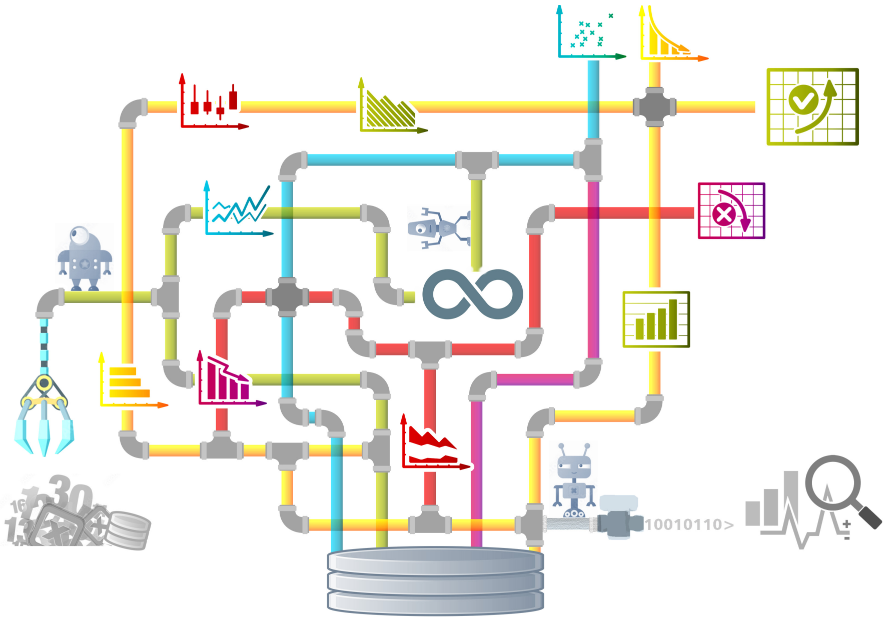
NOOXL

Nooxl User Documentation

v11



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Spreadsheet Web Apps for Teams

1 What is Nooxl?

Nooxl is a self-service platform to avoid Excel chaos in multi-user environments.

Nooxl complements spreadsheets with process, data, user and compliance management in a web browser.

Thus, spreadsheets become business-capable again:

- Efficient, flexible multi-user database application
- Setup without external programming (Zero Code App)
- Customizable by business users
- Central data management including Excel documents
- Avoids Excel chaos, ensures compliance with corporate policies
- Real user self-service, relieves the IT

2 Quick start

On the following pages you'll find a quick start in Nooxl for users. Here you find the basic navigation within the applications and the different aspects and functionalities explained.

First steps in Nooxl (siehe Seite 8)

The second subchapter of the quick start shows how to create a first simple app with Nooxl.

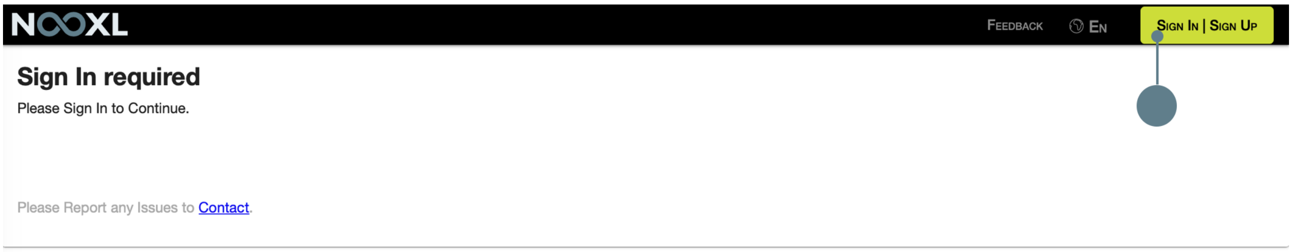
Create a first App - App Design Basics (siehe Seite 25)

2.1 First steps in Nooxl

In the following introductory chapters you'll learn step by step how to use Nooxl as a user and how to navigate in it.

2.1.1 Open Nooxl and log in

Open a browser and navigate to the address of your Nooxl system. Once there, click on Sign In/Sign Up.

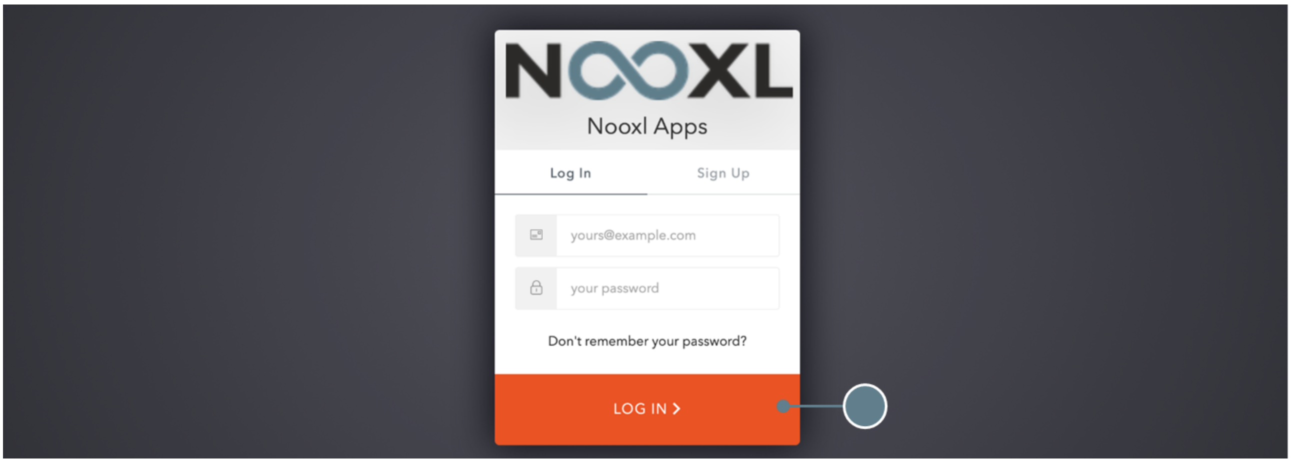


Sign In required

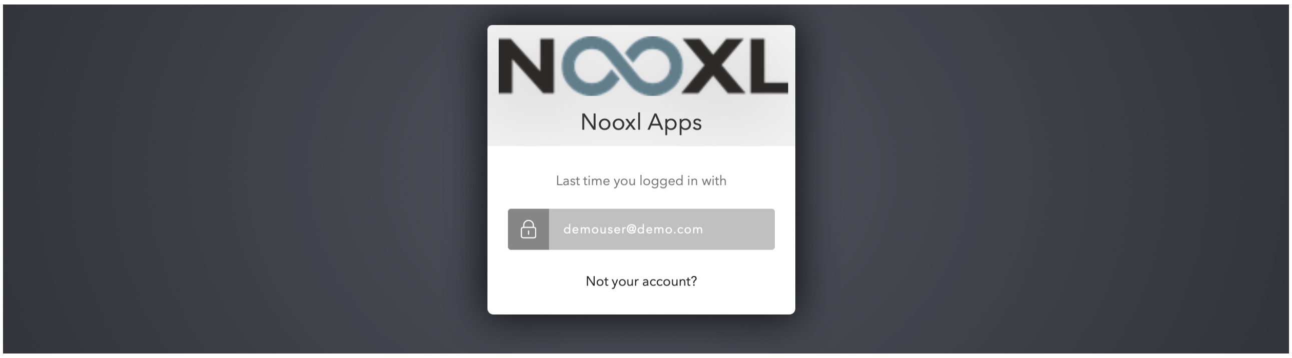
Please Sign In to Continue.

Please Report any Issues to Contact.

When you get to the login screen, enter your user name and password. Confirm by clicking the LOG IN button.



If you logged into Nooxl in the past, you may be able to log in directly without having to enter your username and password again:

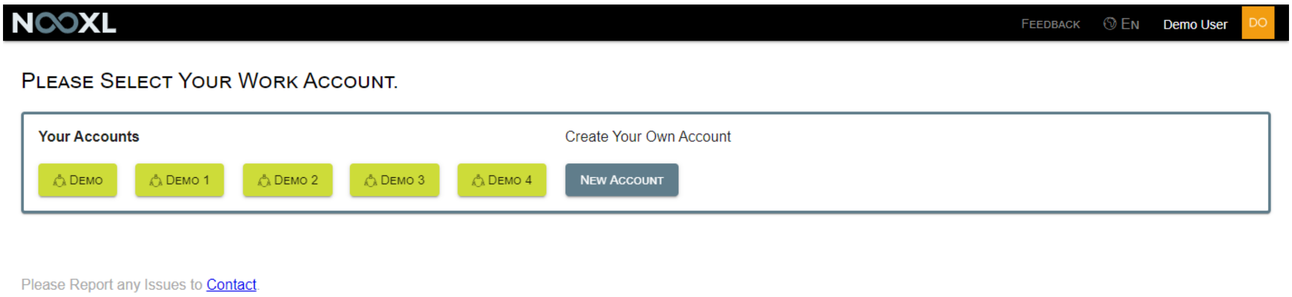


Last time you logged in with

demouser@demo.com

2.1.2 Select an account

If you have access to apps in multiple accounts, you'll get an overview of all your accounts with the option to select one immediately after logging in.



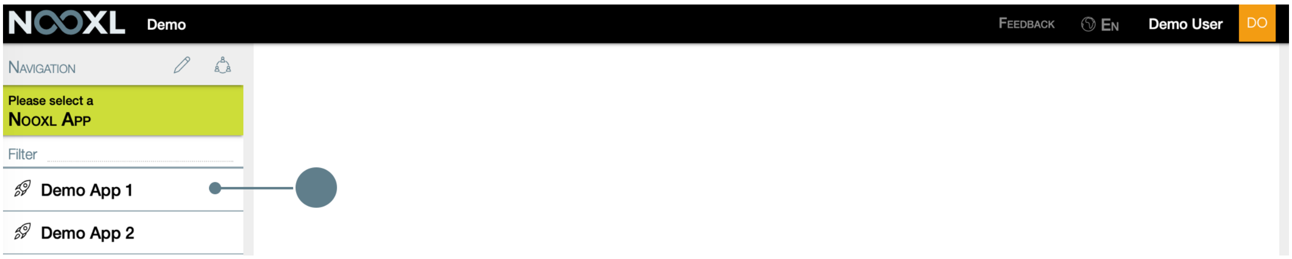
Please Select Your Work Account.

Please Report any Issues to Contact

If you only have access to one account, it will be opened automatically for you and you'll be taken to the app selection (siehe Seite 10).

2.1.3 Select an app

If you have access to several apps in your Nooxl account, you can select the desired app in the left navigation area after logging in to Nooxl or after you selected the account in case you have access to multiple accounts.

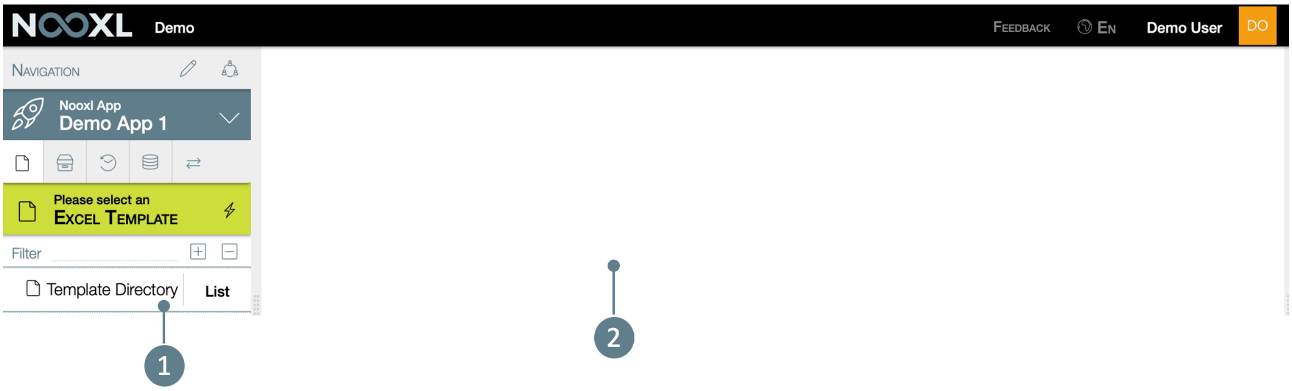


If you only have access to one app, it will open automatically and you can start working in the app (siehe Seite 13).

2.1.4 Working in Nooxl apps

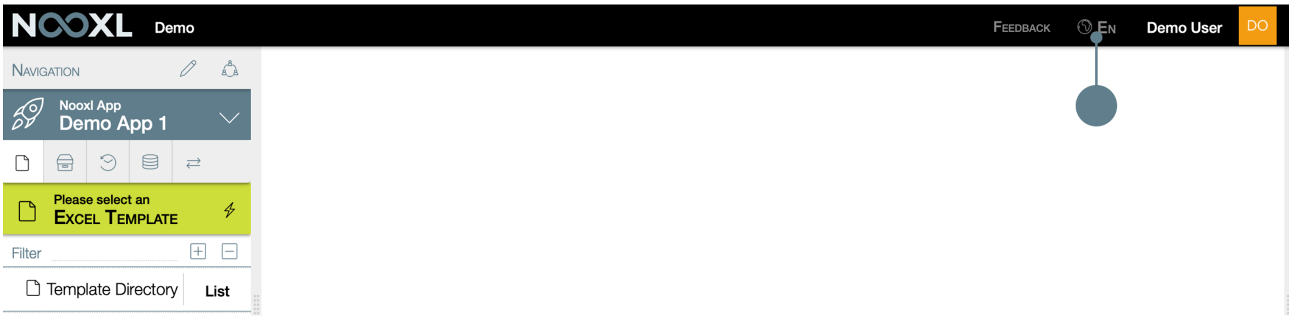
Once you have selected an app, you'll find the navigation area on the left side (1). Here you can select the templates available in the app.

When you load a data record of a template, it is displayed in the application's right-hand area (2).



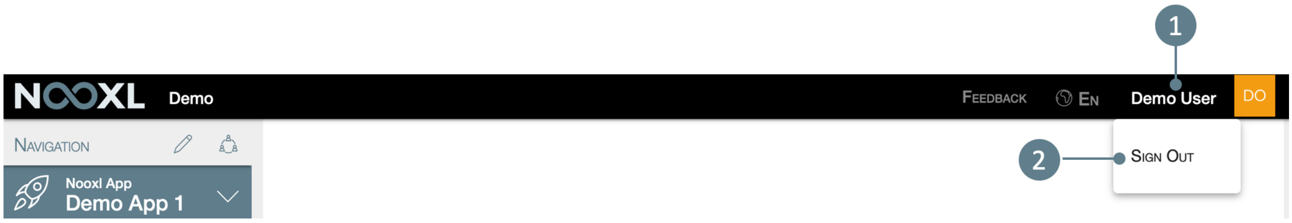
Change language

To change the display language of Nooxl, please click here.



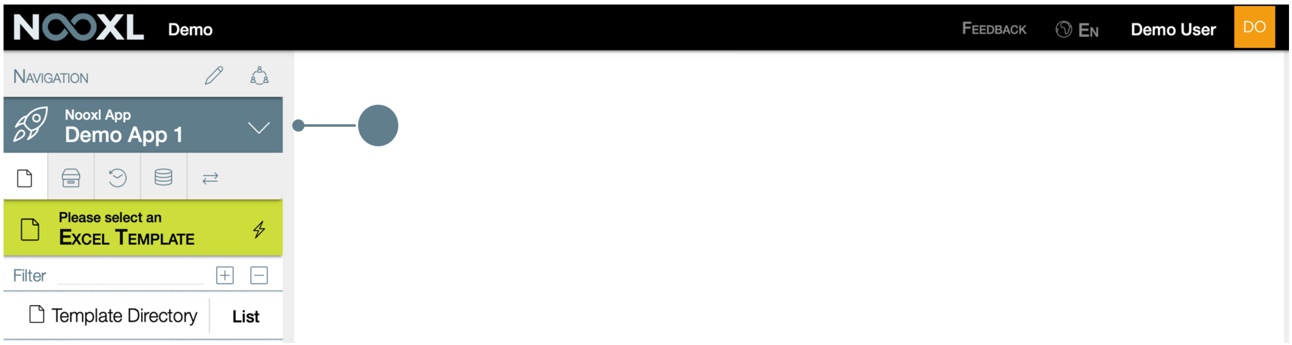
Sign Out

To sign out, click on your user name (1) and then on Sign Out (2) in the menu that opens.



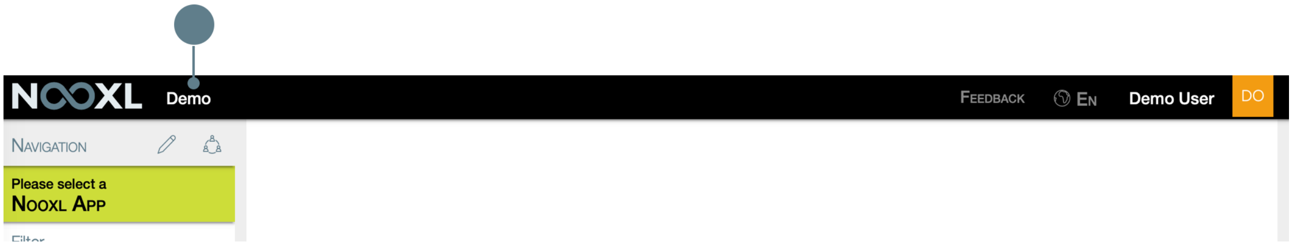
Switch App

If you have access to several apps and want to switch to another app, click on the name of the current Nooxl app. Then you'll get a list of all Nooxl apps you can access in the left navigation area.



Switch Account

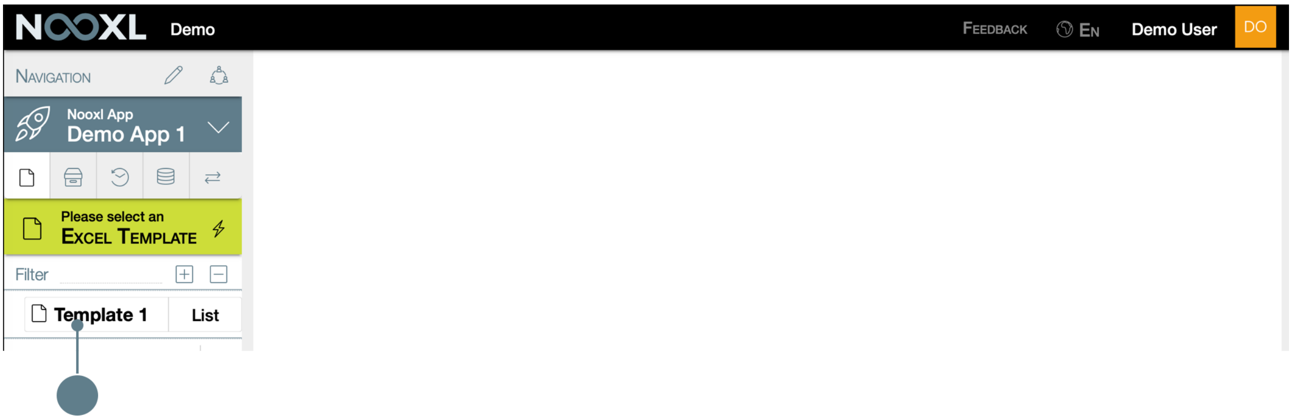
If you have access to several accounts (siehe Seite 79), clicking on the Account name next to the Nooxl Logo will take you to the account overview and from there you can choose another account.



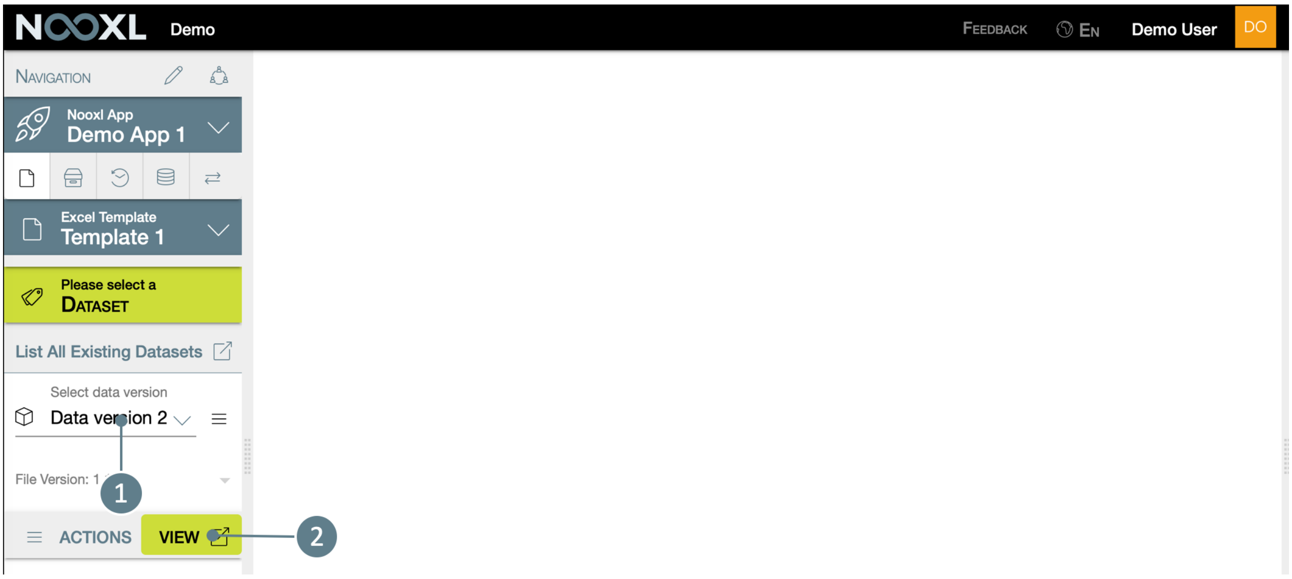
2.1.5 View templates and save data

To get to the data set selection, click in the left navigation on the name of the template you want to view.

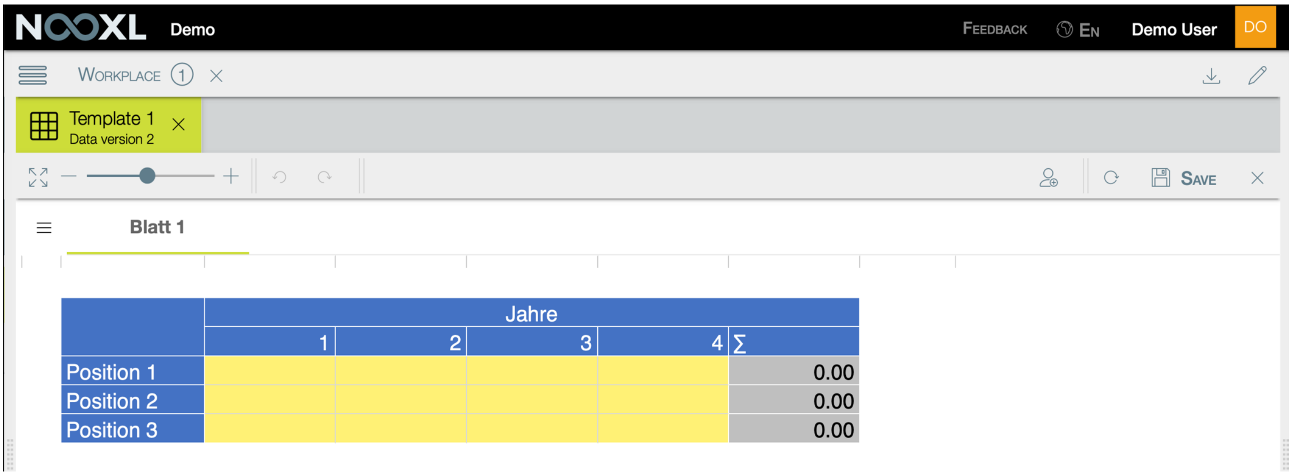
ⓘ Depending on how the account in which you are working is configured, the buttons to the right of the template names may be called "List". In this case you have to click on the name of the template to get to the record selection.



In the data set selection, select the desired entry of your data set in each existing selection (1) and then click on View (2).

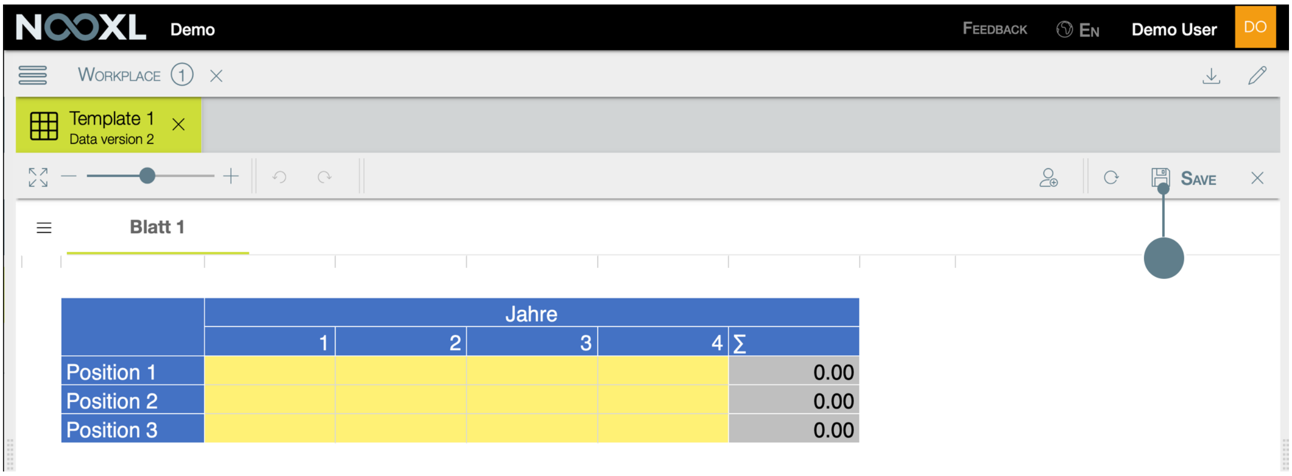


Once you have clicked on View, the left navigation closes to enlarge the work area and the template is loaded with the data of the selected data set.



	Jahre				
	1	2	3	4	∑
Position 1					0.00
Position 2					0.00
Position 3					0.00

If you have made changes to the data set, click Save to save these changes to the database.

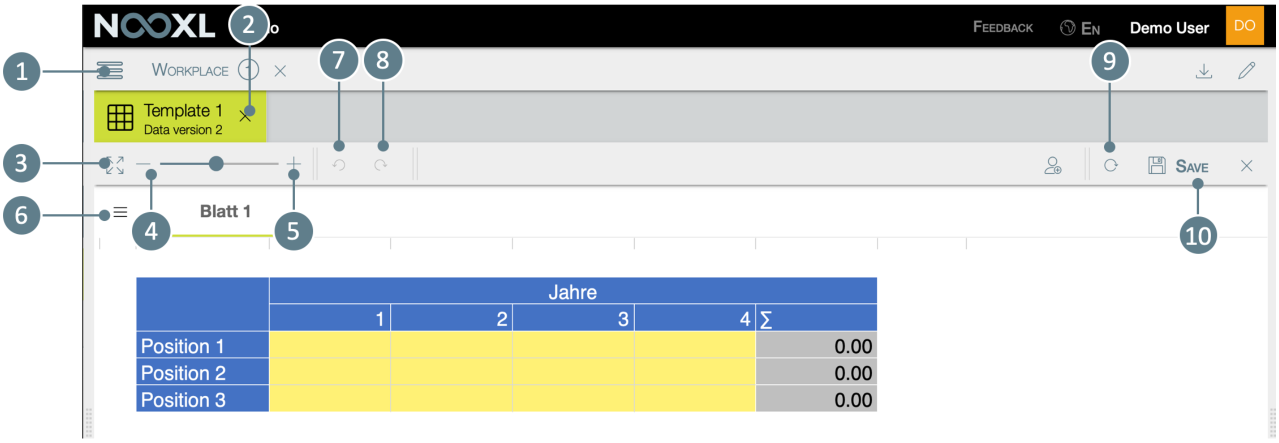


	Jahre				
	1	2	3	4	∑
Position 1					0.00
Position 2					0.00
Position 3					0.00

2.1.6 Important functions in the work area

In the work area of Nooxl you will find the following functions, which are essential for working in Nooxl or make your work easier:

1. Reopen navigation to switch to another record or template.
2. Close the current dataset.
3. Open full screen mode.
4. Reduce zoom level.
5. Increase zoom level.
6. Open any sheet of the template.
7. Undo last entry(s).
8. Restore last undone change(s).
9. Reload data set (possible entries will be lost).
10. Save data set.



	Jahre				
	1	2	3	4	∑
Position 1					0.00
Position 2					0.00
Position 3					0.00

2.1.7 Data protection

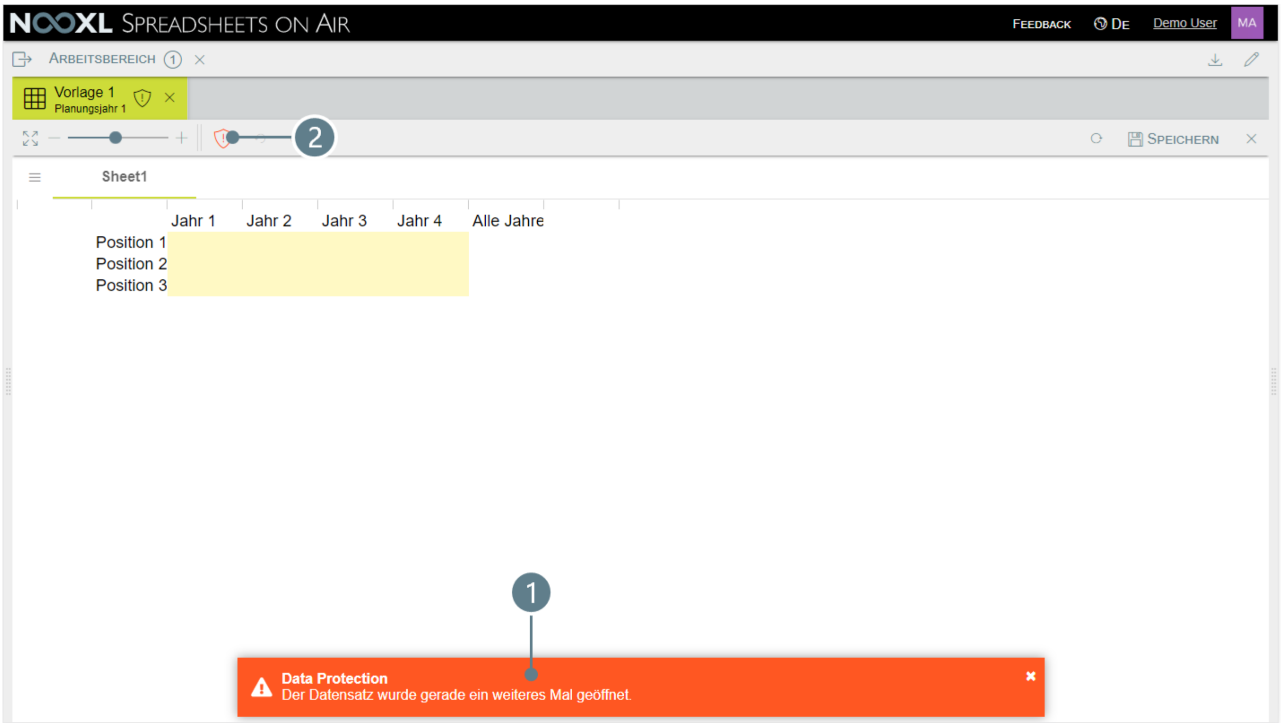
Nooxl has an integrated system which ensures that users are informed when two or more users open data from an identical record. It doesn't matter in which template the data is stored.

Warnings when opening a data record in parallel

If another user opens your record, you will receive the following message at the bottom of the screen (1)

> **Data Protection**
> Der Datensatz wurde gerade ein weiteres Mal geöffnet.

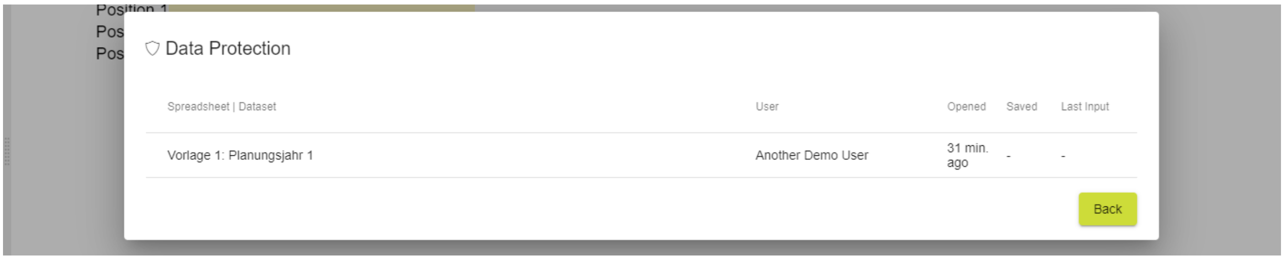
In addition, a red sign with exclamation mark appears in the top bar (2).



	Jahr 1	Jahr 2	Jahr 3	Jahr 4	Alle Jahre
Position 1					
Position 2					
Position 3					

Data Protection
Der Datensatz wurde gerade ein weiteres Mal geöffnet.

If you click on this sign, you will get information about who has just opened your record.



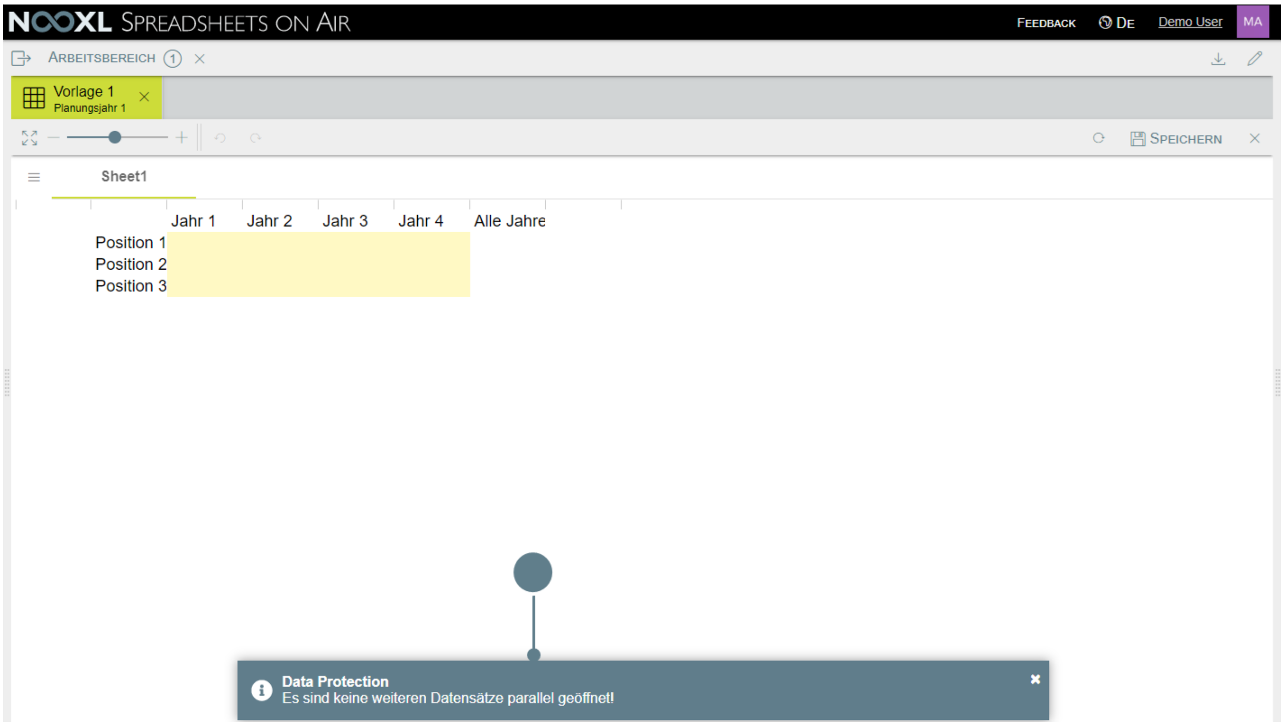
Data Protection

Spreadsheet | Dataset	User	Opened	Saved	Last Input
Vorlage 1: Planungsjahr 1	Another Demo User	31 min. ago	-	-

As soon as the other user closes the record again, you will receive the following message:

> **Data Protection**
> Es sind keine weiteren Datensätze parallel geöffnet!

This means: You can work on the data record without any danger.



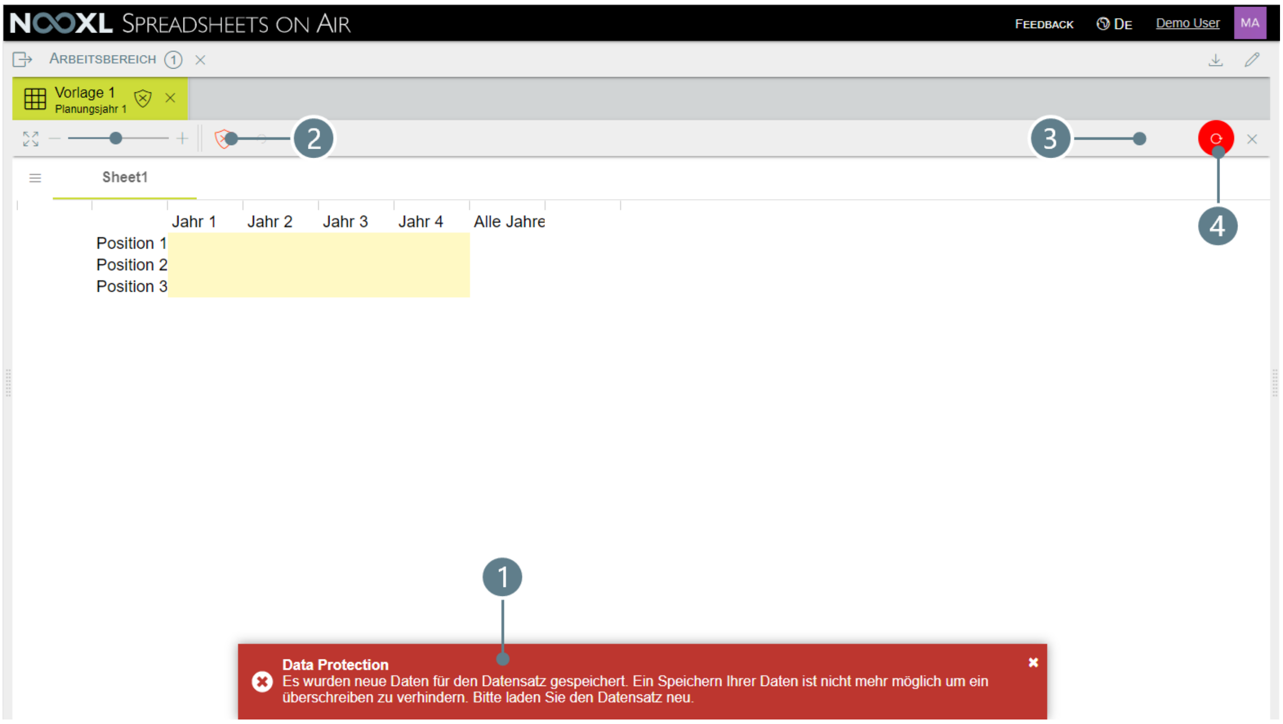
	Jahr 1	Jahr 2	Jahr 3	Jahr 4	Alle Jahre
Position 1					
Position 2					
Position 3					

Data Protection
Es sind keine weiteren Datensätze parallel geöffnet!

Parallel processing warnings

In the event that another user has edited and saved your currently open record in parallel, you will receive the following message (1):

> **Data Protection**
> Es wurden neue Daten für den Datensatz gespeichert. Ein Speichern Ihrer Daten ist nicht mehr möglich um ein überschreiben zu verhindern. Bitte laden Sie den Datensatz neu.

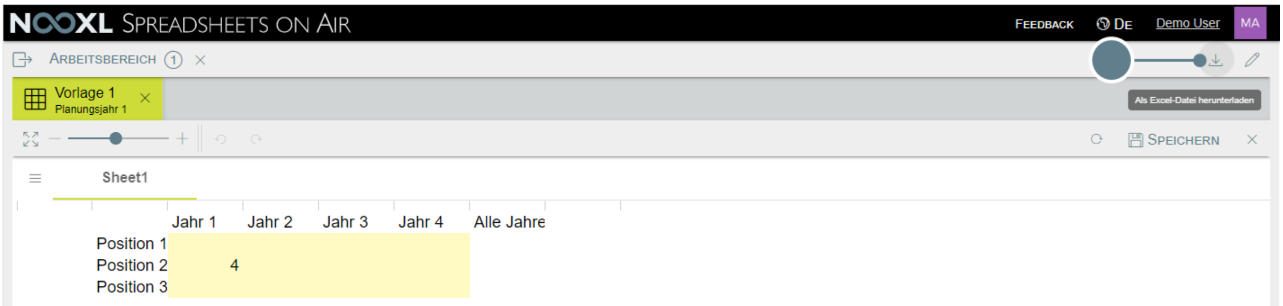


Data Protection
Es wurden neue Daten für den Datensatz gespeichert. Ein Speichern Ihrer Daten ist nicht mehr möglich um ein überschreiben zu verhindern. Bitte laden Sie den Datensatz neu.

The sign with an exclamation mark changes to a sign with x (2) to indicate that the data set is not only being viewed in parallel but has been modified by another user.
To prevent the user from trying to save his record and overwriting the other user's changes, the Save button is removed (3) and the reload button is highlighted in red (4).

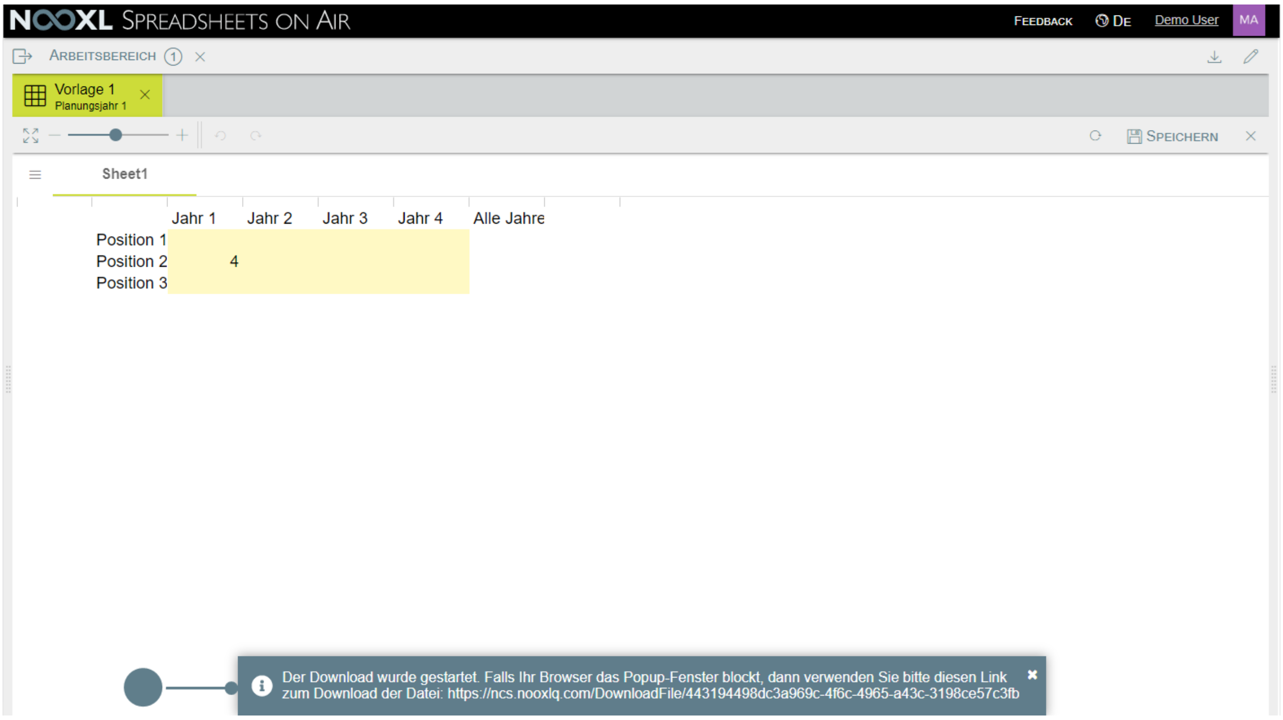
2.1.8 Export templates with current record

If you have the necessary permissions, you can export the currently viewed template including the open dataset to Excel. To do this, click the "Download as Excel file" button.



Depending on the browser used, you will then receive a dialog in which you can specify the storage location or open the file directly, or the file is saved directly on your system.

If this does not happen, it is possible that your browser has blocked the download. In this case please copy the link given in the hint window and paste it into a new browser window.



	Jahr 1	Jahr 2	Jahr 3	Jahr 4	Alle Jahre
Position 1					
Position 2	4				
Position 3					

Der Download wurde gestartet. Falls Ihr Browser das Popup-Fenster blockt, dann verwenden Sie bitte diesen Link zum Download der Datei: https://ncs.nooxlq.com/DownloadFile/443194498dc3a969c-4f6c-4965-a43c-3198ce57c3fb

You can then open the file with Excel, where you will find both the stored data of the data set and the business logic of the template stored in Excel in order to reconstruct it.

2.1.9 Password management

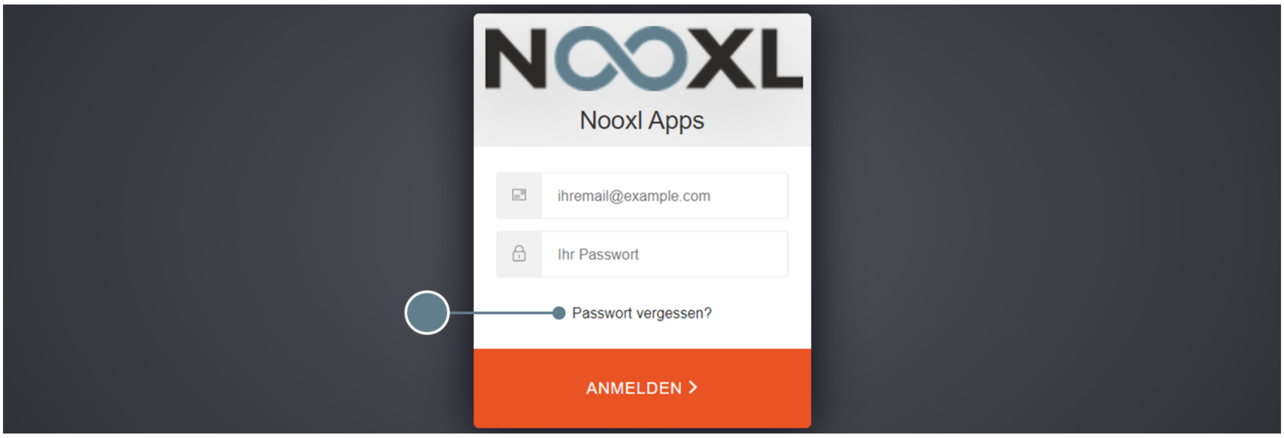
Length and complexity of your password

Your password must be at least 8 characters long and contain upper and lower case letters and numbers. This corresponds to the Password Policy *Fair* von auth0[1] and can be adapted for Enterprise installations.

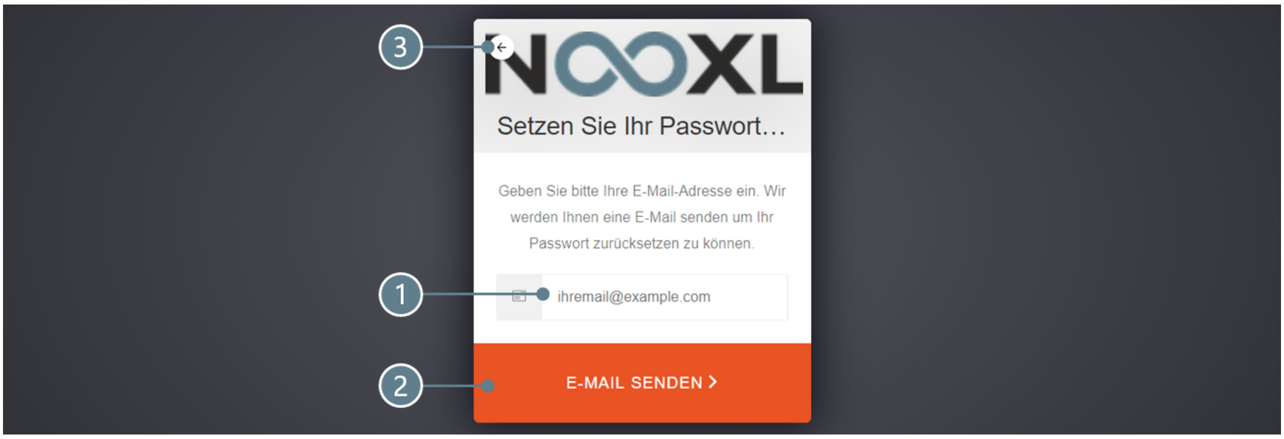
Password forgotten/ change password

If you have forgotten your password or would like to change it, please click on the "Forgot your password?" field in the login screen.

[1] https://auth0.com/docs/connections/database/password-strength#password-policies



In the following mask you can enter your e-mail address (1) with which you are registered at Nooxl. Once you have done so, click on Send e-mail (2) and you will receive an e-mail with a new password. To cancel the process of resetting your password, click on " ← " in the upper left corner (3) and you will be returned to the login screen.



3
NOOXL
Setzen Sie Ihr Passwort…
Geben Sie bitte Ihre E-Mail-Adresse ein. Wir werden Ihnen eine E-Mail senden um Ihr Passwort zurücksetzen zu können.
1
ihremail@example.com
2
E-MAIL SENDEN >

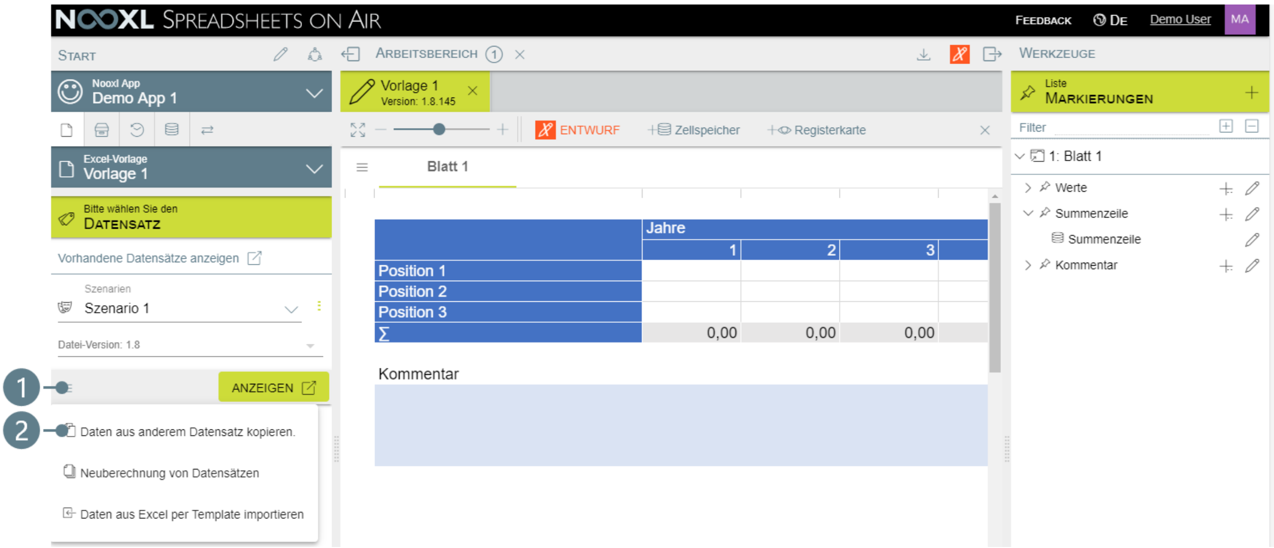
2.1.10 Copy and calculate data records

Nooxl offers the possibility to copy the contents of records to others and to recalculate records automatically.

Copying data records

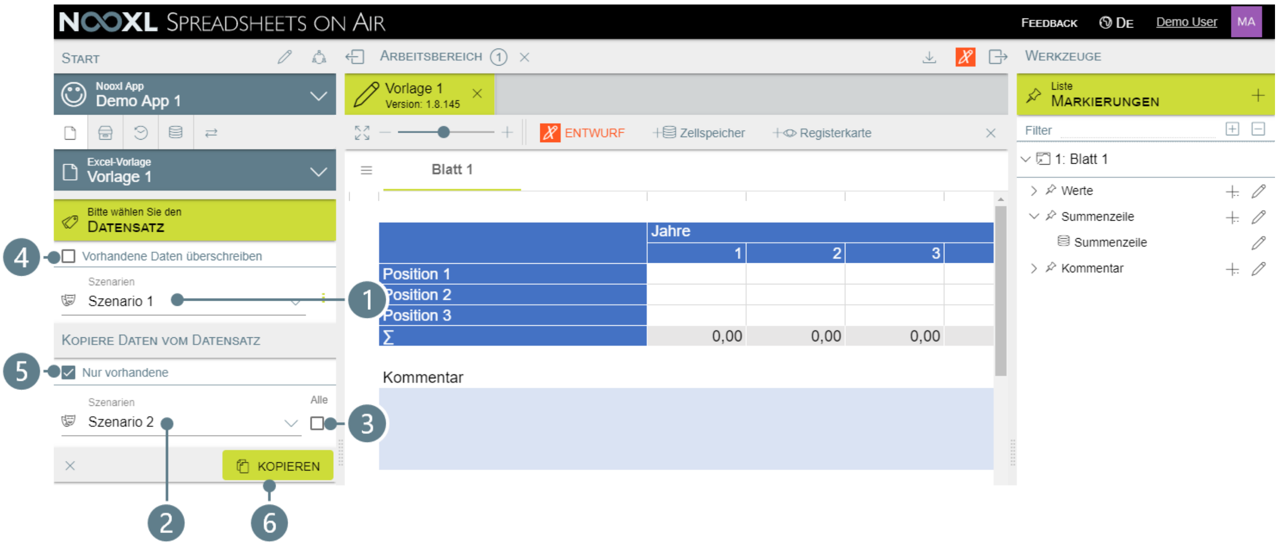
Copying data records is useful if, for example, you want to start a new planning session but want to build on the planning of the last session and do not want to restart it completely.

To copy data sets, click on the three blue-grey horizontal lines (1) in the data set selection of the template and then select the entry "Copy data from another data set" (2) in the menu that opens.

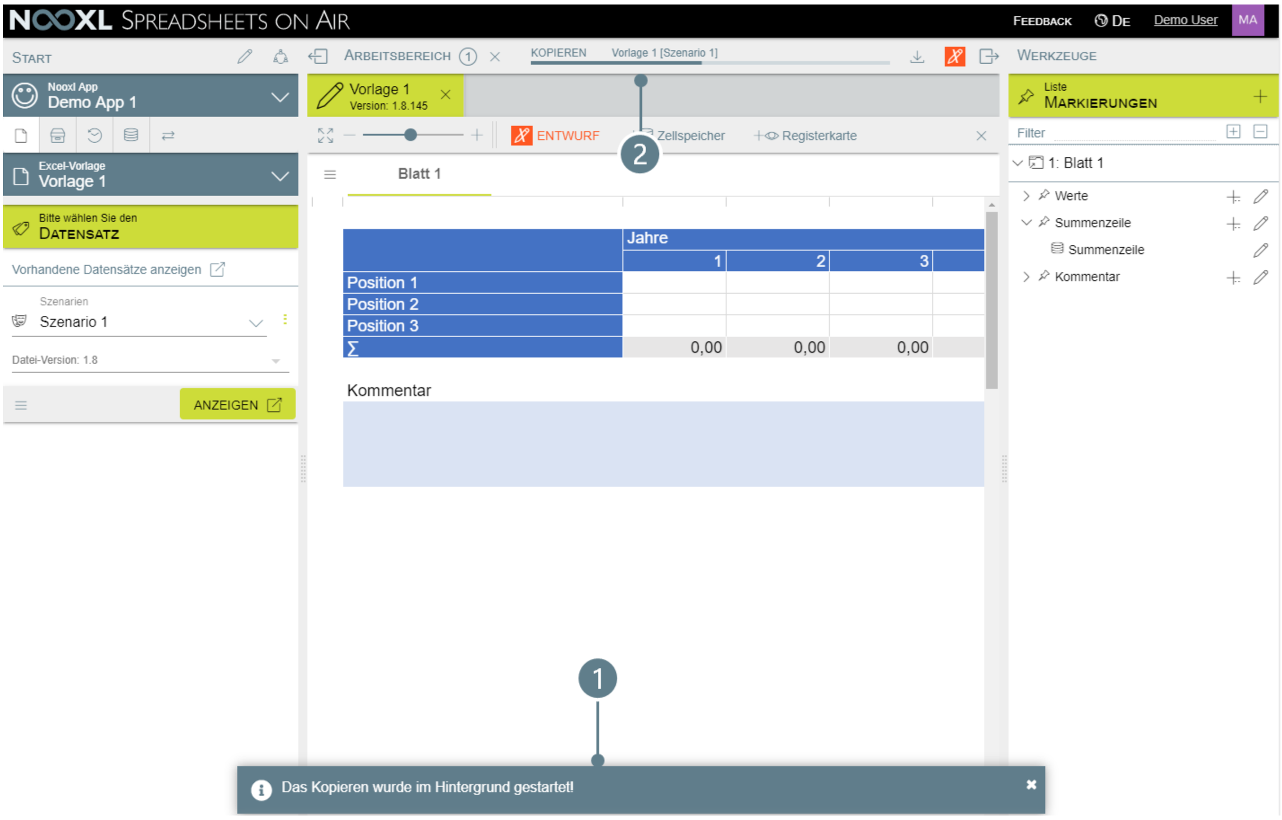


In the opening mask you have the following setting options:

1. This is the target data set to which the data is copied.
2. This is the source data set whose data is copied to the target data set (1).
3. If your data set selection has several selections, it may be useful to select the "All" option.
4. If this option is not active, existing data in the target data set (1) will not be overwritten. This means that only data from cell stores that are not filled in the target Data Set will be enriched by the data from the source.
5. If this option is active, only "filled" cell memories from the source dataset are copied to the target. If this option is not activated, data in the target would be overwritten with "nothing".
6. If everything is set, click on Copy to start the copying process.



At the bottom of the screen you will be informed that the copy process has started in the background (1) and at the top you can see the progress (2).



	Jahre		
	1	2	3
Position 1			
Position 2			
Position 3			
∑	0,00	0,00	0,00

Das Kopieren wurde im Hintergrund gestartet!

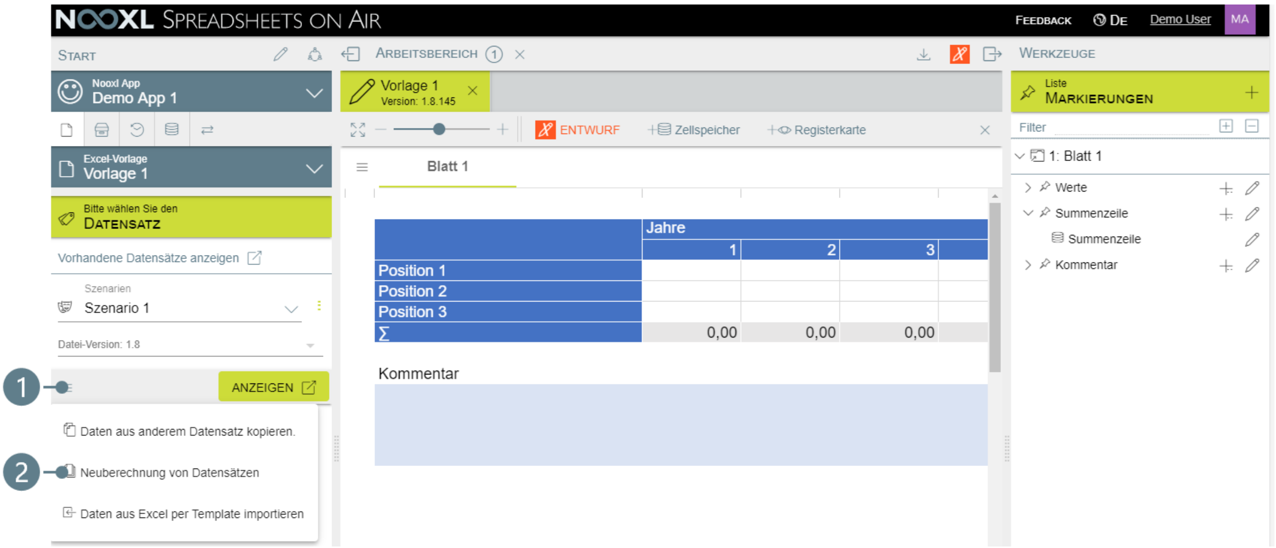
✓ The copy process takes place on the servers of Nooxl, which means you can switch off your computer and Nooxl continues the process without you.

Recalculate Records

A recalculation of data records is always necessary if

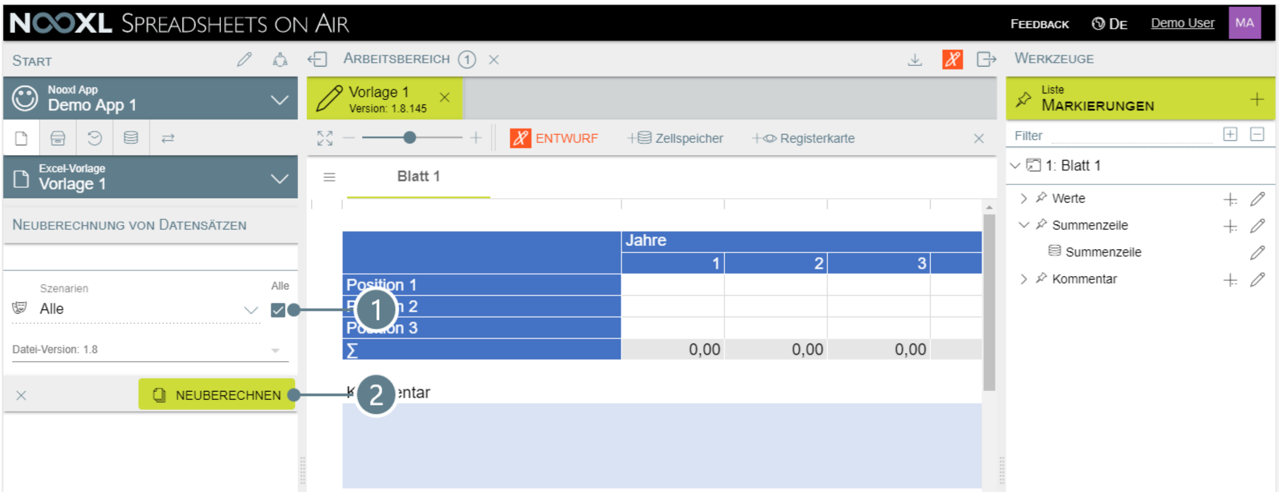
- uploaded a new template with modified Excel logic in Nooxl, or
- have connected new cell memories whose values are to be used in other templates.

To recalculate data sets, click on the three blue-grey horizontal lines (1) in the data set selection of the template and then select "Recalculate data sets" (2) from the menu that opens.



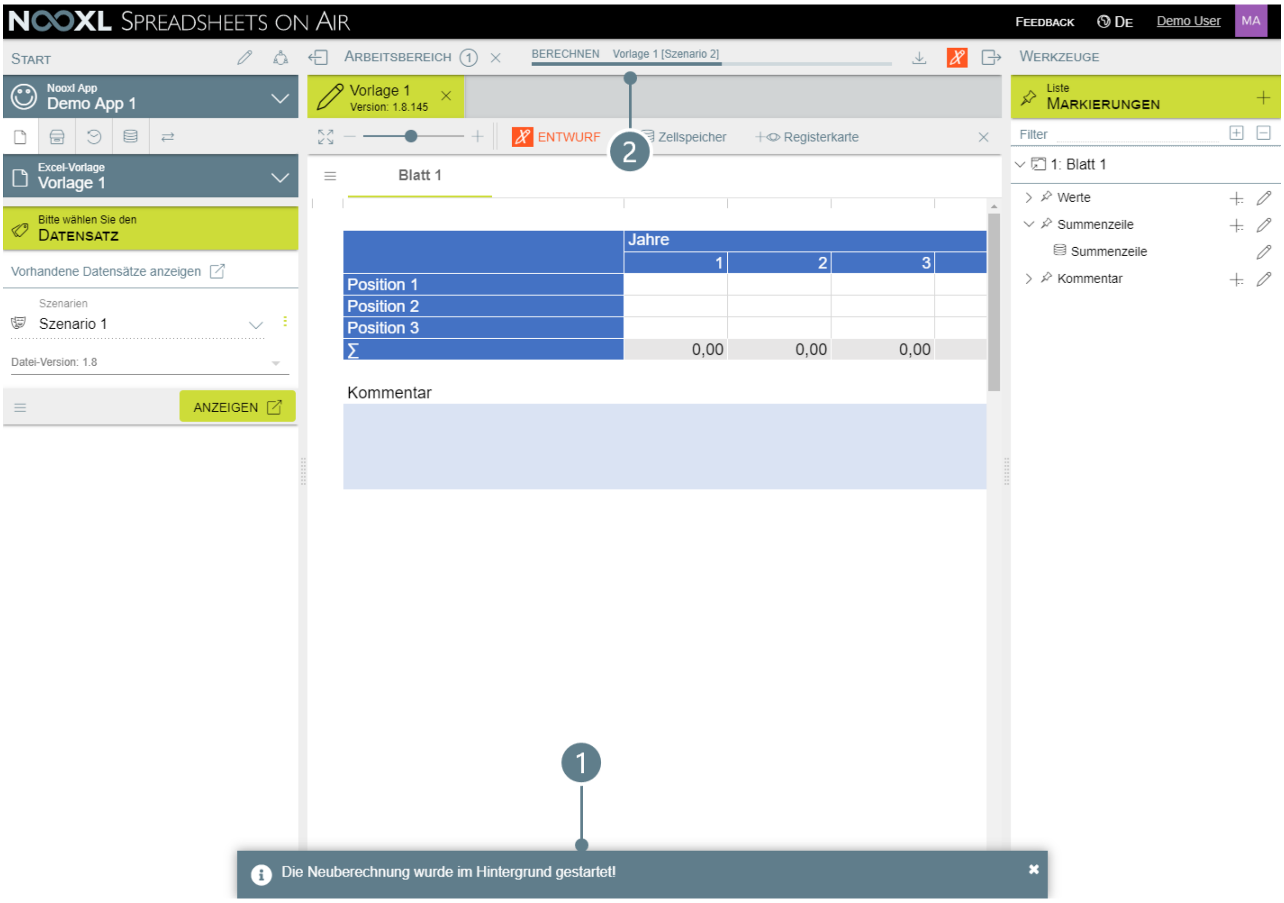
	Jahre		
	1	2	3
Position 1			
Position 2			
Position 3			
Σ	0,00	0,00	0,00

Depending on the use case, mark in the available selections that all containing elements (1) are to be calculated and then click on the Recalculate button (2).



	Jahre		
	1	2	3
Position 1			
Position 2			
Position 3			
Σ	0,00	0,00	0,00

At the bottom of the screen you will be informed that the recalculation was started in the background (1) and in the upper area you can see the progress (2).



	Jahre		
	1	2	3
Position 1			
Position 2			
Position 3			
Σ	0,00	0,00	0,00

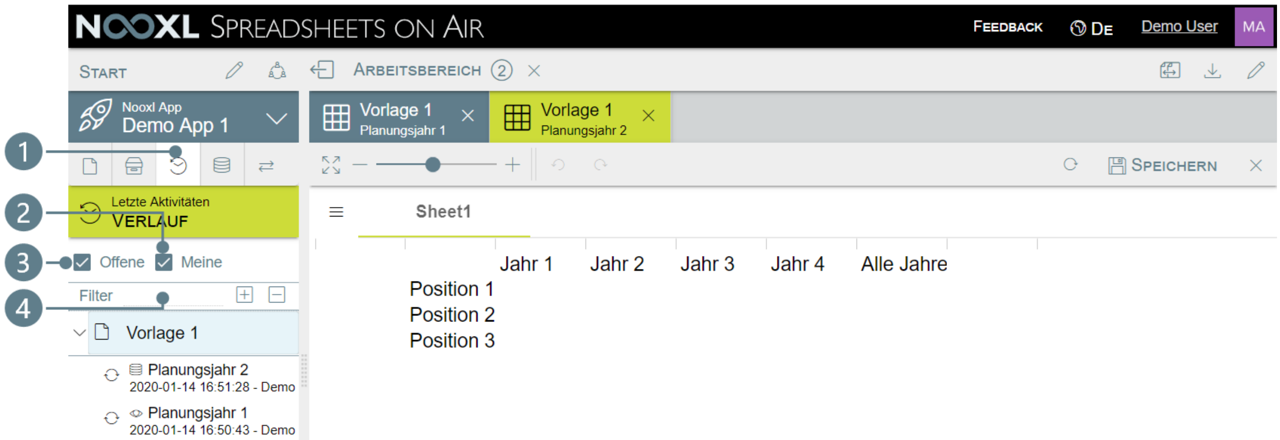
Kommentar

Die Neuberechnung wurde im Hintergrund gestartet!

✓ The recalculation takes place on the servers of Nooxl, this means you can switch off your computer and Nooxl continues the calculation without you.

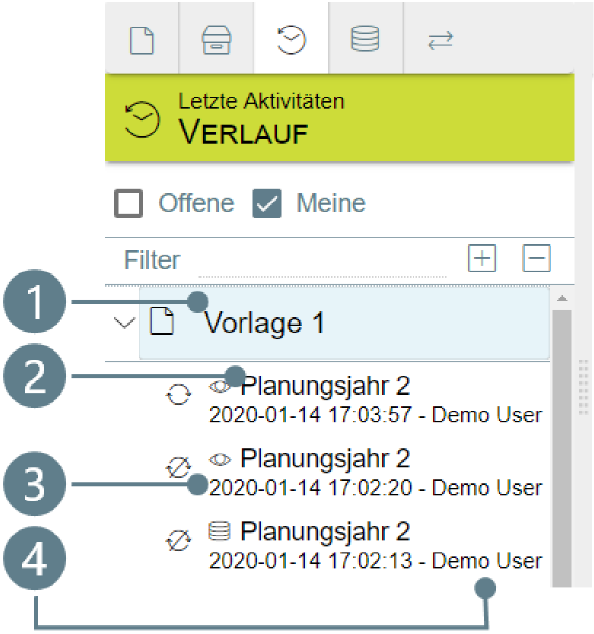
2.1.11 View activity history

In the course of the activities (1) there is an overview of the activities of the users in the system. Depending on the rights of the user and the configuration of the app, these can be only the own activities or the activities of all users.
In the standard system, the list is filtered on the own (2) open (3) activities and is grouped by templates. With the help of the filter (4) entries can be searched.

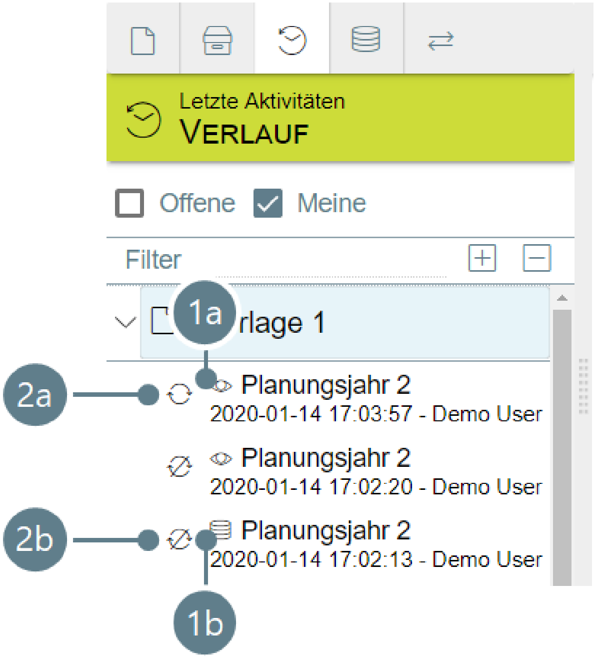


Directly in the list you can see the following information for all activities:

1. Template
2. Data set
3. Time of the last activity
4. User



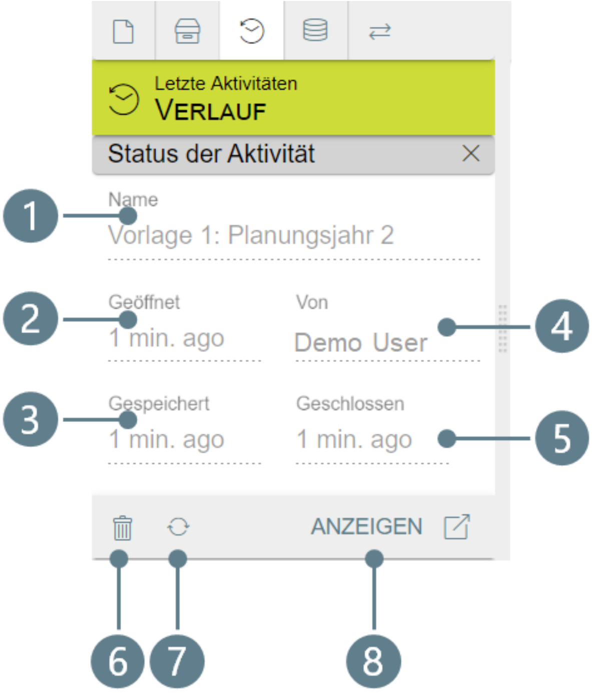
1. Type of activity
    a. User has viewed data set (eye)
    b. User has changed record (database)
2. If the record is still open
    a. Record is still open (arrows in circle)
    b. Record is no longer open (crossed out arrows in the circle)



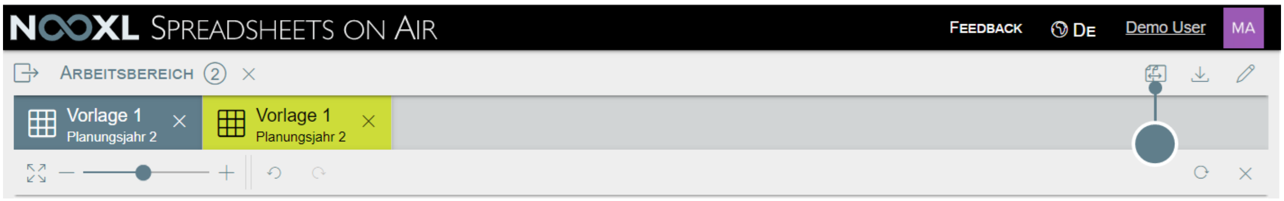
Viewing and changing the status of the activity

If you click on one of the activities in the history list, the status of the activity opens. Here you can view the following information and perform actions according to the set permissions:

1. Template and record
2. When was the activity started
3. If saved, when was last savedt
4. Who is the user
5. If the activity was closed; when
6. Delete activity entry from the logs
7. Open or close activity (depending on current status)
8. Open record as it was during the activity



The last feature can be used, for example, to track who made what changes to a record and when. To do this, the old activity is opened parallel to the currently stored record.
Nooxl then displays an additional button in the workspace with which two records can be compared:



2.2 Create a first App - App Design Basics

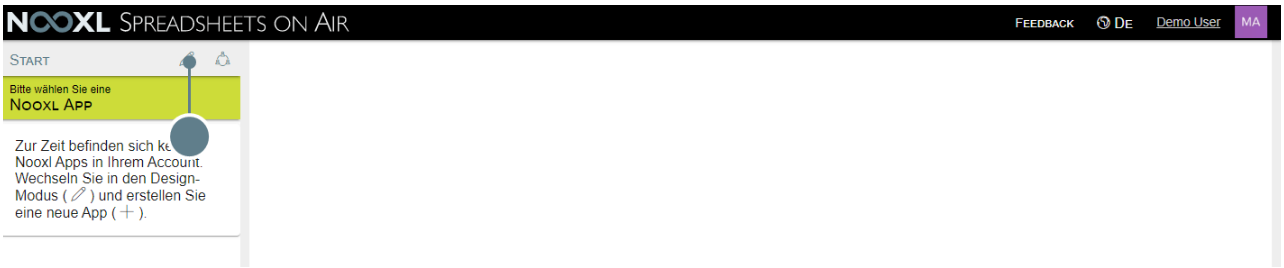
All activities and functionalities of Nooxl mentioned in the following chapter require that you as a user have the designer permissions for the app and its templates.

> Designer authorization is granted to **Account Owner**, **Admins** and users who explicitly have **Design the App** authorization.
> For more information, see the Permissions (siehe Seite 87) section.

2.2.1 Create a new app

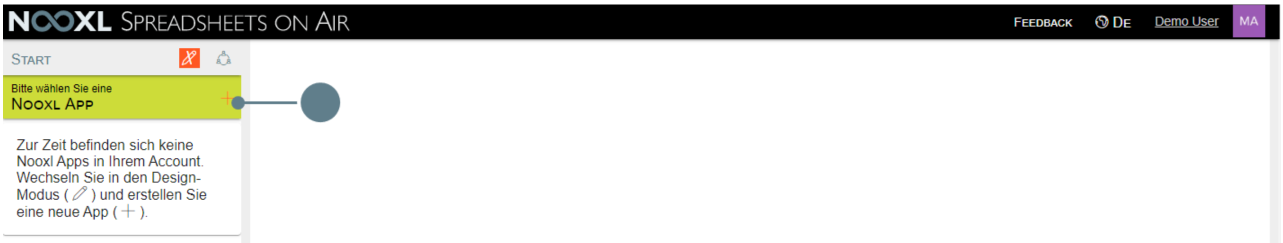
After you have logged in to Nooxl, you will see in the left navigation an overview of the already existing apps or a note that there are currently no apps in your account and an app should be created accordingly.

To do this, **click on the button with the pencil icon** to switch to draft mode.



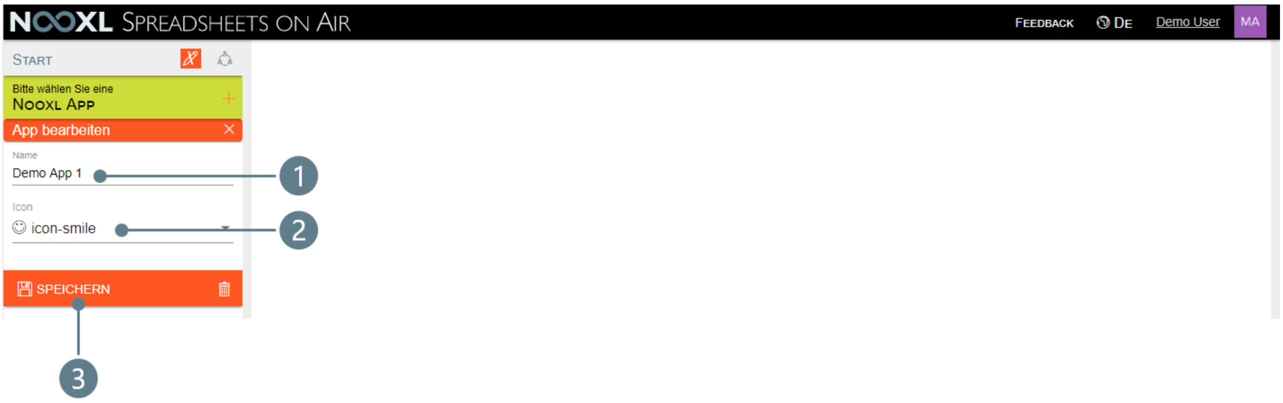
Zur Zeit befinden sich ke Nooxl Apps in Ihrem Account. Wechseln Sie in den Design-Modus ( ) und erstellen Sie eine neue App (+).

In draft mode you have the possibility to create a new app in your account by **clicking on the red plus**.

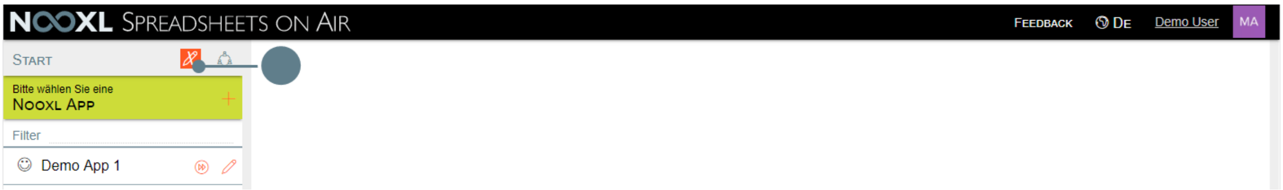


Zur Zeit befinden sich keine Nooxl Apps in Ihrem Account. Wechseln Sie in den Design-Modus ( ) und erstellen Sie eine neue App (+).

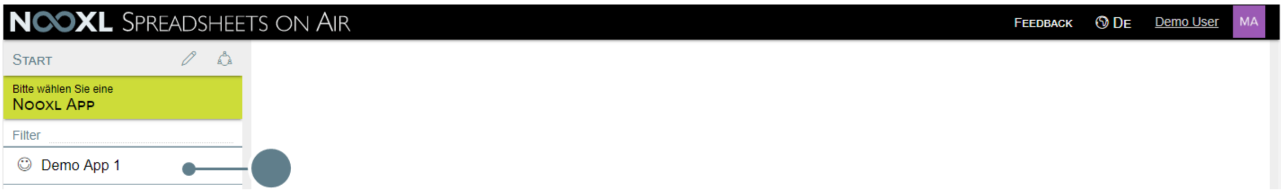
In the creation mask for new apps, you **assign** an app **name** (1), select an icon for your app (siehe Seite 306) (2) and then **save** (3) your entries.



After you are returned to the App Overview, **leave the draft mode** by clicking on the **red pen icon**.



You can then **open your app** by clicking on the entry.

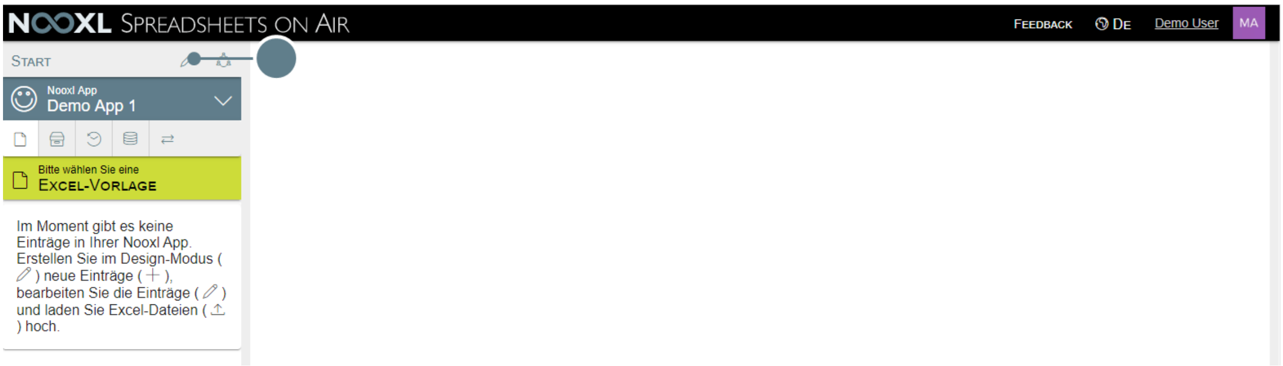


2.2.2 Embed a first spreadsheet in Nooxl

After you have created and opened your first app, it's time to fill it with content. In this chapter you will learn step by step how to integrate a first Excel spreadsheet into your app and how to prepare cell ranges for user input.

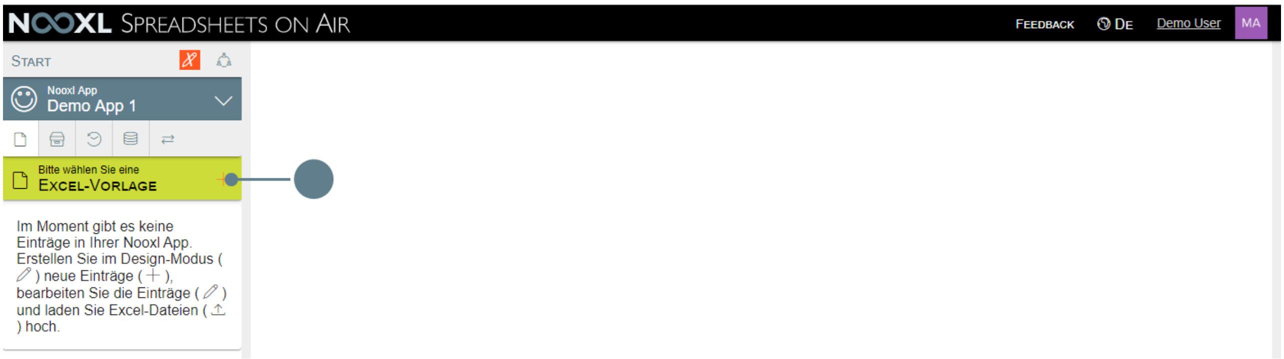
Create a new sheet/template

To create a new template in Nooxl, click on the button with the pencil icon in your app to switch to the draft mode of the app.



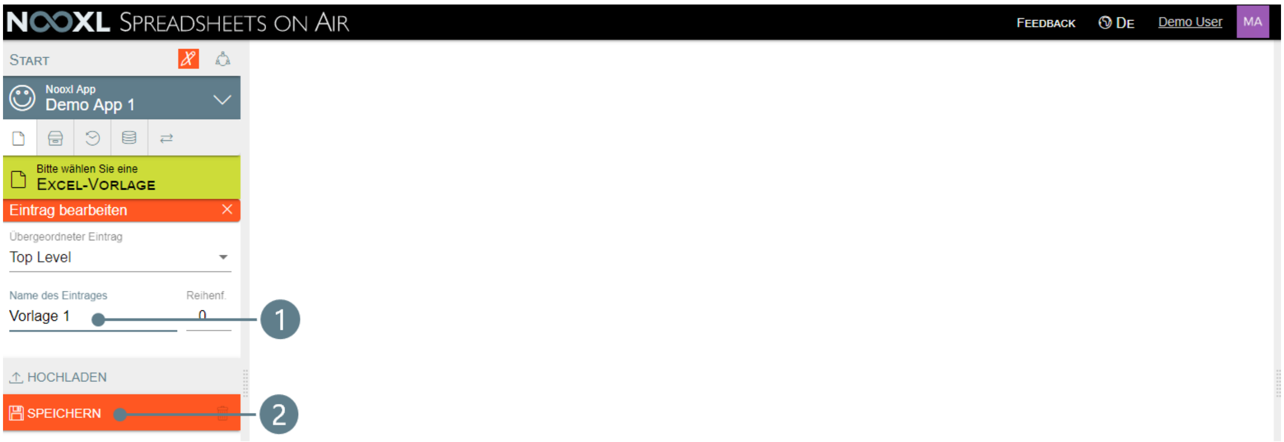
Im Moment gibt es keine Einträge in Ihrer Nooxl App. Erstellen Sie im Design-Modus (✎) neue Einträge (+), bearbeiten Sie die Einträge (✎) und laden Sie Excel-Dateien (⇧) hoch.

You can then create a new template in the app by clicking on the red plus.



Im Moment gibt es keine Einträge in Ihrer Nooxl App. Erstellen Sie im Design-Modus (✎) neue Einträge (+), bearbeiten Sie die Einträge (✎) und laden Sie Excel-Dateien (⇧) hoch.

In the investment mask, please enter a name for the template (1) and then click on Save (2) to create the new entry.

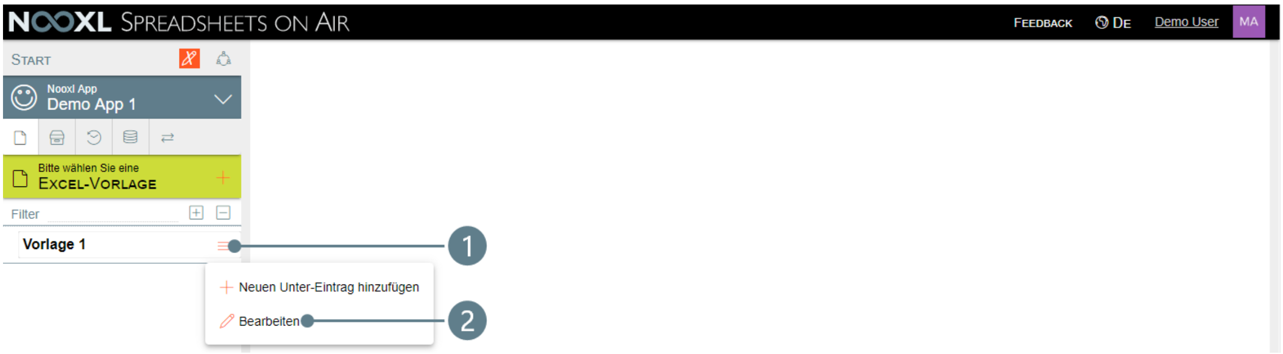


Übergeordneter Eintrag: Top Level

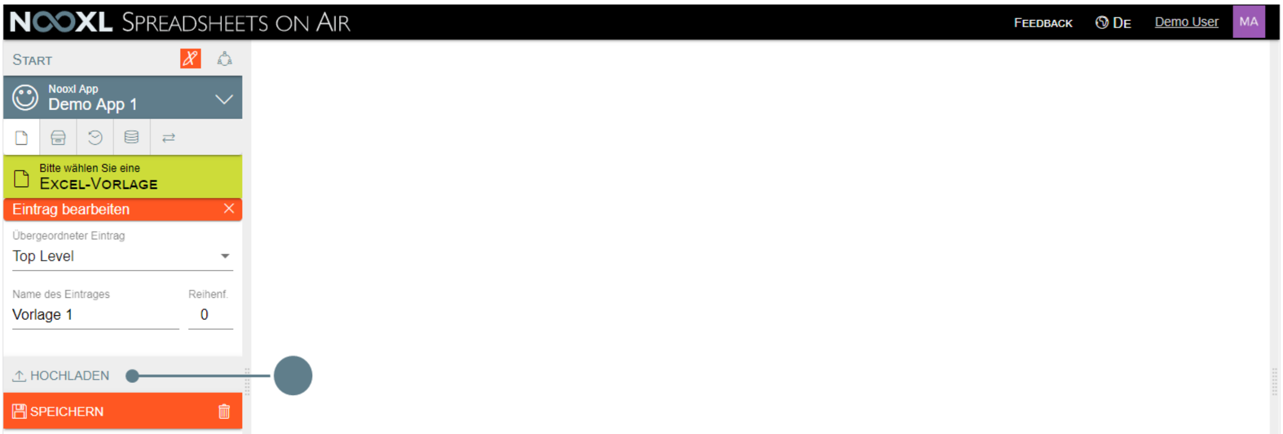
Name des Eintrages: Vorlage 1

Reihenf.: 0

To assign a spreadsheet to the entry, click on the three red horizontal lines to the right of the entry (1) and then select Edit (2) from the menu.



In the mask for editing the entry, click on Upload.

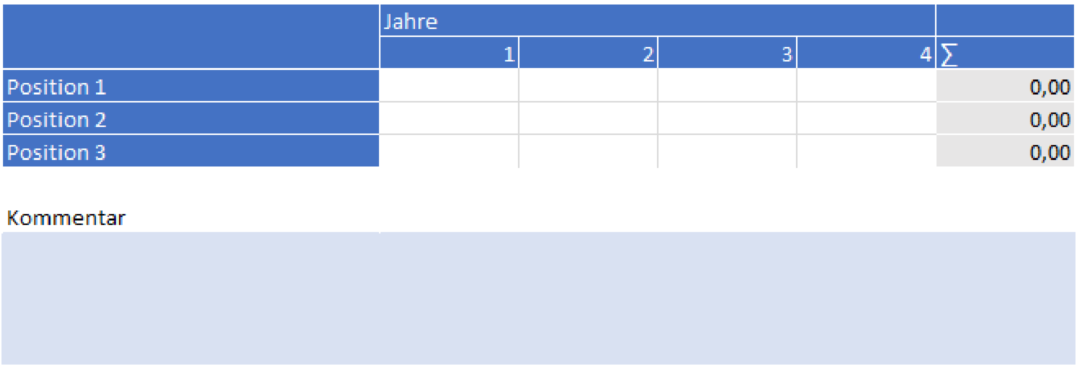


Übergeordneter Eintrag: Top Level

Name des Eintrages: Vorlage 1

Reihenf.: 0

Save the following Excel template to follow the instructions or upload your own Excel template

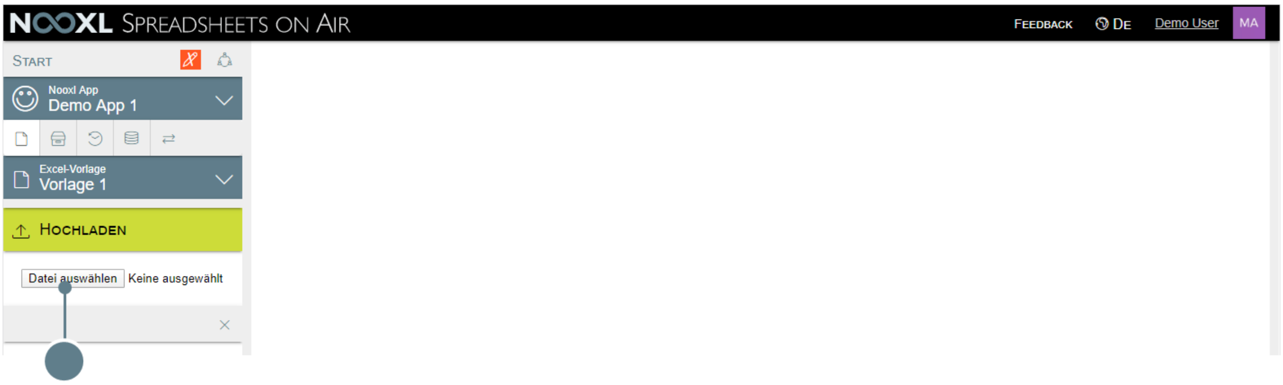


	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

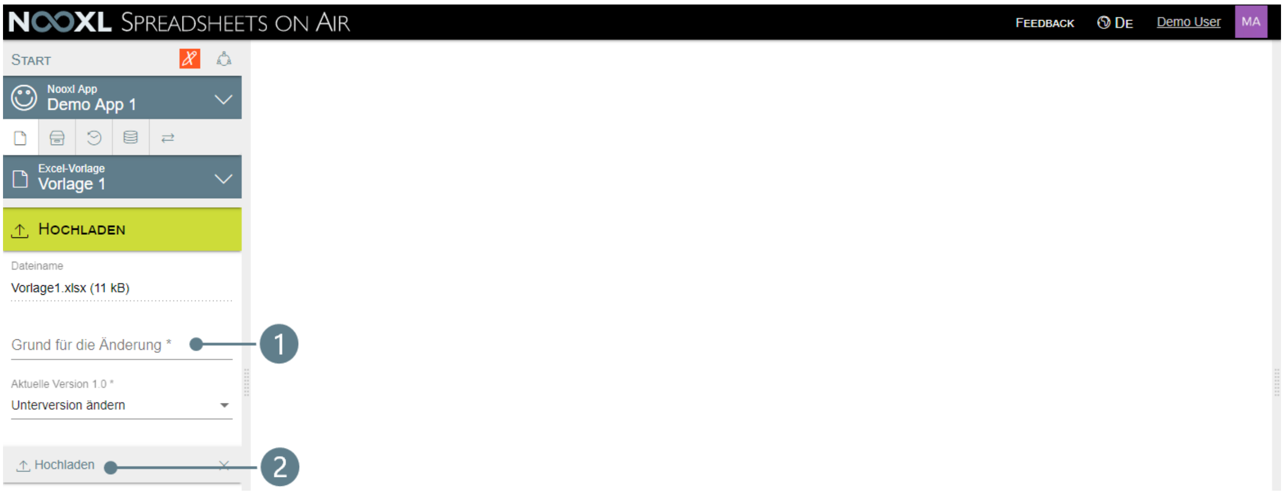
Kommentar

Vorlage1.xlsx

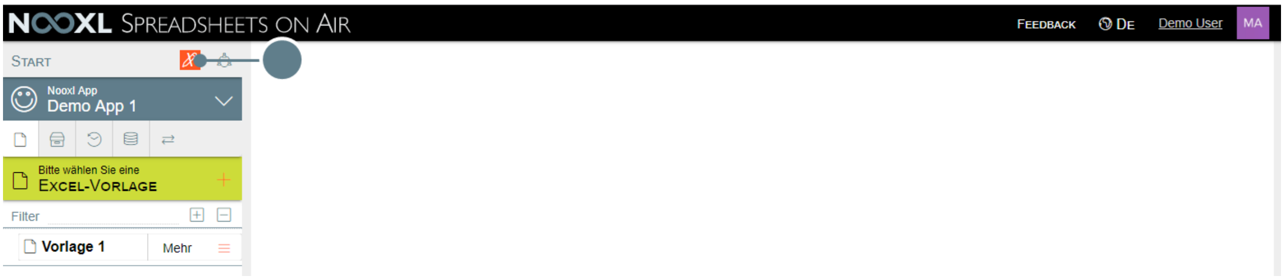
In the next dialog box, click on Upload file and then select your own template or the template provided here.



You can then enter a reason for the change (1) and upload the template (2).



Exit the draft mode by clicking on the red pen.

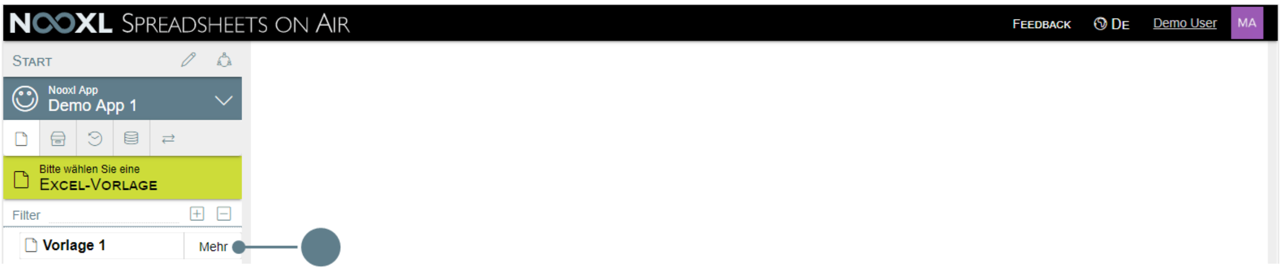


Open a template in design mode

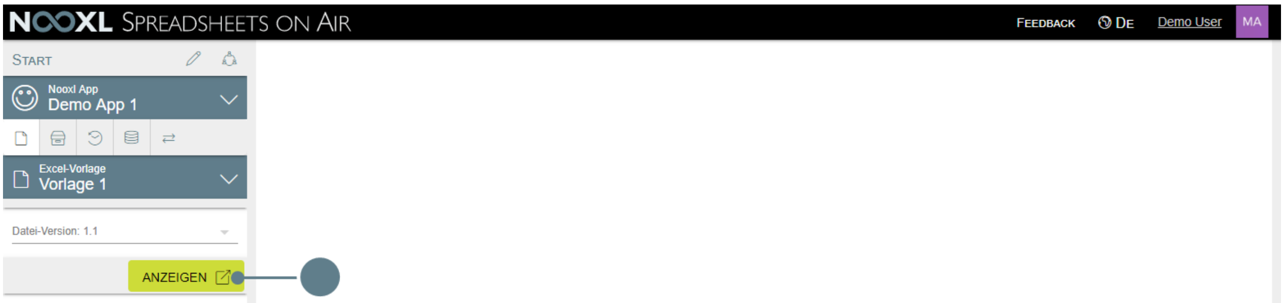
In order to select cells in the template, for example, to release them for input by users or to define them as a display area, the design mode of the template must be opened.
There are basically two procedures for this, which are described below.

Activate design mode from an open template

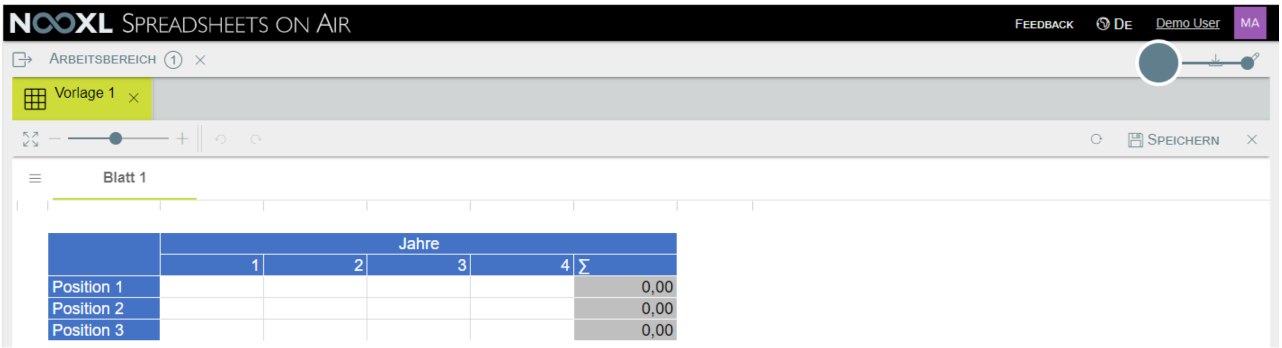
Click on the name of your uploaded template in the left navigation and select a version.



Then click View to open your template.

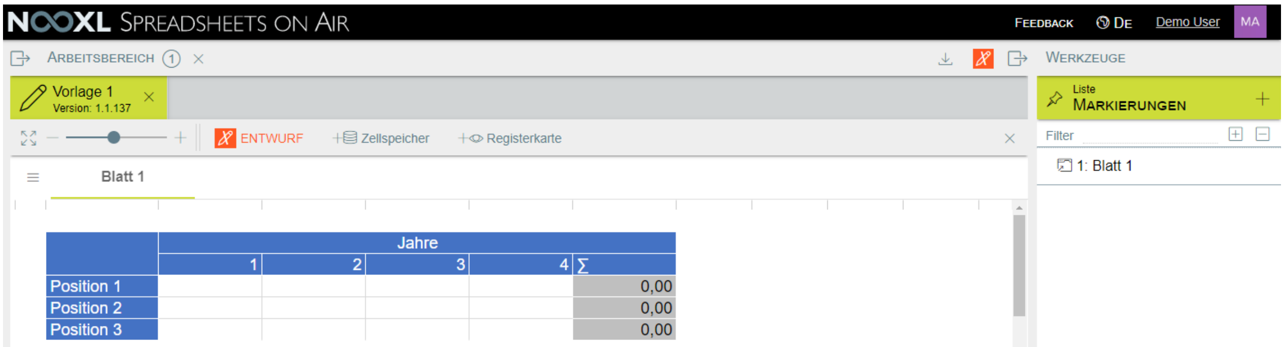


In the display area, the button with the pen is located in the upper right corner again. If this button is pressed, the template opens in design mode.



	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

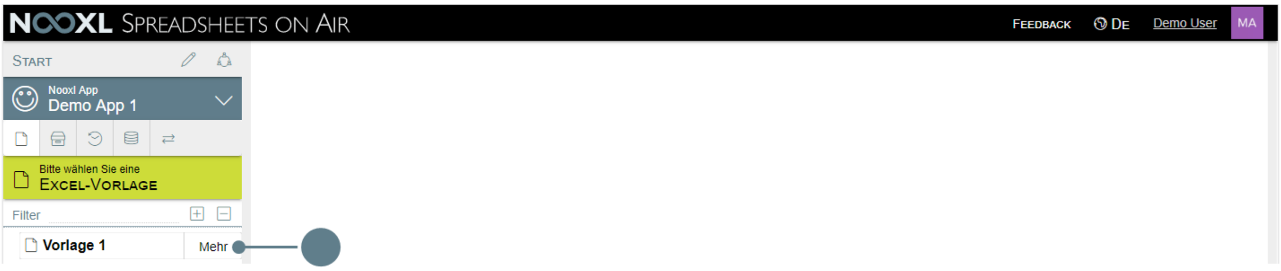
In the design mode, the tools are displayed in the right area of Nooxl.



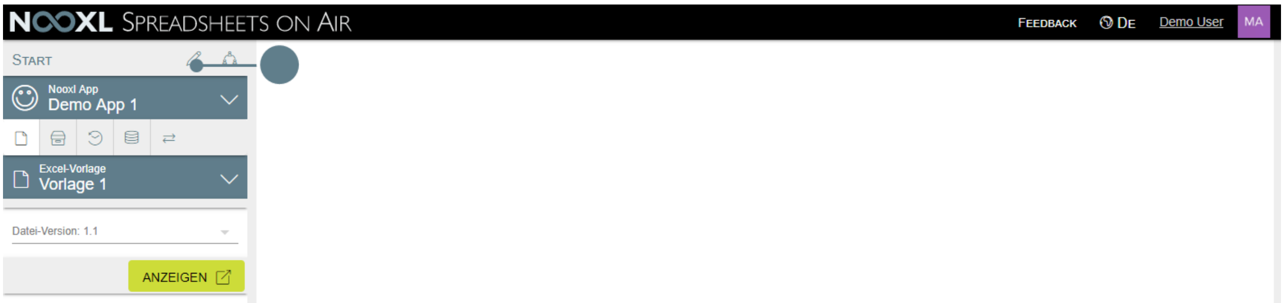
	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

Activate design mode without opening a template

In the left navigation, click on More on the right side of your uploaded template.

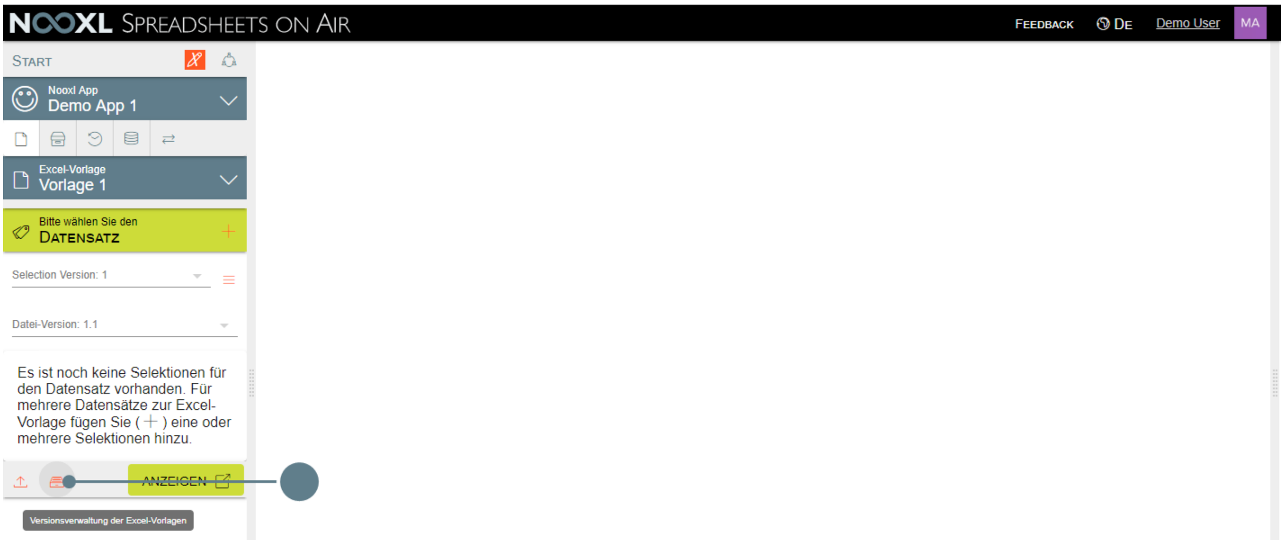


Click on the pen to switch to the app's design mode.



Datei-Version: 1.1

Click on the button for the version management of the Excel templates.

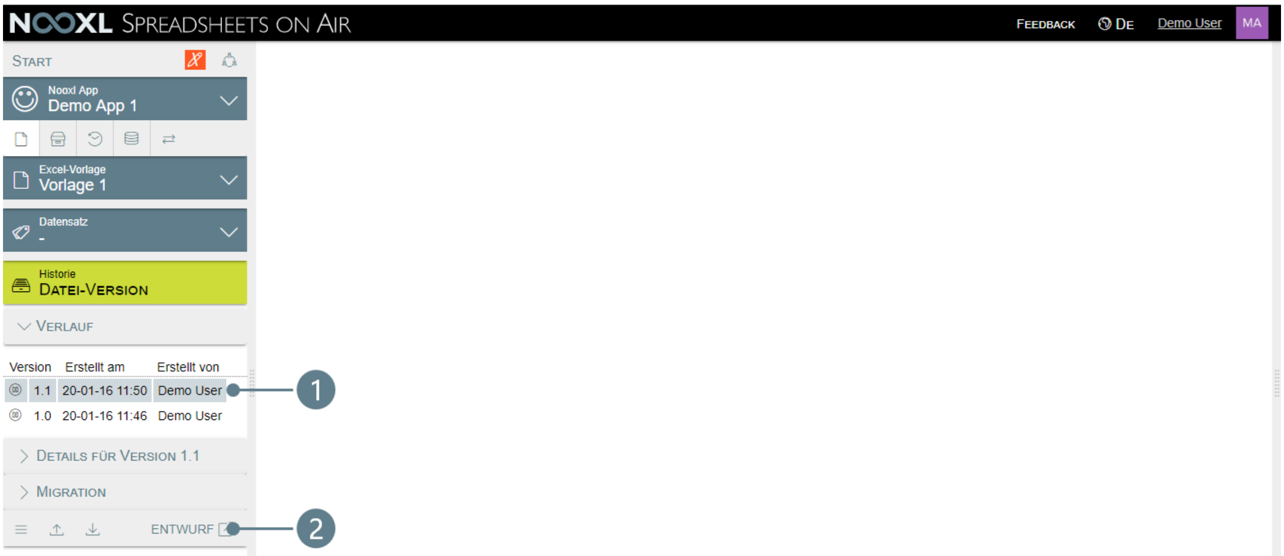


Selection Version: 1

Datei-Version: 1.1

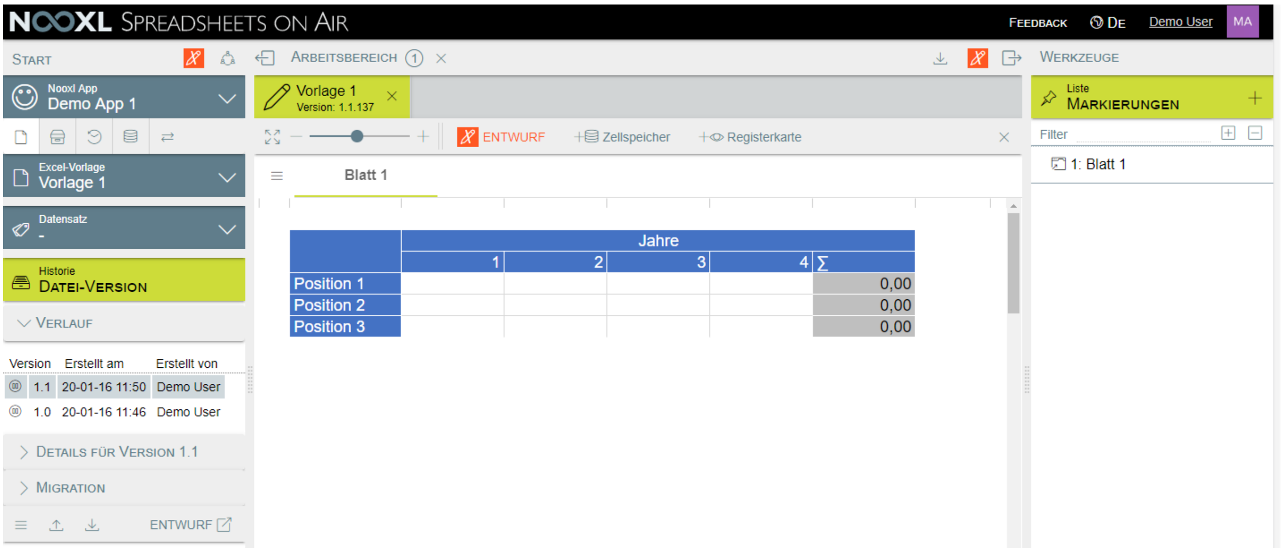
Es ist noch keine Selektionen für den Datensatz vorhanden. Für mehrere Datensätze zur Excel-Vorlage fügen Sie (+) eine oder mehrere Selektionen hinzu.

In the history of file versions, the history is automatically expanded and the latest version is selected (1). With a click on the button Draft (2) the design mode can now be opened for these versions.



Version	Erstellt am	Erstellt von
1.1	20-01-16 11:50	Demo User
1.0	20-01-16 11:46	Demo User

In design mode, the tools are displayed in the right area of Nooxl.

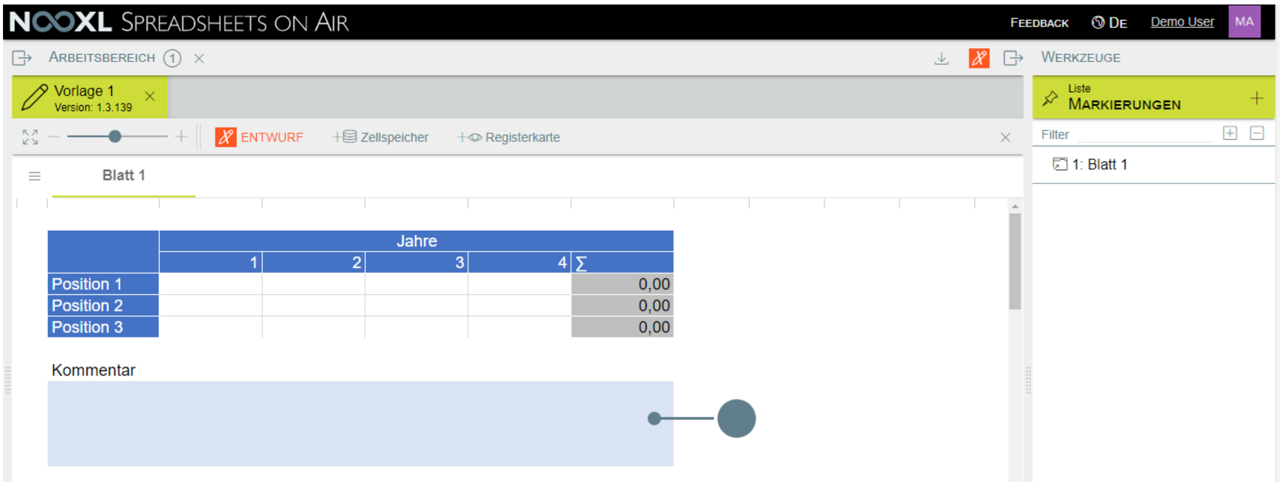


Version	Erstellt am	Erstellt von
1.1	20-01-16 11:50	Demo User
1.0	20-01-16 11:46	Demo User

	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

Connecting a cell to the database using a wizard

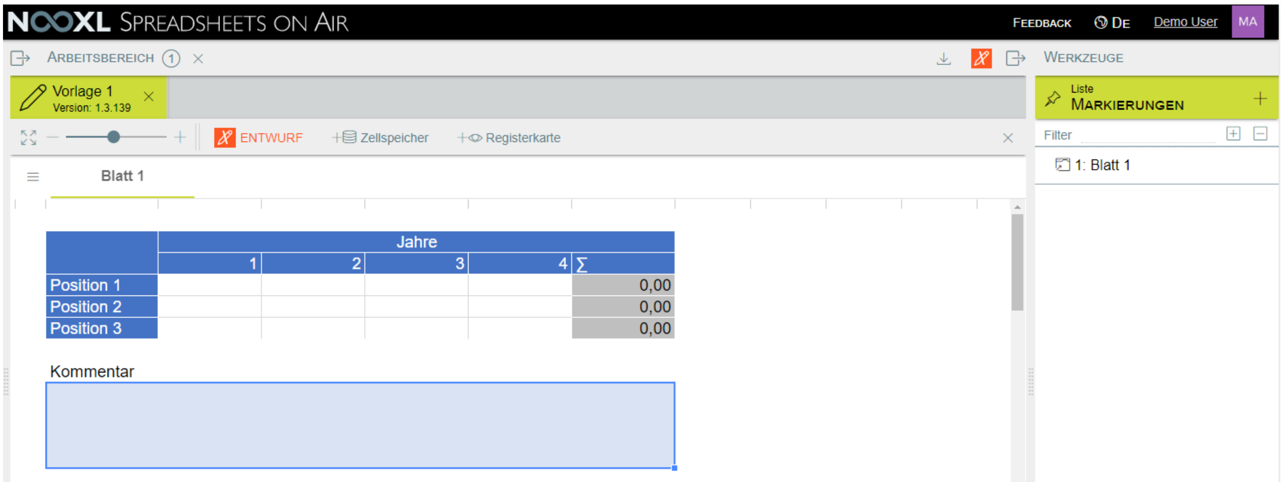
In the draft mode of the template, we will first release the comment cell it contains for user input and at the same time ensure that the content is stored in the Nooxl database.



	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

Kommentar

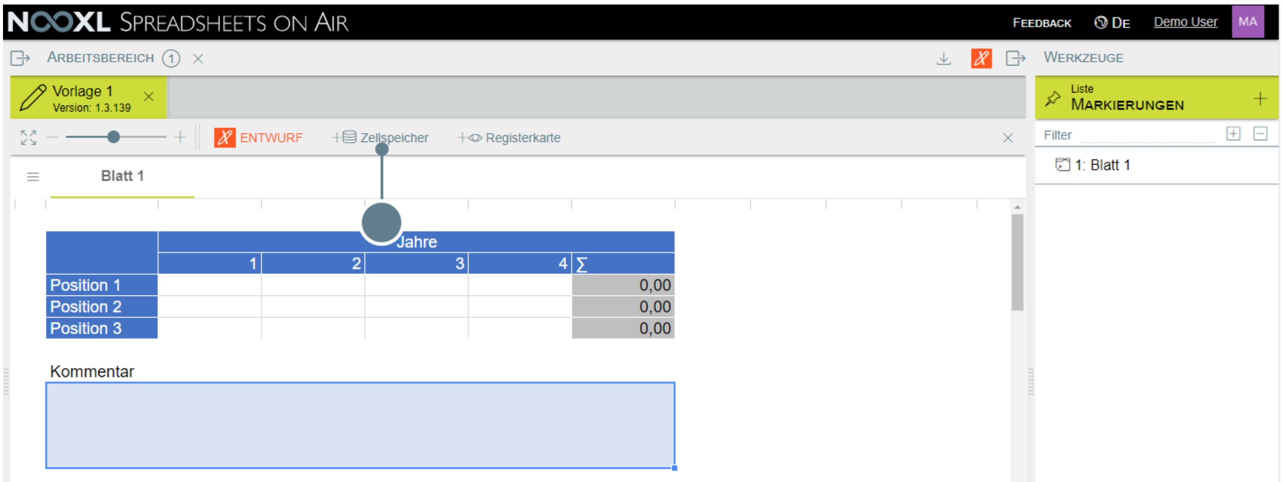
To do this, we select the cell by clicking with the mouse. The cell is then framed in dark blue.



	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

Kommentar

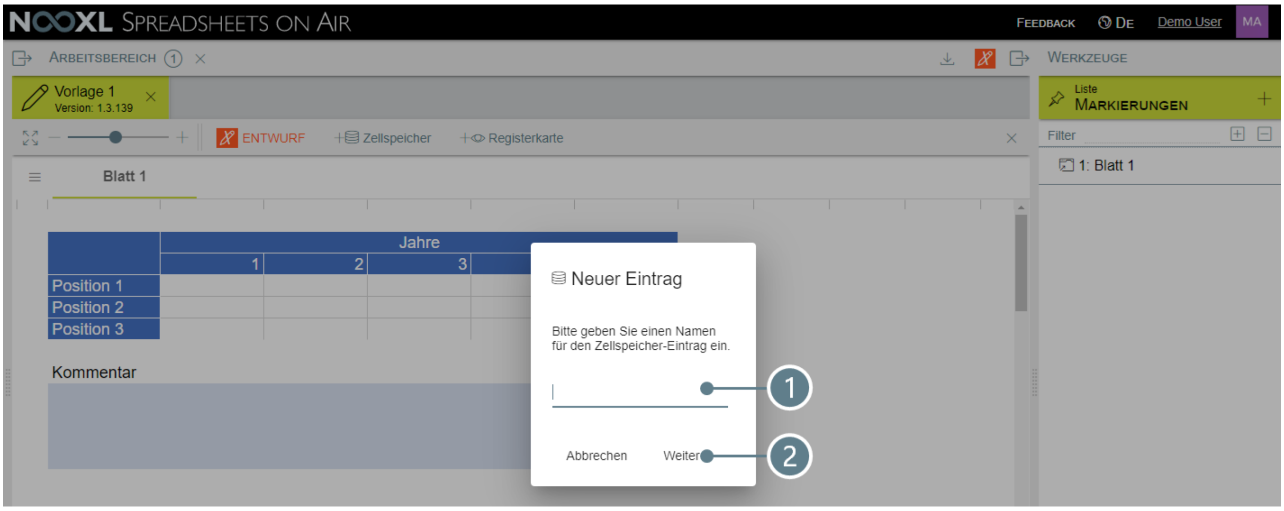
With the marker on this cell, we click on "+cell memory" in the upper menu bar.



	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

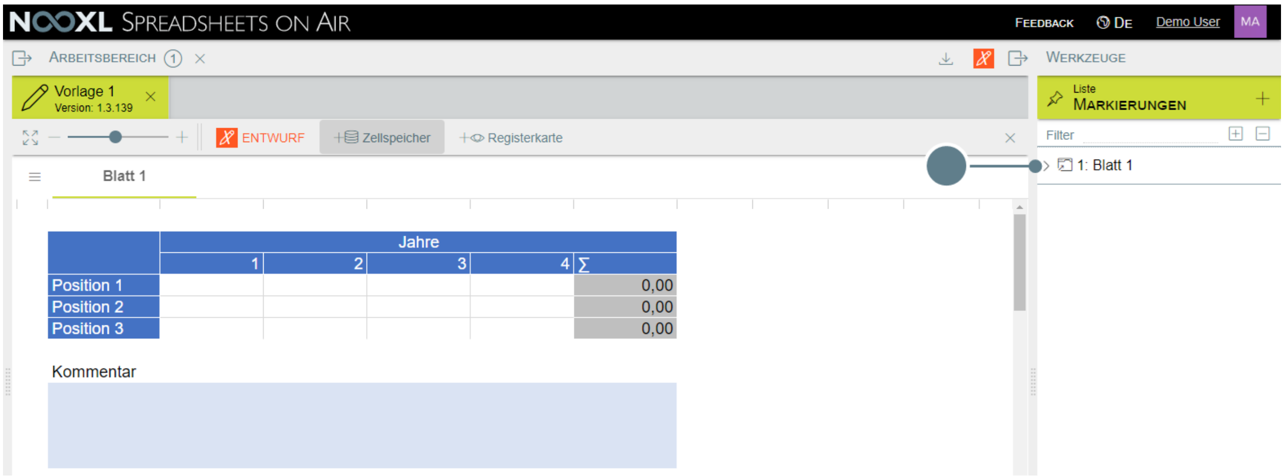
Kommentar

In the dialog box that opens, we enter a name for the entry (1), for example "Comment", and then click Next (2).



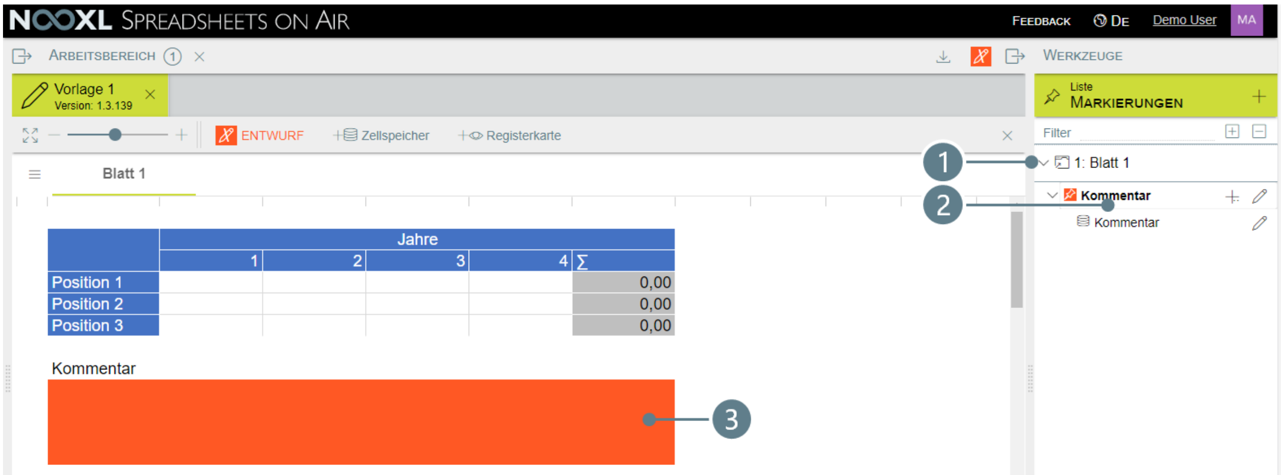
Bitte geben Sie einen Namen für den Zellspeicher-Eintrag ein.

This closes the dialog box and the ">" symbol appears to the left of the "Sheet 1" entry in the tool area, indicating that a new selection is now located here.



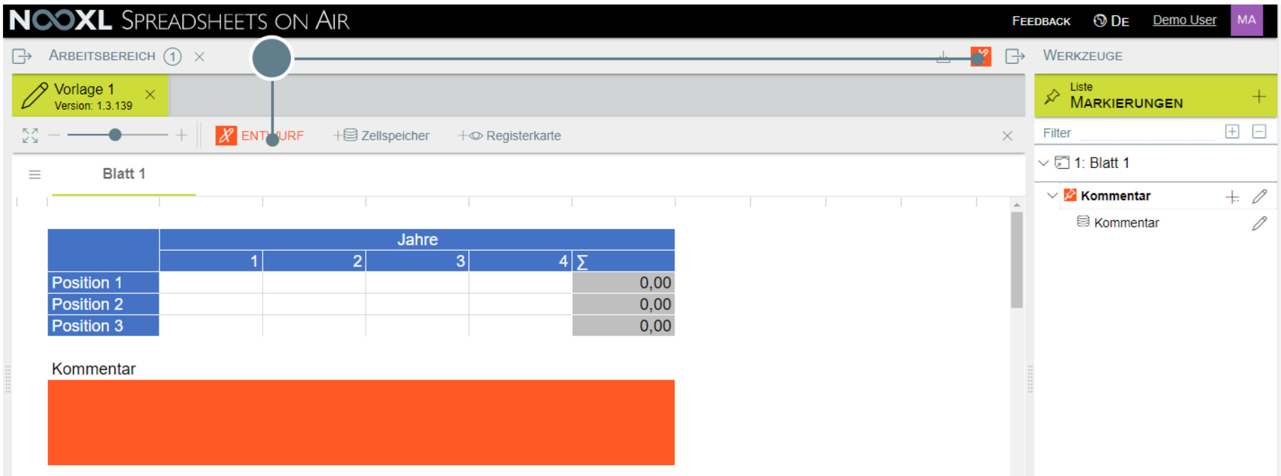
	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

Open the hierarchy by clicking on the ">" symbol (1) and then click on the "Comment" marker (2). This will highlight the cell belonging to the marker in the workspace in red (3).



	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

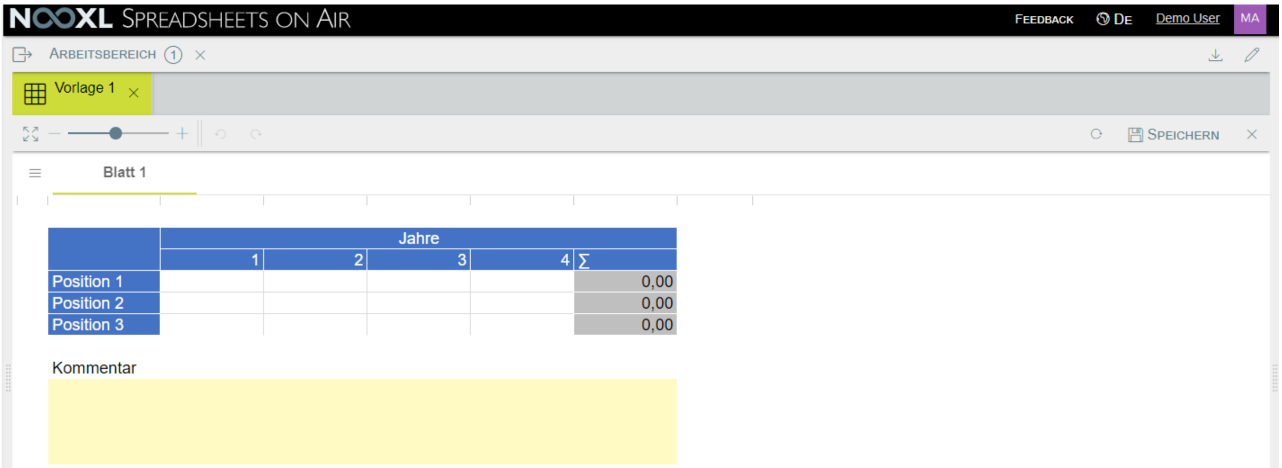
Now click on one of the two red pins to exit the design mode and test the connected cell.



	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

Kommentar

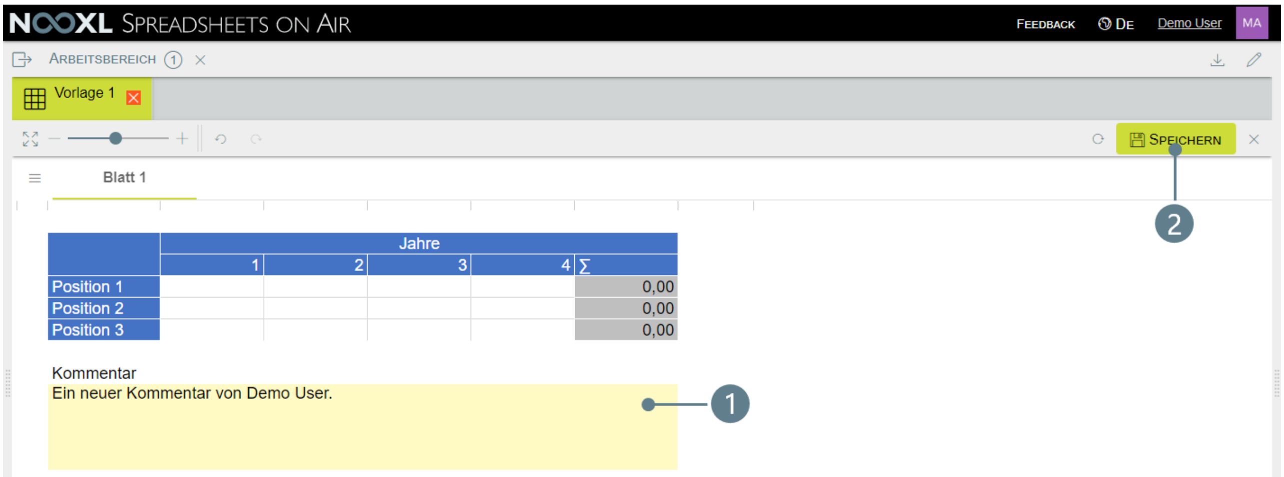
After leaving the design mode, load the template into Nooxl. The first thing you notice here is that the background color of the selected cell has changed. For more information, see chapter Allow user input via input colors .



	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

Kommentar

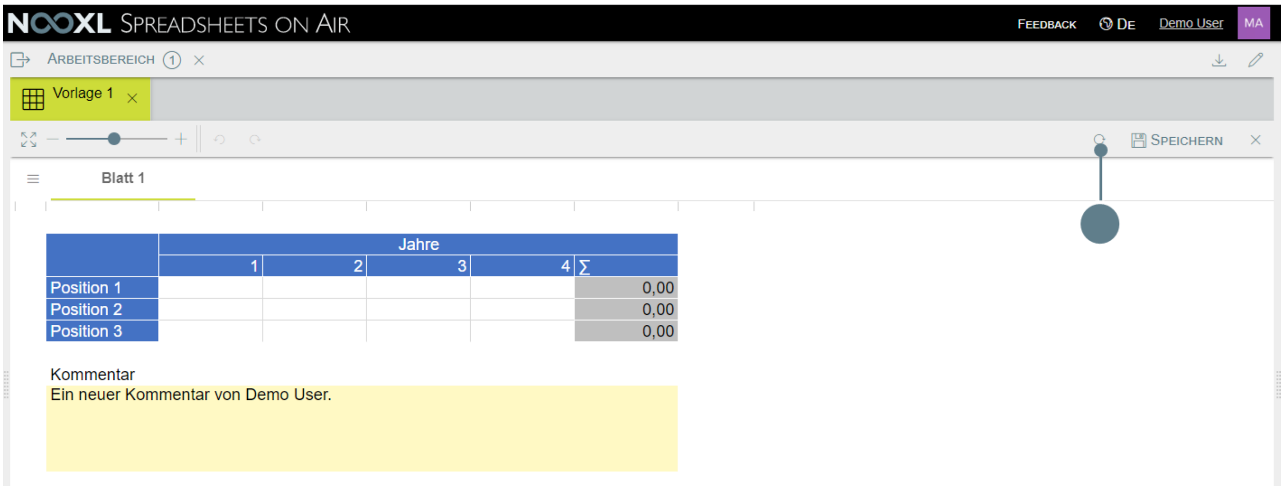
Enter a comment in the previously connected cell (1) and press save (2).



	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

Kommentar
Ein neuer Kommentar von Demo User.

Then click on the button to reload the calculation.



	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

Kommentar

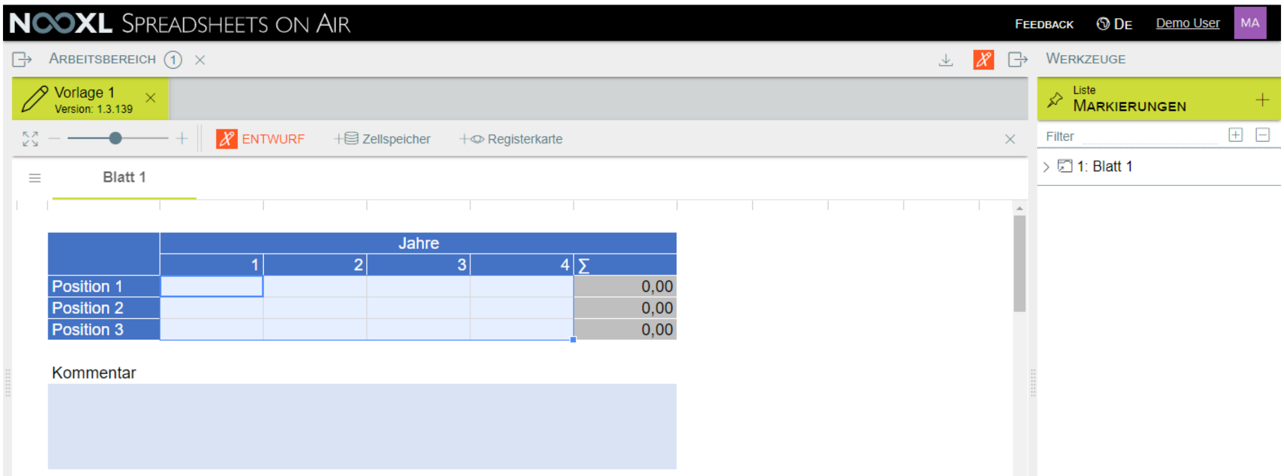
Ein neuer Kommentar von Demo User.

The previously entered comment is displayed again.

Connecting an area to the database using a wizard

After we have successfully connected a single cell, we will now release an area with several cells for user input.

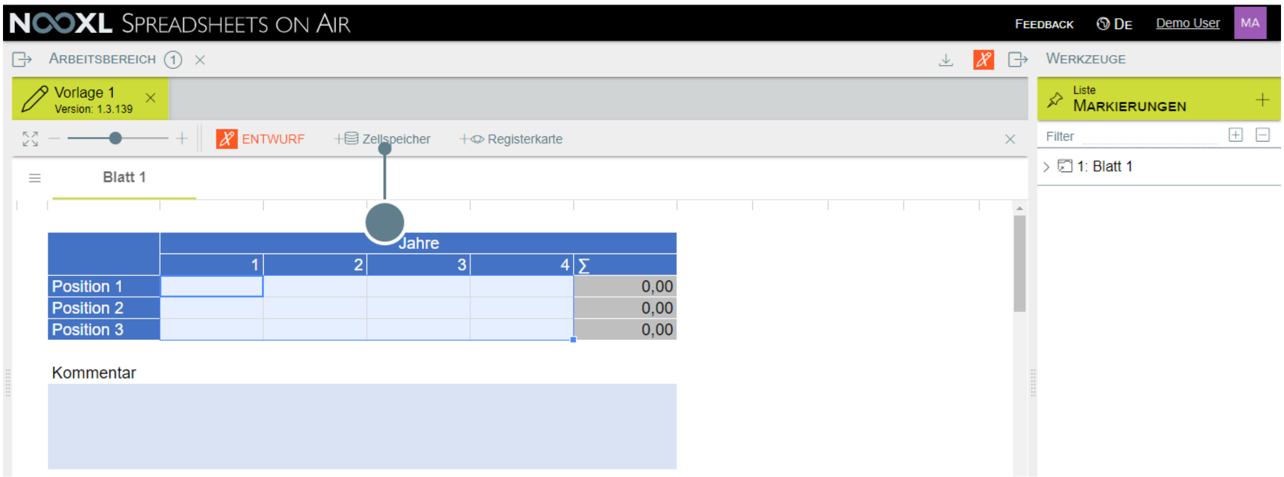
To do this, we go back to the draft mode of the template (siehe Seite 29) and use the mouse to select all cells belonging to years 1 to 4 and positions 1 to 3 so that they are displayed with a dark blue frame.



	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

Kommentar

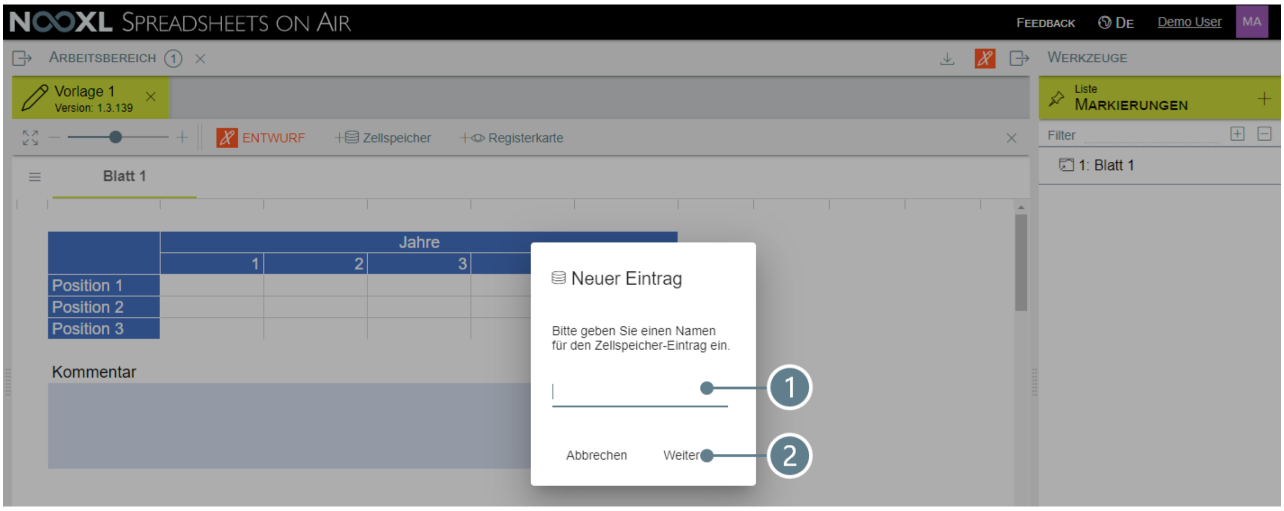
With the marker on these cells, we click on "+cell memory" in the wizard area.



	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

Kommentar

In the wizard's dialog box, we specify a name for the marker (1), for example "Values", and then click Next (2).

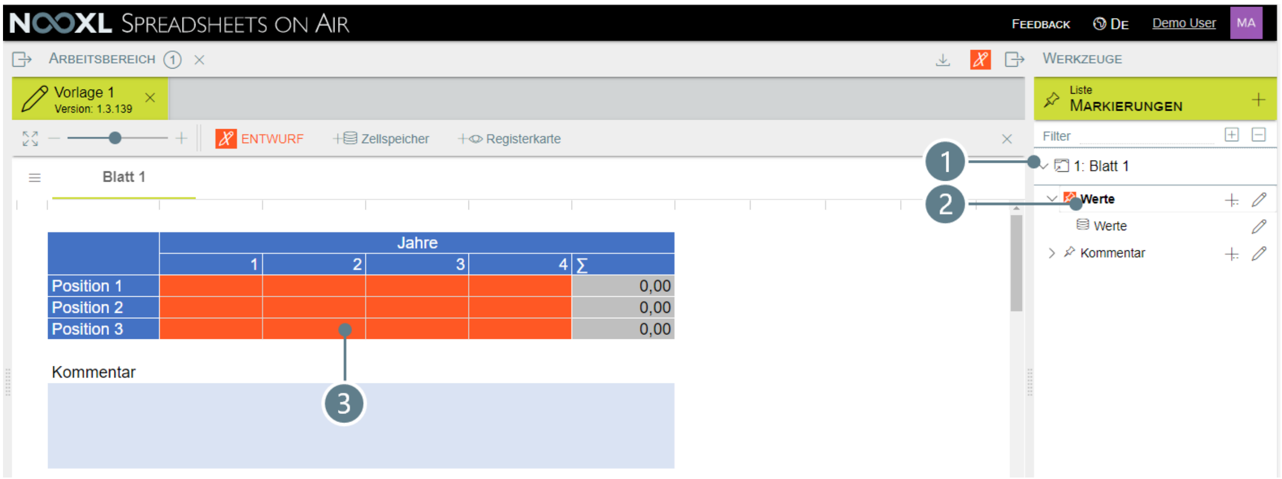


Neuer Eintrag

Bitte geben Sie einen Namen für den Zellspeicher-Eintrag ein.

Abbrechen Weiter

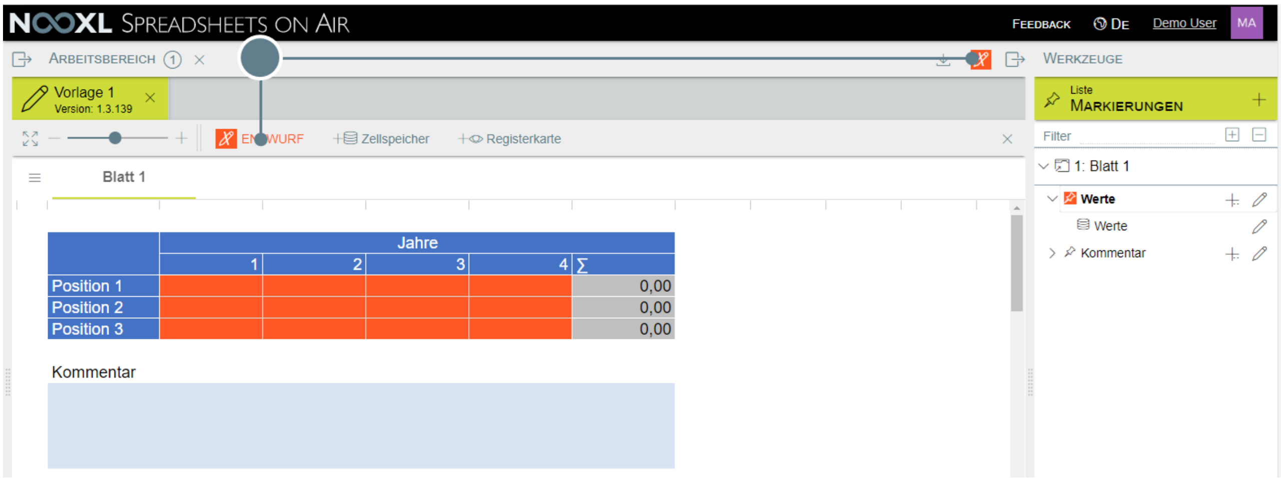
Open the hierarchy by clicking on the ">" symbol to the left of the "Sheet 1" entry (1) and then click on the "Values" marker (2). This highlights the cells in the work area that belong to the selection in red (3).



	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

Kommentar

Now click on one of the two red pins to exit the design mode and test the connected cell.

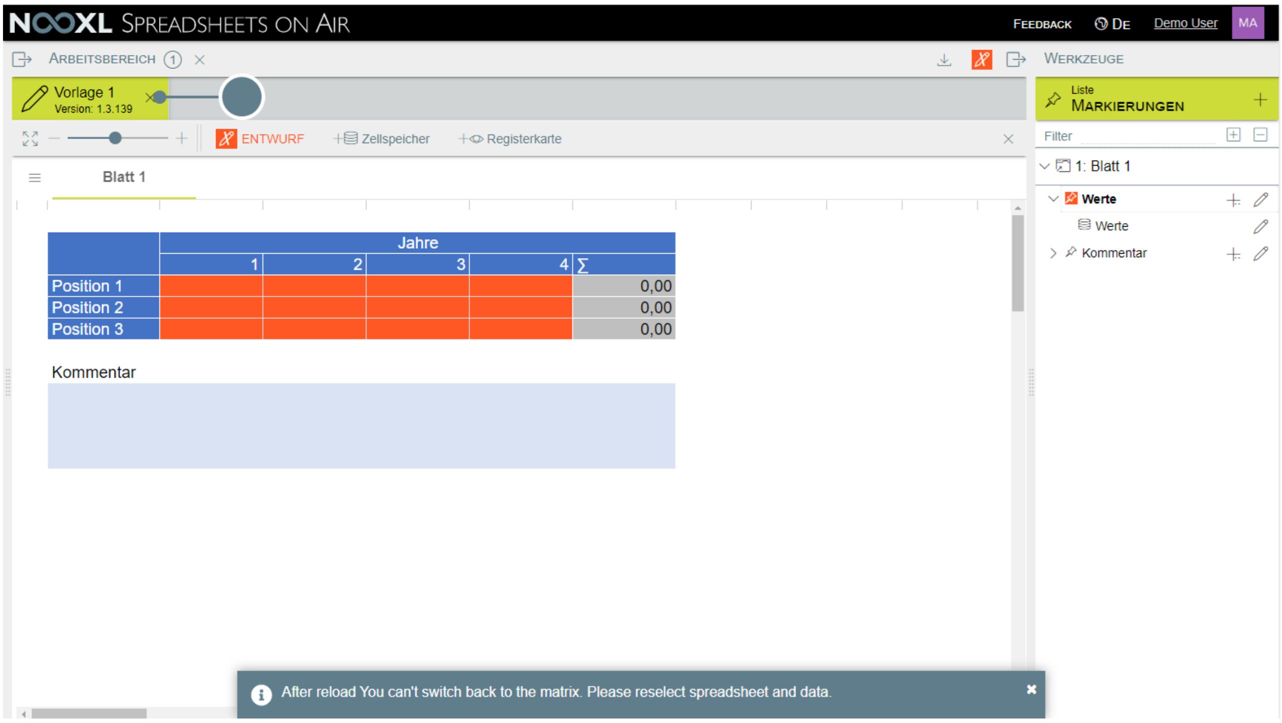


	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

If you get the following message from Nooxl

> After reload You can’t switch back to the matrix. Please reselect spreadsheet and data.

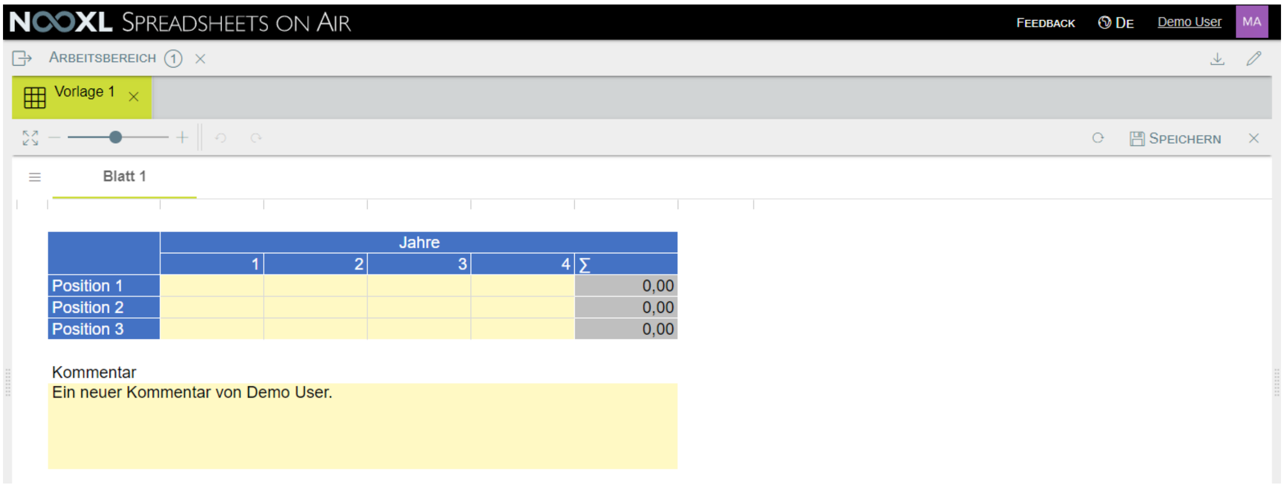
close the template via the "x" and open the record via the left menu area (siehe Seite 11).



	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

After reload You can't switch back to the matrix. Please reselect spreadsheet and data.

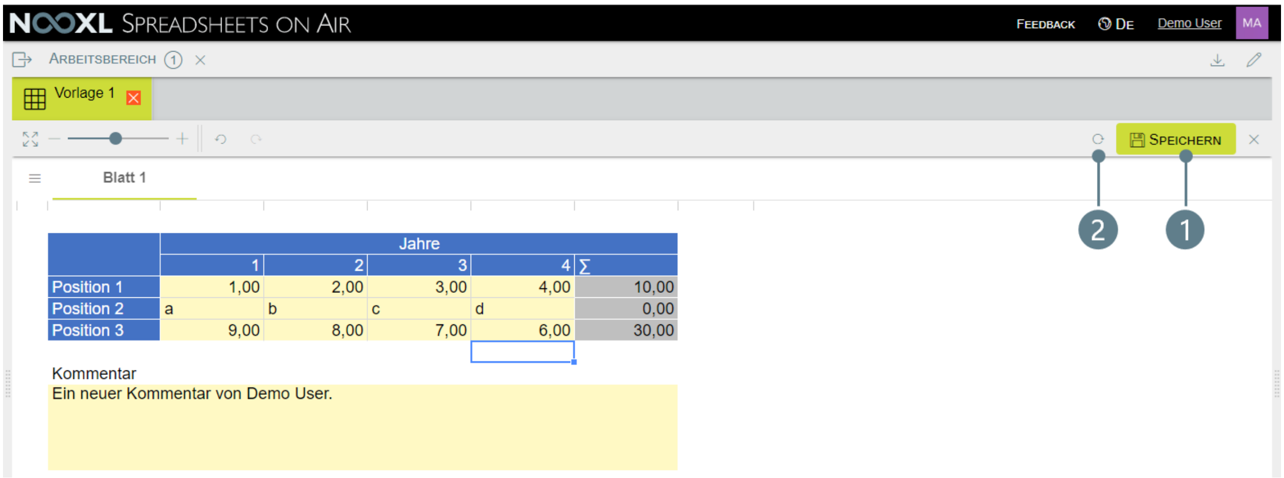
After you have reloaded the template in Nooxl, you can see that the now selected cells have also received a different color from the system.



	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

Kommentar
Ein neuer Kommentar von Demo User.

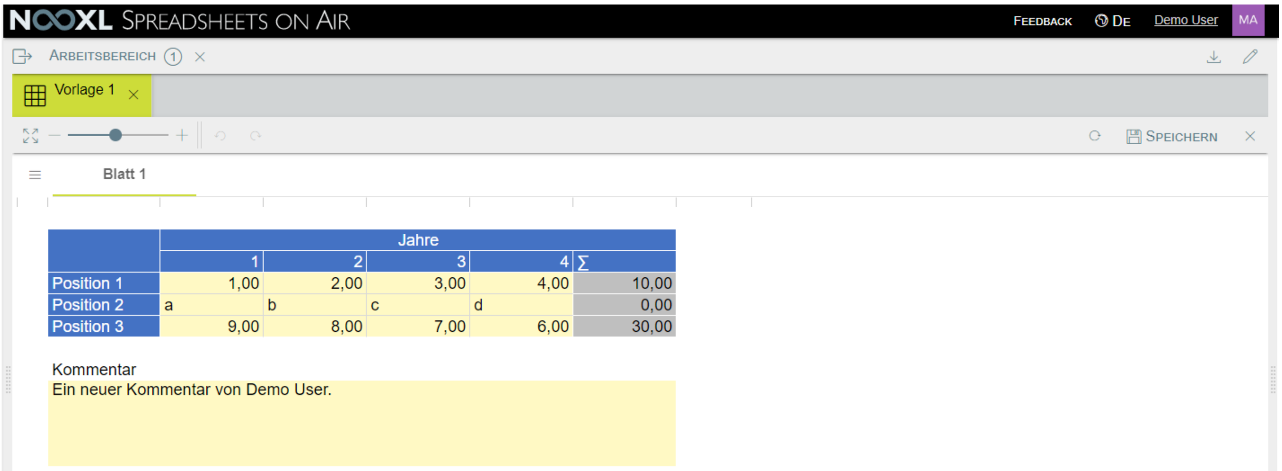
To test the range, enter any value in each cell, save the template (1) and then reload it (2).



	Jahre				
	1	2	3	4	∑
Position 1	1,00	2,00	3,00	4,00	10,00
Position 2	a	b	c	d	0,00
Position 3	9,00	8,00	7,00	6,00	30,00

Kommentar
Ein neuer Kommentar von Demo User.

After reloading the saved data set, the entries can still be found in the correct cells.



	Jahre				
	1	2	3	4	∑
Position 1	1,00	2,00	3,00	4,00	10,00
Position 2	a	b	c	d	0,00
Position 3	9,00	8,00	7,00	6,00	30,00

Kommentar
Ein neuer Kommentar von Demo User.

Allow user input via input colors

Nooxl allows user input only in cells that have been approved for this purpose by the designer or administrator and which therefore have specific background colors. If a user enters something in other cells, the input of the user is ignored.

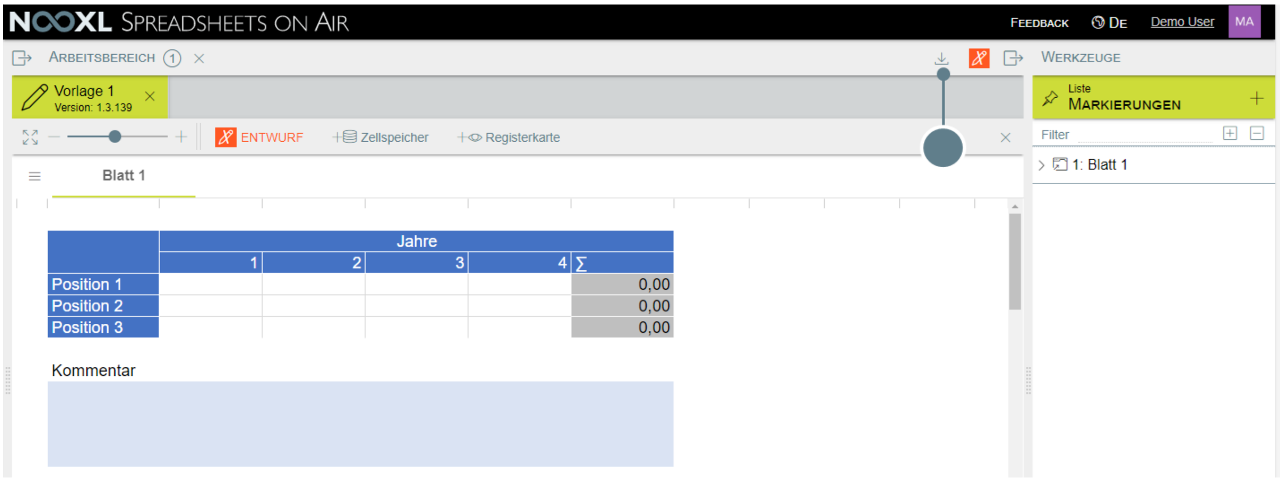
The allowed color codes can be edited per Nooxl account. Cells marked as cell storage will automatically get the correct background color defined for input fields, regardless of the background color defined in the Excel template.

> **Tip**
> If a template was exported from Nooxl, this cell style contains templates, three of which use the correct background color(s) for input cells:
> - Enter.Light
> - Enter.Normal
> - Enter.Strong

Upload an updated template

If you want to make changes to the Excel logic of a template integrated in Nooxl, proceed as follows.

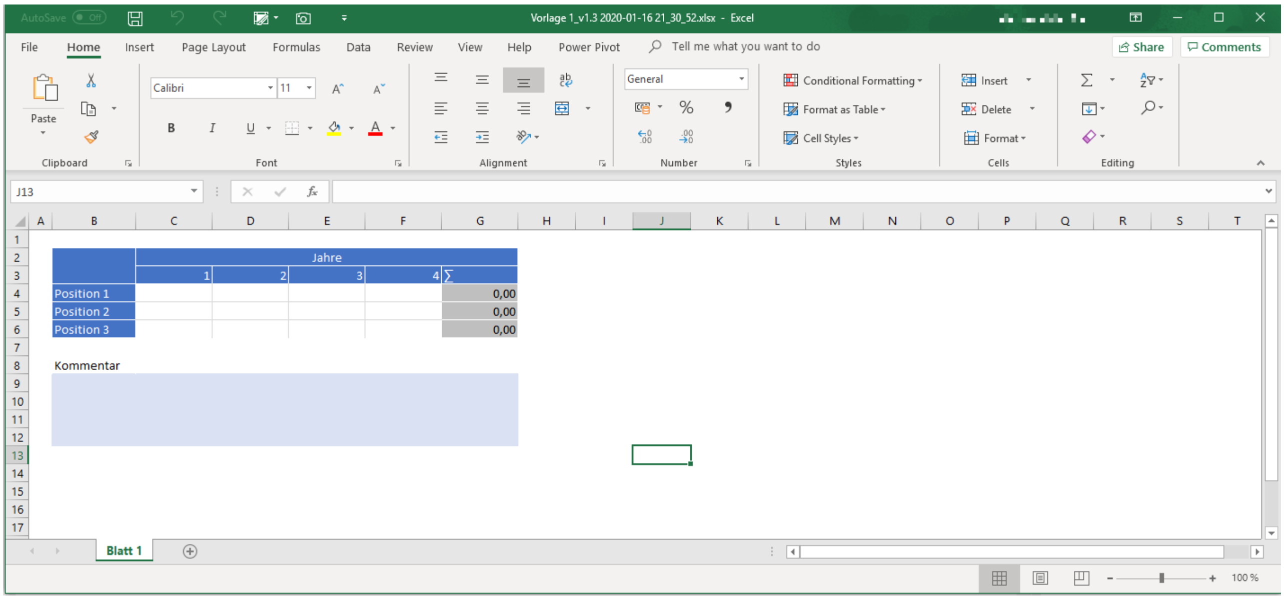
First download the current version of the template from Nooxl by opening the template in draft mode (siehe Seite 29) and clicking the button "Download as Excel file



	Jahre				
	1	2	3	4	Σ
Position 1					0,00
Position 2					0,00
Position 3					0,00

Kommentar

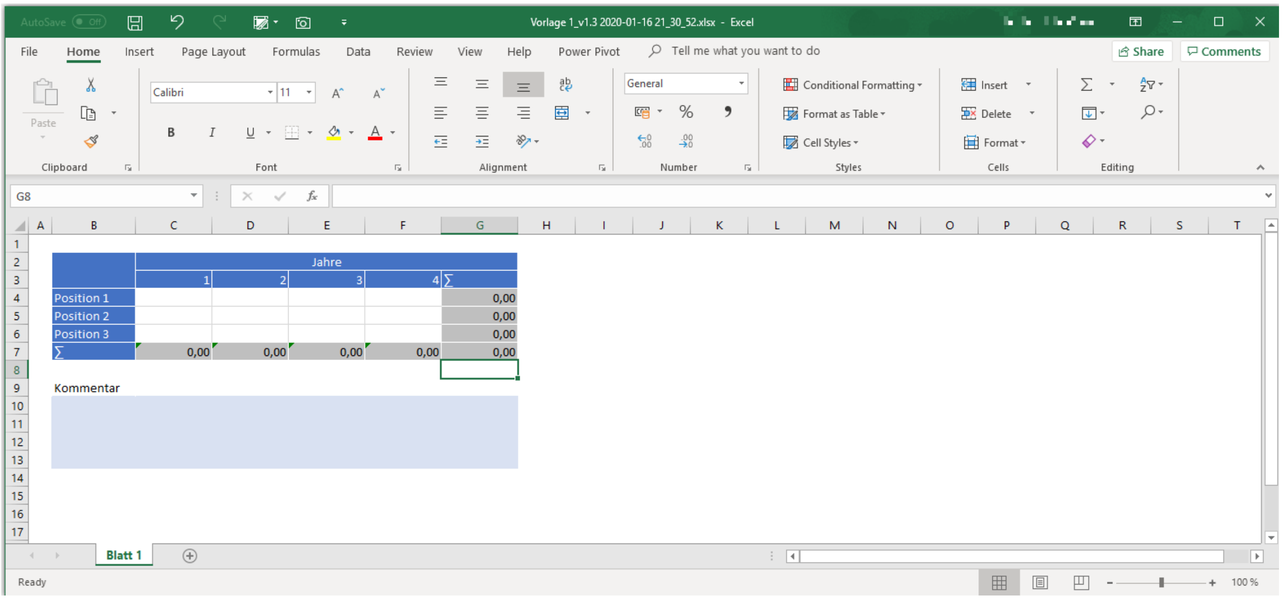
You can then open the template in Excel and edit it as usual.



	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

Kommentar

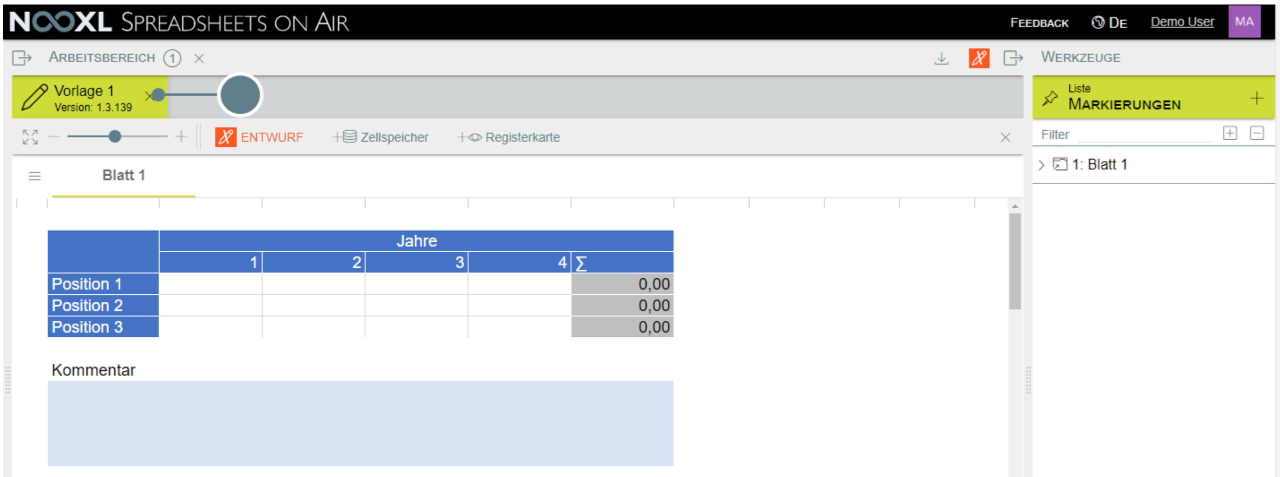
For our example template, we would like to add a totals line in line 7, covering the three items for the individual years. In addition, we want to move the comment cell and the corresponding label one line down so that there is still an empty line between the table and the comment.



	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00
∑	0,00	0,00	0,00	0,00	0,00

Kommentar

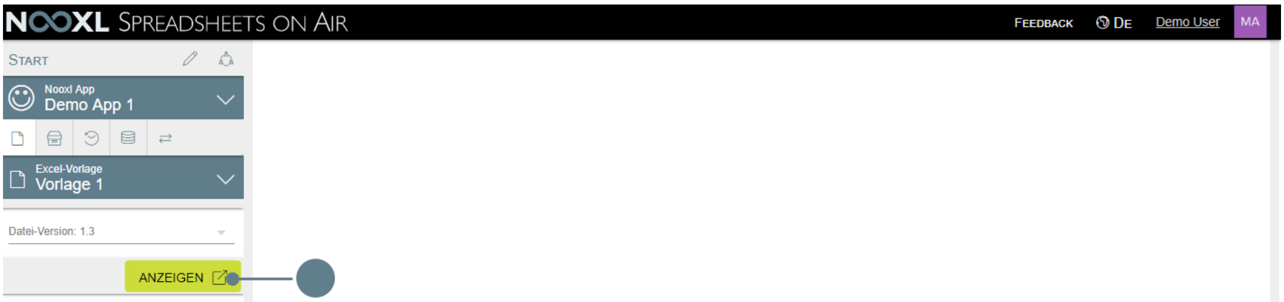
Save the customized template and close Excel. Back in Nooxl we leave the design mode of the template by clicking on the "X".



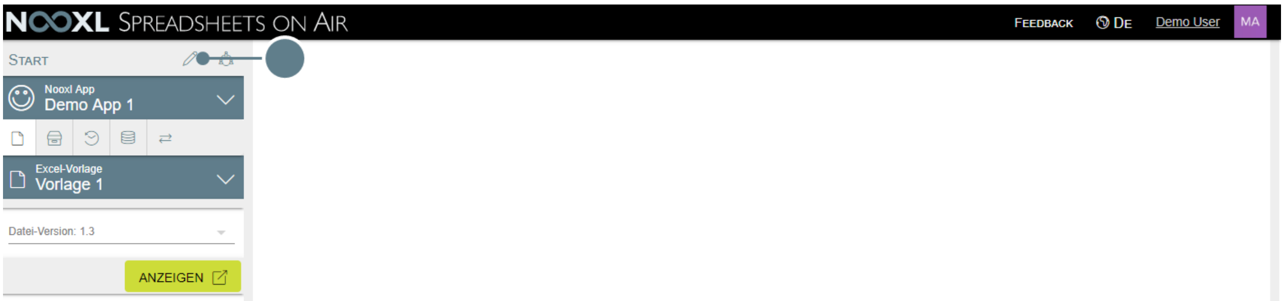
	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

Kommentar

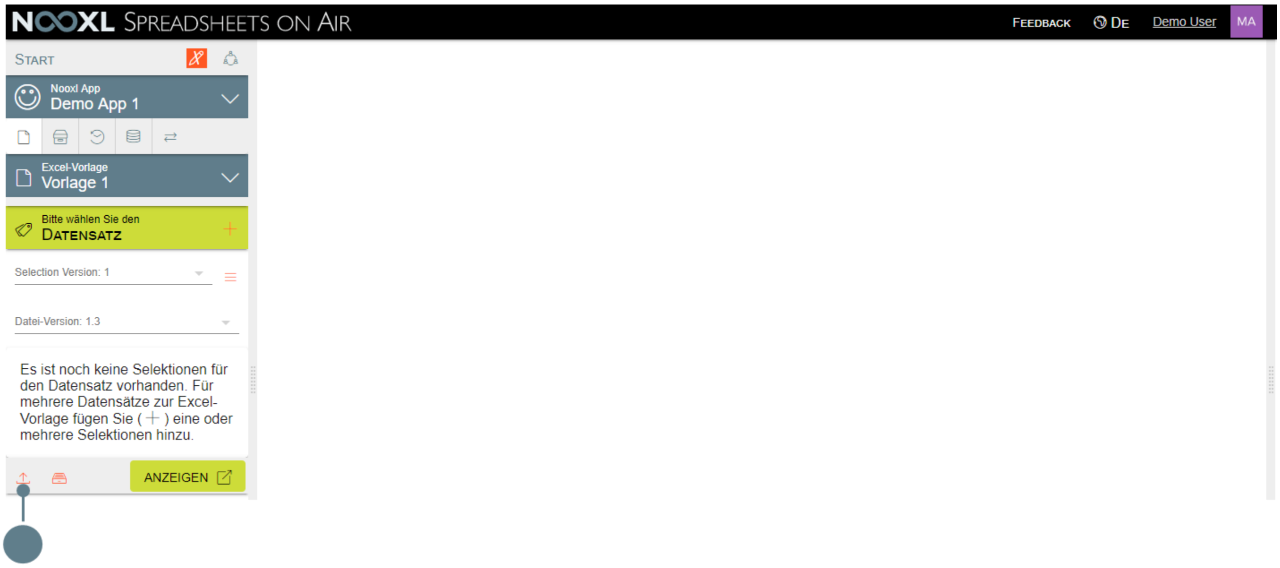
Next, make sure that you are in the record selection of the template (Show button is visible).



In the dataset selection of the template we now activate the draft mode of the app by clicking on the pencil.

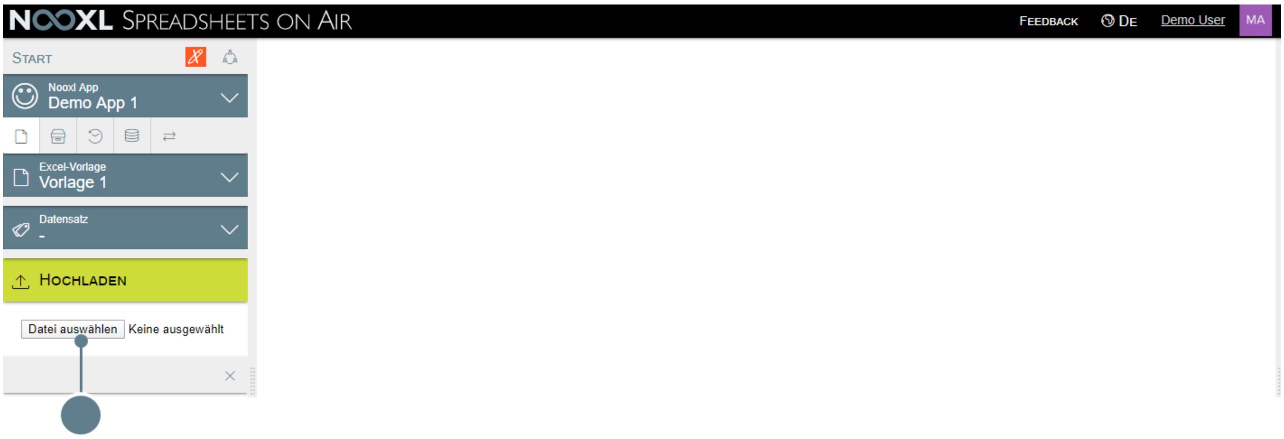


In draft mode we can click on the button "Upload Excel file as template".

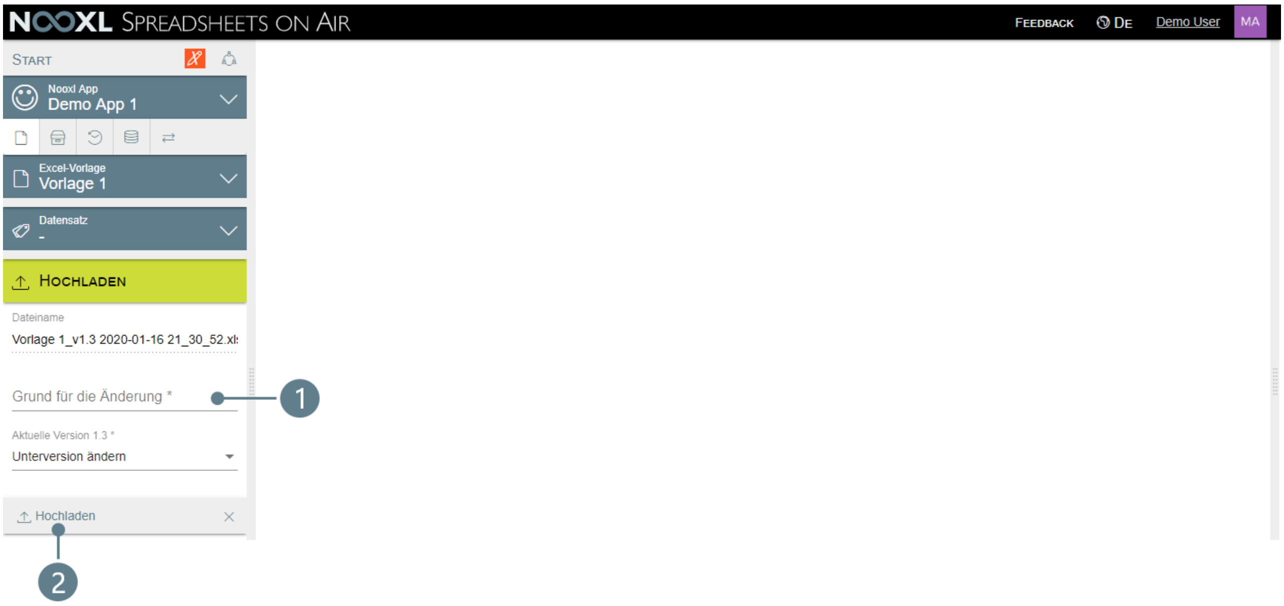


Es ist noch keine Selektionen für den Datensatz vorhanden. Für mehrere Datensätze zur Excel-Vorlage fügen Sie (+) eine oder mehrere Selektionen hinzu.

Then we come back to the dialog, which we know from the initial upload of the template, click on "Select file" and select our updated template from our computer.



Afterwards, we can again enter a reason for the change (1), where we indicate that a "Totals row for the items was added" and then finally confirm the upload of the file (2).



Nooxl App
Demo App 1

Excel-Vorlage
Vorlage 1

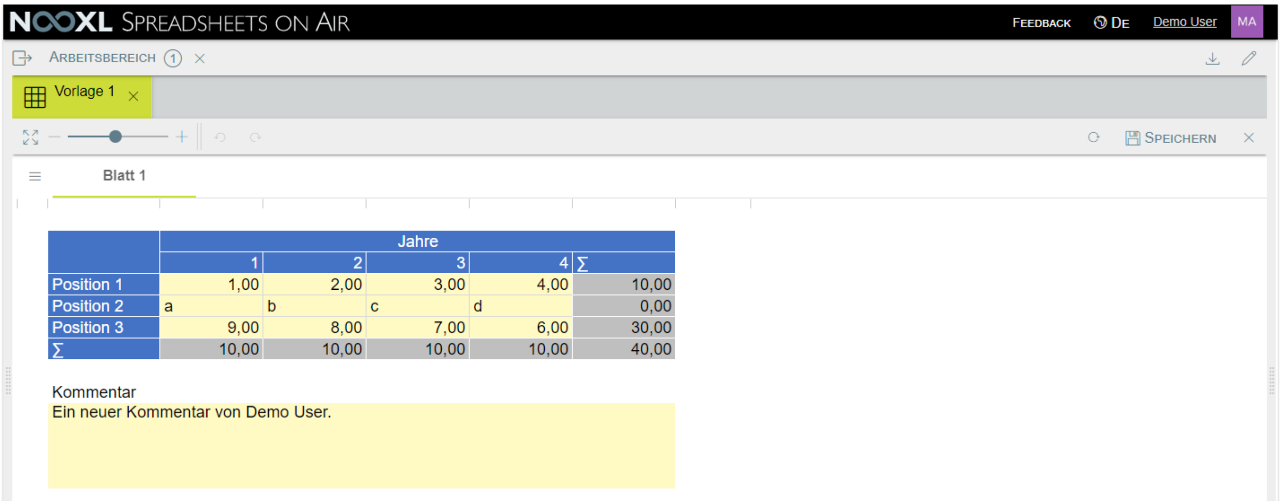
Datensatz
-

Dateiname
Vorlage 1_v1.3 2020-01-16 21_30_52.xl

Grund für die Änderung *

Aktuelle Version 1.3 *
Unterversion ändern

After we have stored the updated template in Nooxl, we can display the dataset again to check that the previously entered data still appear in the intended places and that our adaptation to Excel logic is also displayed.



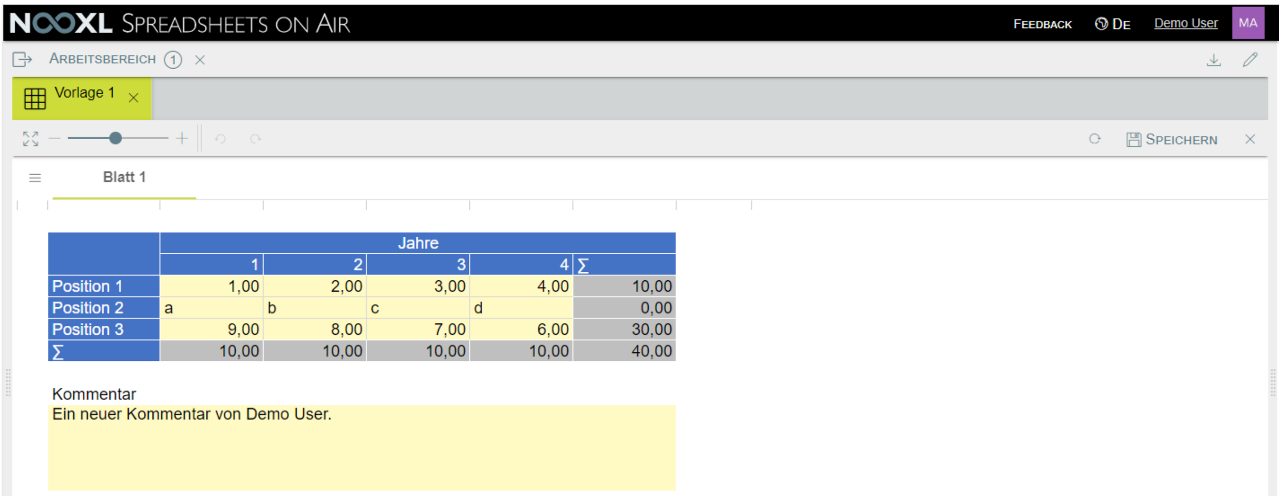
	Jahre				
	1	2	3	4	∑
Position 1	1,00	2,00	3,00	4,00	10,00
Position 2	a	b	c	d	0,00
Position 3	9,00	8,00	7,00	6,00	30,00
∑	10,00	10,00	10,00	10,00	40,00

Kommentar
Ein neuer Kommentar von Demo User.

2.2.3 Defining data records

The entries in the templates are stored in so-called data records. Depending on the template, there can be different numbers of data records with individual contents.

Let us imagine that the template from the previous examples contains a plan that plans the three positions over the next four years. The comment field is used to provide a brief explanation of the assumptions behind the forecast.



	Jahre				
	1	2	3	4	∑
Position 1	1,00	2,00	3,00	4,00	10,00
Position 2	a	b	c	d	0,00
Position 3	9,00	8,00	7,00	6,00	30,00
∑	10,00	10,00	10,00	10,00	40,00

Kommentar
Ein neuer Kommentar von Demo User.

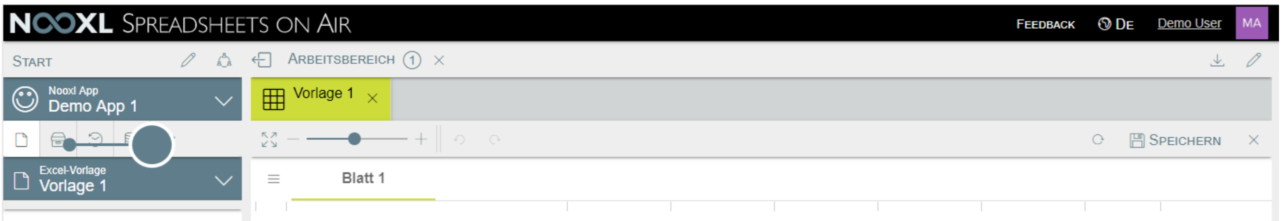
We would like to carry out our planning for three different scenarios:

- Scenario 1
- Scenario 2
- Scenario 3

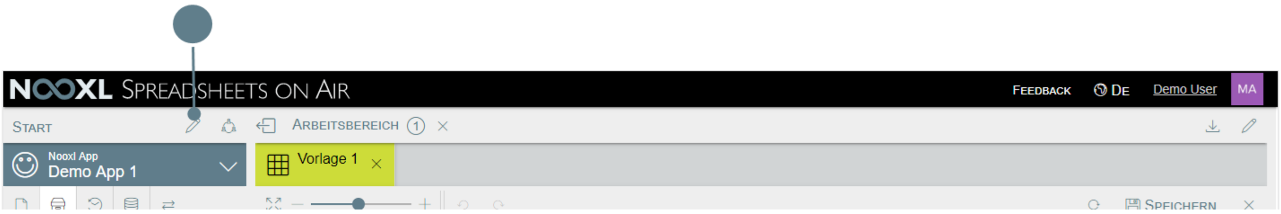
Since each scenario is based on different assumptions, we need a separate data set for each scenario.

Creating Catalogs

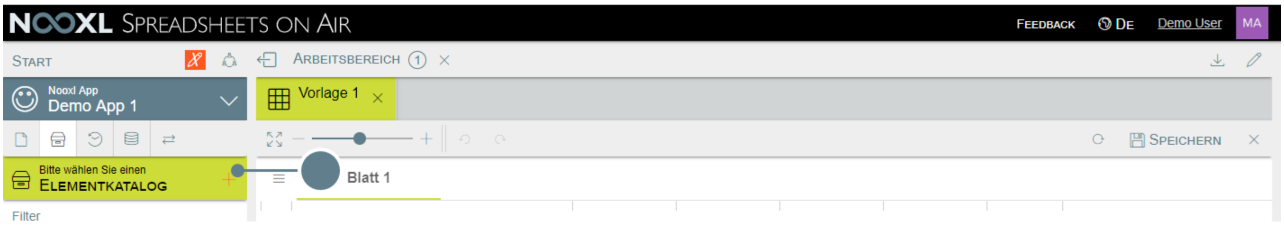
To realize our scenario selection, first of all a Nooxl catalog must be created. To do this, open the left navigation and click on the tab "Catalogues and Elements".



Switch to the draft mode of the app by clicking on the button with the pencil.



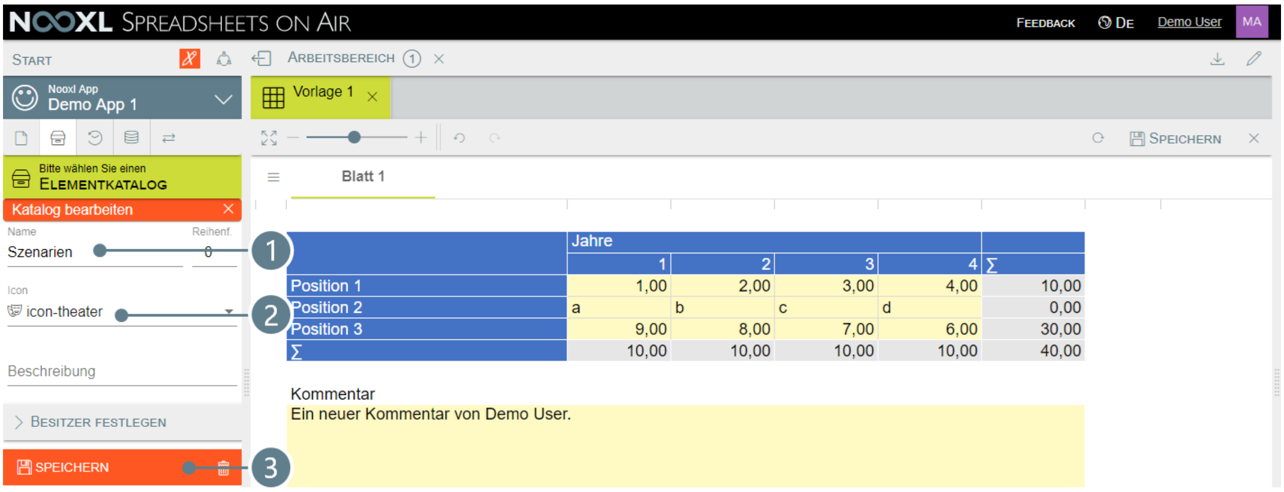
You can then use the red plus to create a new catalog.



In the investment mask, enter "Scenarios" (1) as the name of the catalog. As icon I have chosen the "icon-theater" (2).

> ✓ If you have opened the icon selection, you can type "the" on your keyboard and the selection will automatically jump to the correct icon.

Once the name has been assigned and an icon selected, click on Save (3).



Name: Szenarien

Reihenf.: 0

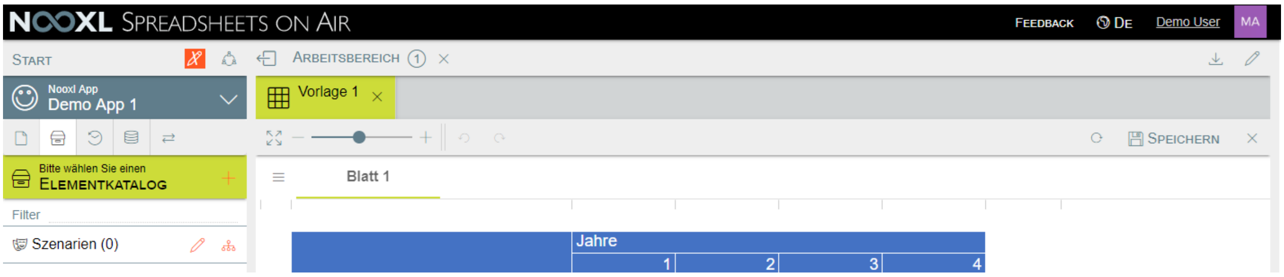
Icon: icon-theater

	Jahre				
	1	2	3	4	∑
Position 1	1,00	2,00	3,00	4,00	10,00
Position 2	a	b	c	d	0,00
Position 3	9,00	8,00	7,00	6,00	30,00
∑	10,00	10,00	10,00	10,00	40,00

Kommentar

Ein neuer Kommentar von Demo User.

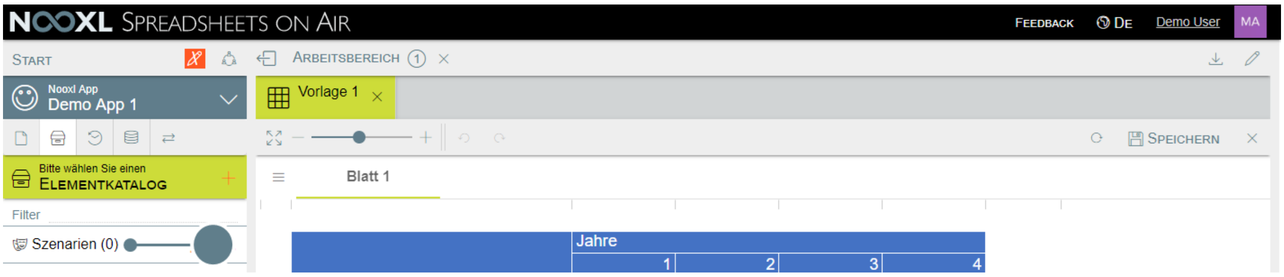
After you have created the catalog, you will come back to the catalog overview and can see it.



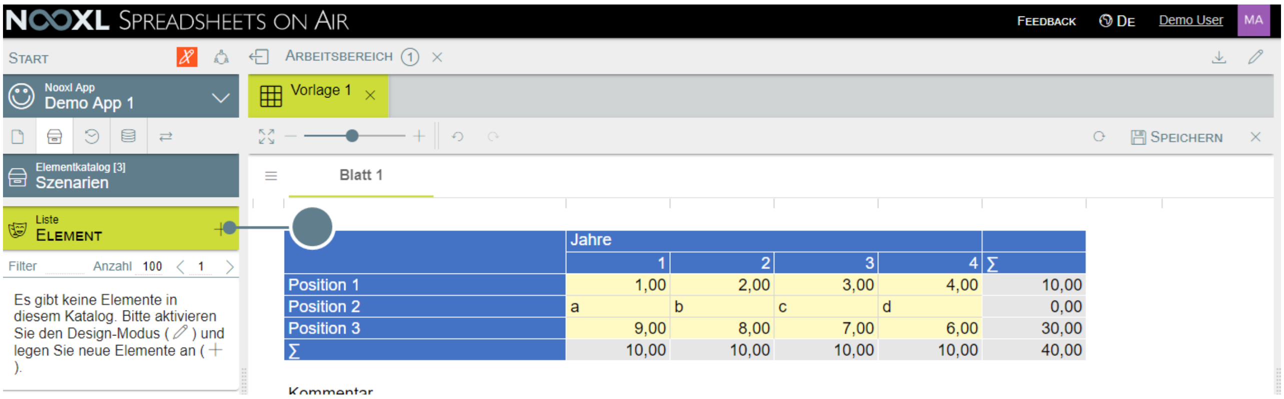
The next step is to create the three desired scenarios as elements in this catalog.

Creating elements

In the catalogue selection please click on the new catalogue scenarios to open it.



Here you can now create new elements by clicking on the plus.

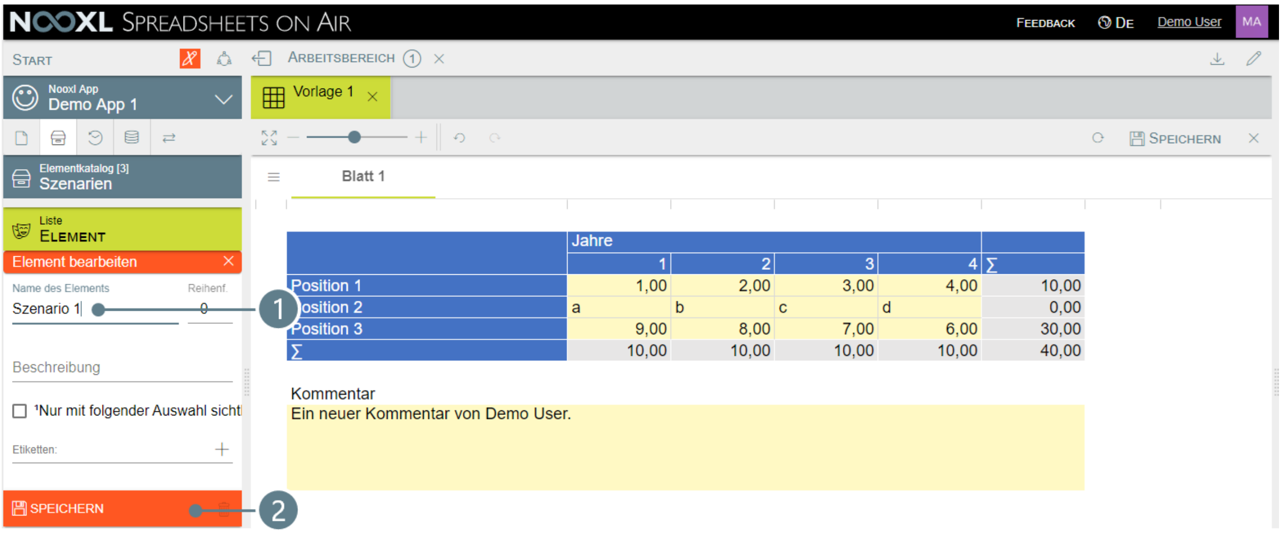


Es gibt keine Elemente in diesem Katalog. Bitte aktivieren Sie den Design-Modus (✎) und legen Sie neue Elemente an (+).

	Jahre				
	1	2	3	4	∑
Position 1	1,00	2,00	3,00	4,00	10,00
Position 2	a	b	c	d	0,00
Position 3	9,00	8,00	7,00	6,00	30,00
∑	10,00	10,00	10,00	10,00	40,00

Kommentar

In the asset mask for catalog elements, please enter "Scenario 1" as "Name of the element" (1) and then click on Save (2) to create the element.



Element bearbeiten

Name des Elements: Szenario 1

Reihenf.: 0

Beschreibung

□ 'Nur mit folgender Auswahl sicht

Etiketten:

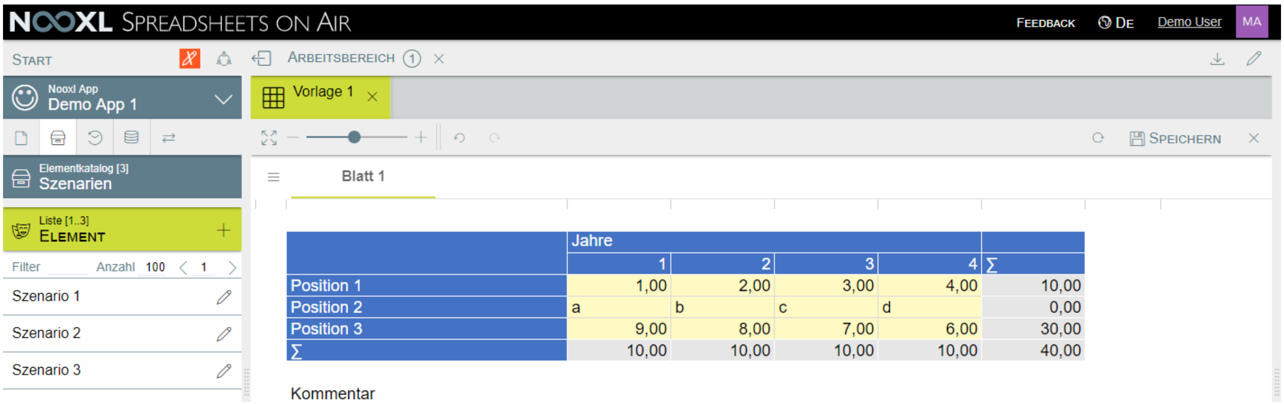
SPEICHERN

	Jahre				
	1	2	3	4	∑
Position 1	1,00	2,00	3,00	4,00	10,00
Position 2	a	b	c	d	0,00
Position 3	9,00	8,00	7,00	6,00	30,00
∑	10,00	10,00	10,00	10,00	40,00

Kommentar

Ein neuer Kommentar von Demo User.

Please repeat this process for the elements "Scenario 2" and "Scenario 3" so that you have the following elements in your catalog.



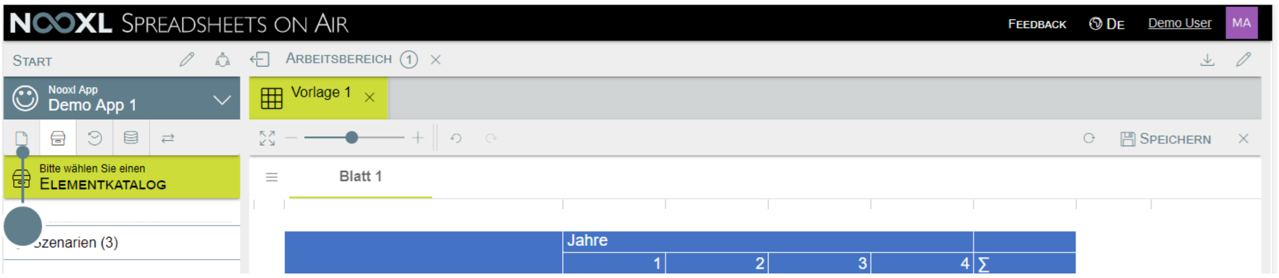
- Szenario 1
- Szenario 2
- Szenario 3

	Jahre				
	1	2	3	4	∑
Position 1	1,00	2,00	3,00	4,00	10,00
Position 2	a	b	c	d	0,00
Position 3	9,00	8,00	7,00	6,00	30,00
∑	10,00	10,00	10,00	10,00	40,00

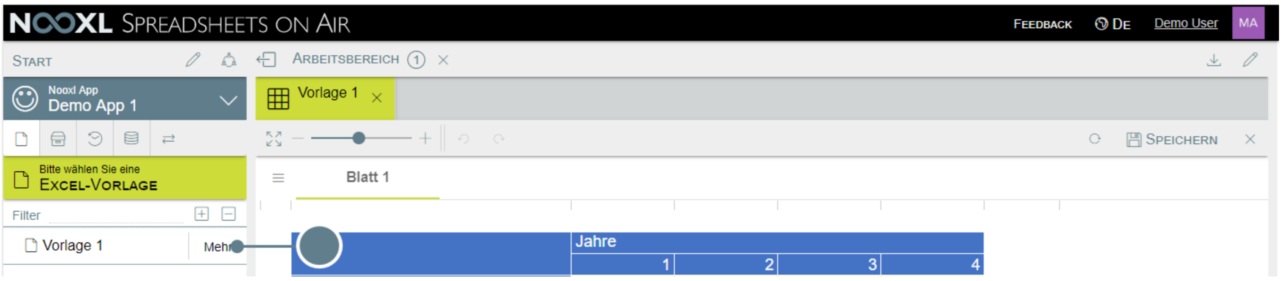
Kommentar

Creating a selection

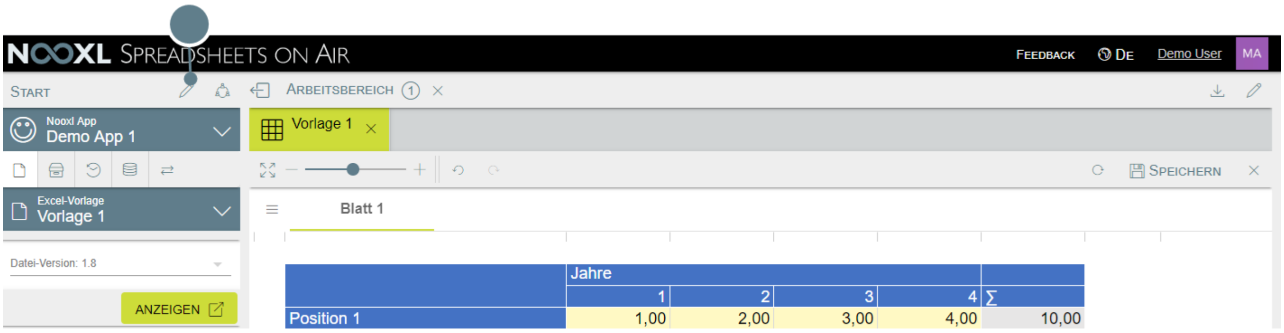
To use our catalog in the template to identify different records, we now need to create a selection and assign it to the template. For this we return to the "Excel Template" section of Nooxl.



Next we click on "More" to the right of our template to get to the data set selection.

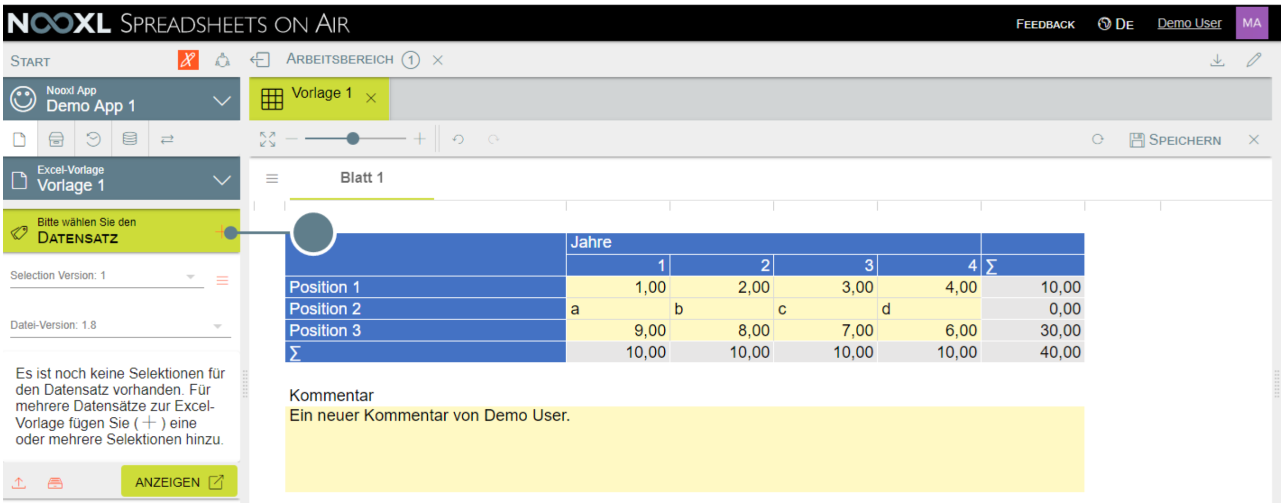


To create a new selection and add it as a selection, the design mode of the app must be activated. This is done by clicking on the pencil so that it is displayed in red.



	Jahre				
	1	2	3	4	∑
Position 1	1,00	2,00	3,00	4,00	10,00

In draft mode a new selection can be added to the record by clicking on the red plus.

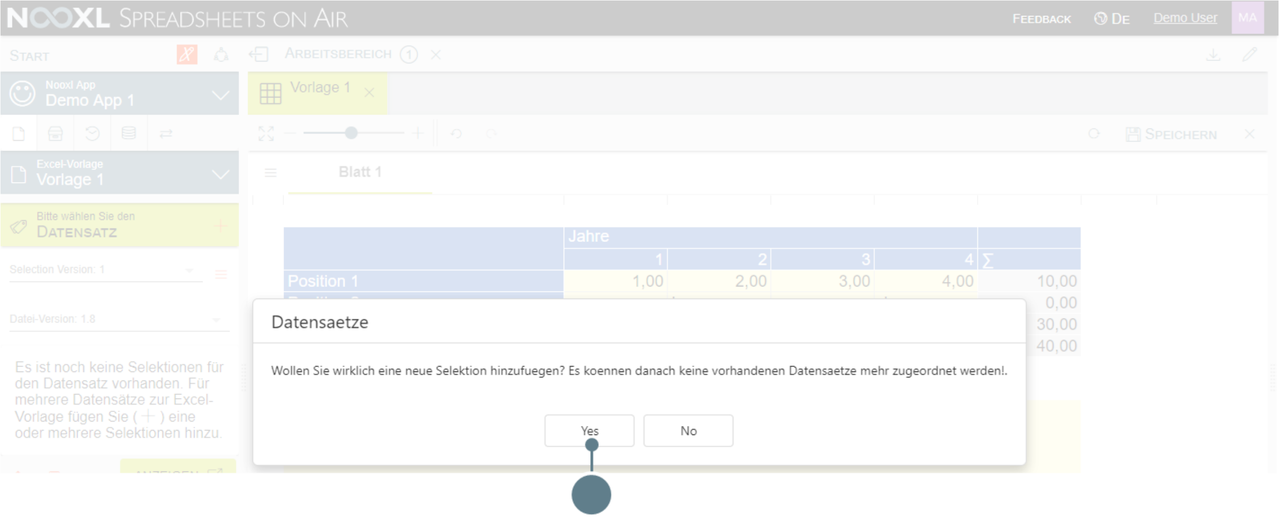


Es ist noch keine Selektionen für den Datensatz vorhanden. Für mehrere Datensätze zur Excel-Vorlage fügen Sie (+) eine oder mehrere Selektionen hinzu.

	Jahre				
	1	2	3	4	∑
Position 1	1,00	2,00	3,00	4,00	10,00
Position 2	a	b	c	d	0,00
Position 3	9,00	8,00	7,00	6,00	30,00
∑	10,00	10,00	10,00	10,00	40,00

Kommentar
Ein neuer Kommentar von Demo User.

The system then warns you that by adding new selections, the existing data records can no longer be assigned to the template. Please confirm this warning by clicking on "Yes".

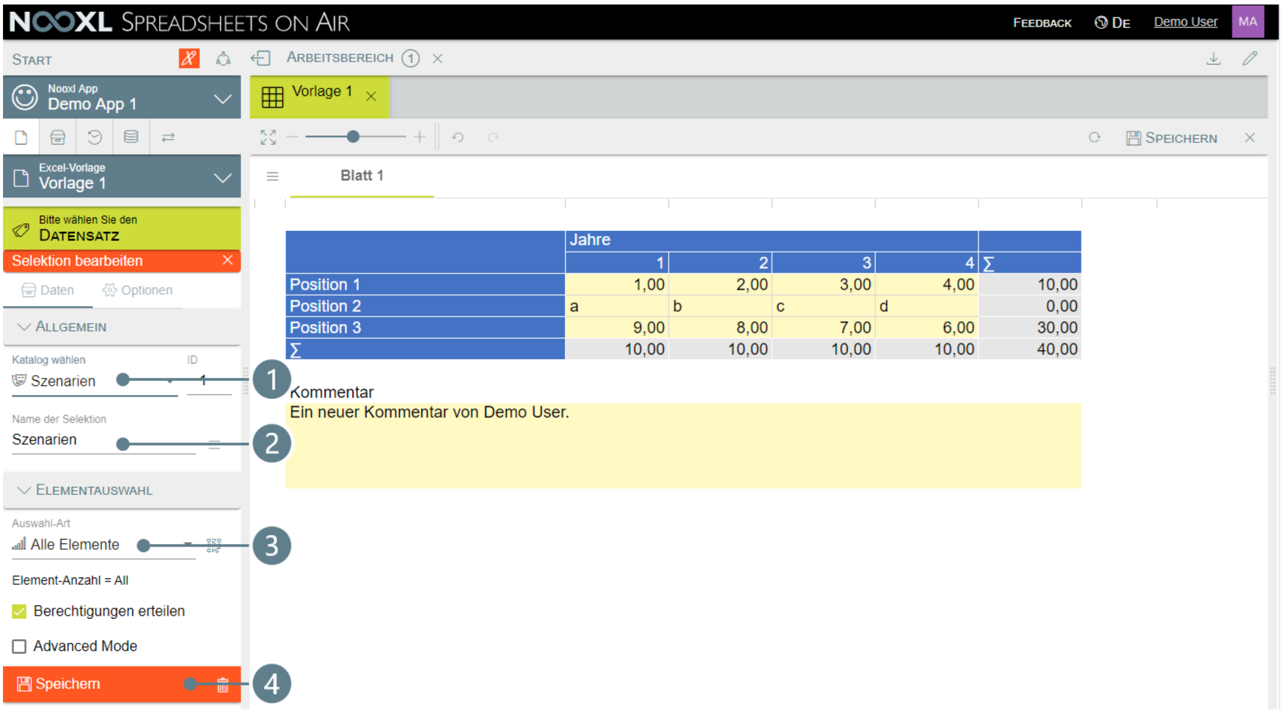


Datensaetze

Wollen Sie wirklich eine neue Selektion hinzufuegen? Es koennen danach keine vorhandenen Datensaetze mehr zugeordnet werden!.

Now you can select the previously created "Scenarios" catalog (1). Nooxl automatically fills the field "Name of selection" (2) with the name of the selection.

In the Element selection area, Nooxl selects "All elements" (3) as selection type, so that you can complete the creation of the selection directly by clicking on Save (4).



Katalog wählen: Szenarien
ID: 1
Name der Selektion: Szenarien
Auswahl-Art: Alle Elemente
Element-Anzahl = All

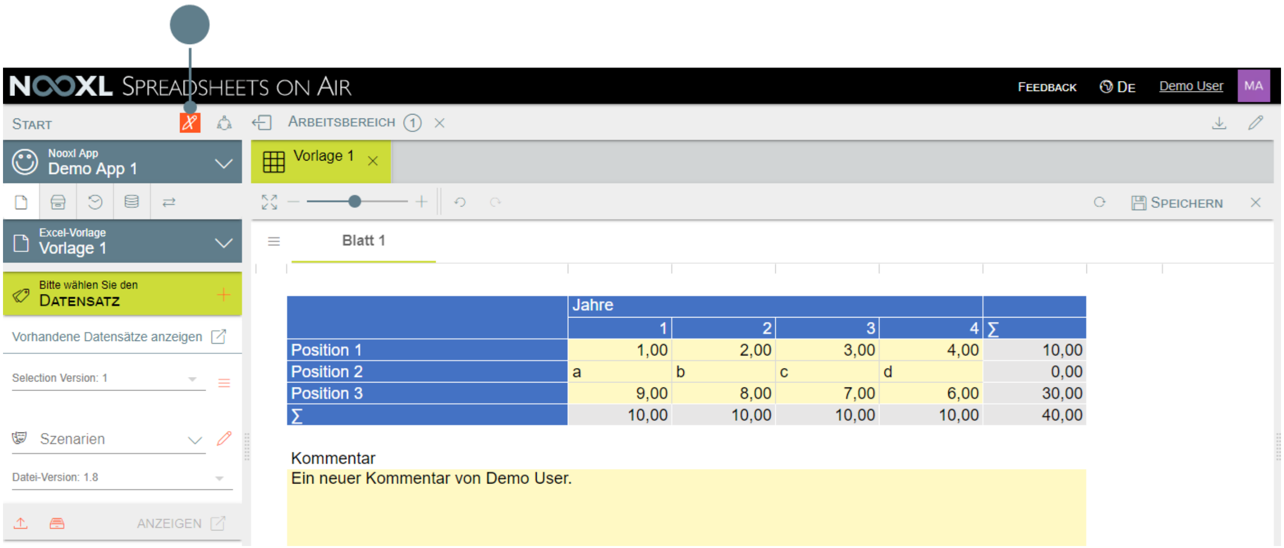
☑ Berechtigungen erteilen

□ Advanced Mode

	Jahre				
	1	2	3	4	∑
Position 1	1,00	2,00	3,00	4,00	10,00
Position 2	a	b	c	d	0,00
Position 3	9,00	8,00	7,00	6,00	30,00
∑	10,00	10,00	10,00	10,00	40,00

Kommentar
Ein neuer Kommentar von Demo User.

Now leave the draft mode to test the new data set selection.

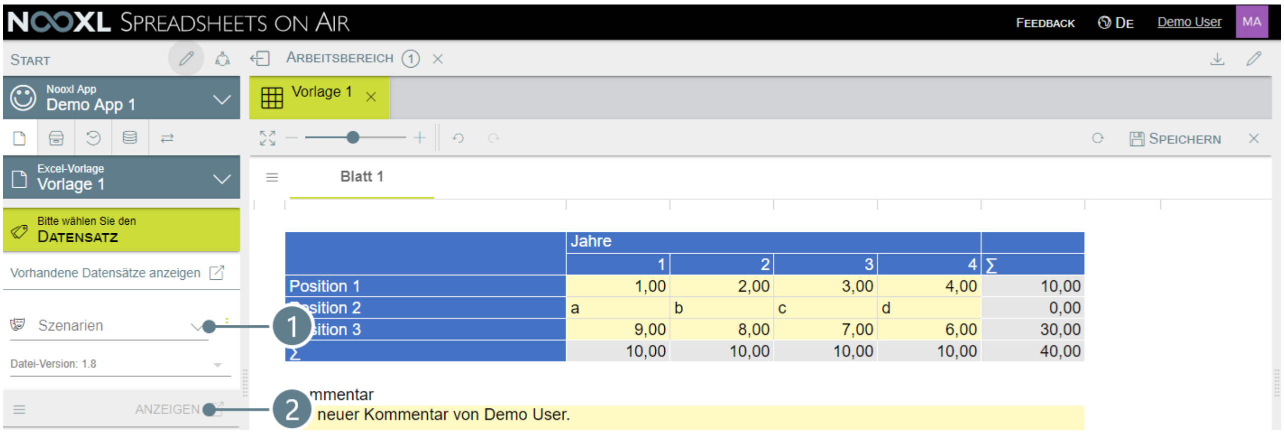


Selection Version: 1
Szenarien
Datei-Version: 1.8

	Jahre				
	1	2	3	4	∑
Position 1	1,00	2,00	3,00	4,00	10,00
Position 2	a	b	c	d	0,00
Position 3	9,00	8,00	7,00	6,00	30,00
∑	10,00	10,00	10,00	10,00	40,00

Kommentar
Ein neuer Kommentar von Demo User.

The selection Scenarios (1) now appears in the dataset selection and as long as no element has been selected here, the button for displaying the dataset is grayed out (2).



	Jahre				
	1	2	3	4	∑
Position 1	1,00	2,00	3,00	4,00	10,00
Position 2	a	b	c	d	0,00
Position 3	9,00	8,00	7,00	6,00	30,00
∑	10,00	10,00	10,00	10,00	40,00

Kommentar
neuer Kommentar von Demo User.

Fill data records with sample data

In order to have sample data for further use cases, please fill the data records of template 1 with the following contents.

Scenario 1

	years			
	1	**2**	**3**	**4**
Position 1	100	101,50	102	103.75
Position 2	20	22	24	26
Position 3	250	260	270	280

Scenario 2

	years			
	1	**2**	**3**	**4**
Position 1	100	102.50	103	104
Position 2	20	21	22	23
Position 3	250	255	260	265

Comment: The contents of scenario 2.

Scenario 3

	years			
	1	**2**	**3**	**4**
Position 1	100	104	107	110
Position 2	20	24	28	30
Position 3	250	265	280	295

Comment: The contents of scenario 3.

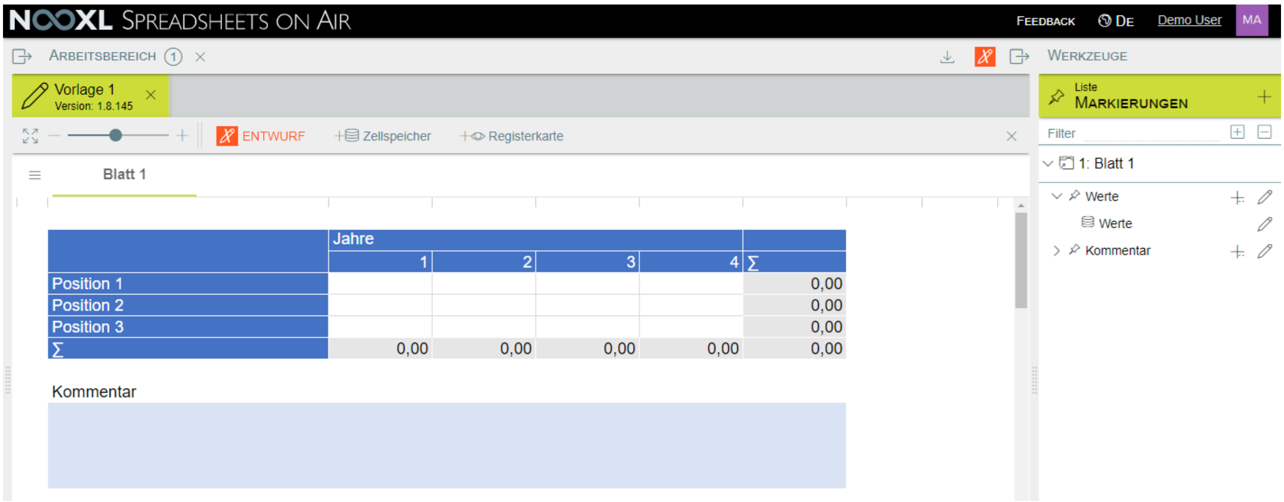
2.2.4 Customize and create markers

Everywhere in your app, where you want to use special Nooxl functionalities, so-called markers are used. These markers consist of one or more cells of the template and each marker can be added with further functionalities.

These are for example read and or write connections to the database, definition of views, extended business logic with Nooxl functions etc.

The tool area

In addition to the wizard for creating cell memories (siehe Seite 32), they can also be created and customized using the tools area, which appears on the right side in the design mode of a template.



	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00
∑	0,00	0,00	0,00	0,00	0,00

Kommentar

In the list of tools in the left menu area, the following element types are displayed as a hierarchy:

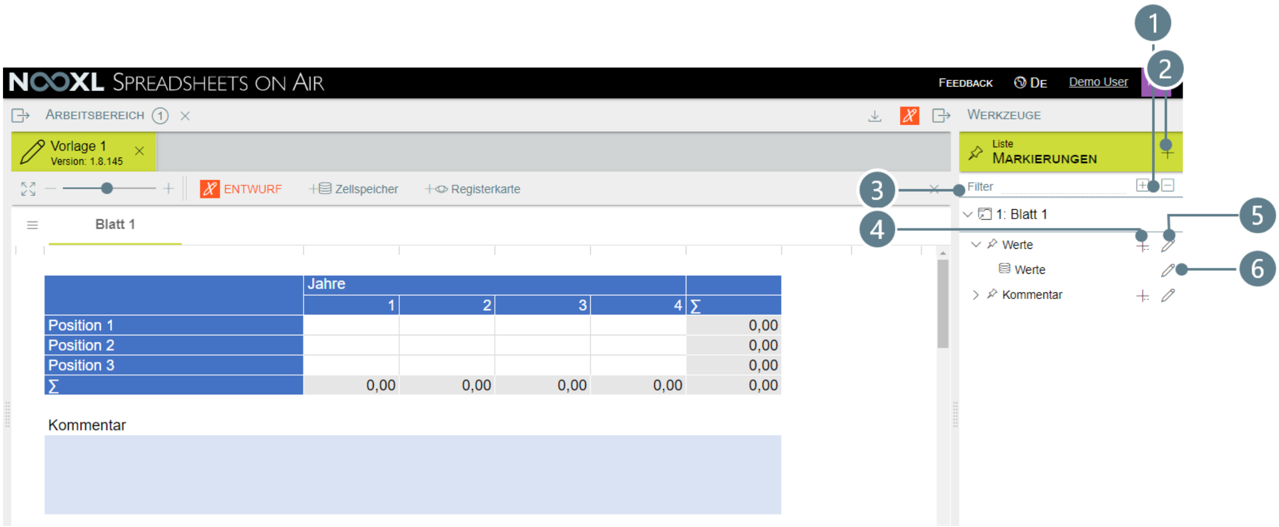
1. Excel sheet of the template
2. Markers within the Excel sheet
3. Entries within the marker

Entries determine the functionality of the respective marker. The following entries can be created in a selection:

- Tab
- Cell memory entry
- Function

In the following, the available functionalities of the tool area are presented:

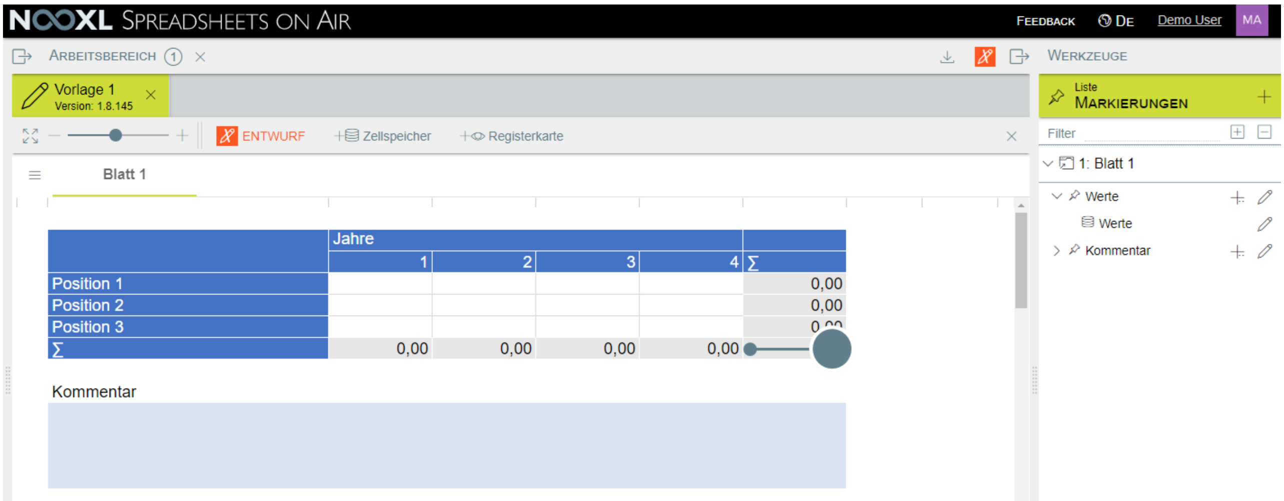
1. Expand or collapse all hierarchy elements in the list
2. Create a new marker for the selected cells
3. Search for a marker or entry
4. Add an entry to the marker
5. Edit the selection
6. Edit the entry



	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00
∑	0,00	0,00	0,00	0,00	0,00

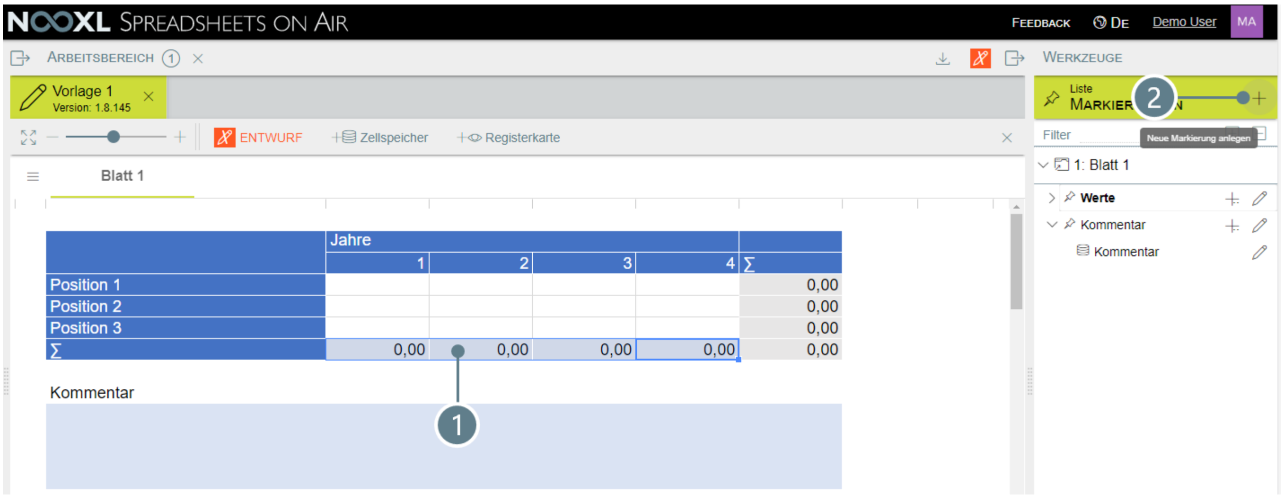
Creating a write cell memory using the tools

In the following we will connect the sum row of template 1 as a writing cell memory entry via the tools. The cells may only be write, since their contents are calculated using Excel logic.



	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00
∑	0,00	0,00	0,00	0,00	

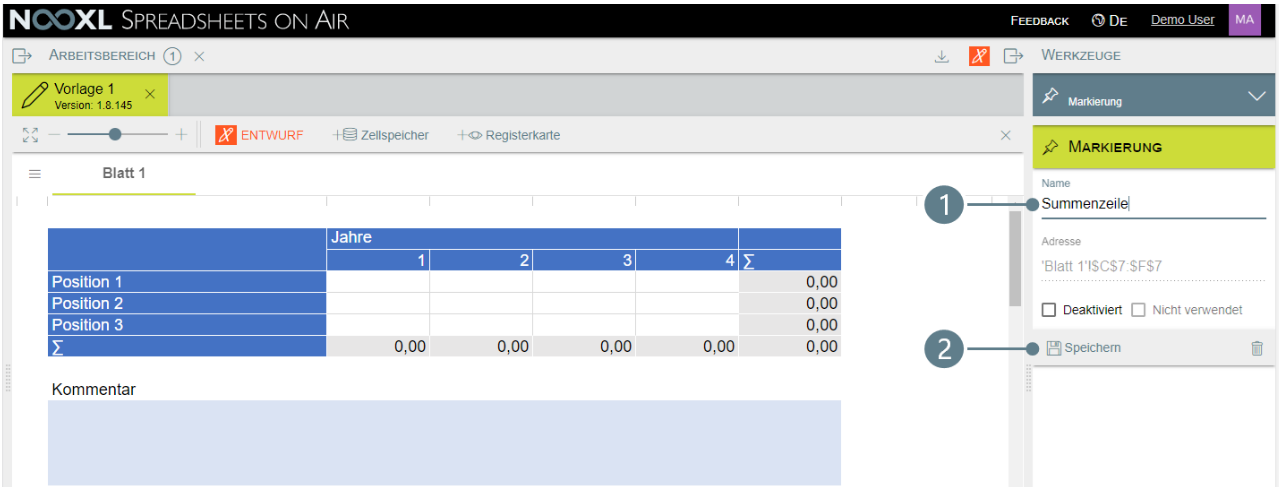
Use the mouse to first select the four cells of the totals row (1) and then click on the plus at markers (2) to create a new marker for the cell.



	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00
∑	0,00	0,00	0,00	0,00	0,00

Kommentar

Enter "Sum row" (1) as name and then click Save (2).



Name: Summenzeile

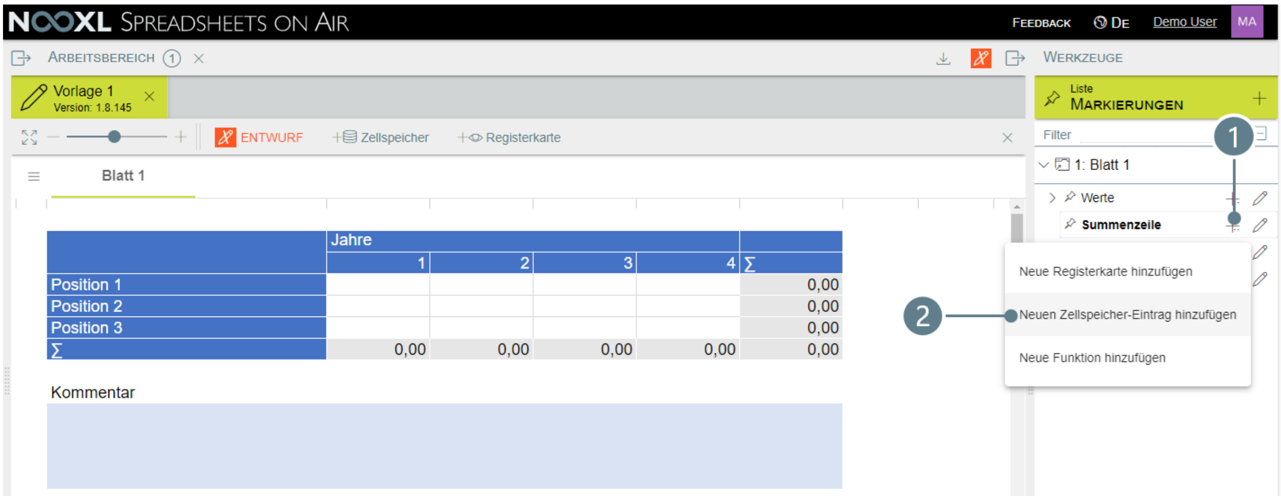
Adresse: 'Blatt 1'!$C$7:$F$7

□ Deaktiviert □ Nicht verwendet

	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00
∑	0,00	0,00	0,00	0,00	0,00

Kommentar

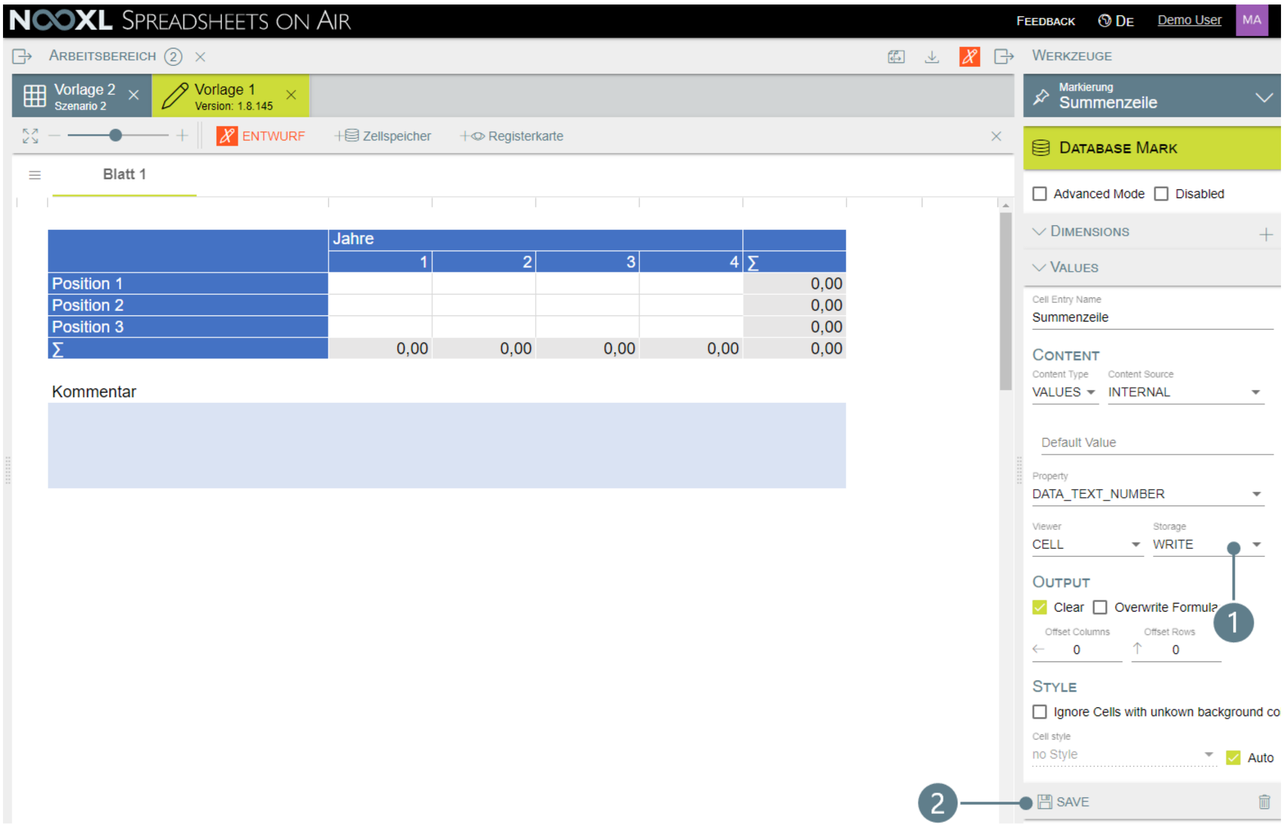
Click on the plus to the right of the "Totals row" marker (1) and select "Add new cell memory entry" (2) from the context menu that opens.



	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00
∑	0,00	0,00	0,00	0,00	0,00

Kommentar

In the menu that now opens, select "WRITE" (1) from the "Storage" item in the selection menu and then click on "Save" (2).



	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00
∑	0,00	0,00	0,00	0,00	0,00

Kommentar

□ Advanced Mode □ Disabled

Cell Entry Name: Summenzeile

Content Type: VALUES
Content Source: INTERNAL
Default Value
Property: DATA_TEXT_NUMBER
Viewer: CELL
Storage: WRITE

☑ Clear □ Overwrite Formula
Offset Columns: 0
Offset Rows: 0

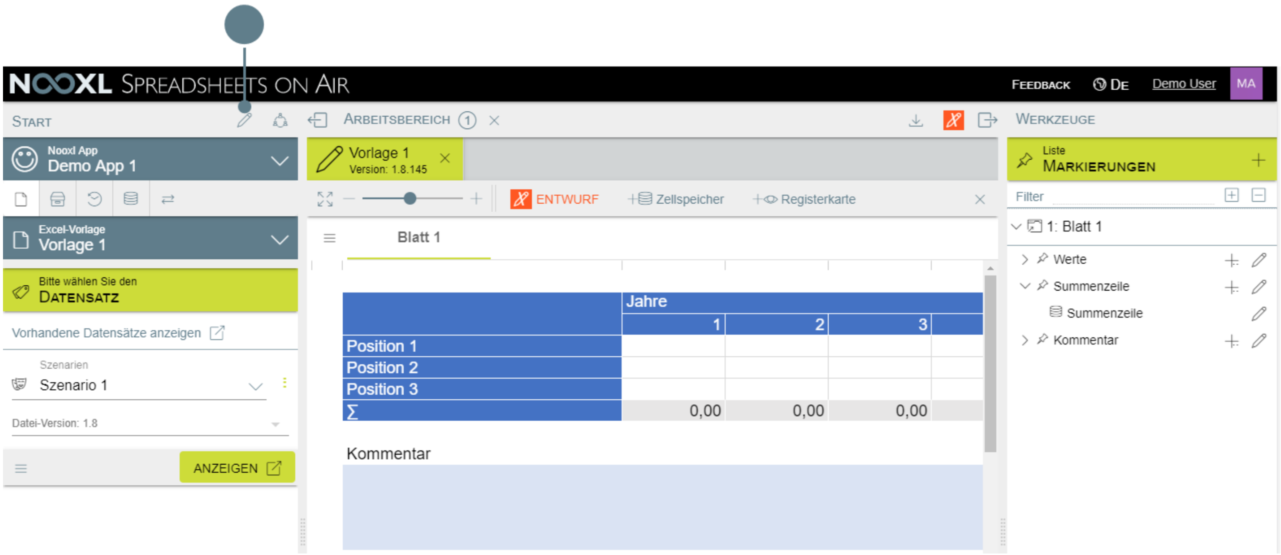
□ Ignore Cells with unkown background co
Cell style: no Style ☑ Auto

Adjust selection "Scenarios" and recalculate data records

So that the values of the sum row are also saved in the Nooxl database, the three data records must be saved again.

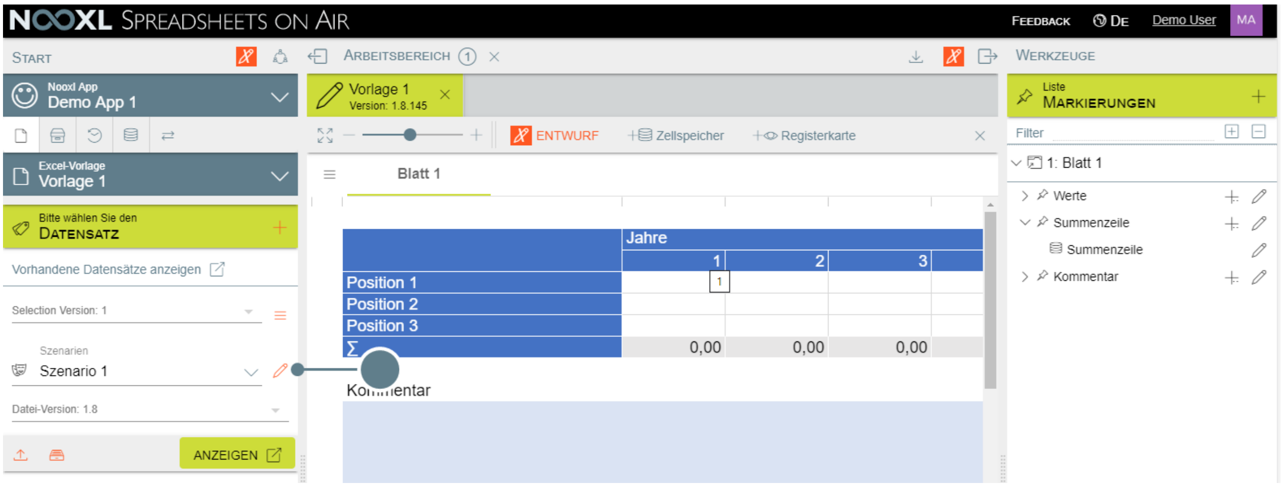
This can be done manually or with the function Calculate records (siehe Seite 125) by Nooxl. In order to calculate all data sets at the same time, the selection of the data sets must be adjusted.

To do this, open the left navigation and activate the draft mode of the app.



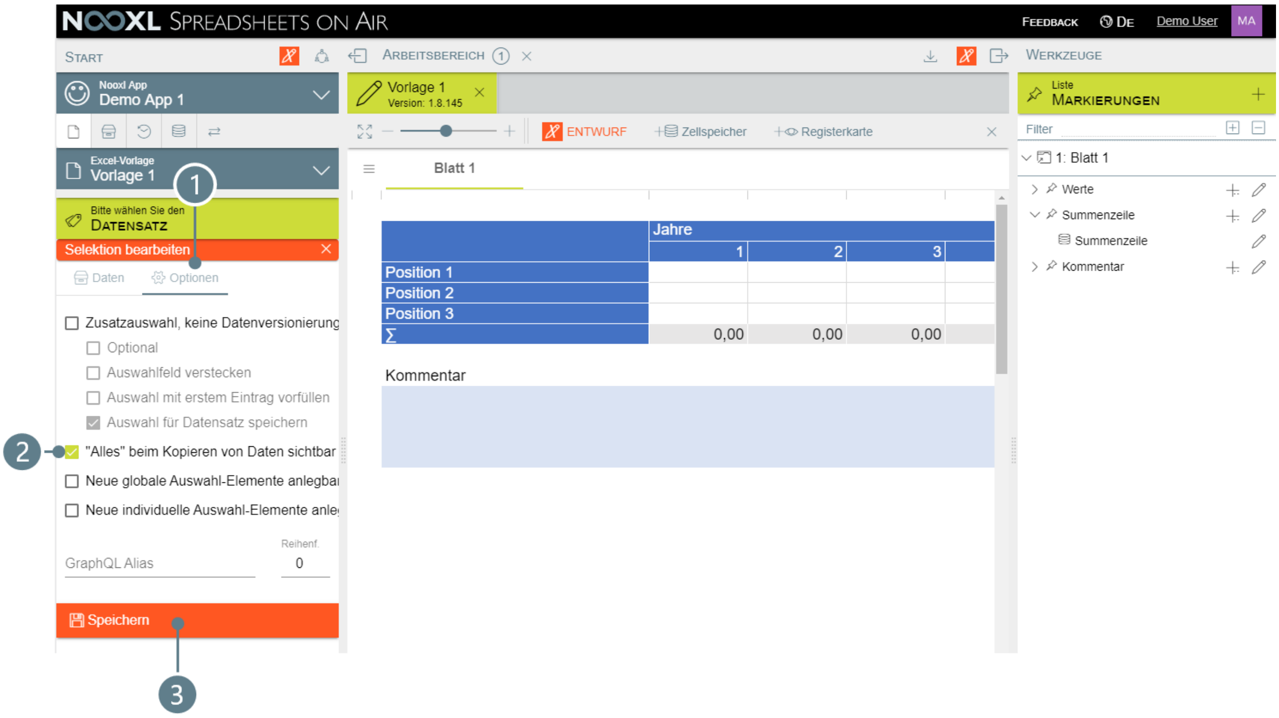
	Jahre		
	1	2	3
Position 1			
Position 2			
Position 3			
Σ	0,00	0,00	0,00

A click on the red pen to the right of the selection opens the dialog to adjust it.



	Jahre		
	1	2	3
Position 1	1		
Position 2			
Position 3			
Σ	0,00	0,00	0,00

Switch to the "Options" tab in the editing dialog (1), check the option "All visible when copying data" (2) and save the changes (3).



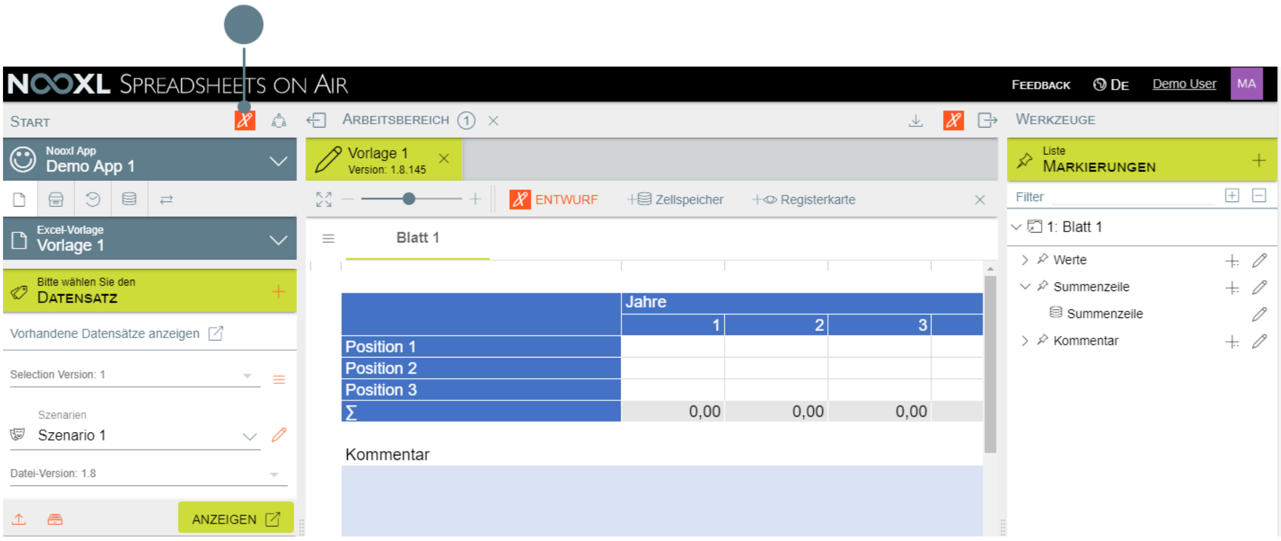
□ Zusatzauswahl, keine Datenversionierung
□ Optional
□ Auswahlfeld verstecken
□ Auswahl mit erstem Eintrag vorfüllen
☑ Auswahl für Datensatz speichern
☑ "Alles" beim Kopieren von Daten sichtbar
□ Neue globale Auswahl-Elemente anlegbar
□ Neue individuelle Auswahl-Elemente anle

Reihenf.: 0

	Jahre		
	1	2	3
Position 1			
Position 2			
Position 3			
∑	0,00	0,00	0,00

Kommentar

Afterwards you can leave the draft mode by clicking on the red pencil.



Selection Version: 1

Szenarien: Szenario 1

Datei-Version: 1.8

	Jahre		
	1	2	3
Position 1			
Position 2			
Position 3			
∑	0,00	0,00	0,00

Kommentar

Then follow the description Copy and calculate records (siehe Seite 20) to recalculate the records.

Create tabs via wizard

If you create and upload a new Excel file as a template in Nooxl, Nooxl will display the sheets contained in it one to one. This means:

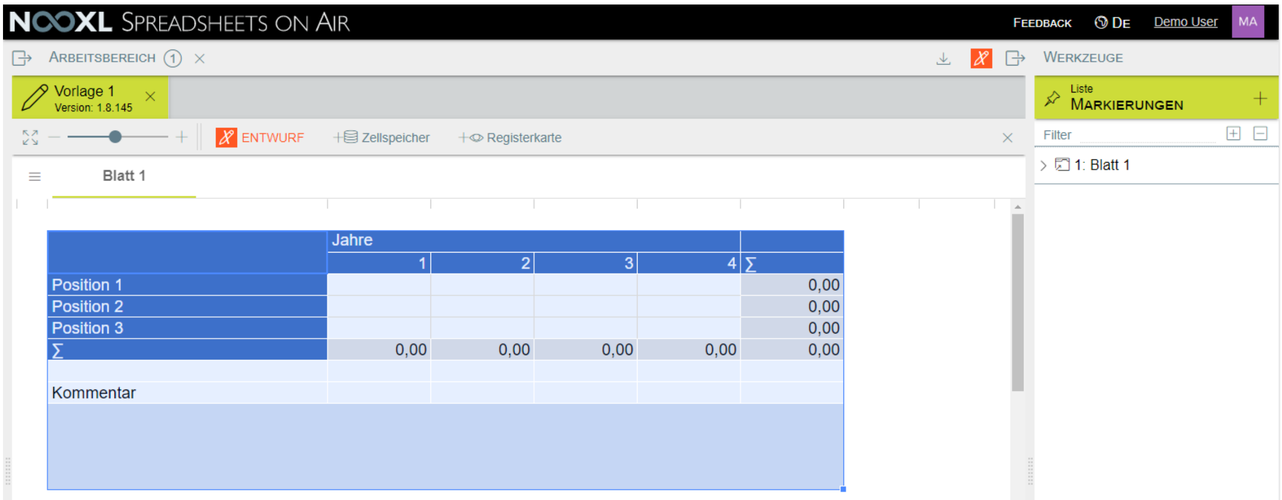
- Content
- Order
- Designation

If you want to change this, for example hide certain sheets from the users or distribute the contents of an Excel sheet between two views in Nooxl, you must create tabs.

Tab pages are also necessary if you want to show and hide rows or columns dynamically or if you want to fix rows and columns.

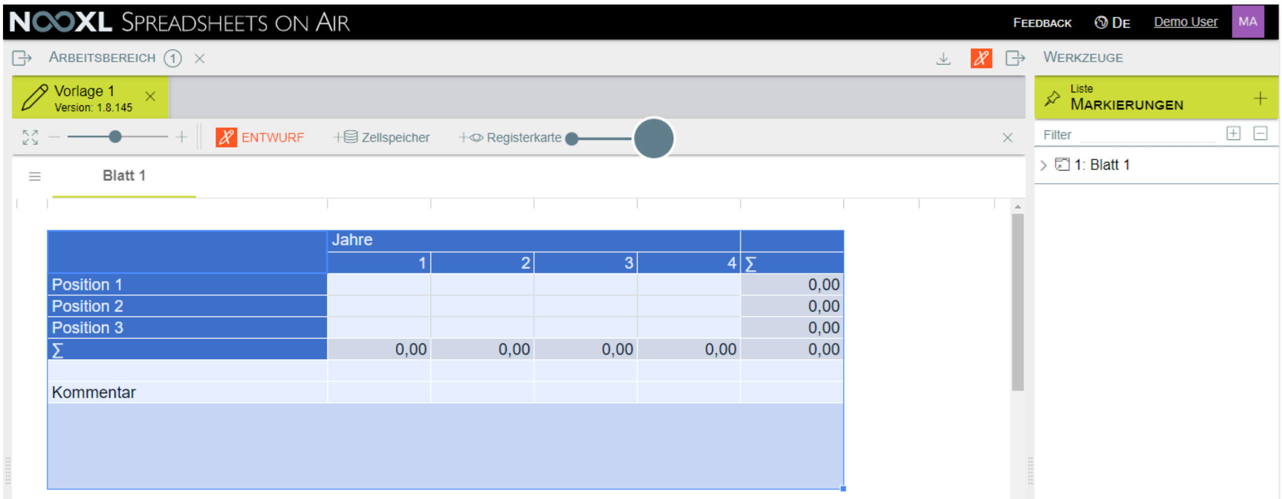
Create a new tab page

To create a new tab, open the template in draft mode (siehe Seite 29). Then use the mouse to select all cells that you want to be visible in the new tab page.



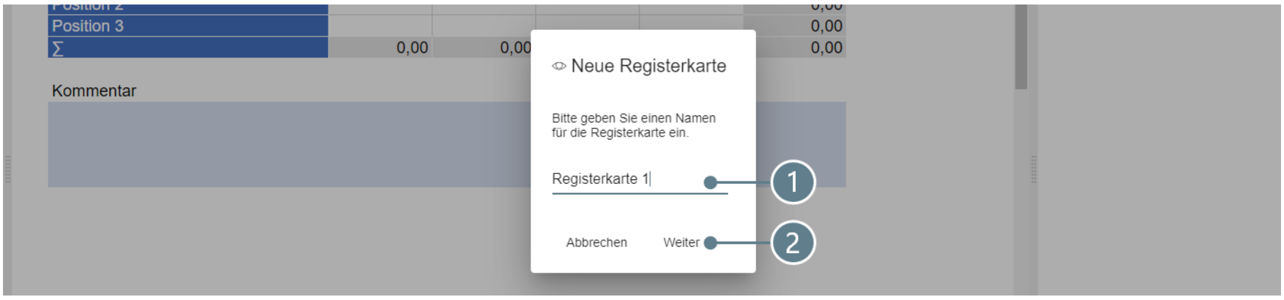
	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00
∑	0,00	0,00	0,00	0,00	0,00
Kommentar					

Now click on the "+tab" wizard at the top of the design mode.



	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00
∑	0,00	0,00	0,00	0,00	0,00
Kommentar					

In the dialog that opens, assign a name with which the new tab should be displayed in Nooxl (1) and then click Next to create it.



Position 3			0,00
∑	0,00	0,00	0,00

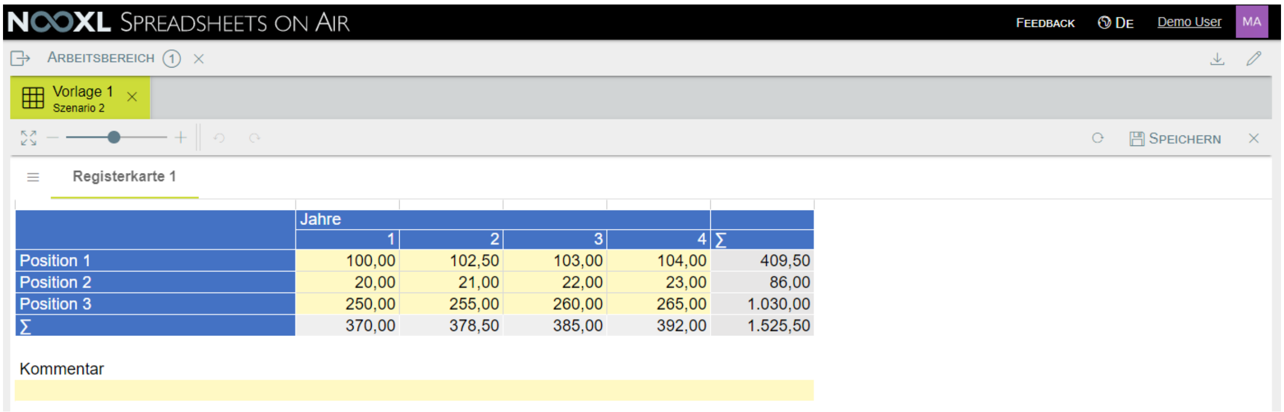
Kommentar

Neue Registerkarte

Bitte geben Sie einen Namen für die Registerkarte ein.

Registerkarte 1

Now leave the design mode and open a record of the template to check the result.



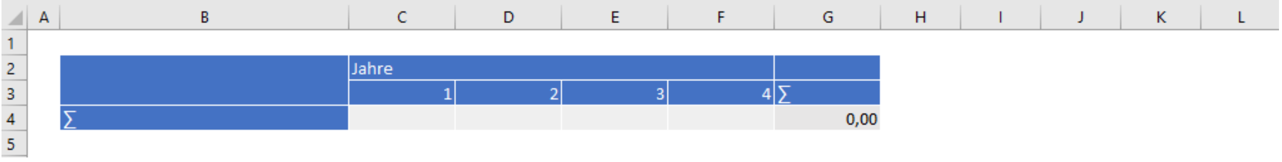
	Jahre				
	1	2	3	4	∑
Position 1	100,00	102,50	103,00	104,00	409,50
Position 2	20,00	21,00	22,00	23,00	86,00
Position 3	250,00	255,00	260,00	265,00	1.030,00
∑	370,00	378,50	385,00	392,00	1.525,50

Kommentar

Import cell contents from another template

In the following exercise we will read the totals row from template 1 into two new templates.

For this exercise we need an Excel file with the following content:



	A	B	C	D	E	F	G	H	I	J	K	L
1												
2			Jahre									
3			1	2	3	4	∑					
4		∑					0,00					
5												

Vorlage2.xlsx

In the first part of the exercise, we create template 2, in which a scenario is set as a data record and the respective totals row is read from template 1.

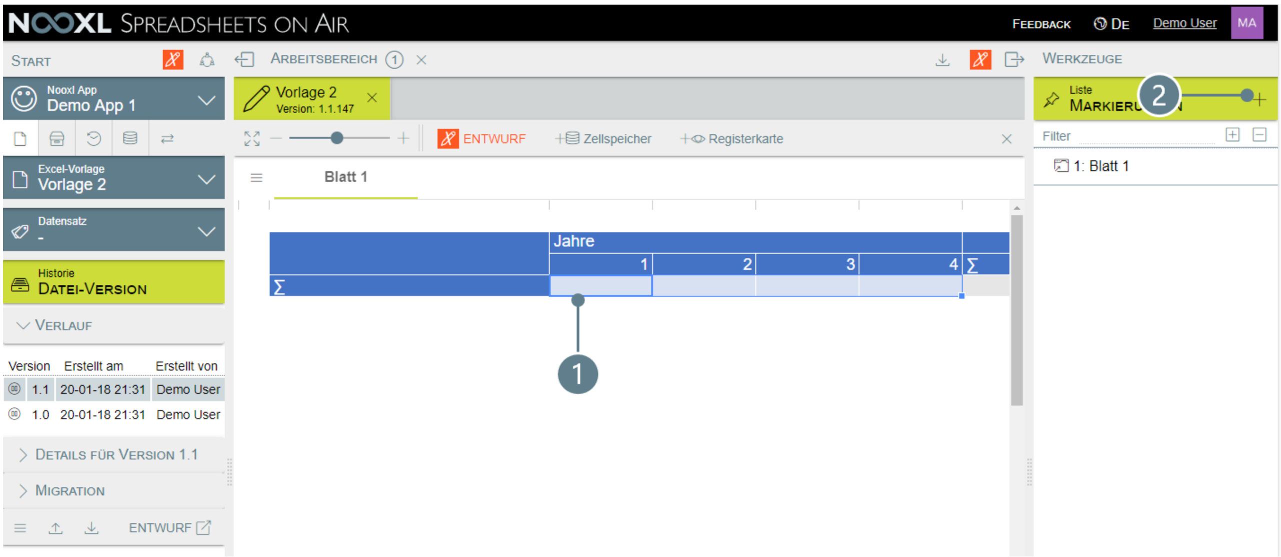
In the second part we create template 3, which uses the identical Excel file as a starting point. Here, however, the scenario is not selected before it is displayed, but the totals rows of all existing scenarios are listed below each other.

Template 1: Read totals row for scenario

Perform the following steps independently:

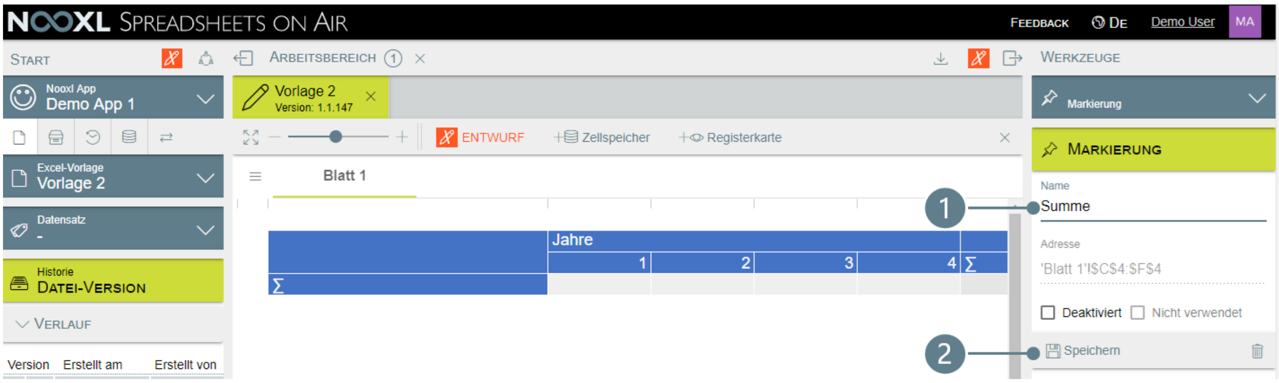
1. Upload the Excel file as "Template 2" in Nooxl (siehe Seite 26)
2. add the selection scenarios as data record selection (siehe Seite 48)
3. then open them in draft mode (siehe Seite 29)

Select the four cells for years 1 to 4 with the mouse (1). Then create a new selection using the tools in the area on the right (2).



Version	Erstellt am	Erstellt von
1.1	20-01-18 21:31	Demo User
1.0	20-01-18 21:31	Demo User

Enter "Sum" (1) as the name and then click on Save (2) to create the marker.

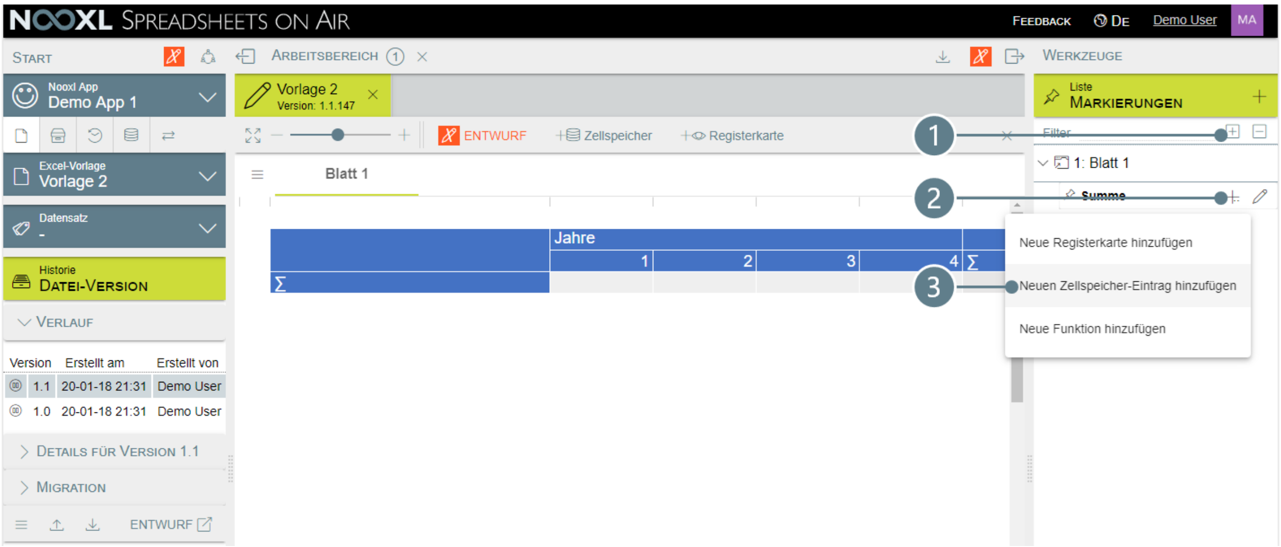


Name: Summe

Adresse: 'Blatt 1'!$C$4:$F$4

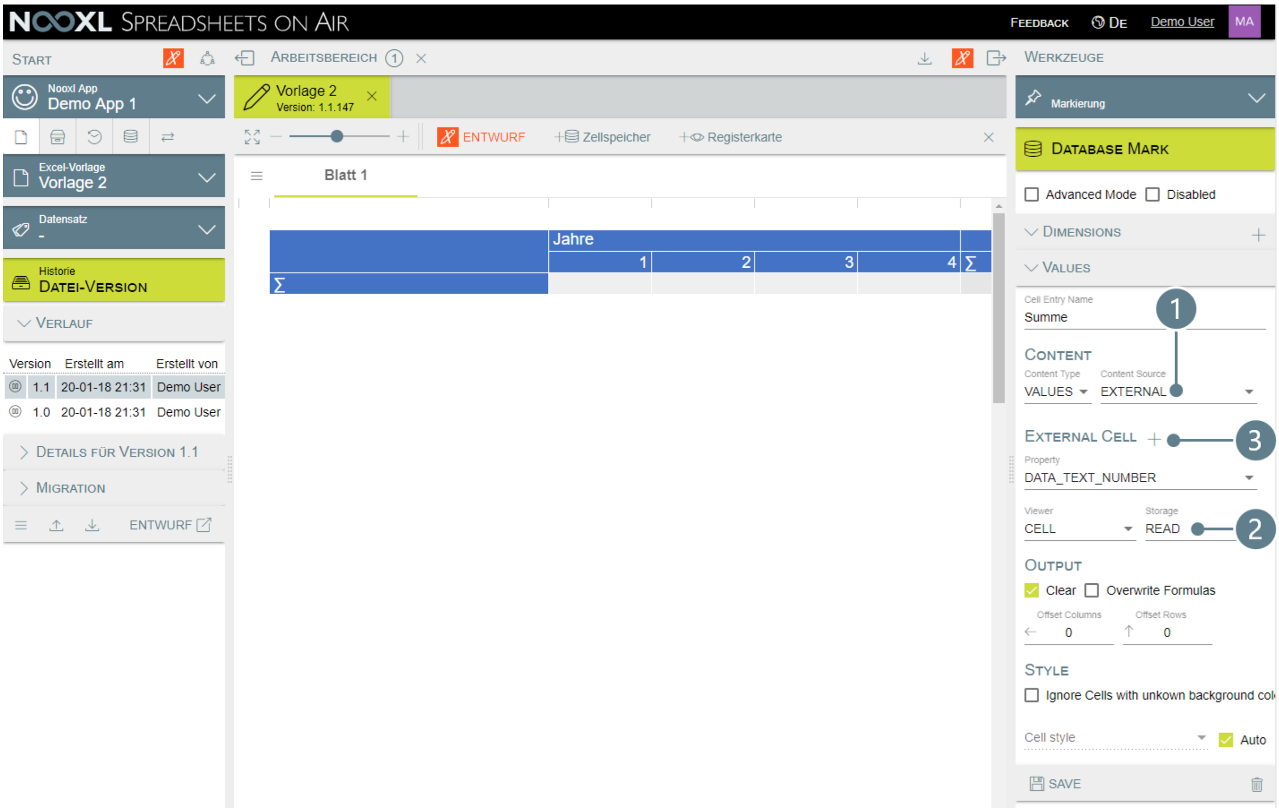
☐ Deaktiviert ☐ Nicht verwendet

Click on the "+" above the tools area (1) to open all hierarchies. Then select the "+" to the right of the previously created marker (2) and then click "Add new cell memory entry" (3) in the menu that opens.



Version	Erstellt am	Erstellt von
1.1	20-01-18 21:31	Demo User
1.0	20-01-18 21:31	Demo User

To read the data from the totals row of template 1, change the Content Source to "EXTERNAL" (1) in the "Database Mark" menu that now opens, select "READ" (2) from the Storage item and then click on the "+" to the right of External Cell (3).



Version	Erstellt am	Erstellt von
1.1	20-01-18 21:31	Demo User
1.0	20-01-18 21:31	Demo User

Cell Entry Name: Summe

CONTENT
Content Type: VALUES
Content Source: EXTERNAL

EXTERNAL CELL +
Property: DATA_TEXT_NUMBER
Viewer: CELL
Storage: READ

OUTPUT
☑ Clear □ Overwrite Formulas
Offset Columns: 0
Offset Rows: 0

STYLE
□ Ignore Cells with unkown background col
Cell style ☑ Auto

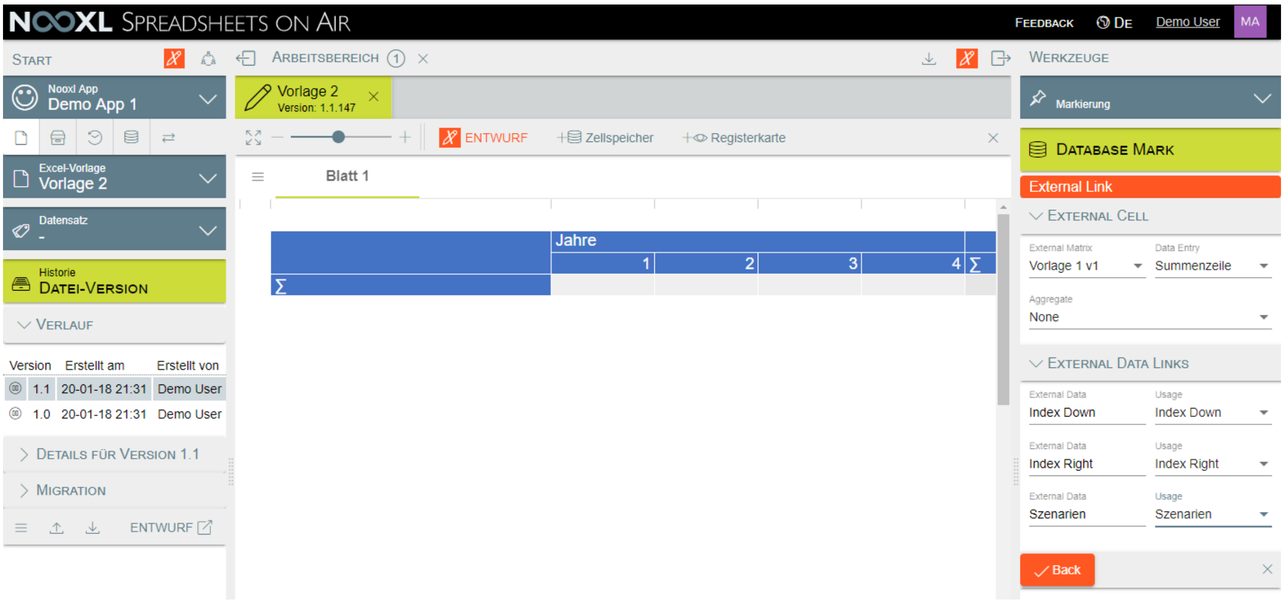
In the "External Cell" area of the dialog you make the following settings:

- External Matrix: Template 1 v1
- Data Entry: Totals row

With this you refer Nooxl to the marker whose contents you want to read.

In the "External Data Links" area, you must now define how the various dimensions of the data record to be read correspond to those of the template to be read:

- Index Down → Index Down
- Index Right → Indes Right
- Scenarios → Scenarios



Version	Erstellt am	Erstellt von
1.1	20-01-18 21:31	Demo User
1.0	20-01-18 21:31	Demo User

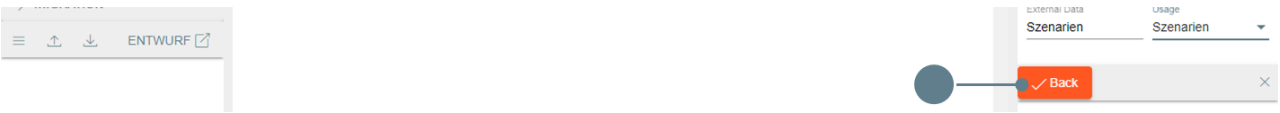
EXTERNAL CELL

External Matrix: Vorlage 1 v1
Data Entry: Summenzeile
Aggregate: None

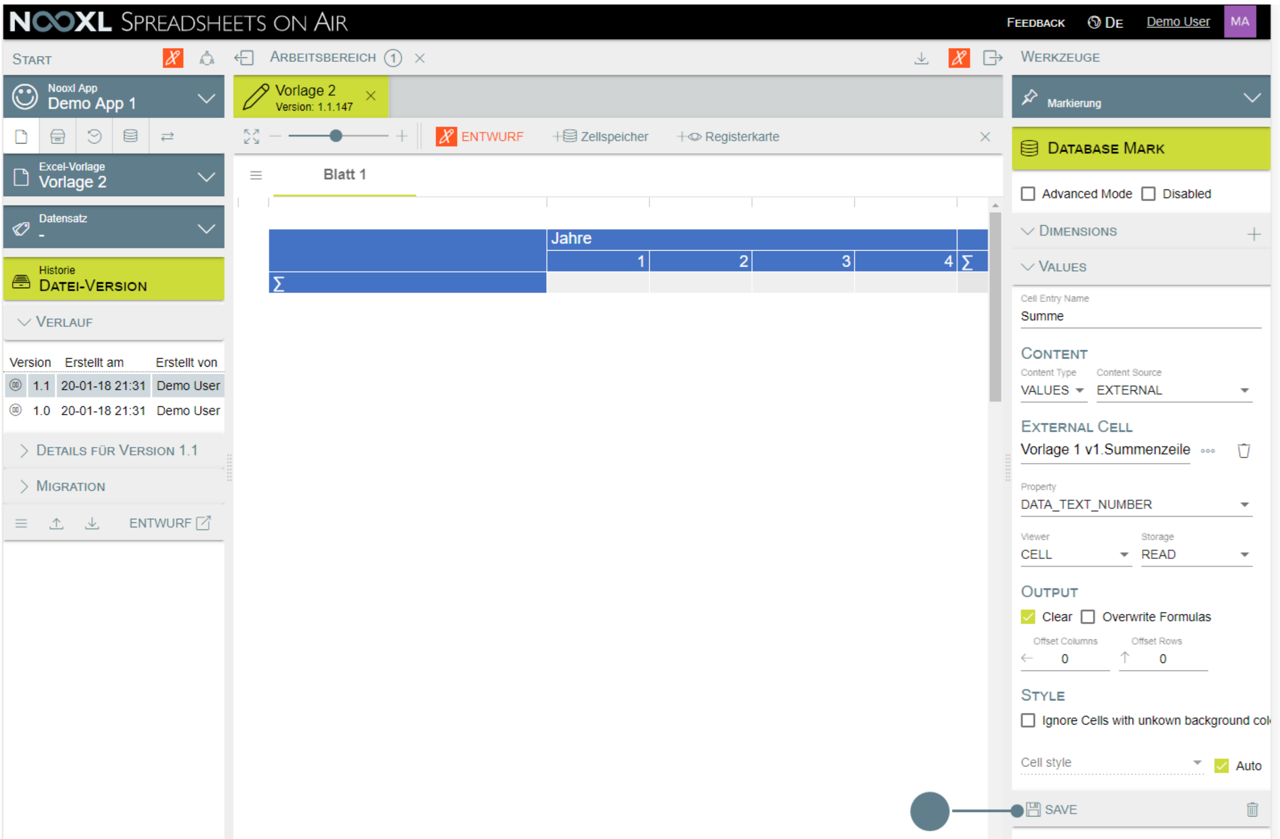
EXTERNAL DATA LINKS

External Data	Usage
Index Down	Index Down
Index Right	Index Right
Szenarien	Szenarien

Then click Back to exit the dialog.



In the Database Mark, click Save to save your adjustments.



NOOXL SPREADSHEETS ON AIR — FEEDBACK — DE — Demo User — MA

START — ARBEITSBEREICH (1) — WERKZEUGE

Nooxl App: Demo App 1

Vorlage 2, Version: 1.1.147

Markierung

Excel-Vorlage: Vorlage 2

ENTWURF — Zellspeicher — Registerkarte

DATABASE MARK

Datensatz: -

Blatt 1

☐ Advanced Mode ☐ Disabled

Historie: DATEI-VERSION

DIMENSIONS

VALUES

VERLAUF

	Jahre				
	1	2	3	4	Σ
Σ					

Version	Erstellt am	Erstellt von
1.1	20-01-18 21:31	Demo User
1.0	20-01-18 21:31	Demo User

DETAILS FÜR VERSION 1.1

MIGRATION

ENTWURF

Cell Entry Name: Summe

CONTENT

Content Type: VALUES — Content Source: EXTERNAL

EXTERNAL CELL

Vorlage 1 v1.Summenzeile

Property: DATA_TEXT_NUMBER

Viewer: CELL — Storage: READ

OUTPUT

☑ Clear ☐ Overwrite Formulas

Offset Columns: 0 — Offset Rows: 0

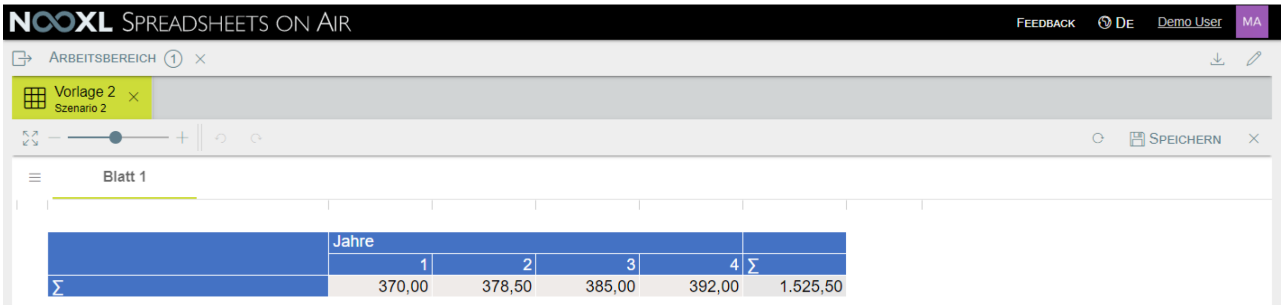
STYLE

☐ Ignore Cells with unkown background col

Cell style — ☑ Auto

SAVE

Now that you have connected the totals row, leave the draft mode of template 2 and open one of the data records to check that the data is read in correctly.



NOOXL SPREADSHEETS ON AIR — FEEDBACK — DE — Demo User — MA

ARBEITSBEREICH (1)

Vorlage 2, Szenario 2

SPEICHERN

Blatt 1

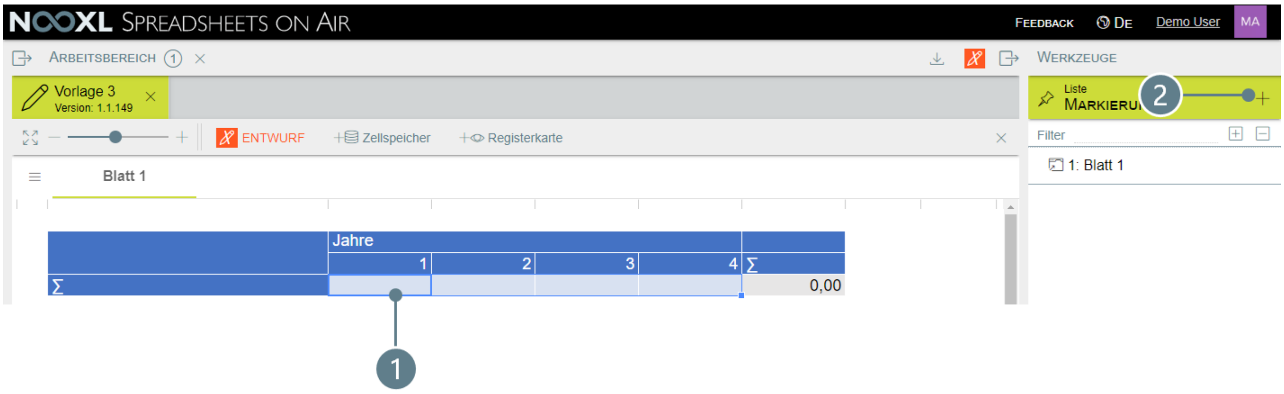
	Jahre				
	1	2	3	4	Σ
Σ	370,00	378,50	385,00	392,00	1.525,50

Template 2: Read the totals row for all scenarios under each other

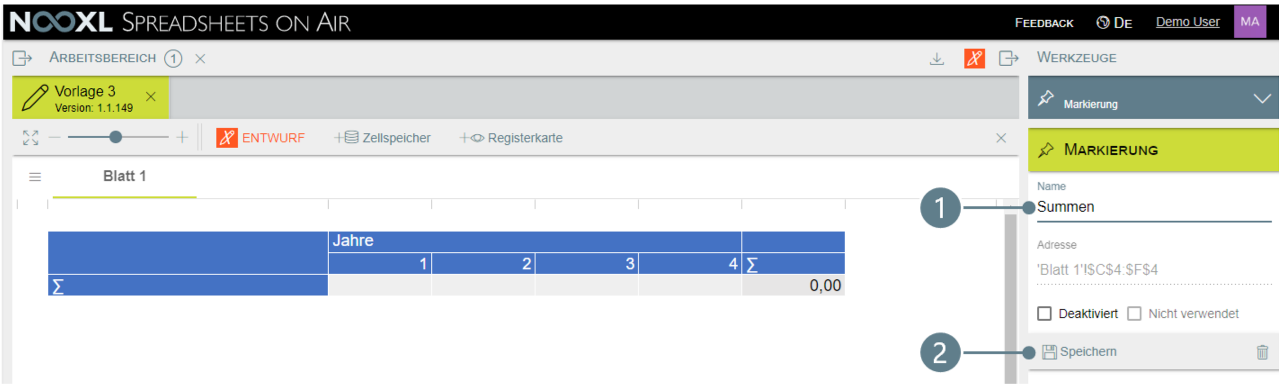
Perform the following steps independently:

1. Upload the Excel file as "Template 3" in Nooxl (siehe Seite 26)
2. add the selection scenarios as data record selection (siehe Seite 48)
3. then open them in draft mode (siehe Seite 29)

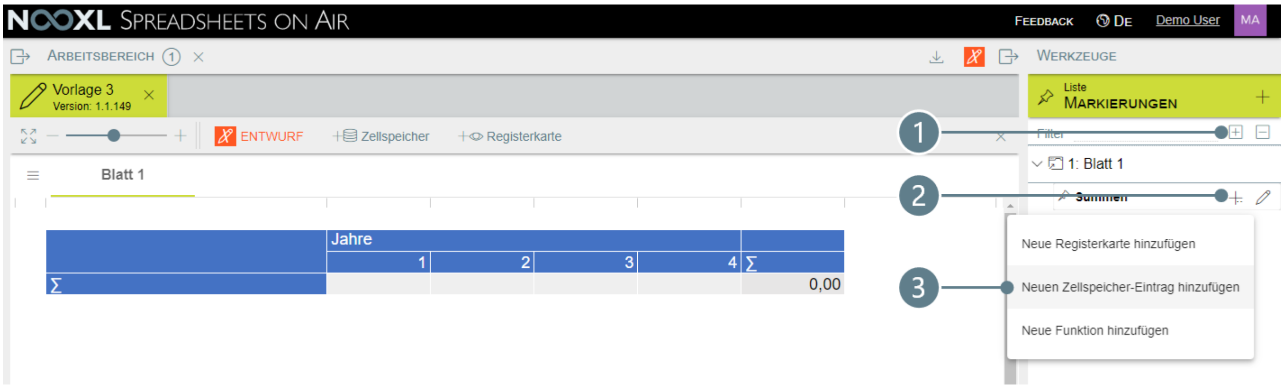
Select the four cells for years 1 to 4 with the mouse (1). Then create a new selection using the tools in the area on the right (2).



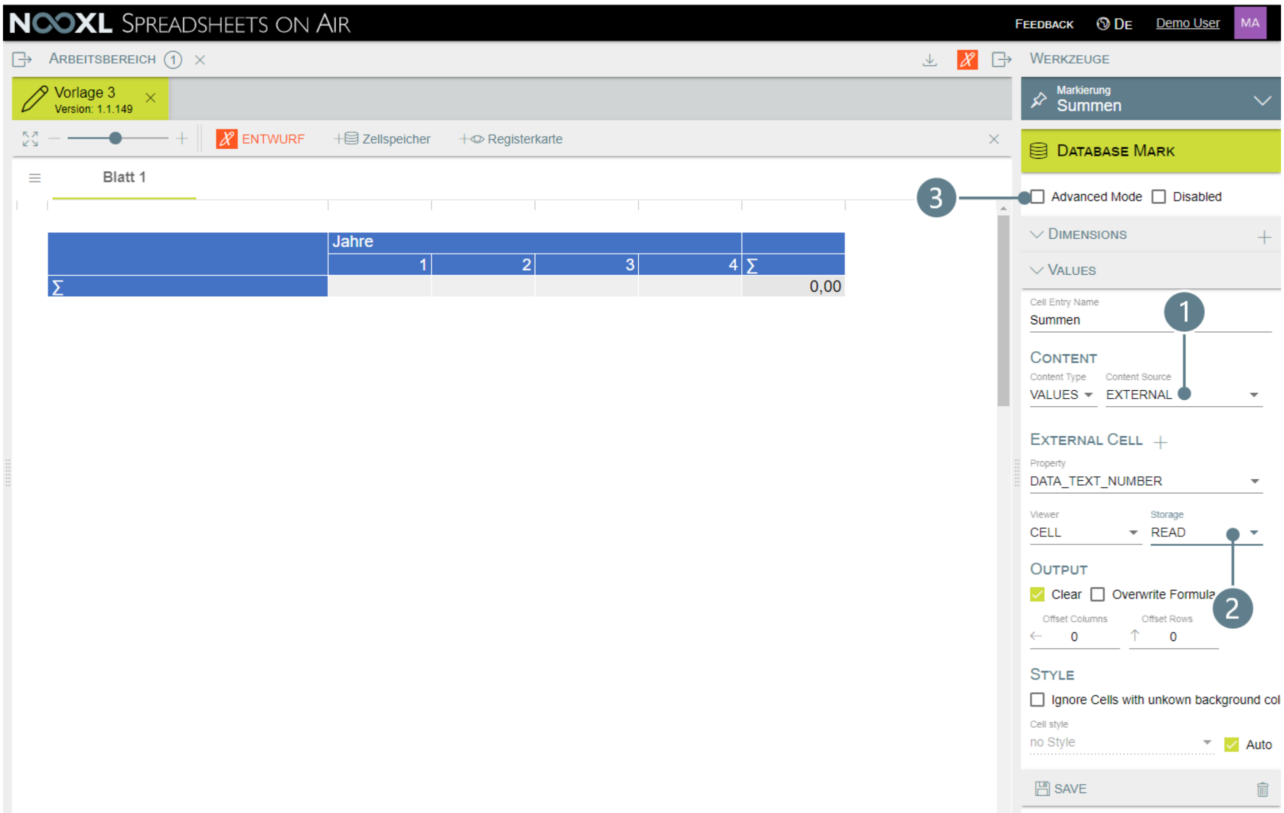
Name the new marker "Totals" (1) and click Save (2).



In the tools area, click on the "+" in the upper area (1) to expand all entries. Then click the "+" to the right of the previously created marker (2) and then click "Add new cell memory entry" (3).



Set the Content Source to EXTERNAL (1), the Storage to READ (2) and then check the Advanced Mode (3).



□ Advanced Mode □ Disabled

DIMENSIONS

VALUES

Cell Entry Name: Summen

CONTENT

Content Type: VALUES
Content Source: EXTERNAL

EXTERNAL CELL

Property: DATA_TEXT_NUMBER

Viewer: CELL
Storage: READ

OUTPUT

☑ Clear □ Overwrite Formula

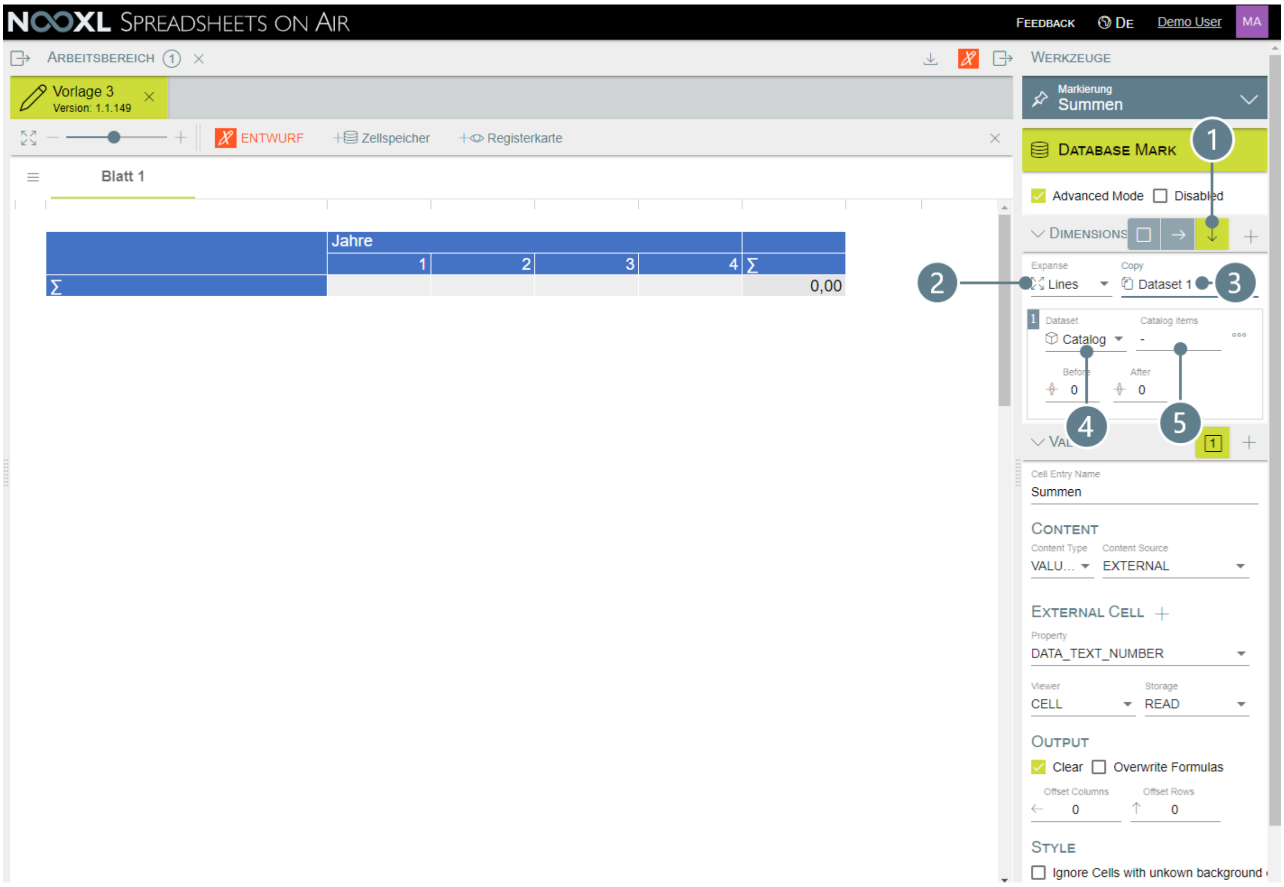
Offset Columns: 0
Offset Rows: 0

STYLE

□ Ignore Cells with unkown background col

Cell style: no Style ☑ Auto

1. In the Dimensions area, click "↓" to indicate to Nooxl that you want to create a vertical dimension
2. Set Expanse to "Insert complete Lines"
3. For Copy, select Dataset 1, which together with (2) ensures that a new row is inserted for each element of the data set
4. Select "Catalog" at Dataset
5. Then click on the "-" at Catalog Items



☑ Advanced Mode ☐ Disabled

Expanse: Lines
Copy: Dataset 1

Dataset: Catalog
Catalog items: -
Before: 0
After: 0

Cell Entry Name: Summen

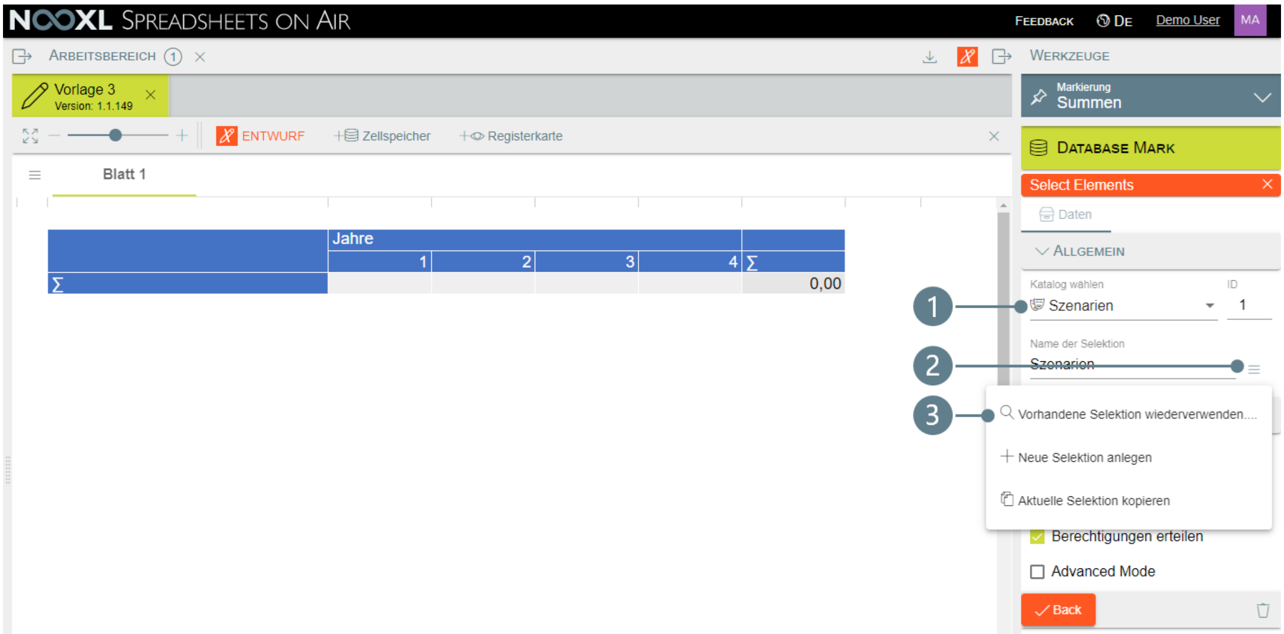
CONTENT
Content Type: VALU...
Content Source: EXTERNAL

EXTERNAL CELL
Property: DATA_TEXT_NUMBER
Viewer: CELL
Storage: READ

OUTPUT
☑ Clear ☐ Overwrite Formulas
Offset Columns: 0
Offset Rows: 0

STYLE
☐ Ignore Cells with unkown background

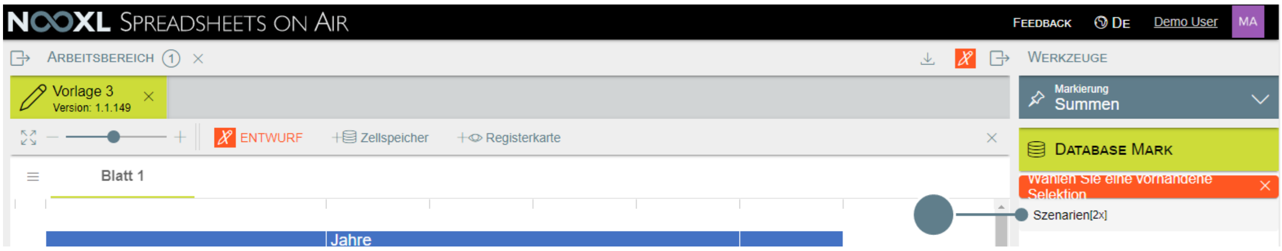
Select the scenarios (1) as catalog and click on the three horizontal bars to the right of "Selection name" (2) to open the menu in which you can "Reuse existing selection...". (3) click on it.



Katalog wählen: Szenarien
ID: 1
Name der Selektion: Szenarien

☑ Berechtigungen erteilen
☐ Advanced Mode

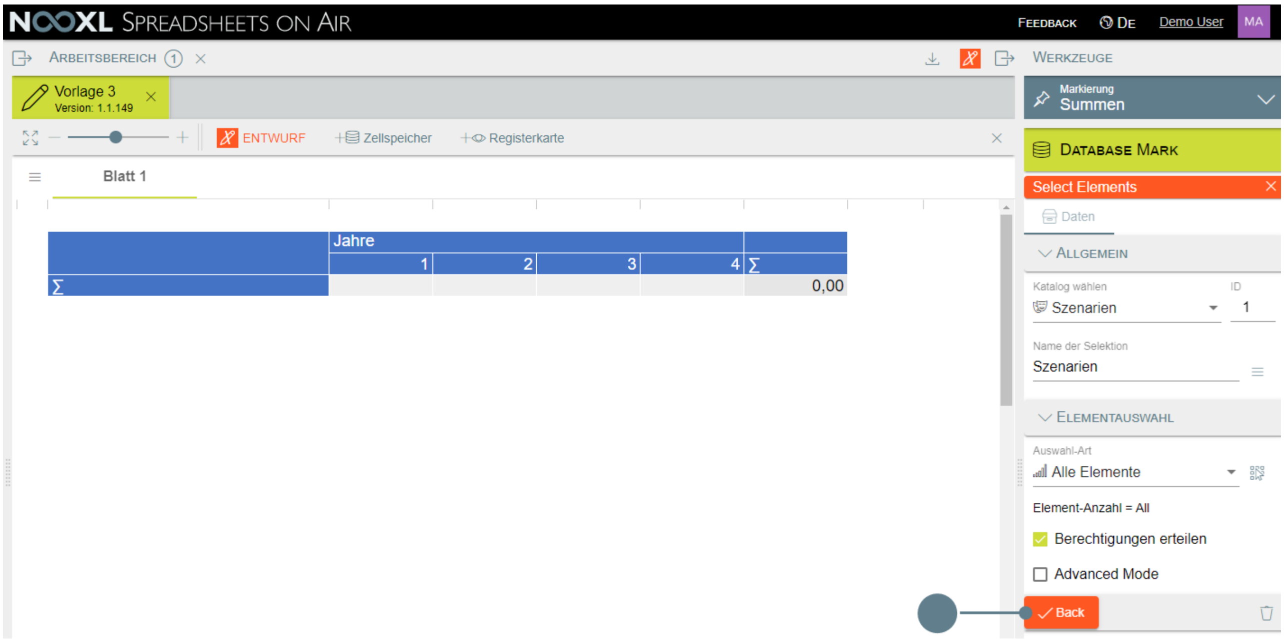
Click on "Scenarios".



Wahlen Sie eine vorhandene Selektion

Szenarien[2x]

Close the dialog by clicking on "Back".



Katalog wählen: Szenarien

ID: 1

Name der Selektion: Szenarien

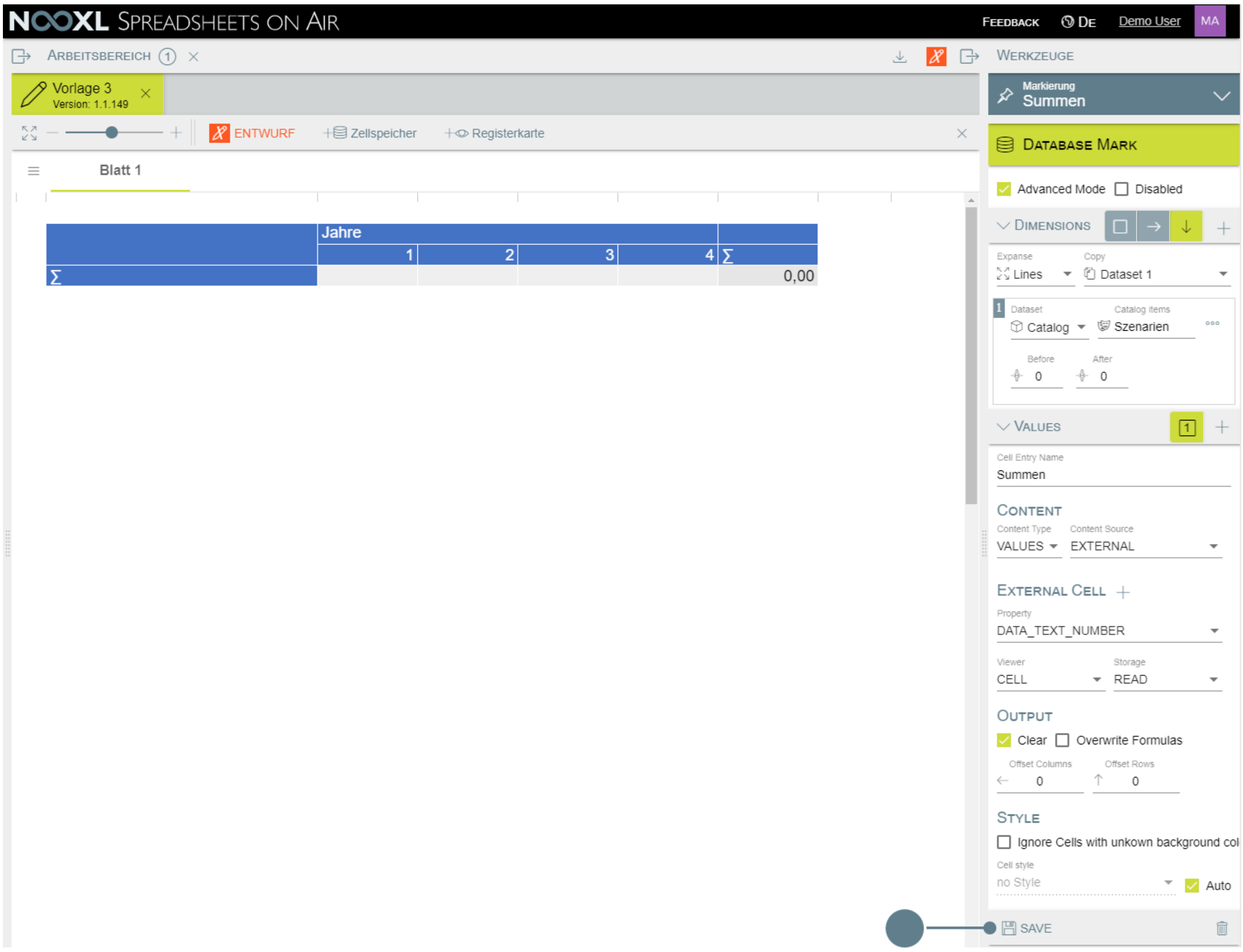
Auswahl-Art: Alle Elemente

Element-Anzahl = All

☑ Berechtigungen erteilen

☐ Advanced Mode

Save your settings by clicking "Save".



☑ Advanced Mode ☐ Disabled

Expanse: Lines; Copy: Dataset 1

Dataset: Catalog; Catalog items: Szenarien; Before: 0; After: 0

Cell Entry Name: Summen

Content Type: VALUES; Content Source: EXTERNAL

Property: DATA_TEXT_NUMBER

Viewer: CELL; Storage: READ

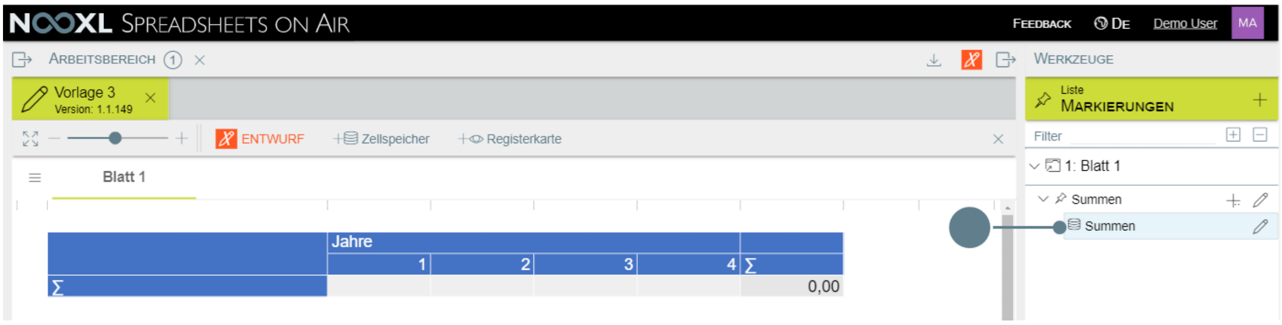
☑ Clear ☐ Overwrite Formulas

Offset Columns: 0; Offset Rows: 0

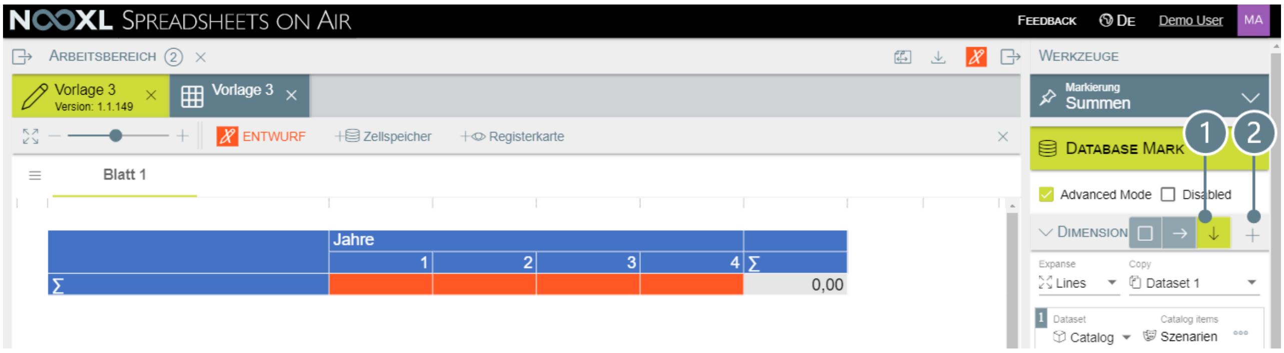
☐ Ignore Cells with unkown background col

Cell style: no Style ☑ Auto

Open the cell memory entry again by clicking on it in the list.

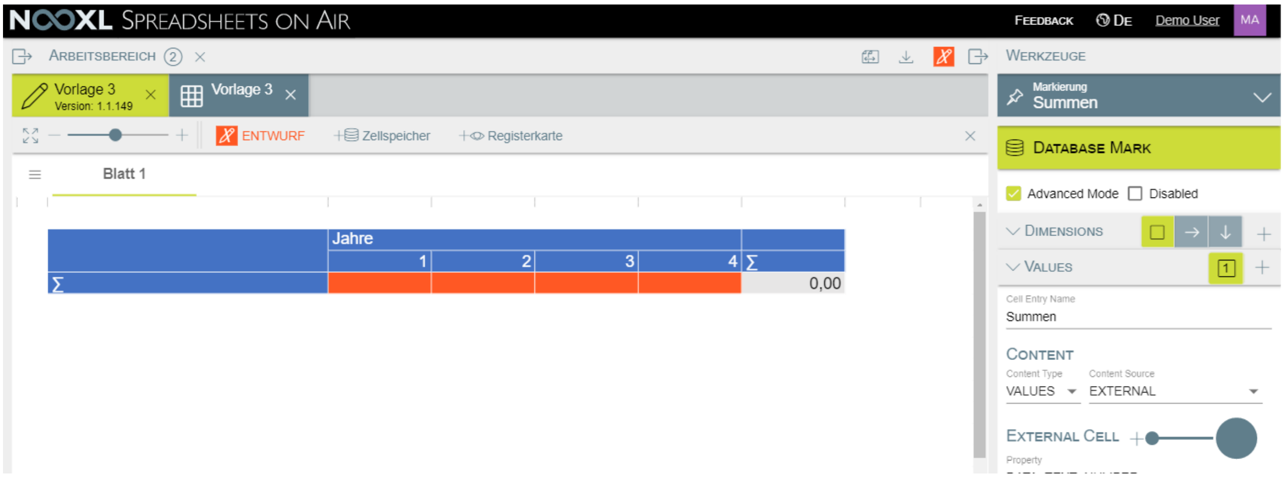


In the Dimensions area, open the vertical dimension again by clicking on "↓" (1) and then create another dataset for this dimension by clicking on the "+" (2).



Save the changes and reopen the cell memory entry. This is necessary so that the dimensions created are available for the reference to the external data cells.

Then click the "+" next to External Cell.

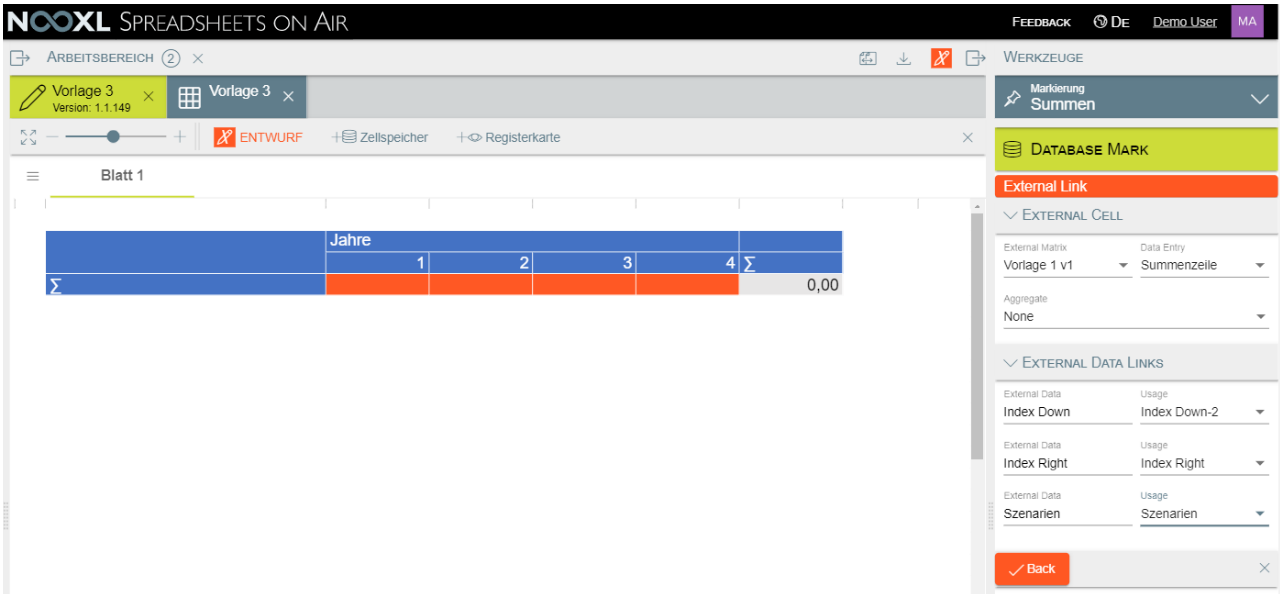


Make the following entries in the External Cell section:

- External Matrix: Template 1 v1
- Data Entry: Totals row

In External Data Links:

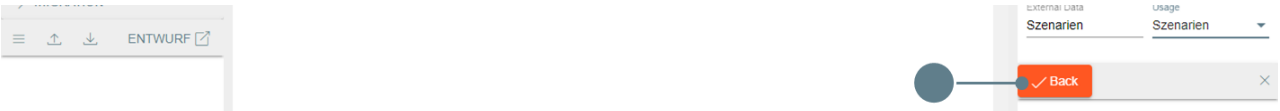
- Index Down → Index Down-2
- Index Right → Index Right
- External Data → Scenarios



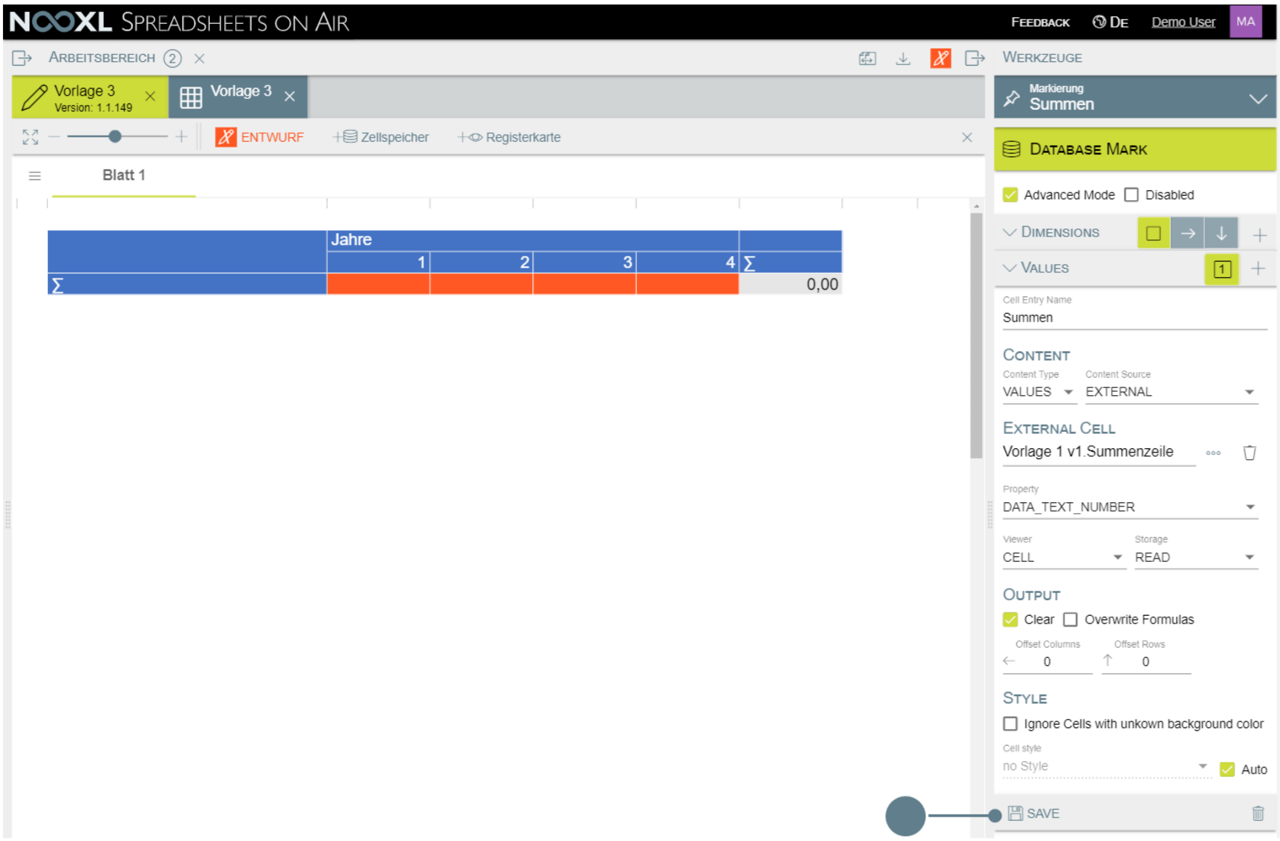
External Matrix: Vorlage 1 v1
Data Entry: Summenzeile
Aggregate: None

External Data	Usage
Index Down	Index Down-2
Index Right	Index Right
Szenarien	Szenarien

Then click Back to exit the dialog.



In the Database Mark, click Save to save your adjustments.



☑ Advanced Mode ☐ Disabled

Cell Entry Name: Summen

Content Type: VALUES
Content Source: EXTERNAL

Vorlage 1 v1.Summenzeile

Property: DATA_TEXT_NUMBER
Viewer: CELL
Storage: READ

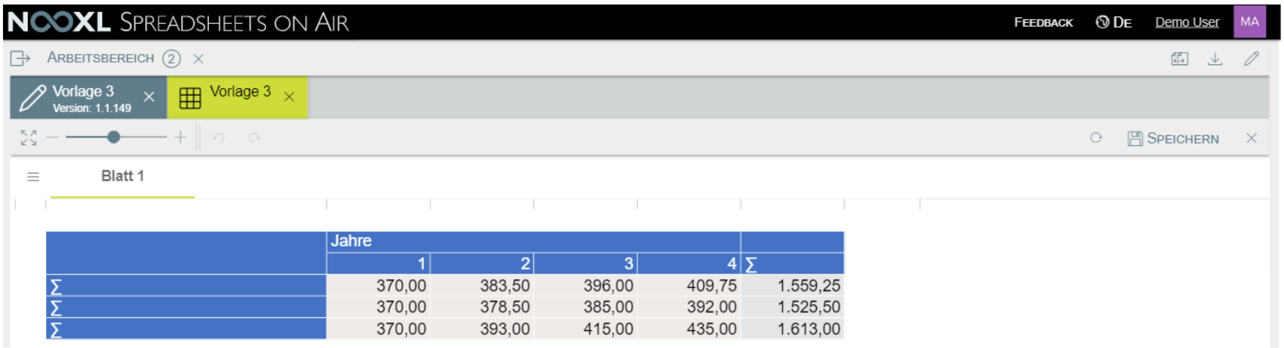
☑ Clear ☐ Overwrite Formulas

Offset Columns: 0
Offset Rows: 0

☐ Ignore Cells with unkown background color

Cell style: no Style ☑ Auto

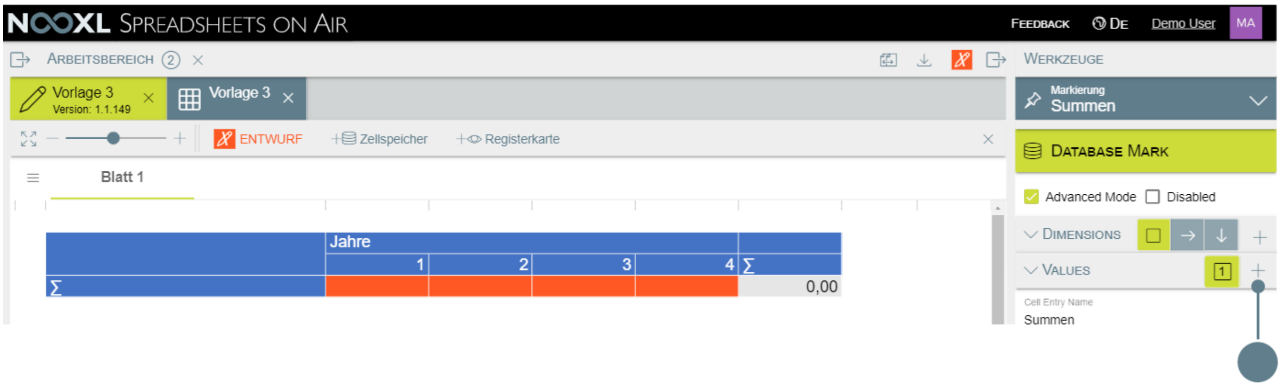
Now open template 3 to check the current status.



	Jahre				
	1	2	3	4	Σ
Σ	370,00	383,50	396,00	409,75	1.559,25
Σ	370,00	378,50	385,00	392,00	1.525,50
Σ	370,00	393,00	415,00	435,00	1.613,00

As you can see the reading of the values works, but the information to which scenarios they belong is missing. In the last step we will read in the scenario names at the place of the "Σ".

Open the cell memory entry again and click on the "+" to the right of the 1 in the Values area.



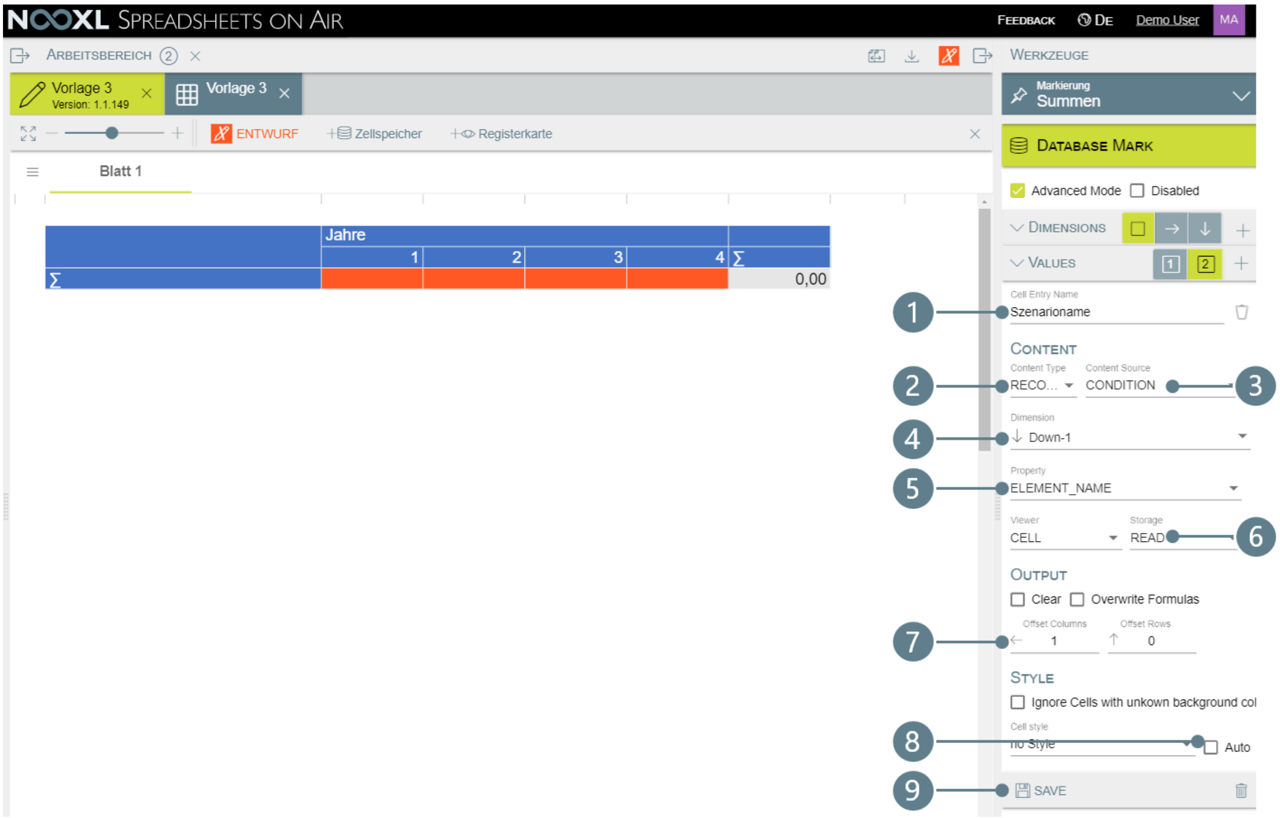
☑ Advanced Mode ☐ Disabled

Cell Entry Name
Summen

	Jahre				
	1	2	3	4	Σ
Σ					0,00

Make the following entries for the created value range:

1. Cell Entry Name: scenario name
2. Content Type: RECORD
3. Content Source: CONDITION
4. Dimension: ↓ Down-1
5. Property: ELEMENT_NAME
6. Storage: READ
7. Offset Columns: 1
8. Cell style: remove the check mark for Auto
9. Save changes by clicking on Save



	Jahre				
	1	2	3	4	∑
∑					0,00

☑ Advanced Mode ☐ Disabled

DIMENSIONS

VALUES

Cell Entry Name: Szenarioname

CONTENT

Content Type: RECO... Content Source: CONDITION

Dimension: Down-1

Property: ELEMENT_NAME

Viewer: CELL Storage: READ

OUTPUT

☐ Clear ☐ Overwrite Formulas

Offset Columns: 1 Offset Rows: 0

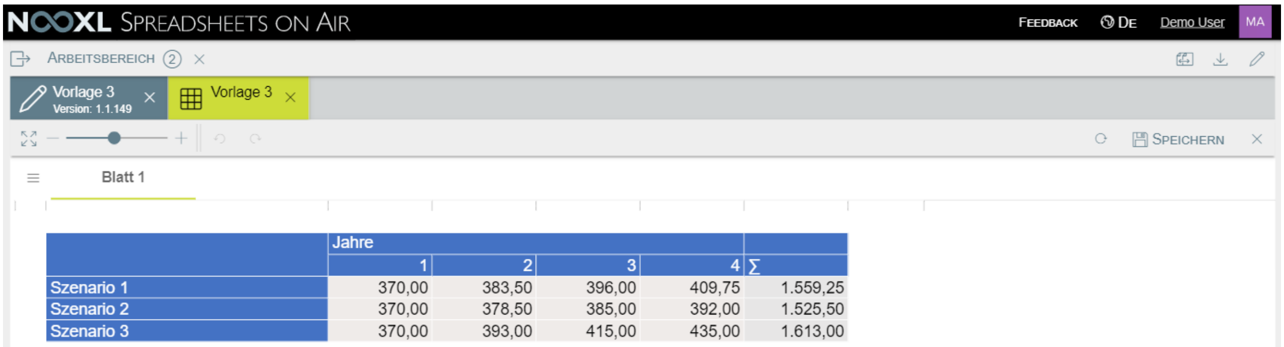
STYLE

☐ Ignore Cells with unkown background col

Cell style: no Style ☐ Auto

SAVE

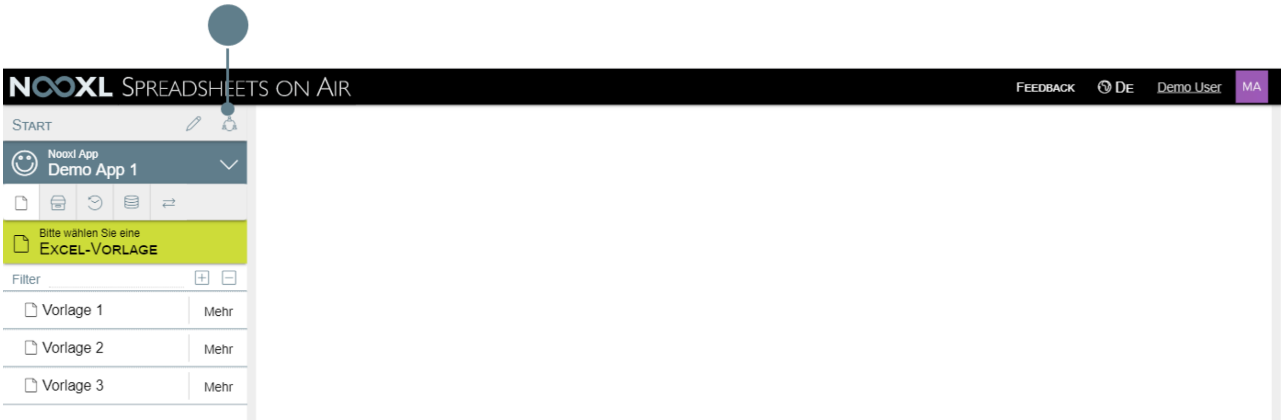
If template 3 is now reloaded, the result looks like this.



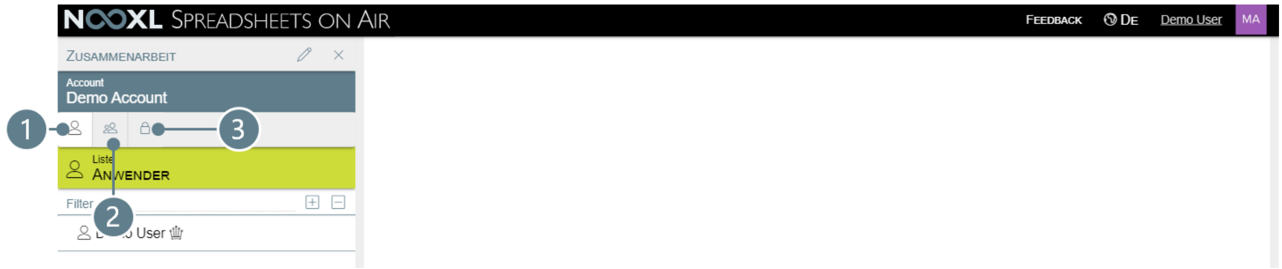
	Jahre				
	1	2	3	4	∑
Szenario 1	370,00	383,50	396,00	409,75	1.559,25
Szenario 2	370,00	378,50	385,00	392,00	1.525,50
Szenario 3	370,00	393,00	415,00	435,00	1.613,00

2.2.5 Set permissions

The permissions for the apps are set in the "Collaboration" section.



On three tabs you have the possibility to store users (1), groups (2) and the respective permissions for users and/or groups (3).

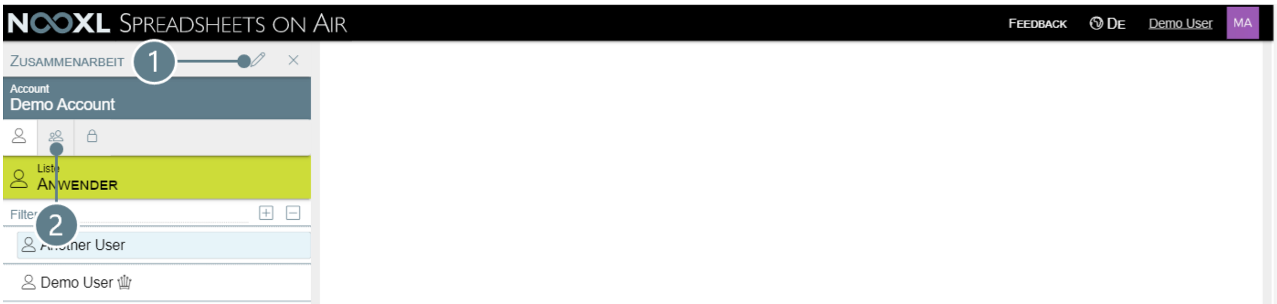


ⓘ For the following steps we assume that you already have a second user (siehe Seite 90) in your app and want to authorize this user now.

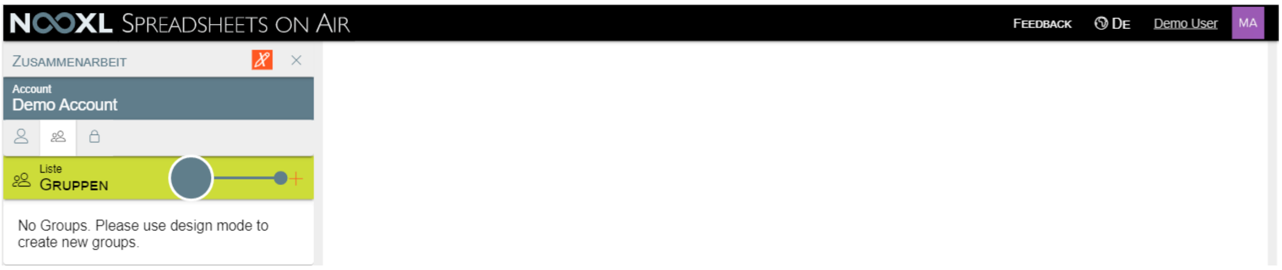
Create a group and add users to it

We will not give the rights directly to the user, but we will create a group beforehand and authorize it so that the assigned rights are "reusable" in case a second user is added to the app who should have the same rights.

First activate the design mode (1) and then switch to the tab for groups (2) in the collaboration area.

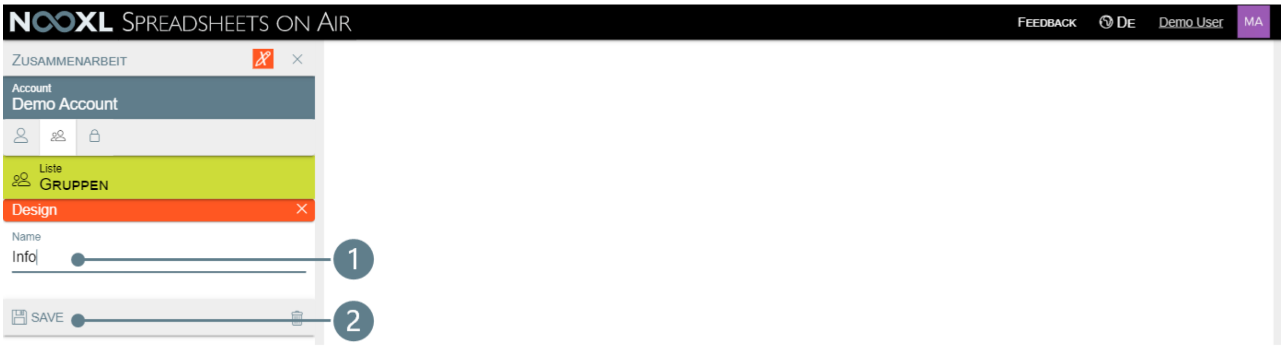


To create a new group, click on the red "+".



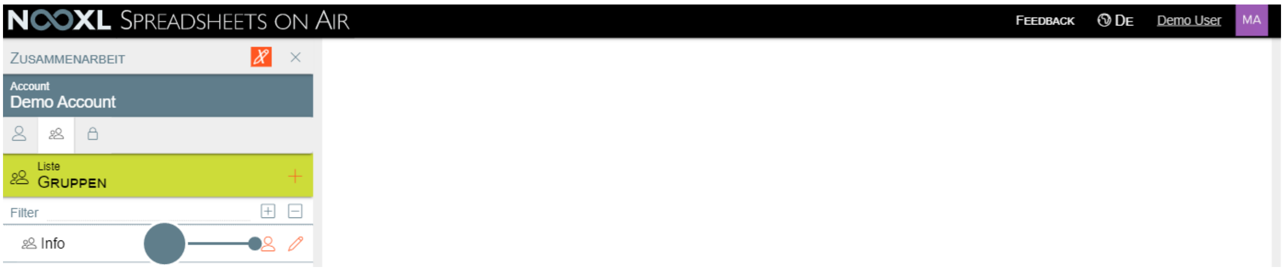
No Groups. Please use design mode to create new groups.

Name the group "Info" (1) and click Save (2).



Name
Info

Click on the button "Add or remove users".

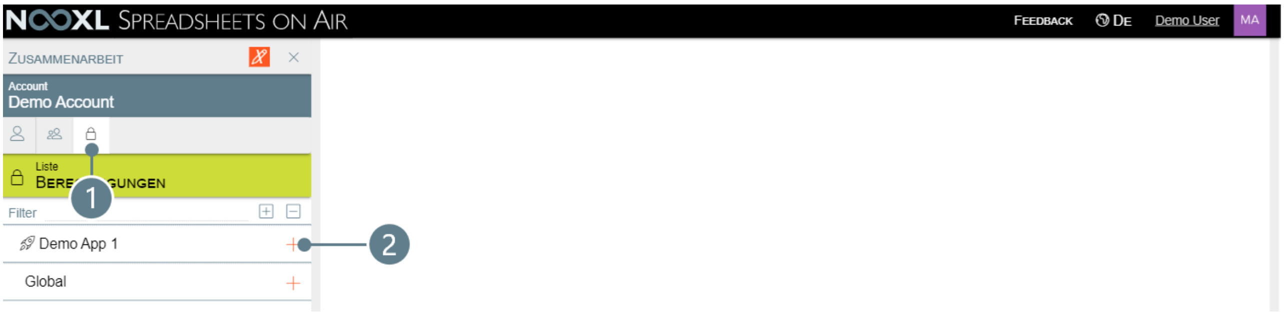


Select the user to be assigned to the group (1) and then click on "↑" to save the setting (2).

Set permissions

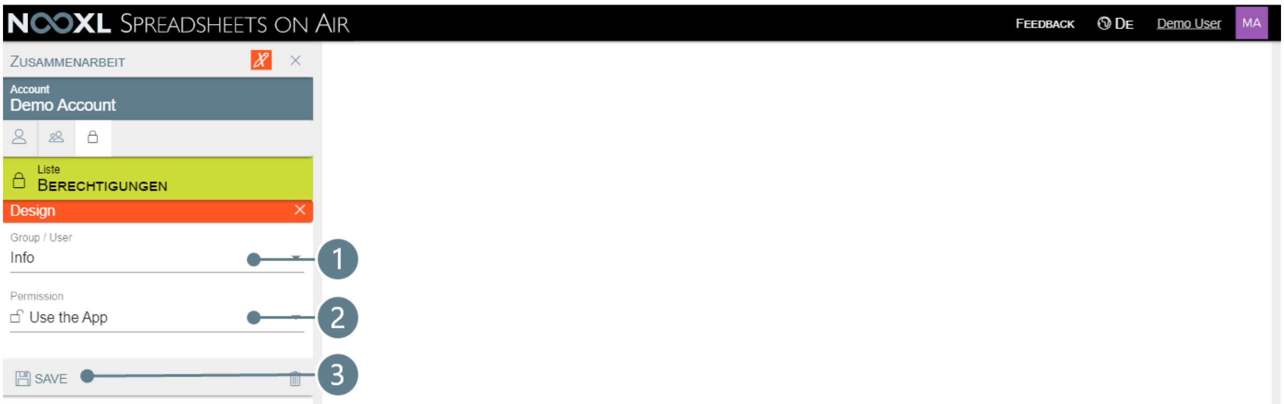
To now grant the group permissions in the app, switch to the "Permissions" tab (1) and click on the red "+" to the right of your app (2).

> ⓘ If you have several apps and want to authorize a group for all apps at the same time, you can give the rights under "Global".



First we give the user the permission to view our app. To do this, set the permissions as follows and click on Save (3):

1. Gruppe/Benutzer: Info
2. Erlaubnis: App → Verwenden Sie die App



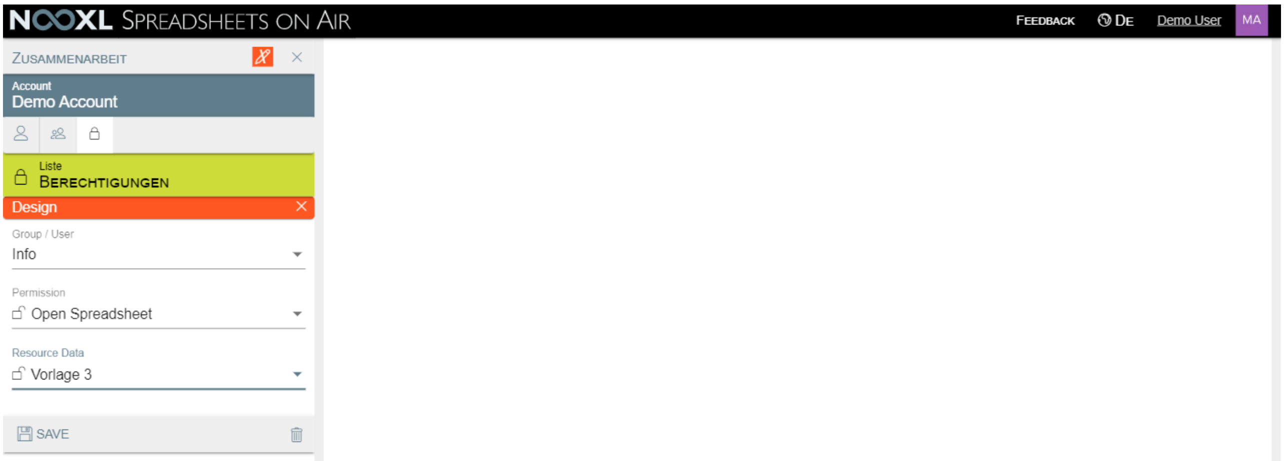
Group / User: Info

Permission: Use the App

With this authorization the user can already log in to their app, but does not see templates or similar.

Next, we still authorize the user to see our template 3 with the totals rows. To do this, click again on the red "+" next to the app and set the permissions as follows

1. Group/ User: Info
2. Permission: Spreadsheet → Open Spreadsheet
3. Resource Data: Template 3

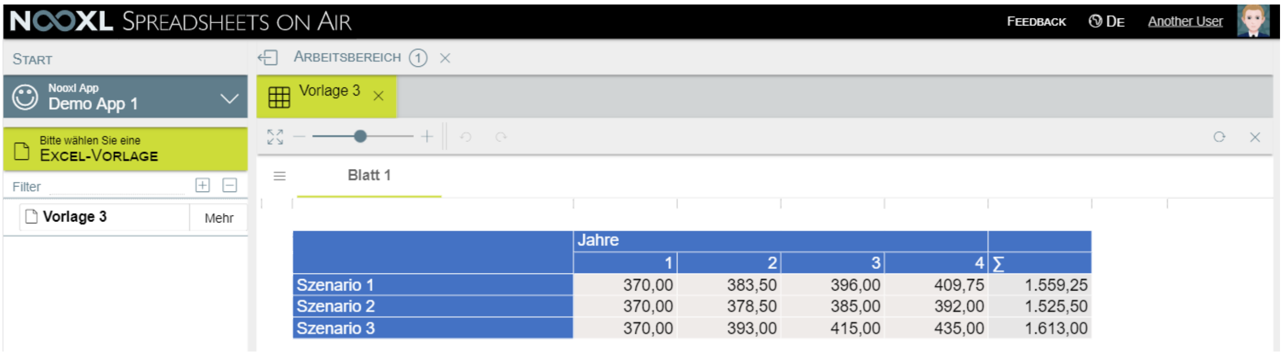


Group / User: Info

Permission: Open Spreadsheet

Resource Data: Vorlage 3

The user can now see the template in the navigation menu on the left and also view the data.

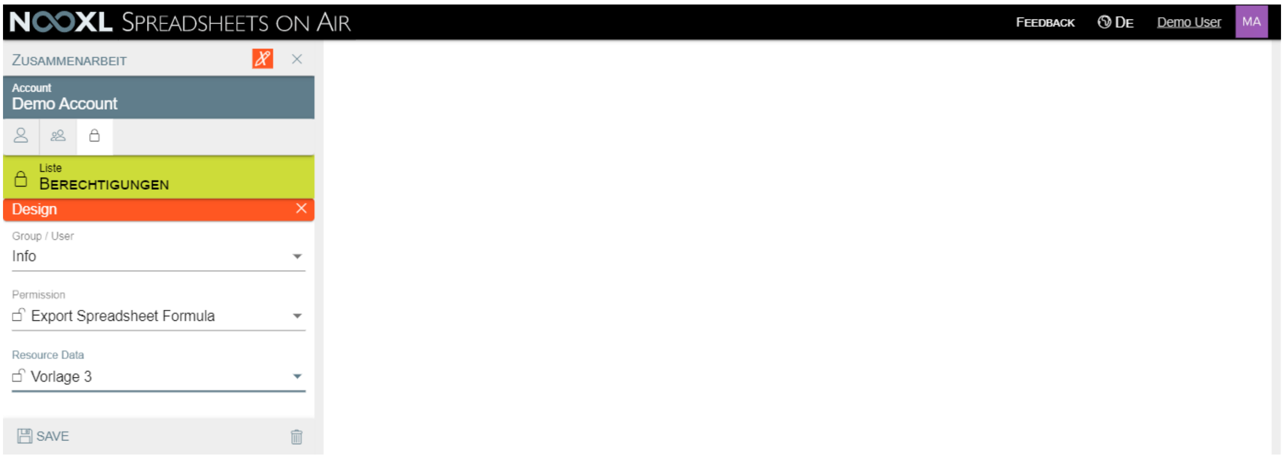


	Jahre				
	1	2	3	4	∑
Szenario 1	370,00	383,50	396,00	409,75	1.559,25
Szenario 2	370,00	378,50	385,00	392,00	1.525,50
Szenario 3	370,00	393,00	415,00	435,00	1.613,00

In addition, he should have the possibility to export the template to Excel in order to reuse the content.

To do this, create a third permission with the following contents:

1. Gruppe/Benutzer: Info
2. Erlaubnis: Tabellenkalkulation → Tabellenkalkulationsformel exportieren
3. Ressourcendaten: Vorlage 3

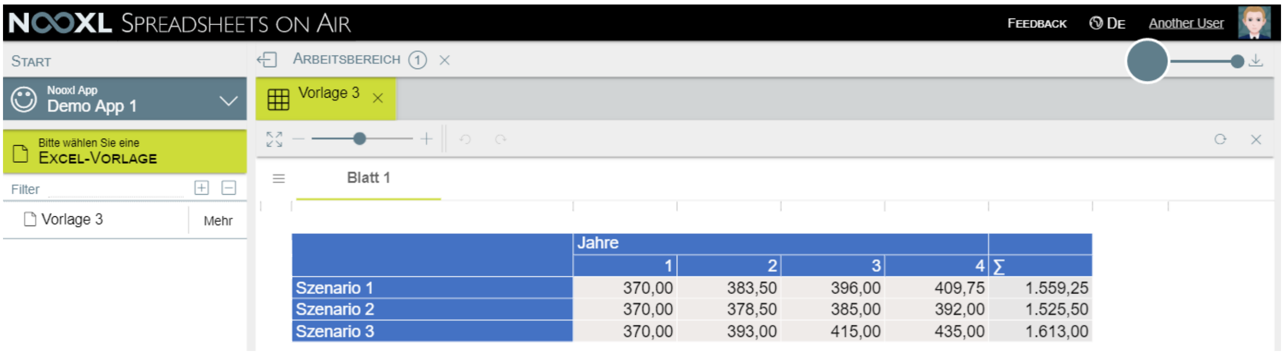


Group / User: Info

Permission: Export Spreadsheet Formula

Resource Data: Vorlage 3

Now the user also gets the "Export to Excel" button in the upper right corner of the template.



	Jahre				
	1	2	3	4	∑
Szenario 1	370,00	383,50	396,00	409,75	1.559,25
Szenario 2	370,00	378,50	385,00	392,00	1.525,50
Szenario 3	370,00	393,00	415,00	435,00	1.613,00

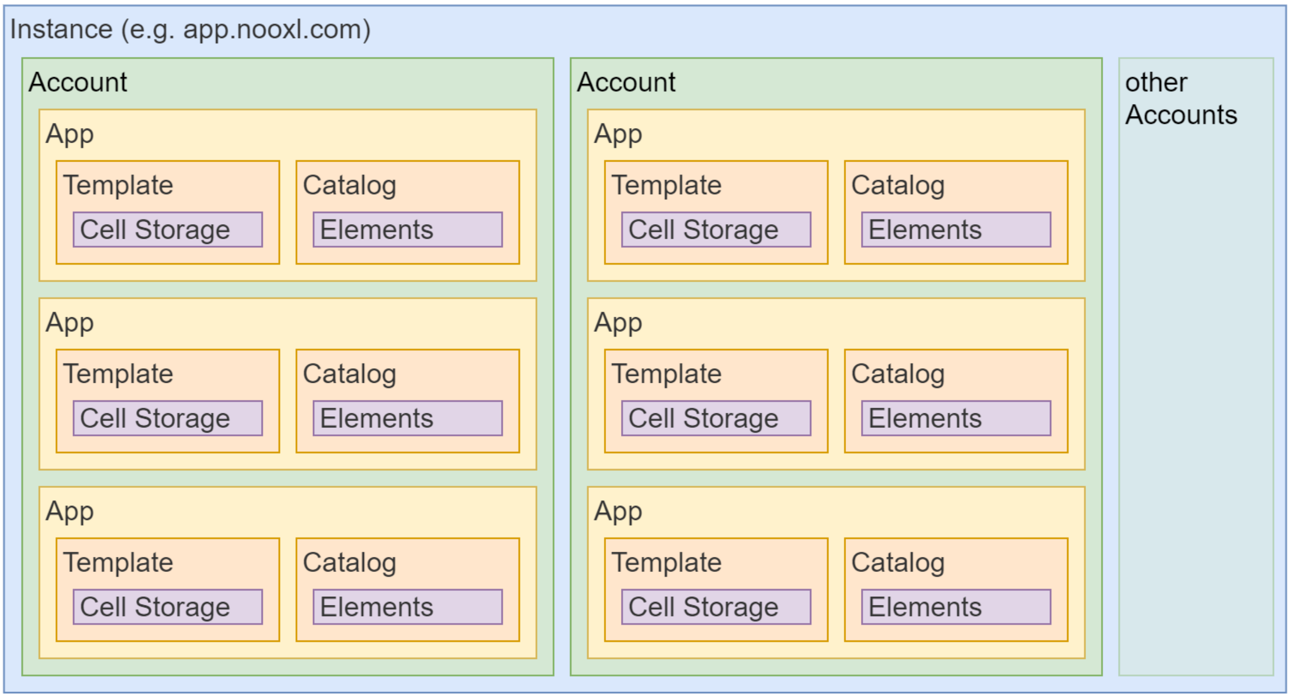
3 Documentation

The following sections highlight the various aspects of the use of Nooxl. Furthermore, the topic App Design with Nooxl is treated in more detail than it is the case in the chapter App Design Basics (siehe Seite 25).

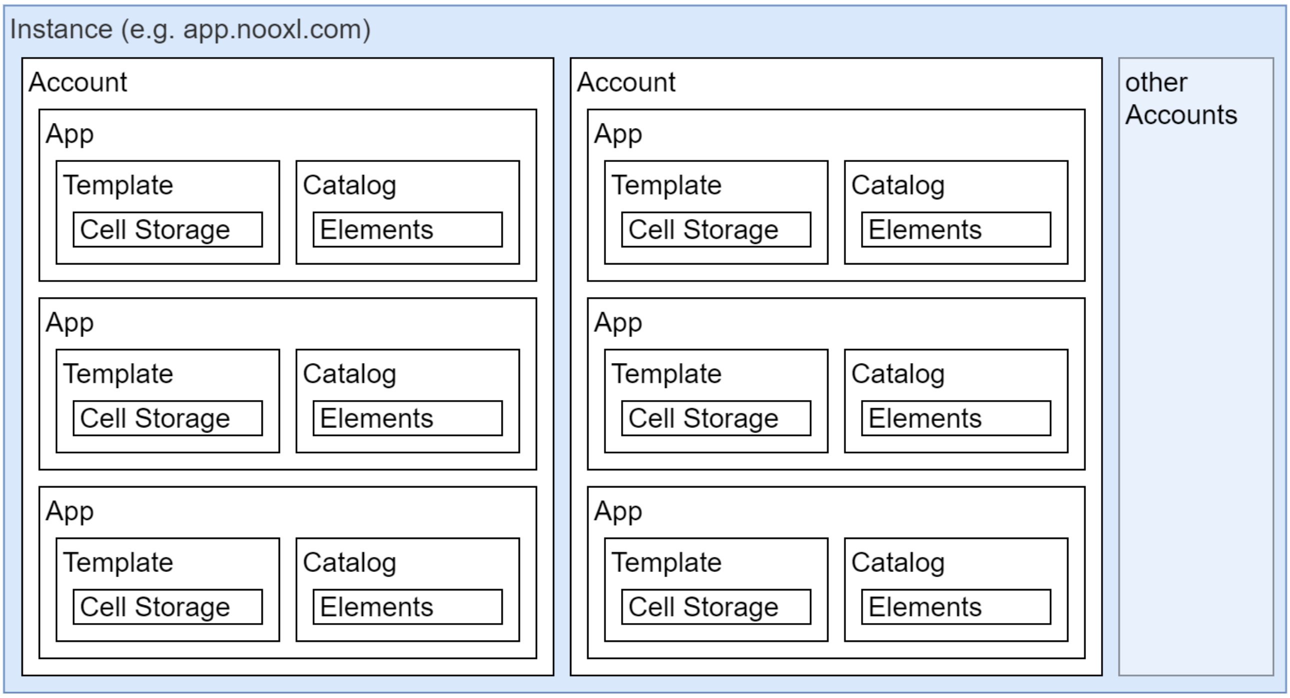
3.1 Content of the documentation

3.2 Overview

The following illustration gives a schematic overview of the different building blocks of Nooxl and how they interact. This schema is reused per section to illustrate where you are currently located.



3.3 Instances

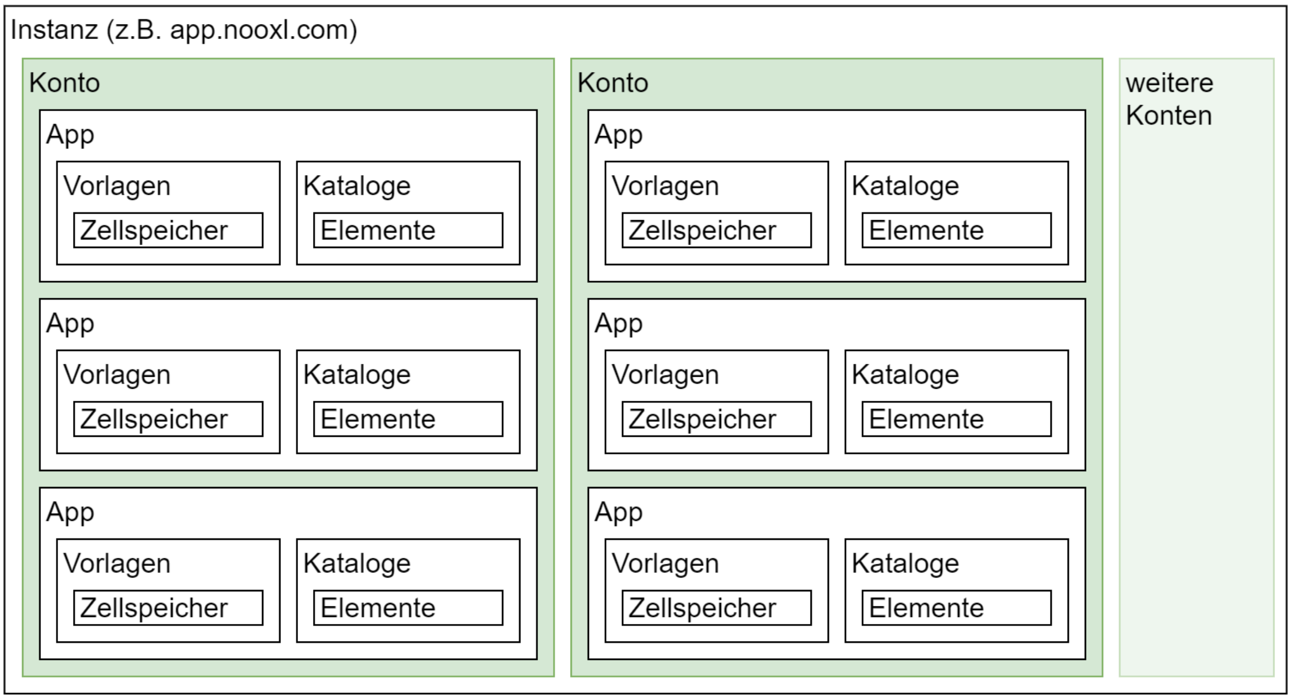


A Nooxl instance is accessed via a unique URL in the web browser, e.g. https://apps.nooxl.com. Instances can contain any number of accounts and these in turn can contain any number of apps with any number of templates. They therefore represent the highest logical order in Nooxl.

Interaction between instances is not possible, except copying existing apps from one instance to another.

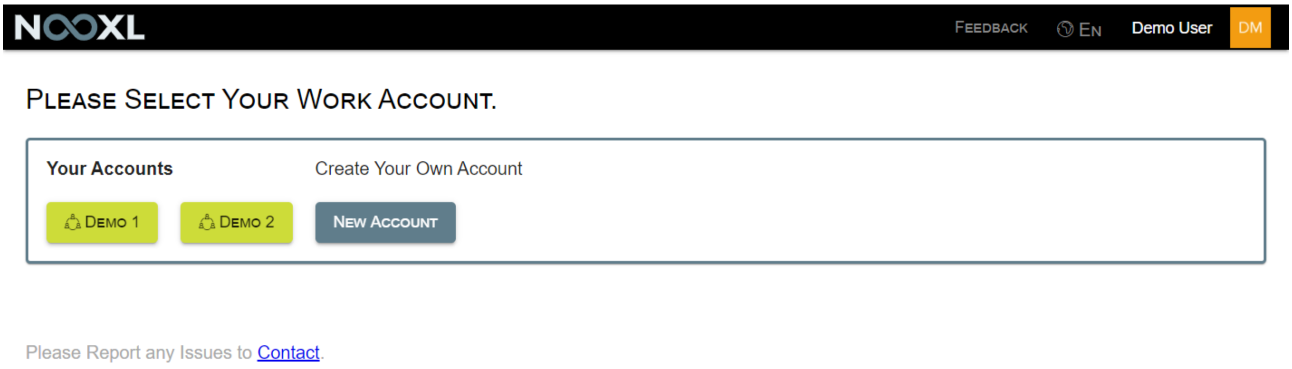
> ⓘ A Nooxl instance is not the same as a physical server. Several instances can run parallel on one server.
> Likewise, several instances can share a URL and can then be accessed via different ports.

3.4 Accounts



Accounts in Nooxl host the actual apps in which the users work. Each user in Nooxl has access to at least one account, but can be invited to additional accounts at any time by other users with the appropriate rights via the Collaboration area (siehe Seite 90).

If a user has access to multiple accounts or is admin for the instance he will see the following after login:



Please Select Your Work Account.

Your Accounts

Create Your Own Account

Please Report any Issues to Contact.

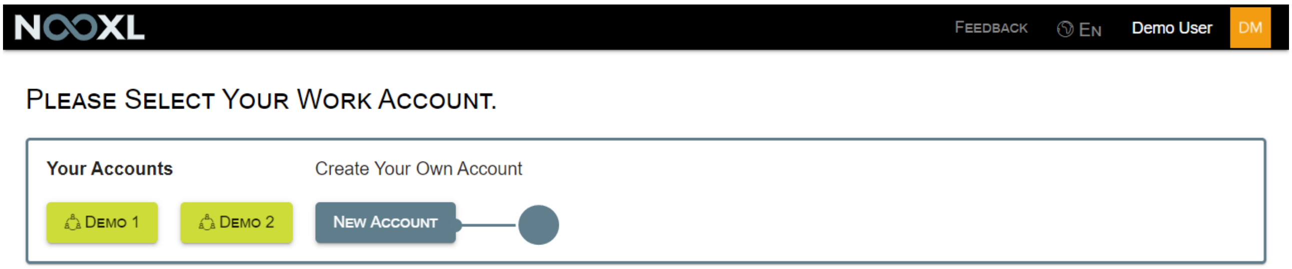
> ⓘ If the user has only access to one account and is not admin for the instance, Nooxl will automatically forward the user to the account.

3.4.1 Create a new account

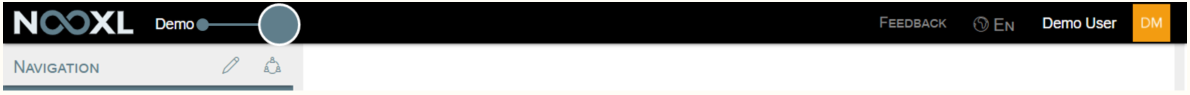
> ⓘ **Please note**

Depending on your permissions and the licensing your company choose, it is possible that you are not allowed to create new accounts.

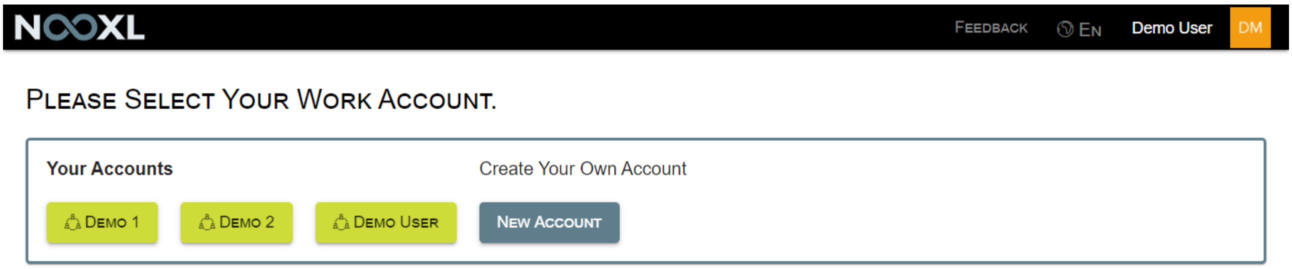
You can create new accounts right after you signed into Nooxl in the account overview. Here you find the button *New Account*.



⚠ When you are directed right to your App after you signed in, please click on the account name to get to the account overview.



After this you will find an additional Account with your name in the overview.



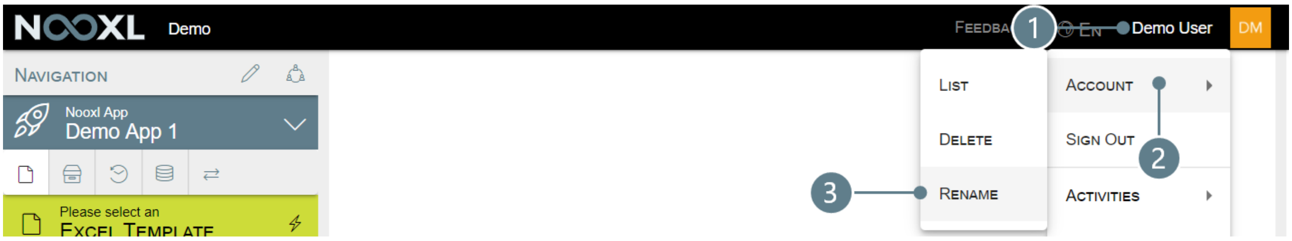
ⓘ When you create yet another account it will have your name followed by "#1".

Next steps

Next you might want to rename the new account (siehe Seite 80).

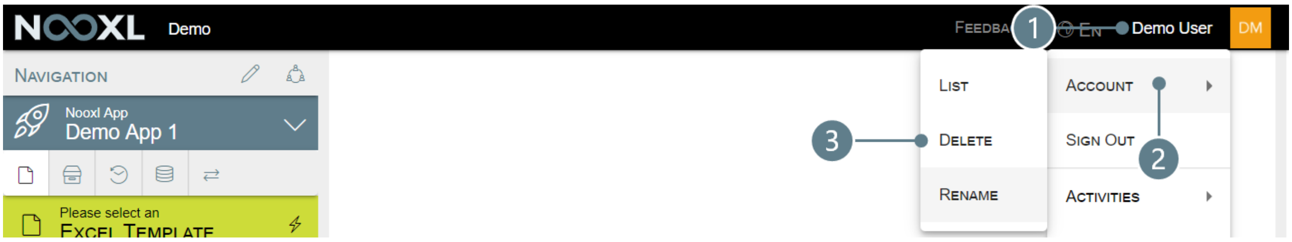
3.4.2 Edit account details

Currently you can only rename your account. To do this, you have to click on your user name **(1)**. In the menu hover your mouse over Account **(2)** and then choose Rename **(3)**.



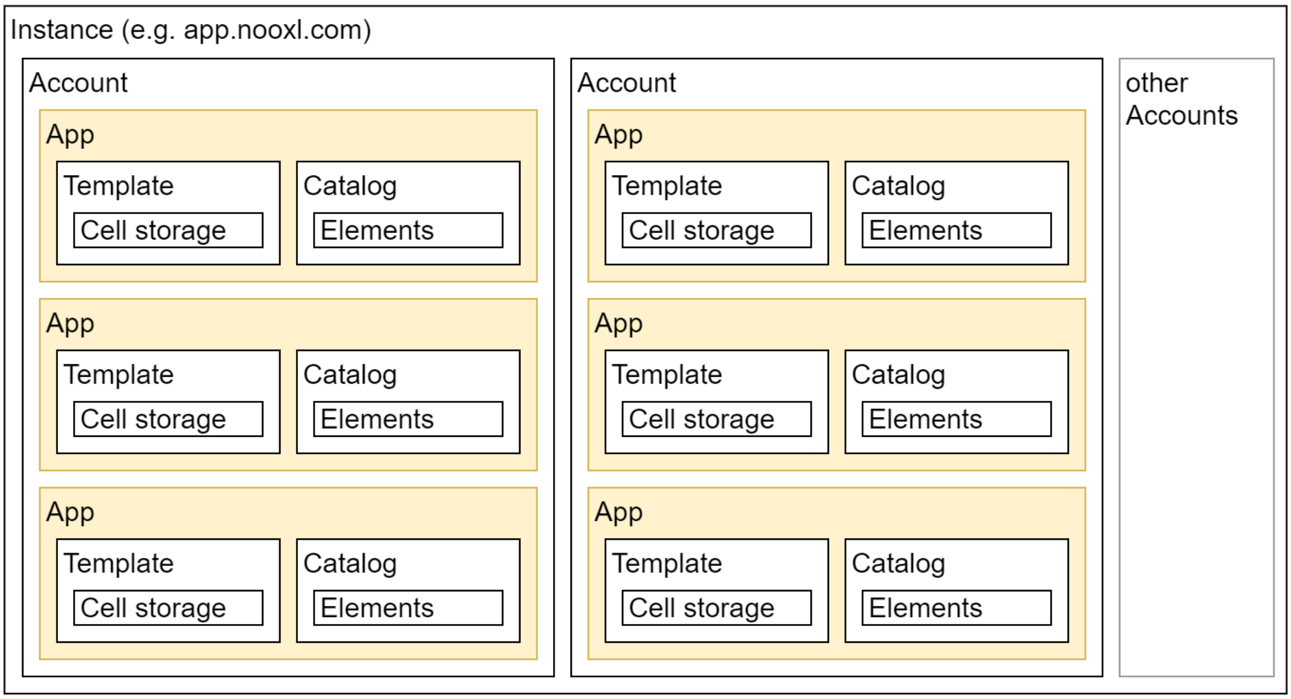
3.4.3 Delete an account

To delete an account, click on your user name **(1)**. In the menu hover your mouse over Account **(2)** and choose Delete **(3)**.

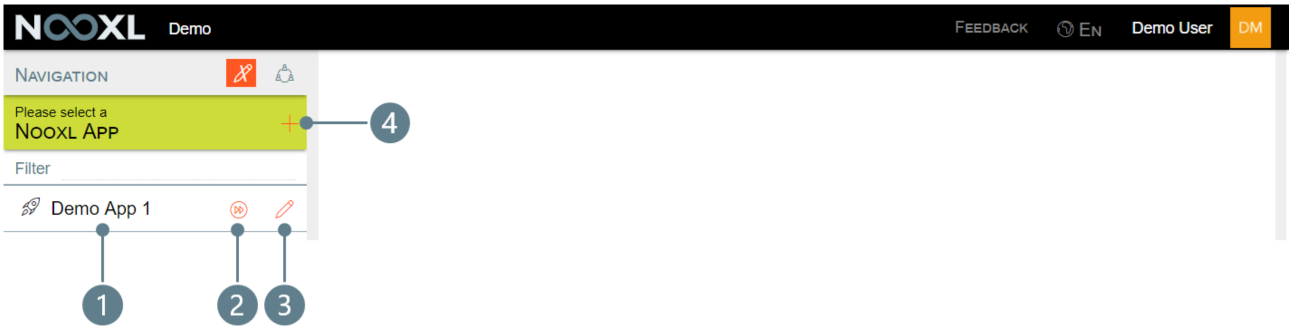


⚠ You can only delete accounts without any Apps. So make sure to delete all apps (siehe Seite 86) prior to deleting an account.

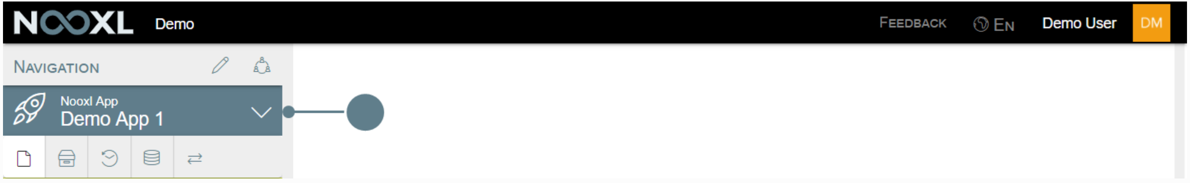
3.5 Apps



Apps combine different templates and normally form something like a programm. Once you logged into an account you see the App overview where you can open an App from the list **(1)**. As soon as you entered the design mode you can also copy an App (siehe Seite 84) **(2)**, edit (siehe Seite 83)or delete an App (siehe Seite 86) **(3)** or create a new App (siehe Seite 82) **(4)**.



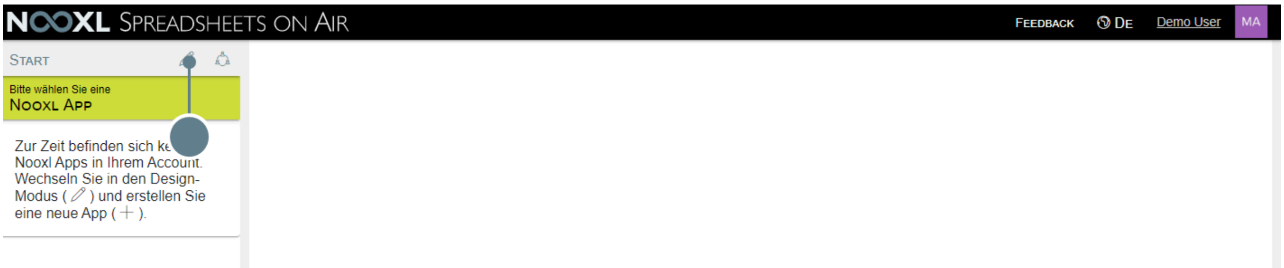
ⓘ **If you do not see this screen after you entered your Account**, only a single App exists and Nooxl automatically transferred to this App. If this is the case, just click on the App Name in the left navigation pane.



3.5.1 Create an App

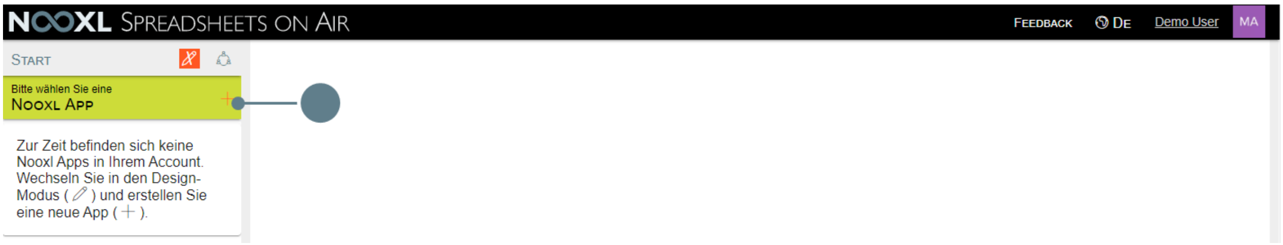
After you have logged in to Nooxl, you will see in the left navigation an overview of the already existing apps or a note that there are currently no apps in your account and an app should be created accordingly.

To do this, **click on the button with the pencil icon** to switch to draft mode.



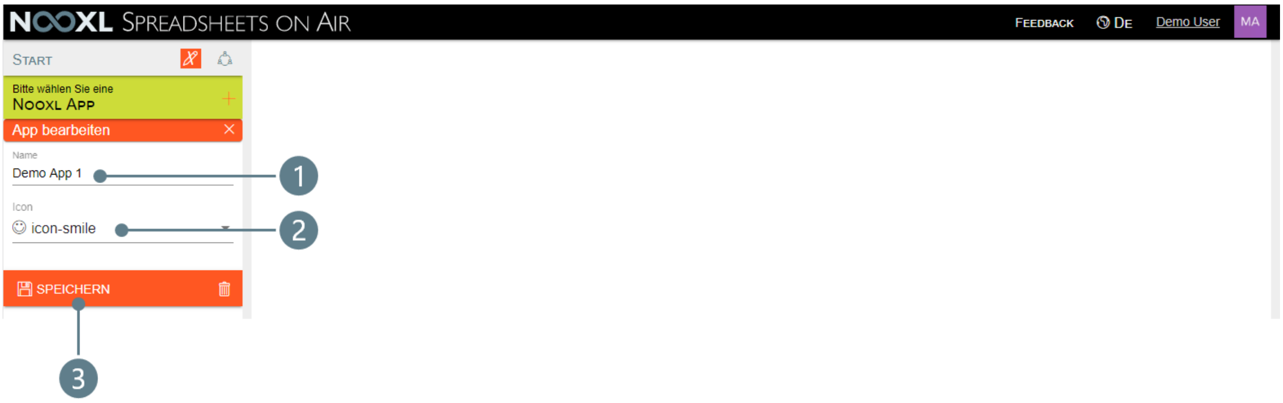
Zur Zeit befinden sich ke Nooxl Apps in Ihrem Account. Wechseln Sie in den Design-Modus ( ) und erstellen Sie eine neue App (+).

In draft mode you have the possibility to create a new app in your account by **clicking on the red plus**.

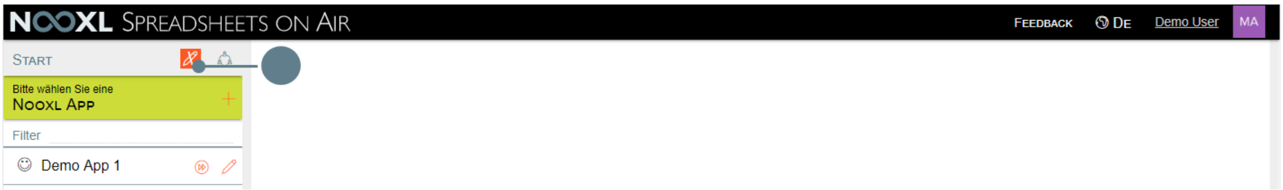


Zur Zeit befinden sich keine Nooxl Apps in Ihrem Account. Wechseln Sie in den Design-Modus ( ) und erstellen Sie eine neue App (+).

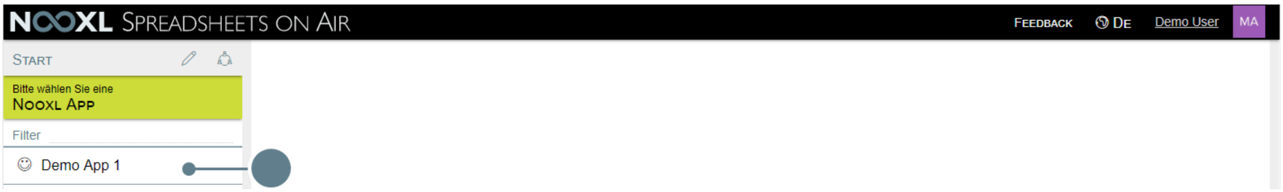
In the creation mask for new apps, you **assign** an app **name** (1), select an icon for your app (siehe Seite 306) (2) and then **save** (3) your entries.



After you are returned to the App Overview, **leave the draft mode** by clicking on the **red pen icon**.



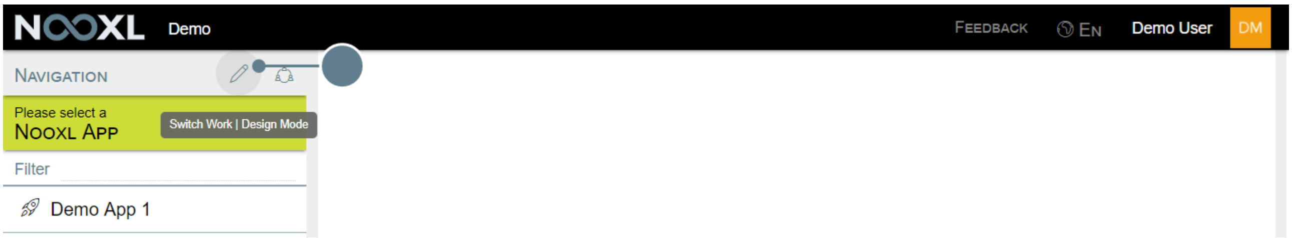
You can then **open your app** by clicking on the entry.



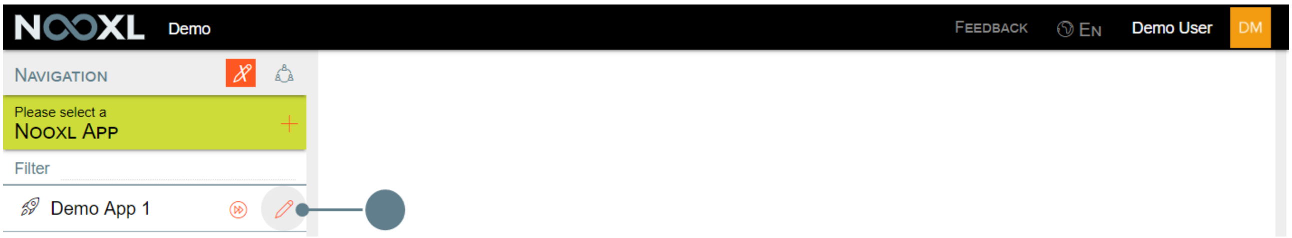
3.5.2 Edit an App

You can always customize the name and icon of an existing app.

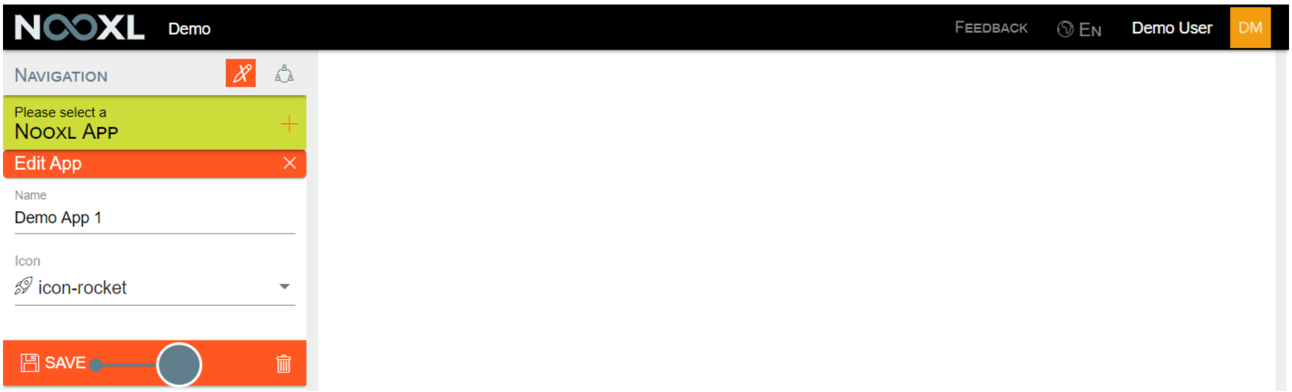
To do so, click on the pen to enter the design mode:



Then click on the red pen to the right of the app you want to edit:



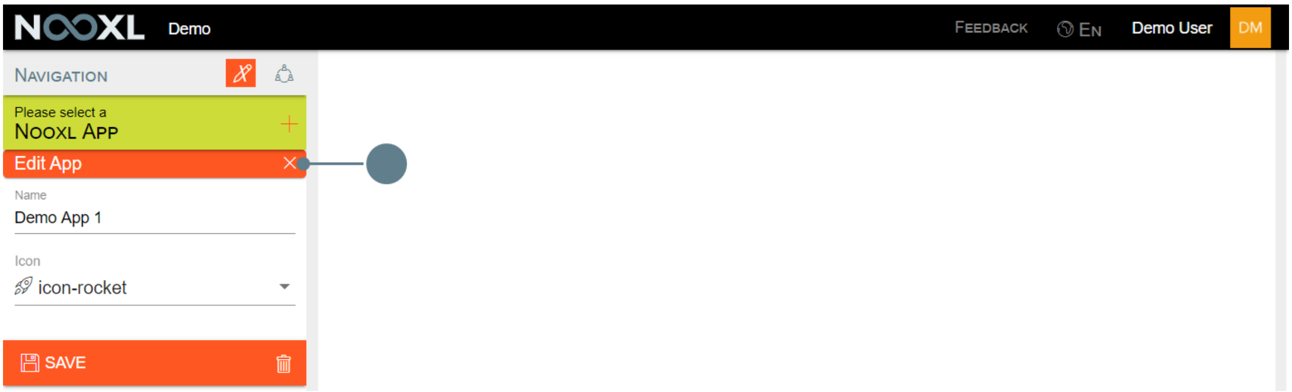
Make the desired changes to the name and icon (siehe Seite 306) and save them by clicking **Save**:



Name
Demo App 1

Icon
icon-rocket

To cancel your edit attempt click on the **x**.



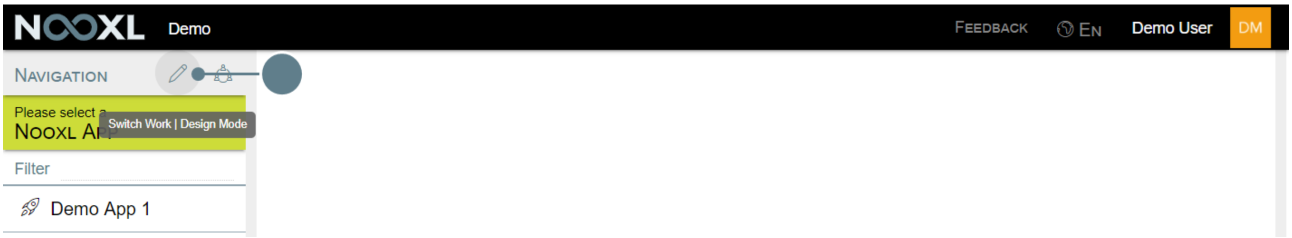
Name
Demo App 1

Icon
icon-rocket

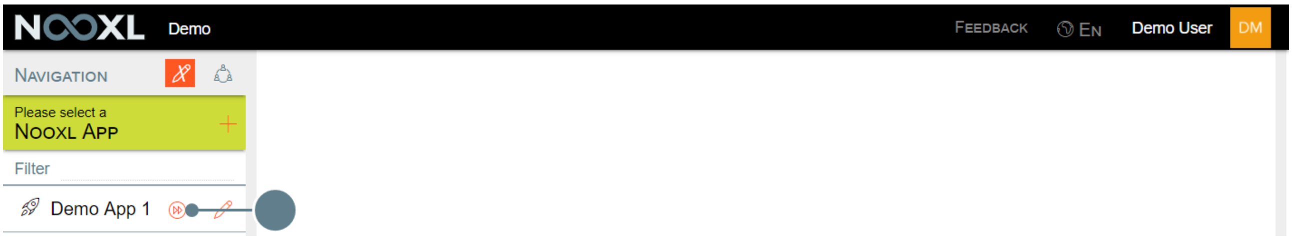
3.5.3 Copy/ clone an App

You can copy apps including all content and data at any time. This is useful, for example, if you need to quickly set up a training environment for employees that is separate from the productive environment to prevent accidental data loss.

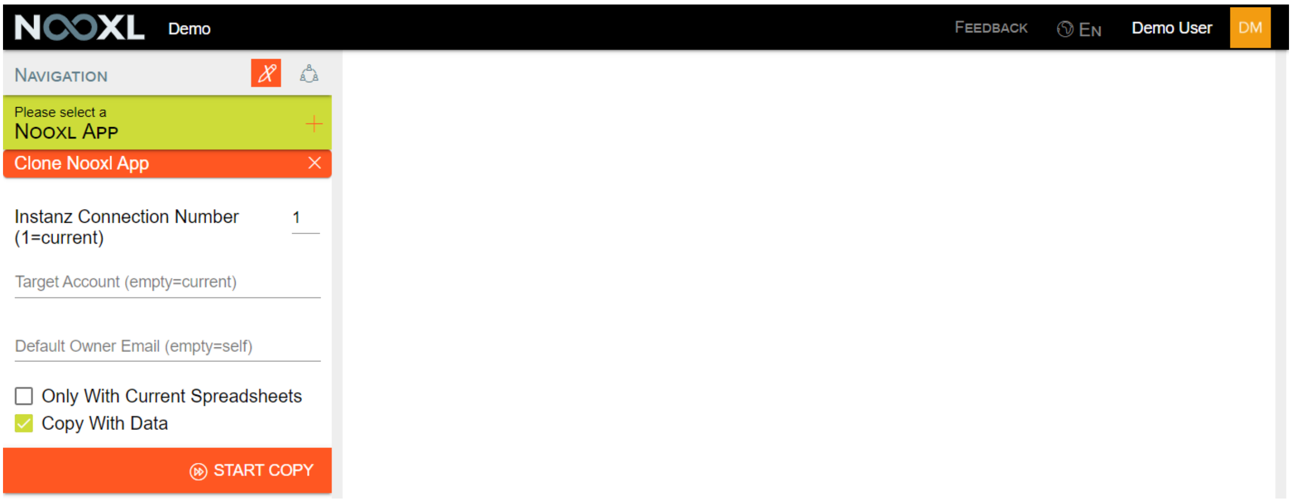
To copy an app, click on the pencil to enter the design mode.



Then you can open the mask for copying the complete Nooxl app by clicking on the ⏩ icon to the right of the app.



Clone Nooxl App properties



Instanz Connection Number (1=current) 1

Target Account (empty=current)

Default Owner Email (empty=self)

□ Only With Current Spreadsheets

☑ Copy With Data

START COPY

Instance Connection Number (1=current)

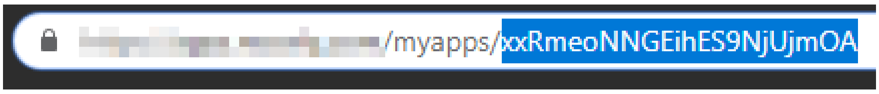
If the app is to be copied to another instance (for example from production server to a test server) of Nooxl, the connection number of the target instance must be specified here.

You get the connection number from the configuration file of the current instance.

Target Account (empty=current)

The ID of the target account, if the app is to be copied to another account.

The ID of an account can be found in the browser URL after `myapps/`



[redacted]/myapps/xxRmeoNNGEihES9NjUjmOA

Default Owner Email (empty=self)

The email address of the user who is to be the owner of the app. If none is given, the current user is stored.

Only With Current Spreadhseets

If this option is selected, only the latest versions of all templates are copied to the new app.

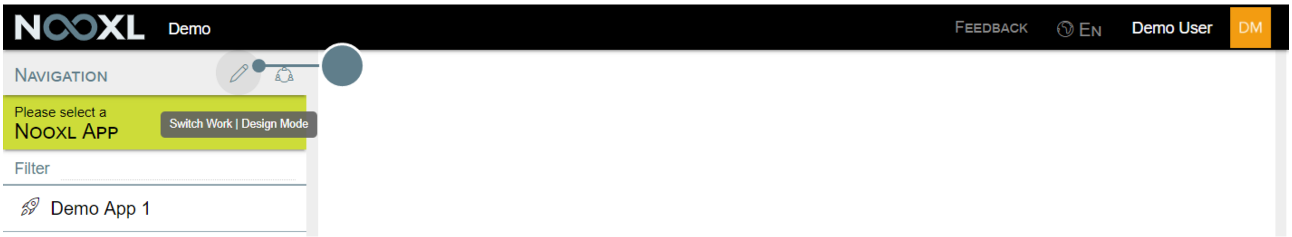
Copy With Data

If this option is selected, all data sets are copied as well.

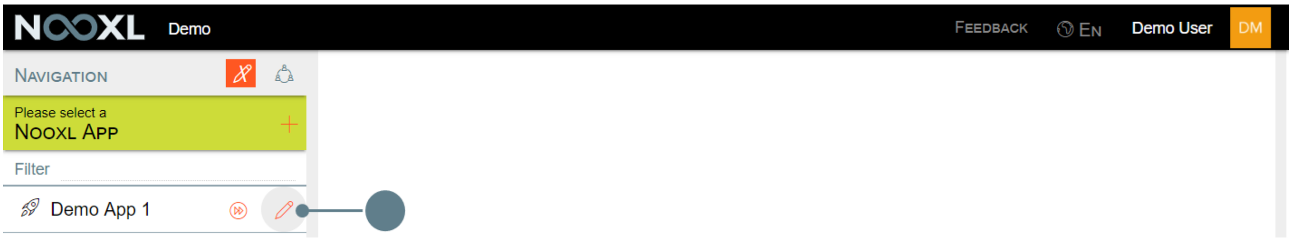
ⓘ Catalogs, catalog elements and selections are copied even if this option is disabled.

3.5.4 Delete an App

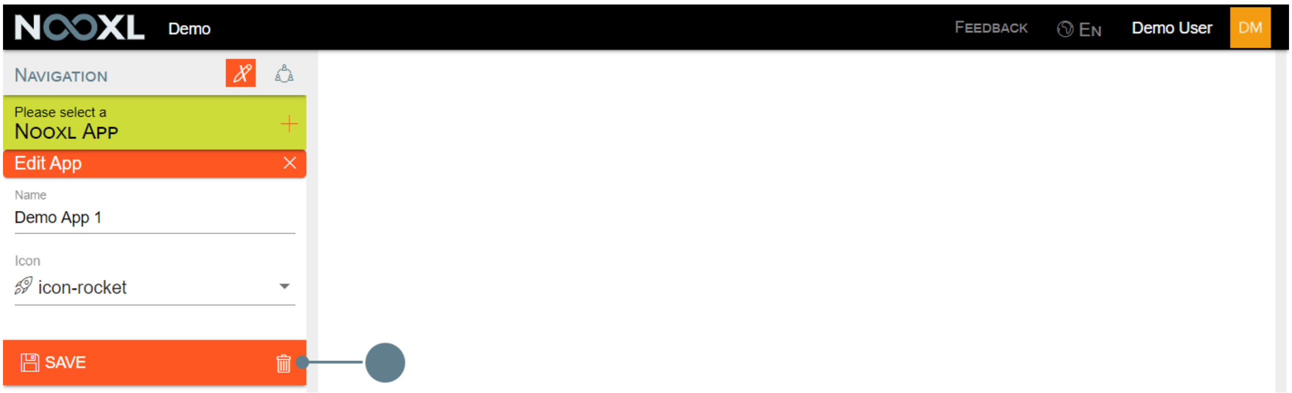
To delete an existing app, click on the pen to enter the design mode.



Then click on the red pen to the right of the app you want to delete.



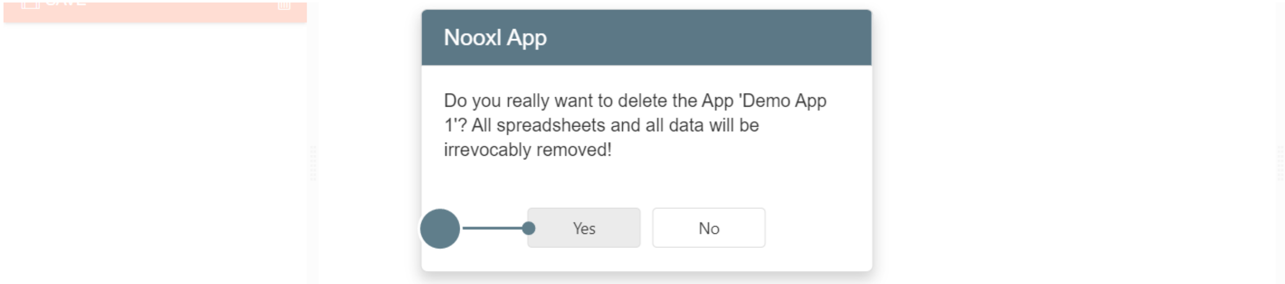
Click on the trash can on the bottom right.



Name
Demo App 1

Icon
icon-rocket

Confirm the final deletion.


Nooxl App

Do you really want to delete the App 'Demo App 1'? All spreadsheets and all data will be irrevocably removed!

3.6 Roles and authorization

In Nooxl there are the following standard roles, with descending rights:

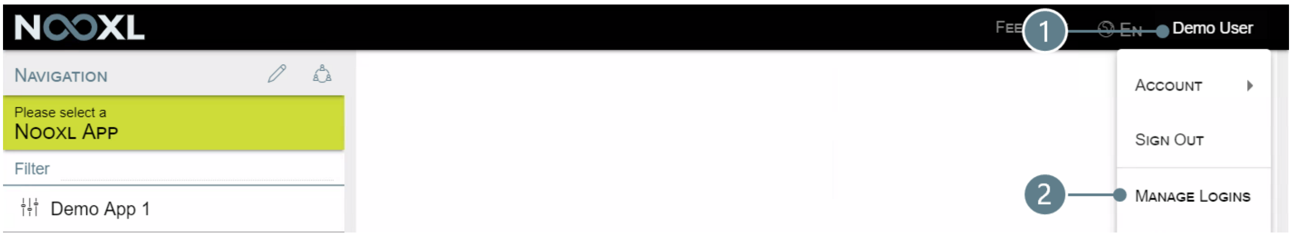
Role	**Rights**
Account Owner	Is the person who created an account, or for whom an account was created. The account owner has all rights within this account: • he can create new apps (siehe Seite 82) and change (design) existing ones, including deleting an App (siehe Seite 86) • he can create (siehe Seite 90) and manage users (siehe Seite 97) in his account ⓘ The Account Owner can never be deprived of admin rights, nor can his account be disabled. A hostile takeover of an account by an admin is therefore not possible.
Admin	Has the same permissions as the account owner. An Admin Role can be withdrawn at any time by other Admins or the Account Owner. Admin users can also be disabled.
User	Is a user who is neither account owner nor admin. He is therefore a user and his rights are controlled by the standard (siehe Seite 100)or workflow permissions (siehe Seite 106).

3.6.1 On premise user management (no auth0 and no Active Directory integration)

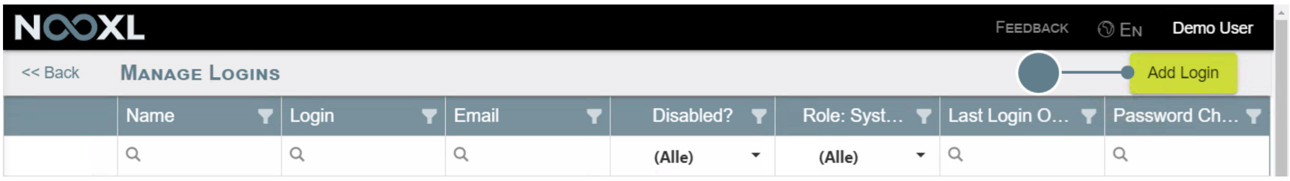
⚠ This article is only relevant to you, if you have a Nooxl on premise installation and do not use any of the supported authorization provider (auth0 and Microsoft Active Directory)

Create a new login

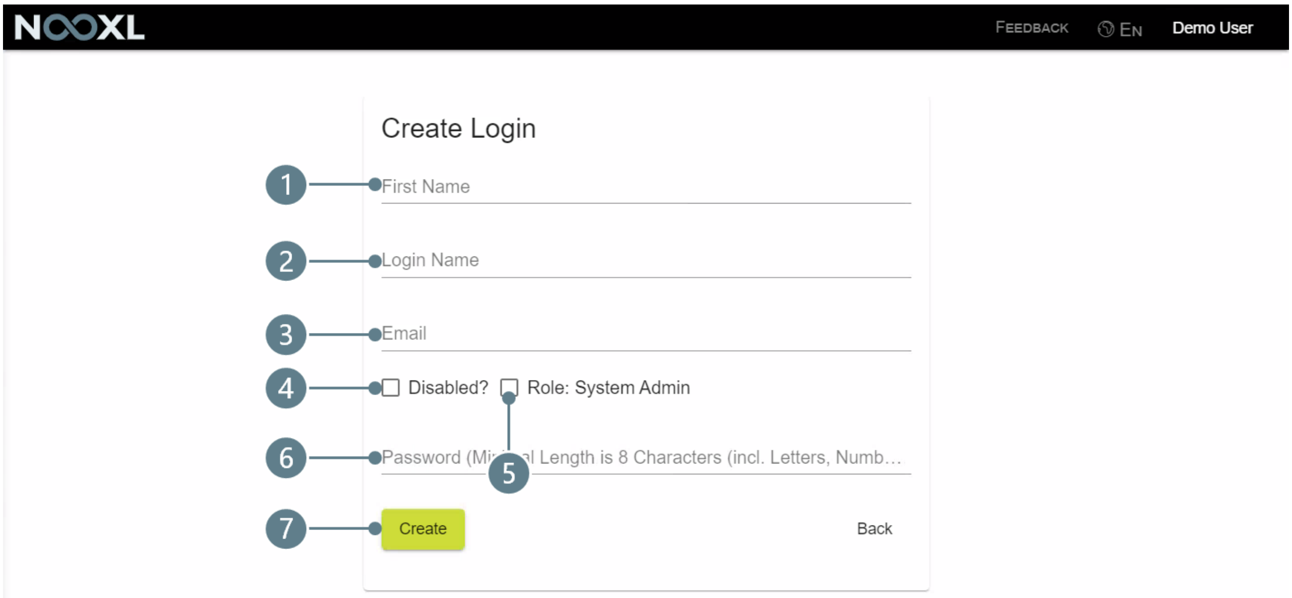
Click on you username **(1)** and then on Manage Logins **(2)**.



Next you see a list of all accounts. To create another one, click on **Add Login**.



In the next mask please provide the following information:



1	First Name	Display name of the user in the system.
2	Login Name	Username used to log into Nooxl. This is most of the time the mail address as well.
3	Email	Mail address of the user.
4	Disabled	With this option you can disable the account.
5	Role: System Admin	Should the new account have System Admin rights?

6	Password	Initial Password for the login. ⓘ Users should change those passwords after the first login, but this is not enforced.

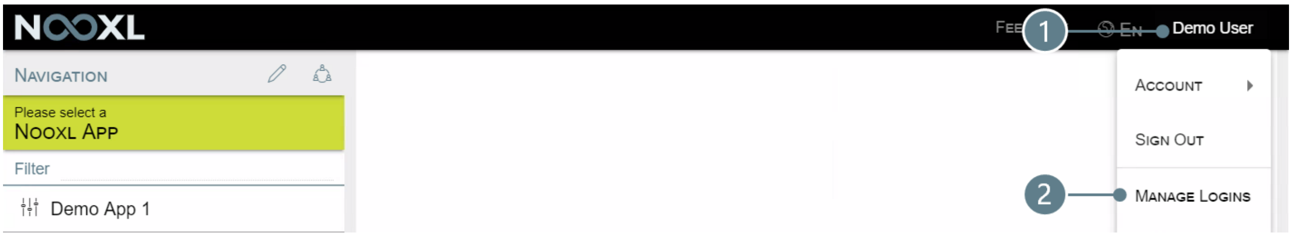
and then click on Create **(7)**.

In the next step you have to create the user in the standard user administration of Nooxl. How to do this is explained here: Create/invite user (siehe Seite 90)

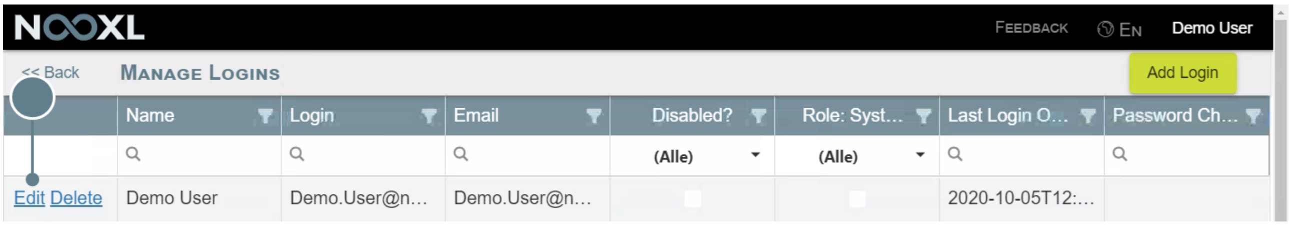
✓ The two pieces of information (Manage Logins and Collaboration) are linked via the e-mail address, which must therefore be identical.

Edit a login

Click on you username **(1)** and then on Manage Logins **(2)**.



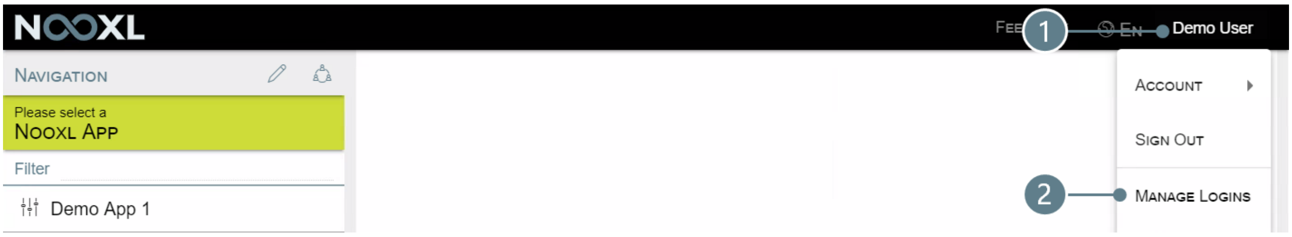
Next you see a list of all accounts. To edit a login click on **Edit** next to the login.



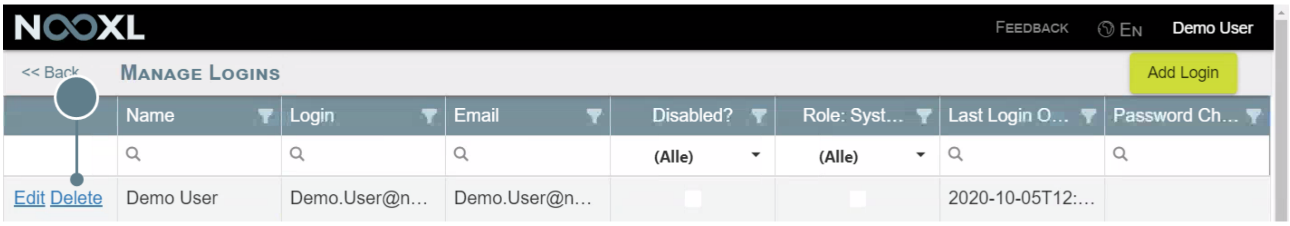
	Name	Login	Email	Disabled?	Role: Syst…	Last Login O…	Password Ch…
				(Alle)	(Alle)		
Edit Delete	Demo User	Demo.User@n…	Demo.User@n…	☐	☐	2020-10-05T12:…	

Delete a login

Click on you username **(1)** and then on Manage Logins **(2)**.



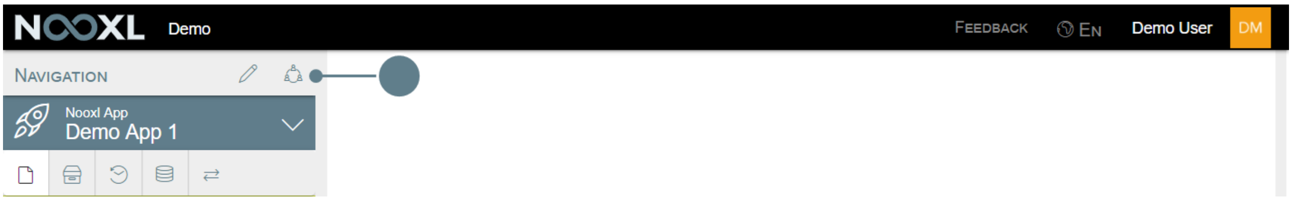
Next you see a list of all accounts. To delete a login click on **Delete** next to the login.



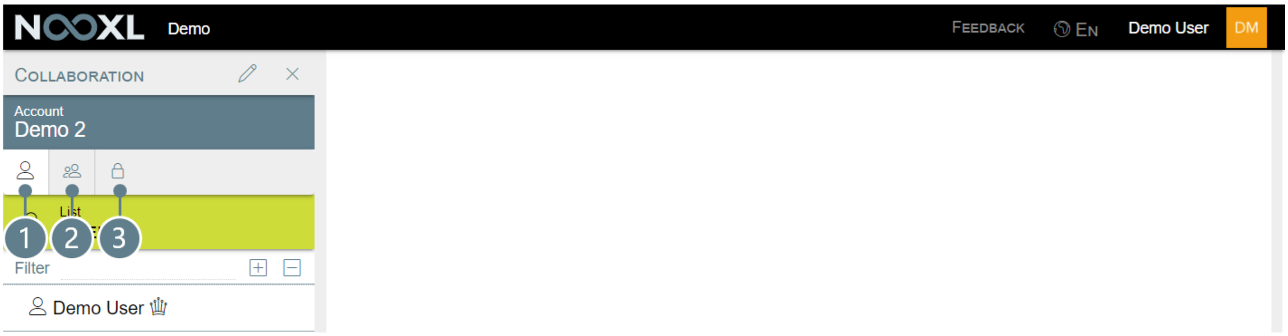
	Name	Login	Email	Disabled?	Role: Syst…	Last Login O…	Password Ch…
				(Alle)	(Alle)		
Edit Delete	Demo User	Demo.User@n…	Demo.User@n…	□	□	2020-10-05T12:…	

3.6.2 Collaboration (Standard permissions)

All standard permissions in Nooxl are granted in the collaboration area. To access the collaboration area click on the button in the left navigation pane.



On three tabs you have the possibility to define users (siehe Seite 90)**(1)**, groups (siehe Seite 94)**(2)** and the respective permissions (siehe Seite 97) for users and/or groups **(3)**.

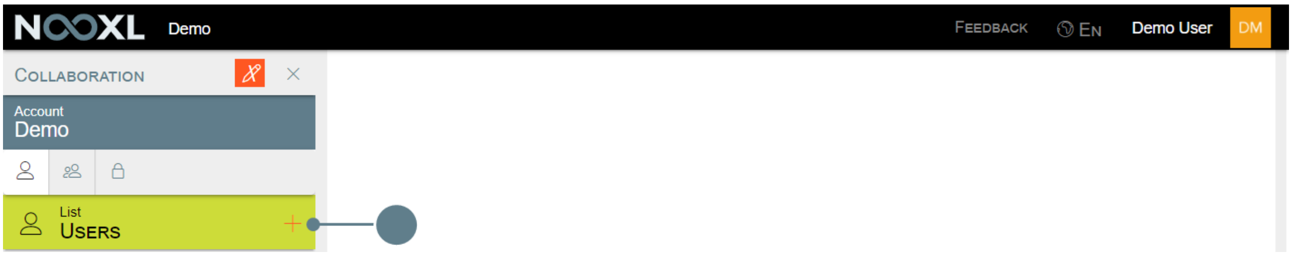


User

Go to the collaboration area (siehe Seite 90) and switch to the design mode.

Add an user

To create a new user, click on the red plus icon,

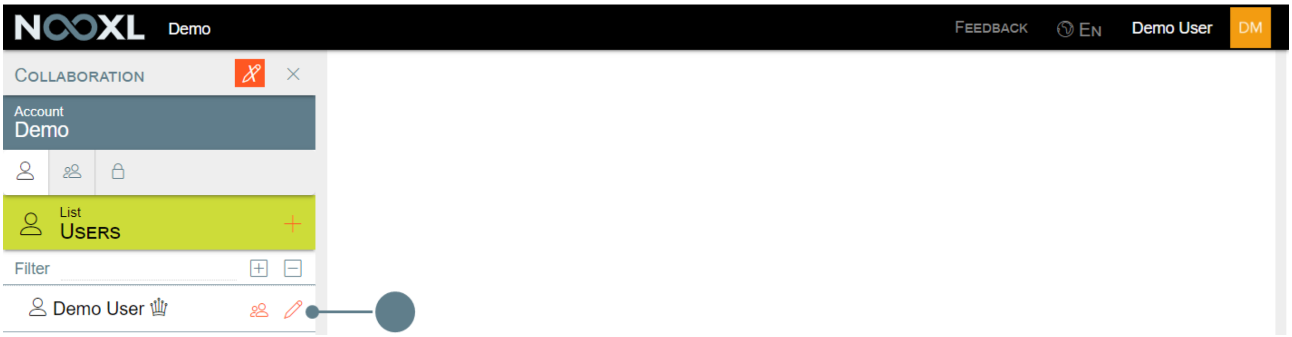


In the opening input mask you have to enter some information. All fields are described below (siehe Seite 93).

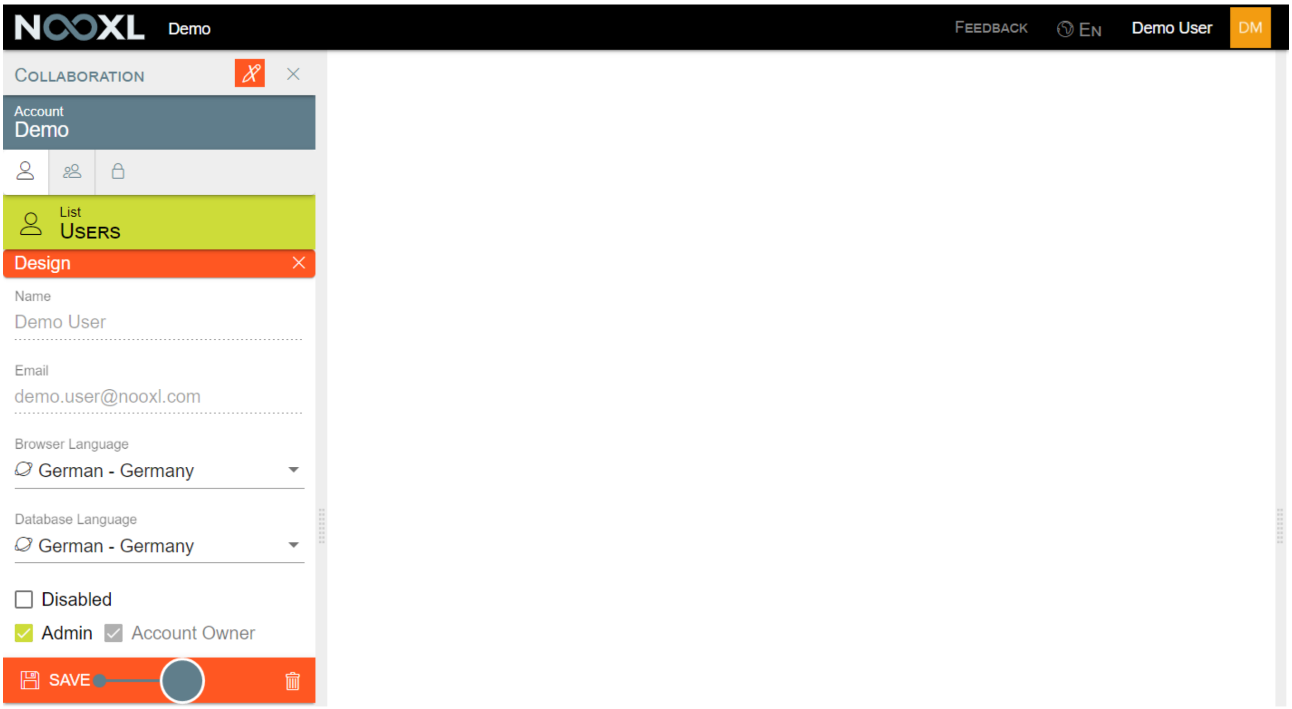
Finish your input and save it by clicking on the "SAVE" field.

Edit an user

To edit the properties of an existing user click on the ✎ next to his name.



Change the properties and save you changes by clicking on save.



Name
Demo User

Email
demo.user@nooxl.com

Browser Language
German - Germany

Database Language
German - Germany

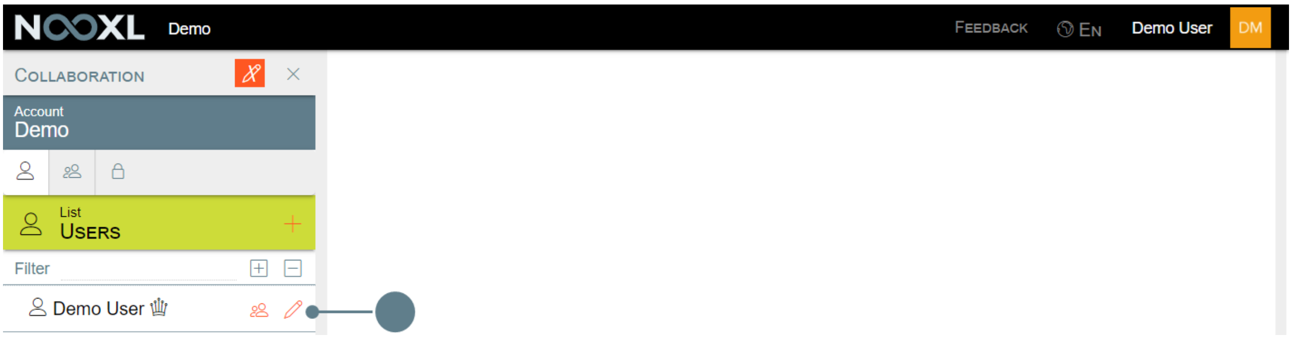
□ Disabled

☑ Admin ☑ Account Owner

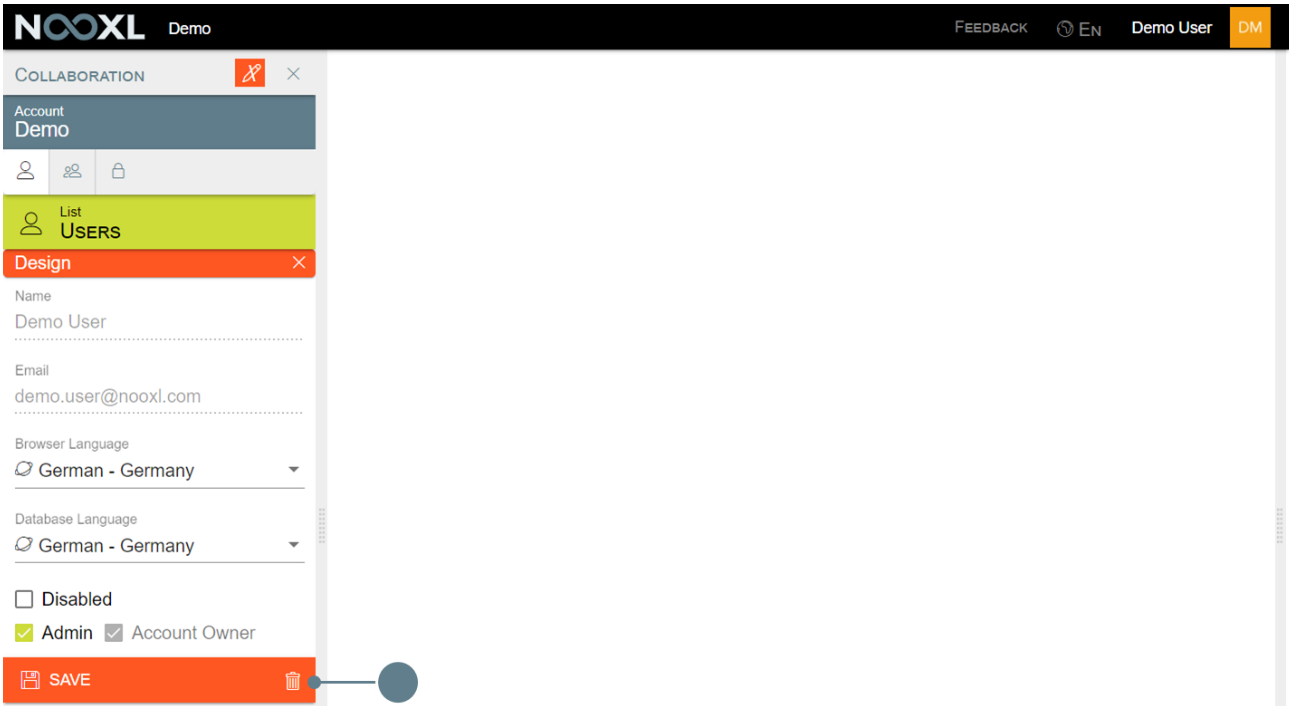
SAVE

Delete an user

To delete an existing user click on the ✎ next to his name.



To delete the user click on the **trash bin**.



Name: Demo User

Email: demo.user@nooxl.com

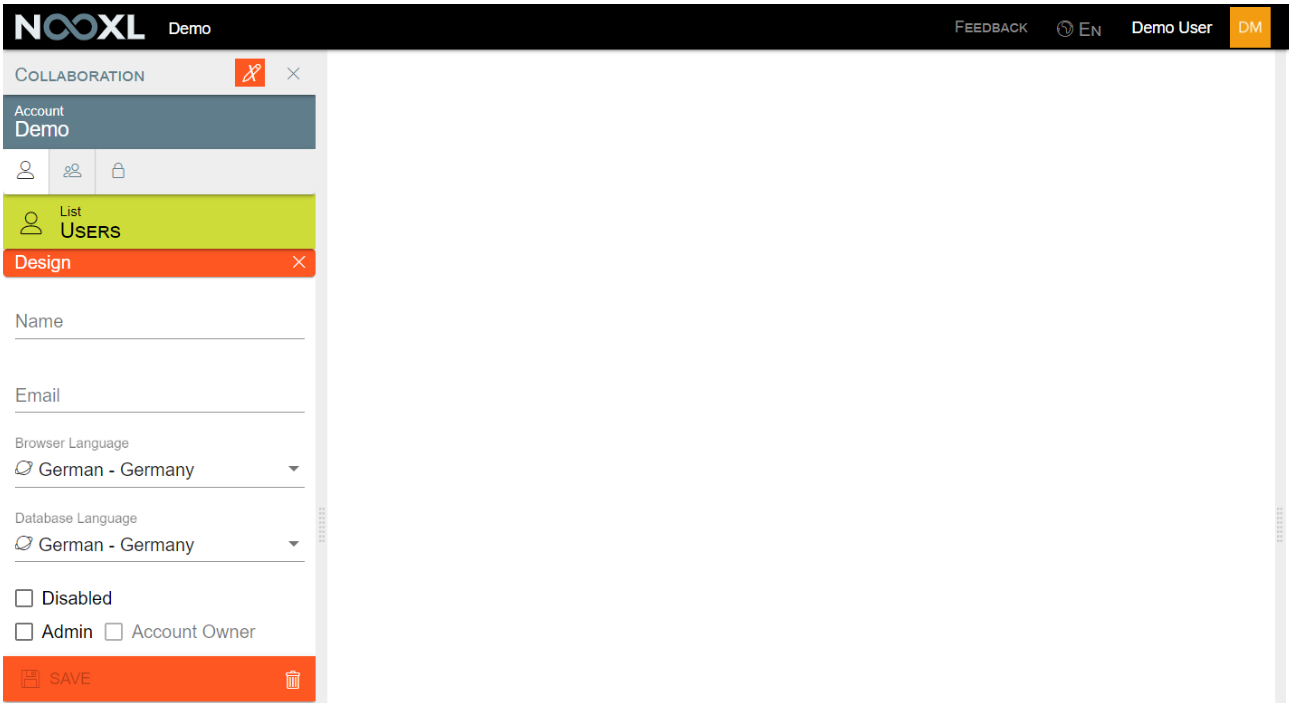
Browser Language: German - Germany

Database Language: German - Germany

☐ Disabled

☑ Admin ☑ Account Owner

Properties of users



Name

Assign a name for the user. This name will be used in the system as the display name of the user.

Email

The e-mail address of the user. This e-mail address is used to authenticate the user and the user will be informed by this e-mail address if he wants to reset the password.

Browser Language

The Browser Language is currently only available in German and English. This setting controls in which language the Nooxl surface is displayed.

> ⓘ The content of the templates is not directly affected by this setting!

Database Language

Database Language controls the number formats in the templates (thousand point vs. thousand decimal point, date format, time zone, etc.).

In addition, it will be possible later on for designers to read the user's current Database Language in an Excel template to control translations in the Excel file depending on this translation.

Disabled

If a user is disabled, he or she can no longer access the account.

This can be used, for example, if the user is to be unlocked later (e.g. only after all rights have been configured).

At this point you can also revoke all access rights to an already created user on this account by selecting the checkbox "Disabled" without deleting the user directly.

Admin

If the user is an administrator, check the "Admin" checkbox. More detailed information about the rights structure can be found in the chapter Permissions in Nooxl (siehe Seite 100).

Account Owner

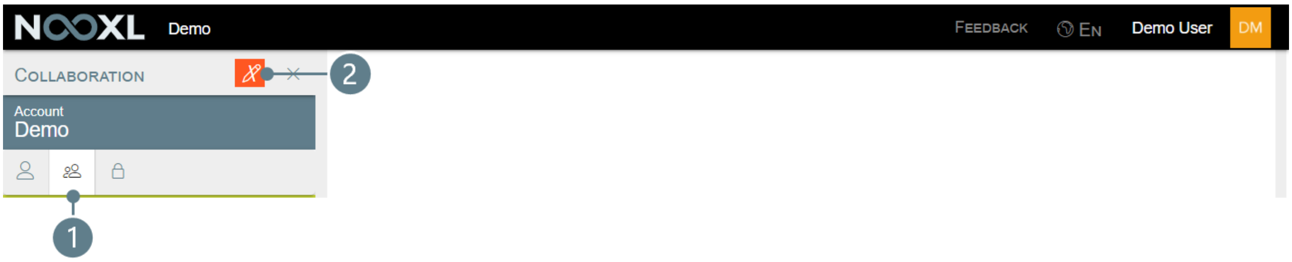
The check mark "Account Owner" indicates whether the user is also the owner of the account. This user automatically has administrator rights that cannot be withdrawn.

The Account Owner property is automatically assigned to the user who created the account and is not transferable.

Groups

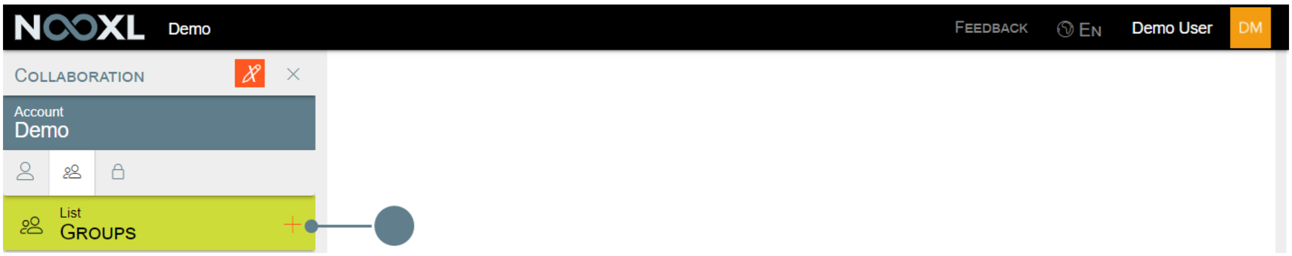
Groups are used to assign the same rights to several users in Nooxl, so you do not have to define them for each user individually. You can create a group in Nooxl and define the rights for this group, similar to a role in other applications. Then all you have to do is assign the users to this group.

Go to the collaboration (siehe Seite 90)area, click on groups **(1)** and activate the design mode **(2)**.

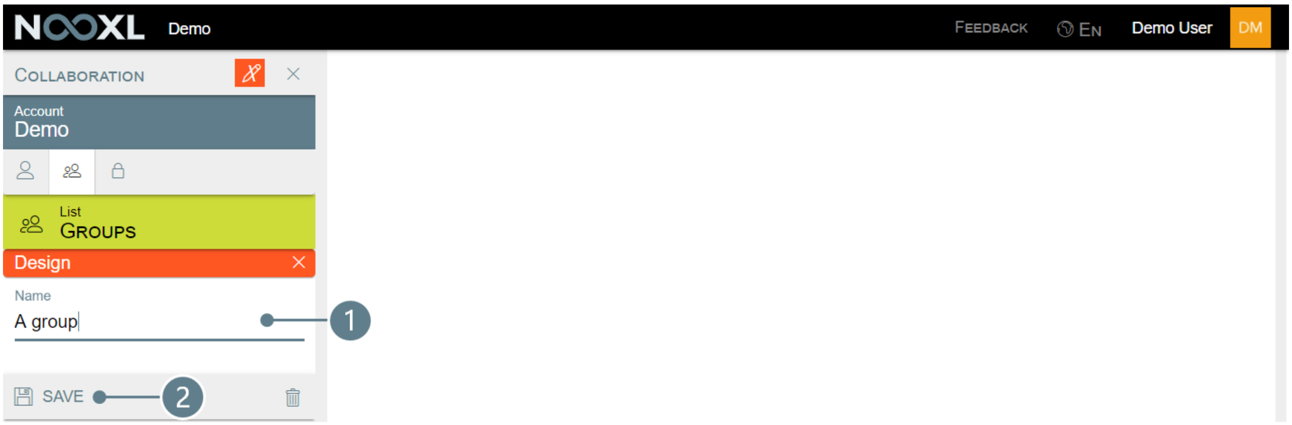


Create a new group

Click on the red plus to create a new group.



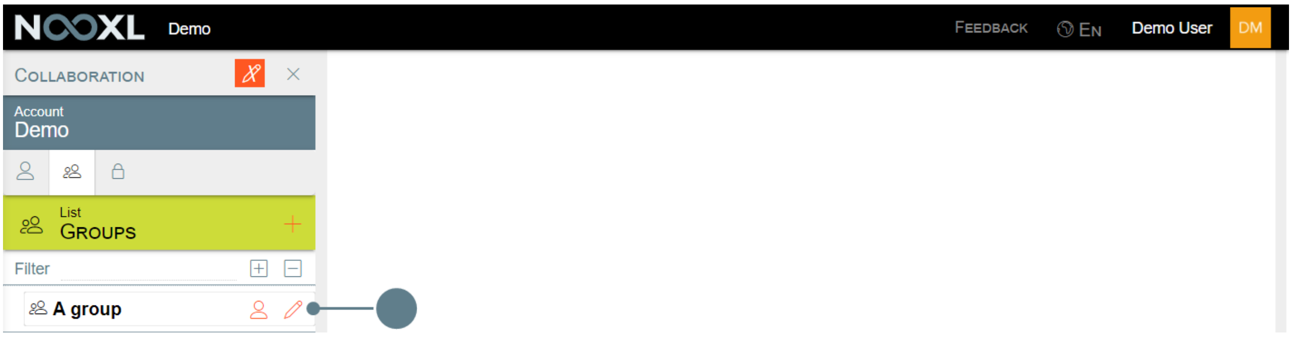
In the dialog that now opens, you can assign a group name **(1)** and save the entry with SAVE **(2)**.



Name
A group

Edit a group

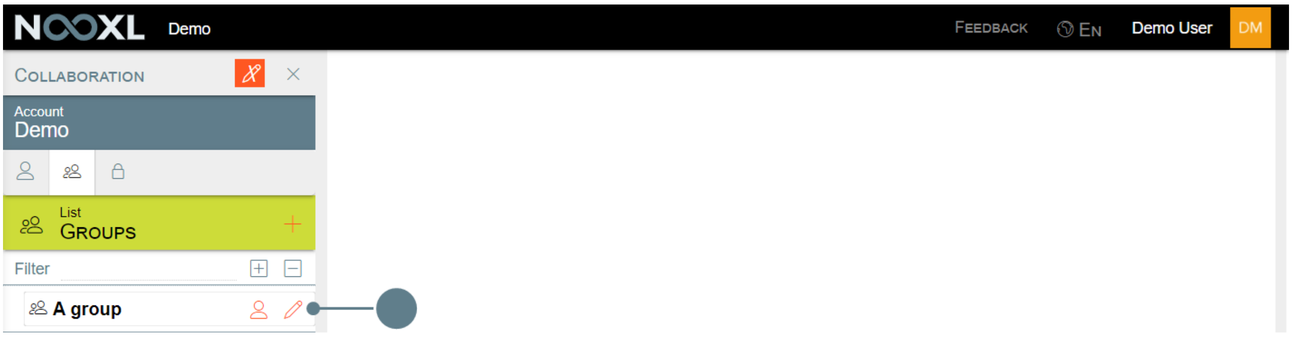
To edit the name of a group click on the ✎ next to the groups name.



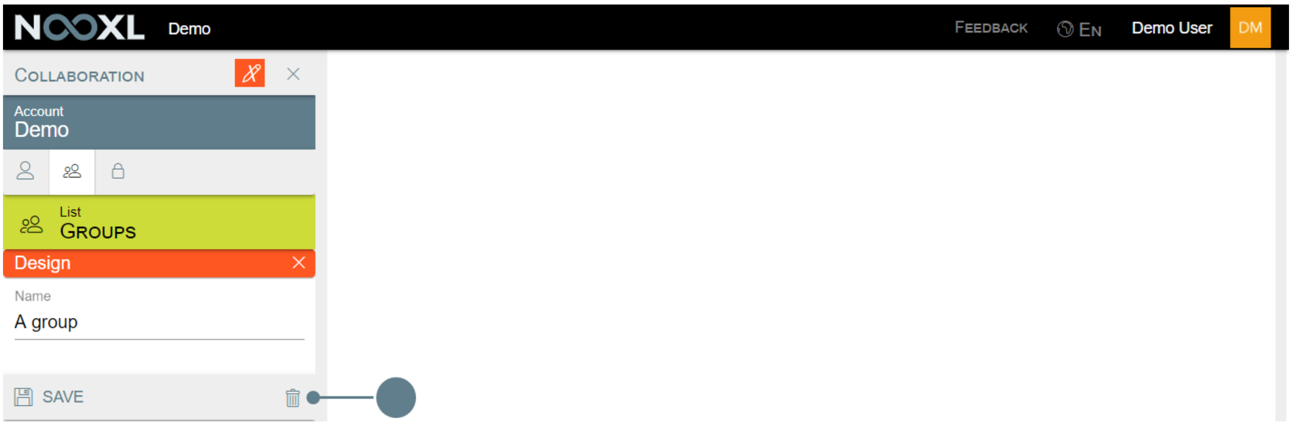
Then you can change the name and save your change.

Delete a group

To delete a group click on the ✎ next to the groups name.



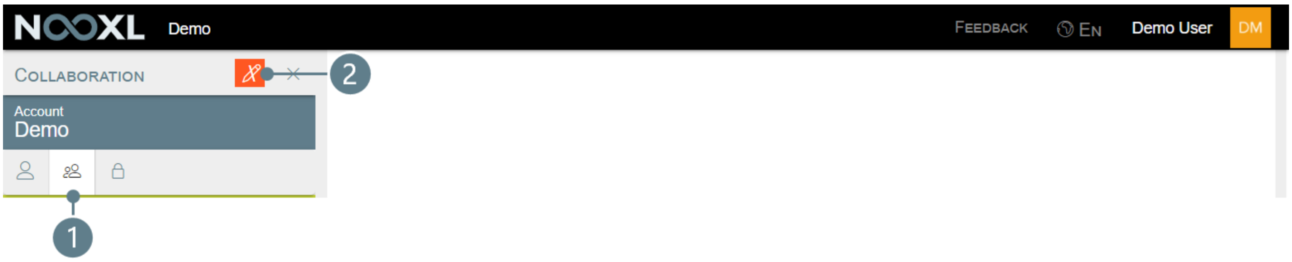
Then you can click on the trash bin to delete the group.



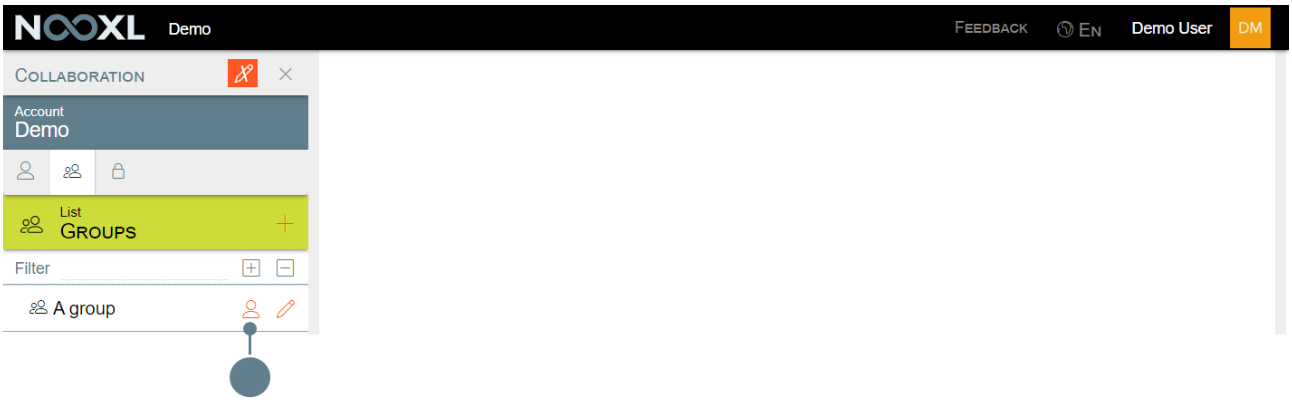
Name
A group

Manage groups and users

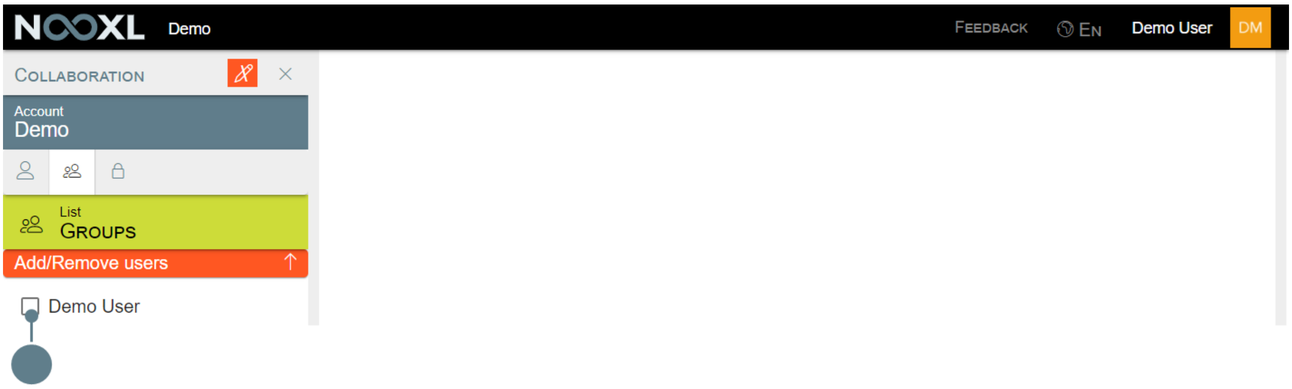
Go to the collaboration (siehe Seite 90)area, click on groups **(1)** and activate the design mode **(2)**.



Click on the icon 👤 next to the group you want to add or remove users from.

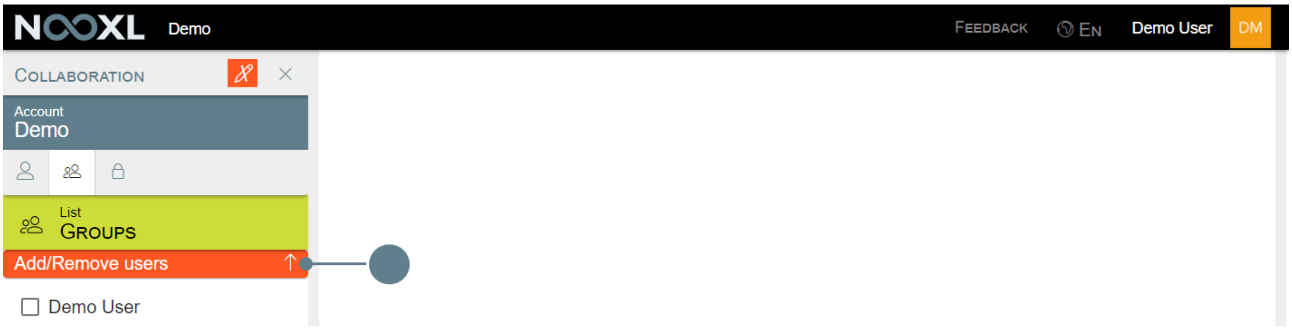


Check the box for all users which will be part of the group.



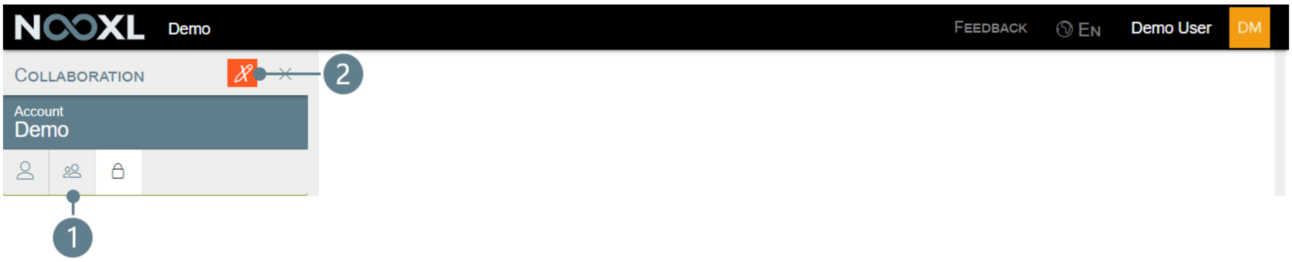
All changes here are immediately effective, there is no separate save button.

Click on the up arrow to leave the group assignment mask.



Assign permissions to groups and users

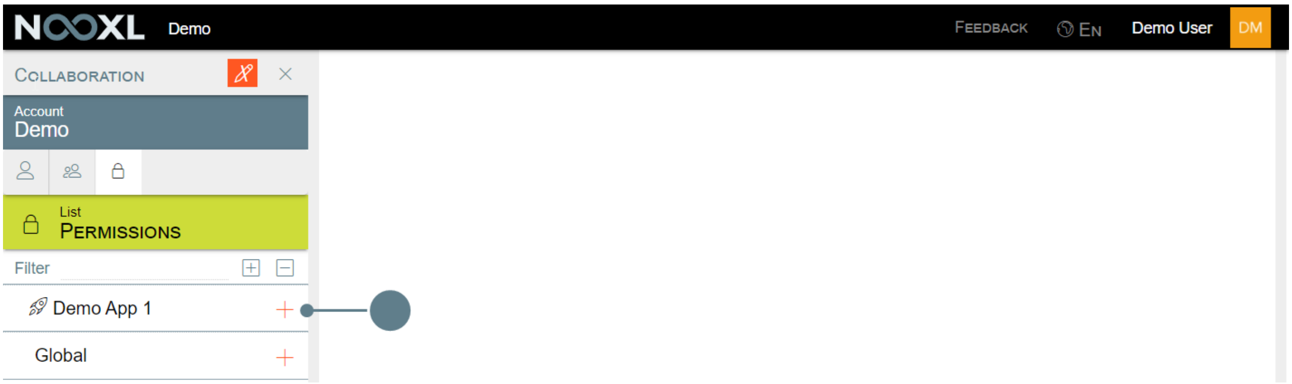
Go to the collaboration (siehe Seite 90)area, click on the tab permissions **(1)** and turn on the design mode **(2)**.



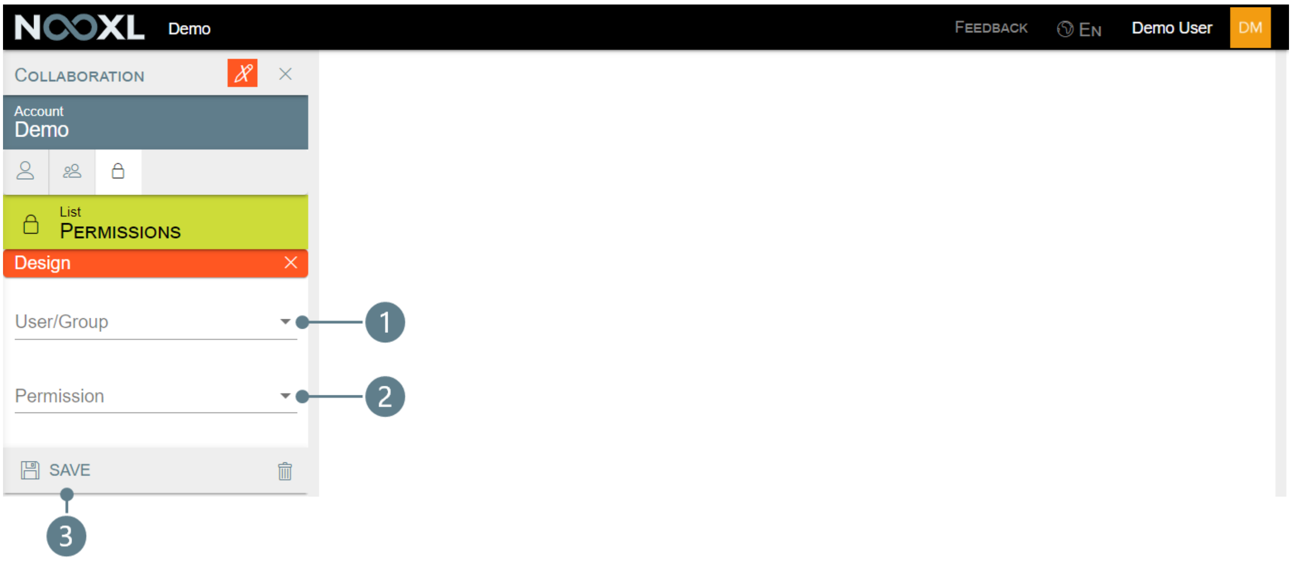
In the permissions tab you will see at least two entries: your App and **Global**. When you assign any permissions on the global level, those will be applied to all apps inside the account. This could for example be handy if you want to create a global designer role in your account.

Create a permission

Click on the red plus to create a new permission.



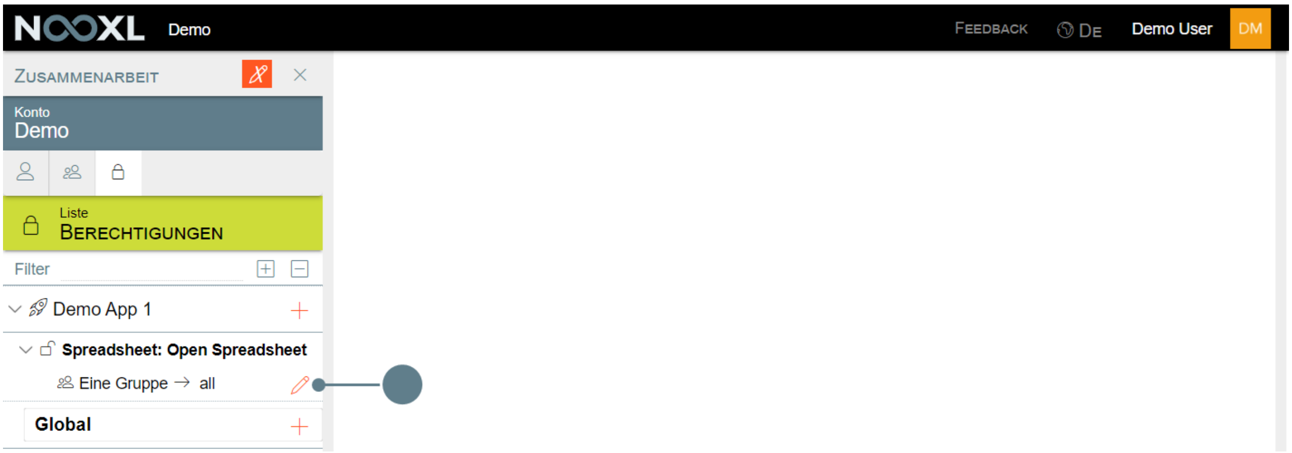
Choose a user or group you want to grant permissions **(1)** and than choose the permission (siehe Seite 100)**(2)**. Depending on the selected permission you have to select the element for which the permission should be valid. After that click save **(3)**.



✓ A list of all possible permissions, with a detailed explanation can be found in the chapter Permissions in Nooxl (siehe Seite 100).

Change a permission

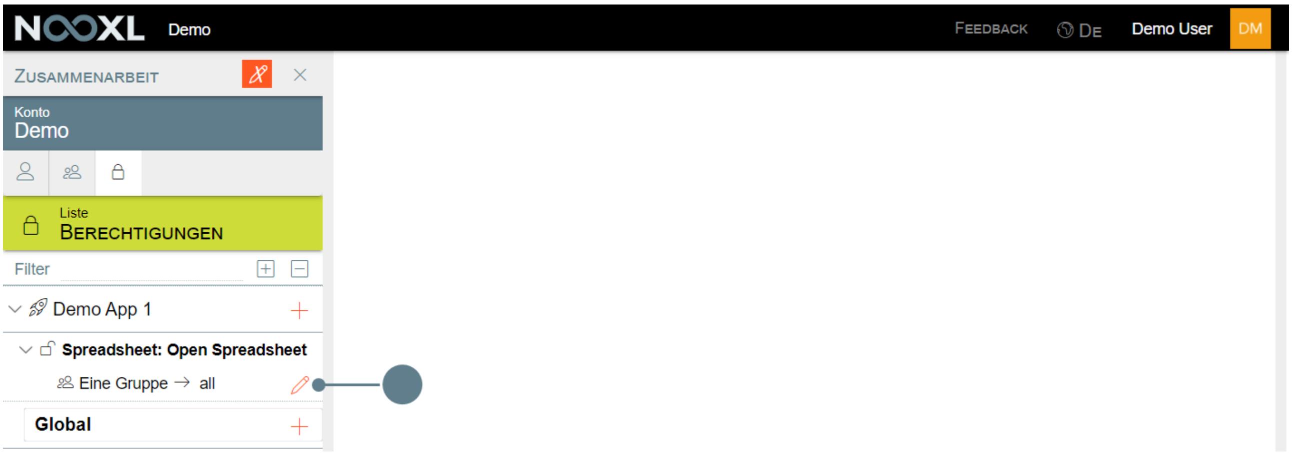
To change a permission, click on the ✎ next to the permission.



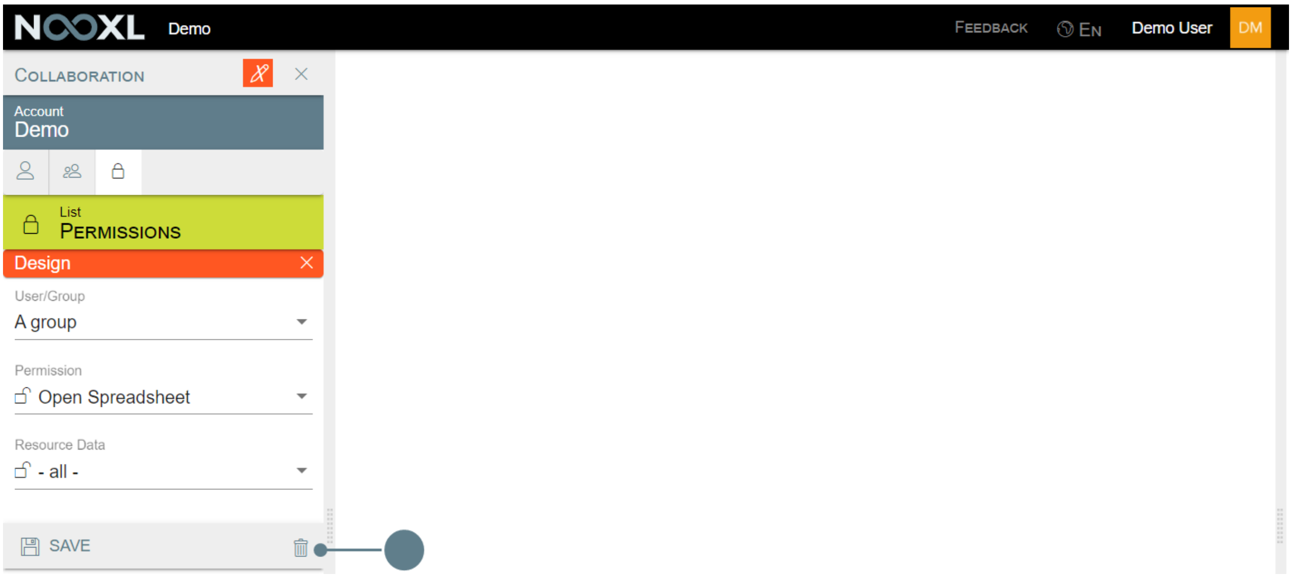
After that you can make your changes and save those.

Delete a permission

To delete a permission, click on the ✏ next to the permission.



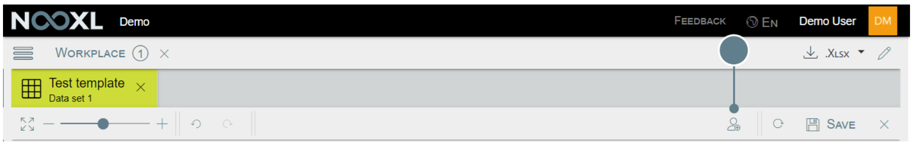
After that click on the **trash bin** to delete the permission.

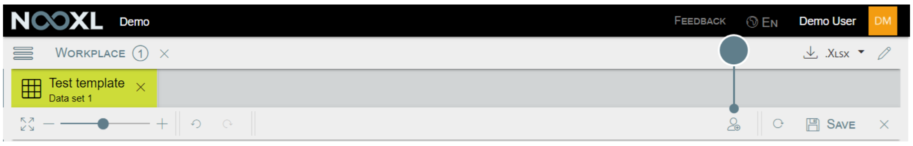


Permissions in Nooxl

Below you will find information about the various objects that can be authorized "out of the box" in Nooxl. In addition, it is possible to make the permissions even more granular by applying conditional formatting to input areas for example, in order to also authorize them user-dependently.

Spreadsheet

Permission	Description
Open Spreadsheet	Permission to see a template in the menu on the left and to open the template.
Save Spreadsheet	Permission to save an open template. ✓ Includes the permission *Open Spreadsheet*
Export Spreadsheet Formula	Permission to export an open template with the Excel formula logic.
Invite new external Users to Spreadsheet	Authorized to invite new users via the invitation wizard and set permissions for them.  NOOXL Demo Feedback EN Demo User DM Workplace 1 Xlsx Test template Data set 1 Save

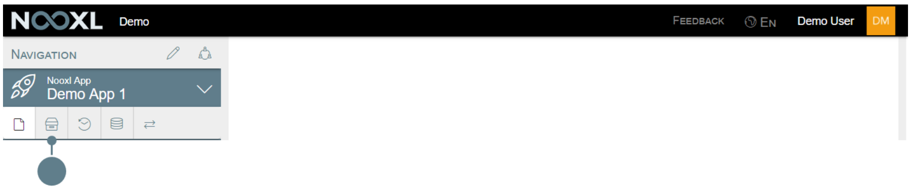
Permission	Description
Invite existing Users to Spreadsheet	Allows to authorize existing users for the template via the invitation wizard.  NOOXL Demo FEEDBACK EN Demo User DM WORKPLACE 1 XLSX Test template Data set 1 SAVE

ⓘ The **permissions** on the object level **Spreadsheet are not copied** when a template is cloned (siehe Seite 156). All permissions must be set again for the newly created template.

Spreadsheet Tree

Permission	Description
View Folder/Item	Similar to the Open Spreadsheet permission, except that folders can be controlled here and the Open Spreadsheet permission is automatically applied to all templates within the folder.

Catalog

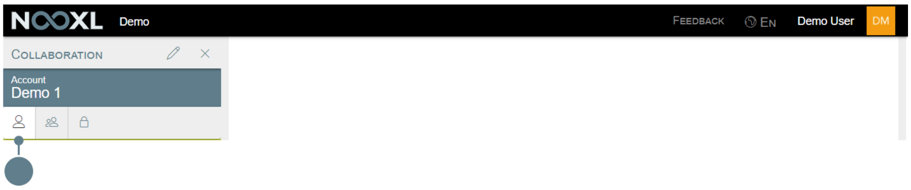
Permission	Description
Show Catalog Menu	Permission to view the *Catalogs and Elements* menu:  NOOXL Demo FEEDBACK EN Demo User DM NAVIGATION Nooxl App Demo App 1
View Catalog	Permission to view specific catalogs within the *Catalogs and Elements* menu. ⓘ The permission to view the elements within the catalog must be granted separately (*View Element*).
Create new Element in Catalog	Permission to create new items in a catalog.

Permission	Description
	ⓘ For the permission to work correctly, the Edit Element permission must also be set on the catalog.

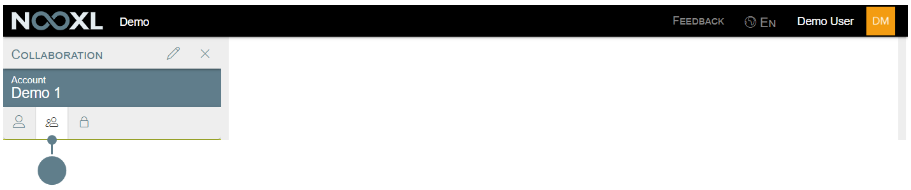
Catalog Element

Permission	Description
View Element	Permission to see all elements of a catalog or only certain elements. ⚠ If the **Grant permissions** checkbox is checked in a selection, the settings do not apply, but everyone is allowed to see all elements.
Edit Element	Permission to change all elements of a catalog or only certain elements. ✓ This includes the following other rights: *Catalog Element → View Element*
Change Spreadsheet Data	
Delete Element	Permission to delete all elements of a catalog or only certain elements.

User

Permission	Description
View Users	Permission to view the User section in the **Collaboration** area.  NOOXL Demo Feedback En Demo User DM Collaboration Account Demo 1

Group

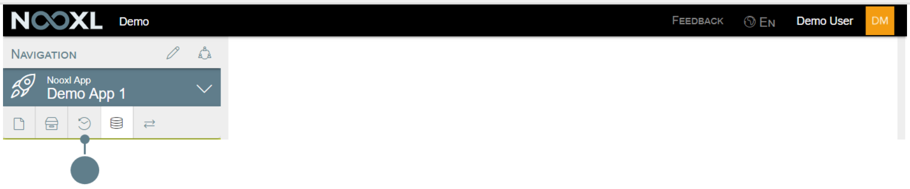
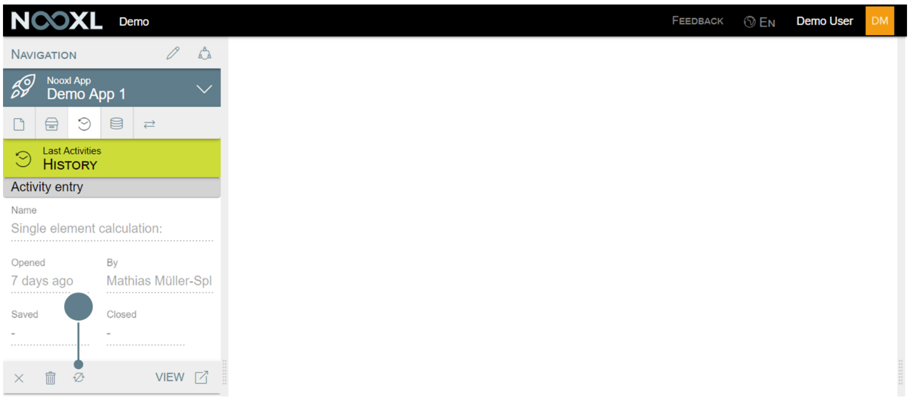
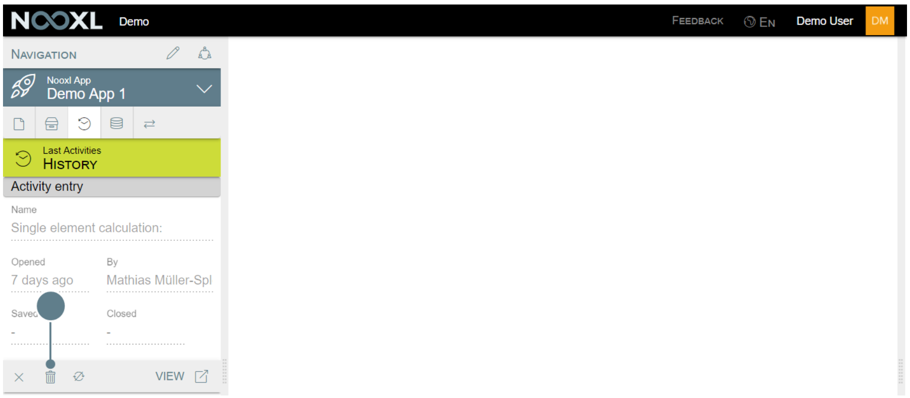
Permission	Description
View Groups	Permission to see the Groups section in the **collaboration** area.  NOOXL Demo FEEDBACK EN Demo User DM COLLABORATION Account Demo 1
Change Group User	Authorization to adjust the assignment of user → groups (siehe Seite 96) in the **collaboration** area.
New user default group	Authorization to create new users in the **collaboration** area.

App

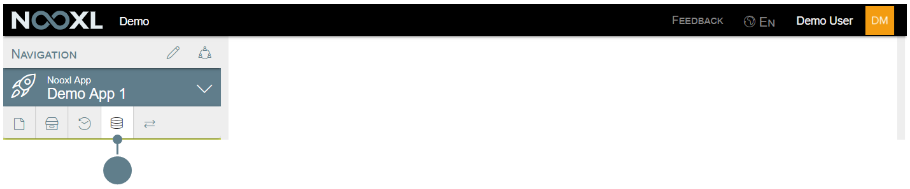
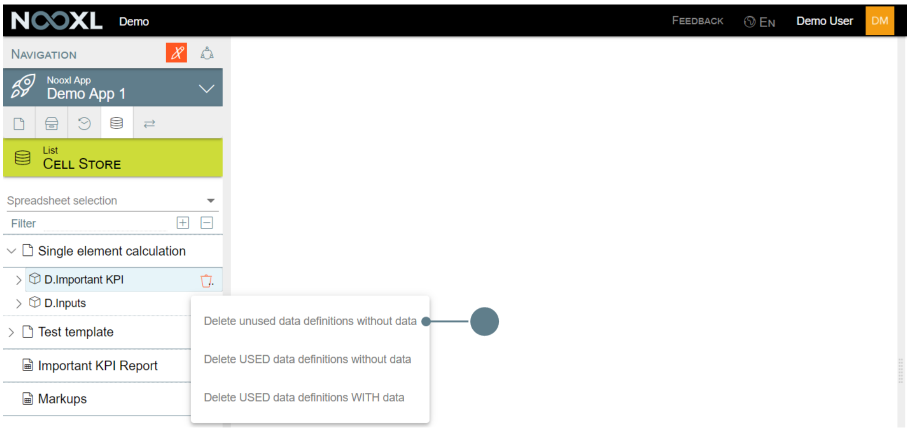
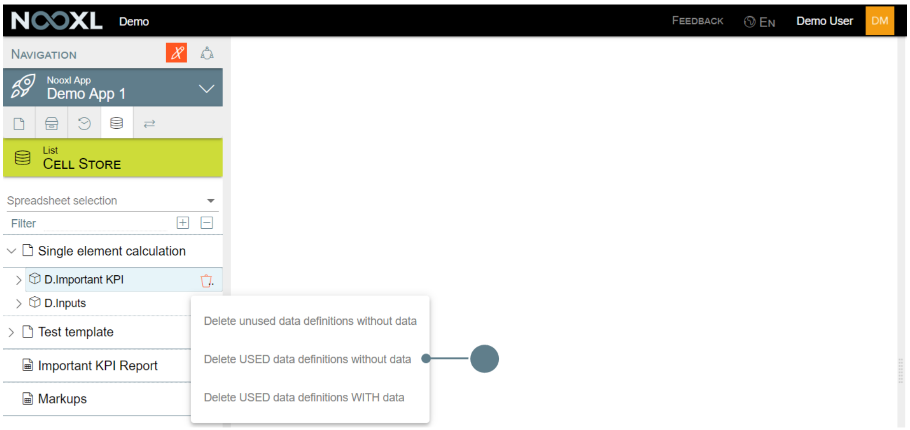
Permission	Description
Design the App	Permission to perform any activity that is edited with the pen within the app.
Create new Apps	Permission to create new apps within the current account. ✓ This authorization can be assigned at the app level, but should rather be set in the Global area. The respective decision has no effect on the rights.
Use the App	Determines whether a user can use the contents of an app. ⓘ As long as this permission is not given, all permissions for objects within the apps will not work.

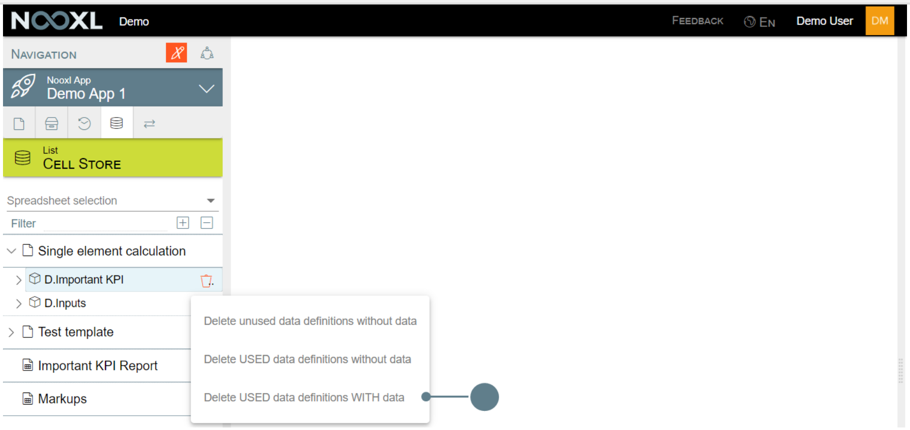
Data States

Permission	Description
Show States Menu	Authorization to view the *History of Activities* menu:

Permission	Description
	 NOOXL Demo Feedback EN Demo User DM Navigation Nooxl App Demo App 1
View States	Authorization to have the activities listed within the *History of Activities*.
Open State Spreadsheet	Authorization to open an old state of a spreadsheet again via *History of Activities*. ⓘ In addition, it is necessary that the user has the Open Spreadsheet permission of the requested templates.
Change States	Permission to end an open activity or to reopen a closed activity, depending on the current status:  NOOXL Demo Feedback EN Demo User DM Navigation Nooxl App Demo App 1 Last Activities History Activity entry Name Single element calculation: Opened 7 days ago By Mathias Müller-Spl Saved Closed VIEW
Delete States	Permission to remove an activity from the history:  NOOXL Demo Feedback EN Demo User DM Navigation Nooxl App Demo App 1 Last Activities History Activity entry Name Single element calculation: Opened 7 days ago By Mathias Müller-Spl Saved Closed VIEW

Data Entries

Permission	**Description**
Show Data Entry Menu	Authorization to view the cell store menu:  NOOXL Demo FEEDBACK EN Demo User DM NAVIGATION Nooxl App Demo App 1
View Data Entry	Allows viewing the data of a specific template.
Try Delete Data Entry	Permission to use the *Delete unused data definition without data* option.  NOOXL Demo FEEDBACK EN Demo User DM NAVIGATION Nooxl App Demo App 1 List CELL STORE Spreadsheet selection Filter Single element calculation D.Important KPI D.Inputs Test template Important KPI Report Markups Delete unused data definitions without data Delete USED data definitions without data Delete USED data definitions WITH data
Force Delete Used Entry	Permission to use the *Delete USED data definition without data* option.  NOOXL Demo FEEDBACK EN Demo User DM NAVIGATION Nooxl App Demo App 1 List CELL STORE Spreadsheet selection Filter Single element calculation D.Important KPI D.Inputs Test template Important KPI Report Markups Delete unused data definitions without data Delete USED data definitions without data Delete USED data definitions WITH data
Force Delete Used & Filled Entry	Permission to use the *Delete USED data definition WITH data* option.

Permission	Description
	 NOOXL Demo Feedback En Demo User DM Navigation Nooxl App Demo App 1 List Cell Store Spreadsheet selection Filter Single element calculation D.Important KPI D.Inputs Test template Important KPI Report Markups Delete unused data definitions without data Delete USED data definitions without data Delete USED data definitions WITH data

3.6.3 Realizing workflows in Nooxl

Every permission granted in the Collaboration (siehe Seite 90) section of your Account is static as long as nobody changes it. This can be enough, but if you need to implement a workflow which grants different permissions to different user groups based on the current workflow status you need to extend beyond the normal permissions.

Here workflow based user rights come into play. which can be granted to different objects in your App:

Authorization level	Description
Matrix (siehe Seite 112)	Changes permissions for a specific template.
State (siehe Seite 113)	Change permissions for a particular data set of a template.
Condition (siehe Seite 114)	Change permissions for elements of a catalog. These permissions are transferred into all templates where the elements are either used for the dataset selection or as selections in dimensions.
Selection (siehe Seite 116)	TBD.

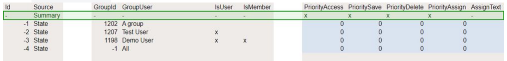
The following permissions are distinguished:

Permission	Description
PriorityAccess	Can the element be seen? This translates to data set selections as well as the usage of selections in templates. If a user has no access for the elements it can not be seen.
PrioritySave	Can the elements data be changed/ saved?
PriorityDelete	Can the element be deleted?
PriorityAssign	Can the element be assigned to a user/ group?
AssignText	If the element is assigned to someone, what should the assignments text be? This is used to pass messages through the workflow, for example to give hints to another department. The messages will show up in the list of existing data sets (siehe Seite 117).

Create a new workflow

⚠ Currently, workflow markups cannot be created via the web interface. To create a new workflow you need to create a new markup in your template. After that you need to set up the workflow markup in the database table `[u1].[MarkupWorkflow]`.

Column	Description	Example
Id	The primary key of the table. It is the identity and will autoincrement.	`22`
UniverseId	Id of the account (table `[ctr].[Universe]`).	`1057`
MarkupId	Id of the markup you created (table `[u1].[Markup]`).	`37859`
LogicReleaseId	This Id references an entry in the table table `[u1].[LogicRelease]` which in the end points to your template. You can find this Id already in the table `[u1].[Markup]` from the previous column.	`14580`

Column	Description	Example
Name	A name for the workflow markup. This can be the same as the markup itself, but can also be something different.	`WorkflowData`
IsDisabled	A Boolean. If it is `TRUE` the workflow is disabled.	`FALSE`
IsFromSummary	A Boolean. If your workflow is granting permissions to states (siehe Seite 113), you can have an additional summary row on top of your table structure. For this set this column to `TRUE`. 	`TRUE`
IsFromSelection	A Boolean. If your workflow is granting permissions to selections (siehe Seite 116), set this column to `TRUE`.	`FALSE`
IsFromMatrix	A Boolean. If your workflow is granting permissions to t (siehe Seite 0)emplates (siehe Seite 112), set this column to `TRUE`.	`FALSE`
IsFromState	A Boolean. If your workflow is granting permissions to states (siehe Seite 113), set this column to `TRUE`.	`TRUE`
IsFromCondition	A Boolean. If your workflow is granting permissions to elements of a condition (siehe Seite 114), set this column to `TRUE`.	`FALSE`
FromConditionId	If `IsFromCondition = TRUE` you must supply the conditions Id (table `[u1].[Condition])` you want to work with.	`NULL`

Id	Source	GroupId	GroupUser	IsUser	IsMember	PriorityAccess	PrioritySave	PriorityDelete	PriorityAssign	AssignText
-	Summary	-	-	-	-	x	x	x	x	-
-1	State	1202	A group			0	0	0	0	
-2	State	1207	Test User	x		0	0	0	0	
-3	State	1198	Demo User	x	x	0	0	0	0	
-4	State	-1	All			0	0	0	0	

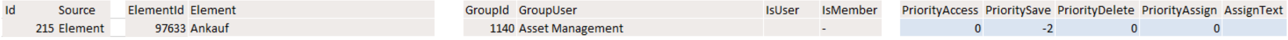
Column	Description	Example
FromMatrixId	If `IsFromMatrix = TRUE` you must supply the template Id (table `[u1].[Matrix])` you want to work with.	`NULL`
IsStorageRead	A Boolean. If your elements you want to grant access to are static, you can have them as static content in the template and set this field to `FALSE`. If you want to read all elements on runtime, because they can change, set this to `TRUE`.	`TRUE`
IsStorageWrite	A Boolean. If your logic is changing the workflows settings you need to set this field to `TRUE`. If you are only reading the current settings of a workflow you can leave this field as `FALSE`.	`TRUE`
IsAccessGroups	A Boolean. Is access granted on group level?	`TRUE`
IsAccessUsers	A Boolean. Is access granted on user level?	`TRUE`
IsContentClear	A Boolean. Should values in the template be overwritten in the markup area?	`TRUE`
IsContentOverwriteFormulas	A Boolean. If there are Excel formulas in the Markup area, should they be overwritten (`TRUE`) or retained (`FALSE`)?	`FALSE`
IsStyleAuto	A Boolean. Should Nooxl automatically adjust the cell style for the markup? Set this to `TRUE` is you want this, or `FALSE` if you want to retain the style set in the template.	`TRUE`

Column	Description	Example
ExpanseTypeRows	Should the area of the markup be enlarged, depending on the amount of elements read?	`2`
CopyTypeRows	If `ExpanseTypeRows` is `TRUE`, should the original content be copied over to the inserted rows?	`1`

> ⓘ The number of inserted rows corresponds to the number of authorization groups from the Collaboration (siehe Seite 94)area, multiplied by the number of elements to be authorized in the selected catalog.
> Accordingly, out of consideration for the usability of the system, but also from a performance point of view, you should try to authorize the smallest possible catalogs.

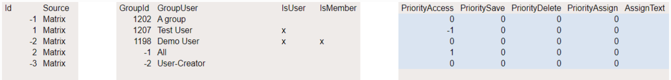
Workflow table properties

After you created a new workflow in a template, you find a similar structure to this.



Id	Source	ElementId	Element	GroupId	GroupUser	IsUser	IsMember	PriorityAccess	PrioritySave	PriorityDelete	PriorityAssign	AssignText
215	Element	97633	Ankauf	1140	Asset Management		-	0	-2	0	0	

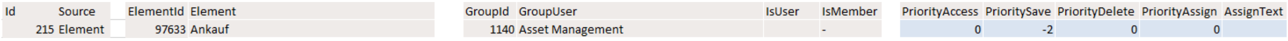
Depending on your settings you made for the workflow we will see less columns or some not visible in the screenshot above. All columns you can see are described below.

<table>
<tr><th>Block</th><th>Column</th><th>Description</th></tr>
<tr><td>Source</td><td>Id</td><td>An internal Id for the specific workflows setting.
ⓘ For all rows without any change in the permission, this is enumerated with signed integers and for all rows with changed with unsigned integers.
So please be ware that this is not a static Id.

<table>
<tr><th>Id</th><th>Source</th><th>GroupId</th><th>GroupUser</th><th>IsUser</th><th>IsMember</th><th>PriorityAccess</th><th>PrioritySave</th><th>PriorityDelete</th><th>PriorityAssign</th><th>AssignText</th></tr>
<tr><td>-1</td><td>Matrix</td><td>1202</td><td>A group</td><td></td><td></td><td>0</td><td>0</td><td>0</td><td>0</td><td></td></tr>
<tr><td>1</td><td>Matrix</td><td>1207</td><td>Test User</td><td>x</td><td></td><td>-1</td><td>0</td><td>0</td><td>0</td><td></td></tr>
<tr><td>-2</td><td>Matrix</td><td>1198</td><td>Demo User</td><td>x</td><td>x</td><td>0</td><td>0</td><td>0</td><td>0</td><td></td></tr>
<tr><td>2</td><td>Matrix</td><td>-1</td><td>All</td><td></td><td></td><td>1</td><td>0</td><td>0</td><td>0</td><td></td></tr>
<tr><td>-3</td><td>Matrix</td><td>-2</td><td>User-Creator</td><td></td><td></td><td>0</td><td>0</td><td>0</td><td>0</td><td></td></tr>
</table></td></tr>
<tr><td></td><td>Source</td><td>Essentially the workflows type: Element (→ Condition), State, Template (→ Matrix)</td></tr>
<tr><td>Element</td><td>ElementId</td><td>The Id of the catalog element.
ⓘ Only visible for Condition.</td></tr>
</table>

Block	Column	Description
	Element	The name of the catalog element. ⓘ Only visible for Condition.
Group/ User	GroupId	The groups or users internal Id. This is static and can be used to identify users even if the display name is changed.
	GroupUser	The display name of the group or user.
	IsUser	Contains an "x" if the entry is a user and not a group. ⓘ Only visible if the permissions are granted for users or groups and users.
	IsMember	Contains an "x" if it is the current user (then `IsUser` is also "x") or if the current user is part of the group. ⓘ Only visible if the permissions are granted for users or groups and users.
Permissions	PriorityAccess	Can the element be seen? This translates to data set selections as well as the usage of selections in templates. If a user has no access for the elements it can not be seen.
	PrioritySave	Can the elements data be changed/ saved?
	PriorityDelete	Can the element be deleted?
	PriorityAssign	Can the element be assigned to a user/ group?
	AssignText	If the element is assigned to someone, what should the assignments text be? This is used to pass messages through the workflow, for example to give hints to another department. The messages will show up in the list of existing data sets (siehe Seite 117).

How are permissions evaluated?

As soon as you created a workflow markup and reload the template you will see an auto generated table structure, similar to this.



Id	Source	ElementId	Element	GroupId	GroupUser	IsUser	IsMember	PriorityAccess	PrioritySave	PriorityDelete	PriorityAssign	AssignText
215	Element	97633	Ankauf	1140	Asset Management		-	0	-2	0	0	

No matter which columns you have, on the right hand side you always find the four permissions you can grant or deny. A user or group is granted a permission as soon as the value in the permissions column is equal or greater than 0 (`>=0`). So in the example above the group *Asset Manangement* can not save data for the element *Ankauf*, but can access it.

> If you authorize on a user and group level at the same time, please note that the rights are summed up.
> So if you have some users in a group and that group has `-1` for `priorityAccess` on an element, no user can see it. But if you then give one of the groups users a +1 for `priorityAccess` he has a `0` in total, meaning that he can see the element, despite nobody else from his group can.

Authorization levels

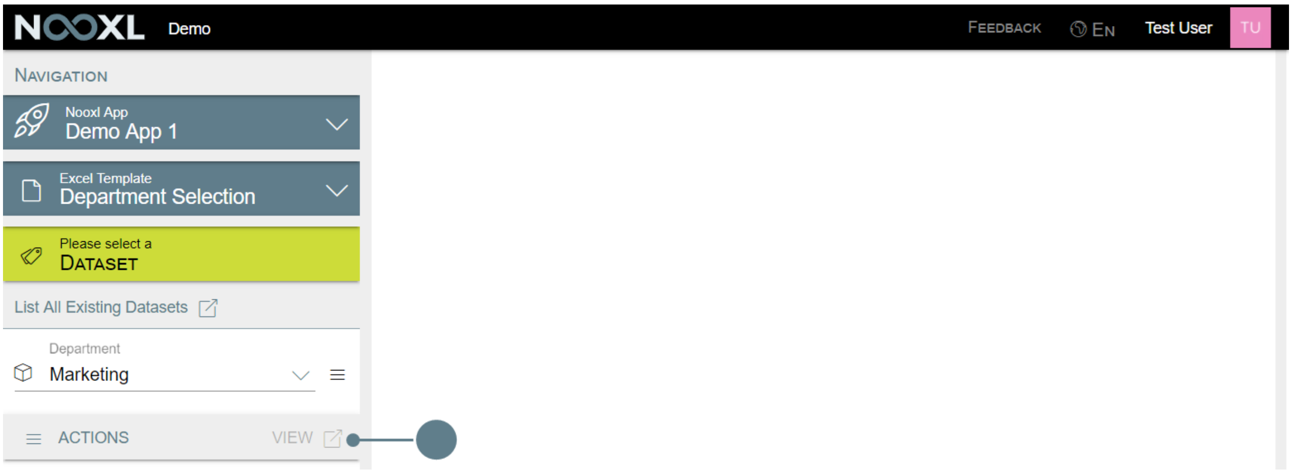
The following section describes the individual authorization levels in Nooxl workflows and how to use them. Please note that not all permissions are usable within every authorization level. Which you can use is described in each section.

Matrix

Matrix workflow permissions can be set up in their own templates, but also if you want in the template itself. Therefore you can decide were to put your workflow. If have need to change permissions to a template based on what happens inside this template, you would like to put the workflow right inside this template. If it depends on actions done somewhere else in your Application, put it there.

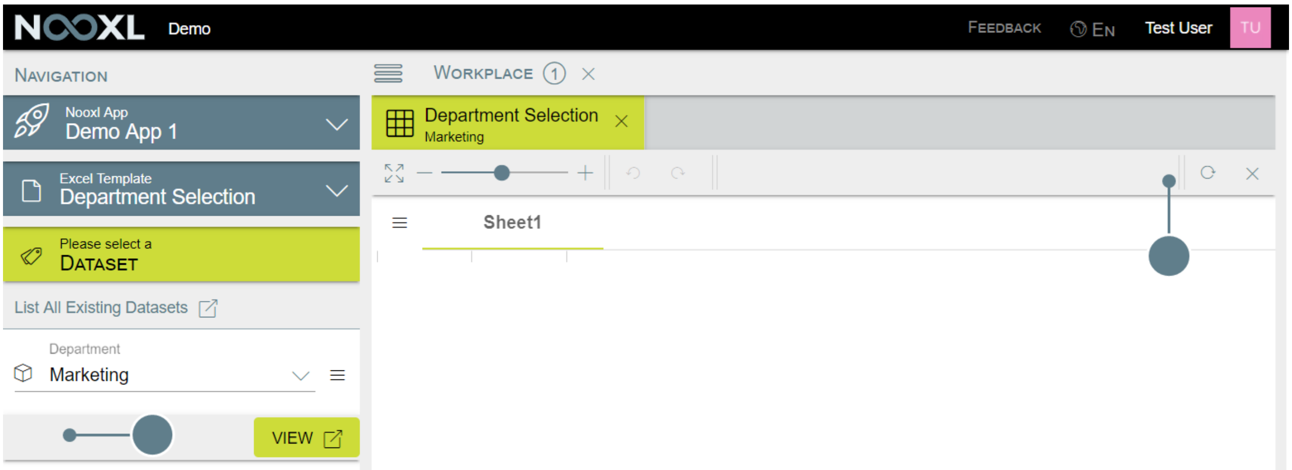
priorityAccess

Without `priorityAccess` to a template the user is still able to see the template in the navigation and also to view whatever selections are available, but the View button is never enabled.



prioritySave

Without `prioritySave` the user will not be able to save any changes made to any dataset of the template, as well as not be able to use the copy (siehe Seite 123)and recalculate (siehe Seite 125)features for this template.



State

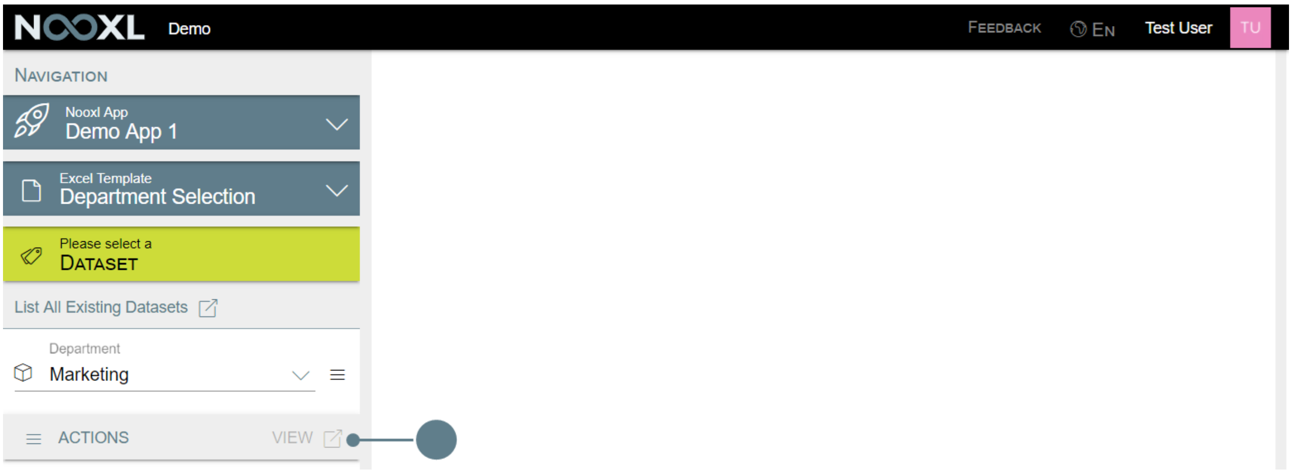
State workflow permissions are set up directly in the template they should affect.

Each time you save the data set you can specify who can do what to the specific data set in this template after you saved.

> ⚠ In order to use a state workflow, your template must at least use one selection for the data sets.

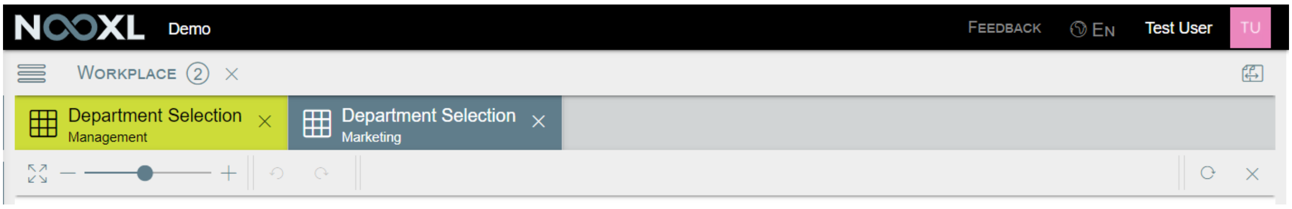
priorityAccess

Without `priorityAccess` to a state the user is still able to see the data set in selections, but the View button is never enabled.



prioritySave

If you restrict `prioritySave` , it will prevent the user from saving any changes, by withholding the save button.



Condition

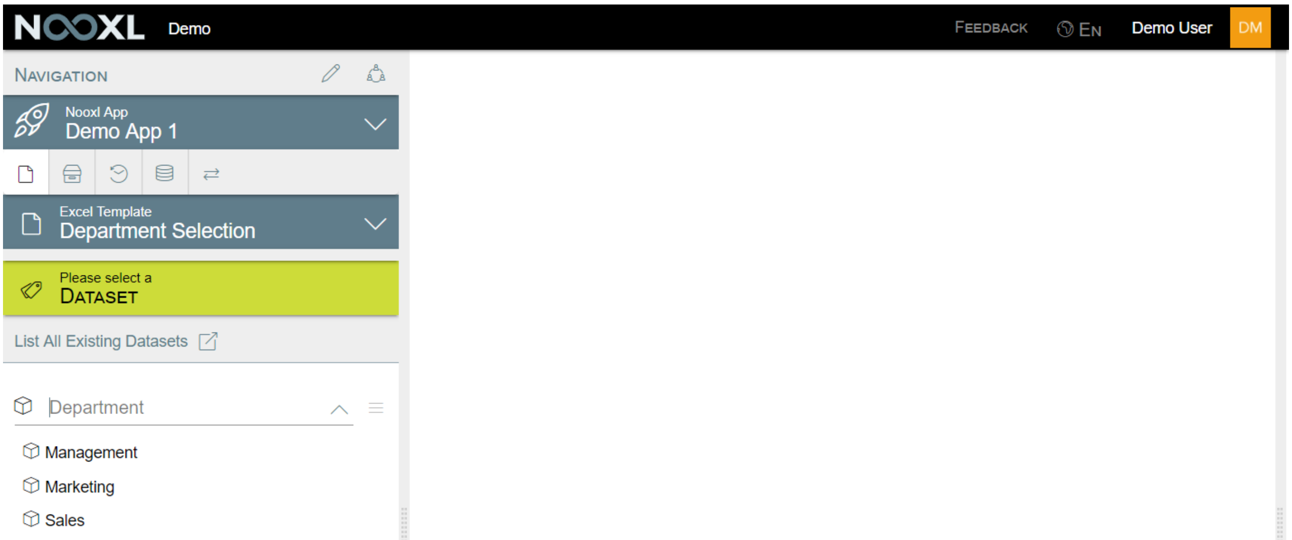
Condition workflow permissions are set up in their own templates, because they influence all templates of an App. By doing so, per default condition permissions are somewhat static and need manual interaction by a user, or need to be included as a step in a job (siehe Seite 219).

Rights set up on conditions, influence your app in two places: data set selections and selections used in advanced mode inside your template.

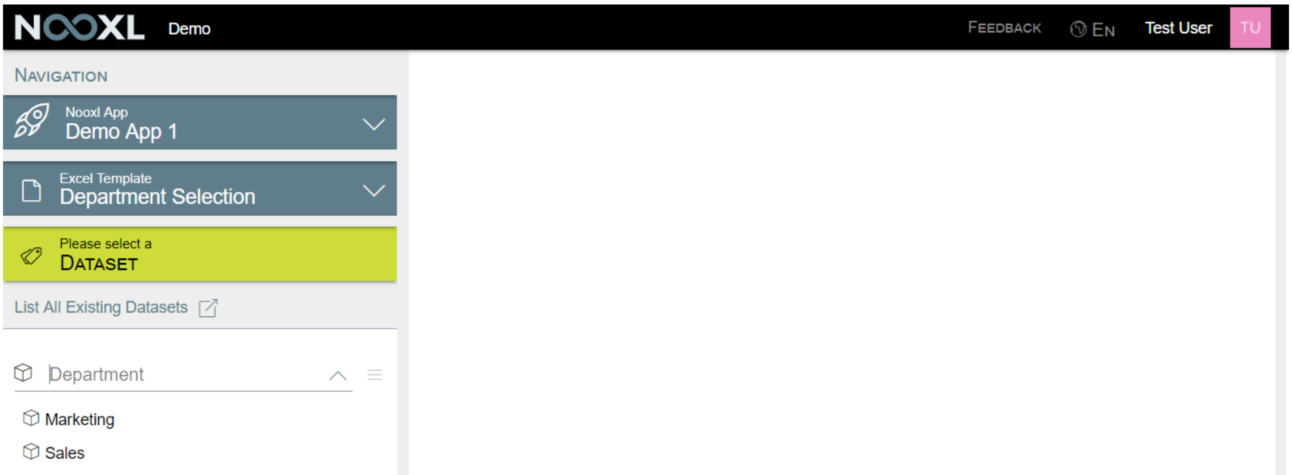
> ✔ Even if the permission object is called condition and you use a condition to set the rights, everything is applied to the underlying catalog!

priorityAccess

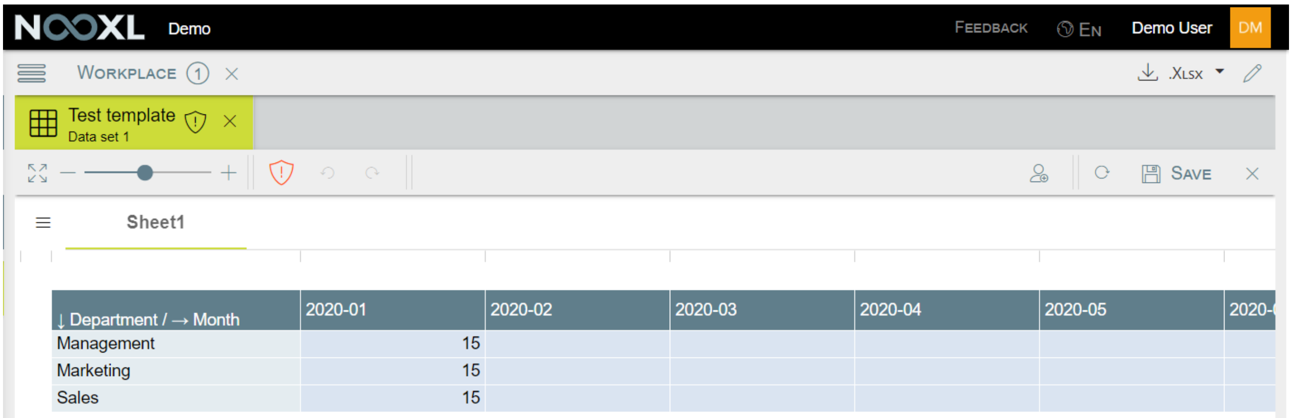
The revocation of the `priorityAccess` permission has two effects. First of all the affected users will no longer see the elements in data set selection. The screenshot below show the selection items for a "normal" user without restrictions.



The next screenshot shows what *Test User* can see. He is not granted the `priorityAccess` permission for the element *Management*. Therefore this element is not available to him in the data set selection.

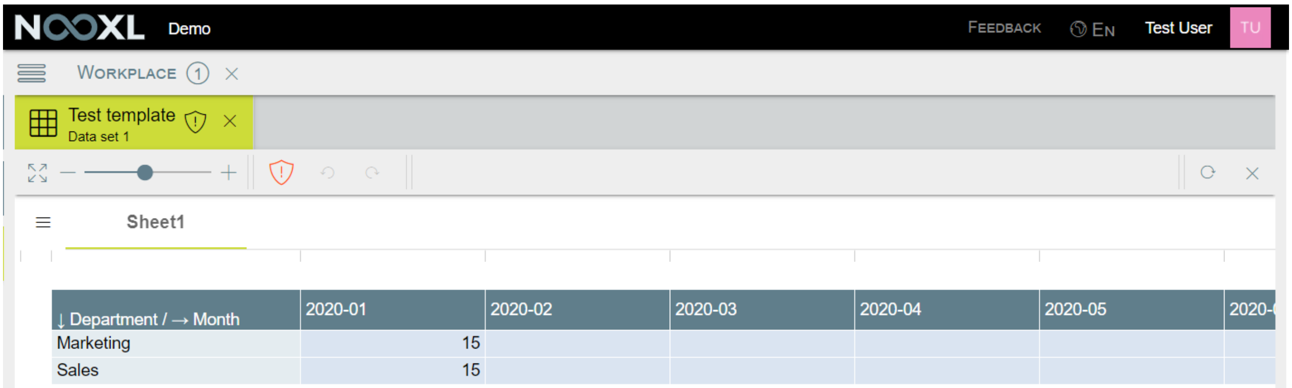


The second place were your users will feel the restrictions is inside your templates. If you use a selection in your template as a dimension of a cell storage, the `priorityAccess` will restrict which elements the user can see. Below the user without restrictions can see all three departments in the rows.



↓ Department / → Month	2020-01	2020-02	2020-03	2020-04	2020-05	2020-(
Management	15					
Marketing	15					
Sales	15					

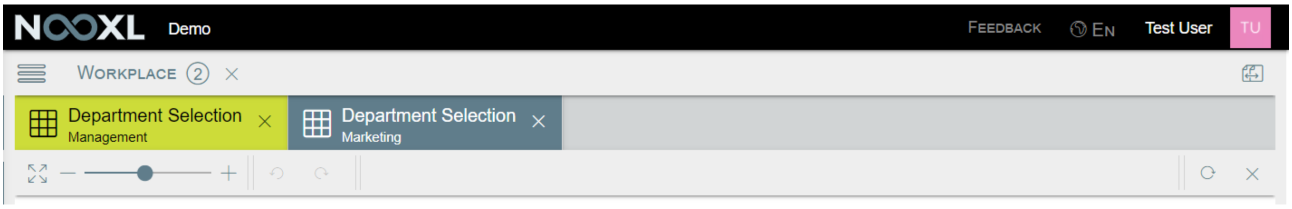
Test User will not see the element Management.



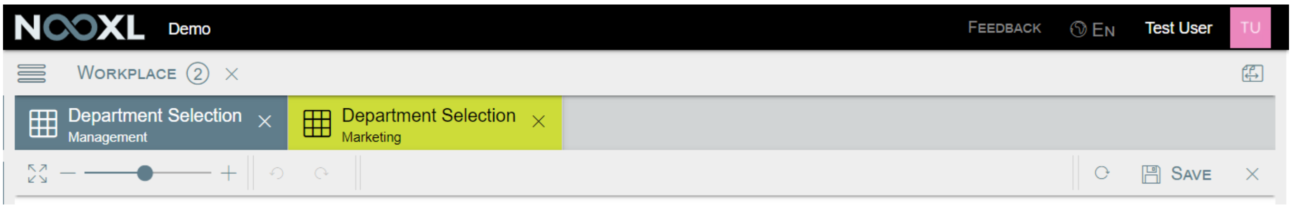
↓ Department / → Month	2020-01	2020-02	2020-03	2020-04	2020-05	2020-(
Marketing	15					
Sales	15					

prioritySave

If you restrict `prioritySave`, it will prevent the user from saving any changes, by withholding the save button. *Test User* is not granted `prioritySave` for the *Management* element, therefore no save button shows up.



For Marketing he does have the permission and so the Save button will show up for him in this data set.

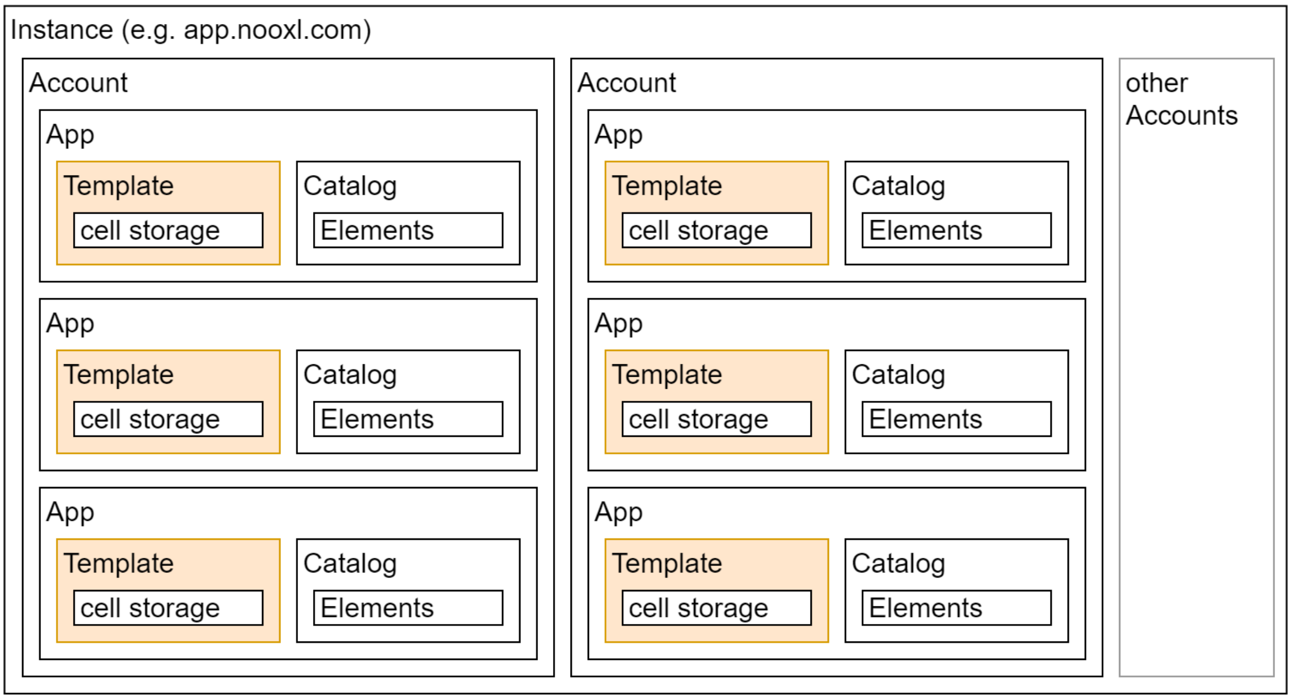


ⓘ If your data set uses more than one selection, Nooxl will add up the `prioritySave` permissions for all elements involved. If it is `>=0` then the user can save the data set. Is the sum `<0` he can not.

Selection

TBD.

3.7 Templates



Instance (e.g. app.nooxl.com)

Account

App
Template
cell storage
Catalog
Elements

App
Template
cell storage
Catalog
Elements

App
Template
cell storage
Catalog
Elements

Account

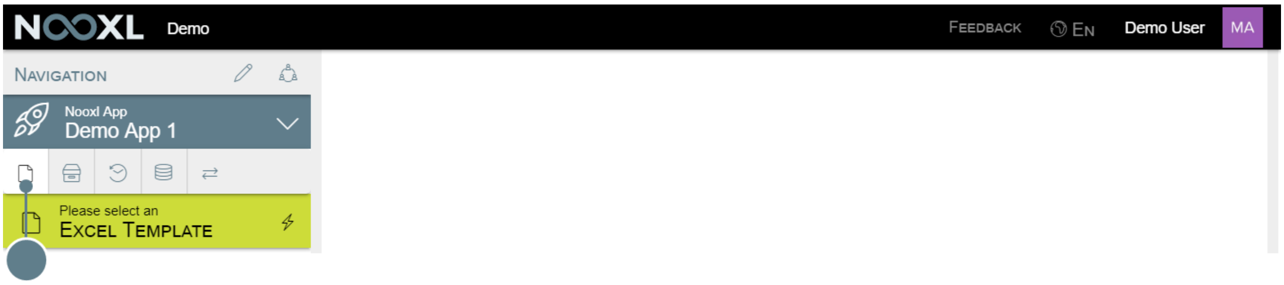
App
Template
cell storage
Catalog
Elements

App
Template
cell storage
Catalog
Elements

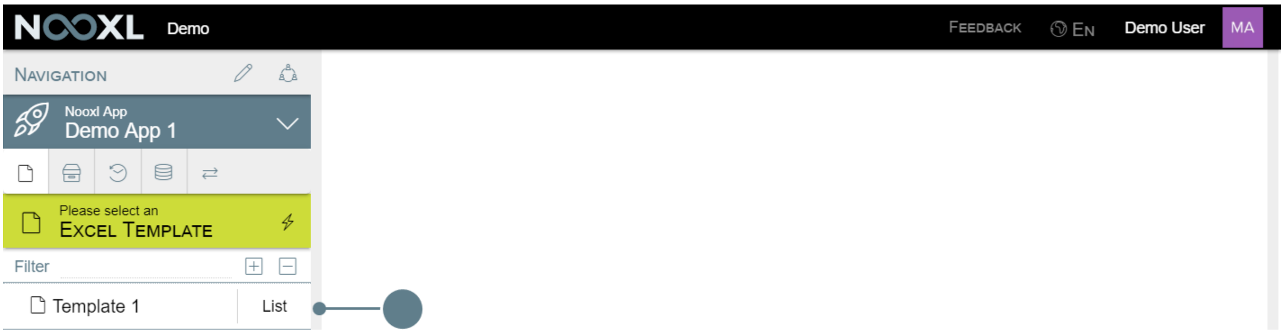
App
Template
cell storage
Catalog
Elements

other Accounts

When an app is opened, the Excel Templates view is open by default.



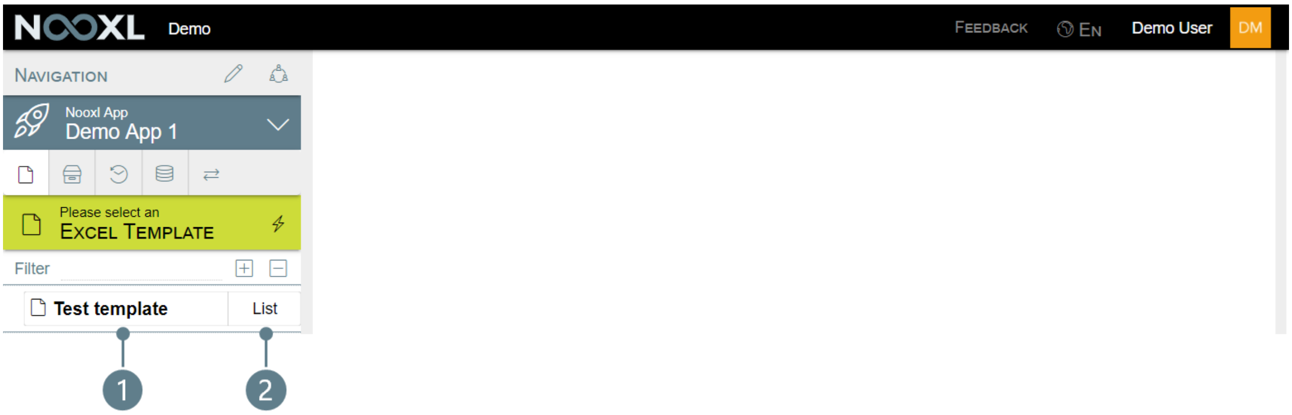
Every Nooxl App consists of one or more templates in which the end users work. The access to a template is done by the users via the left navigation of the app.



3.7.1 Select a dataset and List of all existing datasets

For each template there are two possible actions that the user can directly perform:

1. Clicking on the templates name will open the dataset selection for the template (siehe Seite 118).
2. Clicking on List, will List all existing datasets (siehe Seite 119).

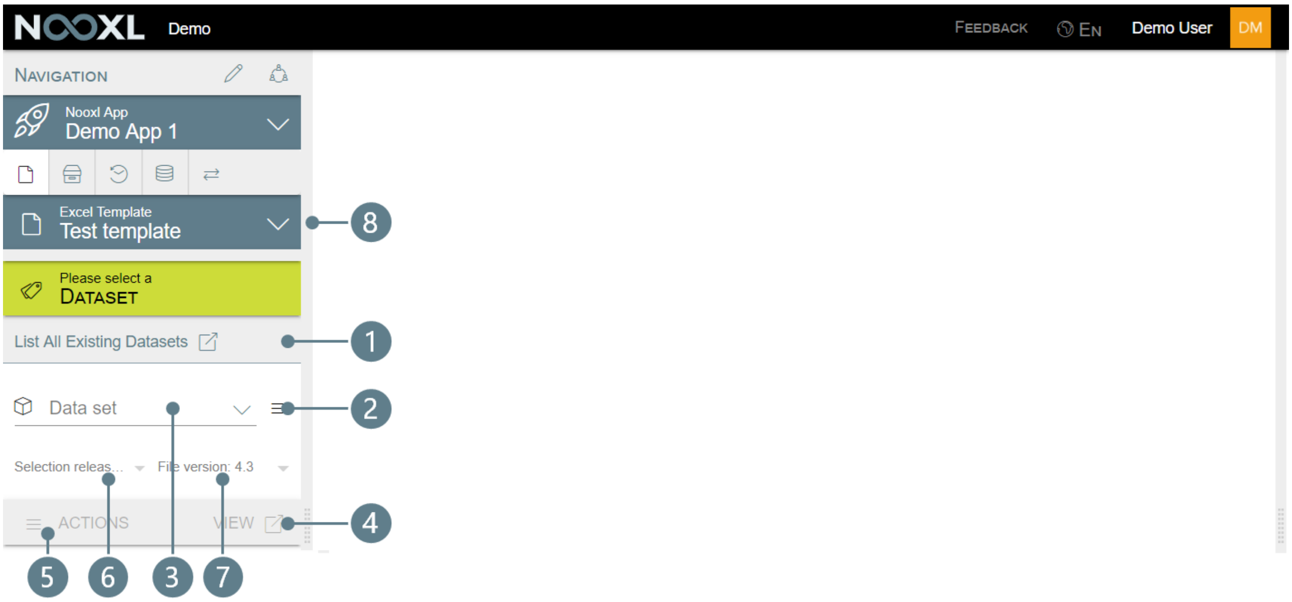


ⓘ This is the default behavior of Nooxl. The functionalities can also be configured in exactly the opposite way per account. In this case, "More" is displayed on the right instead of "List".

Dataset selection

The following functionalities can be used in the data set selection:

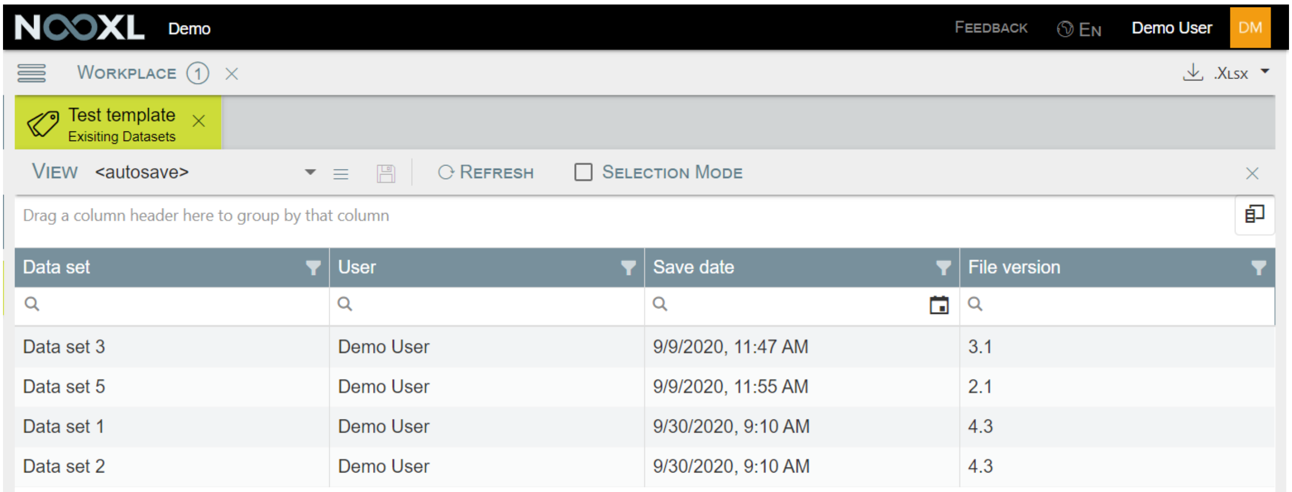
1. Jump to the list of existing data sets (siehe Seite 119).
2. Depending on the configuration of the selections of the dataset, a click on ☰ opens a menu where further elements can be created, edited or deleted (siehe Seite 268).
3. Depending on the configuration of the template, there are different selections that describe a data set. There can also be templates without any selection, in which case there is exactly one data set.
4. If an element is selected for each of the available selections of the template, the View button turns green and can be clicked to load the selected data set.
5. A click on this button opens a menu through which the following additional functions can be accessed:
    a. Copy data from another data set (siehe Seite 123)
    b. Recalculation of data sets (siehe Seite 125)
    c. Import data via a template (siehe Seite 127)
    d. Mass export of data sets (siehe Seite 251)
6. This dropdown lets you switch between selection releases. Older selection releases (siehe Seite 239) let you access older major versions of the template **(7)**.
7. This menu lets you choose an older version of the template (siehe Seite 239).
8. When you click on the templates name, you will go back to the navigation with all the templates.



List all existing data sets

The list of existing data sets shows one row per data set and contains different information about each data set in the columns.

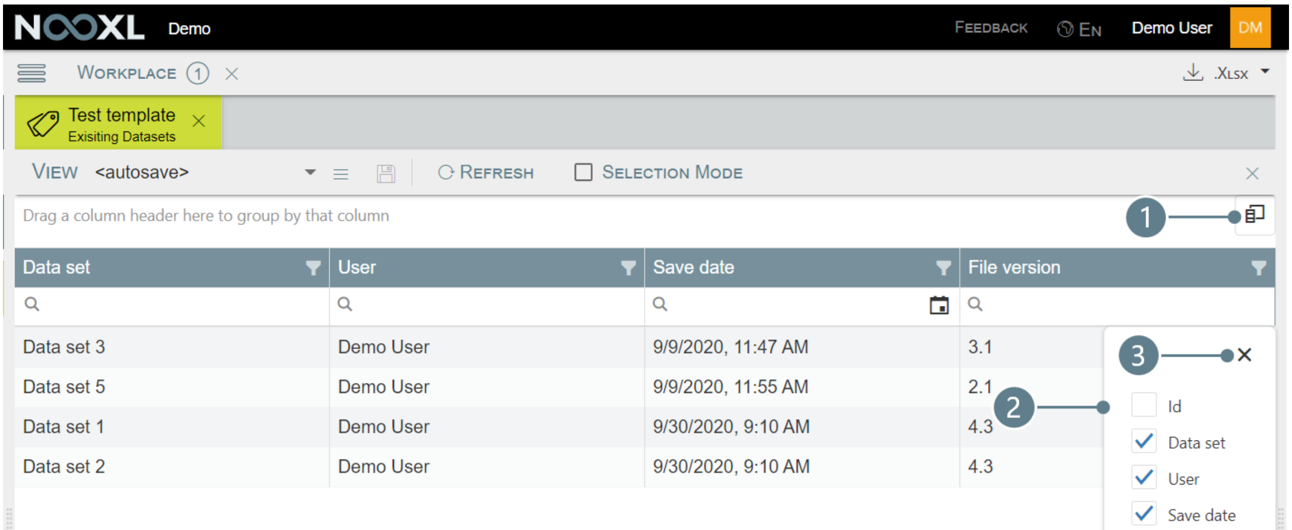
A click on an entry in the list opens the data set in a new tab of the workspace.



Data set	User	Save date	File version
Data set 3	Demo User	9/9/2020, 11:47 AM	3.1
Data set 5	Demo User	9/9/2020, 11:55 AM	2.1
Data set 1	Demo User	9/30/2020, 9:10 AM	4.3
Data set 2	Demo User	9/30/2020, 9:10 AM	4.3

Configuration of the columns

The displayed columns are freely configurable by the users. To do so, click on the column symbol **(1)** and then tick the columns to be displayed **(2)**. As soon as the selection is complete, the selection window can be closed again by clicking on the "x" **(3)**.



Data set	User	Save date	File version
Data set 3	Demo User	9/9/2020, 11:47 AM	3.1
Data set 5	Demo User	9/9/2020, 11:55 AM	2.1
Data set 1	Demo User	9/30/2020, 9:10 AM	4.3
Data set 2	Demo User	9/30/2020, 9:10 AM	4.3

The available columns are on the one hand standard columns, which are always present, and on the other hand every selection of the data set selection is available as a column.

Column	Description
Id	The Nooxl internal Id to identify the data set.
User	Display name of the user who last used the record. ⓘ It is irrelevant whether the user has also changed the data record and/or saved this change. A simple display is sufficient to store the new user name in the list.
Save date	Date on which the user saved the record. The date format corresponds to ISO 8601[2] (YYYY-MM-DD). And time at which the user saved the data record. The format corresponds to the extended time format of ISO 8601[3] without seconds ([hh]: [mm]).
File version	The version number of the template that was used to save the record.
Access?	The following columns always consider the current user. There is a ticket checkbox for each of the different permissions you can set up in the workflows (siehe Seite 106)of Nooxl. The message contains whatever was is stored for the current user in the AssignText column of the workflow (siehe Seite 106).

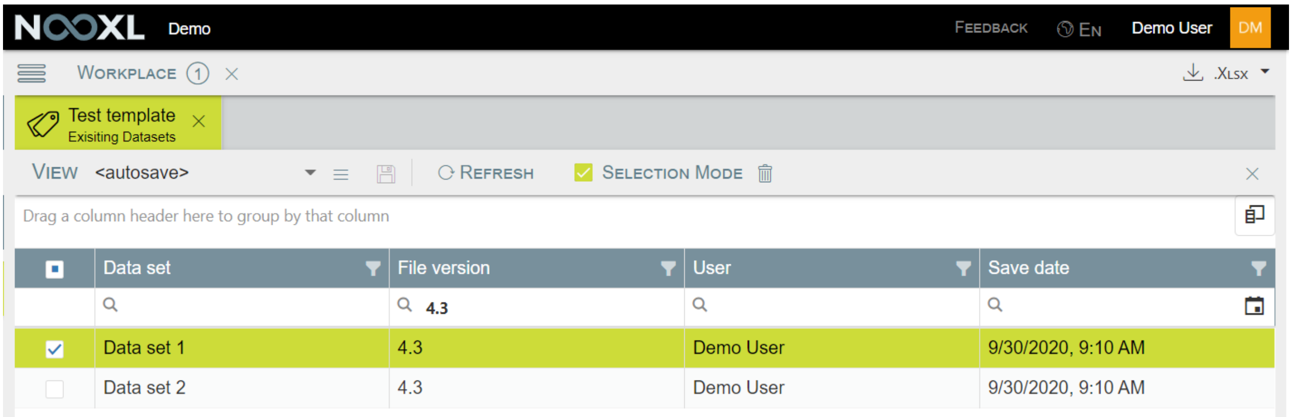
[2] https://en.wikipedia.org/wiki/ISO_8601
[3] https://en.wikipedia.org/wiki/ISO_8601

Save?	
Delete?	
ToDo?	
Message	

1: Standard columns of the list of existing data sets

Search for a data set

You can filter the data sets by searching for values in the columns.



☐	Data set	File version	User	Save date
		4.3		
☑	Data set 1	4.3	Demo User	9/30/2020, 9:10 AM
☐	Data set 2	4.3	Demo User	9/30/2020, 9:10 AM

✓ Note that you can change the search type depending on the column, by clicking on the 🔍. For example you can search for all data sets saved between to date/ times by changing the type to *between* and giving a start and end date.

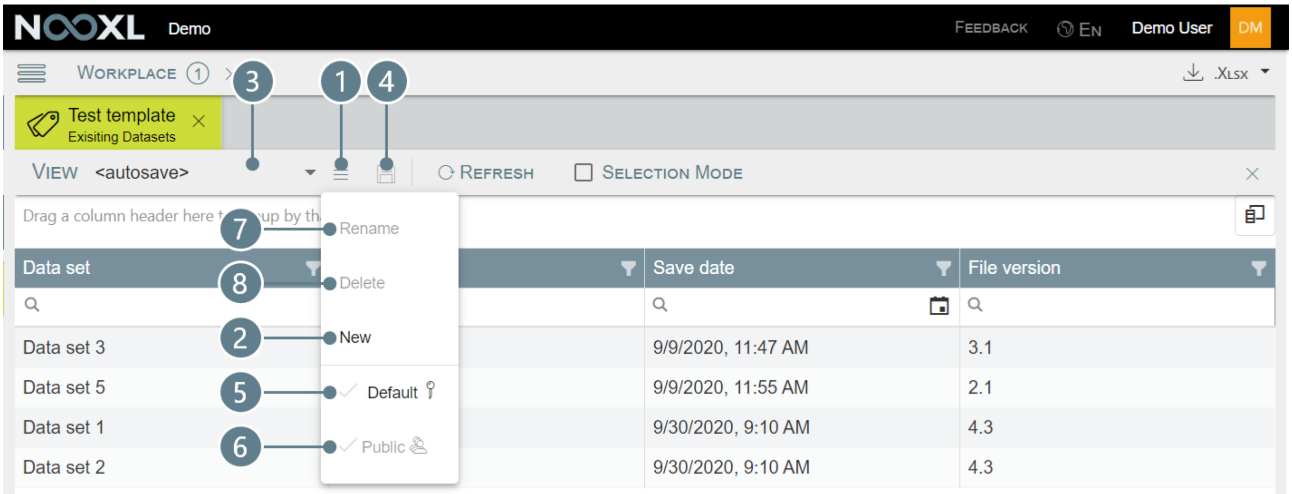
Saving and interacting with saved column configuration

The last column view set up is automatically saved for each user and used in the future. In addition, each user can also configure and save any number of other column configuration, so that different views can be pre-configured for different use cases. These views can be made public so that other users of the app can use the same column view.

The steps for saving configurations are:

1. Opens the menu to interact with column configurations (create new, delete, modify, publish, etc.)
2. A click on New creates a new view, which can be named.
3. Opens a selection menu with all available views.
4. A click on the disk saves the current view. This button is not available in the <autosave> view.
5. Marks the current view as the user's default view, which is selected as default when the list of records is opened.
6. Makes the current view available for other users of the app.
7. Renames the current view.

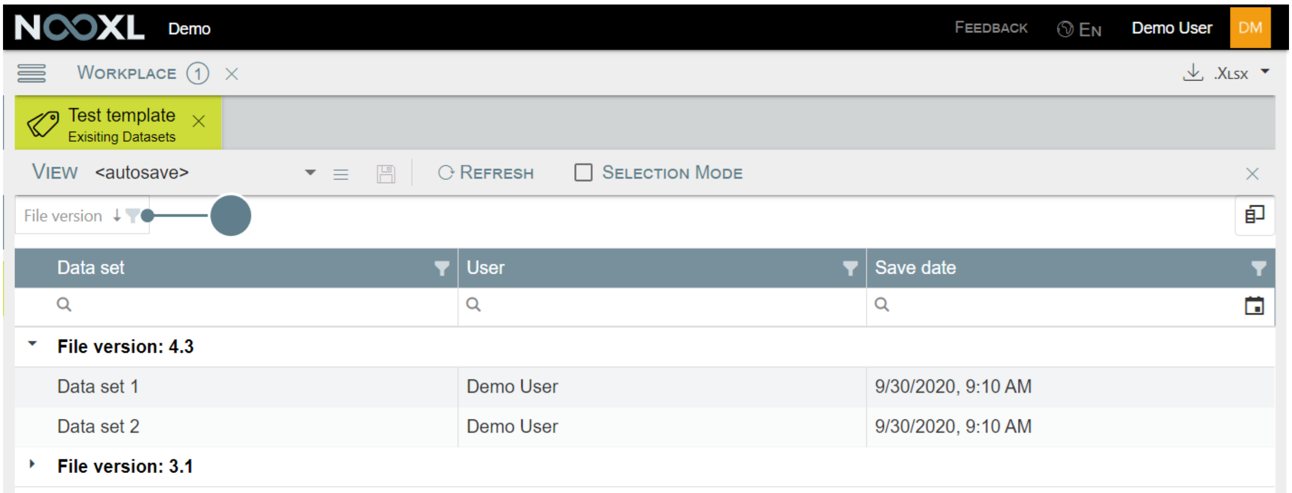
8. Deletes the current view.



Data set	Save date	File version
Data set 3	9/9/2020, 11:47 AM	3.1
Data set 5	9/9/2020, 11:55 AM	2.1
Data set 1	9/30/2020, 9:10 AM	4.3
Data set 2	9/30/2020, 9:10 AM	4.3

Grouping the data sets

Besides the pure list view, columns can also be used to create groupings. To do this, simply drag and drop the desired column header into the designated area.

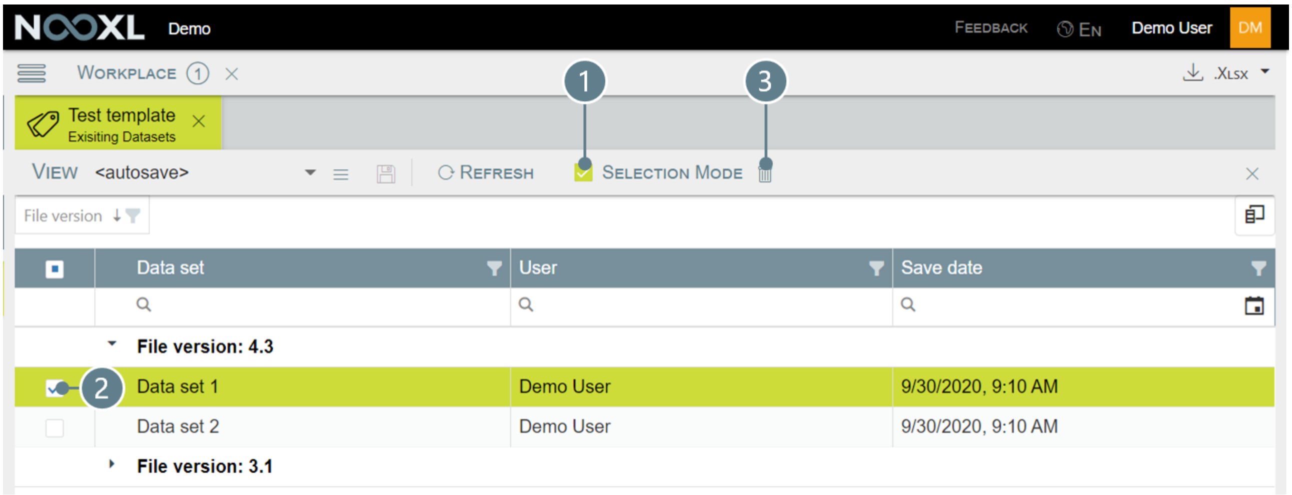


Data set	User	Save date
File version: 4.3		
Data set 1	Demo User	9/30/2020, 9:10 AM
Data set 2	Demo User	9/30/2020, 9:10 AM
File version: 3.1		

There must be at least one column in the table. The order of the hierarchy can be changed at any time by drag and drop.

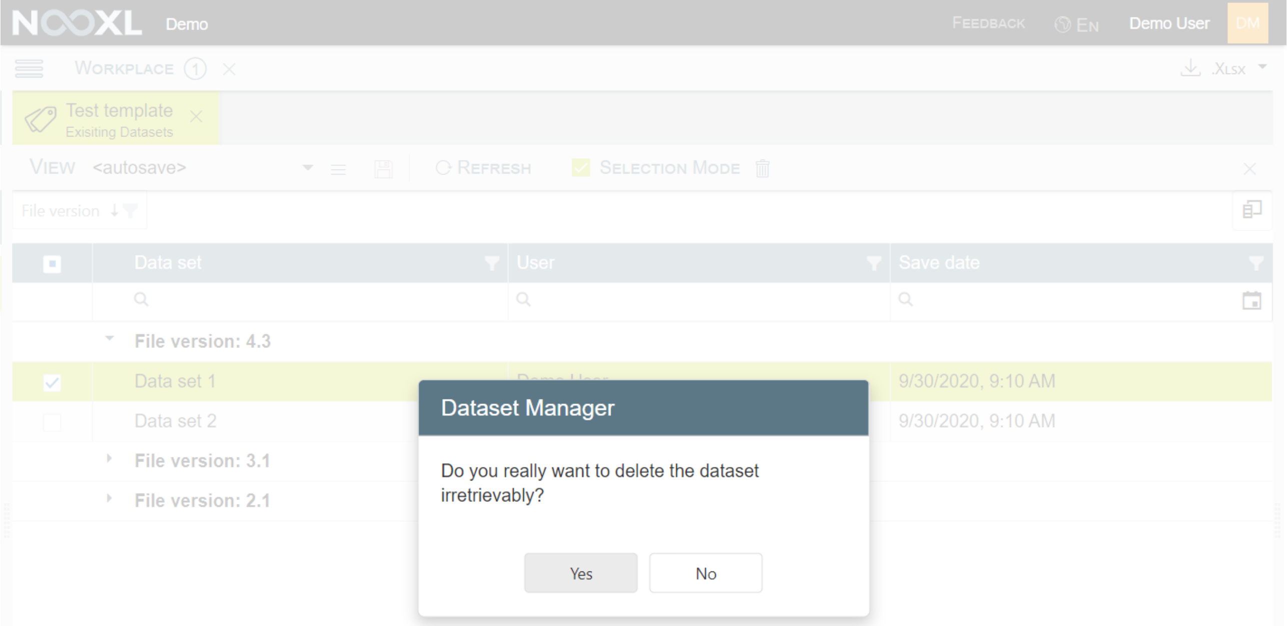
Deleting a data set

To permanently delete a data set of a template, the selection mode must be activated **(1)**. Then the records to be deleted can be selected in the list **(2)** and deleted by clicking on the trash can **(3)**.



	Data set	User	Save date
	File version: 4.3		
☑	Data set 1	Demo User	9/30/2020, 9:10 AM
□	Data set 2	Demo User	9/30/2020, 9:10 AM
	File version: 3.1		

Before deleting, Nooxl asks again if the selected records should really be deleted. A click on Yes then deletes the data set(s).

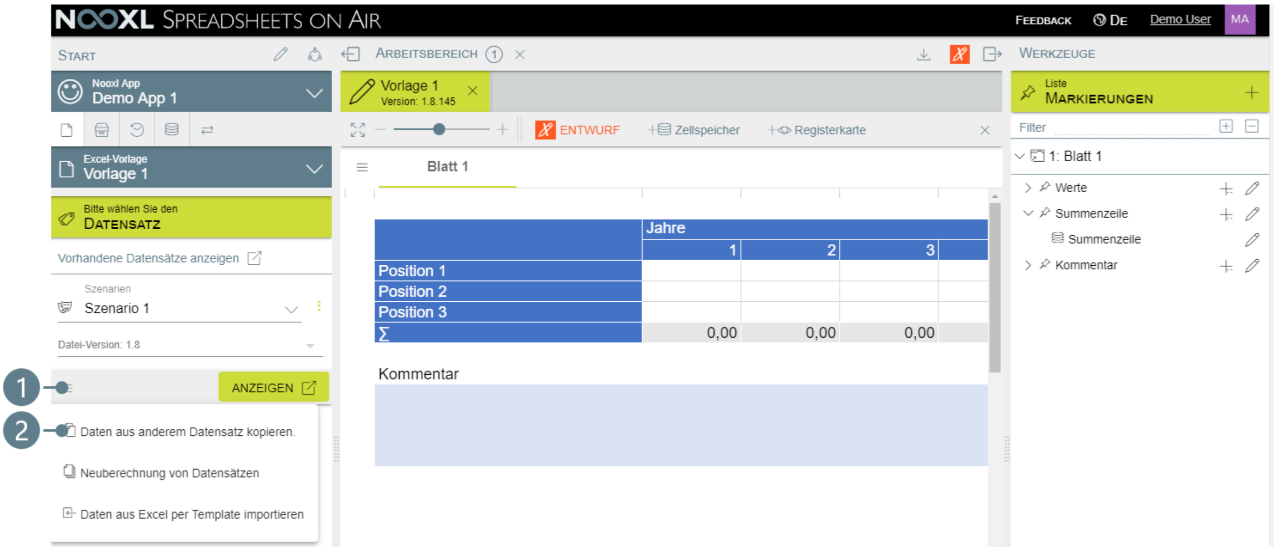


Do you really want to delete the dataset irretrievably?

3.7.2 Copy data from another data set

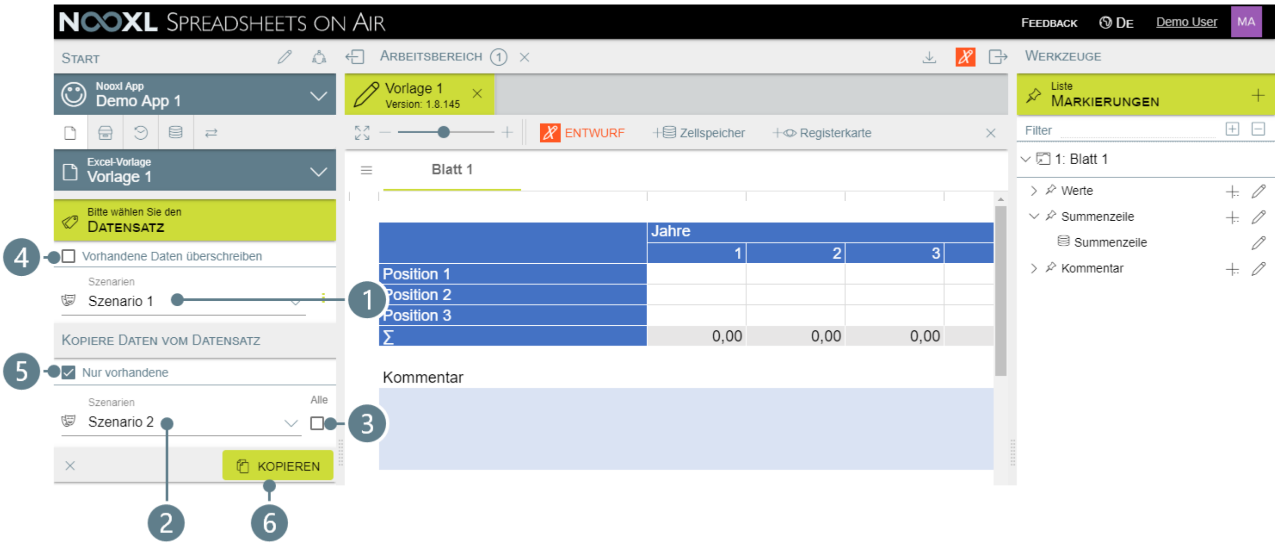
Copying data records is useful if, for example, you want to start a new planning session but want to build on the planning of the last session and do not want to restart it completely.

To copy data sets, click on the three blue-grey horizontal lines (1) in the data set selection of the template and then select the entry "Copy data from another data set" (2) in the menu that opens.

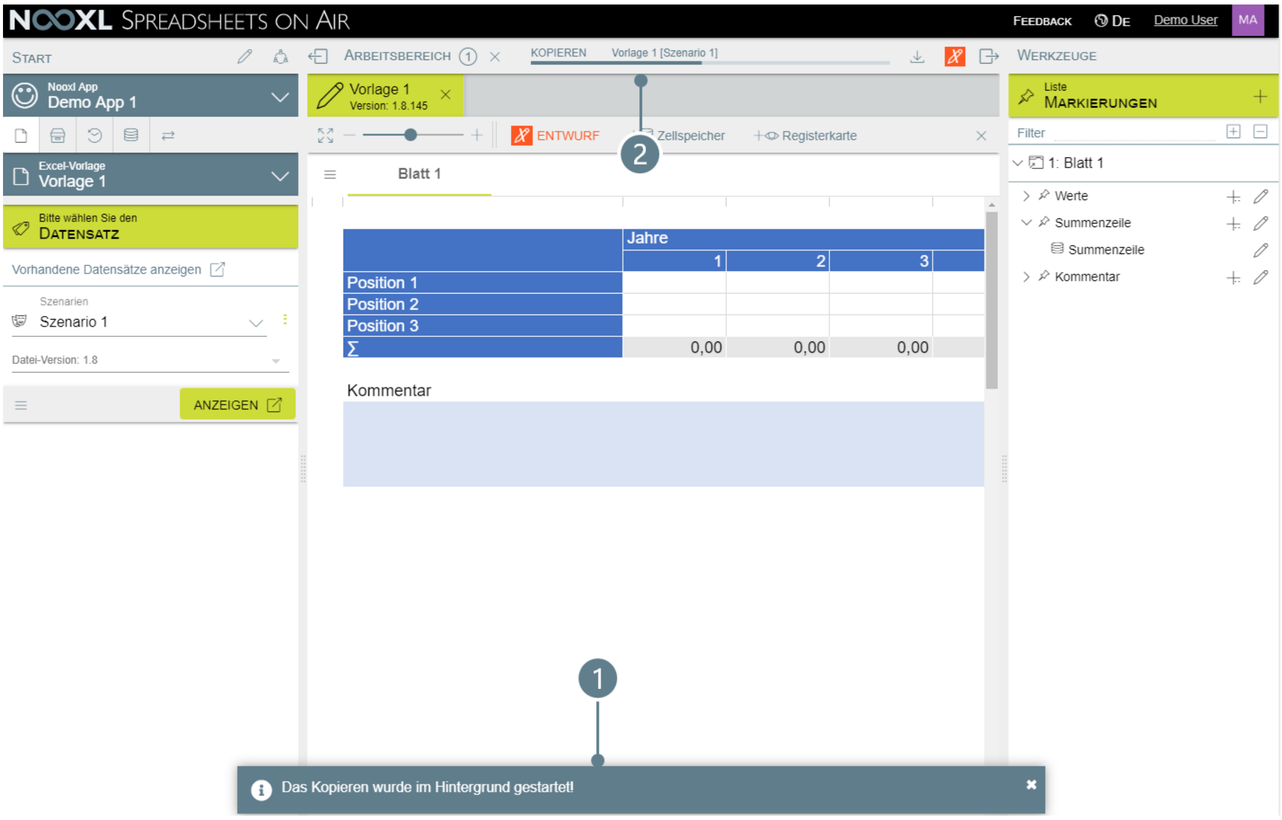


In the opening mask you have the following setting options:

1. This is the target data set to which the data is copied.
2. This is the source data set whose data is copied to the target data set (1).
3. If your data set selection has several selections, it may be useful to select the "All" option.
4. If this option is not active, existing data in the target data set (1) will not be overwritten. This means that only data from cell stores that are not filled in the target Data Set will be enriched by the data from the source.
5. If this option is active, only "filled" cell memories from the source dataset are copied to the target. If this option is not activated, data in the target would be overwritten with "nothing".
6. If everything is set, click on Copy to start the copying process.



At the bottom of the screen you will be informed that the copy process has started in the background (1) and at the top you can see the progress (2).



	Jahre		
	1	2	3
Position 1			
Position 2			
Position 3			
∑	0,00	0,00	0,00

Kommentar

Das Kopieren wurde im Hintergrund gestartet!

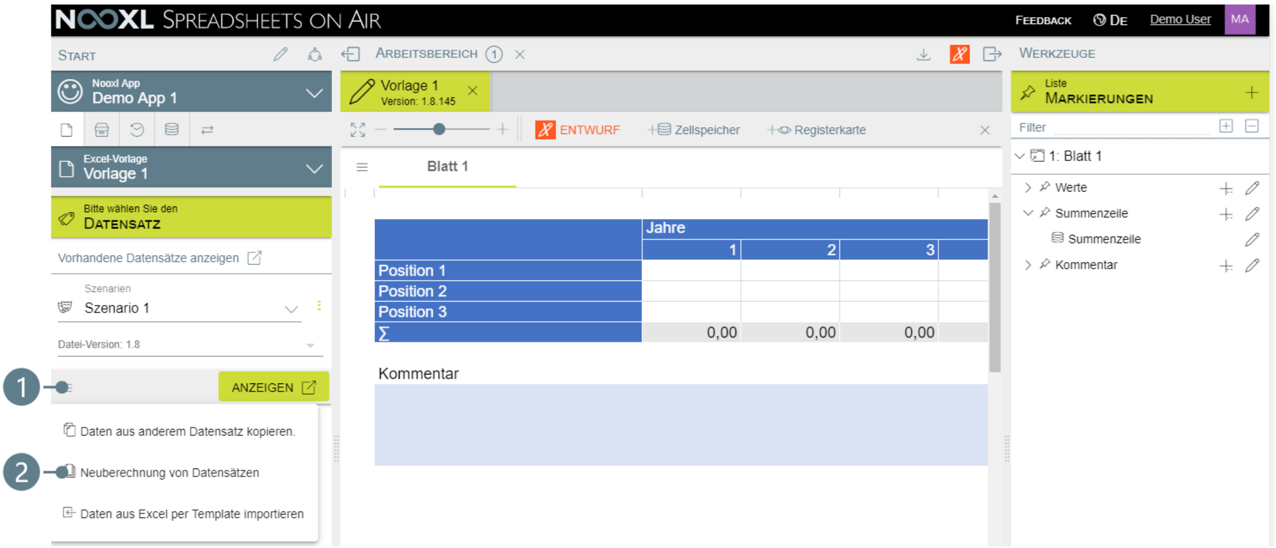
✓ The copy process takes place on the servers of Nooxl, which means you can switch off your computer and Nooxl continues the process without you.

3.7.3 Recalculation of data records

A recalculation of data records is always necessary if

- uploaded a new template with modified Excel logic in Nooxl, or
- have connected new cell memories whose values are to be used in other templates.

To recalculate data sets, click on the three blue-grey horizontal lines (1) in the data set selection of the template and then select "Recalculate data sets" (2) from the menu that opens.



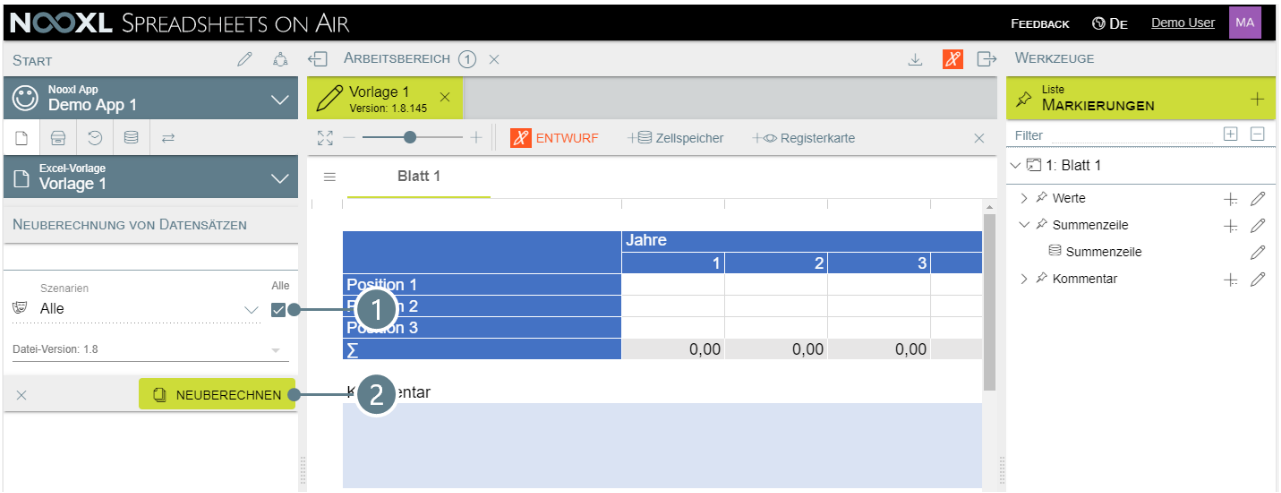
Vorlage 1
Version: 1.8.145

Szenarien: Szenario 1

Datei-Version: 1.8

	Jahre		
	1	2	3
Position 1			
Position 2			
Position 3			
Σ	0,00	0,00	0,00

Depending on the use case, mark in the available selections that all containing elements (1) are to be calculated and then click on the Recalculate button (2).



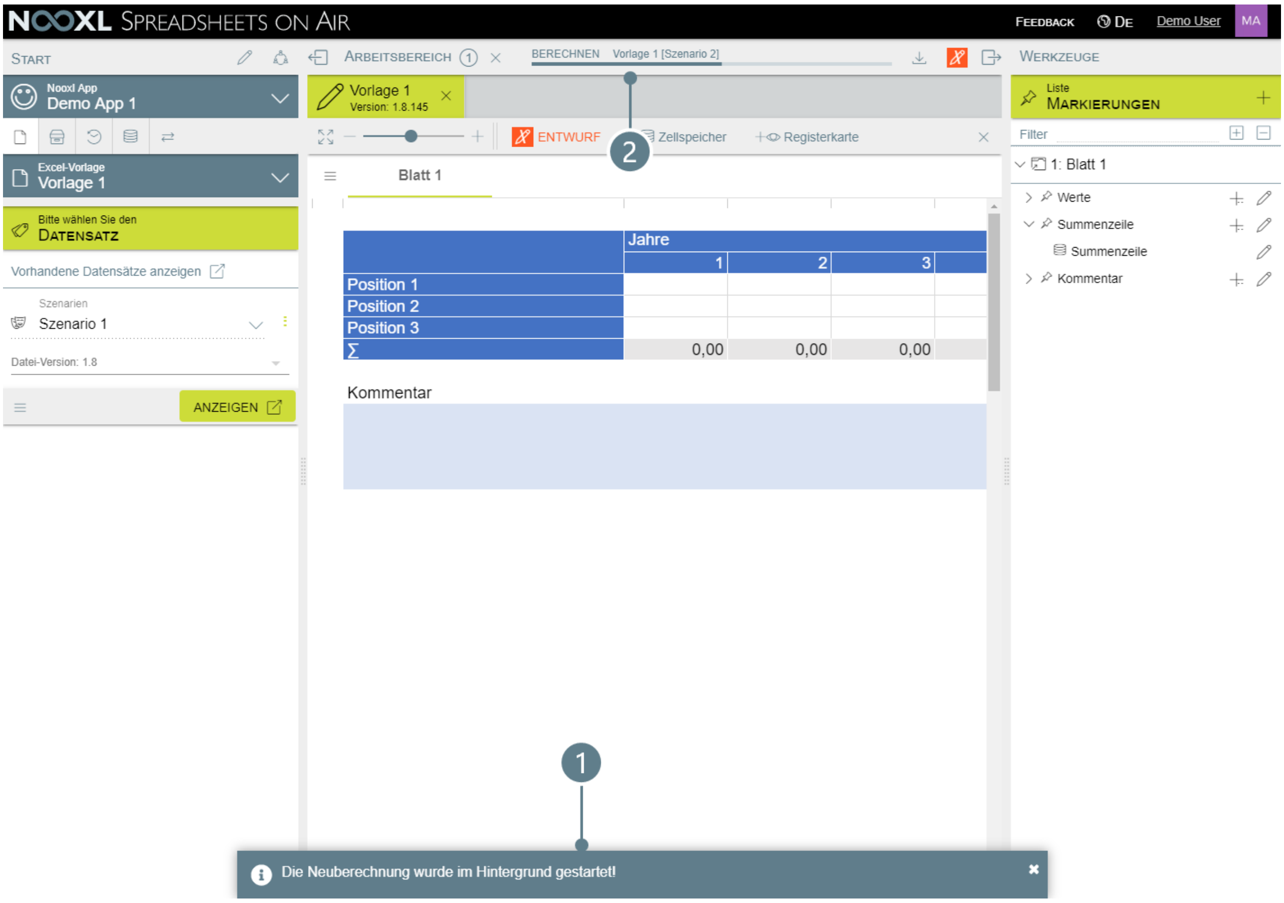
Vorlage 1
Version: 1.8.145

Szenarien: Alle
Alle ☑

Datei-Version: 1.8

	Jahre		
	1	2	3
Position 1			
Position 2			
Position 3			
Σ	0,00	0,00	0,00

At the bottom of the screen you will be informed that the recalculation was started in the background (1) and in the upper area you can see the progress (2).



	Jahre		
	1	2	3
Position 1			
Position 2			
Position 3			
Σ	0,00	0,00	0,00

Die Neuberechnung wurde im Hintergrund gestartet!

The recalculation takes place on the servers of Nooxl, this means you can switch off your computer and Nooxl continues the calculation without you.

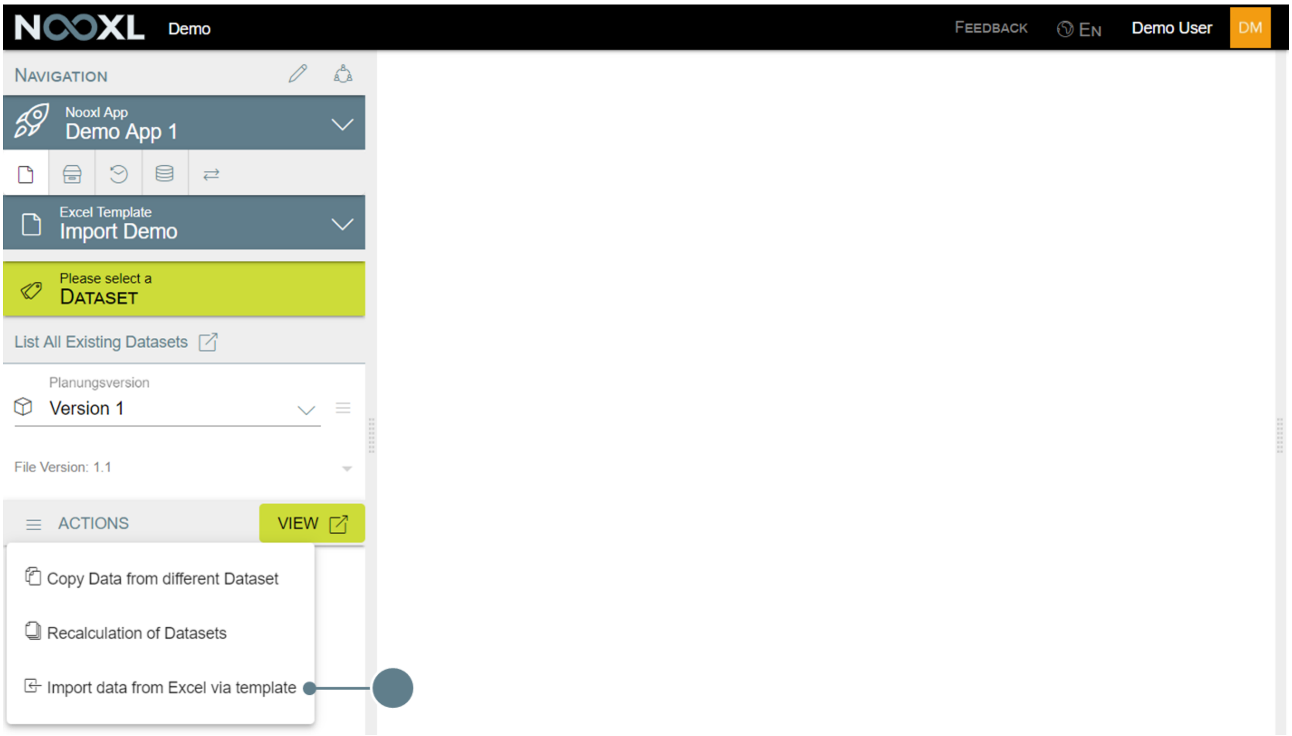
3.7.4 Import data via template

If you regularly receive data from third party systems as Excel, CSV or TXT files, you can create an import and migration template to extract, transform and load the data into Nooxl (ETL process). In this way, recurring similar data imports can easily be imported into Nooxl by your users.

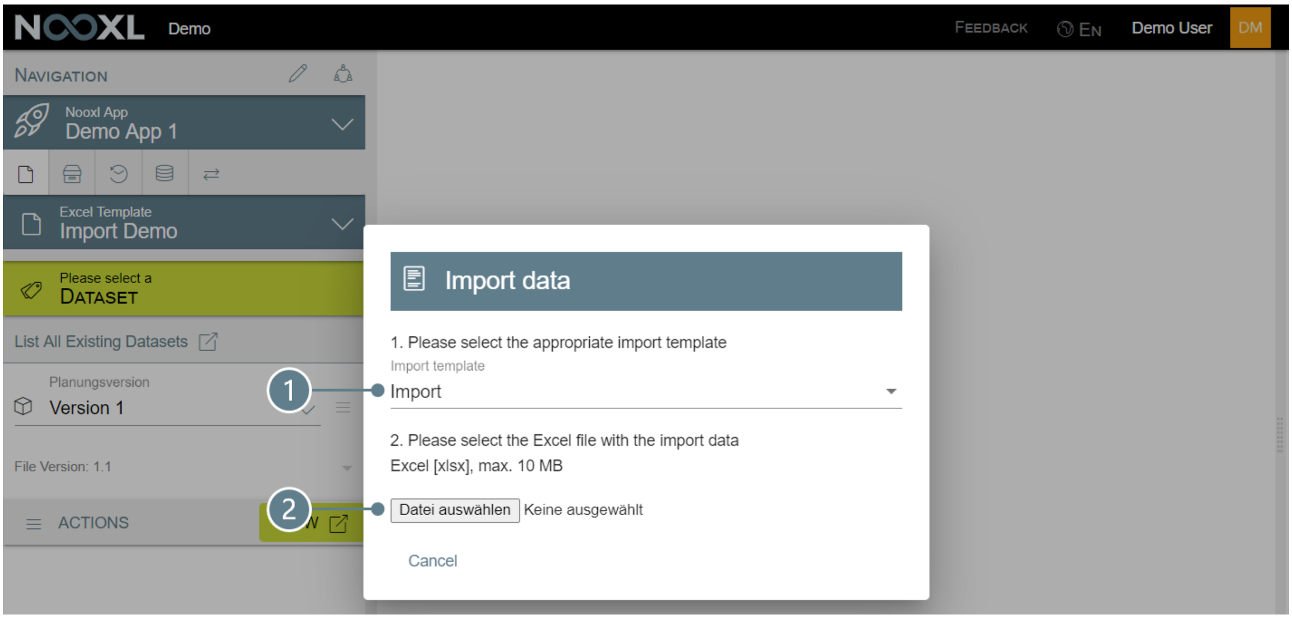
The following articles are available on this topic:

How to import data via template

When a template is set up with a data import and migration template you'll see a third option in your dataset actions menu:



The dialog *Import data* lets you choose an import template **(1)** and select the file **(2)** containing all the data. Once you have selected a file, a button to upload the data appears.



Import data

1. Please select the appropriate import template

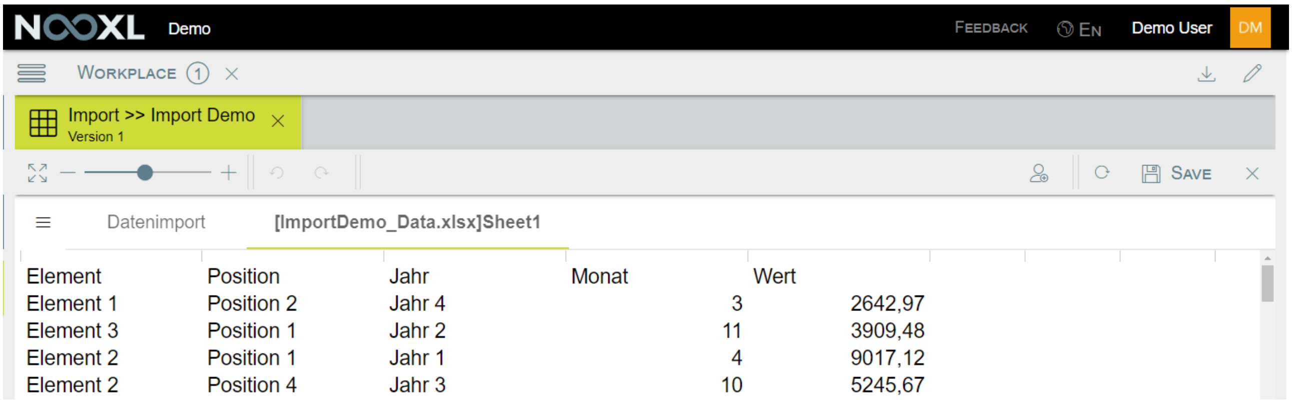
Import template: Import

2. Please select the Excel file with the import data

Excel [xlsx], max. 10 MB

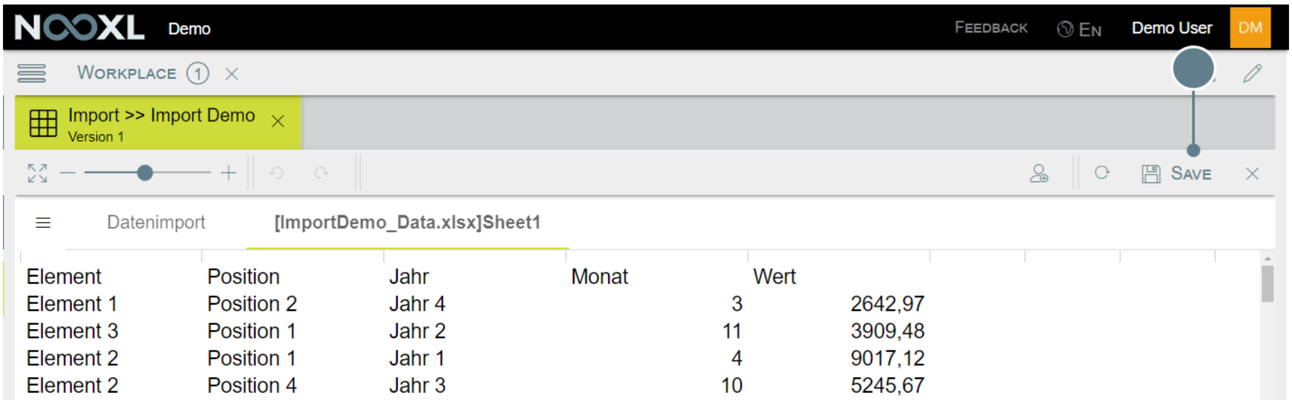
Keine ausgewählt

After the upload is complete, the template will open with an additional sheet. When you click on this sheet, you can see the actual data contained in your upload file.



Element	Position	Jahr	Monat	Wert
Element 1	Position 2	Jahr 4	3	2642,97
Element 3	Position 1	Jahr 2	11	3909,48
Element 2	Position 1	Jahr 1	4	9017,12
Element 2	Position 4	Jahr 3	10	5245,67

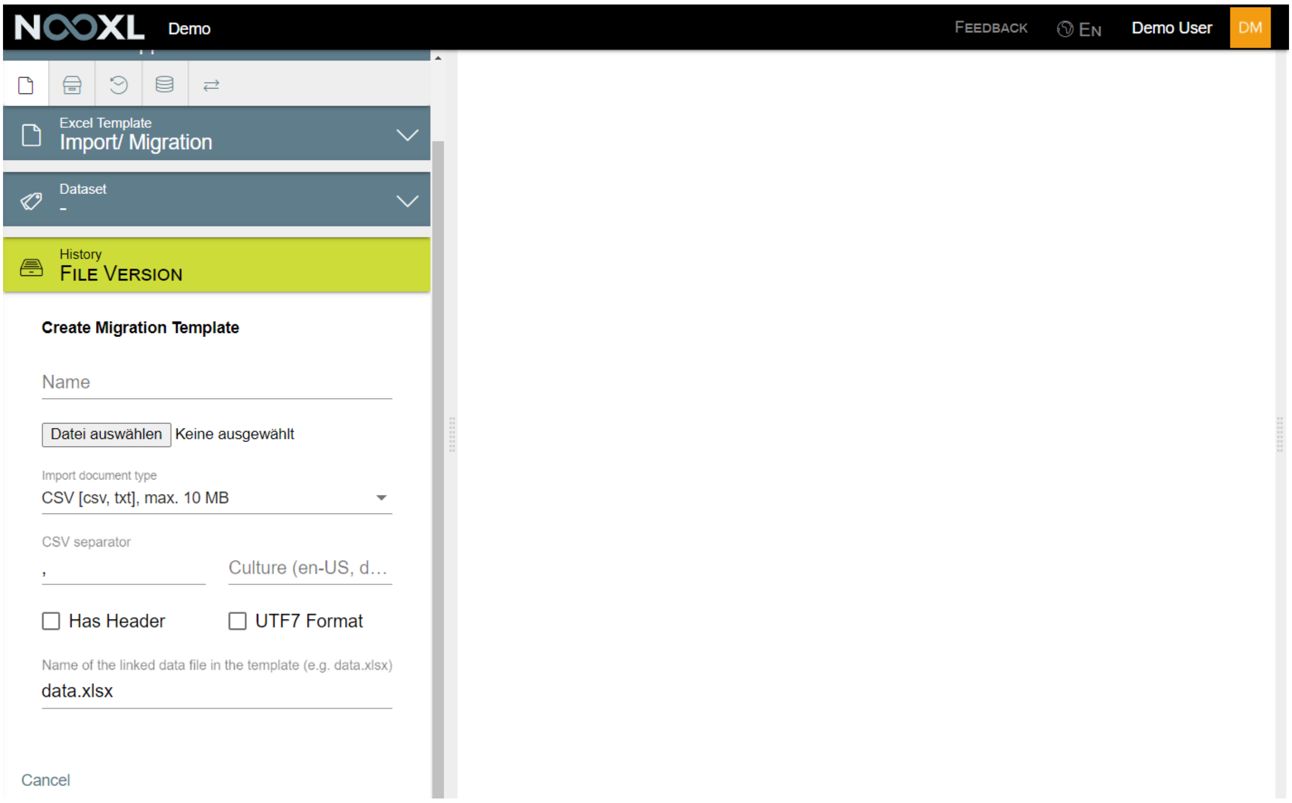
To finish the import process, click on *Save*.



Element	Position	Jahr	Monat	Wert
Element 1	Position 2	Jahr 4	3	2642,97
Element 3	Position 1	Jahr 2	11	3909,48
Element 2	Position 1	Jahr 1	4	9017,12
Element 2	Position 4	Jahr 3	10	5245,67

Create Migration Template Dialog

For CSV and TXT files



Create Migration Template

Name

Datei auswählen Keine ausgewählt

Import document type
CSV [csv, txt], max. 10 MB

CSV separator
,

Culture (en-US, d…

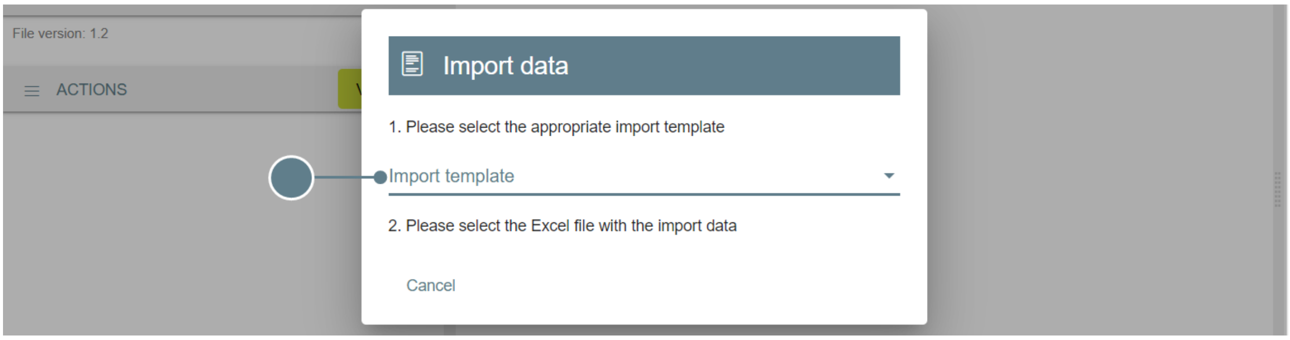
□ Has Header □ UTF7 Format

Name of the linked data file in the template (e.g. data.xlsx)
data.xlsx

Cancel

Name

The name of your Import template. This will be shown to the users in the Nooxl dialog "Import data":



Import data

1. Please select the appropriate import template

Import template

2. Please select the Excel file with the import data

Cancel

File

A file selection dialog, were you need to point Nooxl to the actual excel import and migration file.

Import document type

`CSV [csv, txt], max. 10 MB` is set here.

CSV separator

By default Nooxl recommends the comma as separator, since CSV is short for ***Comma*** *Separated Values*. However, some systems use a pipe symbol (|) or something exotic as the column separator, so here you can specify it.

Culture (en-US, de-DE,..)

The ISO 639-1 language code of the data you are dealing with. Essentially, this is where you tell Nooxl what to expect as decimal separator for numbers and what the date format looks like.

Has Header

If your data comes with a header row, check this option.

UTF7 Format

When this option is not set, the file is treated as an ANSI encoded file, which is okay for most data extracts. However, when you deal with special characters, your file is probably encoded with UTF-7 or UTF-8 and you want to tick this option in order to ensure that the special characters get imported correctly.

Name of the linked data file in the template (e.g. data.xlsx)

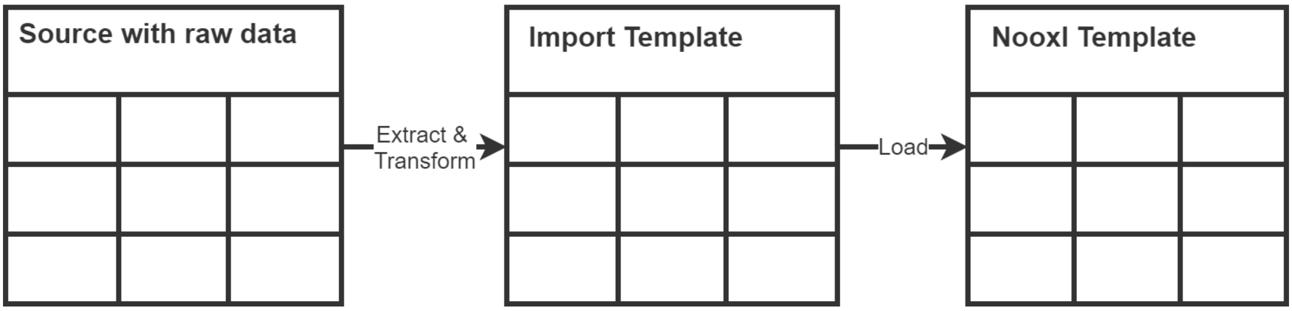
The name of the Excel data example file you used to create your import and migration template with. This string will be replaced with whatever the actual name of the import file is, which the user is trying to upload.

✓ When you create an import and migration template based on a csv or txt file, you will do this as well with an Excel file as your example file. Please make sure, that the sheet, in which your data is located, is called `CSV` (all caps).

How to create an Import and Migration template

The following article will guide you through the process of how to create an import template for your Nooxl App. It will demonstrate the underlying concepts, which you can then apply to your specific use case.

The following schema illustrates the import and migration process.



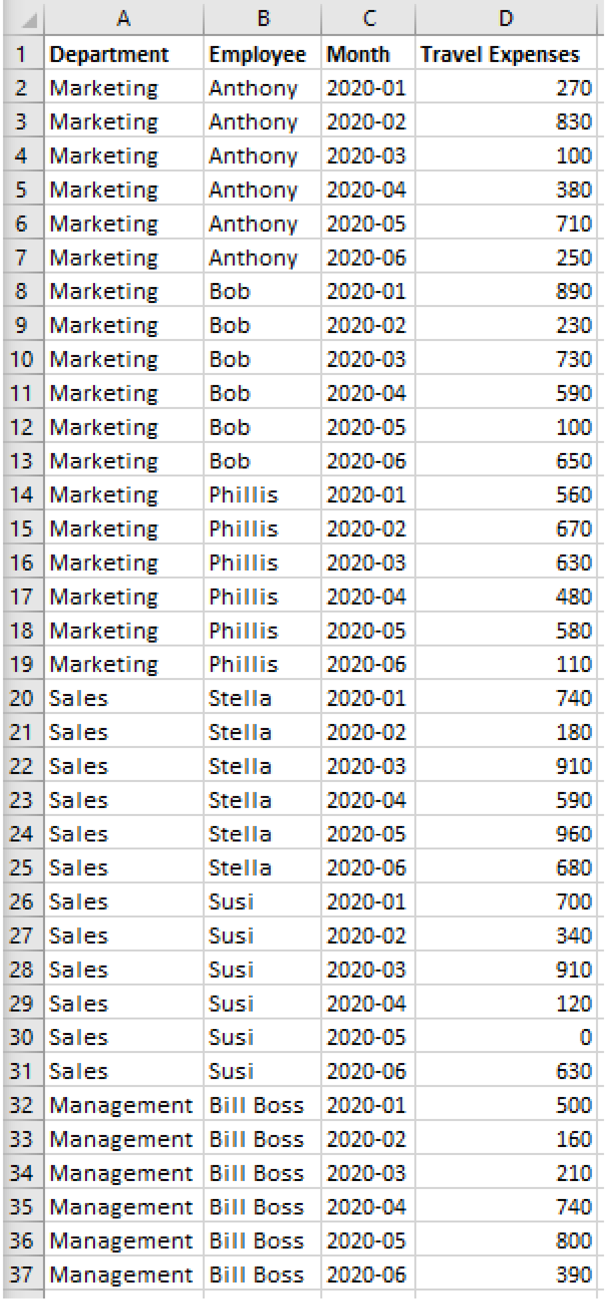
Step 1: View your source file with the raw data

First of all, we need to take a look at the data source provided to us, so we know what we are dealing with. Nooxl supports *.txt, *.csv and *.xlsx files as data sources.

In our example we will deal with travel expense data provided as an Excel spreadsheet by the travel agency of our company.

Please download the example file data for import.xlsx if you want to follow the guide.

In the file you will find the travel expenses per employee on a monthly basis. Additionally, the department of the employee is mentioned.



	A	B	C	D
1	**Department**	**Employee**	**Month**	**Travel Expenses**
2	Marketing	Anthony	2020-01	270
3	Marketing	Anthony	2020-02	830
4	Marketing	Anthony	2020-03	100
5	Marketing	Anthony	2020-04	380
6	Marketing	Anthony	2020-05	710
7	Marketing	Anthony	2020-06	250
8	Marketing	Bob	2020-01	890
9	Marketing	Bob	2020-02	230
10	Marketing	Bob	2020-03	730
11	Marketing	Bob	2020-04	590
12	Marketing	Bob	2020-05	100
13	Marketing	Bob	2020-06	650
14	Marketing	Phillis	2020-01	560
15	Marketing	Phillis	2020-02	670
16	Marketing	Phillis	2020-03	630
17	Marketing	Phillis	2020-04	480
18	Marketing	Phillis	2020-05	580
19	Marketing	Phillis	2020-06	110
20	Sales	Stella	2020-01	740
21	Sales	Stella	2020-02	180
22	Sales	Stella	2020-03	910
23	Sales	Stella	2020-04	590
24	Sales	Stella	2020-05	960
25	Sales	Stella	2020-06	680
26	Sales	Susi	2020-01	700
27	Sales	Susi	2020-02	340
28	Sales	Susi	2020-03	910
29	Sales	Susi	2020-04	120
30	Sales	Susi	2020-05	0
31	Sales	Susi	2020-06	630
32	Management	Bill Boss	2020-01	500
33	Management	Bill Boss	2020-02	160
34	Management	Bill Boss	2020-03	210
35	Management	Bill Boss	2020-04	740
36	Management	Bill Boss	2020-05	800
37	Management	Bill Boss	2020-06	390

Step 2: Decide which data you need

Most of the time, you'll deal with files which are not tailored specifically for you. Typically, the files will contain information you do not need and which you want to discard on the way into Nooxl. This will dictate the layouts of your Nooxl template and your Import template.

Our travel expense example has detailed data per employee, but we only want to know the total travel expenses per department per month. So this is something we will need to transform in our Import template.

Step 3: Create your Nooxl template and store your data

In this step we create the Nooxl Template used to load the data, which is the template on the right side in the process scheme at the top. It will also be the base for the import and migration template in the middle.

As mentioned in the last step, we want to store the travel expenses per department per month in Nooxl. As the layout we could choose a tabular layout, but we will go for a X-/ Y-axis approach.

Department	Month	Sum of travel expenses
Management	2020-01	1234
Management	2020-02	5678
...	...	...

2: tabular layout example

↓ Department / → Month	2020-01	2020-02	...
Management			
Marketing			
Sales			

3: X-/ Y-Axis approach

Create the two catalogs for the two dimensions

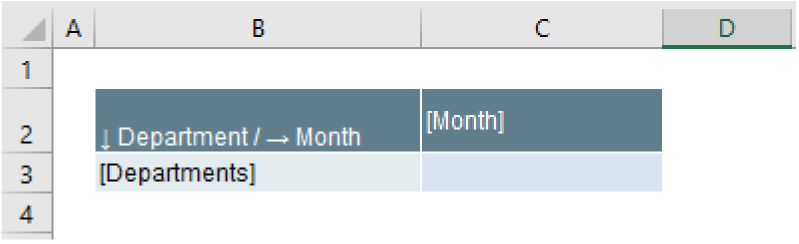
For the Nooxl template you will need two catalogs (siehe Seite 262) (*Department* and *Month*), with the following elements (siehe Seite 268):

- Month
    - 2020-01
    - 2020-02

  - 2020-03
  - 2020-04
  - 2020-05
  - 2020-06
- Department
  - Management
  - Marketing
  - Sales

Create the Nooxl template in Excel

The Nooxl template will look really simple, as it consists of just four cells.



	A	B	C	D
1				
2		↓ Department / → Month	[Month]	
3		[Departments]		
4				

You can download it here.

In `C2` we'll use a selection (siehe Seite 277) of our catalog *Month* to insert as many columns as we need. The same applies to `B3`, where we utilize the catalog *Departments* to generate rows.

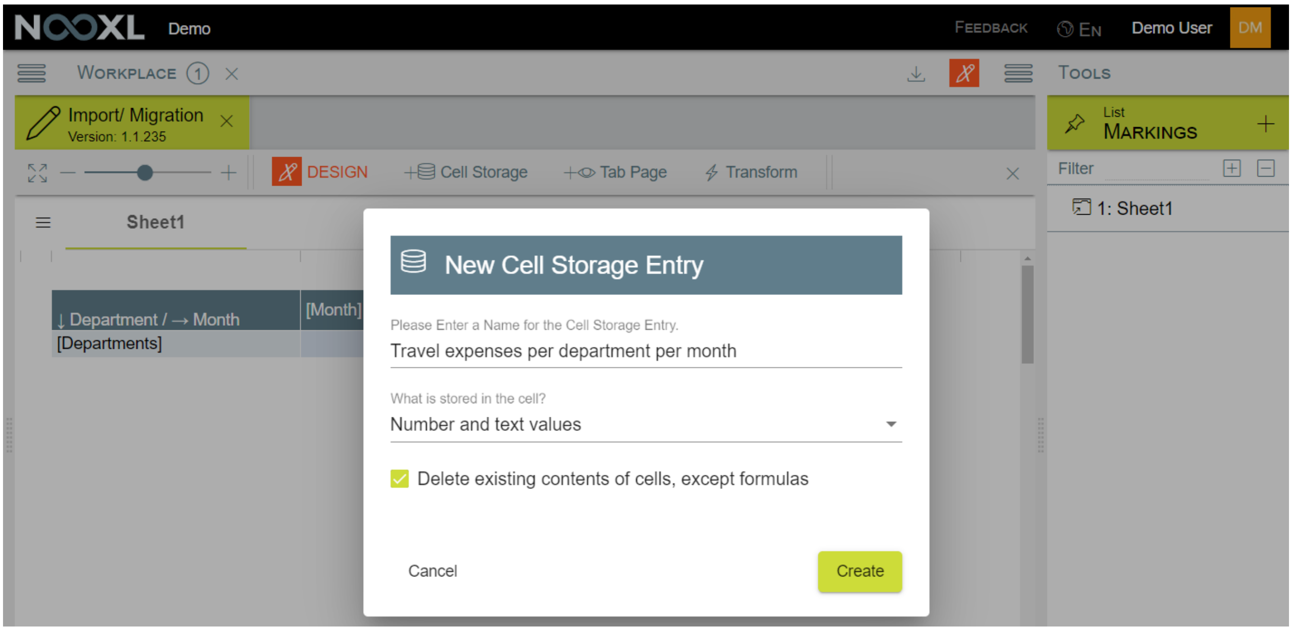
> ⓘ You could of course create the necessary rows and columns directly instead of using catalogs. But by using catalogs for the dimensions you make your import future-proof, as it will automatically adapt to new months and employees.

Add the template as a new item to your app

Please use the provided template or your own and set it up as a new template in Nooxl (siehe Seite 26). After you have done this, please open the template in the design mode (siehe Seite 29).

Create a cell storage for the imported data

Select the cell `C3` and click on + Cell Storage to create a new cell storage entry for the cell. Give your cell storage a meaningful name and click on create.



New Cell Storage Entry

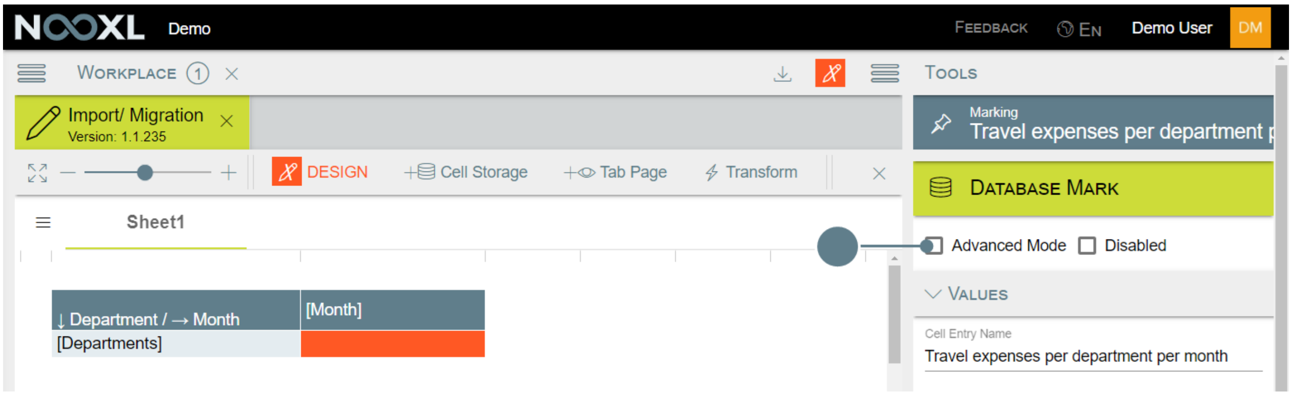
Please Enter a Name for the Cell Storage Entry.
Travel expenses per department per month

What is stored in the cell?
Number and text values

☑ Delete existing contents of cells, except formulas

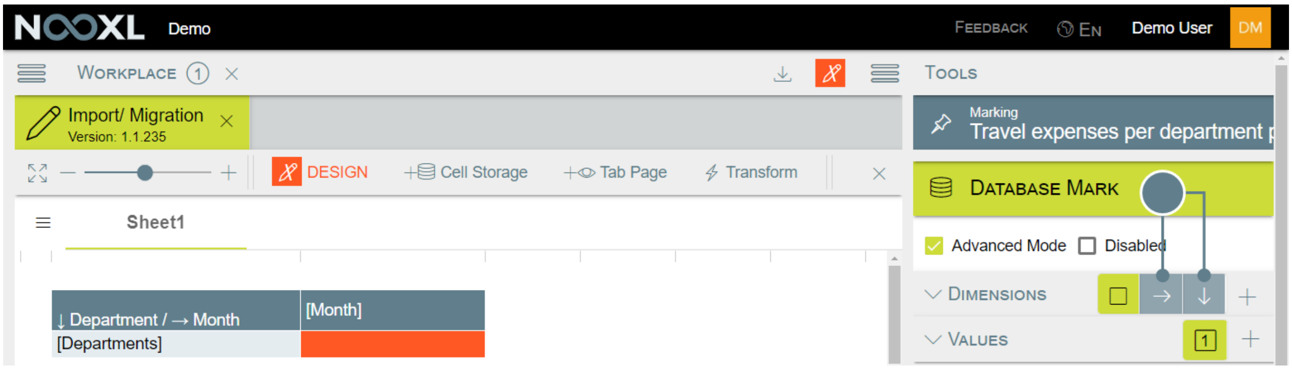
Cancel | Create

Open the database mark in the right hand tools section and activate the advanced mode.

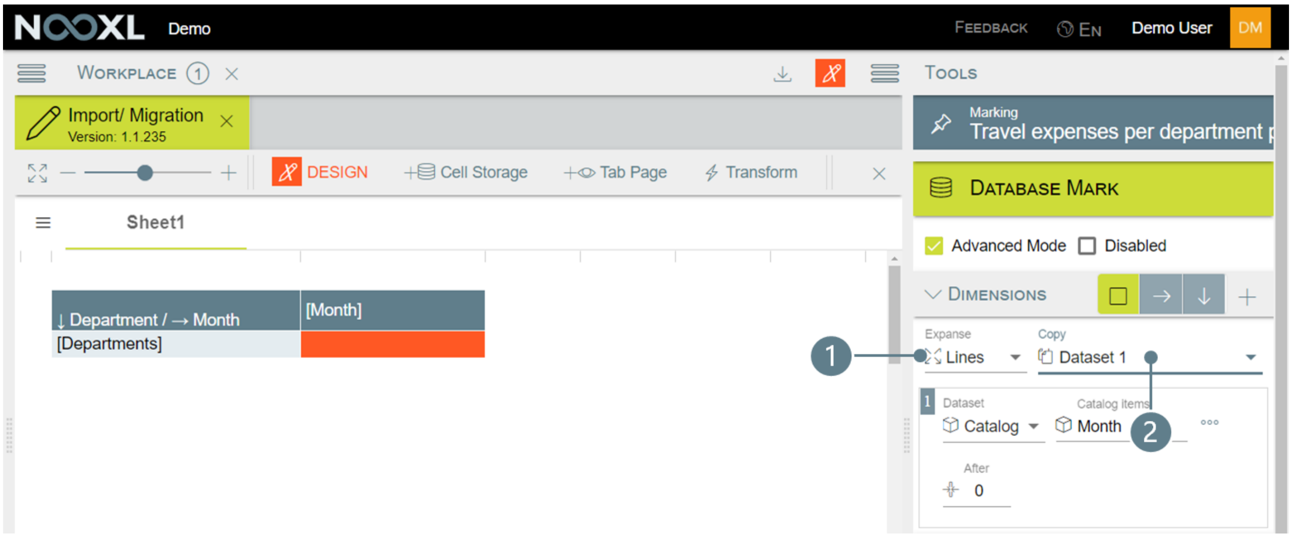


Cell Entry Name
Travel expenses per department per month

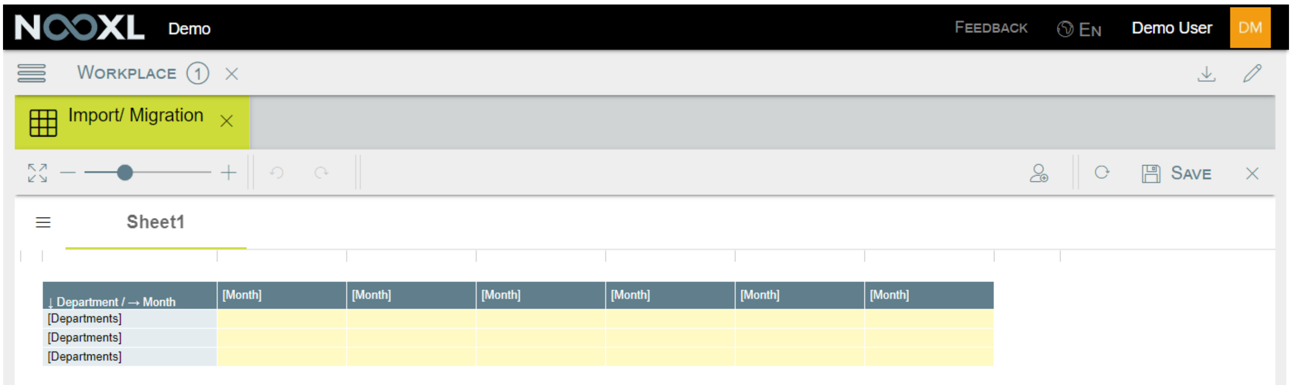
In the advanced mode set up the two catalogs as the vector right and vector down.



Set the Expanse option to *Insert complete lines* **(1)** and to *Copy cells with size from dataset 1* **(2)**.



When you now take a look at the template in Nooxl you'll notice that the rows and columns have been inserted, but the labels are missing:



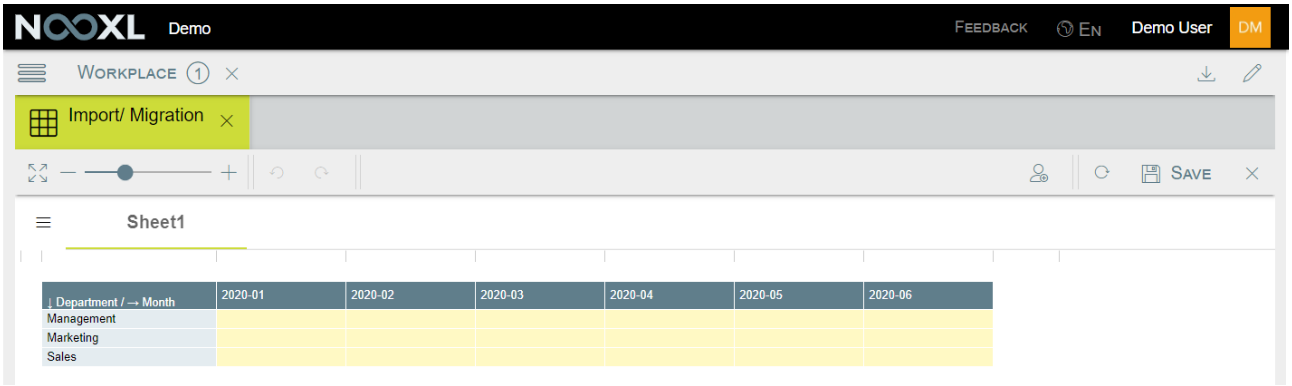
Read the catalog element names

To fix this issue you need to add two more values to your cell storage and set them up as follows:

	Department	**Month**
Cell Entry Name	Departments	Months
Content Type	RECORD	RECORD
Content Source	CONDITION	CONDITION
Dimension	Down	Right
Property	ELEMENT_NAME	ELEMENT_NAME

Storage	READ	READ
Offset Columns	1	0
Offset Rows	0	1
Cell Style Auto	deactivate	deactivate

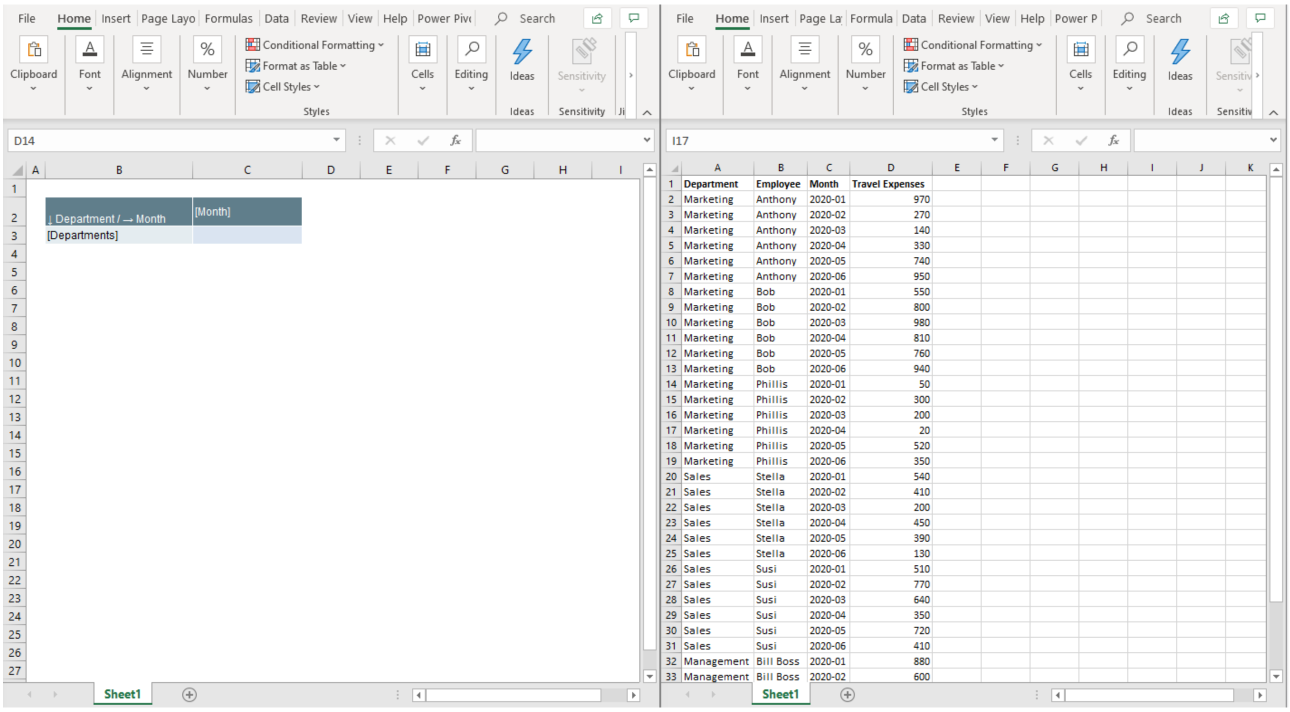
We get the desired result.



↓ Department / → Month	2020-01	2020-02	2020-03	2020-04	2020-05	2020-06
Management						
Marketing						
Sales						

Step 4: Alter your template to read data from the source file (create the import template)

In design mode you need to download your template. This will serve as the base for the import and migration template. Open up the template as well as the file with your import data and place them next to each other:



D14

↓ Department / → Month	[Month]
[Departments]	

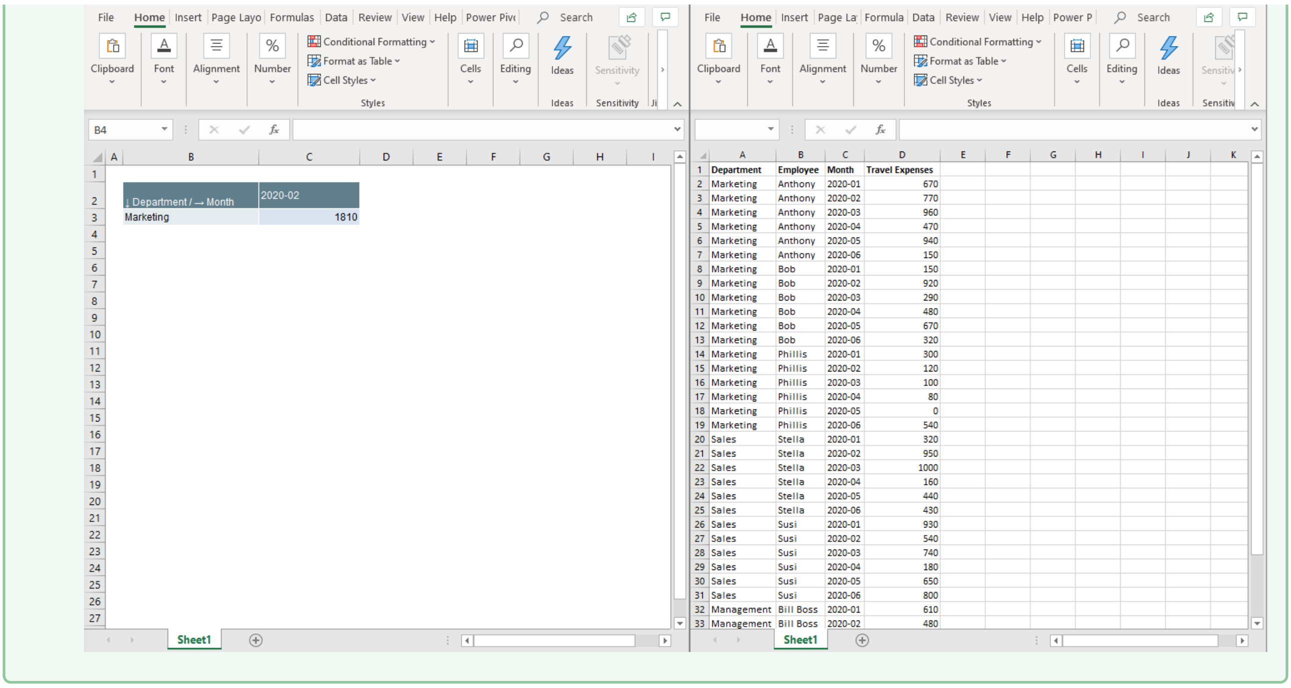
I17

	A	B	C	D
1	Department	Employee	Month	Travel Expenses
2	Marketing	Anthony	2020-01	970
3	Marketing	Anthony	2020-02	270
4	Marketing	Anthony	2020-03	140
5	Marketing	Anthony	2020-04	330
6	Marketing	Anthony	2020-05	740
7	Marketing	Anthony	2020-06	950
8	Marketing	Bob	2020-01	550
9	Marketing	Bob	2020-02	800
10	Marketing	Bob	2020-03	980
11	Marketing	Bob	2020-04	810
12	Marketing	Bob	2020-05	760
13	Marketing	Bob	2020-06	940
14	Marketing	Phillis	2020-01	50
15	Marketing	Phillis	2020-02	300
16	Marketing	Phillis	2020-03	200
17	Marketing	Phillis	2020-04	20
18	Marketing	Phillis	2020-05	520
19	Marketing	Phillis	2020-06	350
20	Sales	Stella	2020-01	540
21	Sales	Stella	2020-02	410
22	Sales	Stella	2020-03	200
23	Sales	Stella	2020-04	450
24	Sales	Stella	2020-05	390
25	Sales	Stella	2020-06	130
26	Sales	Susi	2020-01	510
27	Sales	Susi	2020-02	770
28	Sales	Susi	2020-03	640
29	Sales	Susi	2020-04	350
30	Sales	Susi	2020-05	720
31	Sales	Susi	2020-06	410
32	Management	Bill Boss	2020-01	880
33	Management	Bill Boss	2020-02	600

Go ahead and create an Excel logic in the cells making up your cell storage (in the example `C3`), which is able to extract the data from your source file. For the example file the formula could look like this:

```
=SUMIFS(
    '[data for import.xlsx]Sheet1'!$D:$D;
    '[data for import.xlsx]Sheet1'!$A:$A;$B3;
    '[data for import.xlsx]Sheet1'!$C:$C;C$2
)
```

✓ To test your formula you are of course allowed to insert test values in `C2` and `B3`:



	2020-02
↓ Department / → Month	
Marketing	1810

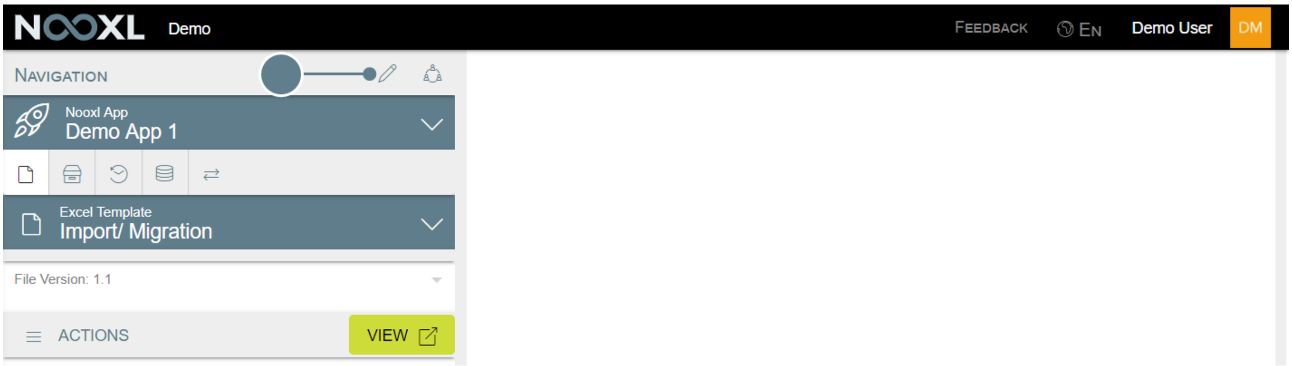
	A	B	C	D
1	Department	Employee	Month	Travel Expenses
2	Marketing	Anthony	2020-01	670
3	Marketing	Anthony	2020-02	770
4	Marketing	Anthony	2020-03	960
5	Marketing	Anthony	2020-04	470
6	Marketing	Anthony	2020-05	940
7	Marketing	Anthony	2020-06	150
8	Marketing	Bob	2020-01	150
9	Marketing	Bob	2020-02	920
10	Marketing	Bob	2020-03	290
11	Marketing	Bob	2020-04	480
12	Marketing	Bob	2020-05	670
13	Marketing	Bob	2020-06	320
14	Marketing	Phillis	2020-01	300
15	Marketing	Phillis	2020-02	120
16	Marketing	Phillis	2020-03	100
17	Marketing	Phillis	2020-04	80
18	Marketing	Phillis	2020-05	0
19	Marketing	Phillis	2020-06	540
20	Sales	Stella	2020-01	320
21	Sales	Stella	2020-02	950
22	Sales	Stella	2020-03	1000
23	Sales	Stella	2020-04	160
24	Sales	Stella	2020-05	440
25	Sales	Stella	2020-06	430
26	Sales	Susi	2020-01	930
27	Sales	Susi	2020-02	540
28	Sales	Susi	2020-03	740
29	Sales	Susi	2020-04	180
30	Sales	Susi	2020-05	650
31	Sales	Susi	2020-06	800
32	Management	Bill Boss	2020-01	610
33	Management	Bill Boss	2020-02	480

As soon as you are finished:

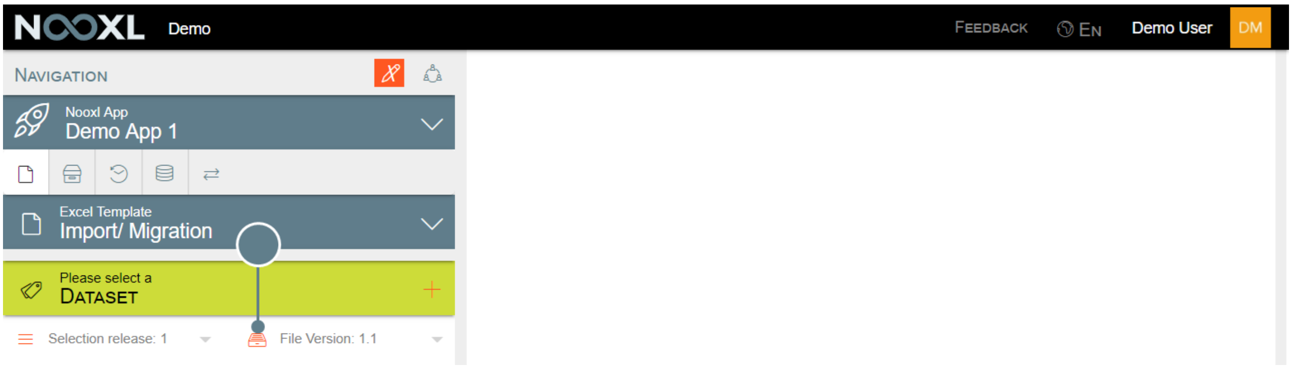
1. Save your file.
2. Make a note of the file name of your raw data (the string between the brackets in your formula). In the example this is `data for import.xlsx`
3. Close the import template.
4. Close the file with the raw data.

Step 5: Upload your import and migration template

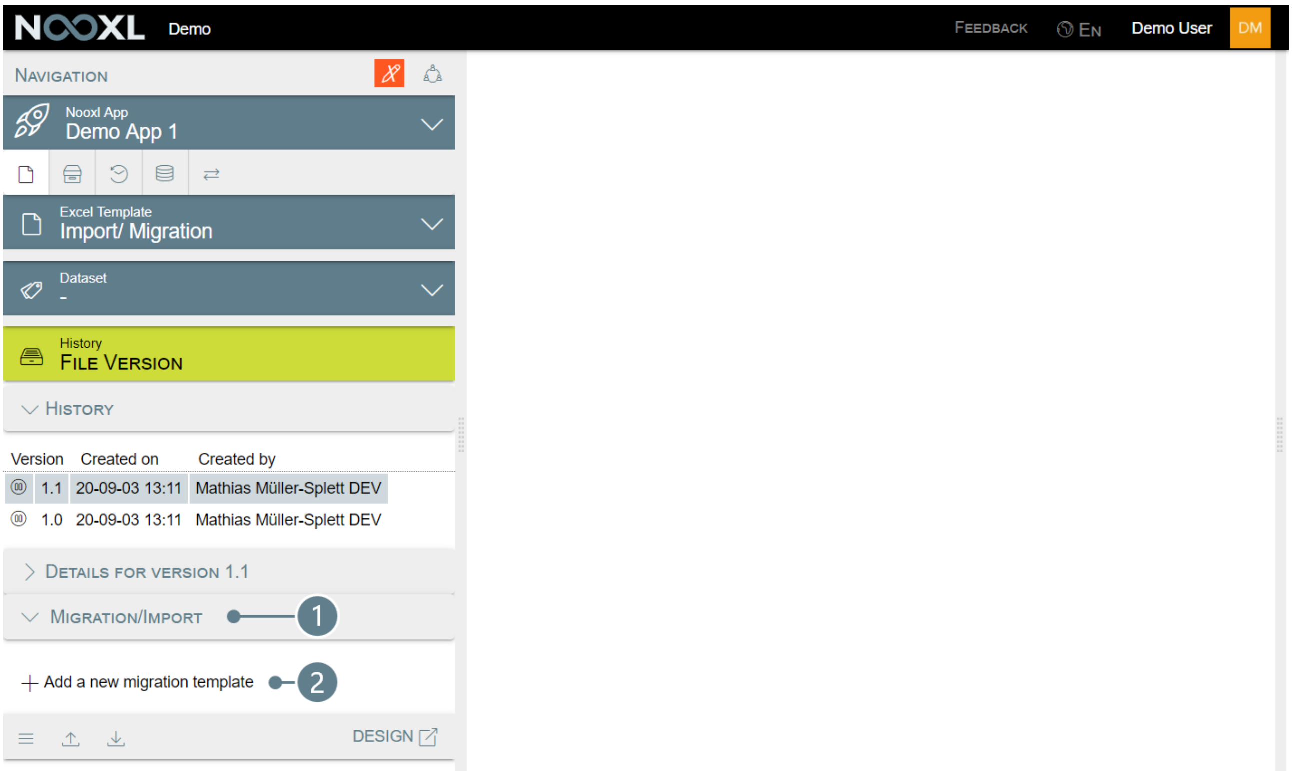
In Nooxl, go to the dataset selection of your template and activate the design mode of your app.



Open the Version Management of your template.

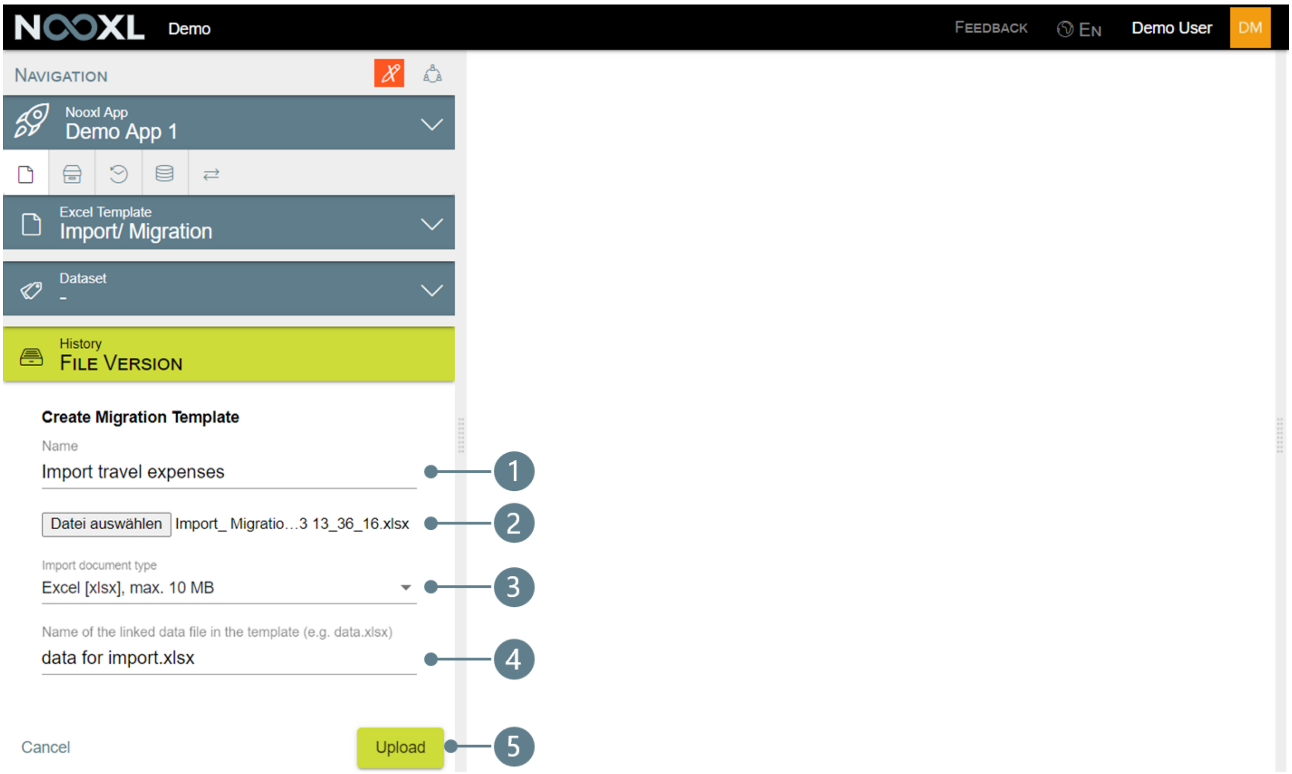


Open the section Migration/Import **(1)** and click on *Add a new migration template* **(2)**.



Version	Created on	Created by
1.1	20-09-03 13:11	Mathias Müller-Splett DEV
1.0	20-09-03 13:11	Mathias Müller-Splett DEV

Give your template a name **(1)** and point Nooxl to the file from the previous step **(2)**. For the import document type you need to specify the type, which is either Excel or CSV (this includes TXT files) **(3)**. The field *Name of the linked data file in the template (e.g. data.xlsx)* **(4)** wants to know the name of the import file you used to create the migration template. This is the name between the brackets from the last step you needed to make a note of. When you are all set, click on *Upload* **(5)**.



Create Migration Template

Name
Import travel expenses

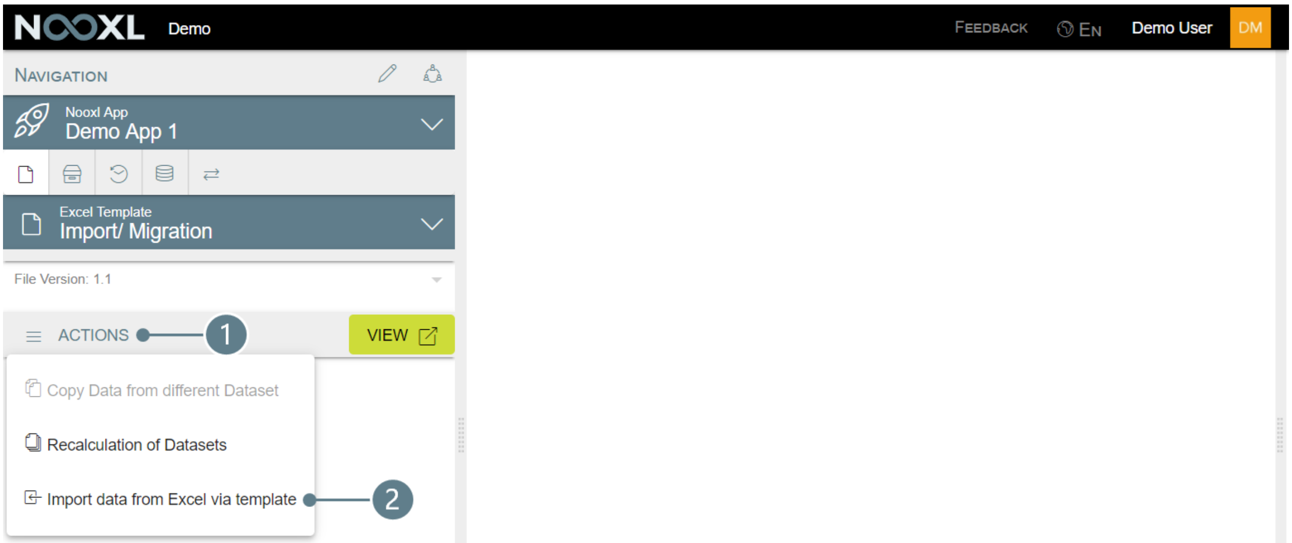
Datei auswählen Import_ Migratio…3 13_36_16.xlsx

Import document type
Excel [xlsx], max. 10 MB

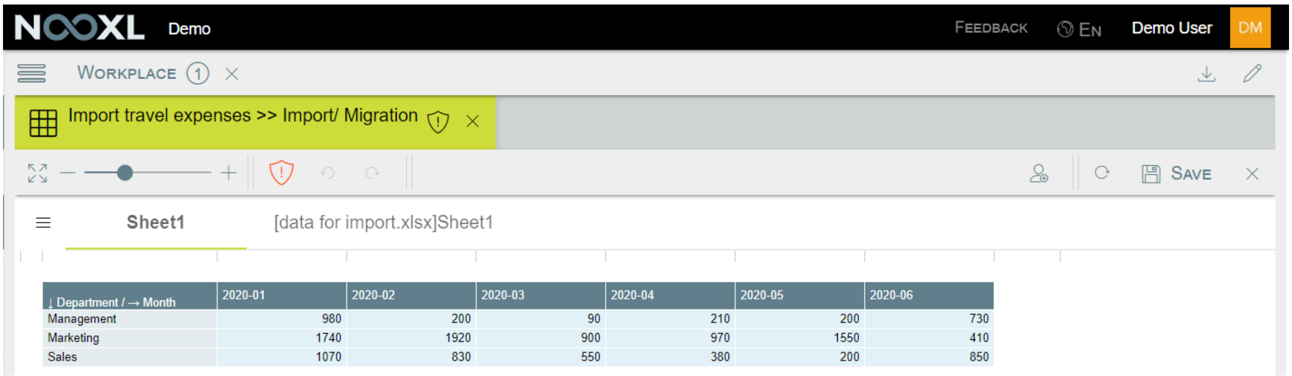
Name of the linked data file in the template (e.g. data.xlsx)
data for import.xlsx

Step 6: Test the import

In the context menu *Actions* **(1)** of your template you will now find a new entry called *Import data from Excel via template* **(2)**.

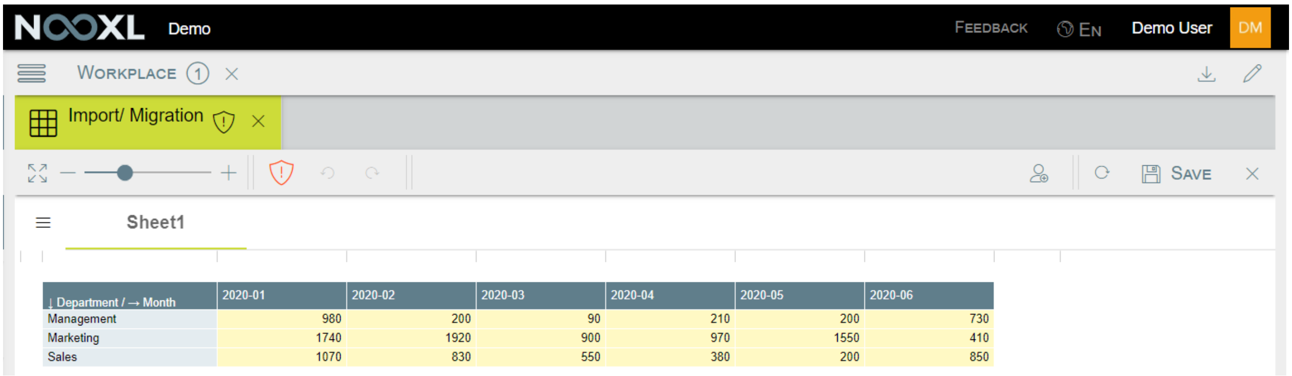


Click on it, choose your import template, point Nooxl to the file with the raw data and click on *Upload*. You can see the aggregated data of your raw file as well as the raw data itself (last tab). Right now the data is not yet stored, so you need to click save to finish the upload process.


NOOXL Demo
FEEDBACK
EN
Demo User
DM
WORKPLACE 1
Import travel expenses >> Import/ Migration
SAVE
Sheet1
[data for import.xlsx]Sheet1

↓ Department / → Month	2020-01	2020-02	2020-03	2020-04	2020-05	2020-06
Management	980	200	90	210	200	730
Marketing	1740	1920	900	970	1550	410
Sales	1070	830	550	380	200	850

When you click on *Reload Calculation* you will see that your data was successfully stored in the Nooxl database.



↓ Department / → Month	2020-01	2020-02	2020-03	2020-04	2020-05	2020-06
Management	980	200	90	210	200	730
Marketing	1740	1920	900	970	1550	410
Sales	1070	830	550	380	200	850

Congratulations, now when the travel agency sends you new data next month, you can easily import the data into your Nooxl app and use it in your templates.

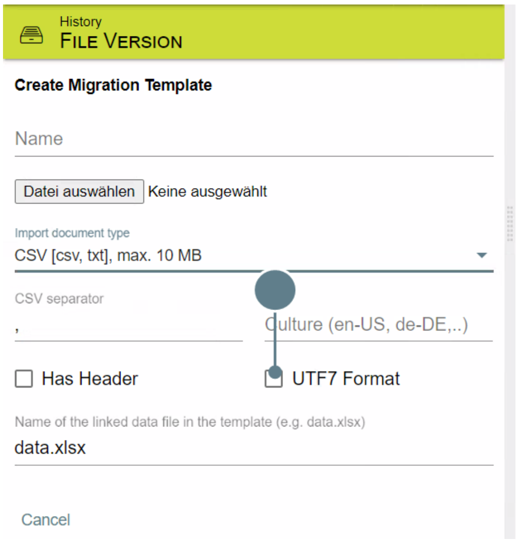
Tips

Dealing with dates

When you deal with dates in your raw data, please make sure that you convert those into real date data types in your migration template. This can be done with the Excel formulas `DATEVALUE()` and `DATE()`. If you don't do this, it is possible that your migration template will just discard the separators ("." or "/" for example) and you end up with strings in the form `DDMMYYYY`, but not actual dates.

Dealing with special characters in txt and csv files

When you have trouble with special characters like "&", "ä", and others, please make sure to activate the UTF7 Format option when you create the template:



History
FILE VERSION

Create Migration Template

Name

Datei auswählen Keine ausgewählt

Import document type
CSV [csv, txt], max. 10 MB

CSV separator
,

Culture (en-US, de-DE,..)

□ Has Header □ UTF7 Format

Name of the linked data file in the template (e.g. data.xlsx)
data.xlsx

Cancel

Sheet name when creating a csv/txt based import and migration

When you create an import and migration template based on a csv or txt file, you will do this as well with an Excel file as your example file. Please make sure that the sheet, where your data is located is called `CSV` (all caps).

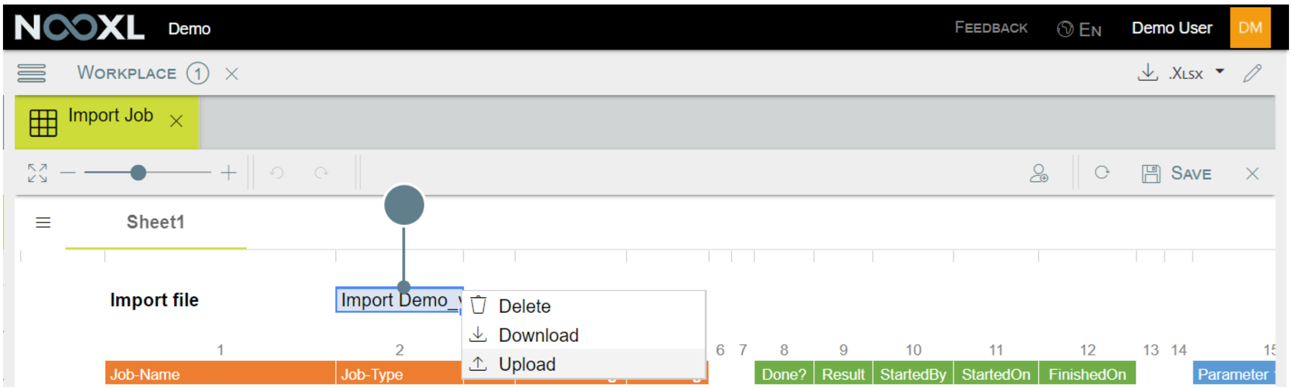
Execute imports via JobRanges

As mentioned in the article about JobRanges (siehe Seite 219), you can have an import be part of your job.

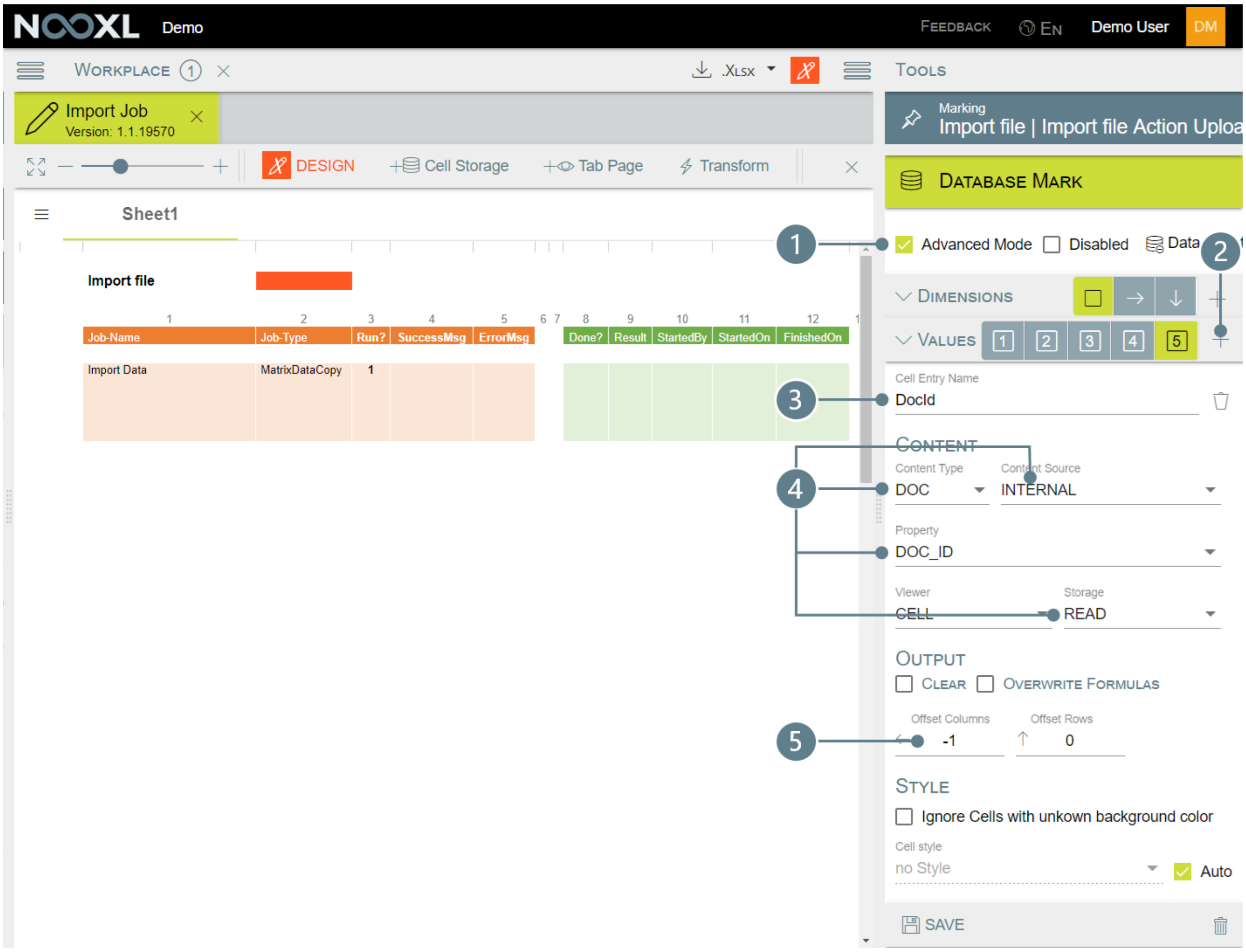
Setting up an import job step

First of all you need to follow the instructions in the article about JobRanges (siehe Seite 219) to set up a job in your template.

When you are done you need to create a cell storage (siehe Seite 190) in your template which will allow the users to upload the file with the data you want to import.



In the design mode of the template go to the markup for your document. Active the Advanced Mode **(1)**, add a fifth value **(2)**, name it DocId **(3)** and get the `DOC_ID` property for the uploaded file **(4)**. Make sure that it will printed right next to the cell storage **(5)**.



Job-Name	Job-Type	Run?	SuccessMsg	ErrorMsg	Done?	Result	StartedBy	StartedOn	FinishedOn
Import Data	MatrixDataCopy	1							

☑ Advanced Mode ☐ Disabled Data

Cell Entry Name: DocId

CONTENT

Content Type: DOC

Content Source: INTERNAL

Property: DOC_ID

Viewer: CELL

Storage: READ

OUTPUT

☐ CLEAR ☐ OVERWRITE FORMULAS

Offset Columns: -1

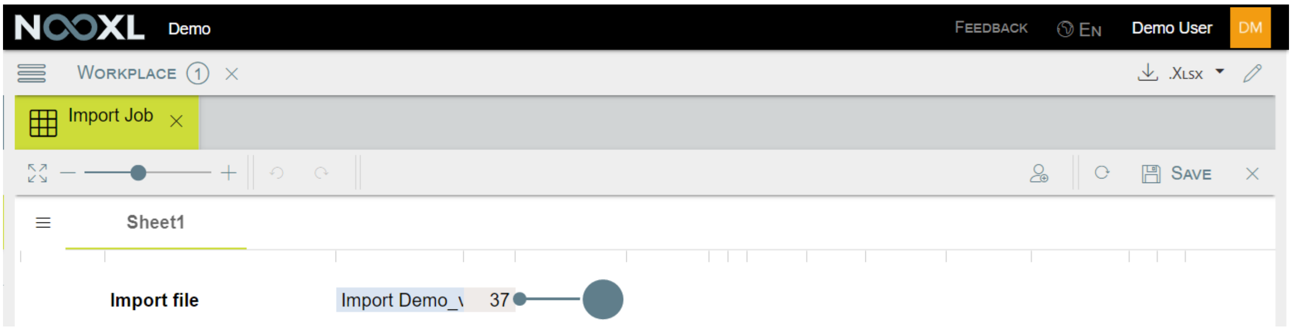
Offset Rows: 0

STYLE

☐ Ignore Cells with unkown background color

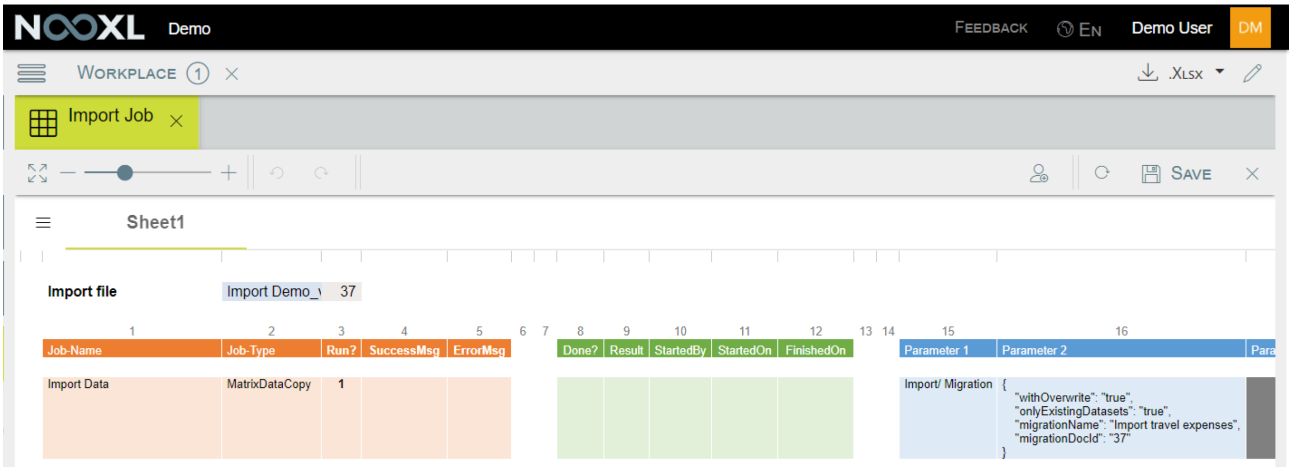
Cell style: no Style ☑ Auto

Then reload the template and write down the documents Id.



Import file: Import Demo_\ 37

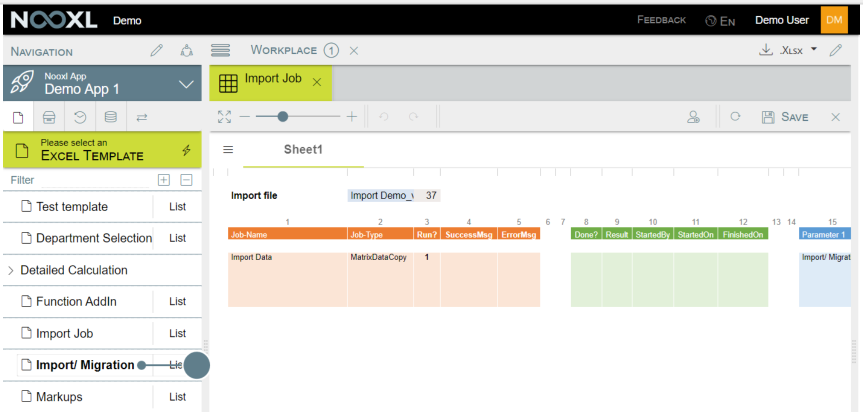
Now you have all the information you need to fill in everything for your jobs step.



Import file | Import Demo_\ 37

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Job-Name	Job-Type	Run?	SuccessMsg	ErrorMsg			Done?	Result	StartedBy	StartedOn	FinishedOn			Parameter 1	Parameter 2
Import Data	MatrixDataCopy	1												Import/ Migration	{ "withOverwrite": "true", "onlyExistingDatasets": "true", "migrationName": "Import travel expenses", "migrationDocId": "37" }

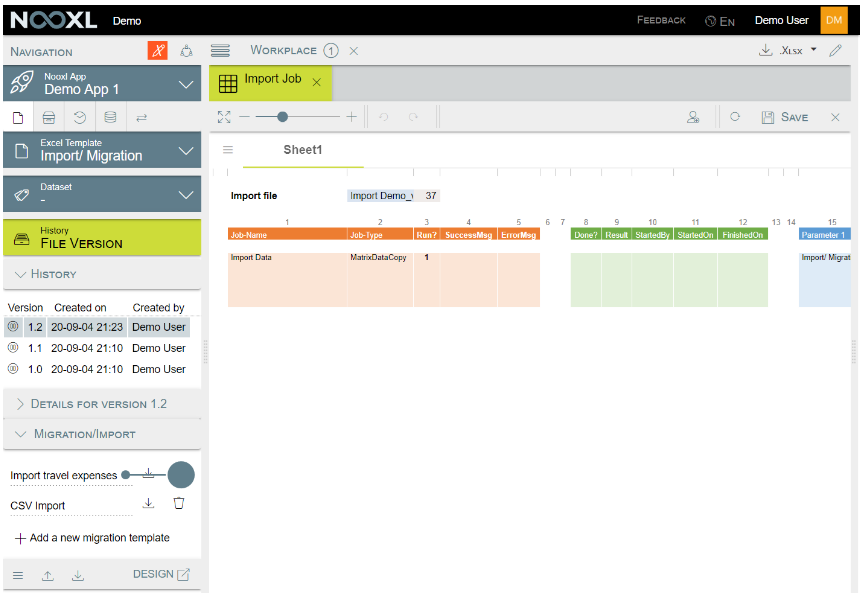
Column	Description
Job-Name	Any name you feel suitable for your import.
Job-Type	`MatrixDataCopy`
Run?	1 if it should run. You can make this field editable for the user by changing the background color, to enable him to decide if the step should run or not. Another option would be to insert an excel formula to decide if it runs based on certain parameters.
Parameter 1	Here you need to insert the name of your import template, as it is shown in the navigation.

<table>
<tr><th>Column</th><th>Description</th></tr>
<tr><td></td><td>


</td></tr>
<tr><td>Parameter 2</td><td>
Specify the import parameters as a JSON. The options in line 2 and 3 are described in the JobRange article (siehe Seite 219).

<pre>
1 {
2   "withOverwrite": "true",
3   "onlyExistingDatasets": "true",
4   "migrationName": "Import travel
   expenses",
5   "migrationDocId": "37"
6 }
</pre>

You find the `migrationName` (line 4) in the migration section of the file information for the import template. Please make sure to choose the correct migration template if there are multiple available.



</td></tr>
</table>

Column	Description
	The `migrationDocId` (line 5) is the number from the last step.

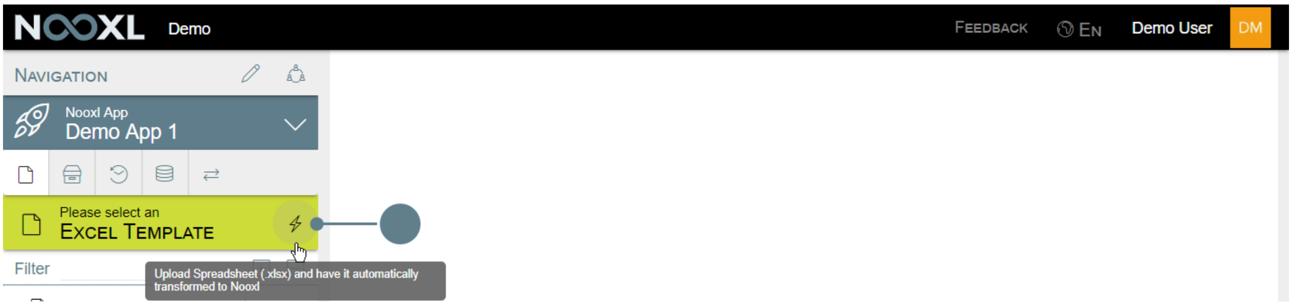
3.7.5 Automatic transformation from Excel file to Nooxl

When you create a new template for your Nooxl application or upload a new version of an existing template, you can let Nooxl create the cell storage entries instead of doing this manually.

Nooxl will try to identify all cells in your template, which likely have to be stored in the database.

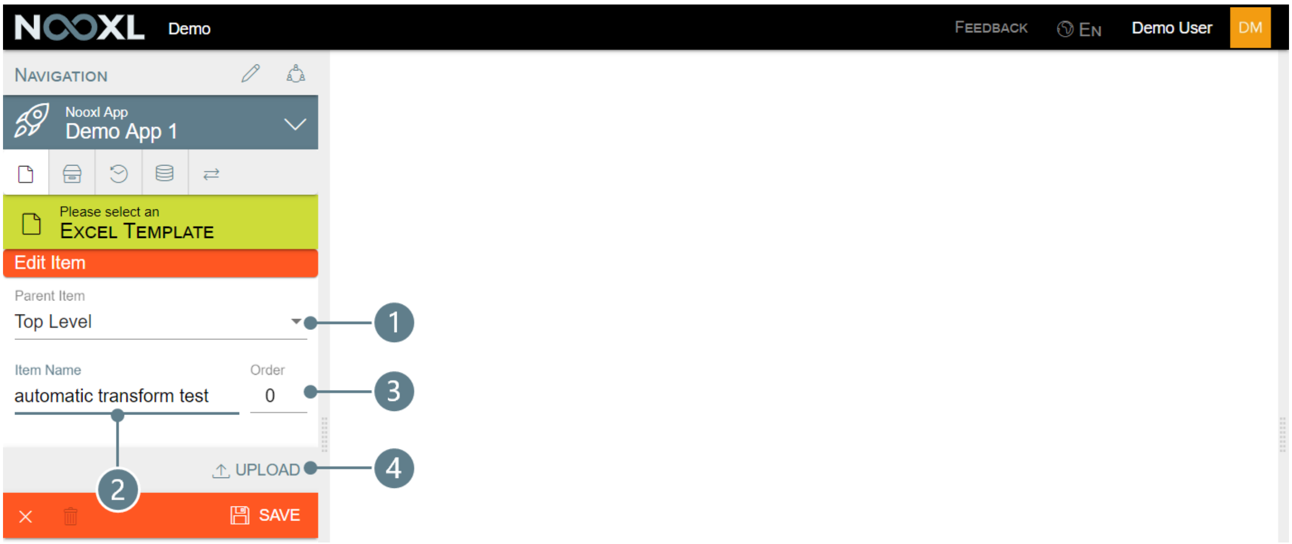
How to use the automatic transformation

To start the automatic transformation of a new template, click on the lightning icon in the left navigation panel:



Upload Spreadsheet (.xlsx) and have it automatically transformed to Nooxl

Next, you find yourself in the usual template upload dialog. Here you need to specify where the new template should be located **(1)**, what the visible name of the entry is **(2)** and whether you want to specify the order **(3)** instead of ordering the items alphabetically. By clicking the *Upload* button **(4)** you'll get a dialog to select a file from your local machine.

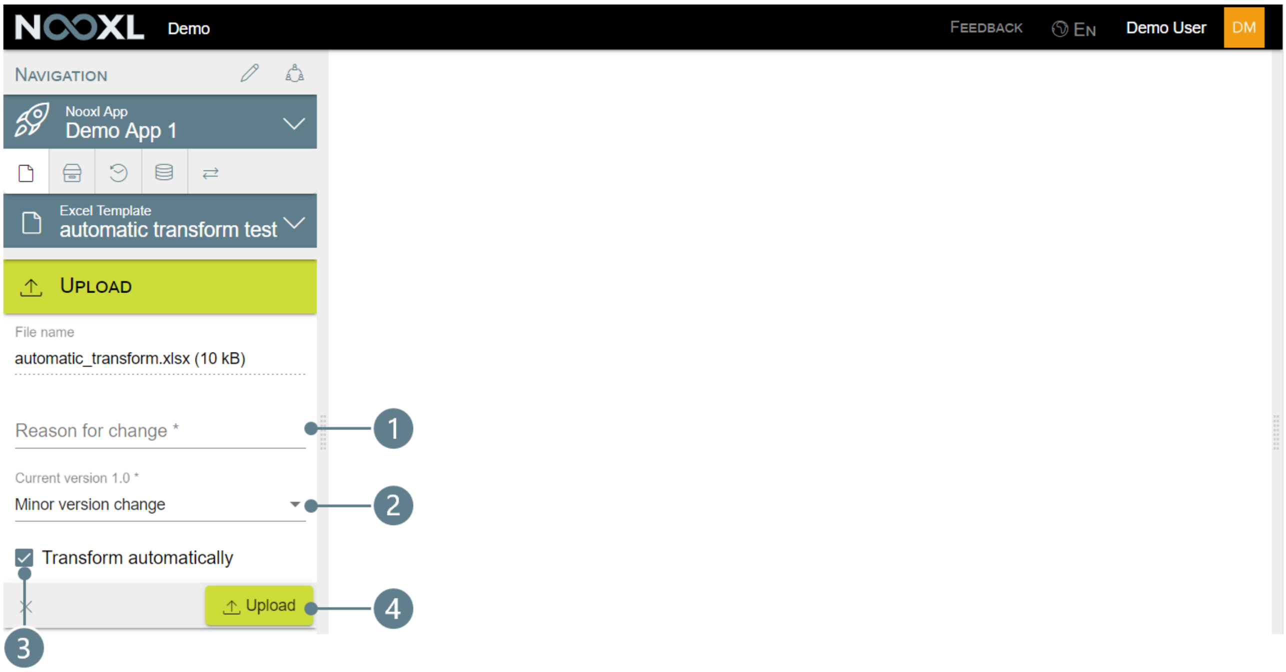


Parent Item: Top Level

Item Name: automatic transform test

Order: 0

Then, you can give a reason for the change **(1)** to document your progress. It is also possible to create a new major version **(2)**. When you are done giving all the needed information, make sure that *Transform automatically* **(3)** is turned on and click on *Upload* **(4)**.



File name
automatic_transform.xlsx (10 kB)

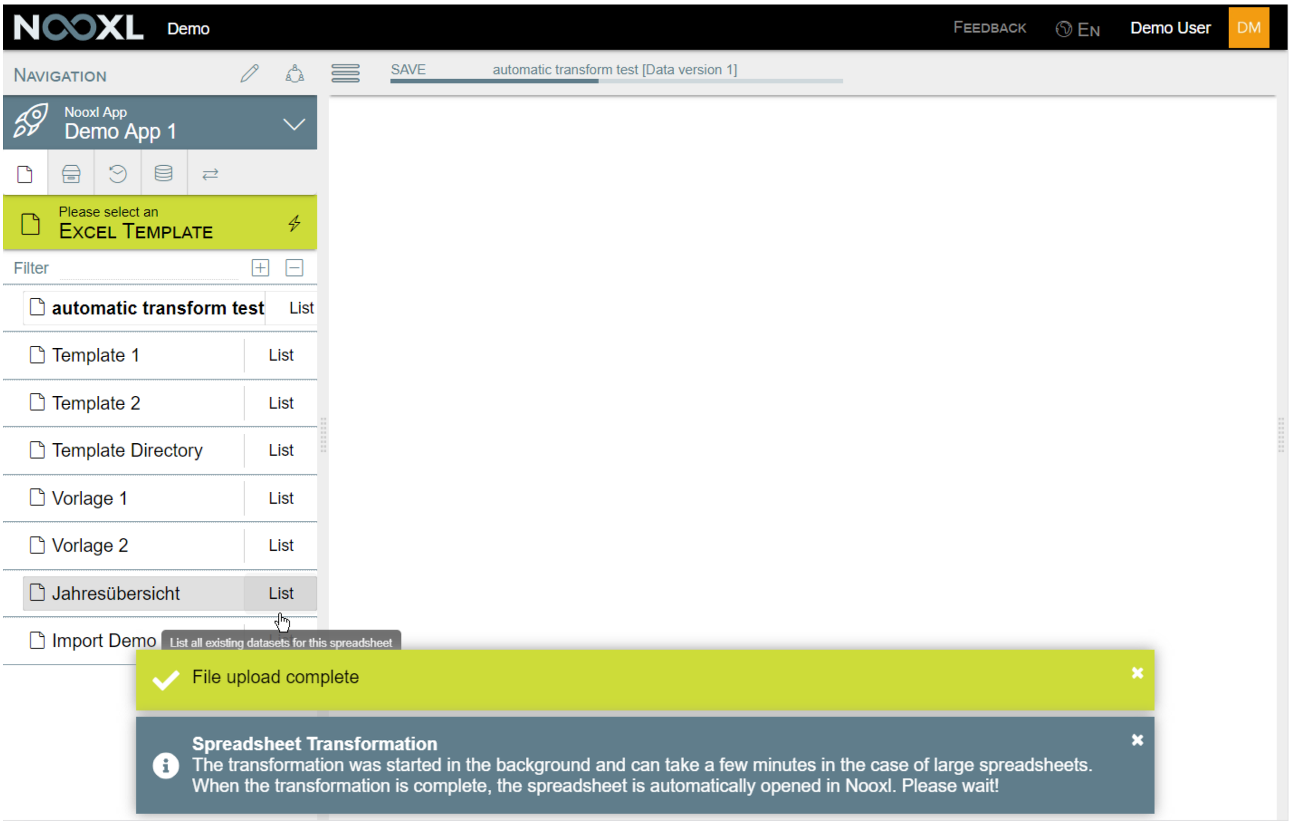
Reason for change *

Current version 1.0 *
Minor version change

☑ Transform automatically

Upload

Depending on the size of your template, the process to automatically transform it can take a while.



automatic transform test [Data version 1]

automatic transform test	List
Template 1	List
Template 2	List
Template Directory	List
Vorlage 1	List
Vorlage 2	List
Jahresübersicht	List
Import Demo	

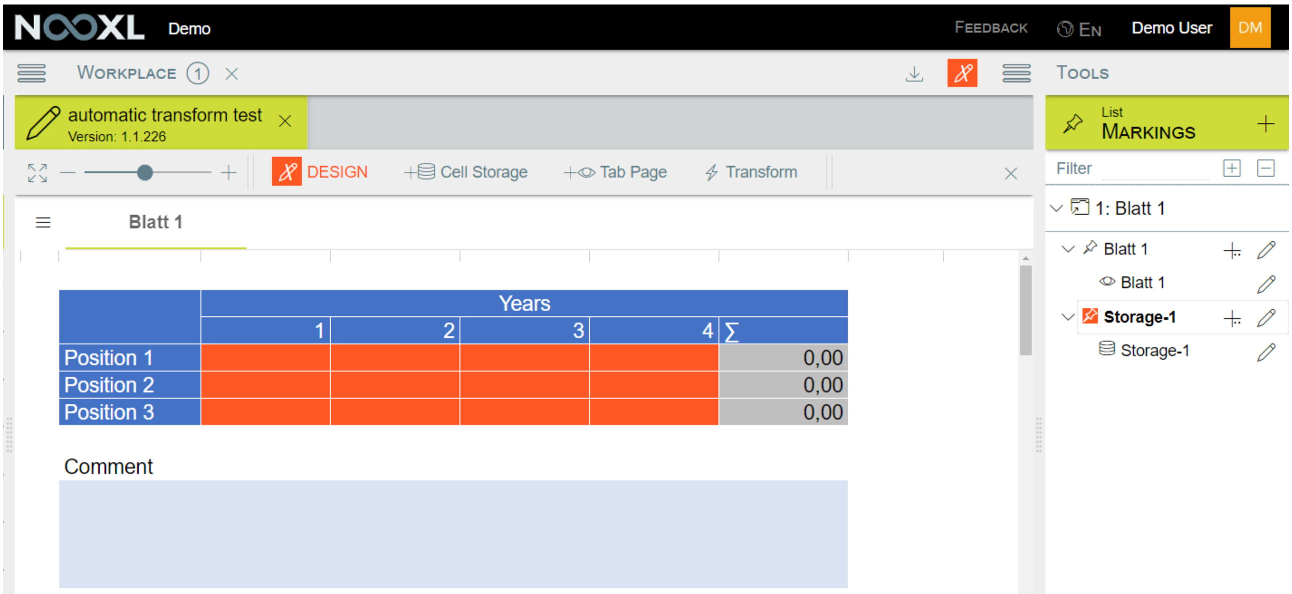
List all existing datasets for this spreadsheet

File upload complete

Spreadsheet Transformation
The transformation was started in the background and can take a few minutes in the case of large spreadsheets. When the transformation is complete, the spreadsheet is automatically opened in Nooxl. Please wait!

The result

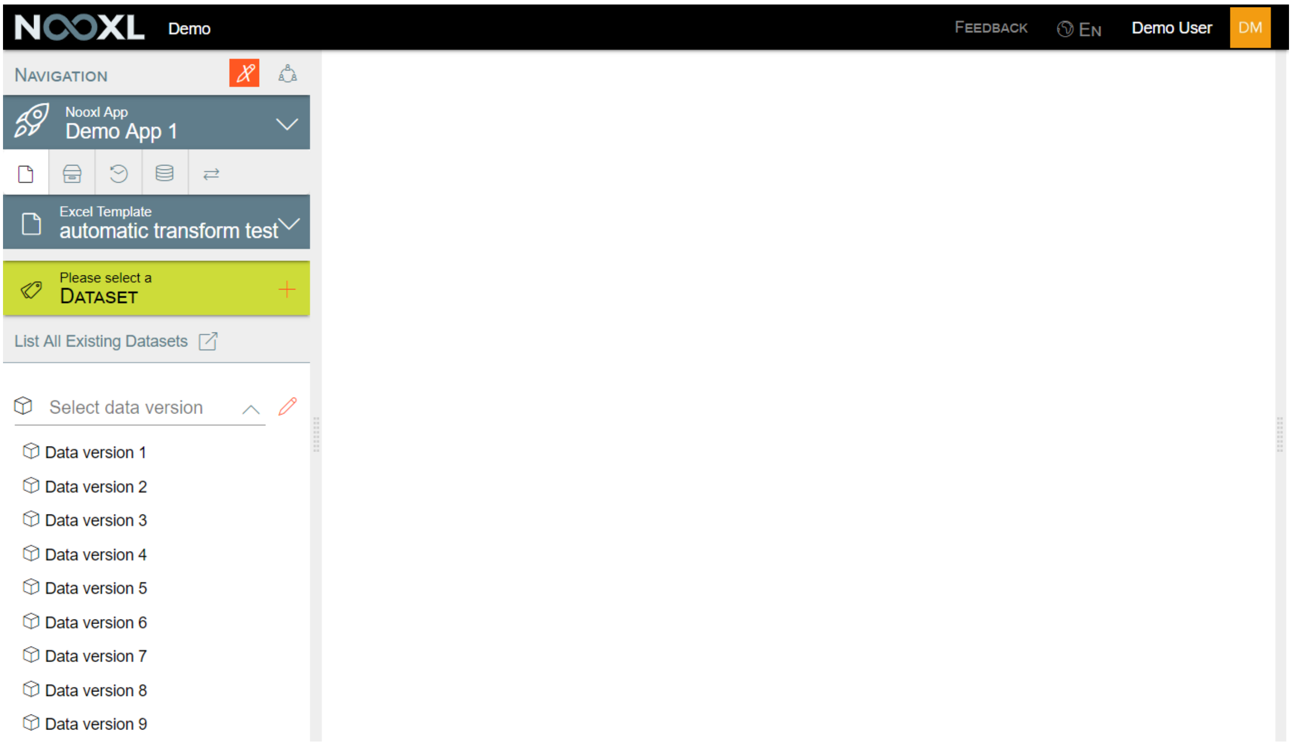
In the following example Nooxl successfully identified the input cells (marked red) and created a cell storage with the name `Storage-1`. Additionally, it created a tab page called `Blatt 1` since this is the name of the sheet in the original template.



	Years				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

Comment

Nooxl also created a selection using the catalog *data versions* for the new template. This is the default behavior.



What to do after the automatic transformation is complete

Check if everything has been set up to your liking

Nooxl analyzes all cells and how they are referenced inside the workbook to determine if a cell is likely a manual input, which should be saved to the database. Since the content of the comment cell in our example is not referenced by any other cell in the workbook, Nooxl didn't recognize it as a cell whose content should be saved to the database. If you wish to store the content of this cell, you need to create a cell storage manually.

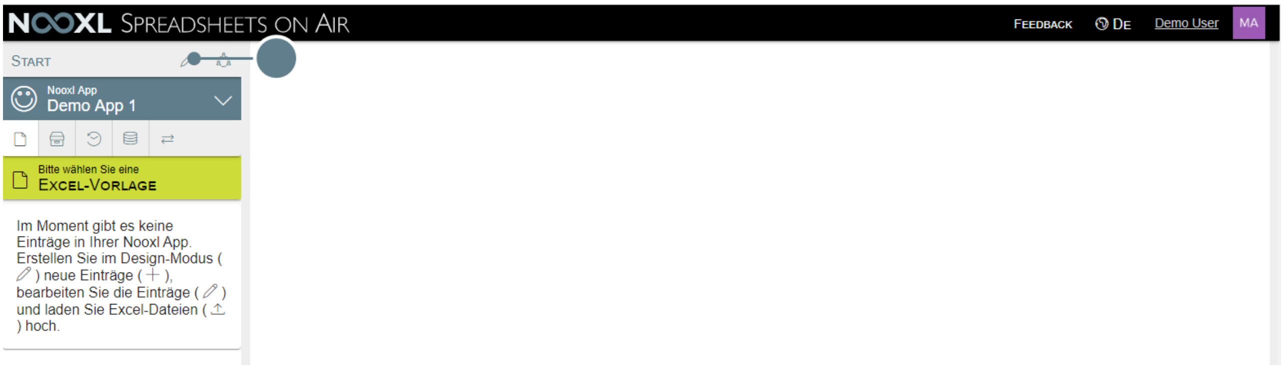
By default, Nooxl will create all cell storages as `DATA_TEXT_NUMBER`, which is fine. If possible, it is, however, recommended to change this to `DATA_TEXT` or `DATA_NUMBER` if you know for sure that the cells content can be only one of the two.

Add more selections to the dataset

The default selection with data versions is maybe not what you really need for your template. So please go ahead and delete or expand the selections.

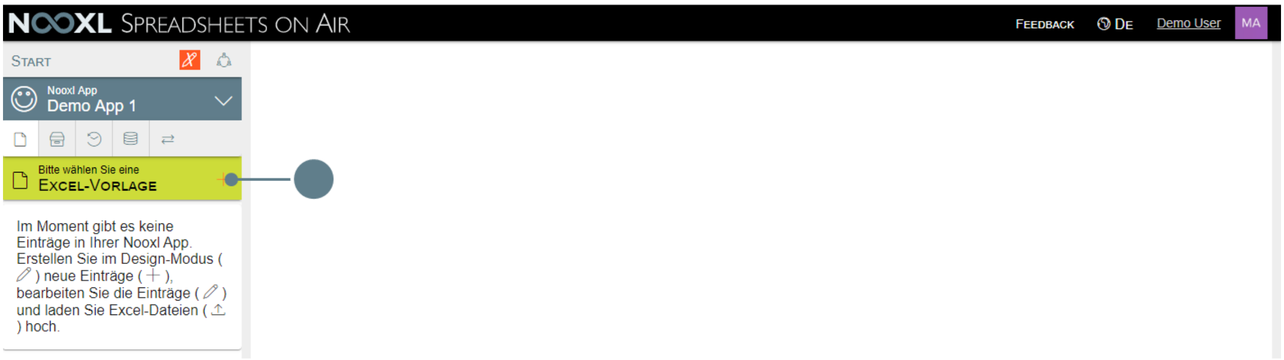
3.7.6 Upload a new template

To create a new template in Nooxl, click on the button with the pencil icon in your app to switch to the draft mode of the app.



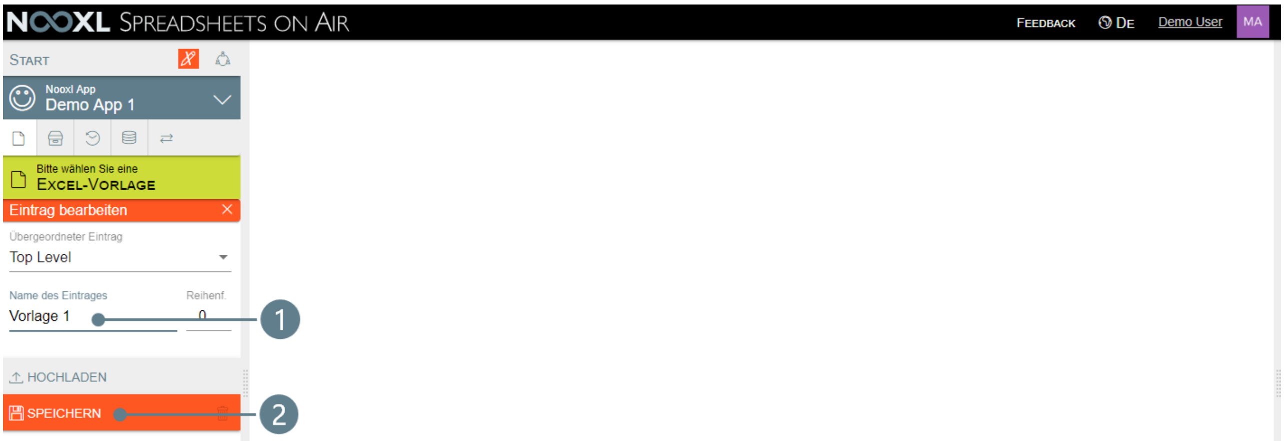
Im Moment gibt es keine Einträge in Ihrer Nooxl App. Erstellen Sie im Design-Modus ( ) neue Einträge (+), bearbeiten Sie die Einträge ( ) und laden Sie Excel-Dateien ( ) hoch.

You can then create a new template in the app by clicking on the red plus.

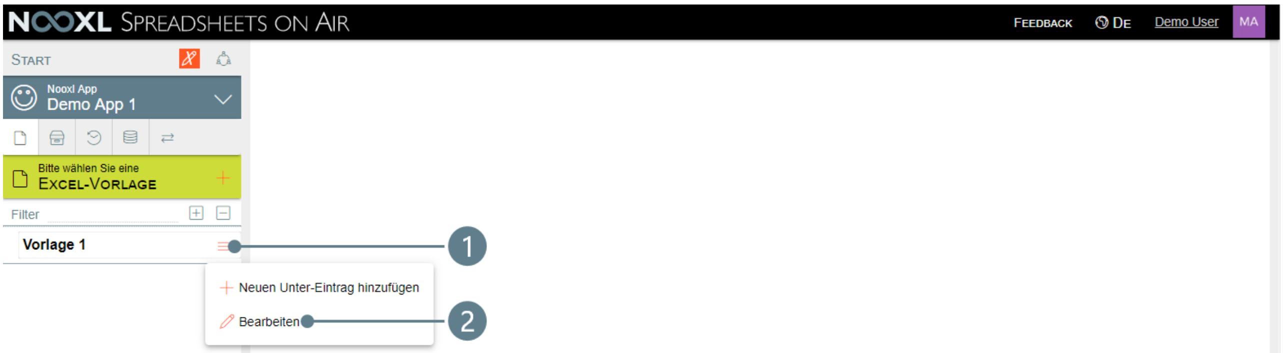


Im Moment gibt es keine Einträge in Ihrer Nooxl App. Erstellen Sie im Design-Modus ( ) neue Einträge (+), bearbeiten Sie die Einträge ( ) und laden Sie Excel-Dateien ( ) hoch.

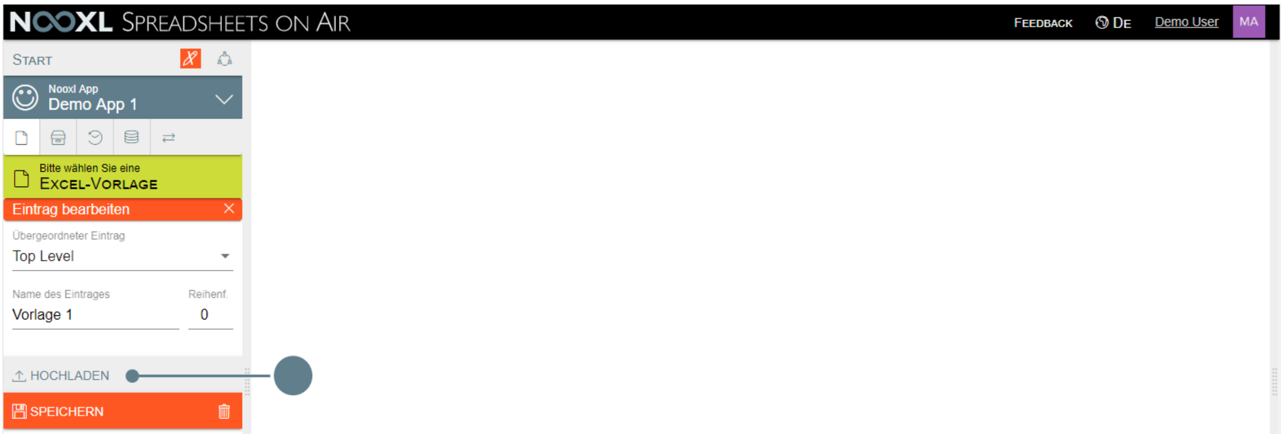
In the investment mask, please enter a name for the template (1) and then click on Save (2) to create the new entry.



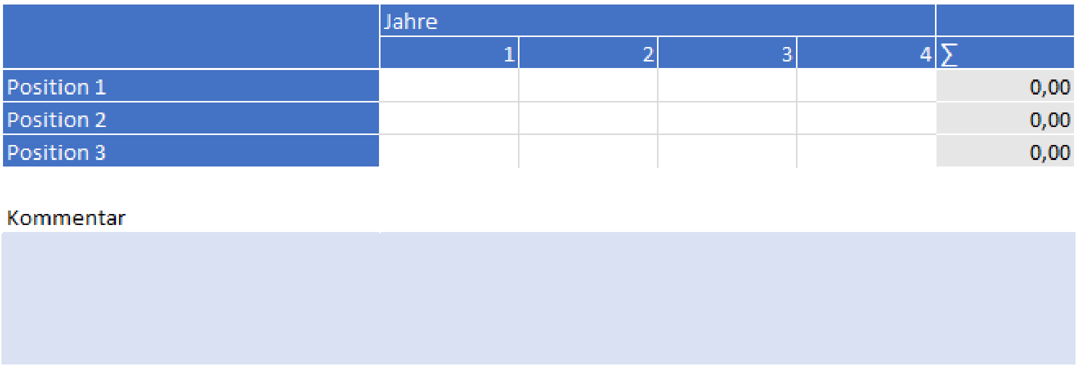
To assign a spreadsheet to the entry, click on the three red horizontal lines to the right of the entry (1) and then select Edit (2) from the menu.



In the mask for editing the entry, click on Upload.



Save the following Excel template to follow the instructions or upload your own Excel template

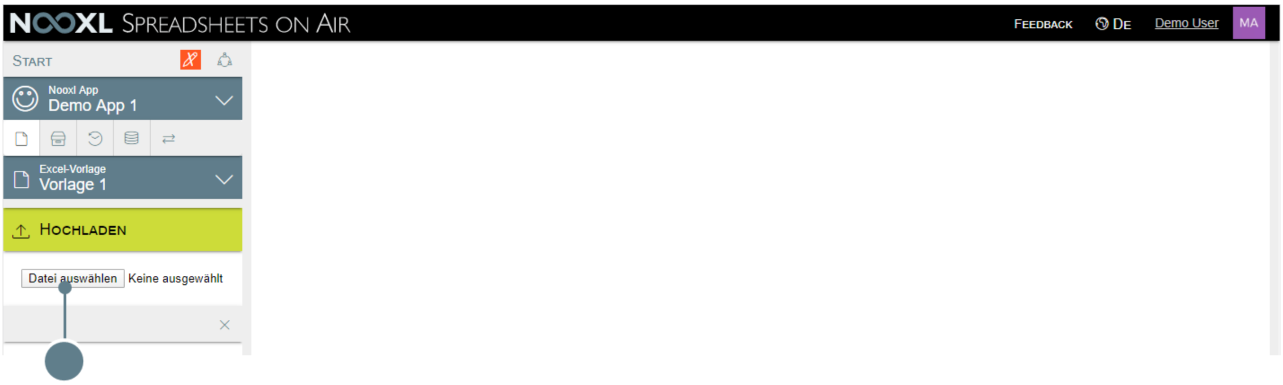


	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

Kommentar

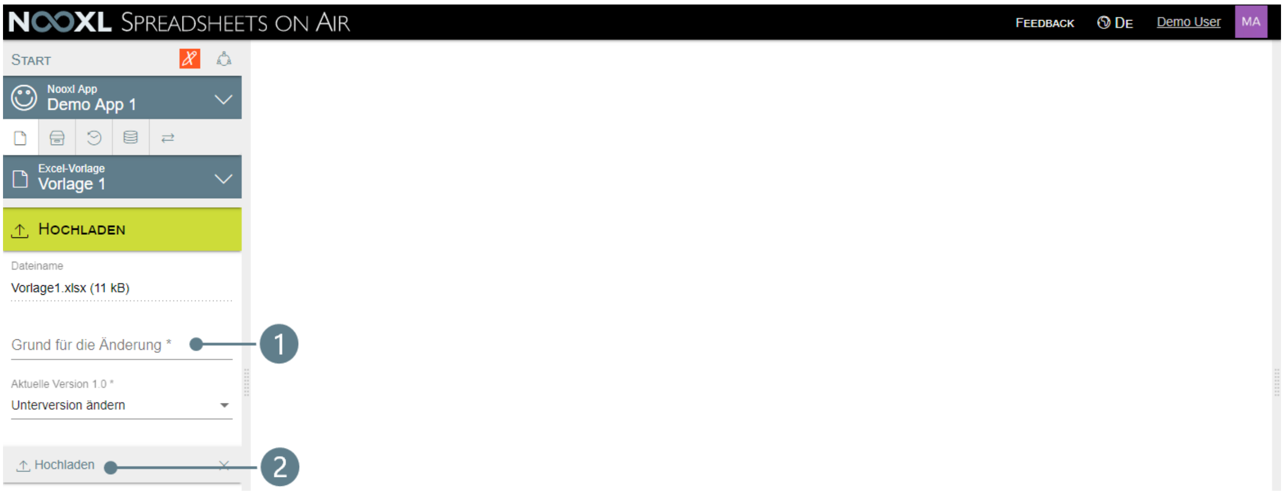
Vorlage1.xlsx

In the next dialog box, click on Upload file and then select your own template or the template provided here.



Keine ausgewählt

You can then enter a reason for the change (1) and upload the template (2).

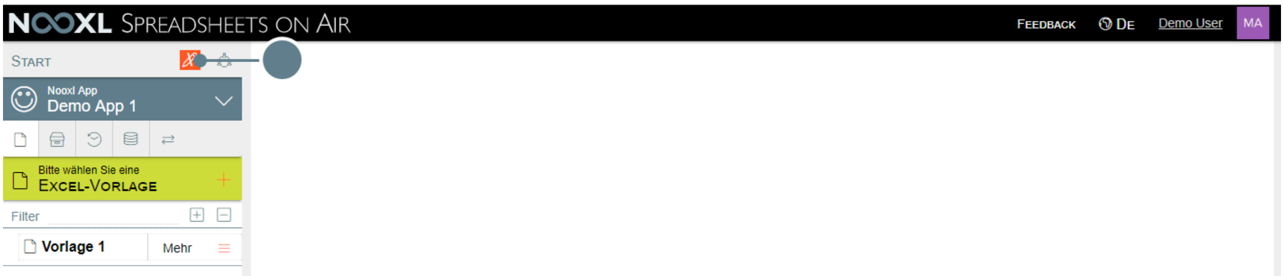


Dateiname
Vorlage1.xlsx (11 kB)

Grund für die Änderung *

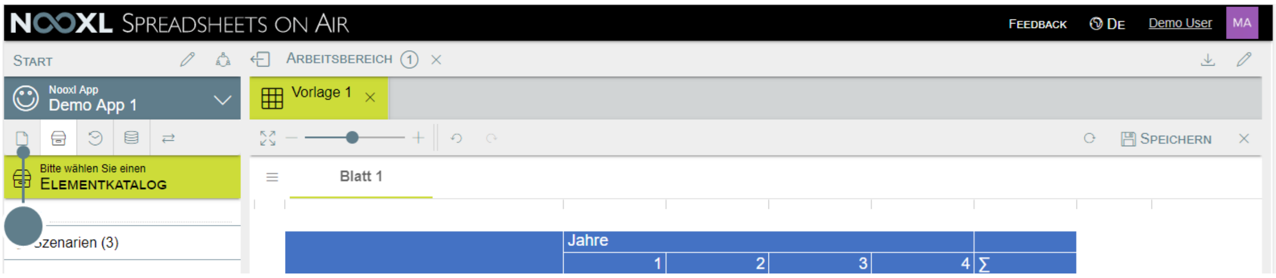
Aktuelle Version 1.0 *
Unterversion ändern

Exit the draft mode by clicking on the red pen.

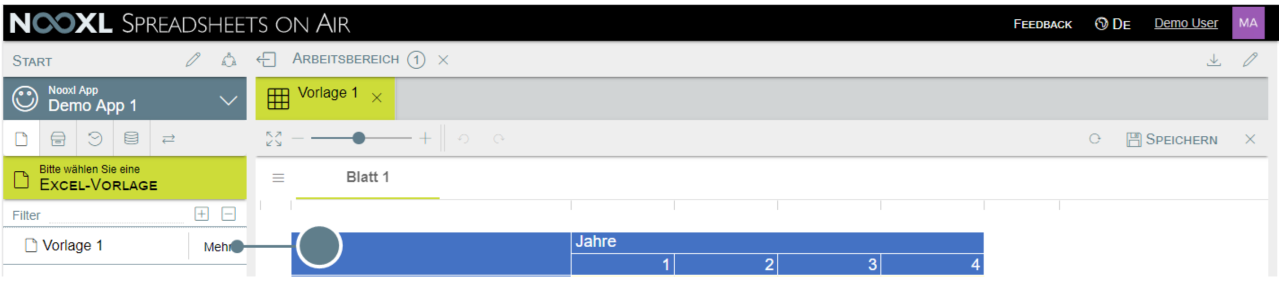


3.7.7 Set up the data set selections for a template

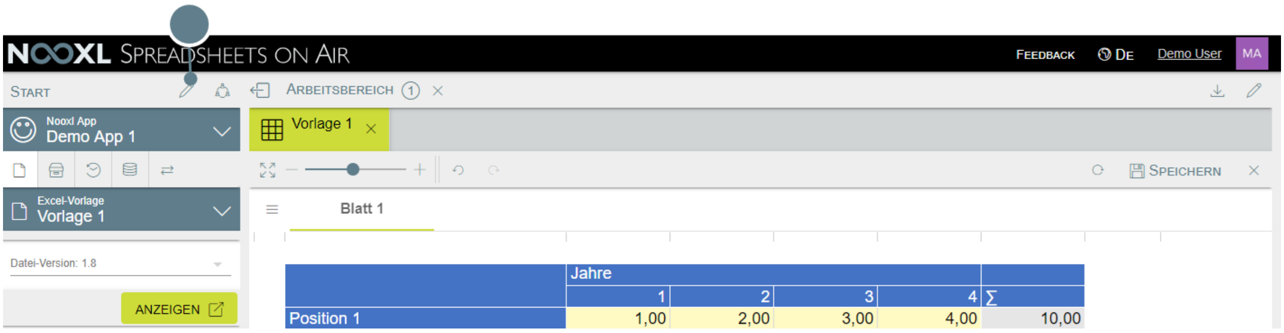
To use our catalog in the template to identify different records, we now need to create a selection and assign it to the template. For this we return to the "Excel Template" section of Nooxl.



Next we click on "More" to the right of our template to get to the data set selection.

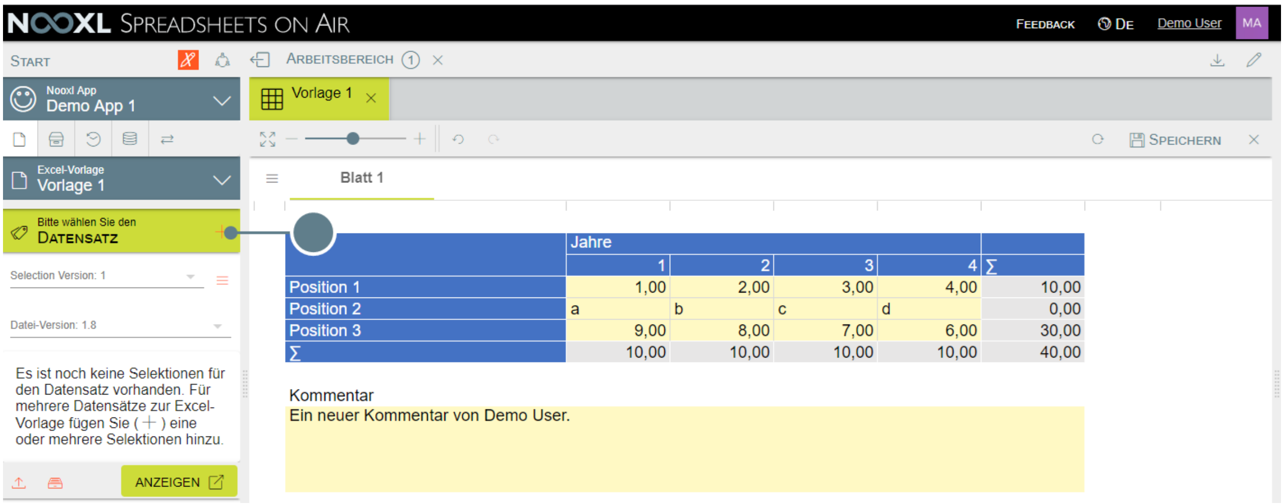


To create a new selection and add it as a selection, the design mode of the app must be activated. This is done by clicking on the pencil so that it is displayed in red.



	Jahre				
	1	2	3	4	∑
Position 1	1,00	2,00	3,00	4,00	10,00

In draft mode a new selection can be added to the record by clicking on the red plus.



Selection Version: 1

Datei-Version: 1.8

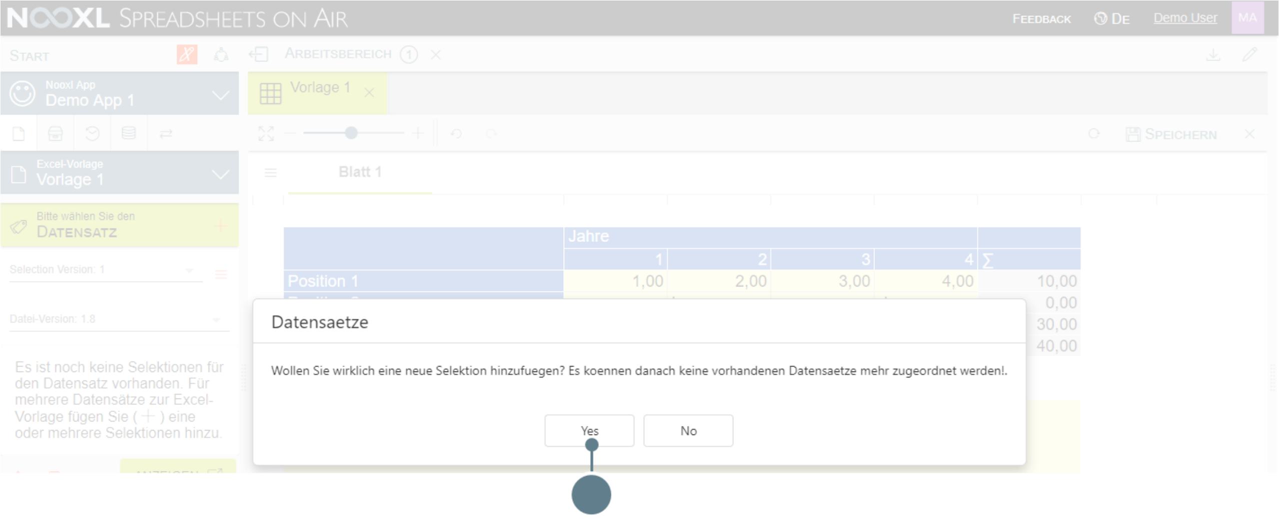
Es ist noch keine Selektionen für den Datensatz vorhanden. Für mehrere Datensätze zur Excel-Vorlage fügen Sie (+) eine oder mehrere Selektionen hinzu.

	Jahre				
	1	2	3	4	∑
Position 1	1,00	2,00	3,00	4,00	10,00
Position 2	a	b	c	d	0,00
Position 3	9,00	8,00	7,00	6,00	30,00
∑	10,00	10,00	10,00	10,00	40,00

Kommentar

Ein neuer Kommentar von Demo User.

The system then warns you that by adding new selections, the existing data records can no longer be assigned to the template. Please confirm this warning by clicking on "Yes".

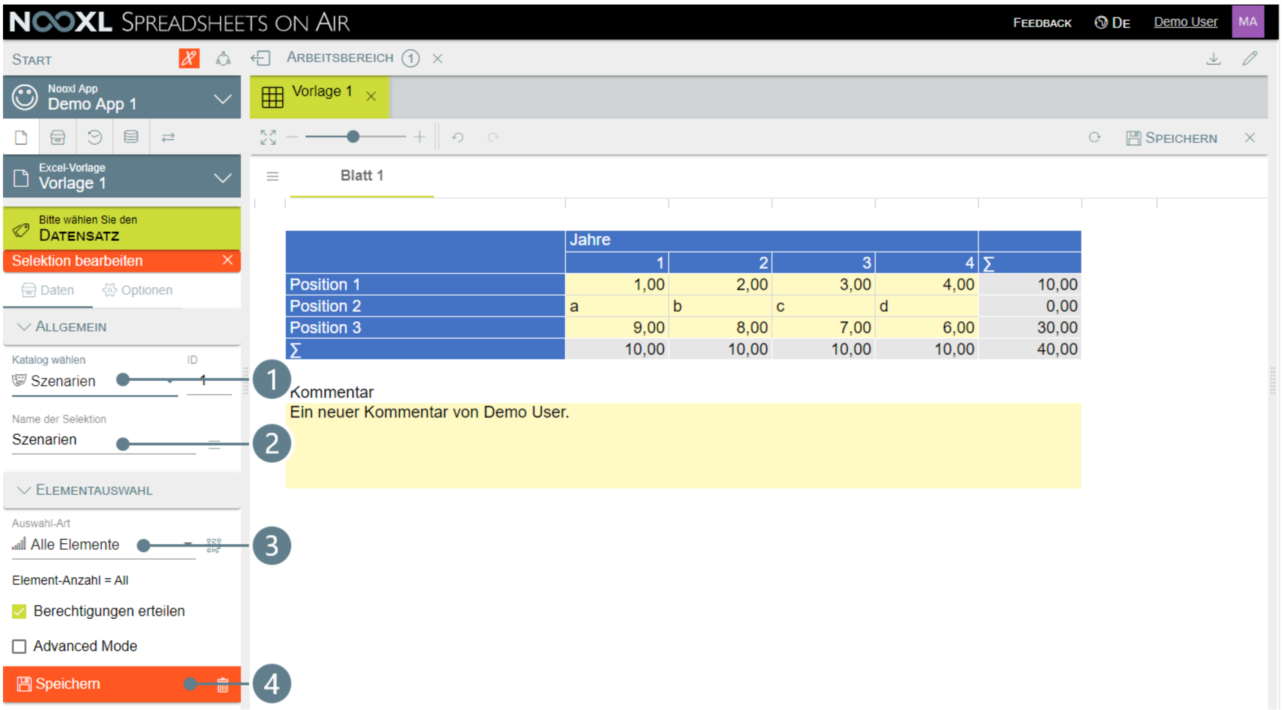


Datensaetze

Wollen Sie wirklich eine neue Selektion hinzufuegen? Es koennen danach keine vorhandenen Datensaetze mehr zugeordnet werden!.

Now you can select the previously created "Scenarios" catalog (1). Nooxl automatically fills the field "Name of selection" (2) with the name of the selection.

In the Element selection area, Nooxl selects "All elements" (3) as selection type, so that you can complete the creation of the selection directly by clicking on Save (4).



Katalog wählen: Szenarien — ID: 1

Name der Selektion: Szenarien

Auswahl-Art: Alle Elemente

Element-Anzahl = All

☑ Berechtigungen erteilen

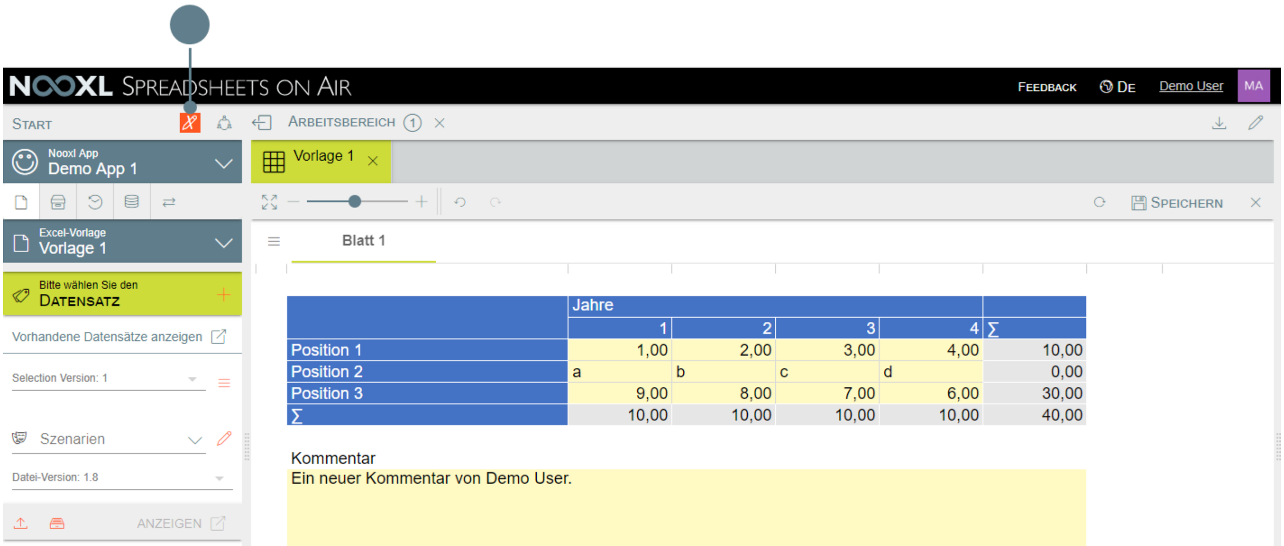
☐ Advanced Mode

Speichern

	Jahre				
	1	2	3	4	∑
Position 1	1,00	2,00	3,00	4,00	10,00
Position 2	a	b	c	d	0,00
Position 3	9,00	8,00	7,00	6,00	30,00
∑	10,00	10,00	10,00	10,00	40,00

Kommentar
Ein neuer Kommentar von Demo User.

Now leave the draft mode to test the new data set selection.



Selection Version: 1

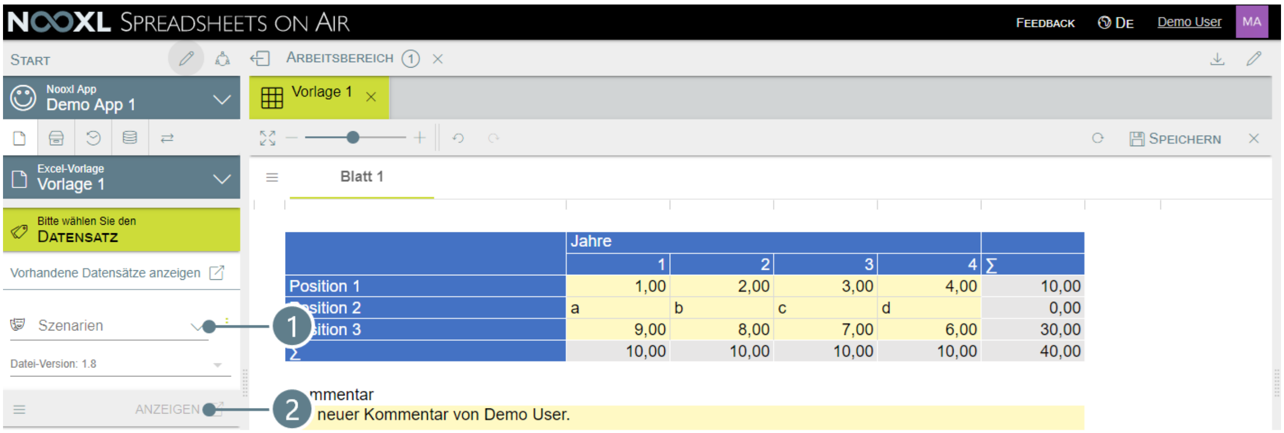
Szenarien

Datei-Version: 1.8

	Jahre				
	1	2	3	4	∑
Position 1	1,00	2,00	3,00	4,00	10,00
Position 2	a	b	c	d	0,00
Position 3	9,00	8,00	7,00	6,00	30,00
∑	10,00	10,00	10,00	10,00	40,00

Kommentar
Ein neuer Kommentar von Demo User.

The selection Scenarios (1) now appears in the dataset selection and as long as no element has been selected here, the button for displaying the dataset is grayed out (2).



	Jahre				
	1	2	3	4	∑
Position 1	1,00	2,00	3,00	4,00	10,00
sition 2	a	b	c	d	0,00
ition 3	9,00	8,00	7,00	6,00	30,00
∑	10,00	10,00	10,00	10,00	40,00

mmentar

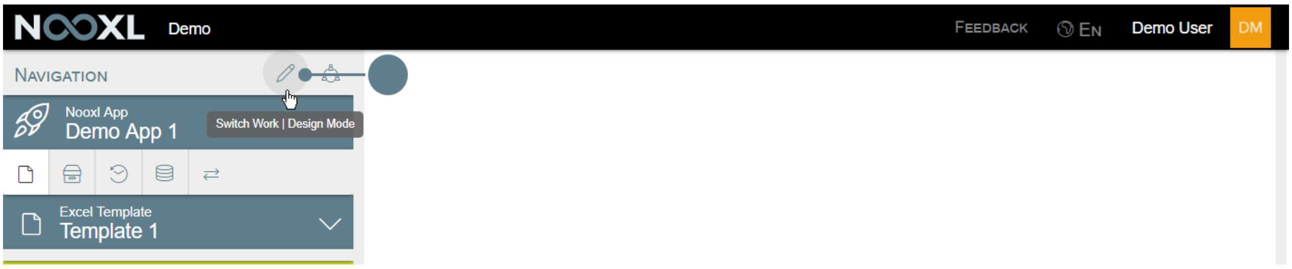
neuer Kommentar von Demo User.

3.7.8 Create a new template based on an existing template (copy/ clone templates)

This article explains how you can base a new template for your Application on an existing template. This process is called cloning or copying.

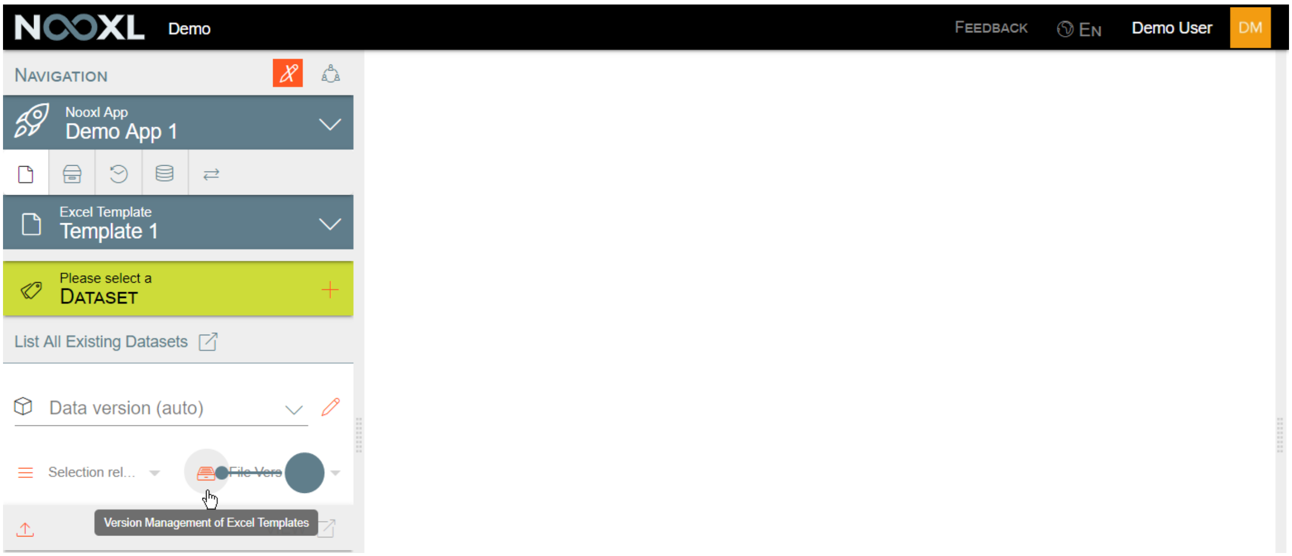
Step 1: Enter the Design Mode

First of all you need to switch to the design mode.



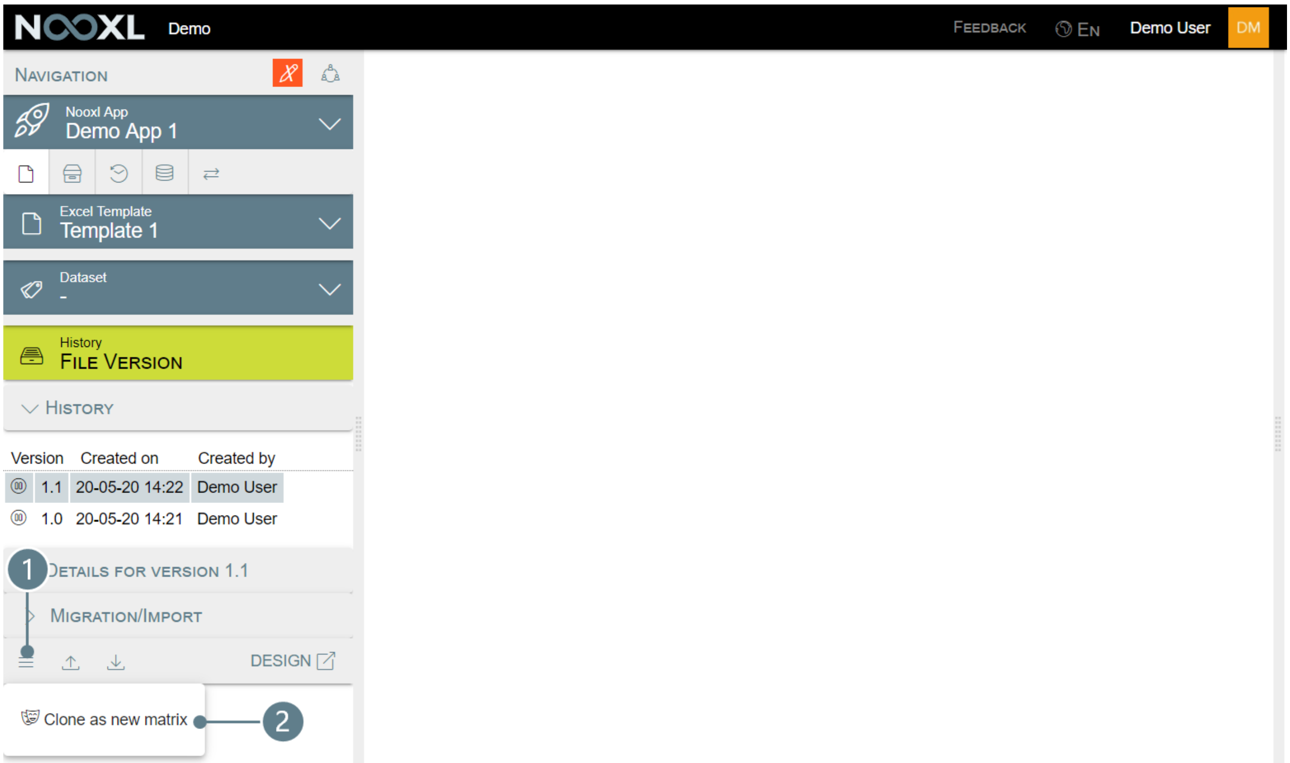
Step 2: Go to the version management of the template you want to copy

When you are in the design mode, please go to the template you want to copy.



Step 3: Clone the template as a new matrix

Next you need to open the context menu **(1)** in the the version management and select Clone as a new matrix **(2)**.



Version	Created on	Created by
1.1	20-05-20 14:22	Demo User
1.0	20-05-20 14:21	Demo User

Result

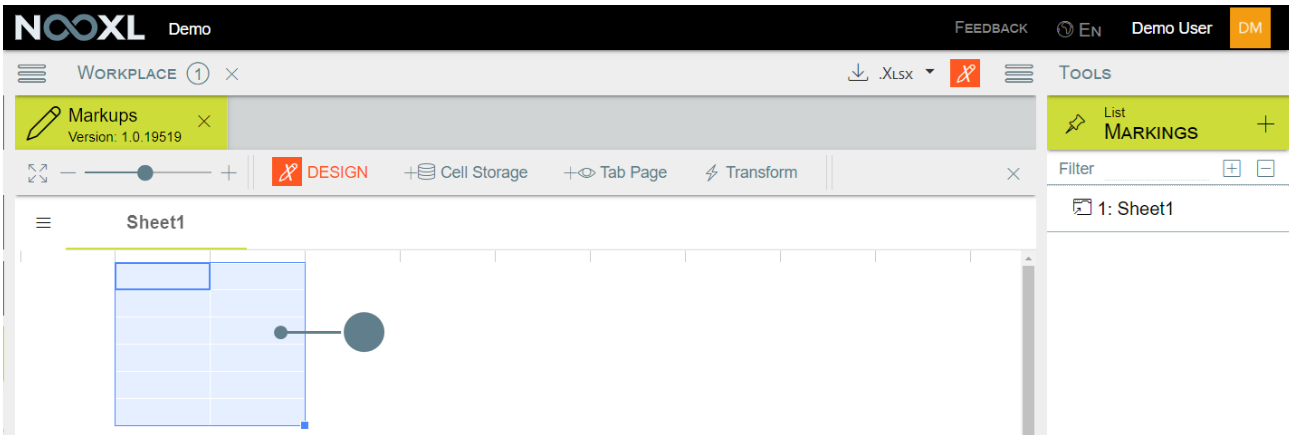
The new template will be created with a " copy" after the original name and you can go ahead and rename to your desire.

3.7.9 Markups/ Markings

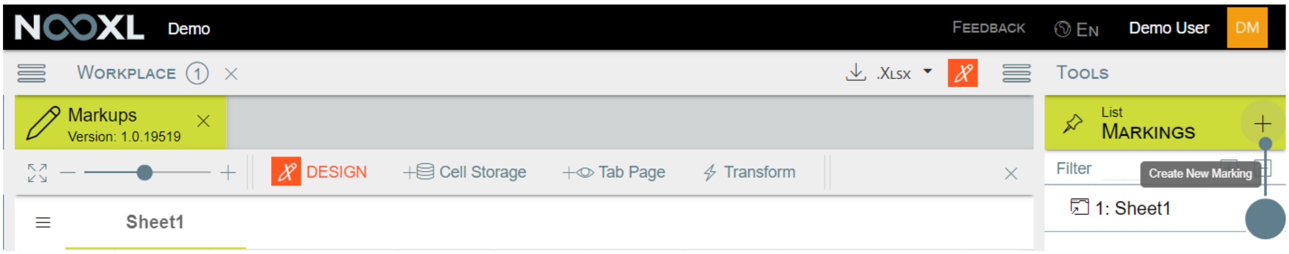
As a designer, you can add so-called markups to a template in design mode (siehe Seite 29). Markups can be used to show and hide views dynamically, to save data or to host further Nooxl functionalities.

Create a markup

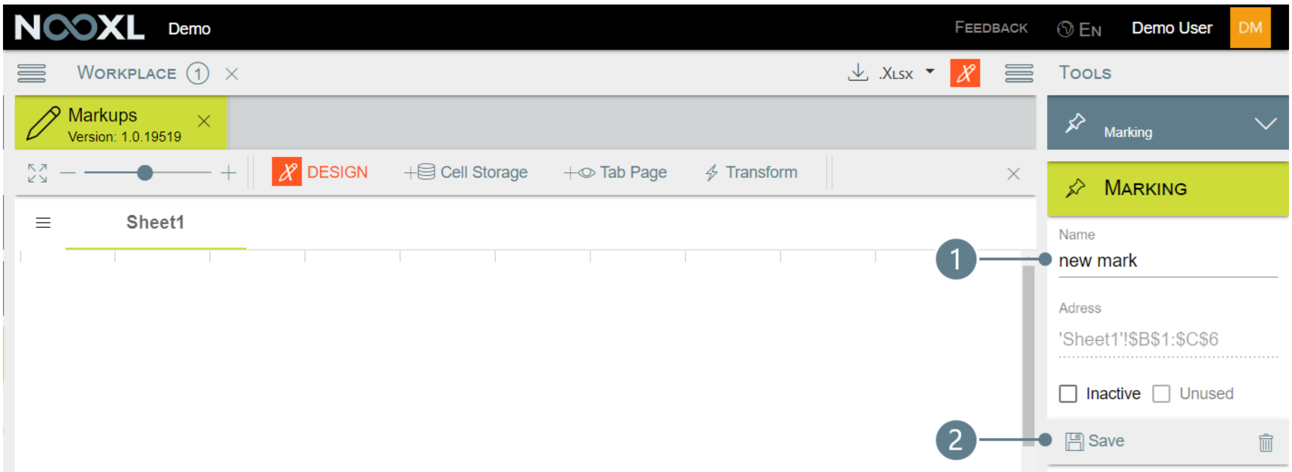
To create a new markup, simply select the desired cells with the mouse.



Then click on the plus to the right of "Markings" in the right-hand menu area "Tools".



In the dialog that opens, assign a name **(1)** to the markup and save it **(2)**.



Name
new mark

Adress
'Sheet1'!$B$1:$C$6

☐ Inactive ☐ Unused

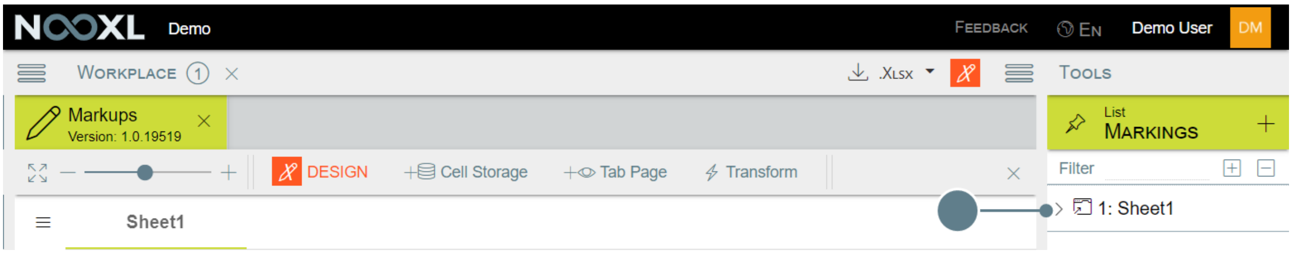
✓ If the check mark is set to *Inactive* here, this markup and all its "children" are ignored. This can be useful if you want to define and configure a markup, but want it to be active only at a later time.

ⓘ If adjustments are made in the Excel template, it is possible that a markup is no longer present in the current file, for example because the cells have been deleted. If this is the case, you will be notified of the missing markups when uploading the template and they will also be displayed crossed out in the tool list on the right.

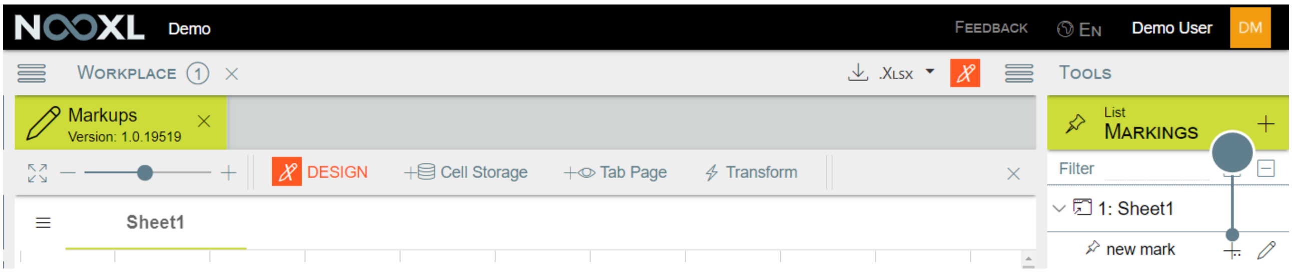
Add Nooxl functionalities to the markup

A markup itself has no functionality at all, but is only a shell that can contain one or more functionalities.

To bring a markup to life, click on the arrow (>) to the left of the sheet in which you have just saved a markup in the Tools area.



Using the button + to the right of the created markup, further functionality can be added.



Information about the different Nooxl functionalities

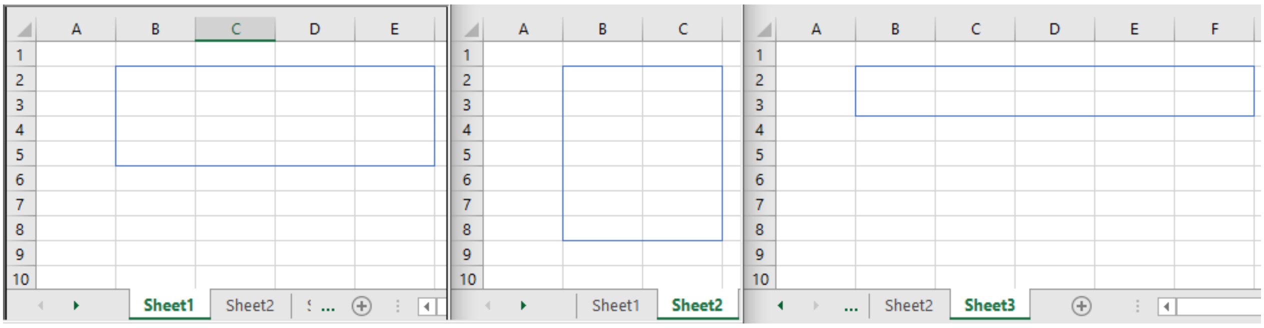
Add New Tab Page (siehe Seite 159)

Add New Cell Store Entry (siehe Seite 166)

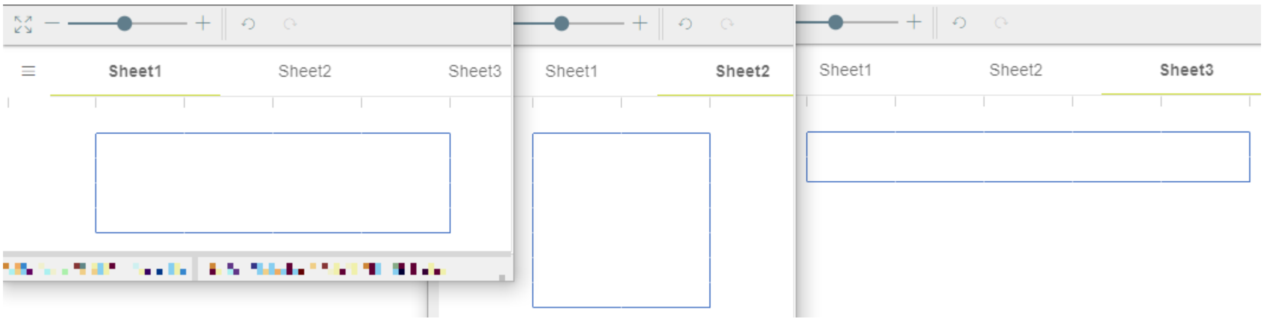
Add New Function (siehe Seite 203)

Tab pages

What sheets are in Excel are tab pages in Nooxl. Per default Nooxl will show a tab page for every sheet in your template.



1: Excel template with three sheets and some bordered cells



2: Template in Nooxl without any adjustments

As soon as you start to create an own tab page, Nooxl will no longer show the sheets from the template.

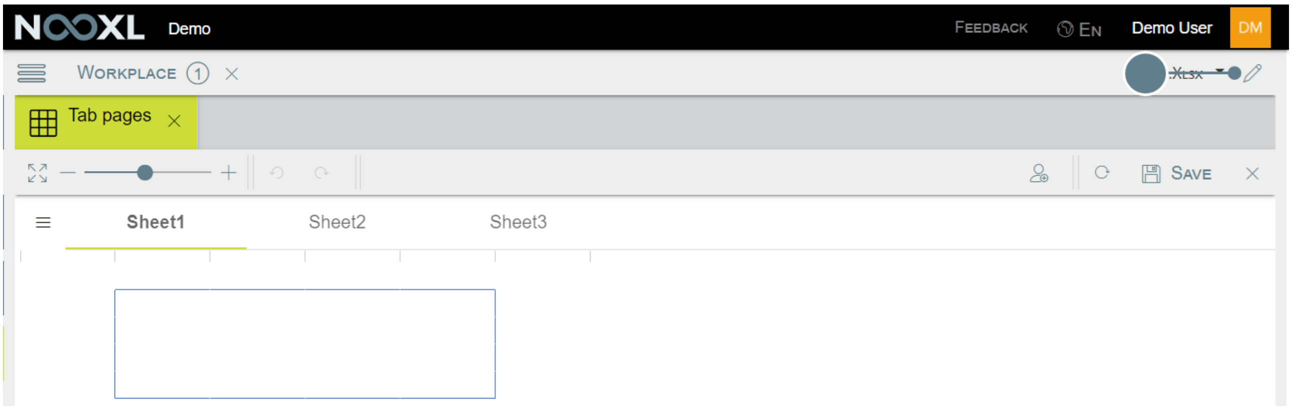
Why should you use tab pages?

Using custom tab pages offers some functionality to the designers, which are not possible with the default sheets:

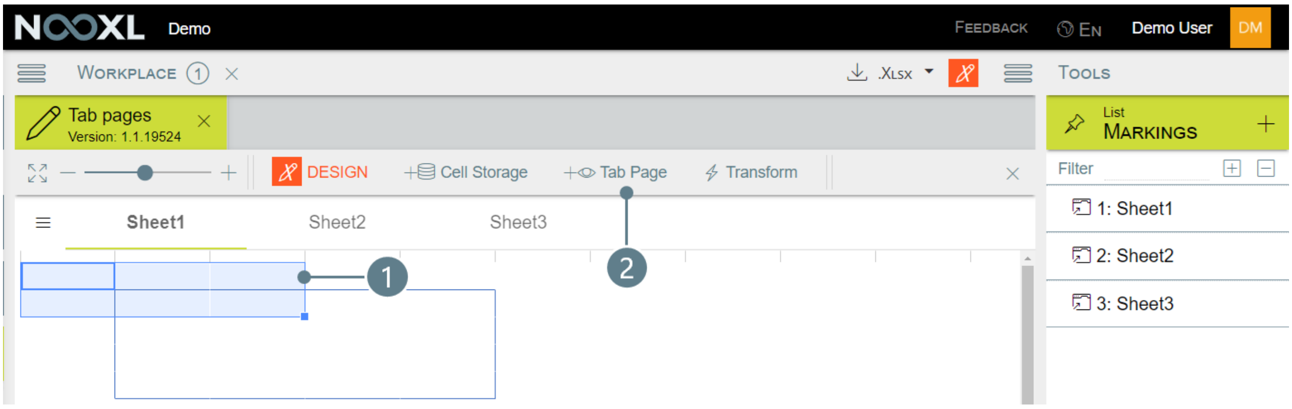
- fixing certain rows and columns to make sure they are always visible
- hiding tab pages dynamically on run time
- hiding columns and rows dynamically on run time
- distribute content from one sheet in your template on multiple tab pages
- show only parts of a sheet to the end user

Create a tab page

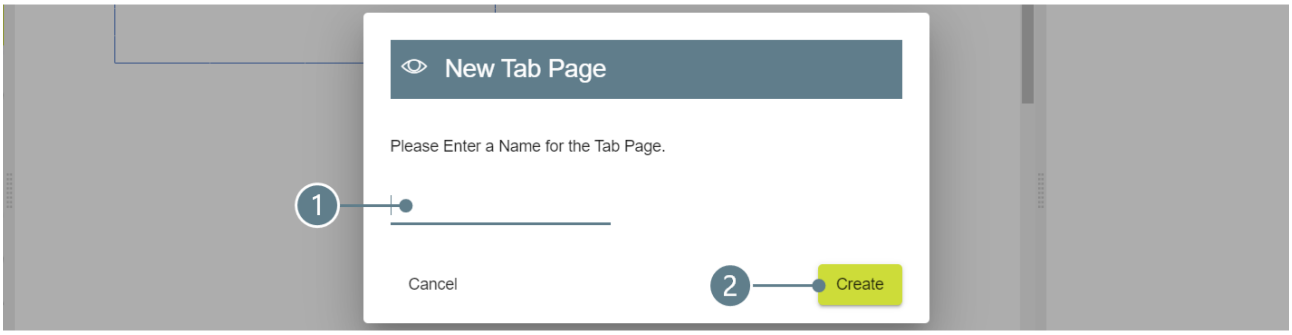
Open a dataset with your template and then click on the button to open the template in the design mode.



Next you need to select all cells with your mouse, which should be part of the tab page **(1)**. With the cells selected, click on *Create new Tab Page* **(2)**.



Give the tab a name **(1)** and click "Create" **(2)**.

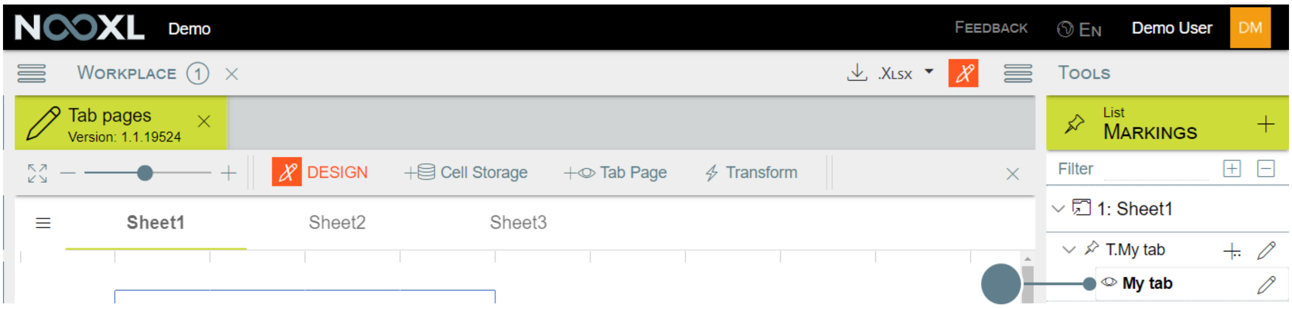


✓ This will create a markup with a tab page inside. Both will have the same name you state here. However you can give the markup and tab page a different name and in order to be able to find all markups with tabs quickly later using filters, it is a good practice to name the markups according to a certain scheme. For example `T.[tab name]`
So later you can simply search for " `T.` " and find all markups with tabs.

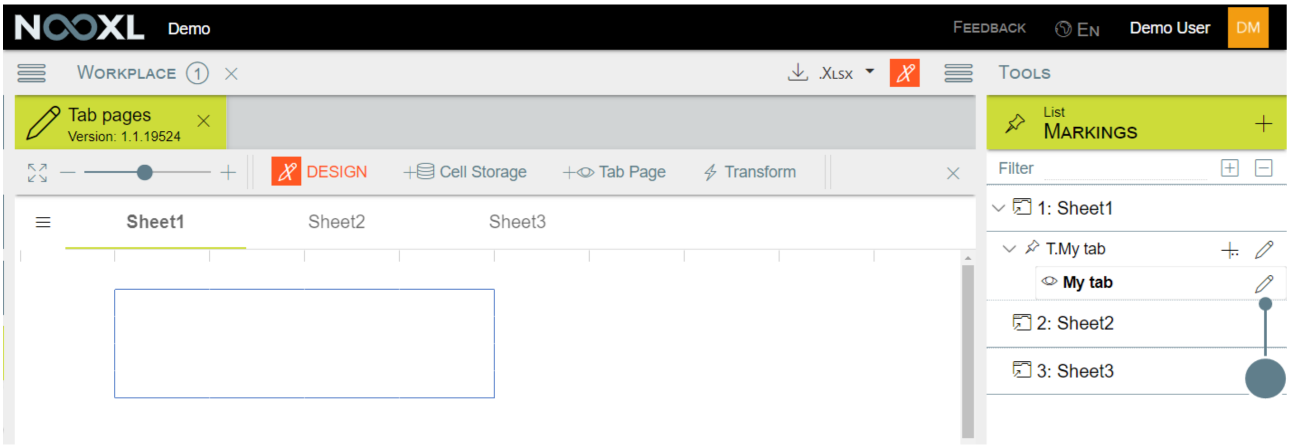
Edit an existing tab page

To edit an existing tab page, make sure you are in the design mode of the template and locate the tab you want to edit in the right tools area.

> ✓ Tabs can be recognized by the 👁 icon.



To adjust the properties, click on the pencil to the right of the entry.

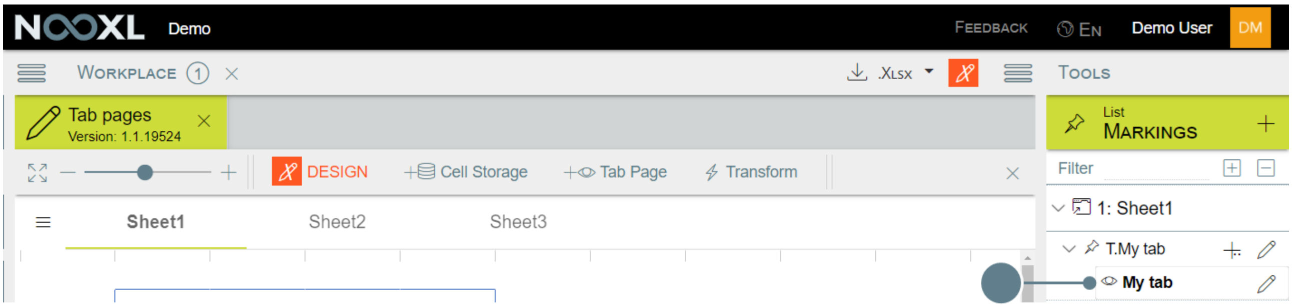


Then the properties for the tab page will be opened in the right menu.

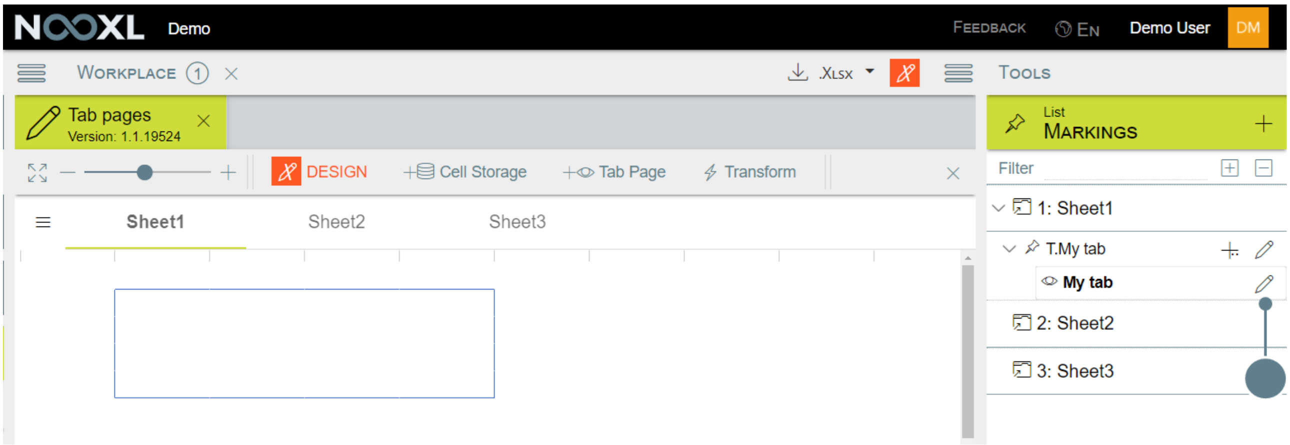
Delete a tab page

To delete an existing tab page, make sure you are in the design mode of the template and locate the tab you want to delete in the right tools area.

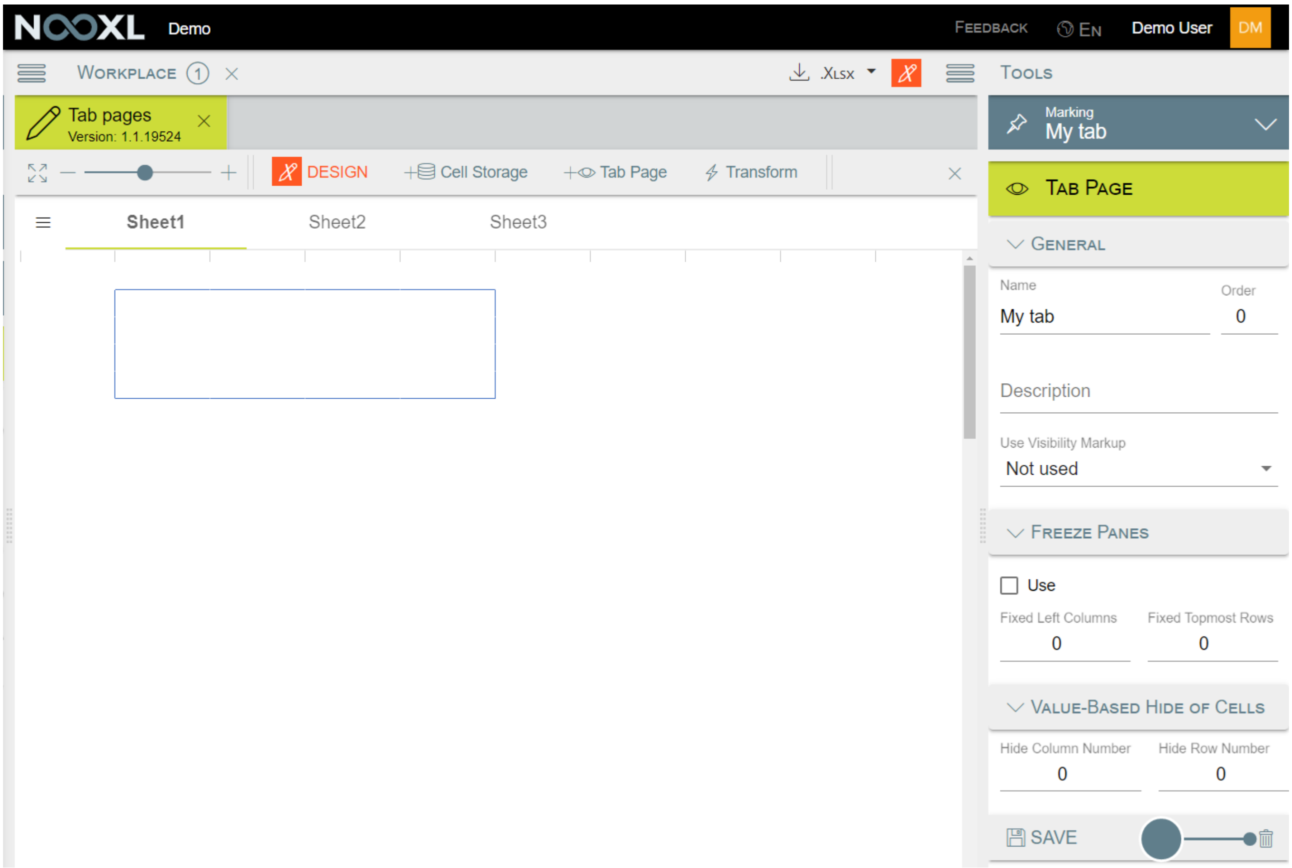
> ✓ Tabs can be recognized by the 👁 icon.



To delete the tab page click on the pencil to the right of the entry.



Then at the bottom of the properties panel of the tab page you find a trash bin. click on it to delete the tab page.



Name: My tab

Order: 0

Description

Use Visibility Markup: Not used

□ Use

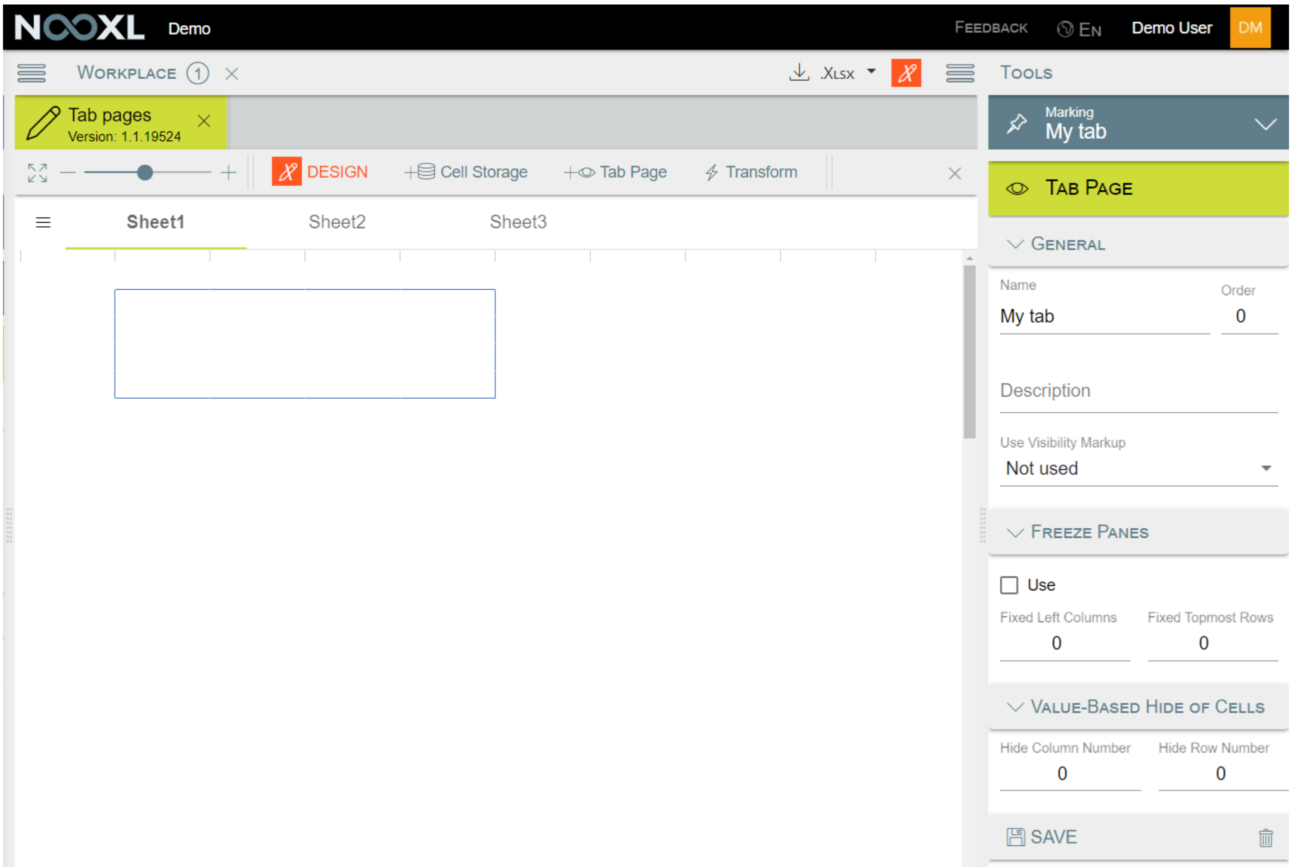
Fixed Left Columns: 0

Fixed Topmost Rows: 0

Hide Column Number: 0

Hide Row Number: 0

Tab page properties



Name: My tab
Order: 0
Description
Use Visibility Markup: Not used
☐ Use
Fixed Left Columns: 0
Fixed Topmost Rows: 0
Hide Column Number: 0
Hide Row Number: 0

General

Name
The name of the tab page. This name will be displayed to the user in the template.

Order
Position where the tab should be displayed. If the order number is the same, the tabs are sorted alphabetically.

Description
An optional description of the tab page.

Use Visibility Markup
If you want the tab to be shown and hidden dynamically, you can implement an excel logic in your template, which has `1` (=show) and `-1` (=hide) as its output.

Then you place a markup on this cell and choose it from the *Use Visibility Markup* drop-down menu.

Freeze Panes

In this area you can specify whether parts of the tab page should be "fixed".

Use
If this check mark is not set, the specifications made for fixed rows and columns are ignored.

Fixed Left Columns
Amount of fixed columns on the left side.

> ⚠ Here only the columns visible in the tab page count, not the columns in the Excel file.

Fixed Topmost Rows
Amount of fixed rows on the top.

> ⚠ Here only the rows visible in the tab page count, not the rows in the Excel file.

Value-Based Hide of Cells

This area can be used to control whether there are logics in the template to dynamically hide rows and columns.

Nooxl searches the column and row specified as *Hide Column* or *Hide Row* for entries with `1` or `-1`. If Nooxl finds a `-1` in one row of the column, the entire row is hidden. If a column in the specified row is found with a `-1`, the entire column is hidden.

Example
Column 1 and row 2 (both green) were specified as the *Hide Column* and *Hide Row* and have the following contents when displayed in Nooxl

	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1	1							
2	-1	1	-1	-1	1	1	-1	1
3	-1							
4	1							
5	-1							

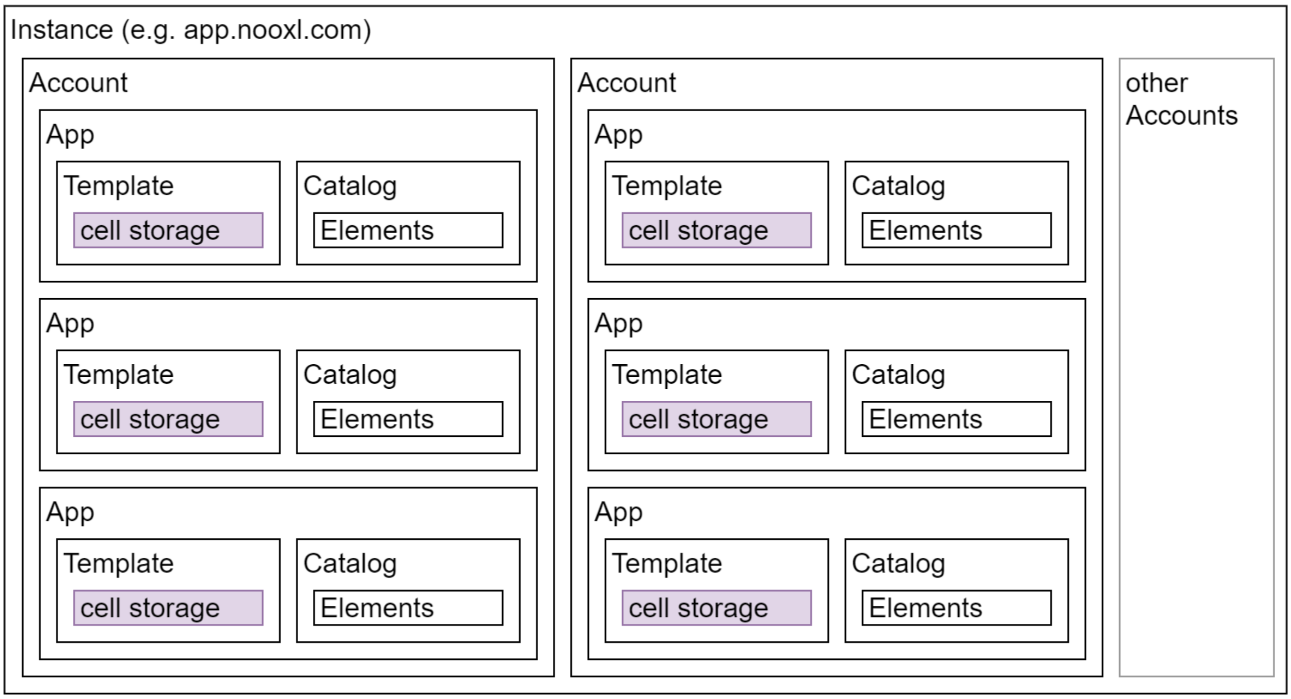
Nooxl will then only show the following section of the tab page to the user:

	1	**2**	**5**	**6**	**8**
1	1				
4	1				

Hide Column Number
Column number with the result of the show/ hide logic for the rows.

Hide Row Number
Row number with the result of the show/ hide logic for the columns.

Cell storage entries (save and read out data)

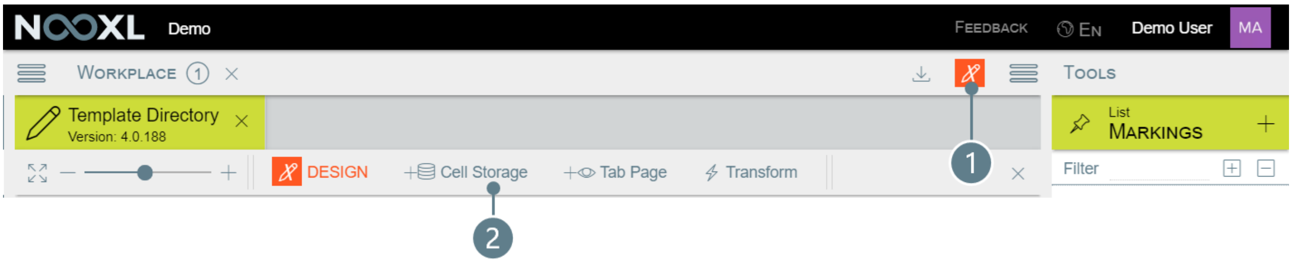


In order to permanently store data in the database and read it out again, so-called cell storages are used. The data stored in cell storages does not necessarily have to be just text and numbers, but can also include documents and images and be made available to other users.

The creation of a cell storage entry is always the same regardless of the type of data.

Create a cell storage

To create a cell storage in a template, switch to design mode (1). Then select the cell or cells whose contents you want to save and click the button *+Cell Storage* (2) to create a new cell storage.



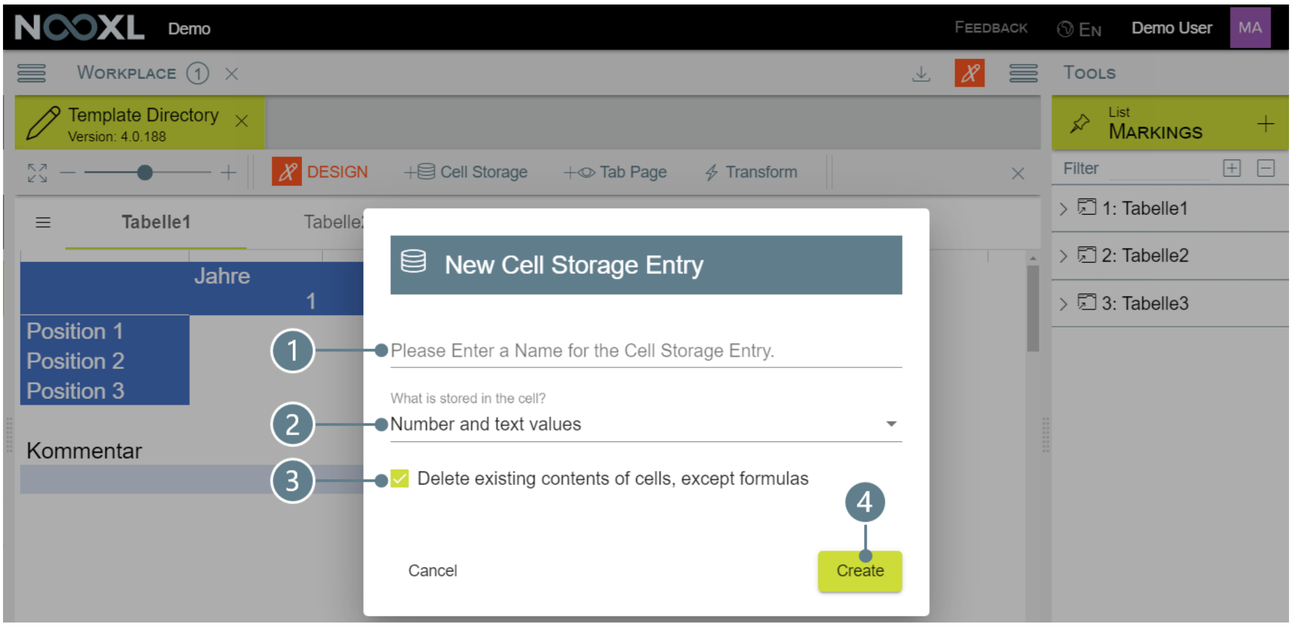
As soon as the button is clicked, a dialog opens. Enter a unique name (in the template) here (1). Then you have to specify what is to be saved (2). The following options are available:

- Number and text values
- Number values
- Text values

- Document

By placing a check mark at (3), you ensure that Nooxl removes any values contained in the Excel template from the selected cells. This is useful, for example, if your template contains sample values to test the calculation logic.

Then confirm the attachment by clicking the button *Create* (4).



New Cell Storage Entry

1. Please Enter a Name for the Cell Storage Entry.
2. What is stored in the cell? Number and text values
3. ☑ Delete existing contents of cells, except formulas
4. Create

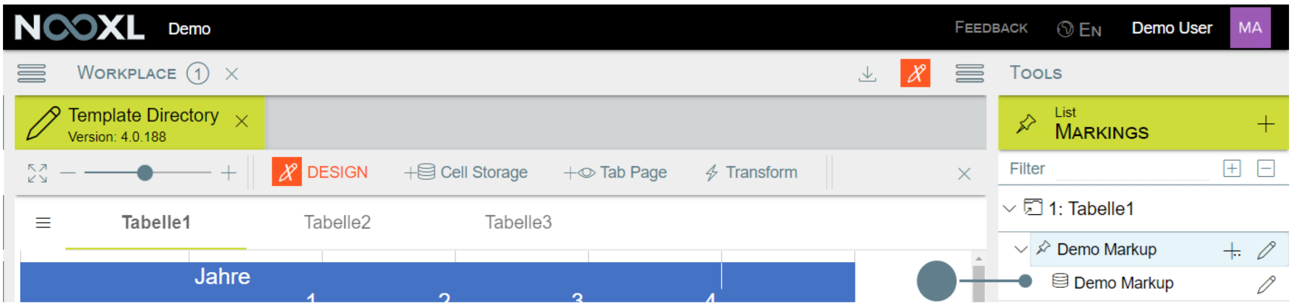
The creation of a cell storage combines several actions:

1. Creation of a markup
2. Creation of a cell storage within the markup, according to the selected option

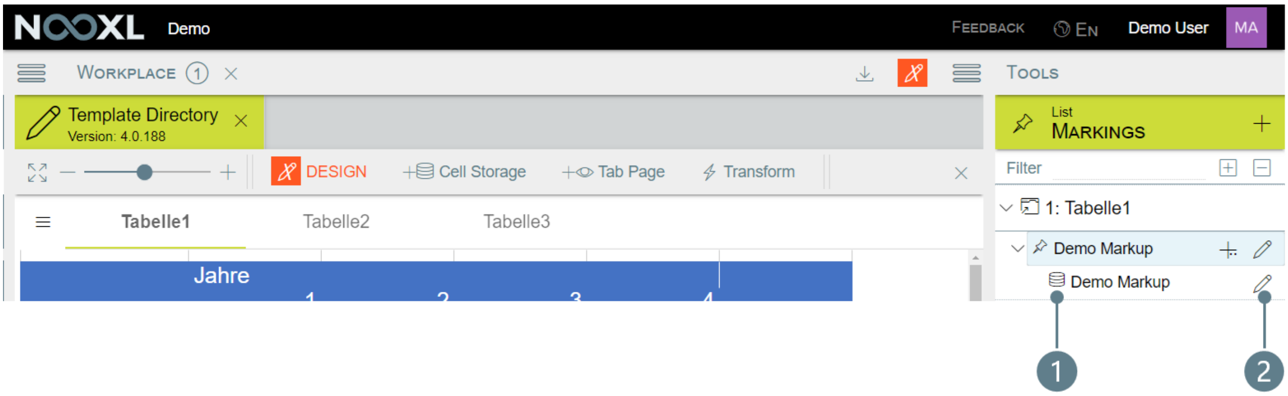
The markup and the cell storage get the name given in the dialog.

Edit a cell storage

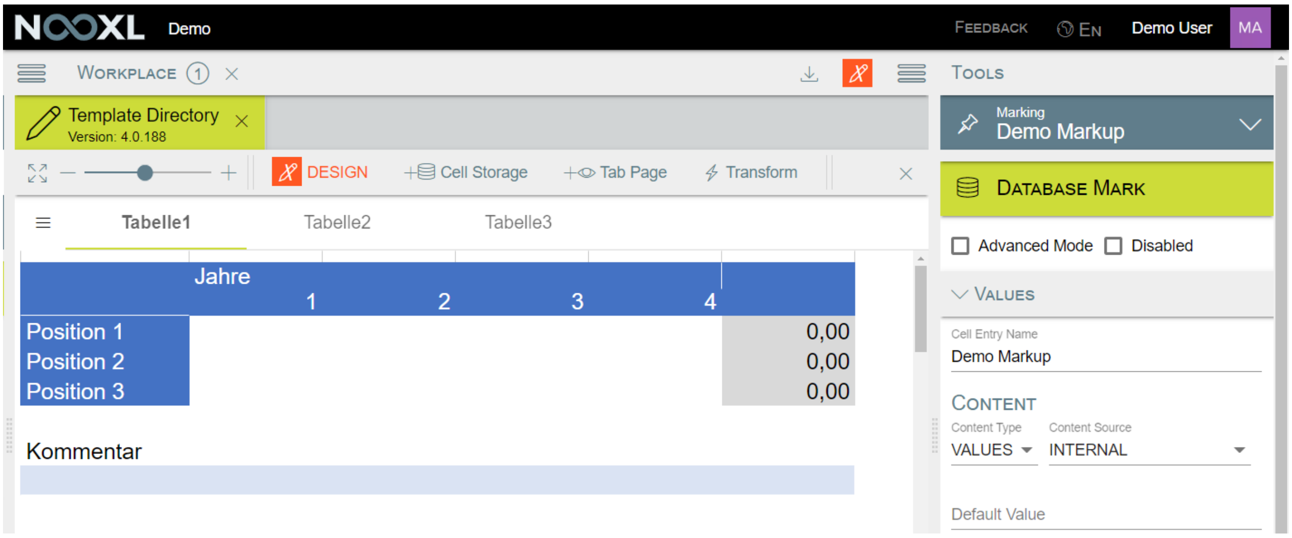
In design mode, you can use the *Tools* area on the right-hand side of the screen to navigate to the Markups and thus cell storages and edit them as required.



Cell storages can be identified by the 🛢 symbol (1). A click on the pen icon (2) will open the edit mode.



Newly created cell storage entries are configured in a way that the contents of the cells are stored and read out again. At the same time the cells are given the background color that allows user input. (siehe Seite 40)



☐ Advanced Mode ☐ Disabled

Cell Entry Name: Demo Markup

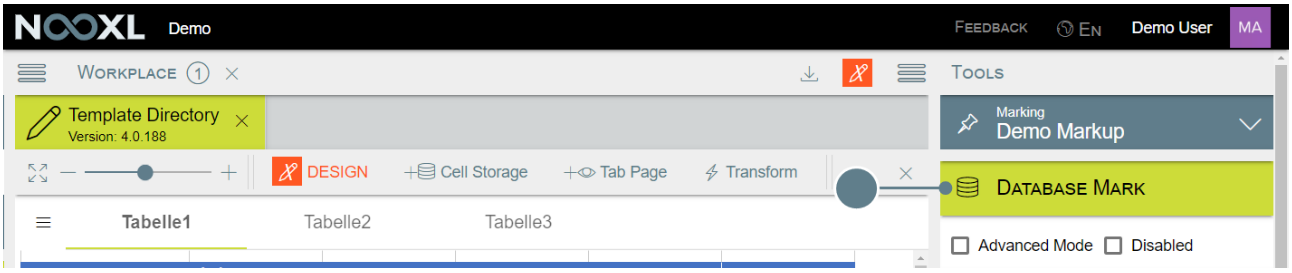
Content Type: VALUES

Content Source: INTERNAL

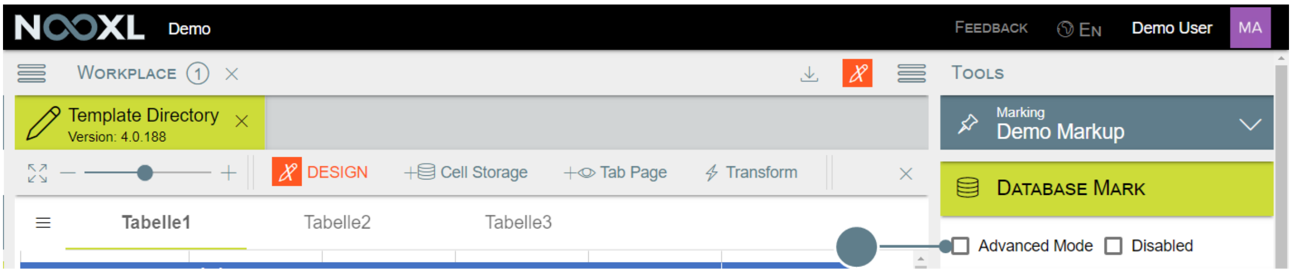
Below you will find detailed descriptions of all the setting options of a cell storage using the *Tools* area on the right hand side.

Database Mark

Tells you that you currently view a cell storage details page.



Advanced Mode



□ Advanced Mode □ Disabled

If the *Advanced Mode* is activated, Nooxl offers the possibility to configure cell storage entries beyond simple use cases:

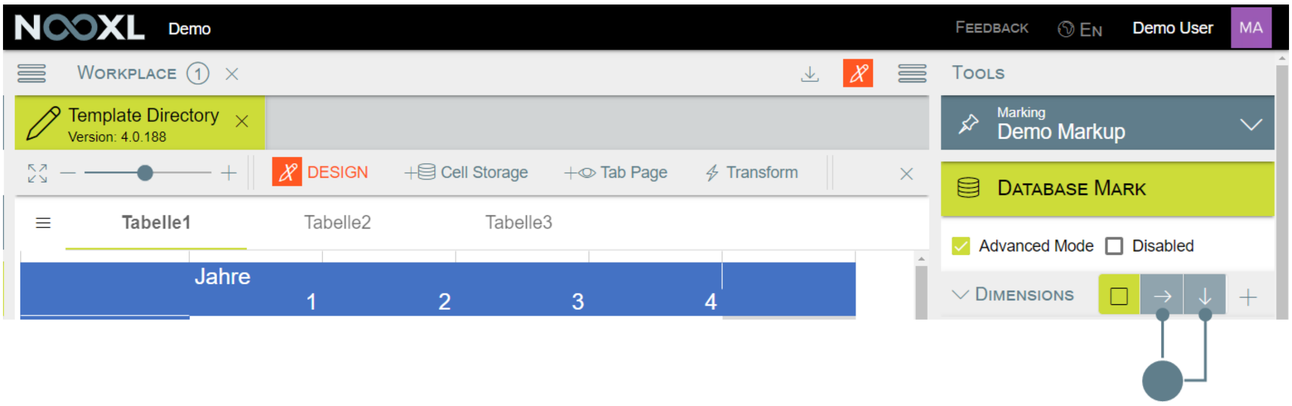
- Use of own dimensions to clearly identify the cells of a cell storage (siehe Seite 169)
- Use more than one *Values* entry (output area), for example to simultaneously output data and information of the dimension used (siehe Seite 170)

Use of own dimensions to clearly identify the cells of a cell storage
When a new cell storage entry is created, Nooxl automatically generates coordinates for the cells contained in the selection (horizontally → and vertically ↓), based on their position within the selection.

This is illustrated in the table below. The gray cells contain the coordinates of the two dimensions and the green cells contain the unique combination of these coordinates.

	1	**2**	**3**	**4**
1	→ = 1 ↓ = 1	→ = 2 ↓ = 1	→ = 3 ↓ = 1	→ = 4 ↓ = 1
2	→ = 1 ↓ = 2	→ = 2 ↓ = 2	→ = 3 ↓ = 2	→ = 4 ↓ = 2
3	→ = 1 ↓ = 3	→ = 2 ↓ = 3	→ = 3 ↓ = 3	→ = 4 ↓ = 3
4	→ = 1 ↓ = 4	→ = 2 ↓ = 4	→ = 3 ↓ = 4	→ = 4 ↓ = 4

In *Advanced Mode* you can now define your own dimensions for the horizontal and vertical axis, which are used to identify the cells.



You can use any catalog selection (siehe Seite 277) available in the app as a dimension. You can also mix the contents of several selections for one dimension. In this case, a cross product of the existing catalog elements is created to represent all possible combinations:

- Selection 1 contains the elements A and B
- Selection 2 contains the elements 1, 2, 3 and 4
- The resulting vector from these two selections would have 8 entries, which would look as follows:

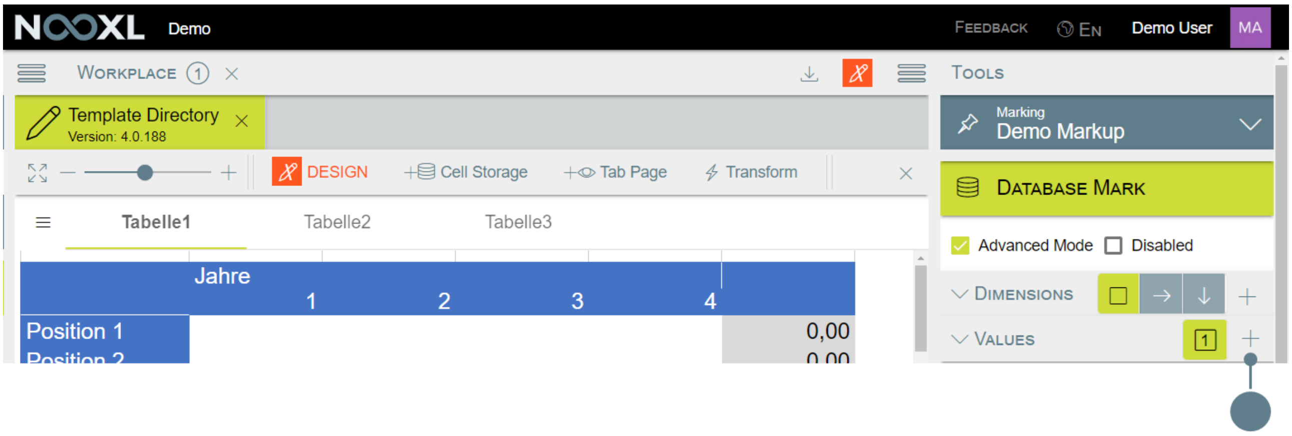
A	A	A	A	B	B	B	B
1	2	3	4	1	2	3	4

Further information on this topic can be found in section Dimensions (siehe Seite 171).

> ✓ If your selection contains dependent catalog elements, they only appear below their corresponding "parents".

Using more than one Values entry

By default, a cell storage entry has exactly one output value, or one for each cell it contains. If *Advanced Mode* is activated, further output values can be defined by clicking on the "+".



This is useful, for example, if you have used a catalog selection of elements as a dimension and would like to display the names of the elements in addition to the actual values:

Element	Value
Element 1	123
Element 2	456
Element 3	789

✓ Nooxl will process multiple values in the order displayed in the design mode. Here the order is determined by alphabetical sorting of the *cell entry names*. This means you can change the process order by just adding numbers at the beginning of the *cell entry names*.

You can find more on this topic in section Values (siehe Seite 179).

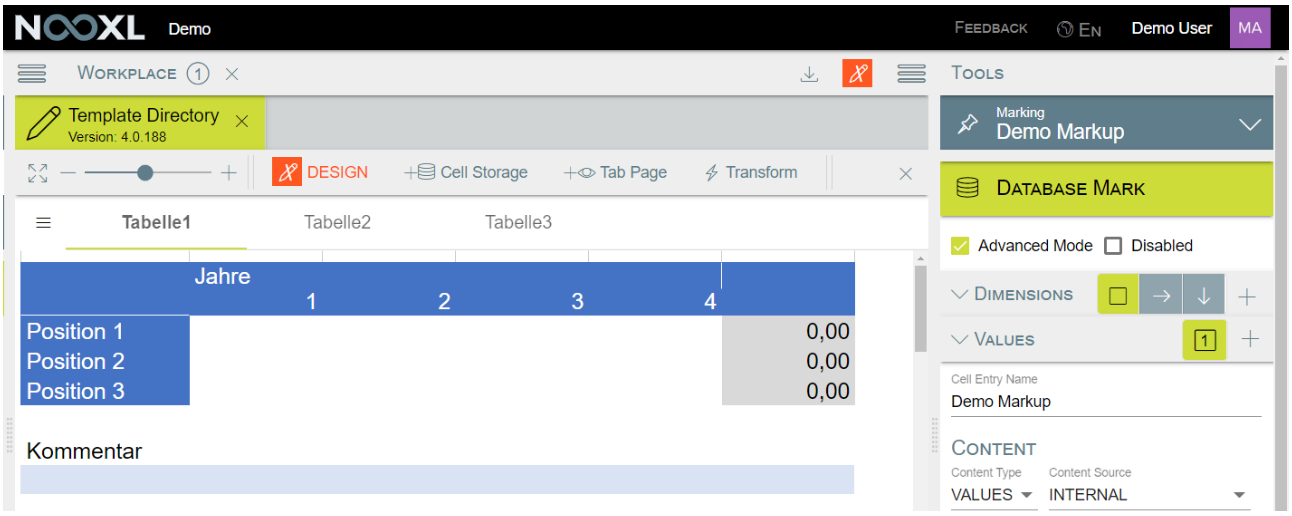
Disabled

If the checkbox *Disabled* is set, the cell storage entry is deactivated. This means that all read and/or write commands stored here will not be executed.

Deactivating a cell storage entry is useful if you need to setup something elsewhere to finalize the configuration of the cell storage entry. In the meantime, in order not to produce unwanted error messages if a user opens the template, the unfinished entries should be deactivated.

Dimensions (in *Advanced Mode*)

In *Advanced Mode*, selections can be used for the horizontal and vertical dimensions to identify the values of the cells. This makes it possible, for example, to read out only parts of a cell storage entry in another template instead of the entire area.



Jahre	1	2	3	4	
Position 1					0,00
Position 2					0,00
Position 3					0,00

☑ Advanced Mode ☐ Disabled

Cell Entry Name: Demo Markup

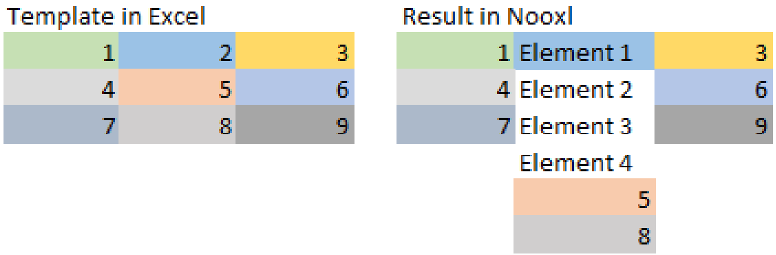
Content Type: VALUES

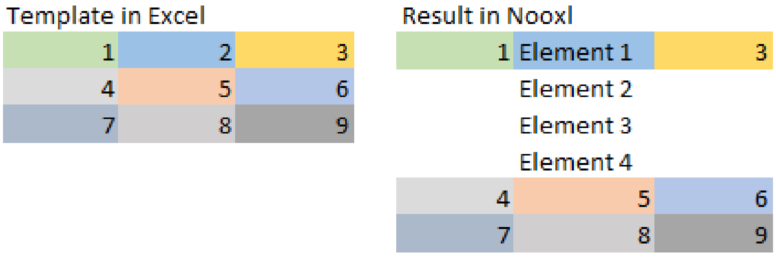
Content Source: INTERNAL

Settings

Expanse

The setting under Expanse controls whether or not cells or entire rows/columns are to be added for the elements of the selection used.

Option	Description
Off - do not expand	Nothing is added.
Insert Cells	A cell is inserted for each element (except the first). Depending on whether it is the horizontal or vertical dimension below the first cell of the selection or to the right of it. Below you can see the effect of Insert Cells for a selection in cell 2. The selection used for the vertical dimension contains the following elements: `Element 1`, `Element 2`, `Element 3`, `Element 4`.  Template in Excel 1 2 3 4 5 6 7 8 9 Result in Nooxl 1 Element 1 3 4 Element 2 6 7 Element 3 9 Element 4 5 8
Insert complete lines	A row or column is inserted for each element (except the first). Depending on whether it is the horizontal or vertical dimension below the first cell of the selection or to the right of it. Below is the effect of Insert complete lines for a selection in cell 2. The selection used for the vertical dimension contains the following Elemente: `Element 1`, `Element 2`, `Element 3`, `Element 4`.

<table>
<tr><th>Option</th><th>Description</th></tr>
<tr><td></td><td>
Template in Excel
<table>
<tr><td>1</td><td>2</td><td>3</td></tr>
<tr><td>4</td><td>5</td><td>6</td></tr>
<tr><td>7</td><td>8</td><td>9</td></tr>
</table>
Result in Nooxl
<table>
<tr><td>1</td><td>Element 1</td><td>3</td></tr>
<tr><td></td><td>Element 2</td><td></td></tr>
<tr><td></td><td>Element 3</td><td></td></tr>
<tr><td></td><td>Element 4</td><td></td></tr>
<tr><td>4</td><td>5</td><td>6</td></tr>
<tr><td>7</td><td>8</td><td>9</td></tr>
</table></td></tr>
</table>

Copy

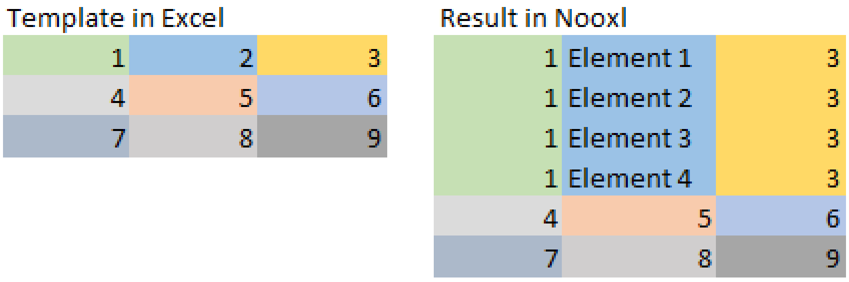
ⓘ Only visible if something other than `Off` is selected for Expanse.

Controls whether newly inserted rows/cells should be provided with the content of the original cell/row. This is useful, for example, if there are Excel formulas in the original row that are to be copied over.

<table>
<tr><th>Option</th><th>Description</th></tr>
<tr><td>Off - do not copy content to inserted cells</td><td>Nothing is copied.</td></tr>
<tr><td>Copy cells with size of dataset X</td><td>The contents and formating of the original cell/row are copied. If you use more than one selection in the dimension concerned, you will be able to choose between them.

If you want the content to be inserted for all inserted rows/columns, you must select the "highest" dataset.

Below you can see the effect of Insert complete lines for a selection in cell 2. The selection used for the vertical dimension contains the following elements: `Element 1`, `Element 2`, `Element 3`, `Element 4`. The option *Copy cells with size of dataset 1* is selected.


Template in Excel
<table>
<tr><td>1</td><td>2</td><td>3</td></tr>
<tr><td>4</td><td>5</td><td>6</td></tr>
<tr><td>7</td><td>8</td><td>9</td></tr>
</table>
Result in Nooxl
<table>
<tr><td>1</td><td>Element 1</td><td>3</td></tr>
<tr><td>1</td><td>Element 2</td><td>3</td></tr>
<tr><td>1</td><td>Element 3</td><td>3</td></tr>
<tr><td>1</td><td>Element 4</td><td>3</td></tr>
<tr><td>4</td><td>5</td><td>6</td></tr>
<tr><td>7</td><td>8</td><td>9</td></tr>
</table></td></tr>
</table>

Dataset

Option	Description
Markup: size by markup size (variable)	Default setting, corresponds to the behavior of cell storage entries in "normal mode", i.e. for each contained row/column (depending on the selected dimension) all cells contained in the markup are assigned an index. If the markup in the template is changed, the cell storage entry is automatically adjusted as well.
Count: size by value (fix)	Independent of the columns/rows actually contained in the markup, a fixed size is provided for the dimension. If the markup in the template is changed, the cell storage entry is not adjusted.
Catalog: size by Catalog/Collection items (…	The width/height (depending on the selected dimension) of the cell storage entry depends on a catalog selection.

Length

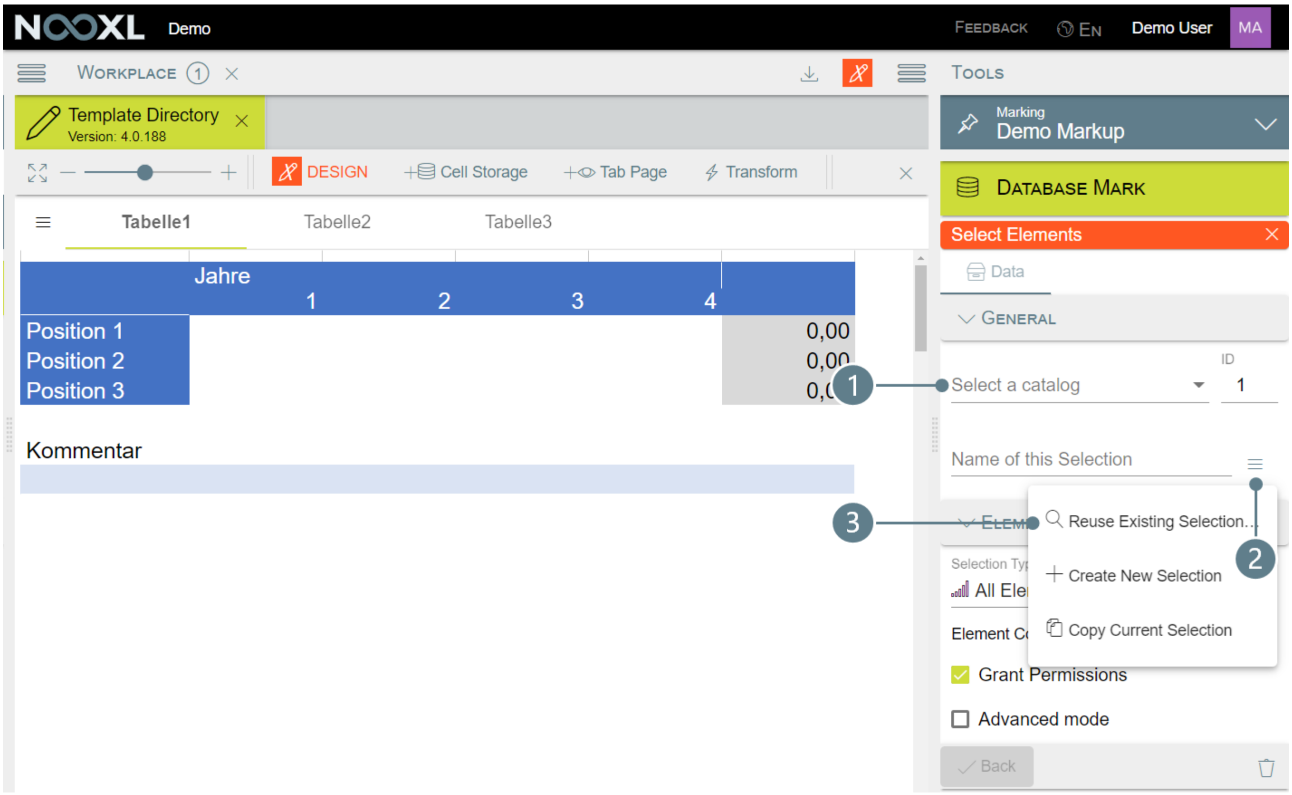
ⓘ Only visible if `Count` is selected for Dataset.

Defines the fixed size for the dimension.

Catalog items

ⓘ Only visible if `Catalog` is selected for Dataset.

By clicking on Catalog items the following mask opens. Here you can select any catalog (1). Afterwards you can open a menu by clicking on the three dashes (2) and search for an already created selection (3).



Jahre	1	2	3	4	
Position 1					0,00
Position 2					0,00
Position 3					0,(

Kommentar

☑ Grant Permissions

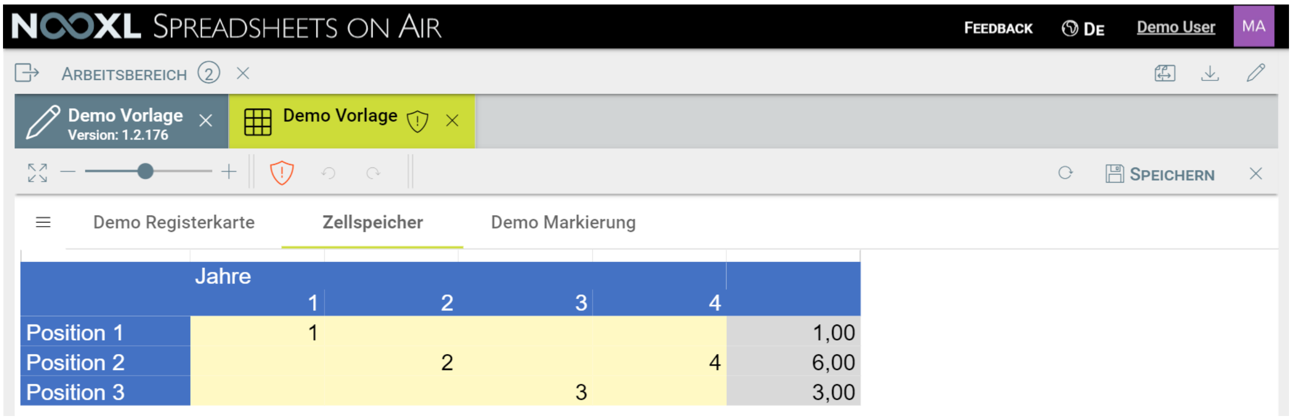
☐ Advanced mode

If you want to create a new selection, you will find a description of the procedure in the chapter on Selections (siehe Seite 277).

After

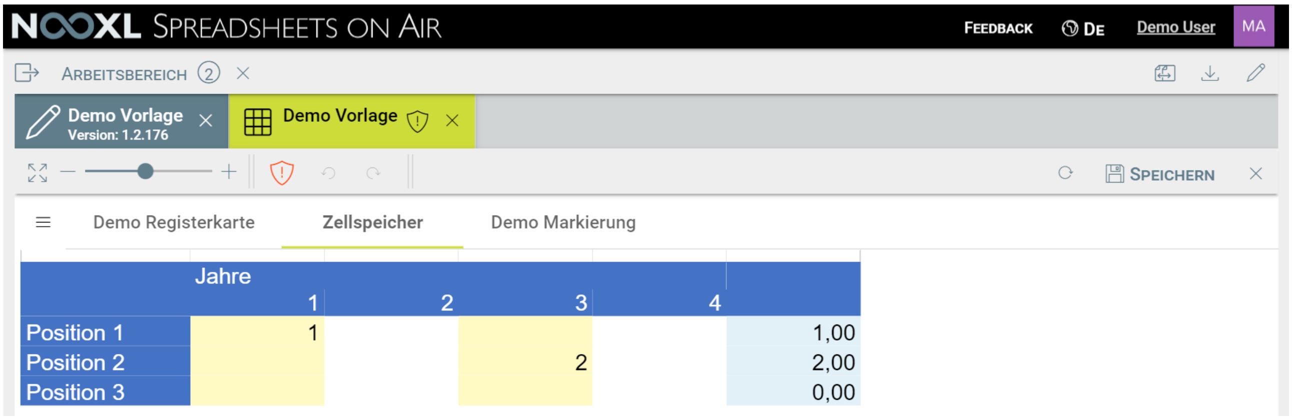
With *After* you can specify whether you want to have an empty cell after each element of the dimension.

`After = 0` für die horizontale Dimension.



Jahre	1	2	3	4	
Position 1	1				1,00
Position 2		2		4	6,00
Position 3			3		3,00

3: After = 0 für die horizontale Dimension.

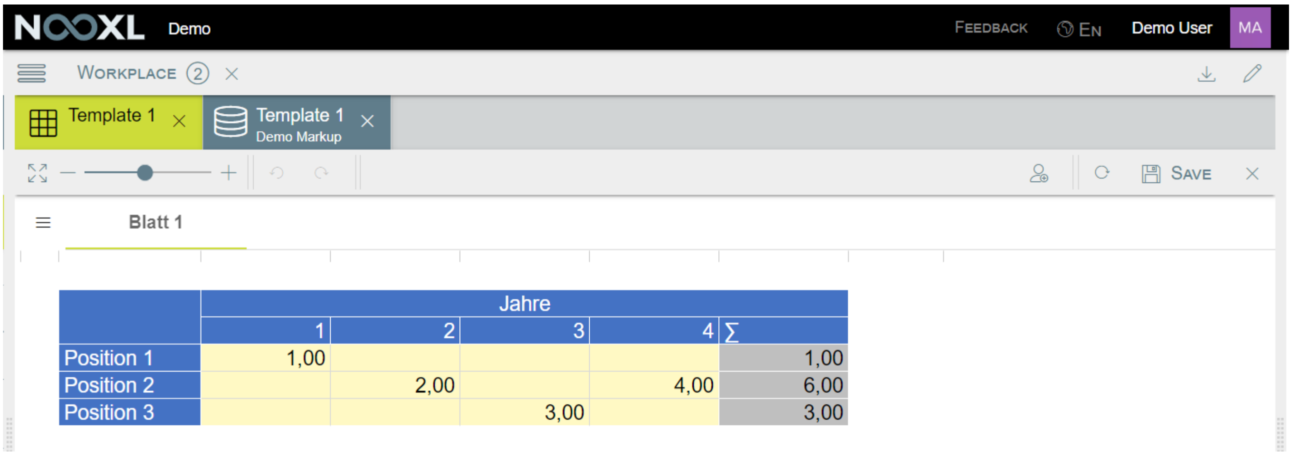


	Jahre				
	1	2	3	4	
Position 1	1				1,00
Position 2			2		2,00
Position 3					0,00

4: After = 1 für die horizontale Dimension.

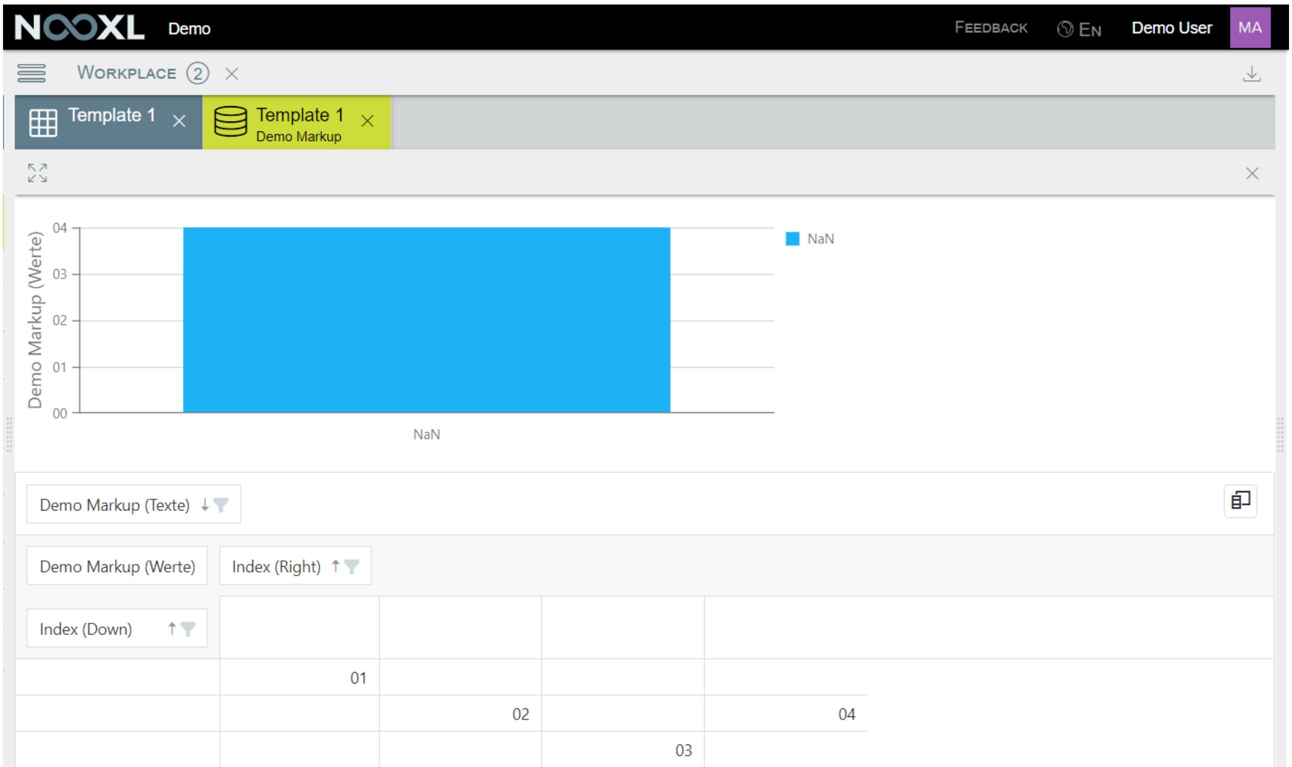
Example usage of the advanced mode

In the template shown below, the orange colored cells are marked as cell storage entries and the only existing data set is filled with the following values



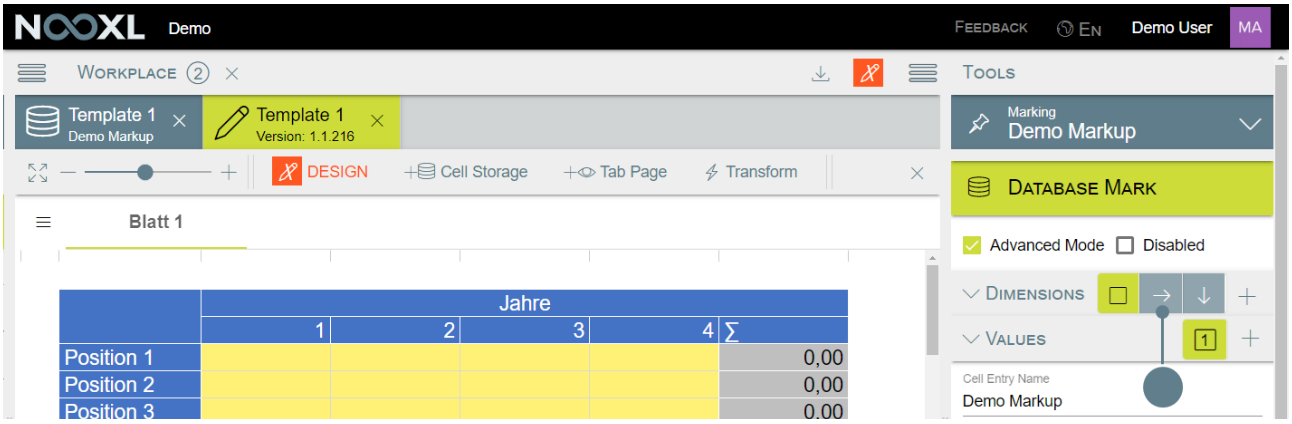
	Jahre				
	1	2	3	4	∑
Position 1	1,00				1,00
Position 2		2,00		4,00	6,00
Position 3			3,00		3,00

A look at the associated cell store (siehe Seite 300) shows that the values are only identified by the automatically generated coordinates.



We want to achieve that for the horizontal the years 1 to 4 and for the vertical the positions 1 to 3 are used for identification. For this purpose, we are creating two catalogs with the respective desired elements.

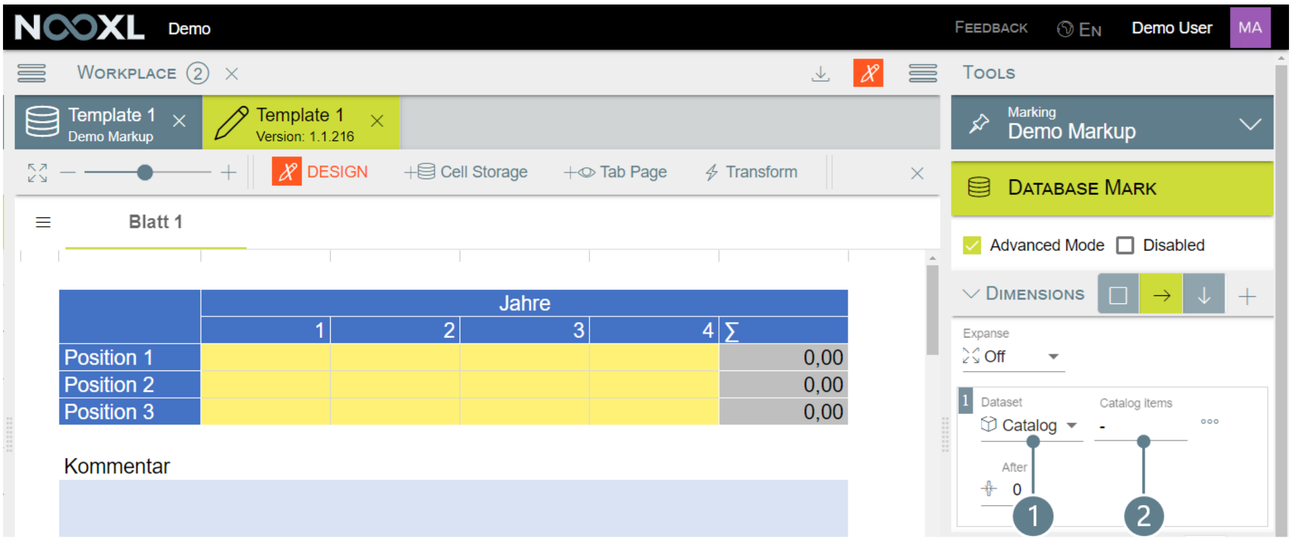
After the creation you can click on the → button to open the settings for the horizontal dimension.



☑ Advanced Mode ☐ Disabled

	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

At Dataset select the entry Catalog (1) and then click on "-" in Catalog items (2).



	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

Kommentar

☑ Advanced Mode ☐ Disabled

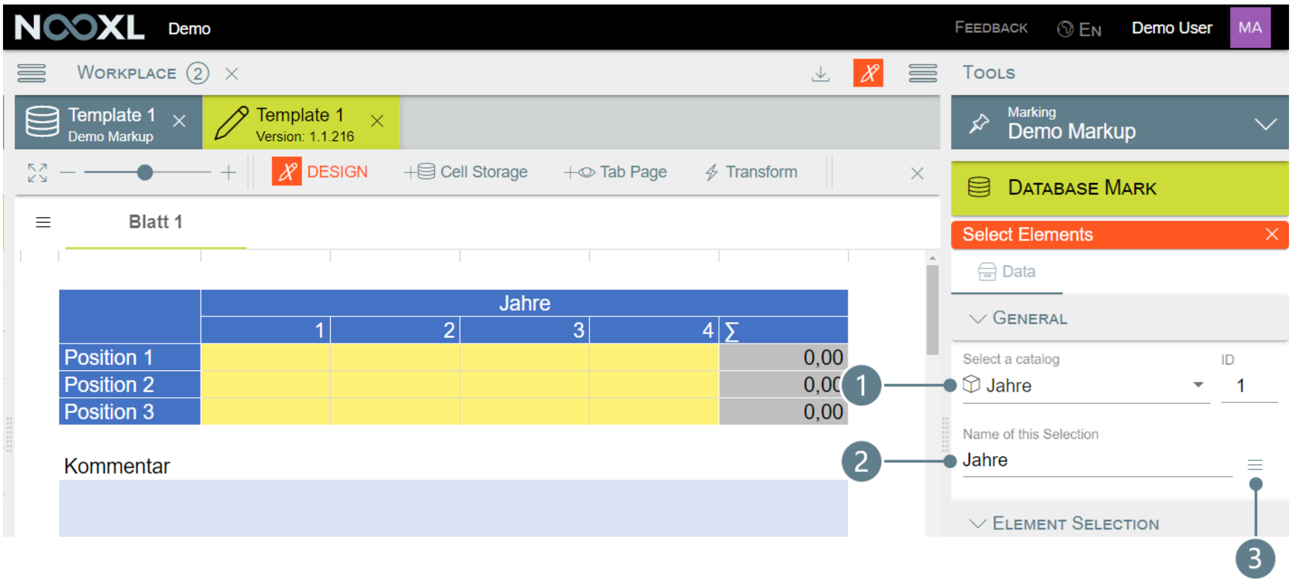
Expanse: Off

Dataset: Catalog

Catalog Items: -

After: 0

In the next dialog select the catalog with the year elements (1). If you never created a selection or want to create a new you need to specify a name of this Selection (2). If you already created a selection with the catalog elements you want to used, click on the three horizontal dashed (3) and choose *Reuse existing Selection...* to select the selection.



	Jahre				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

Kommentar

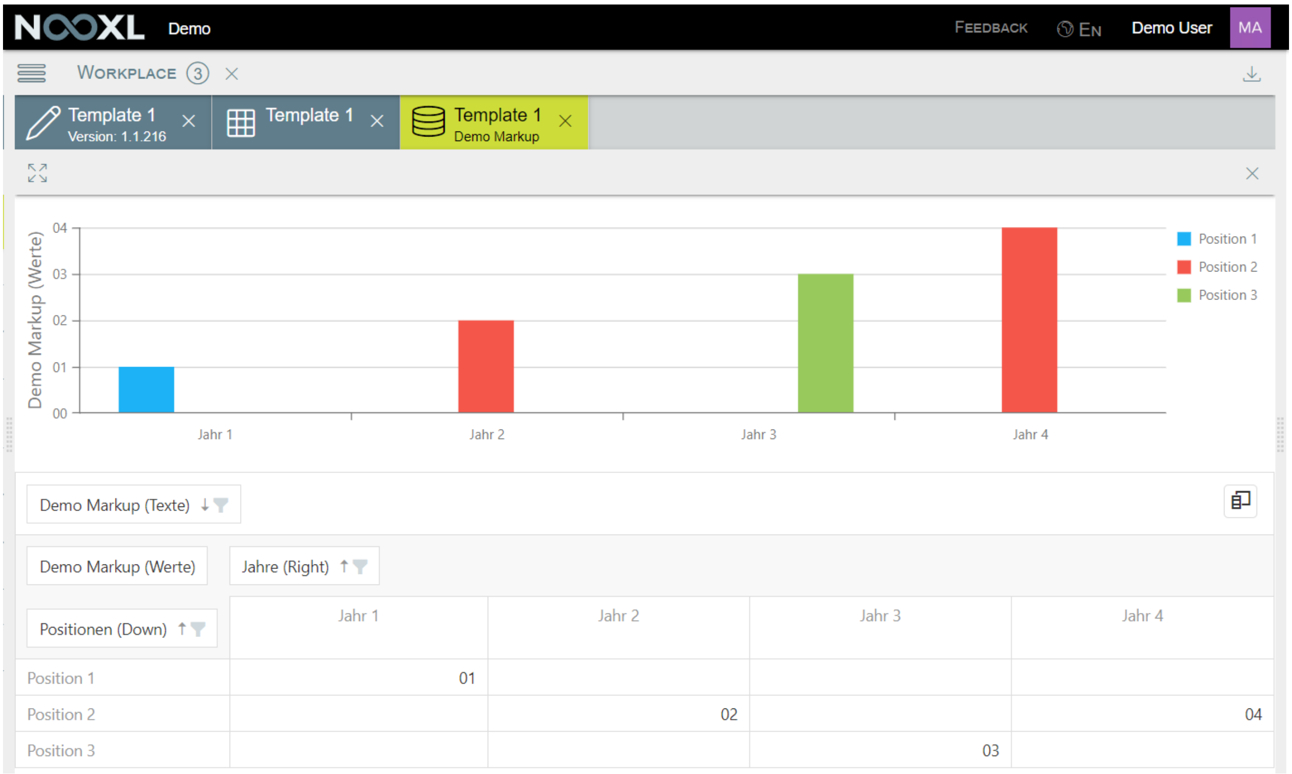
Select a catalog: Jahre

ID: 1

Name of this Selection: Jahre

Please be aware, that by changing the associated dimensions of the cell storage you will not be able to access the previously stored data! So in a real life case you would want to export all data sets prior to such a change.

After the record in the template is reopened and saved, it is visible n the cell store (siehe Seite 300), that the values are now clearly identified by the two dimensions and their elements we have stored.

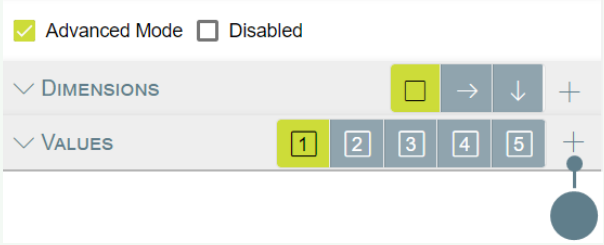


Positionen (Down)	Jahr 1	Jahr 2	Jahr 3	Jahr 4
Position 1	01			
Position 2		02		04
Position 3			03	

Values

In the value area of the cell storage entries all details concerning the way how to handle the contained data are stored.

In Advanced Mode, more than one value area can be set by clicking on the "+" on the right side.



☑ Advanced Mode □ Disabled

Cell Entry Name

The name of the cell storage entry. This can be chosen freely as long as it is unique within a template.

> If an already used name is assigned, Nooxl automatically adds a hash ("#") and a consecutive number to your name.

> If possible, give them names that speak for themselves! You will encounter them again in the following places:
>
> 1. You can search for the names in the tools list.
> 2. Names are used in the cell store (siehe Seite 300).
> 3. You refer to this name to read the data in another template (siehe Seite 196).

Content

Within the area Content you set the details for the data.

Content Type
The content type of the cell.

Content Type	Beschreibung
`VALUES`	The default setting for a cell storage entry. The Content Type Values allows you to store and/or read the data entered in a cell.
`VIEW`	This feature is currently under development.
`RECORD`	Allows to output the details of the dimensions of the markup. For example, the content of dimensions set up in Advanced Modus (siehe Seite 171).

Content Type	Beschreibung
`SELECTION`	Allows you to select a selection of the current dataset.
`DOC`	If documents (images, files, etc.) are to be stored in the cell storage instead of data, select `DOC` as content type.
`DETAILS`	The content type `DETAILS` allows to open another dataset in any template within the app. This is useful, for example, if you have a template with a list of elements and another template exists in which detailed information is stored for specific elements. With a `DETAILS` entry you can quickly jump to the respective detail page.

Content Source
The options of this dropdown depend on the previously selected content type.

For `Content Type = Values`
Determines whether the data is to be saved within the current template (`INTERNAL`) or whether it is to be saved in another template (`EXTERNAL`)

You always need `Content Source = EXTERNAL` if you want to load data from another template into the current load.

✓ It is also possible to change `EXTERNAL` data. To do this, the storage type must be set to `READ_WRITE` or `WRITE` . Nooxl assures that the same data set is not being worked on in parallel. (siehe Seite 13)

For `Content Type = View`
The `content type = COMMENT` is set for views.

For `Content Type = Record`
`Content Source = Index` returns the index of the selected dimension. The index starts at 0.

`Content Source = Condition` returns the details of a selection set in advanced mode.

For `Content Type = Selection`
The C`ontent Source = CONDITION` is set for `Content Type = Selection`.

For `Content Type = DOC`
Determines whether the data is to be saved within the current template (`INTERNAL`) or whether it is to be saved in another template (`EXTERNAL`)

You always need `Content Source = EXTERNAL` if you want to load data from another template into the current load.

✓ It is also possible to change `EXTERNAL` data. To do this, the storage type must be set to `READ_WRITE` or `WRITE`. Nooxl assures that the same data set is not being worked on in parallel. (siehe Seite 13)

For `Content Type = Details`

For Details the `Content Type = EXTERNAL` is set.

Default Value

ⓘ Only visible when `Content Type = VALUES` in combination with `Content Source = Internal`

In case there is no value for the cell storage in the record opened by the user, a default value can be specified. This will be used instead of leaving the cell(s) empty.

Dimension

ⓘ Only visible when `Content Type = Record` and `Content Type = Selection`.

Depending on the dimensions used, you will find at least two entries (`↓ Down`, `→ Right`). If you have created nested dimensions using Advanced Mode, you will find additional dimensions to choose from, for example `↓ Down - 2`.

For `Content Type = Record`
You use this selection to determine the dimension from which the contents are to be output.

For `Content Type = Selection`
This selection is important if the selection is a multiselect selection. Then you can specify over here whether the selections made by the user should be output downwards (`↓ Down`) or to the right (`→ Right`).

Property
The options of this dropdown depend on the previously selected Content Type.

For `Content Type = Values`
Nooxl provides for three different ways of storing cell contents: texts (strings), numbers and (Excel) formulas. The Content Type can be used to determine which type(s) should be used to save the content. Any combination of the three types is possible.

Property	Description
`DATA_TEXT`	The contents are stored as texts.
`DATA_NUMBER`	The contents are stored as numbers.

Property	Description
	⚠ If the content is not a number, the content is not saved.
`DATA_TEXT_NUMBER`	The content is stored both as text and as numbers, provided that the content is a valid number.
`DATA_FORMULA`	Only the contained Excel formula is saved.
`DATA_FORMULA_TEXT`	The contained Excel formula and the resulting text is saved.
`DATA_FORMULA_NUMBER`	The contained Excel formula and the resulting number is saved. ⚠ If the content is not a number, the content is not saved.
`DATA_FORMULA_TEXT_NUMBER`	The contained Excel formula, the resulting text and the resulting number is saved. ⚠ If the content is not a number, the content is not saved.

⚠ If you read cell contents in another template using `Content Source = EXTERNAL`, you must make sure that you select a method here that was also saved originally. Reading `DATA_NUMBER` will not work if you only save `DATA_TEXT`.

✓ If you limit the writing of data in certain ways, this will improve the performance of your application, since there is less data to read, write, save and process.

For `Content Type = View`
The `property = COMMENT_TEXT` is set for views.

For `Content Type = Record and Content Source = Index`

Property	Description
`VECTOR_INDEX`	The index of the dimension is output. This starts at 0.

Property	Description
`VECTOR_INDEXNAME`	The name of the index is displayed. This is structured as follows: "Index "+index number.
`VECTOR_COUNTER`	Corresponds to `Index + 1`.
`VECTOR_COUNTERNAME`	The name of the index is displayed. This is structured as follows: "Index "+Counter number.
`RECORD_RANK`	Always 0.

For `Content Type = Record with Content Source = Condition and f` or `Content Type = Selection`

Property	Description
`ELEMENT_ID`	The unique ID of the catalog element of the selected dimension. ✓ ID's of elements do not change when element names are changed and are unique across all catalogs.
`ELEMENT_NAME`	The name of the catalog element of the selected dimension.
`ELEMENT_DESCRIPTION`	The contents of the Description field of the catalog element of the selected dimension.
`ELEMENT_TAGS`	The tags of the catalog element of the selected dimension. ⓘ If there are several tags, they are printed separated by spaces.
`CONDITION_ID`	The unique ID of the selection of the chosen dimension.
`CONDITION_NAME`	The name of the selection of the chosen dimension.

Property	Description
`CONDITION_CATALOGDISTINCT`	The information if this catalog was used only once in the current template.
`CATALOG_ID`	The unique ID of the catalog of the selected dimension.
`CATALOG_NAME`	The name of the catalog of the selected dimension.

For `Content Type = Doc`

Property	Description
`DOC_DATA`	Saves the actual document. The file name is displayed as the cell content.
`DOC_ID`	The unique internal ID of the document.
`DOC_FILE_NAME`	The file name of the document.
`DOC_FILE_TYPE`	The file type (file extension) of the document.
`DOC_FILE_SIZE`	The document size in bytes.
`DOC_UPLOAD_DATE`	Date and time of the upload in format `MM/DD/YYYY HH:MM`
`DOC_UPLOAD_USER`	Display name of the user who uploaded the document.
`DOC_CMD_UPLOAD`	Provides a functionality for users to upload a new document. This can be done with a normal click or via a context menu (right click).
`DOC_CMD_DOWNLOAD`	Provides a functionality for users to download the document. This can be done with a normal click or via a context menu (right click).
`DOC_CMD_CLEAR`	Provides a functionality for users to remove the document. This can be done with a normal click or via a context menu (right click).

For `Content Type = Details`

Property	Description
`DETAIL_MATRIXNAME`	As cell content or as label in the context menu, the name of the template is displayed.
`DETAIL_CELLNAME`	As cell content or as label in the context menu, the name of the cell to be selected is displayed.

Viewer
Currently always `Cell`.

Storage
For `Content Type = Values`

Storage	Description
`READ`	Cell contents are only read from the database. ✓ This setting is useful if external contents are read in and should not be changed.
`WRITE`	Cell content is only written. ✓ This setting is useful if the calculated results of Excel formulas are to be saved.
`READ_WRITE`	Cell contents are written and also read when displayed. ✓ This setting is useful if the cell is to store manual user input.

For `Content Type = View`
Always `Read`.

For `Content Type = Record`
For `Content Source = Index` always `Read`.

For `Content Source = Condition` always `Read`, except for the properties `ELEMENT_NAME` and `ELEMENT_ID`.

For `Content Type = Selection`

Storage	Description
`READ`	Selected item is read.
`WRITE`	Selected item is set. This setting is used if the Selection is an additional selection that is saved with the data set.
`READ_WRITE`	Selected item is read and set. This setting is used if the Selection is an additional selection that is saved with the data set.

For `Content Type = Doc`
For Property = DOC_DATA

Storage	Description
`READ`	Document is read.
`WRITE`	Document is written.
`READ_WRITE`	Document is read and written.

For Property = DOC_CMD_XYZ

Storage	Description
`CLICK`	Functionality is triggered by a click on the cell.
`CONTEXTMENU`	Functionality is provided via a context menu that can be opened with a **right click**. With this option several functionalities can be made available on one cell. This functionality requires a modern browser. On mobile devices (without a mouse) the functionality is triggered by holding down the cell.

For `Content Type = Details`

Storage	Description
`CLICK`	Jump to detail template is triggered by a click on the cell.
`CONTEXTMENU`	Jump to detail template is made available via a context menu that can be opened with a right click. With this option several detail templates can be made available on one cell. This functionality requires a modern browser. On mobile devices (without a mouse) the functionality is triggered by holding down the cell.

Output

Clear
The Clear option ensures that data contained in the cells of the template is cleared before being read from the database. This is necessary so that the data contained in the template is not unintentionally displayed if "nothing" is read from the database.

Overwrite Formulas
By default, Excel formulas contained in cells are not overwritten by values from the database. If this is desired, this behavior can be explicitly activated here.

Offset Columns und Offset Rows
Contents read from the database are read exactly at the position marked in the template. This behavior can be overridden by `Offset Columns` and `Offset Rows`.

> **When to use this**
>
> This option can be used to output the contents of the cells as well as the contents of the corresponding dimensions with only one cell storage.

Storage

Ignore Zero/Empty
This option is only visible if values are saved. If this option is checked, "0" and "" are not stored in the database.

This can be useful to save space and achieve better application performance. However, it must be decided individually for each application (Excel logic in the template) whether a "0" or a "" does contain information and must be saved accordingly.

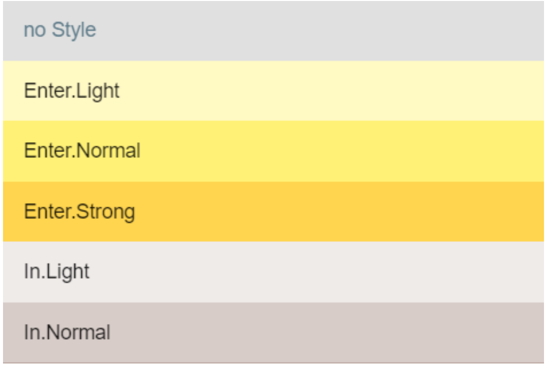
Style

Ignore Cells with unknown background color
If this option is activated, only cell contents of cells whose background color already corresponds to the background color of cell storages in the template will be saved.

This option is useful if you only want to save some cell contents in a large cell range, but do not want to create a separate markup for each of these sub-ranges.

> ⚠ Since the additional background color check during saving takes some time, this procedure is somewhat slower than creating many small cell storage entries.

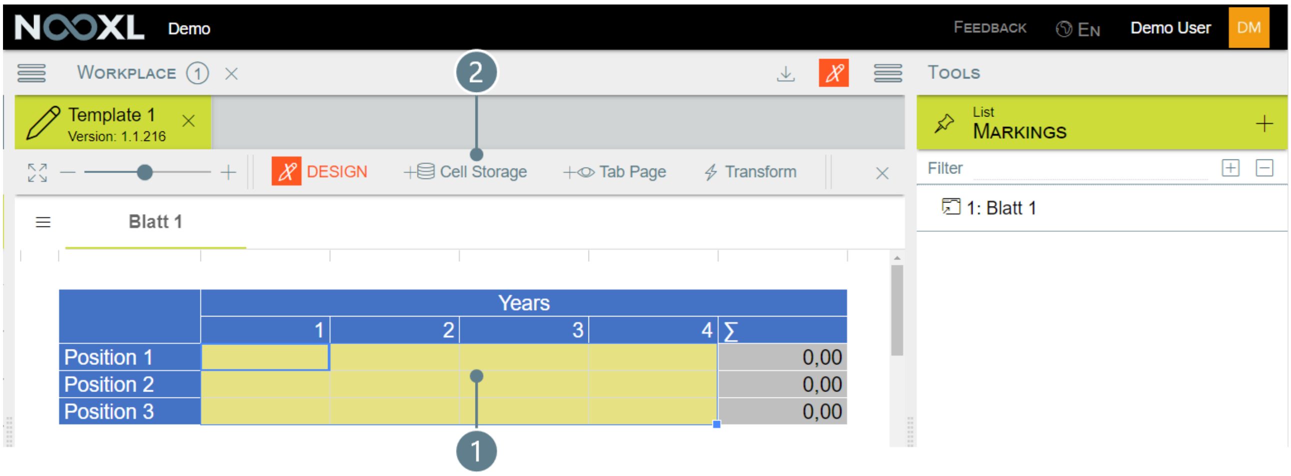
Cell Style
If **Auto** is not checked, a desired style can be assigned to the cell using this selection menu.



Auto
If the check mark is set, Nooxl will automatically assign the "Normal" style to the cells, which corresponds to the set functionality (`READ` , `WRITE` , `READ_WRITE`).

Create a cell storage entry for texts and numbers

To create a cell storage entry for texts and/or numbers you open up the template in the design mode, select the cells whose content you want to save **(1)** and click on the *+Cell Storage* button **(2)**.



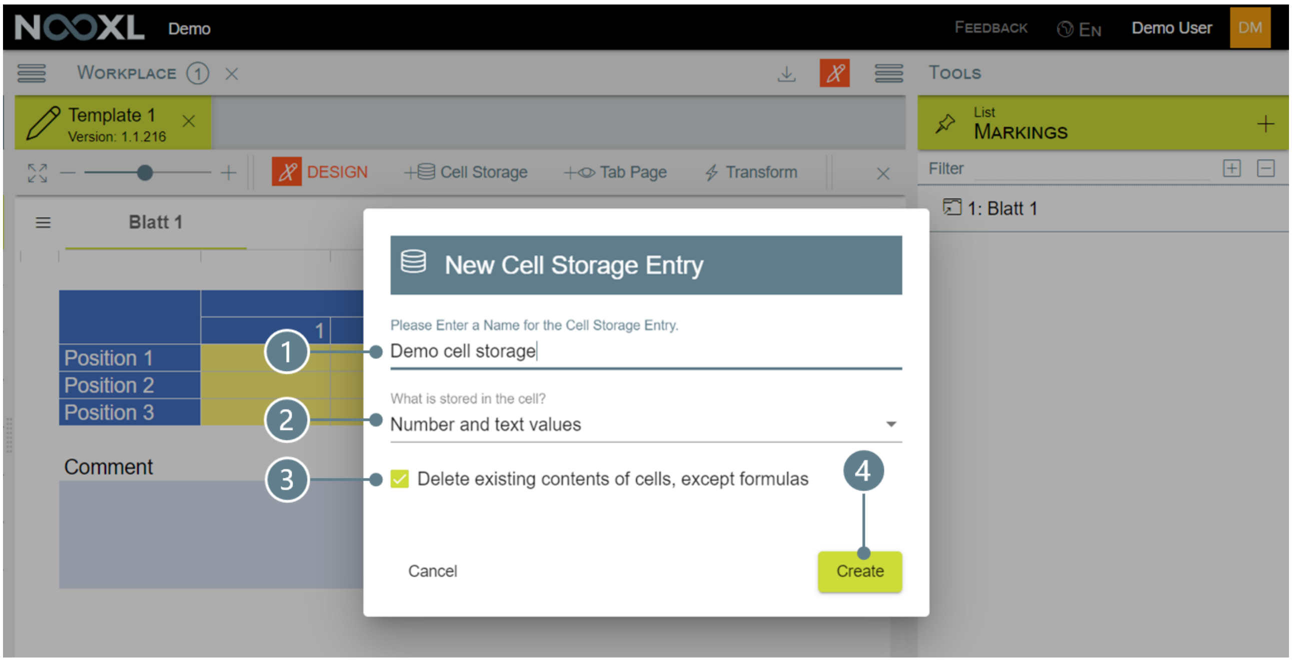
	Years				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

In the next screen you need to give the markup a name **(1)**.

Since this name is used throughout the system, try to give a meaningful name. Please also consider to use naming patterns/conventions to easily sort/filter through your markups. For example, start all markups with texts and/or numbers with a `D.` for data.

Next, you can tell Nooxl what kind of data will be stored in the marked cells **(2)**. By default *Number and text values* is selected, which is exactly what we want to do. The checkbox *Delete existing contents from the cells, except formulas* **(3)**, is automatically checked for you. If you do not want to delete the data contained in your Excel template from the selected cells, please turn this option off.

Then you can create **(4)** the cell storage.



New Cell Storage Entry

Please Enter a Name for the Cell Storage Entry.
Demo cell storage

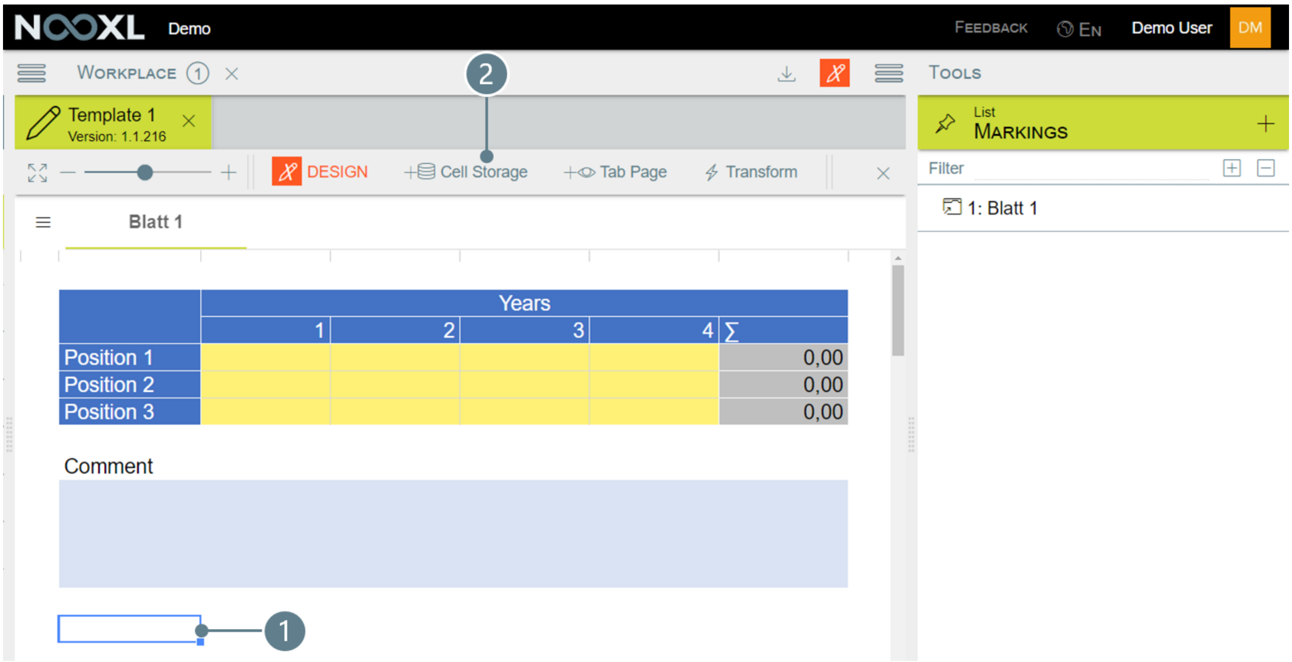
What is stored in the cell?
Number and text values

☑ Delete existing contents of cells, except formulas

Create a cell storage for files/ documents

How to create a cell storage for files/ documents

To create a cell storage for the users to upload documents to your app, open up the template in the designmode, select the cell you want the user to interact with **(1)** and click on + Cell Storage **(2)**.



	Years				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

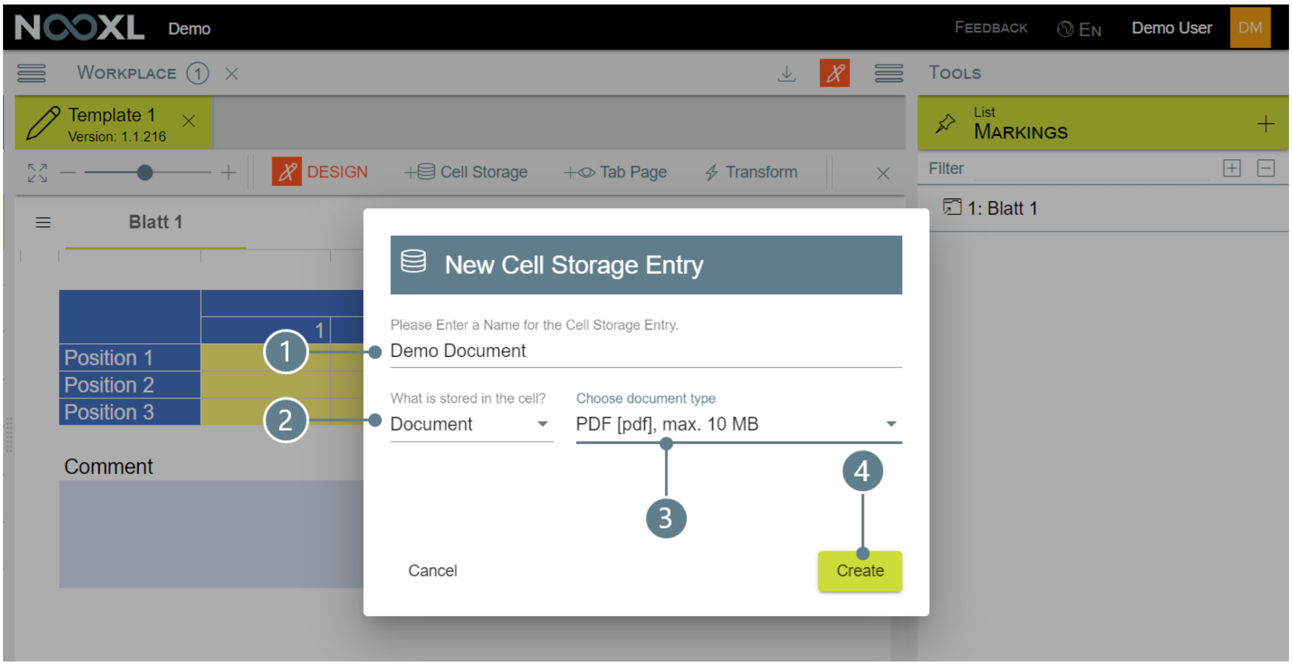
Comment

In the next screen you need to give the markup a name **(1)**.

> Since this name is used throughout the system, try to give a meaningful name. Please also consider to use naming patterns/ conventions to easily sort/ filter through your markups. For example start all markups with texts and/ or numbers with a `f.` for file.

Next you can tell Nooxl what kind of data will be stored in the marked cells **(2)**. Per default Number and text values is selected. Since we want the users allow to upload documents, we choose *Document*. Next you need to specify what kind of files the upload should accept **(3)**.

Then you can create **(4)** the cell storage.



New Cell Storage Entry

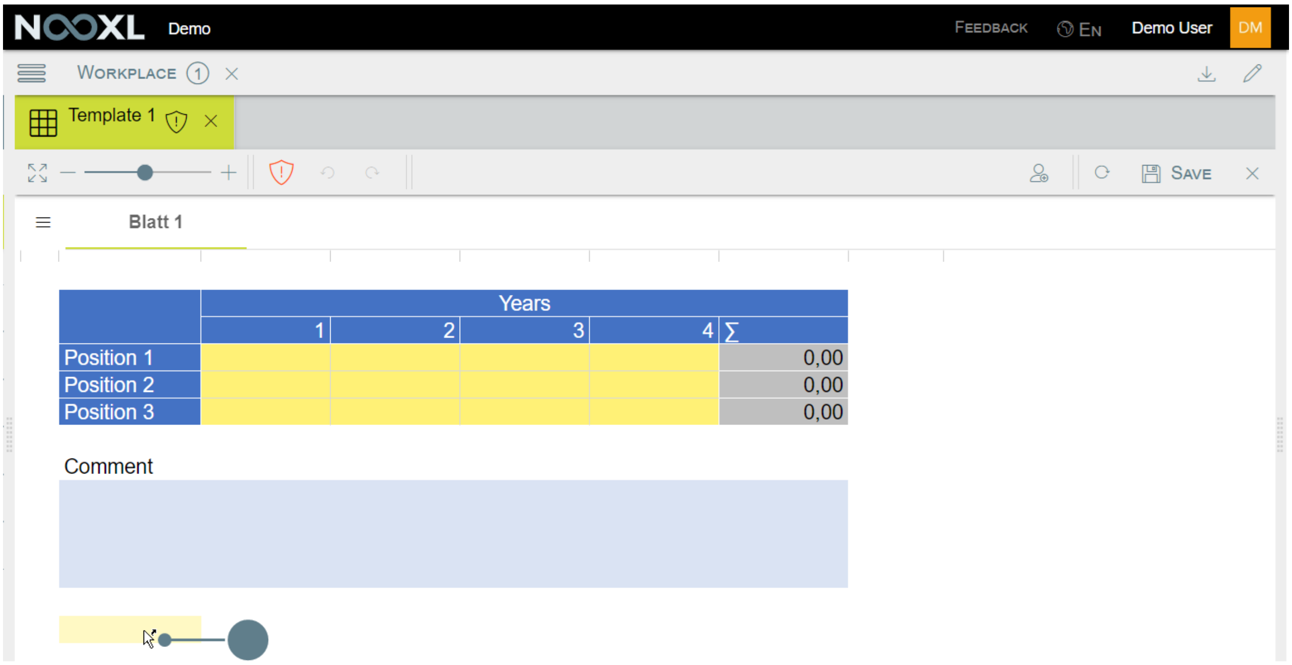
Please Enter a Name for the Cell Storage Entry.
Demo Document

What is stored in the cell?
Document

Choose document type
PDF [pdf], max. 10 MB

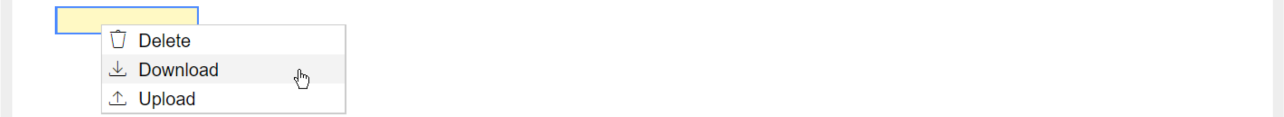
Result

Nooxl will indicate to the user that the cell can be interacted with, by using the following cursor:



	Years				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

This cursor means that the user can right click on the cell to get a context menu with different actions:

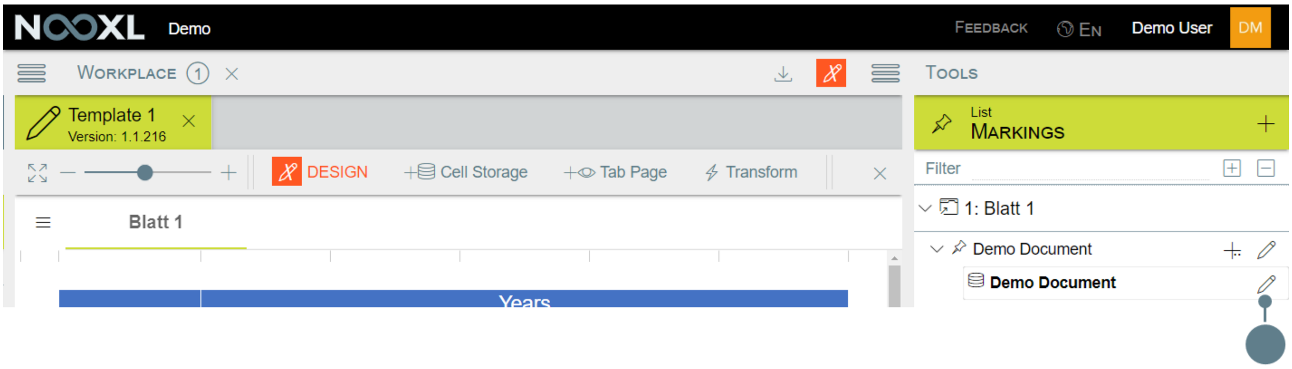


ⓘ The actions will be sorted alphabetically.

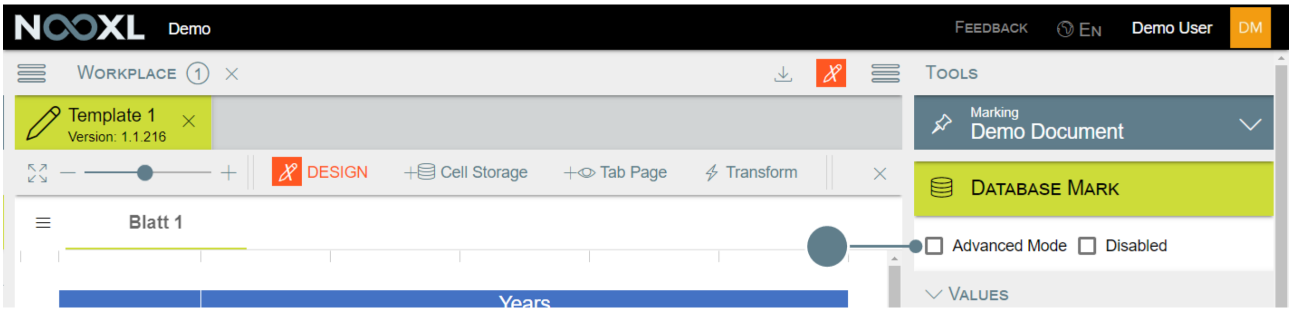
How to change the appearance

Of course you can change the appearance of the functionality in the design mode of Nooxl.

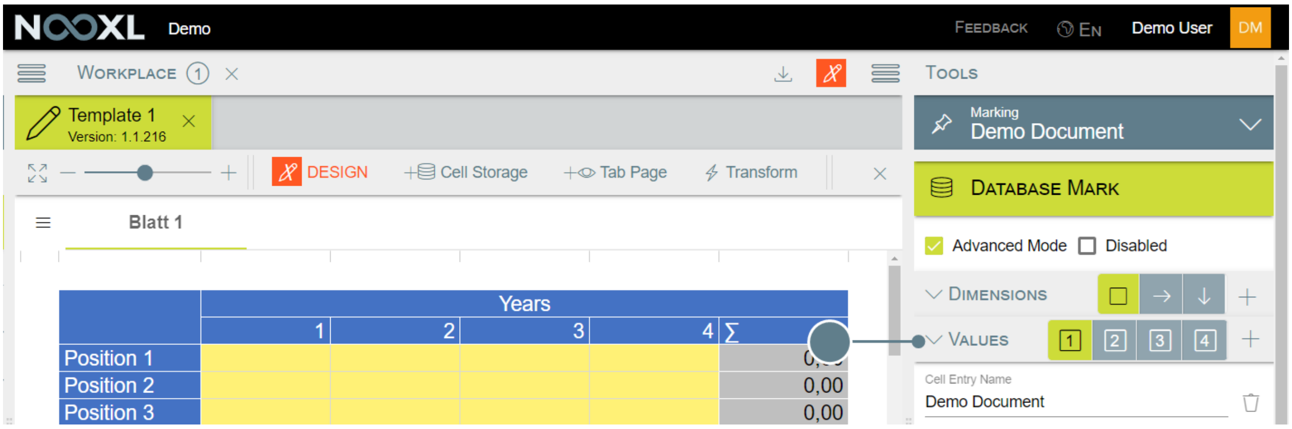
Enter the design mode of the template, navigate to the cell storage marking in the right site tools section and click on the edit button:



In the Database Mark you need to activate the Advanced Mode:

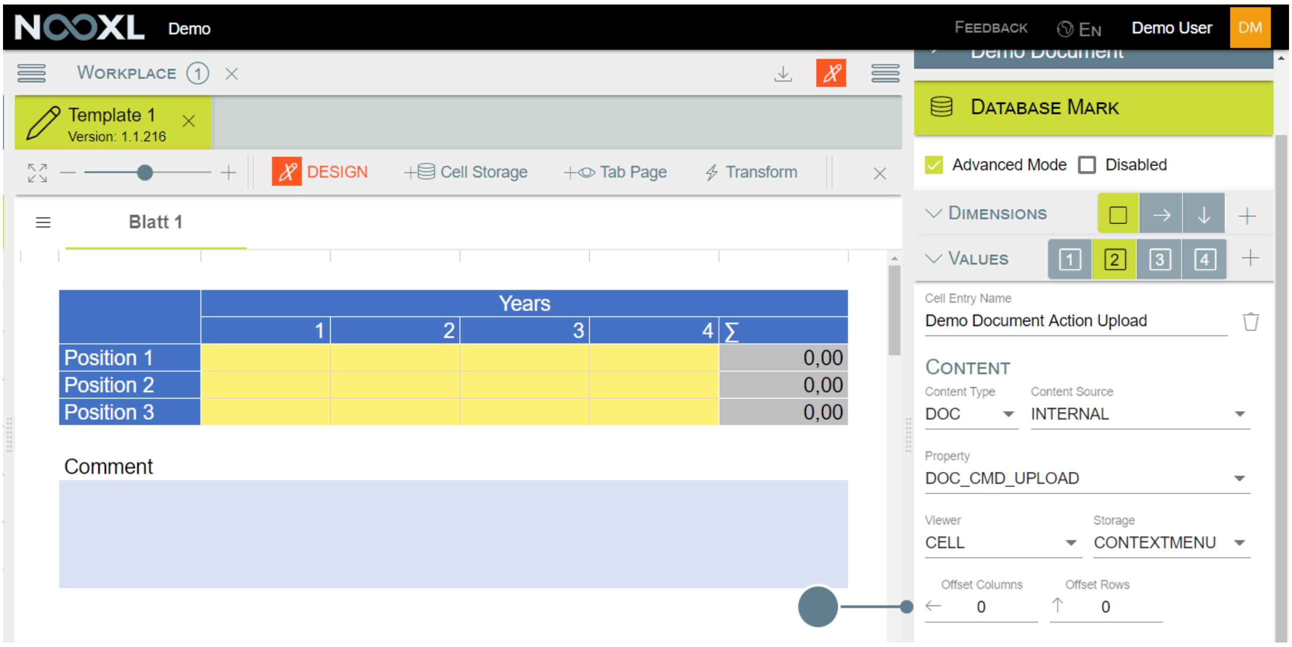


After this you can see that there is not only one Value, but four:



Value	Purpose
1	This will store the actual document, which is uploaded by the users.
2	Upload functionality.
3	Download functionality.
4	Delete functionality.

Let us assume you want to provide all actions as separat buttons, to better accommodate mobile users. To achieve this you can use the *Offset Columns* and *Offset Rows* settings in the Content section of the values. You also need to change the behaviour from `Storage = CONTEXTMENU` to `Storage = CLICK` to trigger the functionality by a left instead of a right click.



	Years				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

Comment

☑ Advanced Mode ☐ Disabled

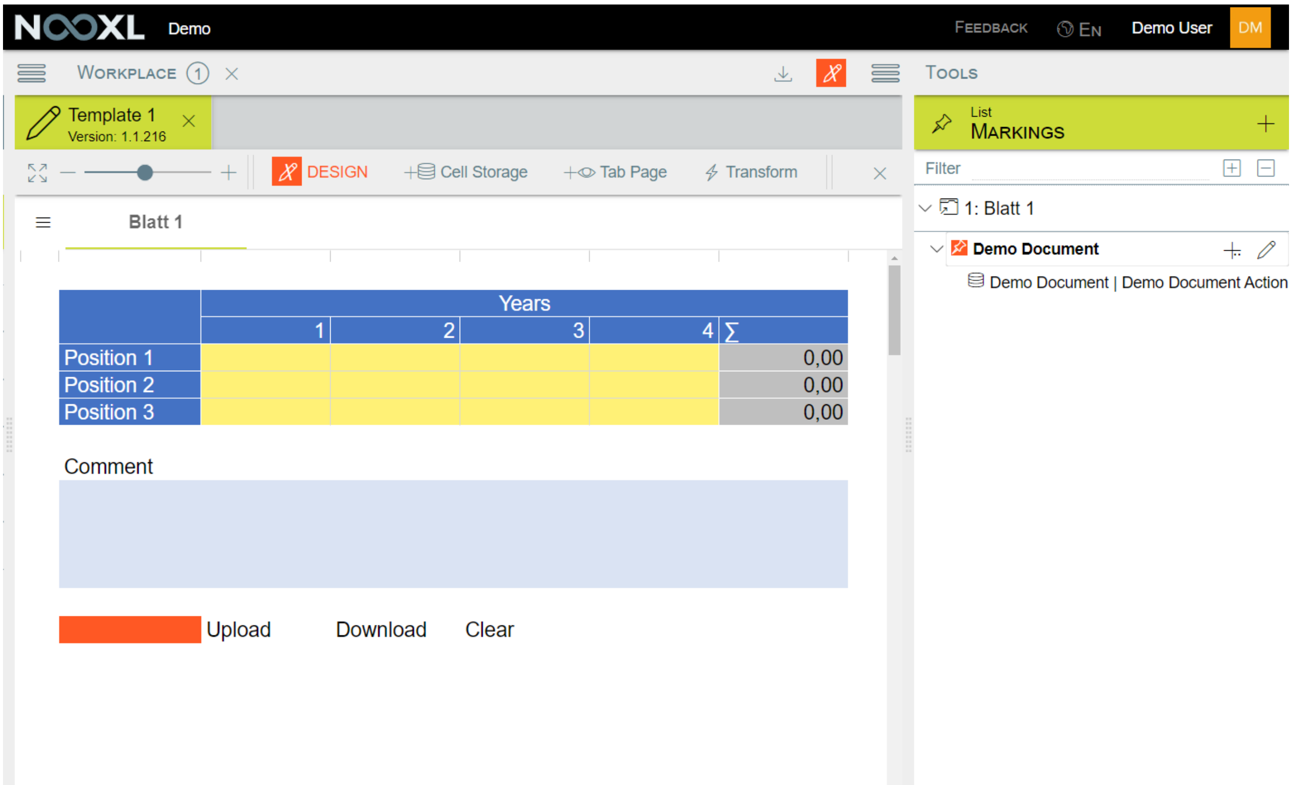
Cell Entry Name: Demo Document Action Upload

Content Type: DOC
Content Source: INTERNAL
Property: DOC_CMD_UPLOAD
Viewer: CELL
Storage: CONTEXTMENU
Offset Columns: 0
Offset Rows: 0

When you input the following settings

Value	Offset Columns	Storage
1	0	READ_WRITE
2	-1	CLICK
3	-2	CLICK
4	-3	CLICK

Then you can also change the template and add labels to your new buttons, by just typing in the label texts:



	Years			
	1	2	3	4 ∑
Position 1				0,00
Position 2				0,00
Position 3				0,00

Comment

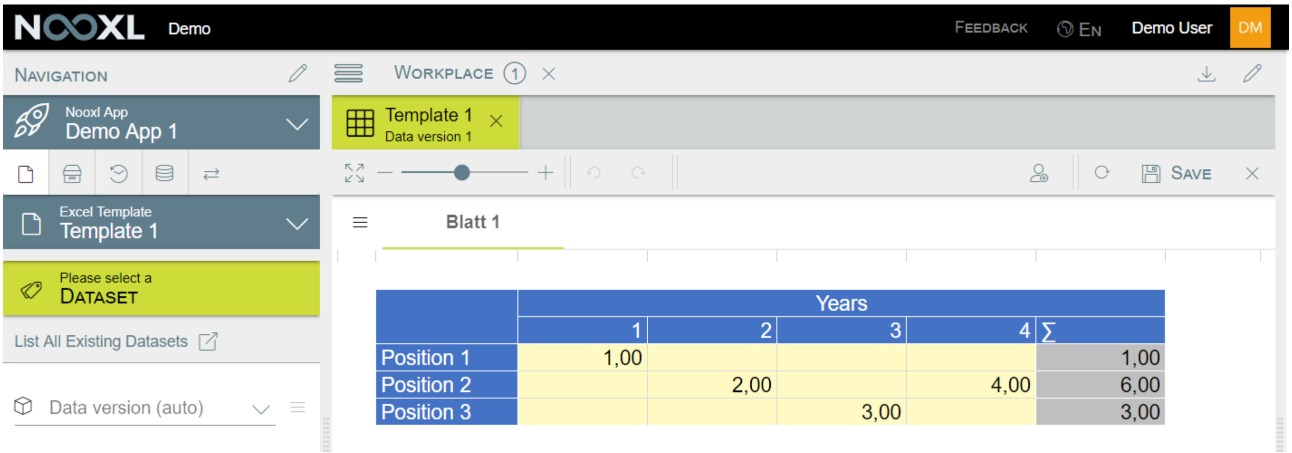
Upload Download Clear

Create an external cell storages to read and write data from another template

In most of your applications you will want to use data entered in one template in another, at least read them, but sometime you also want to be able to alter that data directly without going back and forth.

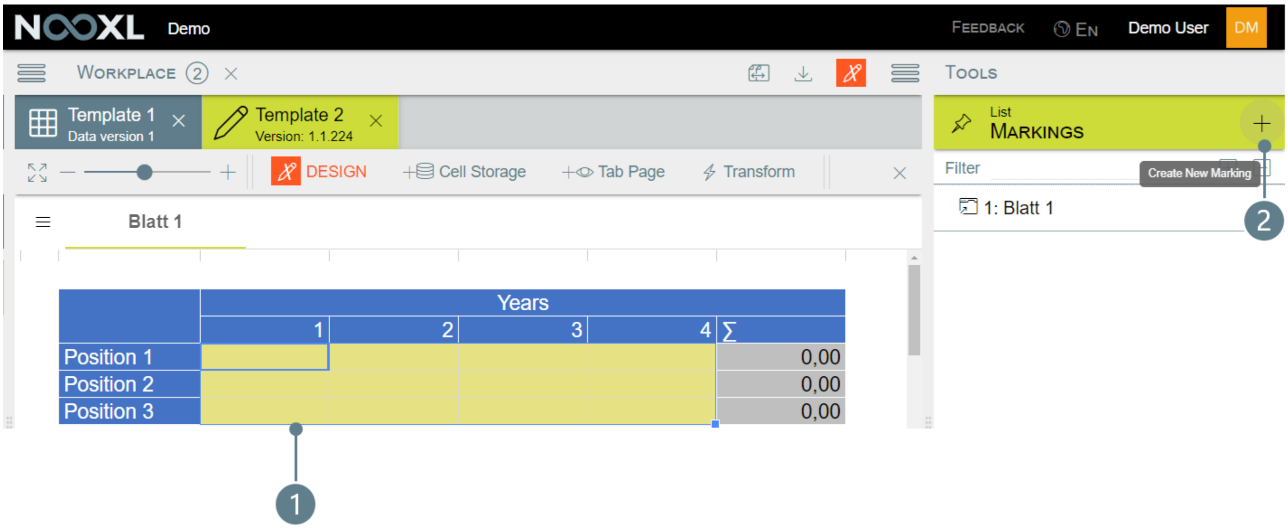
How to read and write data from an external cell storage

For the following example we have two templates, Template 1 and Template 2. Both use the same layout, but in real life cases those could be different. The users have to select a data version for each dataset and for this demonstration we have already some data entered for data version 1:



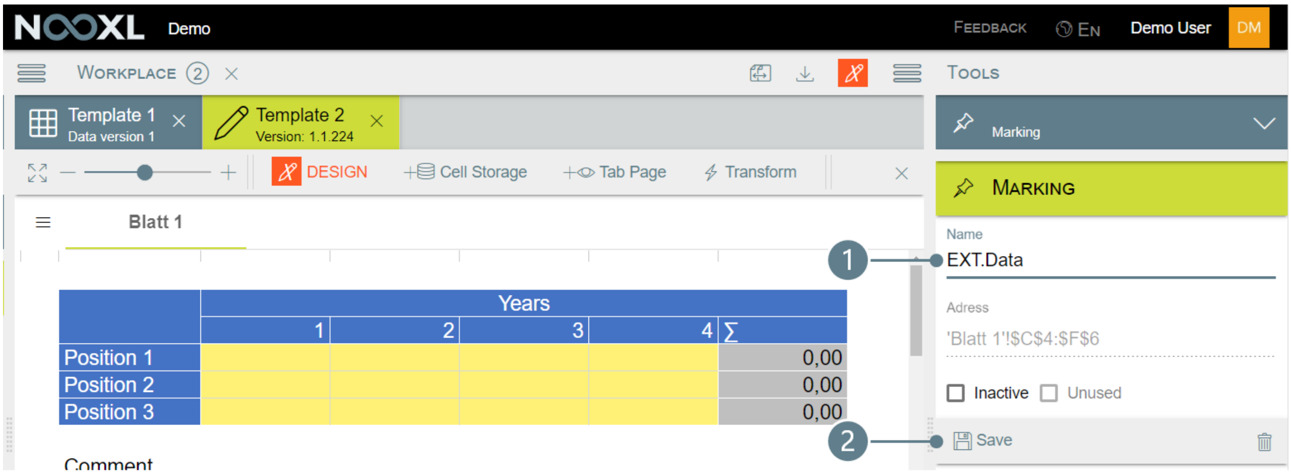
	Years			
	1	2	3	4 ∑
Position 1	1,00			1,00
Position 2		2,00		4,00 6,00
Position 3			3,00	3,00

Open the template were you want to read in the data from your first template and enter the design mode. Create a new markup, which is exactly the same size (amount of rows and columns) as the original, by selecting the cells **(1)** and clicking on Create New Marking **(2)**:



	Years				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

Assign a name to your markup **(1)** and click on save **(2)**:



	Years				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

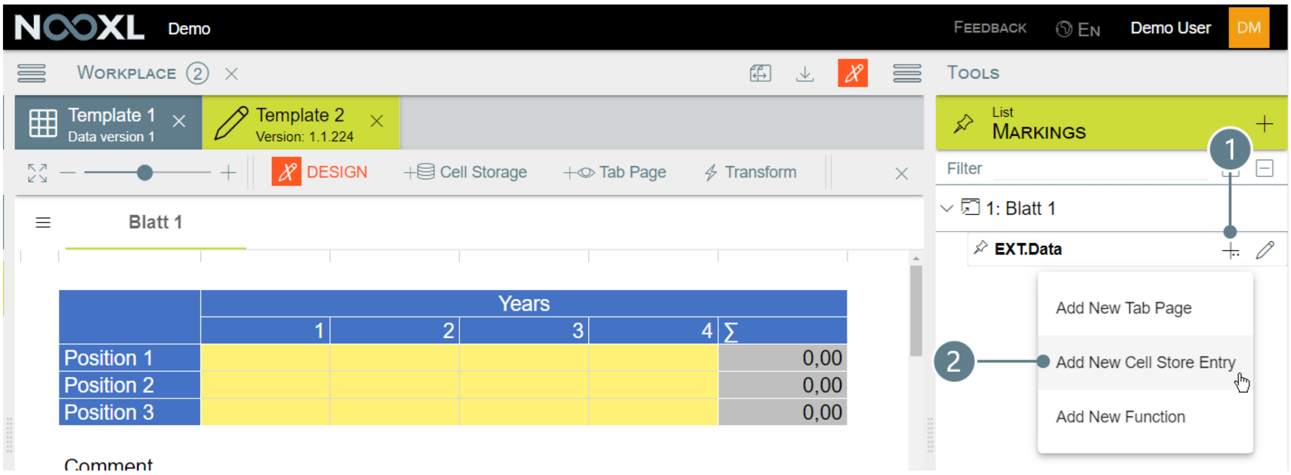
Name
EXT.Data

Adress
'Blatt 1'!$C$4:$F$6

□ Inactive □ Unused

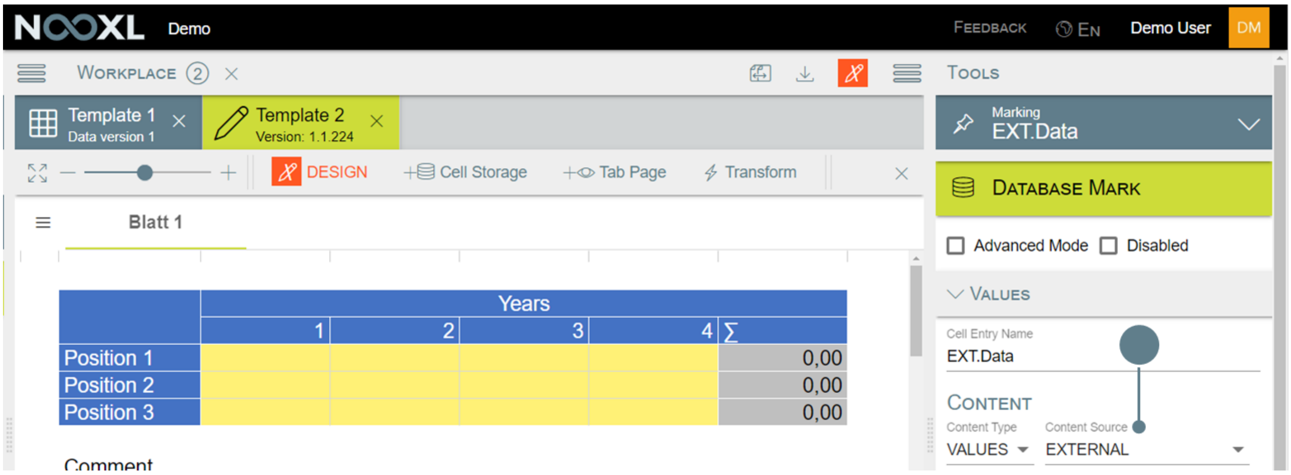
Save

In the Tools section on the right navigate to your new markup and click on Add a New Entry **(1)** and choose Add New Cell Store Entry from the dropdown **(2)**:



	Years				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

Enter the new cell storage by clicking on it and change `Content Source` from `INTERNAL` to `EXTERNAL`.



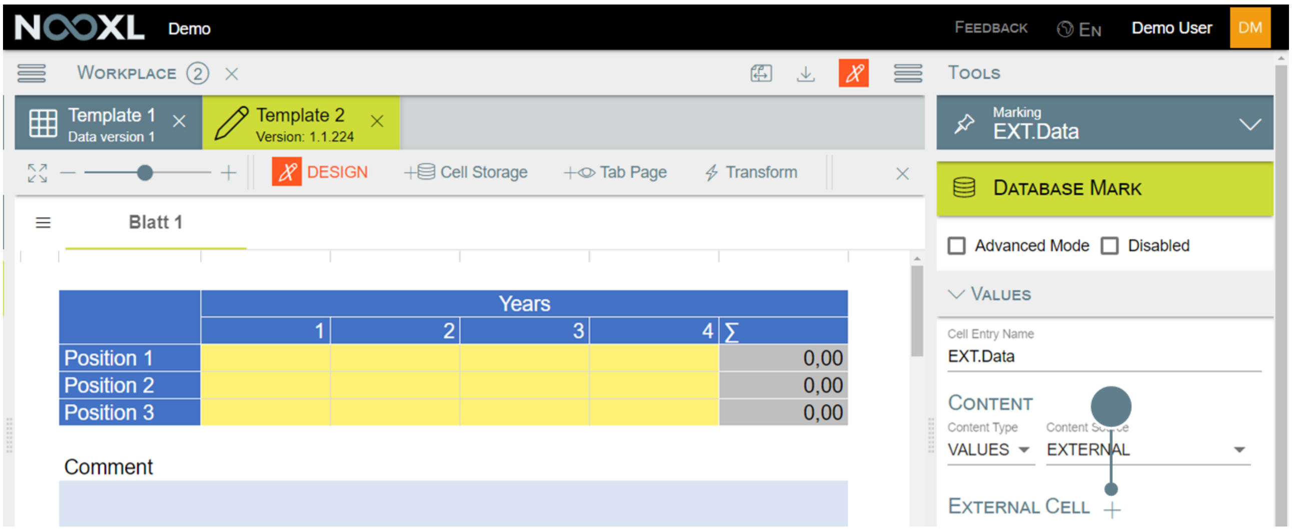
	Years				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

□ Advanced Mode □ Disabled

Cell Entry Name: EXT.Data

Content Type: VALUES
Content Source: EXTERNAL

Now click on the + right next to `External Cell`:



	Years				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

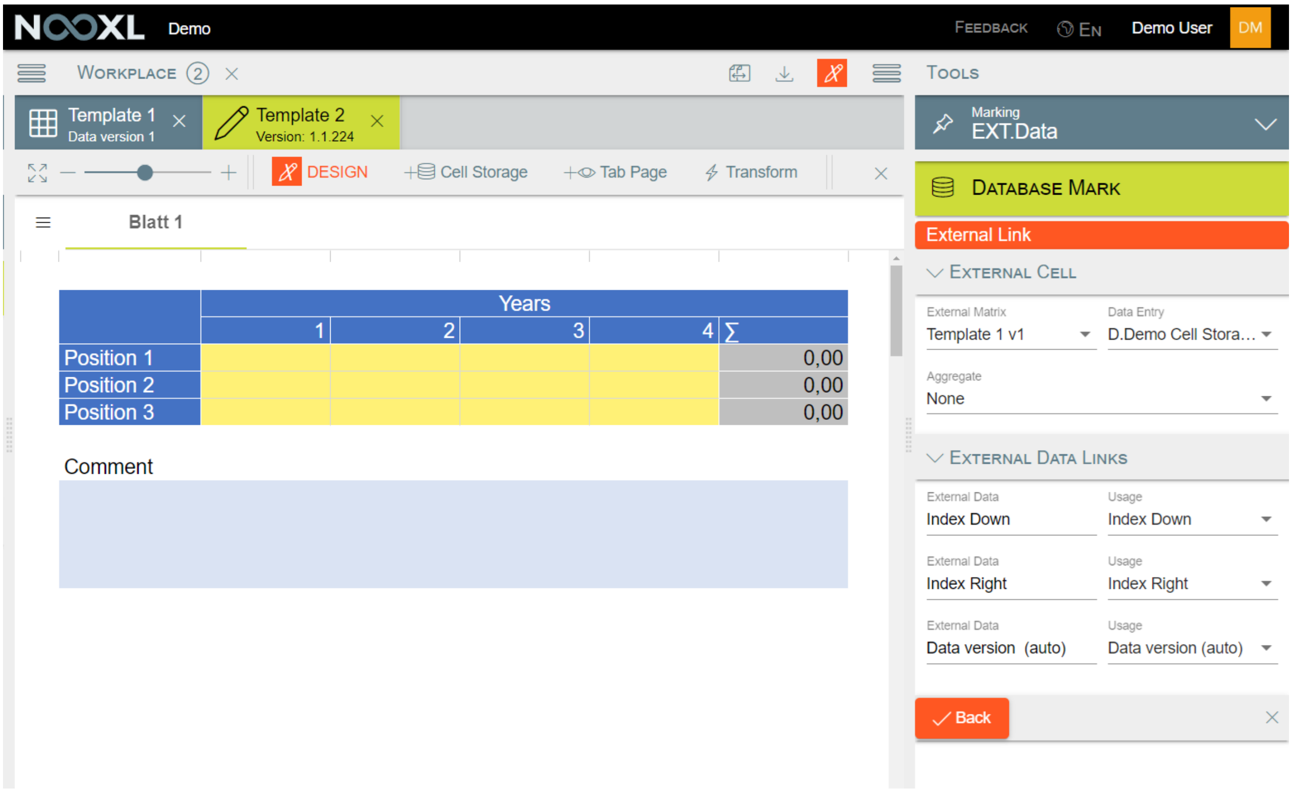
□ Advanced Mode □ Disabled

Cell Entry Name: EXT.Data

Content Type: VALUES
Content Source: EXTERNAL

In the next mask you need to provide the information from were Nooxl should read the data:

Setting	Description
External Matrix	The template were your cell storage is you want to read from. If you have several major versions of your template, you will need to specify the version. This means when you create a new major version for your source template, all templates reading from this, will need to be updated as well, to then read from the new major version.
Data Entry	The cell storage to read
Aggregate	Nooxl can automatically aggregate the data you read if you want to. If this should be done, please specify how the aggregation should be done.
External Data Links	For all external cells you need to specify at least two external data links, this is for the two dimensions each cell storage does at least have (down and right). If your source template has selections prior to opening the dataset, those selections will also be presented in the external data links and need to be specified. **External Data** This is either a selection of the template or a dimension of the cell storage. **Usage** Here you need to specify which information from the current template should be used to match the data. If you chose a Aggregate, you can also say to use that aggregate for (multiple) external data links.


NOOXL Demo
FEEDBACK EN Demo User DM
WORKPLACE 2
Template 1 Data version 1
Template 2 Version: 1.1.224
DESIGN Cell Storage Tab Page Transform
Blatt 1
TOOLS
DATABASE MARK
Back

	Years				
	1	2	3	4	∑
Position 1					0,00
Position 2					0,00
Position 3					0,00

Comment

Marking: EXT.Data

External Link

EXTERNAL CELL

External Matrix: Template 1 v1
Data Entry: D.Demo Cell Stora…
Aggregate: None

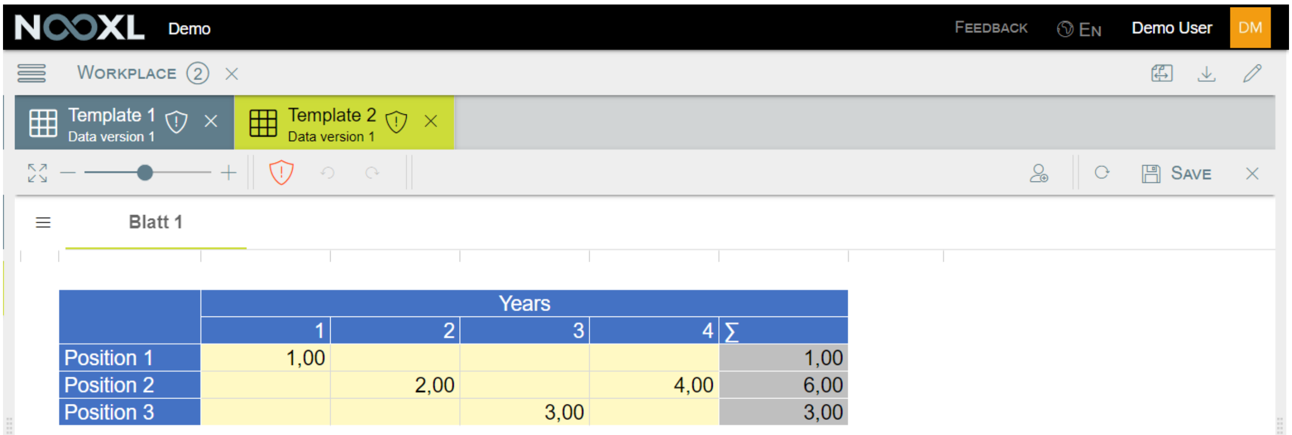
EXTERNAL DATA LINKS

External Data	Usage
Index Down	Index Down
Index Right	Index Right
Data version (auto)	Data version (auto)

When you finished setting up the external data links please click on **BACK** and after that on **SAVE**.

Result

After this you established a bi directional link (reading and writing) for the data between those two templates. If you open up the template with the external link you should see the data entered in the source template:



	Years				
	1	2	3	4	∑
Position 1	1,00				1,00
Position 2		2,00		4,00	6,00
Position 3			3,00		3,00

Details - jump to a data set in a template

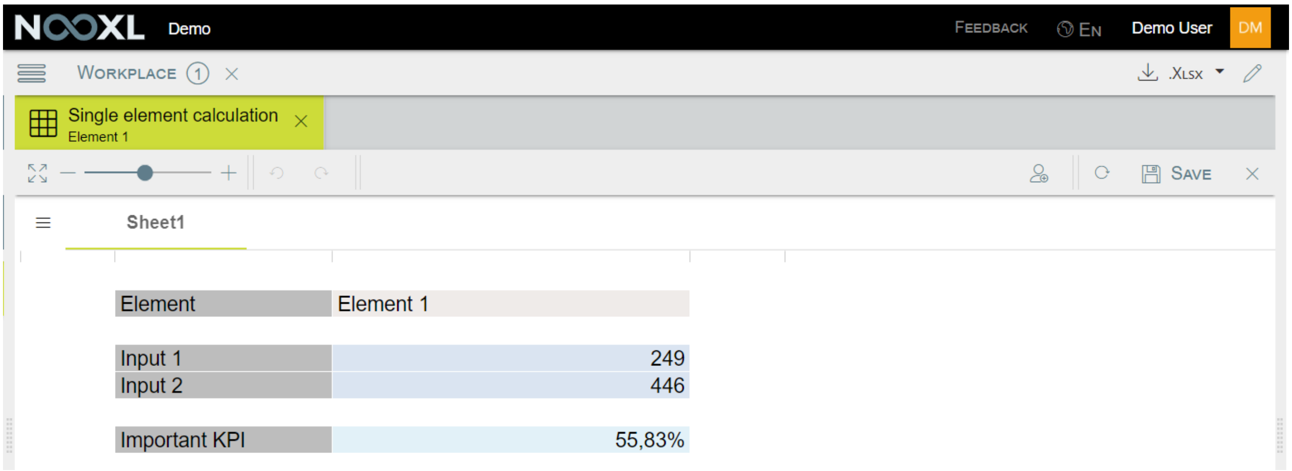
The `Content Type = Details` of database mark enables you to create clickable links or context menus which enable your users to directly open a specific data set of another template (or the same).

How to set up a details markup

The setup of a DETAILS cell is similar to setting up an external cell (siehe Seite 196).

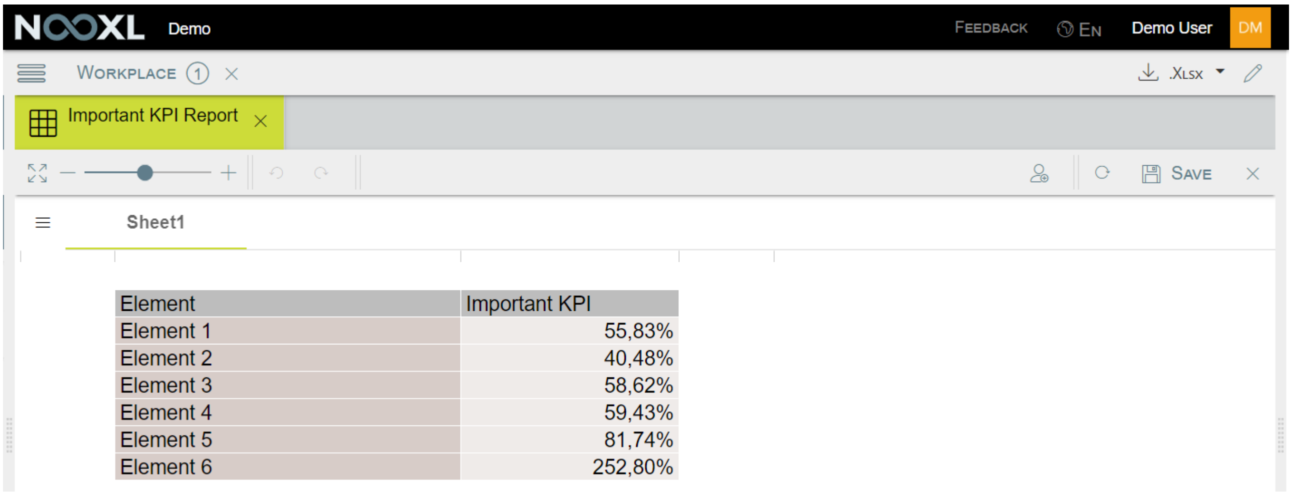
Example usage

Imagine you have a detailed calculation for the elements in your app.



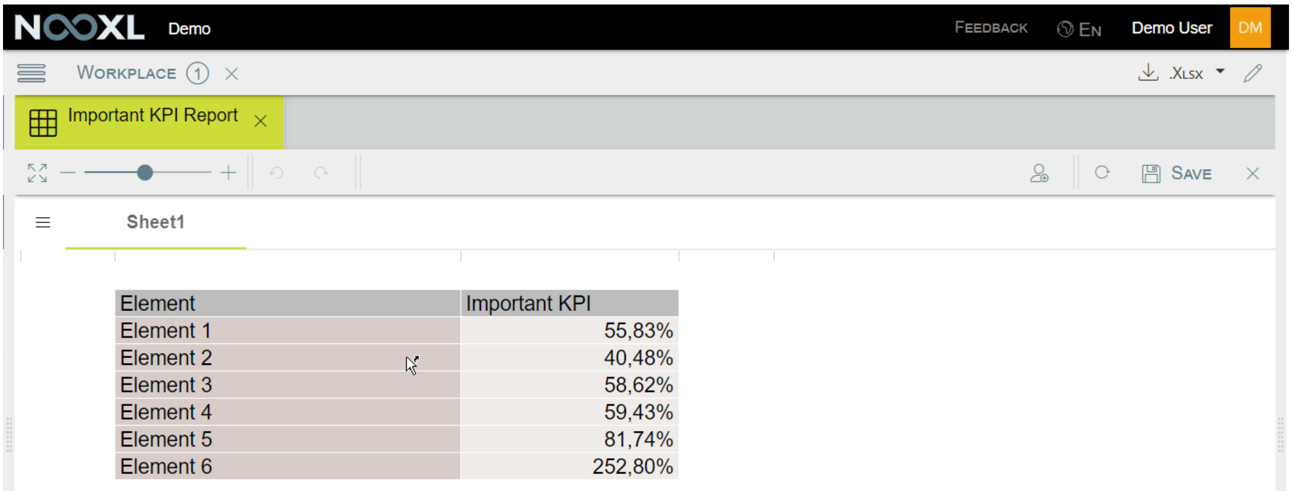
Element	Element 1
Input 1	249
Input 2	446
Important KPI	55,83%

For reporting purposes you show the most important KPI of that calculation in a list for all elements.



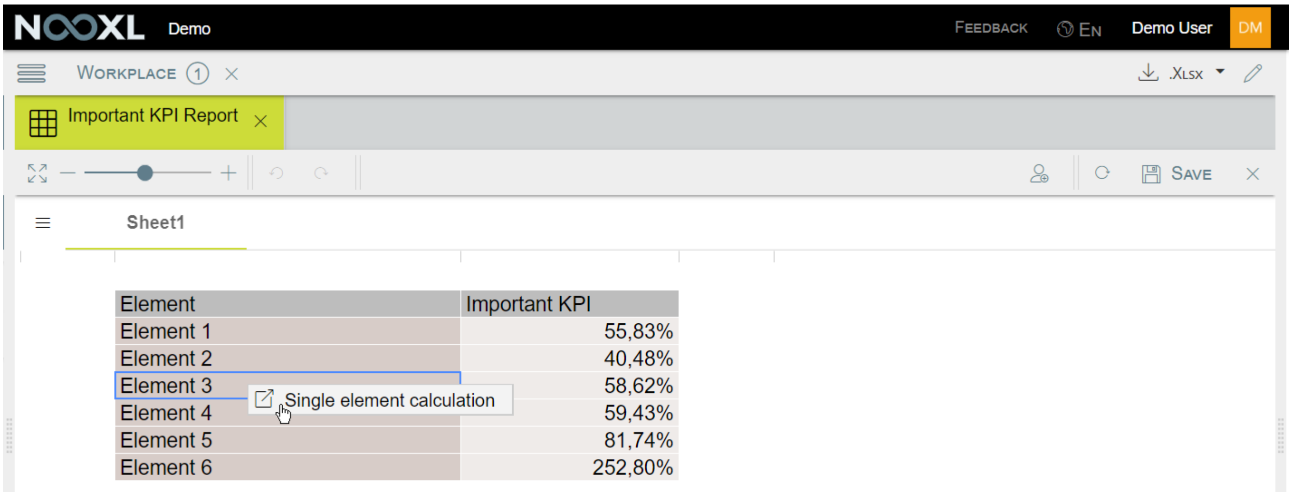
Element	Important KPI
Element 1	55,83%
Element 2	40,48%
Element 3	58,62%
Element 4	59,43%
Element 5	81,74%
Element 6	252,80%

Here you can use the Details Content Type to provide your users an easy access to the detailed calculation, so they can inspect the shown data. The little black arrow on the mouse cursor (↖) indicates to the user that he can right click on the cell.



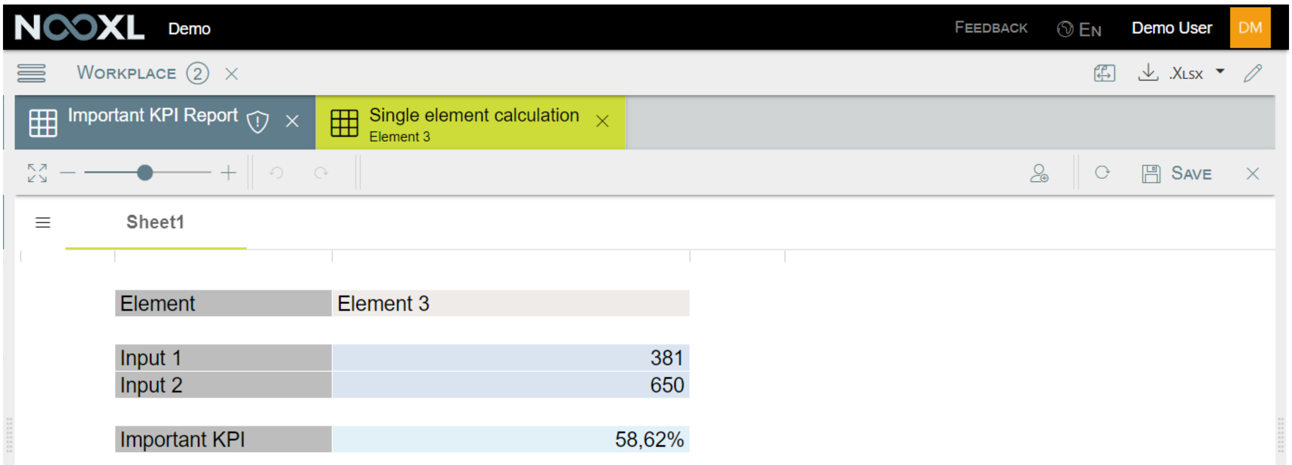
Element	Important KPI
Element 1	55,83%
Element 2	40,48%
Element 3	58,62%
Element 4	59,43%
Element 5	81,74%
Element 6	252,80%

If he does a context menu will show up, with the calculations name he can jump to. Here you can also have multiple details jump points, not only one.



Element	Important KPI
Element 1	55,83%
Element 2	40,48%
Element 3	58,62%
Element 4	59,43%
Element 5	81,74%
Element 6	252,80%

With a click the template will open up and load the chosen data set.

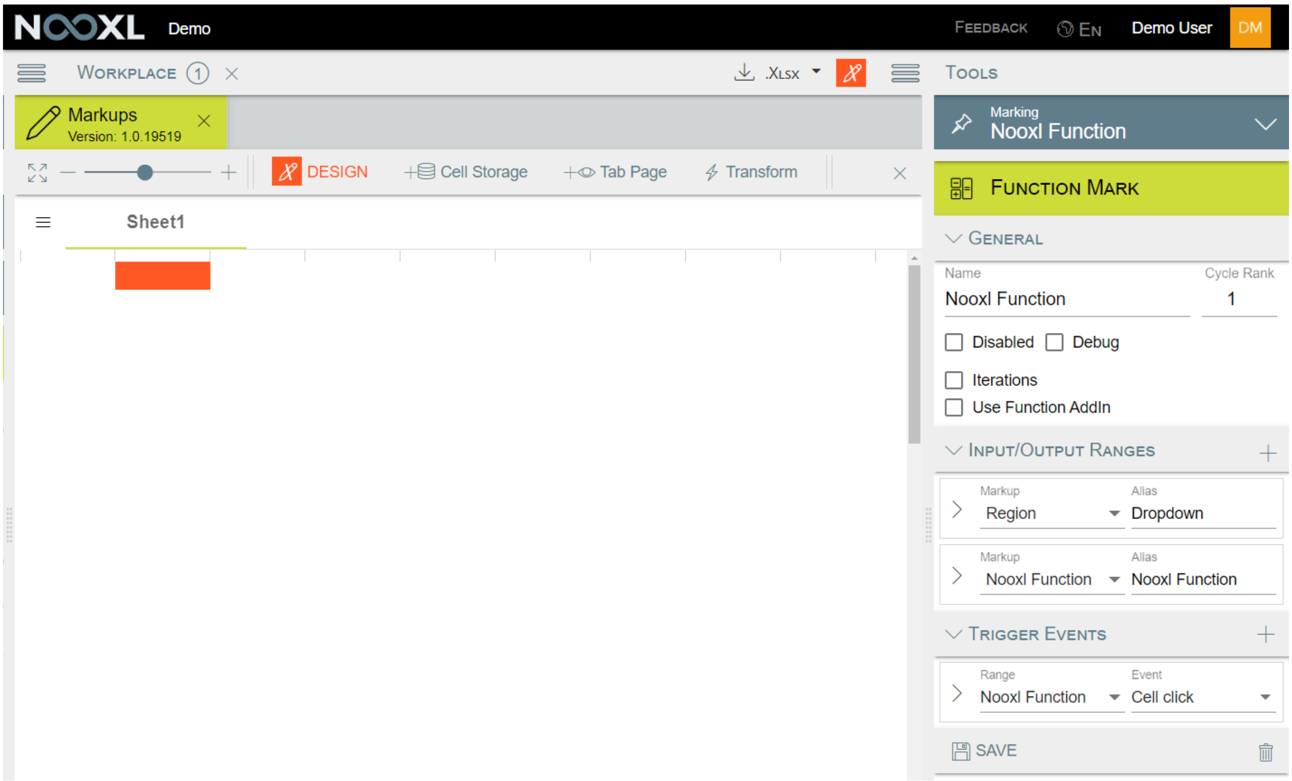


Element	Element 3
Input 1	381
Input 2	650
Important KPI	58,62%

Functions

In order to realize advanced logics in Excel, which cannot be implemented with standard formulas or to automate time-consuming tasks, Visual Basic for Applications (VBA) is used. Since Nooxl does not support VBA for security reasons, so-called Function Mark(up)s are used here. On the following pages you will get an overview of the possibilities, which the Nooxl Function Marks offer you.

Function Mark properties



Marking
Nooxl Function

FUNCTION MARK

GENERAL

Name: Nooxl Function
Cycle Rank: 1

☐ Disabled ☐ Debug
☐ Iterations
☐ Use Function AddIn

INPUT/OUTPUT RANGES

Markup	Alias
Region	Dropdown
Nooxl Function	Nooxl Function

TRIGGER EVENTS

Range	Event
Nooxl Function	Cell click

SAVE

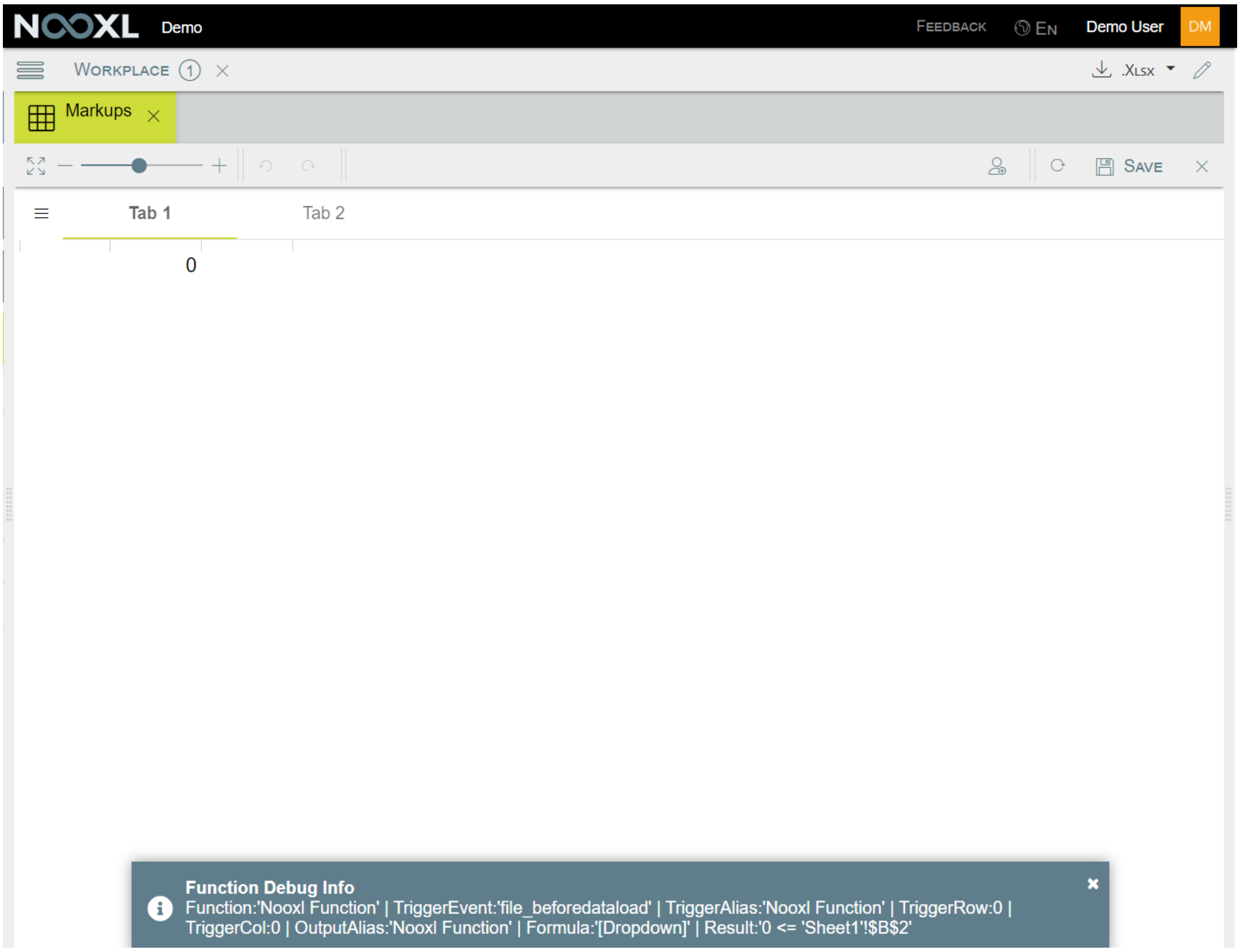
General

Name
Name of the function.

Cycle Rank
Is used to determine the order in which multiple functions are executed if more than one is triggered. Is the rank the same it will be executed in alphabetical order of the function names.

Disabled
Disables the functions logic.

Debug
Turns on debug mode. With this you will get information boxes on the bottom of your screen with debug information as soon as the function is triggered.



Function Debug Info
Function:'Nooxl Function' | TriggerEvent:'file_beforedataload' | TriggerAlias:'Nooxl Function' | TriggerRow:0 | TriggerCol:0 | OutputAlias:'Nooxl Function' | Formula:'[Dropdown]' | Result:'0 <= 'Sheet1'!$B$2'

Iterations
You can turn on iterations if your output formula has a logical circle reference in it. In this case the formula will be executed multiple times.

Max. Count
The amount of times the formula should be executed.

Max. Change
The minimal change from iteration to iteration to trigger another iteration. If the change in the value is below this threshold, no more iterations will be executed, no matter if the Max. Count is not yet reached.

Use Function AddIn
Turn this on if you want to use a Nooxl Function AddIn (siehe Seite 212).

AddIn
Name of the AddIn.

Function
Name of the Function.

Input/ Output Ranges

This sections purpose is to specify all markups (siehe Seite 158) you want to use in your function. This includes every markup containing information you need (inputs) as well as all the markups where you want to write new content to (output).

Markup
Use this dropdown to choose your markup.

> ✓ The numbers in front of the markup names is the index of the sheet where the markup is located. This can help you to speed up the process of finding a specific markup.

Alias
The alias will be used in your Output formulas (siehe Seite 206).

Is Output Range
Turns your cells into an output range, meaning that you can use excel formulas to determine its content dynamically. More about Output formulas (siehe Seite 206).

Set Next Region
If you check this box, Nooxl will use the content of Output formula to determine the name of the tab/ region it will jump to (siehe Seite 217).

With Input-Event
Check this box if you want Nooxl to produce an input event for the cells which can trigger other functions.

Output formula
The output formula specifies the logic to determine the new content Nooxl will put into the cells of your markup. There is a whole article about Output formulas (siehe Seite 206) available.

Trigger Events

Every Nooxl function is triggered through specific events. In the section Trigger Events you tell the system what events you want to use.

Range
In this dropdown you find all aliases for all input and output ranges part of your function.

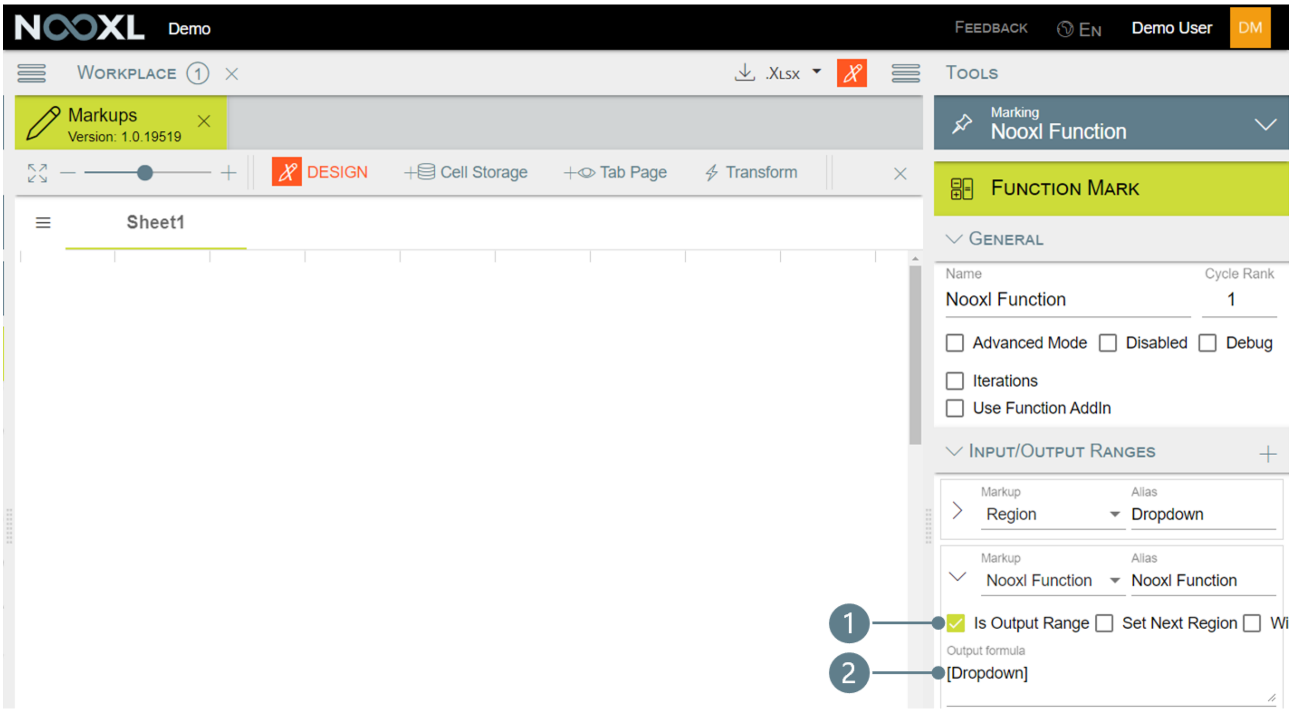
Event
The event type which will trigger your function. Please refer to the article event types for triggers (siehe Seite 210) for in detail information about the different events.

Calculate All Rows/ Columns
Please activate those options in case your output ranges contain more than one cell and you want that the function is applied to all the cells. Are those options not activated, the output formula will only be applied to the first (most upper left) cell of your output range.

Prevent Input
If this option is checked Nooxl will ignore the input made by the user and reset the cells content. This can be useful when you have a cell with a formula in it and you want to preserve the formula but also allow users to input data into this field.

Output formulas

As soon as a markup in a function has been declared as an Output Range in the details area (*Output Range* is checked **(1)**), a field for storing the *Output formula* appears below it **(2)**.



Name: Nooxl Function
Cycle Rank: 1

☐ Advanced Mode ☐ Disabled ☐ Debug
☐ Iterations
☐ Use Function AddIn

Markup: Region — Alias: Dropdown

Markup: Nooxl Function — Alias: Nooxl Function

☑ Is Output Range ☐ Set Next Region ☐ Wi

Output formula
[Dropdown]

In the Output formula field you write down the logic on whose basis the value is determined, which is to be output in the markup cells. The "programming" language used is Excel.

> **The output formulas support like Nooxl itself (nearly) all Excel formulas.**
>
> List of unsupported excel formulas (siehe Seite 254)

Language

You must use the **english excel formulas** in Nooxl.

> If you normally use excel with german formulas, you can find all **translations** here:
> https://de.excel-translator.de/funktionen/
> There are similar services available for other languages, please use google[4] to find yours.

Syntax

Unlike Excel, all formulas start **without =**.

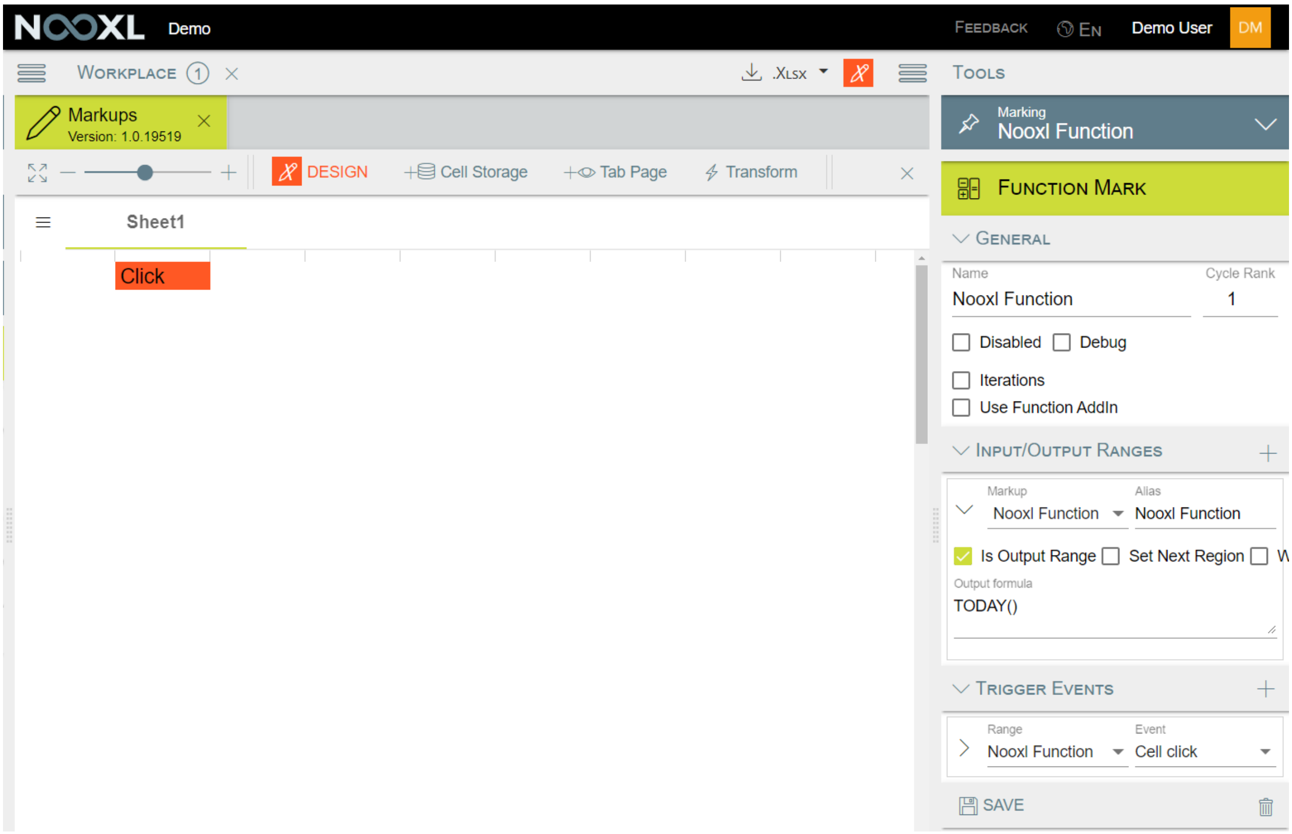
A comma (**,**) or semicolon (**;**) can be used as **separator** of statement blocks.

[4] https://google.com

⚠ You can even mix comma and semicolon within an output formula and Nooxl will find a correct interpretation in most cases.
However, this is not recommended, as it greatly reduces the readability of the formulas.

Example

The following example function will produce the excel date value for the current date in the cell currently holding the value "Click", after the user clicked the cell.



Name: Nooxl Function
Cycle Rank: 1
□ Disabled □ Debug
□ Iterations
□ Use Function AddIn
Markup: Nooxl Function
Alias: Nooxl Function
☑ Is Output Range □ Set Next Region □ W
Output formula: TODAY()
Range: Nooxl Function
Event: Cell click

Example output formula

```
TODAY()
```

⚠ Please be aware that cells with the trigger event `Cell click` must contain something (at least a space). If the cell is totally empty the cell click event will not trigger.

Variables

Various variables can be used in the output formulas. A list can be found here:

Variables for Output formulas (siehe Seite 209)

Numbers in output formulas

If you (must) use hard-coded numbers in your formula and these are floating point numbers, use a **dot** as **decimal separator**.

Example of multiplying a value field with the factor 1.25

```
1.25 * [VALUE]
```

Upper and lower case of aliases (case sensitivity)

Nooxl Function Marks are **not case sensitive** regarding the names of aliases and functions. But this also means that markup aliases must be unique within a Function Mark if you would send them through a `LOWER()` function!

References

If you want to use cell contents in your Output formula, you do not necessarily have to define them as Input Range in the Function Markup. You can also refer to an area or a cell in the original Excel by using the variants known from normal Excel formulas:

- named ranges
- `INDIRECT()` Formula
- direct referencing via A1 Notation[5]

✓ All references can of course be combined with other functions like `OFFSET()` .

Use of points (.) in Output Formulas

All "." (without "") in Output Formulas are replaced by commas (,) before interpretation. This is done so that numbers, which may have been entered in English format (e.g. "1.05" instead of "1,05"), are interpreted correctly.

However, if you really need a ".", for example because it is used at the end of a note to close a sentence, or if you want to use Excel's `WEBSERVICE()` function, use Excel's `CHAR(46)` formula.

So instead of

```
"www.google.de"
```

in the output formula you would use

```
"www"&CHAR(46)&"google"&CHAR(46)&"de"
```

[5] https://bettersolutions.com/excel/formulas/cell-references-a1-r1c1-notation.htm

Dynamic positioning and size of output ranges

Since the output range is declared as a *Named Range* in the Excel file, you can also use the Name Manager to make it dynamic.

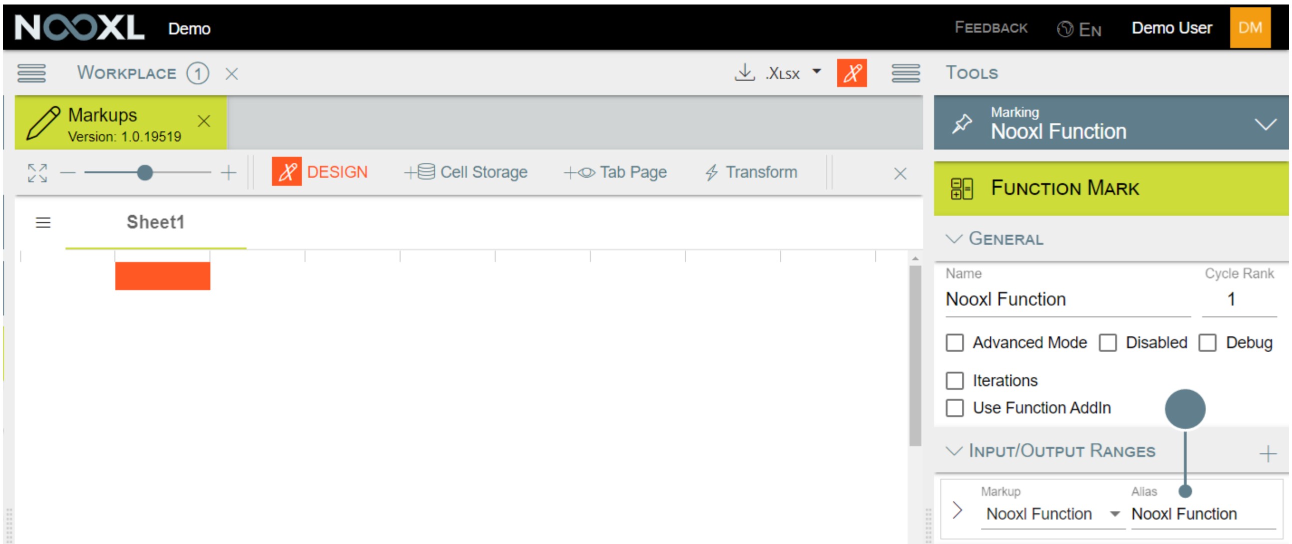
For example, you can move the Named Range in Excel based on another value, so that the output occurs at different locations without having to declare a complicated logic and N many Output Ranges as part of the Function Markup.

> **Please note that the dynamic design of the area always produces a valid result**
>
> If the area is not valid because it
>
> 1. is located outside the sheet
> 2. is located on a non-existent sheet
> 3. does not contain any cells
>
> Nooxl will produce errors which will block your App for a while!

Variables you can use in output formulas

The following table gives you an overview of the variables that can be used in the calculations of Nooxl Function Marks.

`ALIAS` in the Variable columns stands for the ALIAS you have assigned to the markup. So in the following example it would be `[Nooxl Function]` and not `[ALIAS]`.



Name: Nooxl Function
Cycle Rank: 1

☐ Advanced Mode ☐ Disabled ☐ Debug
☐ Iterations
☐ Use Function AddIn

Markup: Nooxl Function
Alias: Nooxl Function

Variable	Description
`[ALIAS]`	The cell content.
`[ALIAS@Before]`	The cell content, before any functions were applied.

Variable	Description
`[@TriggerAlias]`	Contains the `ALIAS` of the range which triggered the current function. This is useful if you have defined multiple triggers for a function and have to implement different behaviors depending on which trigger was triggered.
`[@TriggerRow]`	If the trigger's markup includes multiple rows, `[@TriggerRow]` contains the row number within the range that triggered the trigger. The Index starts at 0.
`[@TriggerCol]`	If the trigger's markup includes multiple columns, `[@TriggerCol]` contains the column number within the range that triggered the trigger. The Index starts at 0.
`[@RegionName]`	Name of the currently selected region/tab. **Usage** `"[@RegionName]"`
`[@UserName]`	Name of the current user. **Usage** `"[@UserName]"`

Event types for triggers

In the following table the different event types for Function Mark Trigger are explained.

Event	Description
not used	Trigger is **deactivated** / not used.
Value input	Is triggered when a user makes **an entry** in a cell of the markup. ❗ If the cell is a dropdown, Value input cannot be used as a trigger.
Value changed	Is triggered when a user makes **an input** in a cell of the markup and the **value differs** from the previously contained value.
Cell click	Is triggered when a user **clicks a cell** of the markup. ⚠ If the cell is empty, the event is not triggered. If you want to use a cell without visible content as a trigger, insert a blank as content.
File, before data load	Is triggered after a user clicks on Show in the dataset selection and before any manipulations are made to the template. Such manipulations are: • Reading data • Inserting cells by read conditions
File, after data load	Is triggered after a user clicks on Show in the dataset selection and after all manipulations are made to the template. Such manipulations are: • Reading data • Inserting cells by read conditions
File, before save	Is triggered when a user clicks Save, but before the data is stored in the database.
File, after save	Is triggered as soon as a user clicks on Save and after the data has been stored in the database.
Tab, before change	Is triggered as soon as a user clicks on another tab in a template. The change is done before the user changes the view.

Event	Description
Tab, after changed	Is triggered as soon as a user clicks on another tab in a template. The change will be made after the user's view is changed.
Context Menu	Is triggered when a user **right clicks on a cell** of the markup and selects the corresponding entry from the context menu.

Function AddIns

If the desired functionalities themselves become too complex for the normal Function Markups, they can be implemented as so-called Function AddIns in C# and used in Nooxl.

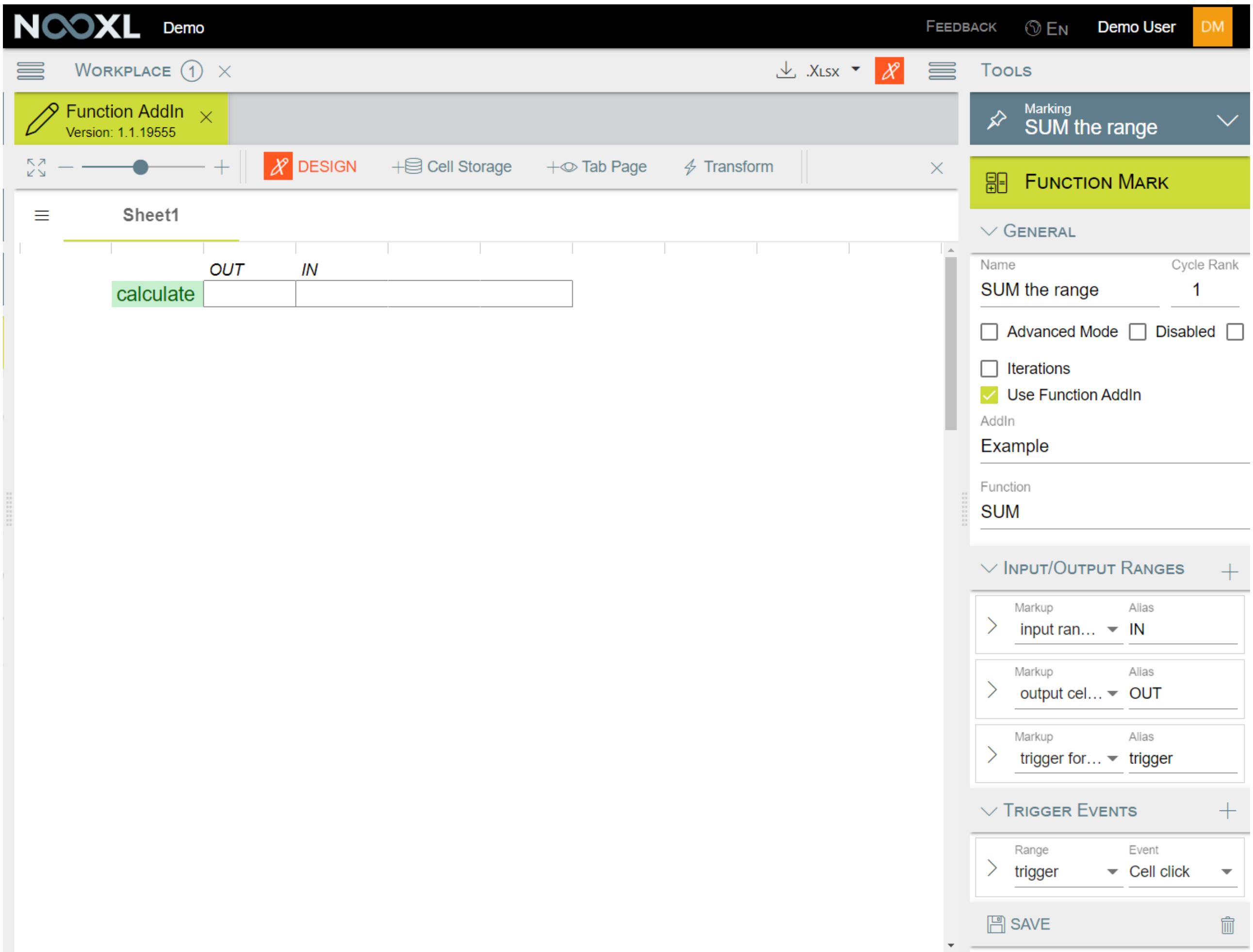
Nooxl already offers a handful of such AddIns, which you can use. Each AddIn consists of one or more functions, which are combined in the AddIn.

How it works

The Functions use the Aliases of the Input/ Output Ranges in the Function Markup to map their input and output. For example you could have a simple Function AddIn which calculates the SUM of all cell in a range and gives back the result.

So it would require the following setup:

Range Alias	Is Output	Description
IN		A range of cells. The cell count does not matter, it can be a single cell or several thousand cells.
OUT	✓	A single cell or a range of cells. If a range of cells is provided, the result will be printed in the first (left/ top) cell.



Name: SUM the range
Cycle Rank: 1

☐ Advanced Mode ☐ Disabled ☐

☐ Iterations

☑ Use Function AddIn

AddIn: Example

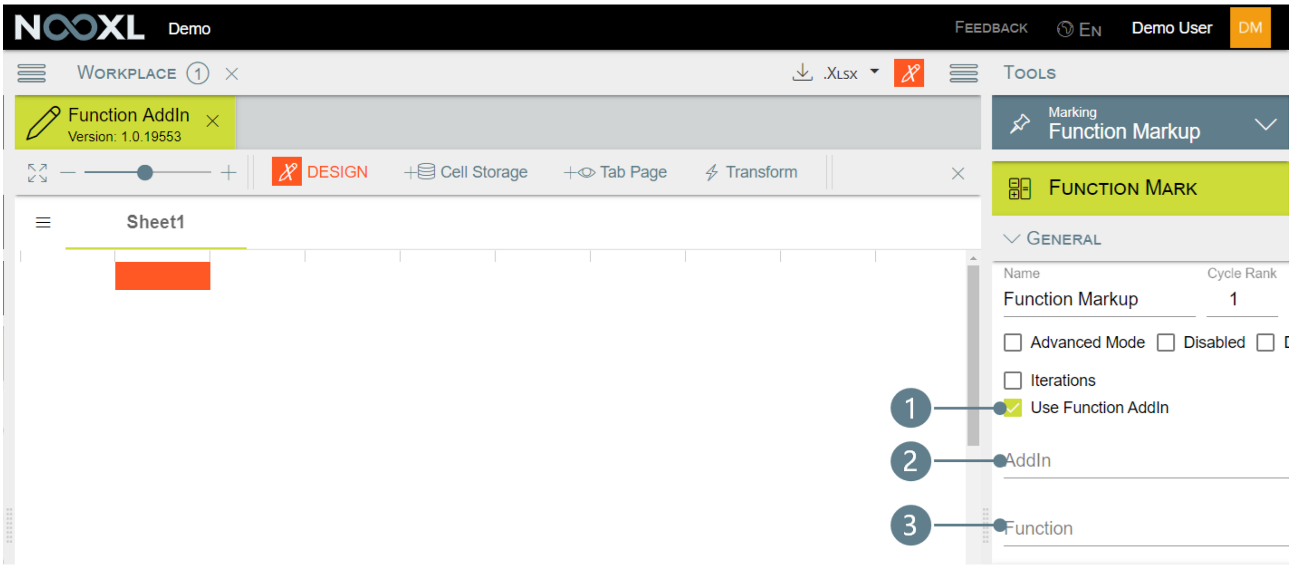
Function: SUM

Markup	Alias
input ran…	IN
output cel…	OUT
trigger for…	trigger

Range	Event
trigger	Cell click

Usage of AddIns

To use an AddIn in your Function Markup you need to check the *Use Function AddIn* option **(1)** and specify the *AddIn* **(2)** as well as the *Function Name* **(3)**.



Name: Function Markup
Cycle Rank: 1

☐ Advanced Mode ☐ Disabled ☐

☐ Iterations

☑ Use Function AddIn

AddIn

Function

Then depending on the Function you chose you need to setup all necessary markups with their correct aliases.

Available Function AddIns

Information about the individual AddIns can be found on the following pages.

DistributionFunctions

The AddIn `DistributionFunctions` contains the following functions:

Verteilfunktion
The distribution function makes it possible to programmatically distribute a value over any number of periods. Each column represents a month.

AddIn
`DistributionFunctions`

Function
`Verteilfunktion`

Input/Output Ranges

Range Alias	Is Output	Description
`Startdatum`		Date represented in the first column of `Ausgabebereich`.
`Ausgabebereich`	✓	Output range.
`Gesamtwert`		Value which should be distributed.

Range Alias	Is Output	Description
`PeriodeAb`		Periods between the value is distributed. `PeriodeAb` will not get any values but `PeriodeBis` will. Both cells must contain an integer representing the columns in the output range where the distribution is to take place.
`PeriodeBis`		
`PeriodeIst`		Integer, which indicates up to which column "actual" numbers already exist. No values are distributed to the months marked in this way, but the function checks whether there are already values in them, which must be subtracted from the value to be distributed.
`Verteilung`		The distribution type to be used, see section Distribution Types.

> All ranges must have the same number of rows for the AddIn to work correctly.

Distribution types

Distribution	Description
`manuell`	No value distribution through Nooxl, because all values in this row will be manual inputs.
`linearmonatlich`	Each column gets exactly the same value.
`linearquartaerlich`	The same value is distributed to each end of a quarter.
`linearjaehrlich`	The same value is distributed to each end of a year.
`zumbeginn`	Everything in the first column.
`zumEnde`	Everything in the last column.
`skurve30`	The whole timespan between `PeriodeAb` and `PeriodeBis` is separated into three phases spanning the same amount of

Distribution	Description
`skurve20`	months. If the amount of months is not divisible by three, then phase 1 and 3 are shorter than phase 2. 10%, 20% or 30% of the `Gesamtwert` are then distributed linear to the months of phase 1 and phase 3. The rest (80%, 60% or 40%) is distributed equally to the months of phase 2.
`skurve10`	

Trigger Events

Range Alias	Event	Description
`PeriodeAb`	Value changed	Trigger, if the timespan is changed.
`PeriodeBis`	Value changed	
`Gesamtwert`	Value changed	Trigger, if the value which is distributed is changed.
`Verteilung`	Value changed	Trigger, if the distribution type is changed.
`PeriodeIst`	Value changed	Trigger, if the amount if actual periods is changed.

Simulierfunktion

The `Simulierfunktion` enables you define parameter sets (`SimInputParameter`) which are applied one by one to a range (`SimInputCells`). You can therefore use the value from this range in your Excel Logik to applied your simulation parameters were applicable. You need a range with the results you want to save for each parameter set (`SimOutputResults`).

AddIn
`DistributionFunctions`

Function
`Simulierfunktion`

Input/Output Ranges

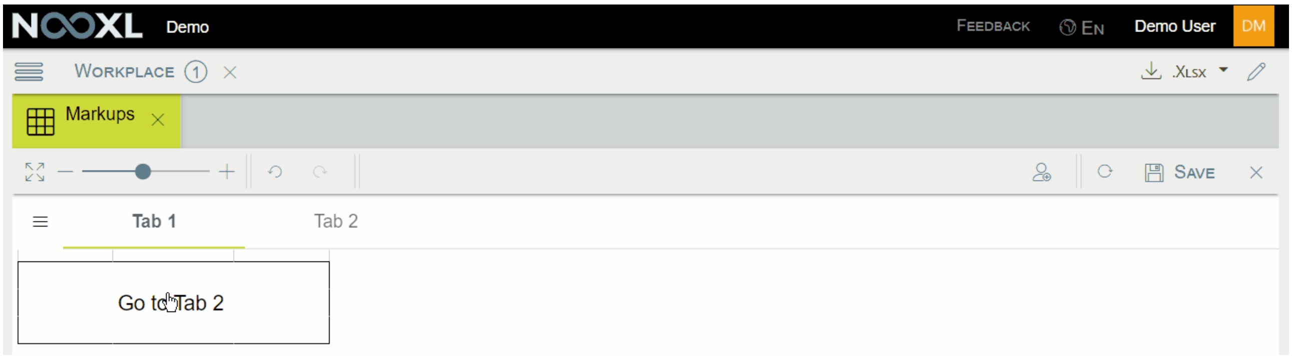
Range Alias	Is Output	Description
`SimCalculatedBy`	✓	Output field into which the user name is written, from which the simulation was started.
`SimCalculatedOn`	✓	Output field into which the time is written at which the simulation was started.
`SimInputCells`	✓	Column with the currently applied parameters. This is what you need to incorporate in your excel logic.
`SimInputParameter`		Parameter-Sets for the Simulation. Each column of this range represents a different set of parameters, for example "normal risk", "extreme risk", "brexit scenario". The more columns the range has, the more parameter sets are processed.
`SimOutputResults`		Range with the stressed values. This range is copied over to `SimOutputStore` after a parameter set is applied.
`SimOutputStore`	✓	Storage range for the parameter set results. This range must have the same amount of columns as the `SimInputParameter` .
`SimStart`		Trigger cell to start the simulation.

Trigger Events

Range Alias	Event	Description
`SimStart`	Cell click	Trigger cell to start the simulation.

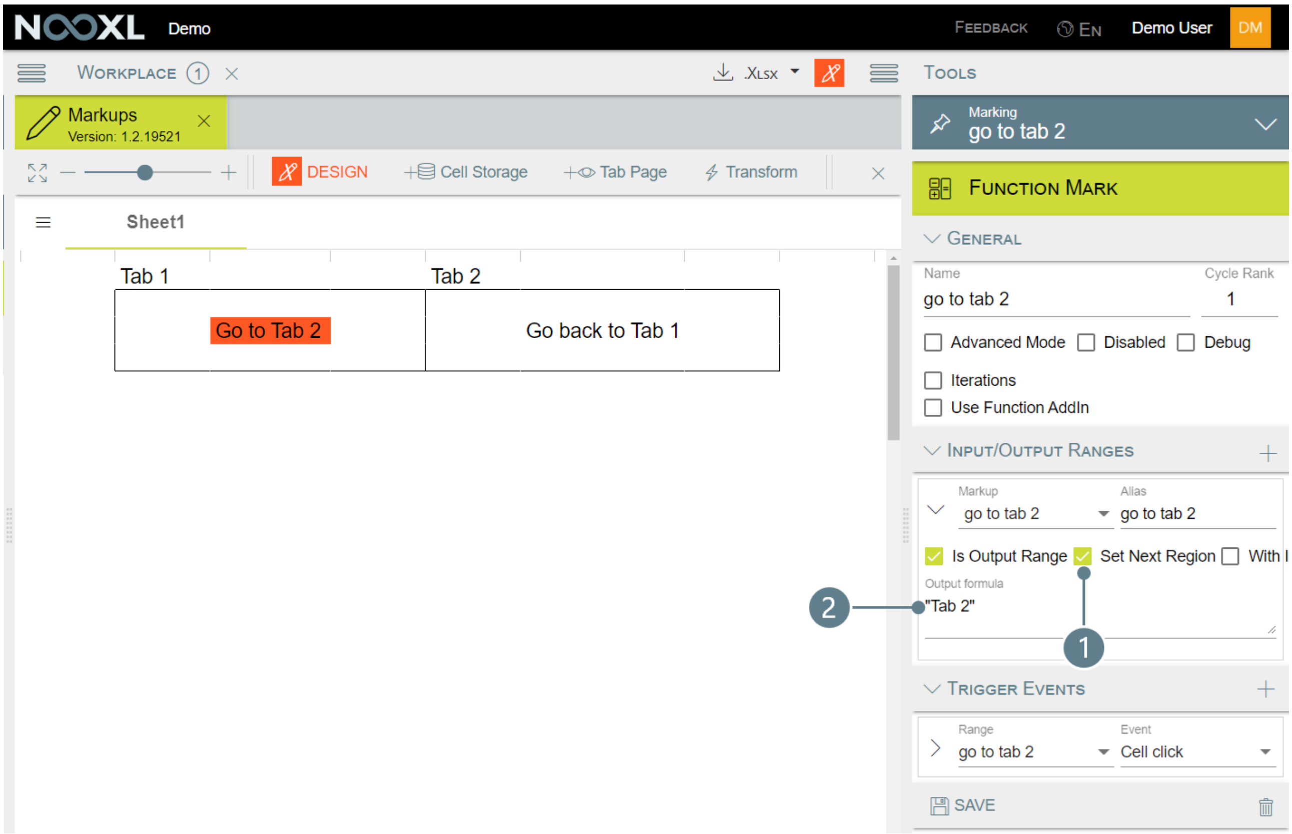
Regions - Jump to another tab page in your template

The option *Set Next Region* in the Output ranges section of your Nooxl function allows you to direct the user to another tab page of the same template.



Usage

All you have to do is to activate the *Set Next Region* checkbox and to specify the name of the tab page you want to go to.



Name: go to tab 2 Cycle Rank: 1

□ Advanced Mode □ Disabled □ Debug

□ Iterations

□ Use Function AddIn

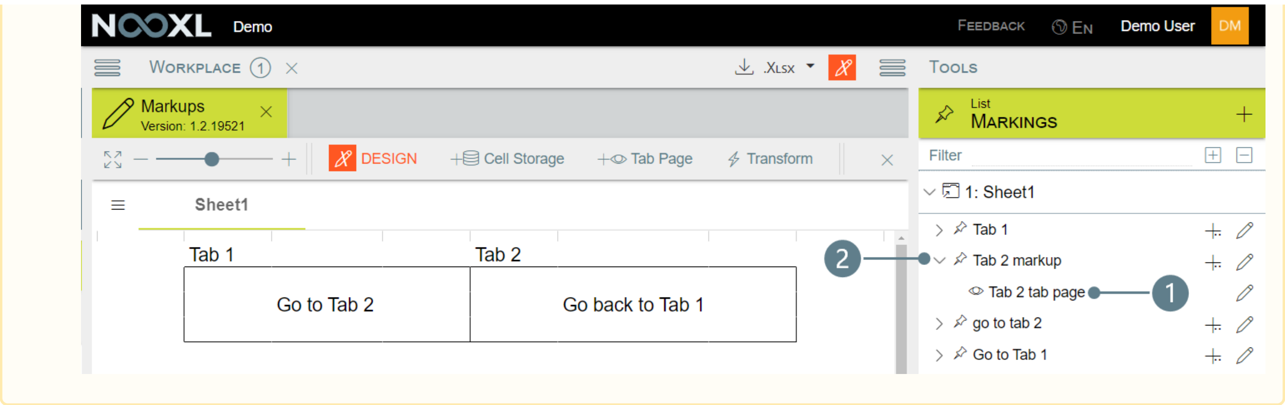
Markup: go to tab 2 Alias: go to tab 2

☑ Is Output Range ☑ Set Next Region □ With I

Output formula: "Tab 2"

Range: go to tab 2 Event: Cell click

⚠ Please specify the name of the tab page **(1)** not the name of the markup containing your tab page **(2)**.



You could combine this with the Use Visibility Markup (siehe Seite 159) option of the tab pages to hide the inactive tabs from the users and to let them navigate your template only by region functions.

Show pictures

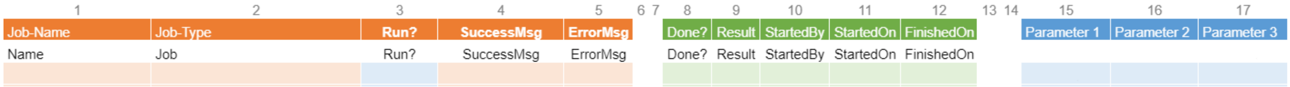
NOTE
The following content represents a current state of work. The information contained herein will be supplemented and adapted in the course of time.

JobRanges - Background processing of tasks

Nooxl offers you to automatically process various tasks in the background, to automate certain things. Currently we offer different job types in the categories Matrix-Jobs (siehe Seite 221) and Status-Jobs (siehe Seite 225). Matrix-Jobs are tasks involving the templates in your App and Status-Jobs deal with activities of the users and are more of the type "housekeeping".

Columns in the JobRange

As soon as you created a JobRange (siehe Seite 226) in your template, you will see the following table like structure (there are more parameter columns to the right).



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Job-Name	Job-Type	Run?	SuccessMsg	ErrorMsg			Done?	Result	StartedBy	StartedOn	FinishedOn			Parameter 1	Parameter 2	Parameter 3
Name	Job	Run?	SuccessMsg	ErrorMsg			Done?	Result	StartedBy	StartedOn	FinishedOn					

Here you insert all the information for your job. Each row represents a step and you can add rows as you like.

Please make sure, that the named range of the JobRange is extended as you insert new rows or else your new steps will be ignored.

	Column	Description
1	Job-Name	A name for the jobs step.
2	Job-Type	One of the job types described below.
3	Run?	If this field is set to `1` the step is executed. If it is anything else, the step is excluded.
4	SuccessMsg	**NOT YET IMPLEMENTED**
5	ErrorMsg	**NOT YET IMPLEMENTED**
6		
7		
8	Done?	**NOT YET IMPLEMENTED**
9	Result	**NOT YET IMPLEMENTED**
10	StartedBy	**NOT YET IMPLEMENTED**
11	StartedOn	**NOT YET IMPLEMENTED**
12	FinishedOn	**NOT YET IMPLEMENTED**
13		
14		
15	Parameter 1	The Parameters of your job step. Please see below in the Job type description what you should put in here.
16	Parameter 2	
17	Parameter N	

If you read elements from a catalog in your rows and set your markup to expand on the lines, your JobRange will automatically grow on run time.

Matrix-Job types

MatrixDataRecalc

The `MatrixDataRecalc` type lets you **recalculate data sets or** import data (siehe Seite 143) with a migration template.

This can be used to automatically recalculate templates which depend on other templates or as part of an automated import process.

Parameters

<table>
<tr><th>#</th><th>Parameter</th><th>Description</th><th>Example</th></tr>
<tr><td>1</td><td>Template Name</td><td>The name of the template whichs data sets are recalculated or migration template is used. This is the name of the template in the left navigation.
If you change the name of a template which is part a job, please be aware that you also need to update the <code>MatrixName</code> in the job.</td><td><code>Test Template</code></td></tr>
<tr><td>2</td><td>Options</td><td>As the second parameter you pass in options as a <code>JSON</code>. All options are optional, the default values are described below.
<b><u>withOverwrite</u></b>
If data contained in the target shall be overwritten by the data of the source (<code>withOverwrite = true</code>) or if only "gaps" in the target shall be filled with the data of the source (<code>withOverwrite = false</code>).
The default is <code>false</code>.
<table>
<tr><th></th><th>Source</th><th>Target</th><th>withOverwrite = true</th><th>withOverwrite = false</th></tr>
<tr><td><b>Position 1</b></td><td>Hello</td><td>Text</td><td>Hello</td><td>Text</td></tr>
</table>
</td><td><b>Example for a recalculation</b>
<pre>{
  "withOverwrite": "true",
  "onlyExistingDatasets": "true"
}</pre></td></tr>
</table>

<table>
<tr><th>#</th><th>Parameter</th><th>Description</th><th>Example</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><th></th><th>Source</th><th>Target</th><th>withOverwrite = true</th><th>withOverwrite = false</th></tr>
<tr><td><b>Position 2</b></td><td>World</td><td></td><td>World</td><td>World</td></tr>
<tr><td><b>Position 3</b></td><td>123</td><td>in</td><td>123</td><td>in</td></tr>
<tr><td><b>Position 4</b></td><td>Example Text</td><td>target data set.</td><td>Example Text</td><td>target data set.</td></tr>
</table>

<b>onyExistingDatasets</b>

This option determines whether only existing data sets should be recalculated or data imported to.

`true` → Records are only calculated if they already exist (once saved by a user).

`false` → All possible datasets are calculated, even if no user has saved them yet.

The default is `false`.

<b>migrationName</b>

Name of the migration to be used when importing data from a file via `MatrixDataRecalc`.

<b>migrationDocId</b>

The document ID of the document to be used for import, if data is to be imported from a file via `MatrixDataRecalc`. The file must be stored in the template as a document for the job to access it.
</td><td>
<b>Example for an import</b>

<pre>
{
"withOverwrite": "true",
"onlyExistingDatasets": "true",

"migrationName": "ImportJOB",
"migrationDocId": "32"
}
</pre>
</td></tr>
</table>

#	Parameter	Description	Example
3 - 8	Selections	In parameters 3 to 8 you specify a concrete selection to be set in the corresponding selection of the template. If you want to process not only a specific data set but all available ones, use the command `##ALL##` in the selection. The order of the selections is analogous to the visible order in the data set selection of the template. *Please note that this does not need to be the order specified in the selection options.* If your data set selection contains hidden additional data, omit these selections in the parameters. This will lead Nooxl to use the latest setting used for each data set. If the data set has no setting in the additional data so far, the first entry is automatically used.	

MatrixDataCopy

The `MatrixDataCopy` type will copy data from data set A to data set B.

This is useful for exmaple if you periodically create new working data sets to preserve the old state for auditing purposes. Here you can use `MatrixDataCopy` to create a one to one copy of all the current data to not start from scratch with your planning process.

Parameters

#	Parameter	Description	Example
1	TemplateName	The name of the template which's data sets ashould be copied. This is the name of the template in the left navigation. ❗ If you change the name of a template which is part a job, please be aware that you also need to update the `MatrixName` in the job.	`Test Template`
2	Options	As the second parameter you pass in options as a `JSON`. All options are optional, the default values are described below. **withOverwrite**	`{`

<table>
<thead>
<tr><th>#</th><th>Parameter</th><th>Description</th><th>Example</th></tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>
<p>If data contained in the target shall be overwritten by the data of the source (<code>withOverwrite = true</code>) or if only "gaps" in the target shall be filled with the data of the source (<code>withOverwrite = false</code>).</p>
<p>The default is <code>false</code> .</p>
<table>
<thead>
<tr><th></th><th>Source</th><th>Target</th><th>withOverwrite = true</th><th>withOverwrite = false</th></tr>
</thead>
<tbody>
<tr><td><b>Position 1</b></td><td>Hello</td><td>Text</td><td>Hello</td><td>Text</td></tr>
<tr><td><b>Position 2</b></td><td>World</td><td></td><td>World</td><td>World</td></tr>
<tr><td><b>Position 3</b></td><td>123</td><td>in</td><td>123</td><td>in</td></tr>
<tr><td><b>Position 4</b></td><td>Example Text</td><td>target data set.</td><td>Example Text</td><td>target data set.</td></tr>
</tbody>
</table>
<p><b><u>onyExistingDatasets</u></b></p>
<p>This option determines whether only existing data sets should be recalculated.</p>
<p><code>true</code> → Records are only calculated if they already exist (once saved by a user).</p>
<p><code>false</code> → All possible datasets are calculated, even if no user has saved them yet.</p>
<p>The default is <code>false</code> .</p>
</td>
<td>
<pre>
"withOverwrite": "true",

"onlyExistingDatasets": "true"
}
</pre>
</td>
</tr>
<tr>
<td>3 - 8</td>
<td>Selections</td>
<td>
<p>In parameters 3 to 8 you specify a concrete selection to be set in the corresponding selection of the template.</p>
<p>If you want to process not only a specific data set but all available ones, use the command <code>##ALL##</code> in the selection.</p>
</td>
<td></td>
</tr>
</tbody>
</table>

#	Parameter	Description	Example
		The order of the selections is analogous to the visible order in the data set selection of the template. *Please note that this does not need to be the order specified in the selection options.* If your data set selection contains hidden additional data, omit these selections in the parameters. This will lead Nooxl to use the latest setting used for each data set. If the data set has no setting in the additional data so far, the first entry is automatically used.	

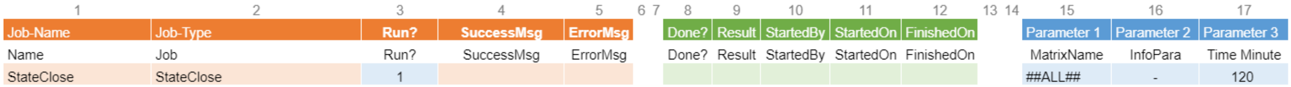
Status-Job types

StateClose

Closes the status of open spreadsheets after a specified time of inactivity by the user. This only affects spreadsheets without unsaved user input. This reduces the number of warnings about parallel processing (siehe Seite 13) by other users if these spreadsheets have not closed properly in Nooxl.

Parameters

#	Parameter	Description	Example
1	Template name	If you want to close open spreadsheets of a specific template, then you need to put the template name here. The alternative is to close all inactive spreadsheets (`##ALL##`).	`##ALL##`
2	Info Parameter	**NOT YET IMPLEMENTED**	`-`
3	Time Minute	The time in minutes which must have passed to qualify an open spreadsheet to be considered for the `StateClose` process. `0` means immediately.	**Close workbooks with 2 hours idle time.** `120`



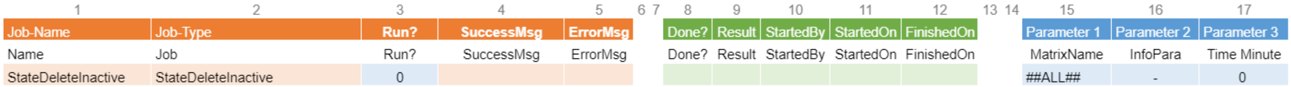
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Job-Name	Job-Type	Run?	SuccessMsg	ErrorMsg			Done?	Result	StartedBy	StartedOn	FinishedOn			Parameter 1	Parameter 2	Parameter 3
Name	Job	Run?	SuccessMsg	ErrorMsg			Done?	Result	StartedBy	StartedOn	FinishedOn			MatrixName	InfoPara	Time Minute
StateClose	StateClose	1												##ALL##	-	120

StateDeleteInactive

Deletes status records from the history of activities (siehe Seite 298) after a specified time to clean up the history.

Parameters

#	Parameter	Description	Example
1	Template name	If you want to delete the records of a specific template, then you need to put the template name here. The alternative is to delete the records of all templates (`##ALL##`).	`##ALL##`
2	Info Parameter	**NOT YET IMPLEMENTED**	`-`
3	Time Minute	The time in minutes which must have passed to qualify an state record to be considered for the `StateDeleteInactive` process. `0` means all.	**Delete the whole history** `0`



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Job-Name	Job-Type	Run?	SuccessMsg	ErrorMsg			Done?	Result	StartedBy	StartedOn	FinishedOn			Parameter 1	Parameter 2	Parameter 3
Name	Job	Run?	SuccessMsg	ErrorMsg			Done?	Result	StartedBy	StartedOn	FinishedOn			MatrixName	InfoPara	Time Minute
StateDeleteInactive	StateDeleteInactive	0												##ALL##	-	0

Create a JobRange

⚠ Currently job ranges can not be created in the web application.
You need to:

- insert the job table layout manually into your template
- create a markup for the layout via the web interface
- add the necessary entries in the database tables `u1.MarkupJob` and `u1.MarkupJobTrigger`

Trigger type	ID
Value changed	2
Cell click	11
File, before data load	20

Trigger type	ID
File, after data load	21
File, before save	22
File, after saved	23

When is the job executed?

You can have the job be triggered as a reaction to a user interaction (same as for Function Markups (siehe Seite 210)) or based on an automated schedule (siehe Seite 227).

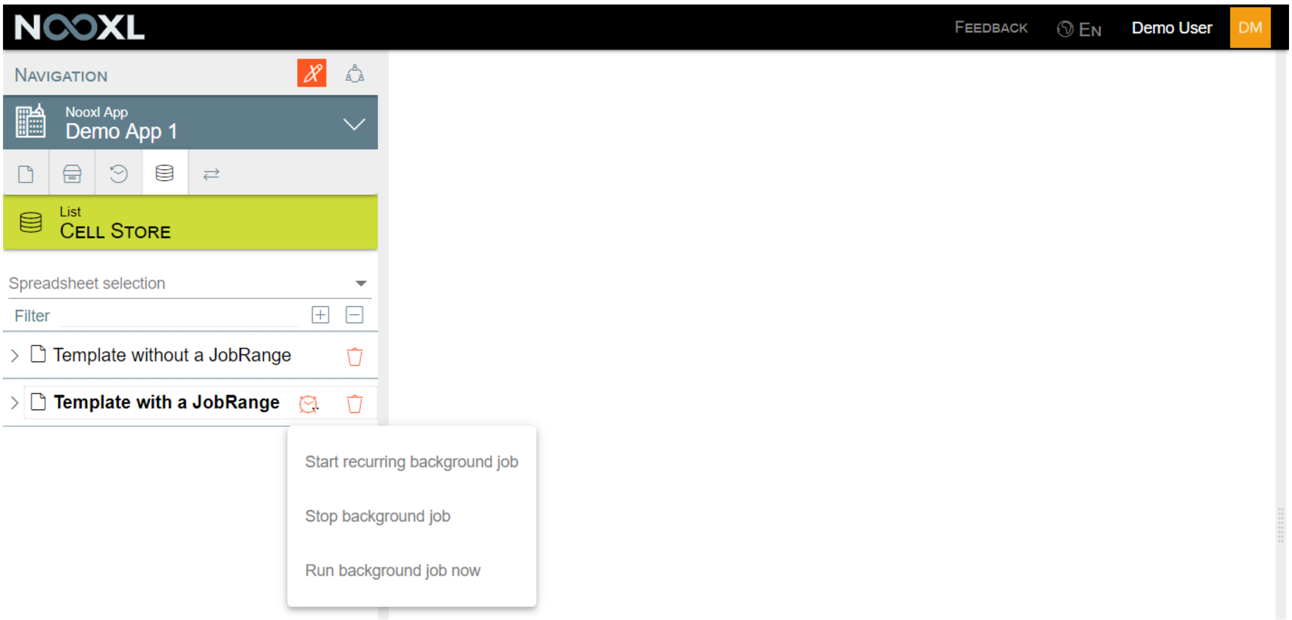
Regularly start jobs (CRON)

Set up your template with the JobRange as you would do normally. After that you need to add a CRON-Job[6] to your template, which is currently only possible in the database table `u1.Matrix`.

CRON entry to start everyday a 00:01 am

```
0 1 * * * *
```

After that you control the CRON-Jobs directly in the Cell Store (siehe Seite 300) in the design mode. All templates with a CRON-Job entry in `u1.Matrix` will be displayed with a ⏰ icon. Click on this to start and stop the CRON-Job or to run the Job besides the schedule right now.



[6] https://en.wikipedia.org/wiki/Cron

Create and edit catalog elements using a modification markup

The normal ways to create new elements in your apps catalogs is to go to the section catalogs and elements (siehe Seite 268) or to allow your users to create new elements in the data set selection (siehe Seite 277).

If those options doesn't suit your needs, because you do not want to allow normal users to access the catalogs and elements section, or because you maybe need to make sure certain naming patters for the elements are followed, you can also create elements from specially crafted templates.

Those templates include a so called modifications markup. The first benefit of those is that you can surround the markup with excel logic, so you can really own the process of creating new elements (naming patterns, including names of elements from other catalogs, save additional data for the elements, start a background job for the new element etc. pp.). The second big pro is, that you can allow your users to create multiple elements at once! This can be helpful in case you have an import from another system and need to create new elements based on that data.

Create a modification markup

⚠ Currently it is not possible to create a modification markup via the web interface. You need to create a normal empty markup and then go to the database table `[u1].[MarkupModification]` to set up your modification markup.

Column	Description	Example
Id	The primary key of the table. This is set automatically.	1
UniverseId	The Id of your app. It references to `[ctr].[Universe].`	10
LogicReleaseId	This Id references to the template your modification markup is located in. You get this Id together with the `MarkupId` from the table `[u1].[Markup]`.	123
Code	The name of your markup which will show up in the web interface.	My modification markup
Rank	If you have multiple markups in your template, you can use the `rank` to define an order in which the elements are created. If you do not provide a `rank` the markups will be processed by their alphabetical order.	0

Column	Description	Example

MarkupId	The Id of the markup. It can be found in the table `[u1].[Markup]`. If you just created the markup you can use the follow SQL to obtain the Id.
	`SELECT TOP 1 * FROM [u1].[Markup]`
	`ORDER BY 1 DESC;`
		345

ConditionId	You element will be created as part of a catalog. To determine which catalog you need to provide the Id of a selection of this catalog. The element will automatically be part of this selection. You find the Ids of catalogs in the table from the table `[u1].[Catalogs]`.	678
IsDisabled	A bit. Set this to 1 if you want to disable the modification markup. Disabled markups are not processed.	0
IsAdvanced	Currently you can only create new elements with a modification markup and Nooxl will treat your markup always as a list. This means that for each new row a new element will be created. In the future it will be possible to: • pivot the creation markup by 90 degree, so each column represents a new element • create new elements and assign a description and tags to them • edit the names, description and tags of existing elements • let Nooxl reload the selections of the current template, so if you create a new element for this selection the new elements will be visible immediately Until then you can fill all these columns with `0`.	False
ModificationEnum		0
VectorDirection		0
PropertyIndexId		0
PropertyIndexName		0
PropertyIndexDescription		0
PropertyIndexTags		0
WithReloadConditions		0

Workflows

Every permission granted in the Collaboration (siehe Seite 90) section of your Account is static as long as nobody changes it. This can be enough, but if you need to implement a workflow which grants different permissions to different user groups based on the current workflow status you need to extend beyond the normal permissions.

Here workflow based user rights come into play. which can be granted to different objects in your App:

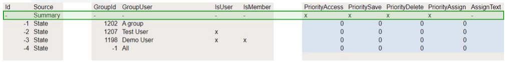
Authorization level	Description
Matrix (siehe Seite 236)	Changes permissions for a specific template.
State (siehe Seite 236)	Change permissions for a particular data set of a template.
Condition (siehe Seite 237)	Change permissions for elements of a catalog. These permissions are transferred into all templates where the elements are either used for the dataset selection or as selections in dimensions.
Selection (siehe Seite 239)	TBD.

The following permissions are distinguished:

Permission	Description
PriorityAccess	Can the element be seen? This translates to data set selections as well as the usage of selections in templates. If a user has no access for the elements it can not be seen.
PrioritySave	Can the elements data be changed/ saved?
PriorityDelete	Can the element be deleted?
PriorityAssign	Can the element be assigned to a user/ group?
AssignText	If the element is assigned to someone, what should the assignments text be? This is used to pass messages through the workflow, for example to give hints to another department. The messages will show up in the list of existing data sets (siehe Seite 117).

Create a new workflow

Currently, workflow markups cannot be created via the web interface. To create a new workflow you need to create a new markup in your template. After that you need to set up the workflow markup in the database table `[u1].[MarkupWorkflow]` .

Column	Description	Example
Id	The primary key of the table. It is the identity and will autoincrement.	`22`
UniverseId	Id of the account (table `[ctr].[Universe]`).	`1057`
MarkupId	Id of the markup you created (table `[u1].[Markup]`).	`37859`
LogicReleaseId	This Id references an entry in the table table `[u1].[LogicRelease]` which in the end points to your template. You can find this Id already in the table `[u1].[Markup]` from the previous column.	`14580`
Name	A name for the workflow markup. This can be the same as the markup itself, but can also be something different.	`WorkflowData`
IsDisabled	A Boolean. If it is `TRUE` the workflow is disabled.	`FALSE`
IsFromSummary	A Boolean. If your workflow is granting permissions to states (siehe Seite 236), you can have an additional summary row on top of your table structure. For this set this column to `TRUE` .  Id Source GroupId GroupUser IsUser IsMember PriorityAccess PrioritySave PriorityDelete PriorityAssign AssignText - Summary - - - - x x x x - -1 State 1202 A group 0 0 0 0 -2 State 1207 Test User x 0 0 0 0 -3 State 1198 Demo User x x 0 0 0 0 -4 State -1 All 0 0 0 0	`TRUE`
IsFromSelection	A Boolean. If your workflow is granting permissions to selections (siehe Seite 239), set this column to `TRUE` .	`FALSE`

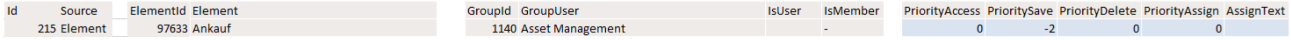
Column	Description	Example
IsFromMatrix	A Boolean. If your workflow is granting permissions to t (siehe Seite 0)emplates (siehe Seite 236), set this column to `TRUE`.	`FALSE`
IsFromState	A Boolean. If your workflow is granting permissions to states (siehe Seite 236), set this column to `TRUE`.	`TRUE`
IsFromCondition	A Boolean. If your workflow is granting permissions to elements of a condition (siehe Seite 237), set this column to `TRUE`.	`FALSE`
FromConditionId	If `IsFromCondition = TRUE` you must supply the conditions Id (table `[u1].[Condition])` you want to work with.	`NULL`
FromMatrixId	If `IsFromMatrix = TRUE` you must supply the template Id (table `[u1].[Matrix])` you want to work with.	`NULL`
IsStorageRead	A Boolean. If your elements you want to grant access to are static, you can have them as static content in the template and set this field to `FALSE`. If you want to read all elements on runtime, because they can change, set this to `TRUE`.	`TRUE`
IsStorageWrite	A Boolean. If your logic is changing the workflows settings you need to set this field to `TRUE`. If you are only reading the current settings of a workflow you can leave this field as `FALSE`.	`TRUE`
IsAccessGroups	A Boolean. Is access granted on group level?	`TRUE`

Column	Description	Example
IsAccessUsers	A Boolean. Is access granted on user level?	`TRUE`
IsContentClear	A Boolean. Should values in the template be overwritten in the markup area?	`TRUE`
IsContentOverwriteFormulas	A Boolean. If there are Excel formulas in the Markup area, should they be overwritten (`TRUE`) or retained (`FALSE`)?	`FALSE`
IsStyleAuto	A Boolean. Should Nooxl automatically adjust the cell style for the markup? Set this to `TRUE` is you want this, or `FALSE` if you want to retain the style set in the template.	`TRUE`
ExpanseTypeRows	Should the area of the markup be enlarged, depending on the amount of elements read?	`2`
CopyTypeRows	If `ExpanseTypeRows` is `TRUE` , should the original content be copied over to the inserted rows?	`1`

The number of inserted rows corresponds to the number of authorization groups from the Collaboration (siehe Seite 94)area, multiplied by the number of elements to be authorized in the selected catalog.
Accordingly, out of consideration for the usability of the system, but also from a performance point of view, you should try to authorize the smallest possible catalogs.

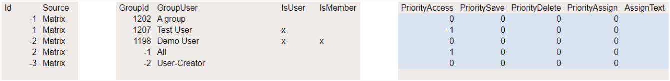
Workflow table properties

After you created a new workflow in a template, you find a similar structure to this.



Id	Source	ElementId	Element	GroupId	GroupUser	IsUser	IsMember	PriorityAccess	PrioritySave	PriorityDelete	PriorityAssign	AssignText
215	Element	97633	Ankauf	1140	Asset Management		-	0	-2	0	0	

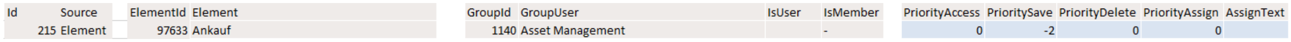
Depending on your settings you made for the workflow we will see less columns or some not visible in the screenshot above. All columns you can see are described below.

<table>
<tr><th>Block</th><th>Column</th><th>Description</th></tr>
<tr><td>Source</td><td>Id</td><td>An internal Id for the specific workflows setting.
ⓘ For all rows without any change in the permission, this is enumerated with signed integers and for all rows with changed with unsigned integers.
So please be ware that this is not a static Id.

<table>
<tr><th>Id</th><th>Source</th><th>GroupId</th><th>GroupUser</th><th>IsUser</th><th>IsMember</th><th>PriorityAccess</th><th>PrioritySave</th><th>PriorityDelete</th><th>PriorityAssign</th><th>AssignText</th></tr>
<tr><td>-1</td><td>Matrix</td><td>1202</td><td>A group</td><td></td><td></td><td>0</td><td>0</td><td>0</td><td>0</td><td></td></tr>
<tr><td>1</td><td>Matrix</td><td>1207</td><td>Test User</td><td>x</td><td></td><td>-1</td><td>0</td><td>0</td><td>0</td><td></td></tr>
<tr><td>-2</td><td>Matrix</td><td>1198</td><td>Demo User</td><td>x</td><td>x</td><td>0</td><td>0</td><td>0</td><td>0</td><td></td></tr>
<tr><td>2</td><td>Matrix</td><td>-1</td><td>All</td><td></td><td></td><td>1</td><td>0</td><td>0</td><td>0</td><td></td></tr>
<tr><td>-3</td><td>Matrix</td><td>-2</td><td>User-Creator</td><td></td><td></td><td>0</td><td>0</td><td>0</td><td>0</td><td></td></tr>
</table>
</td></tr>
<tr><td></td><td>Source</td><td>Essentially the workflows type: Element (→ Condition), State, Template (→ Matrix)</td></tr>
<tr><td>Element</td><td>ElementId</td><td>The Id of the catalog element.
ⓘ Only visible for Condition.</td></tr>
<tr><td></td><td>Element</td><td>The name of the catalog element.
ⓘ Only visible for Condition.</td></tr>
<tr><td>Group/ User</td><td>GroupId</td><td>The groups or users internal Id. This is static and can be used to identify users even if the display name is changed.</td></tr>
<tr><td></td><td>GroupUser</td><td>The display name of the group or user.</td></tr>
<tr><td></td><td>IsUser</td><td>Contains an "x" if the entry is a user and not a group.
ⓘ Only visible if the permissions are granted for users or groups and users.</td></tr>
<tr><td></td><td>IsMember</td><td>Contains an "x" if it is the current user (then `IsUser` is also "x") or if the current user is part of the group.
ⓘ Only visible if the permissions are granted for users or groups and users.</td></tr>
</table>

Block	Column	Description
Permissions	PriorityAccess	Can the element be seen? This translates to data set selections as well as the usage of selections in templates. If a user has no access for the elements it can not be seen.
	PrioritySave	Can the elements data be changed/ saved?
	PriorityDelete	Can the element be deleted?
	PriorityAssign	Can the element be assigned to a user/ group?
	AssignText	If the element is assigned to someone, what should the assignments text be? This is used to pass messages through the workflow, for example to give hints to another department. The messages will show up in the list of existing data sets (siehe Seite 117).

How are permissions evaluated?

As soon as you created a workflow markup and reload the template you will see an auto generated table structure, similar to this.



Id	Source		ElementId	Element	GroupId	GroupUser	IsUser	IsMember	PriorityAccess	PrioritySave	PriorityDelete	PriorityAssign	AssignText
215	Element		97633	Ankauf	1140	Asset Management		-	0	-2	0	0	

No matter which columns you have, on the right hand side you always find the four permissions you can grant or deny. A user or group is granted a permission as soon as the value in the permissions column is equal or greater than 0 (`>=0`). So in the example above the group *Asset Manangement* can not save data for the element *Ankauf*, but can access it.

> ⓘ If you authorize on a user and group level at the same time, please note that the rights are summed up.
> So if you have some users in a group and that group has `-1` for `priorityAccess` on an element, no user can see it. But if you then give one of the groups users a +1 for `priorityAccess` he has a `0` in total, meaning that he can see the element, despite nobody else from his group can.

Authorization levels

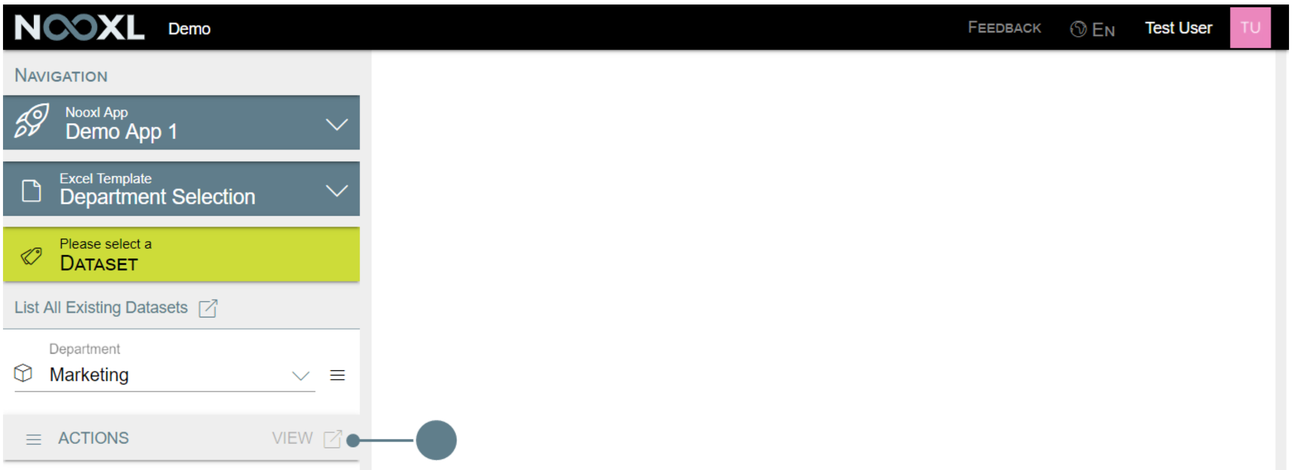
The following section describes the individual authorization levels in Nooxl workflows and how to use them. Please note that not all permissions are usable within every authorization level. Which you can use is described in each section.

Matrix

Matrix workflow permissions can be set up in their own templates, but also if you want in the template itself. Therefore you can decide were to put your workflow. If have need to change permissions to a template based on what happens inside this template, you would like to put the workflow right inside this template. If it depends on actions done somewhere else in your Application, put it there.

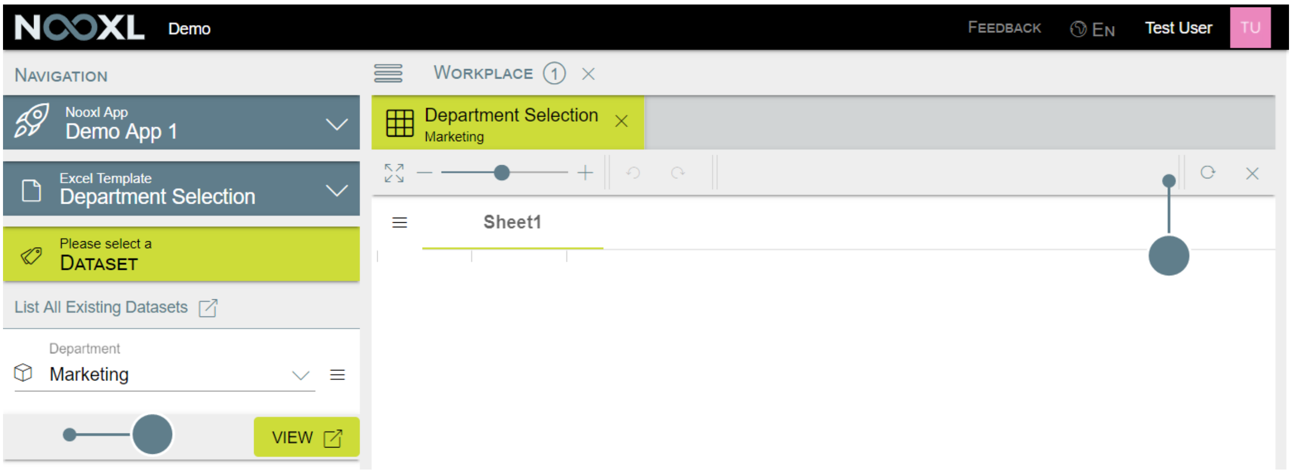
priorityAccess

Without `priorityAccess` to a template the user is still able to see the template in the navigation and also to view whatever selections are available, but the View button is never enabled.



prioritySave

Without `prioritySave` the user will not be able to save any changes made to any dataset of the template, as well as not be able to use the copy (siehe Seite 123)and recalculate (siehe Seite 125)features for this template.



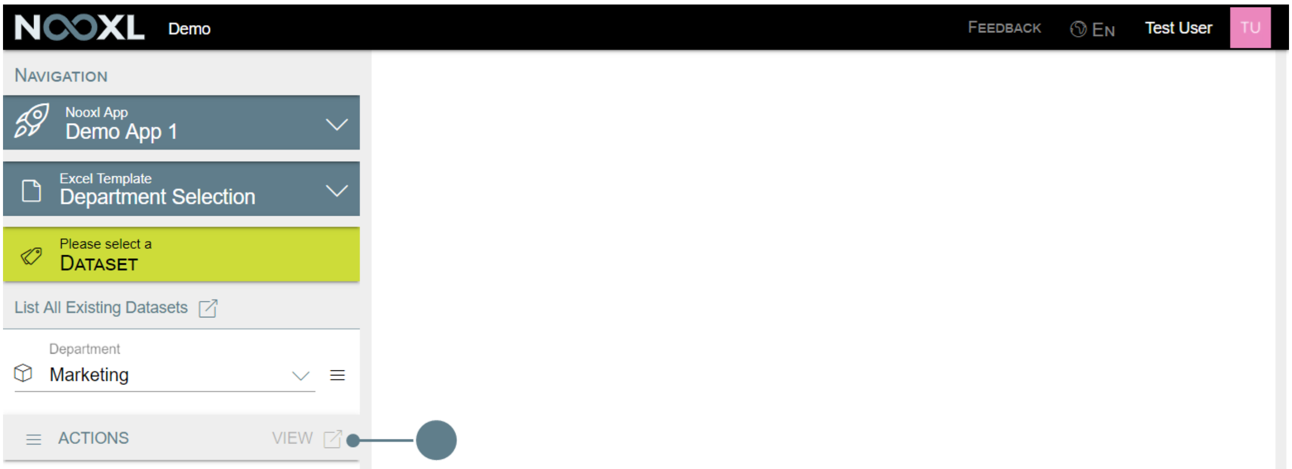
State

State workflow permissions are set up directly in the template they should affect.

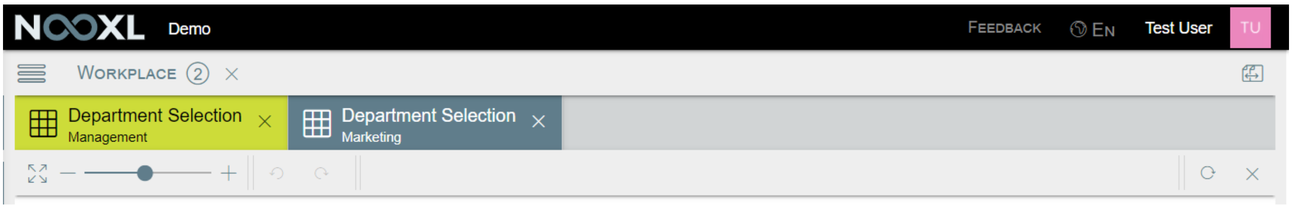
Each time you save the data set you can specify who can do what to the specific data set in this template after you saved.

⚠ In order to use a state workflow, your template must at least use one selection for the data sets.

priorityAccess
Without `priorityAccess` to a state the user is still able to see the data set in selections, but the View button is never enabled.



prioritySave
If you restrict `prioritySave`, it will prevent the user from saving any changes, by withholding the save button.



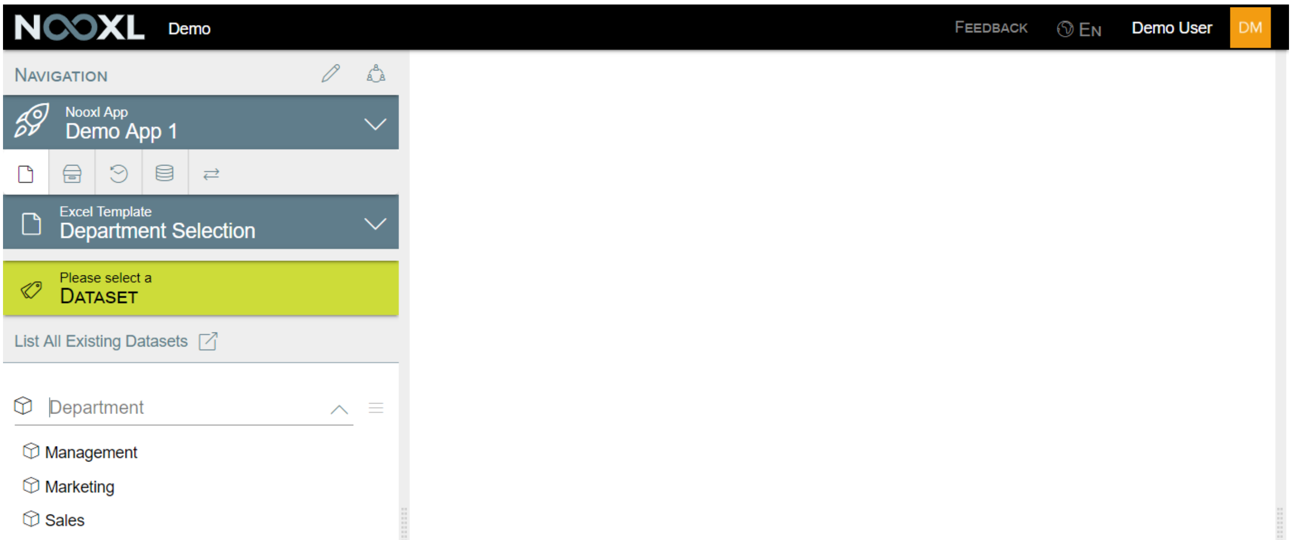
Condition

Condition workflow permissions are set up in their own templates, because they influence all templates of an App. By doing so, per default condition permissions are somewhat static and need manual interaction by a user, or need to be included as a step in a job (siehe Seite 219).

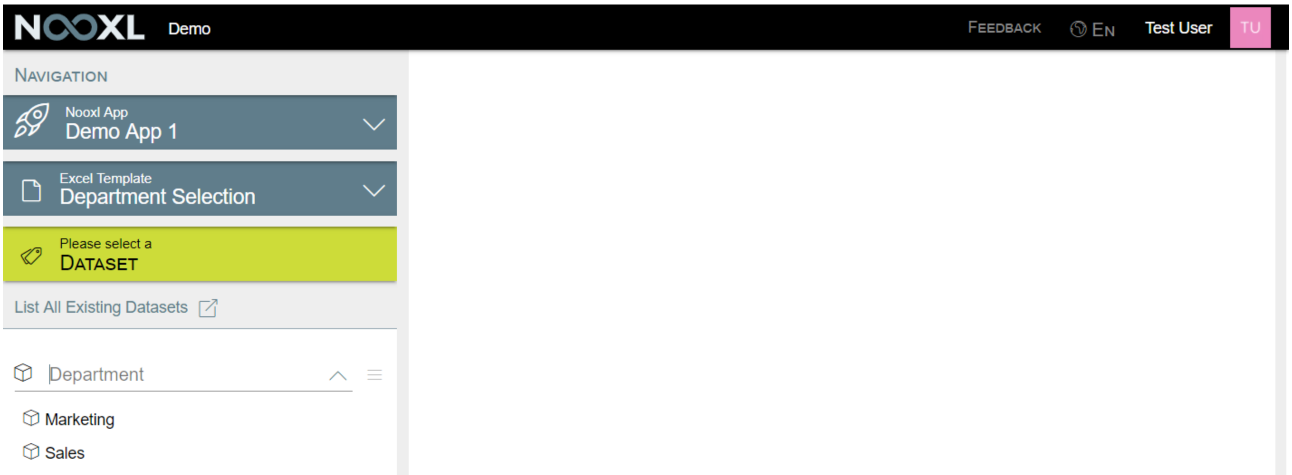
Rights set up on conditions, influence your app in two places: data set selections and selections used in advanced mode inside your template.

✓ Even if the permission object is called condition and you use a condition to set the rights, everything is applied to the underlying catalog!

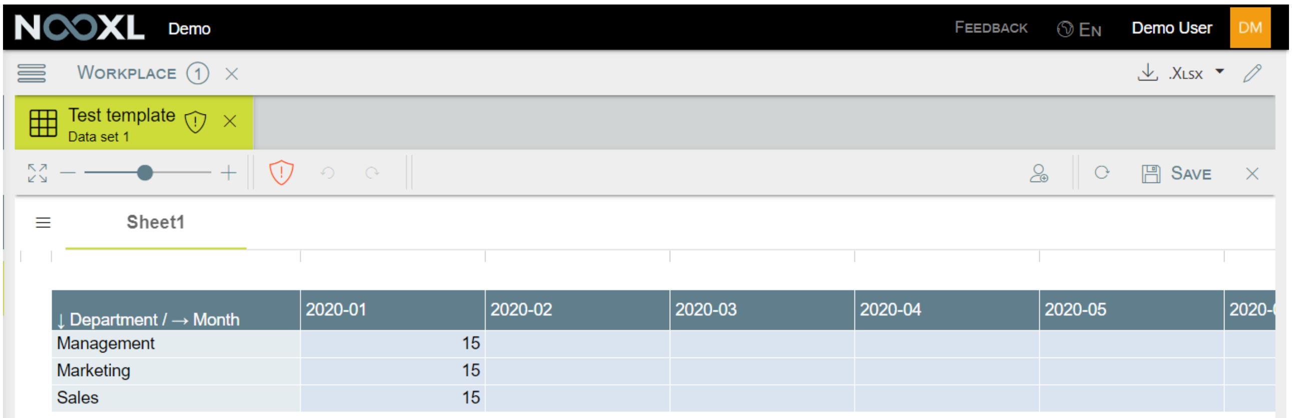
priorityAccess
The revocation of the `priorityAccess` permission has two effects. First of all the affected users will no longer see the elements in data set selection. The screenshot below show the selection items for a "normal" user without restrictions.



The next screenshot shows what *Test User* can see. He is not granted the `priorityAccess` permission for the element *Management*. Therefore this element is not available to him in the data set selection.

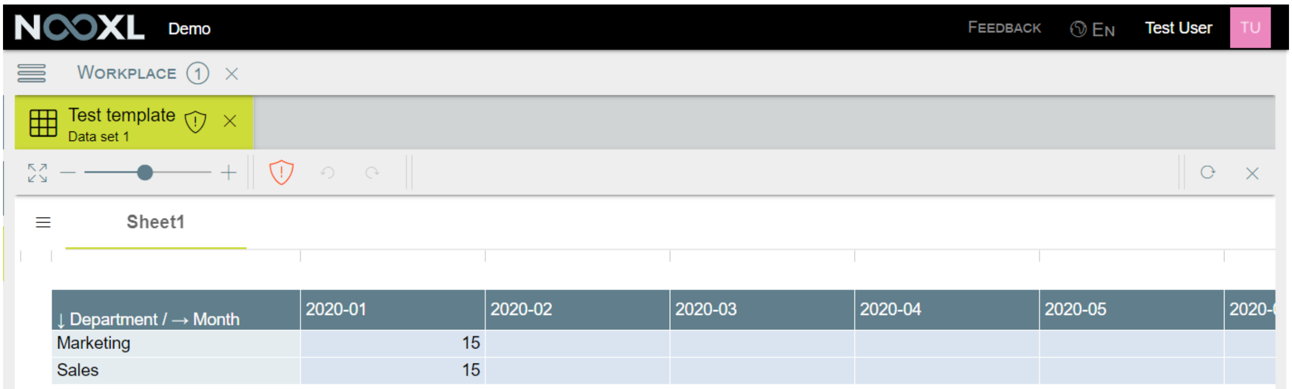


The second place were your users will feel the restrictions is inside your templates. If you use a selection in your template as a dimension of a cell storage, the `priorityAccess` will restrict which elements the user can see. Below the user without restrictions can see all three departments in the rows.



↓ Department / → Month	2020-01	2020-02	2020-03	2020-04	2020-05	2020-(
Management	15					
Marketing	15					
Sales	15					

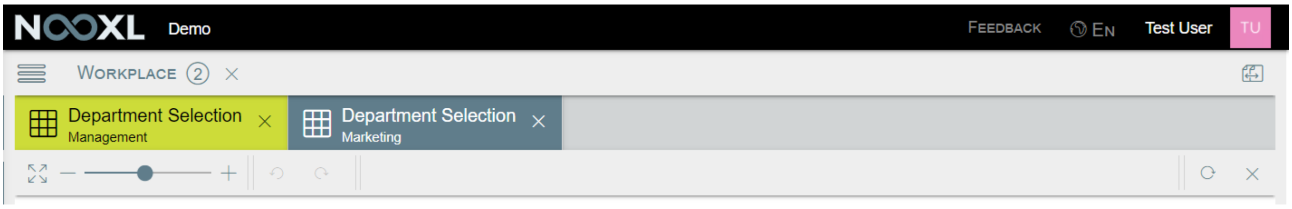
Test User will not see the element Management.



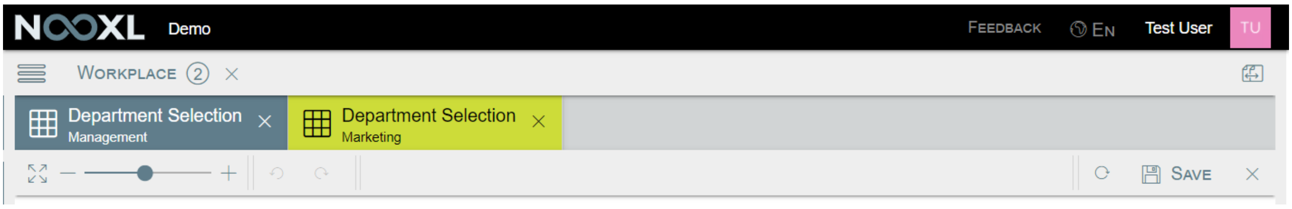
↓ Department / → Month	2020-01	2020-02	2020-03	2020-04	2020-05	2020-
Marketing	15					
Sales	15					

prioritySave

If you restrict `prioritySave`, it will prevent the user from saving any changes, by withholding the save button. *Test User* is not granted `prioritySave` for the *Management* element, therefore no save button shows up.



For Marketing he does have the permission and so the Save button will show up for him in this data set.



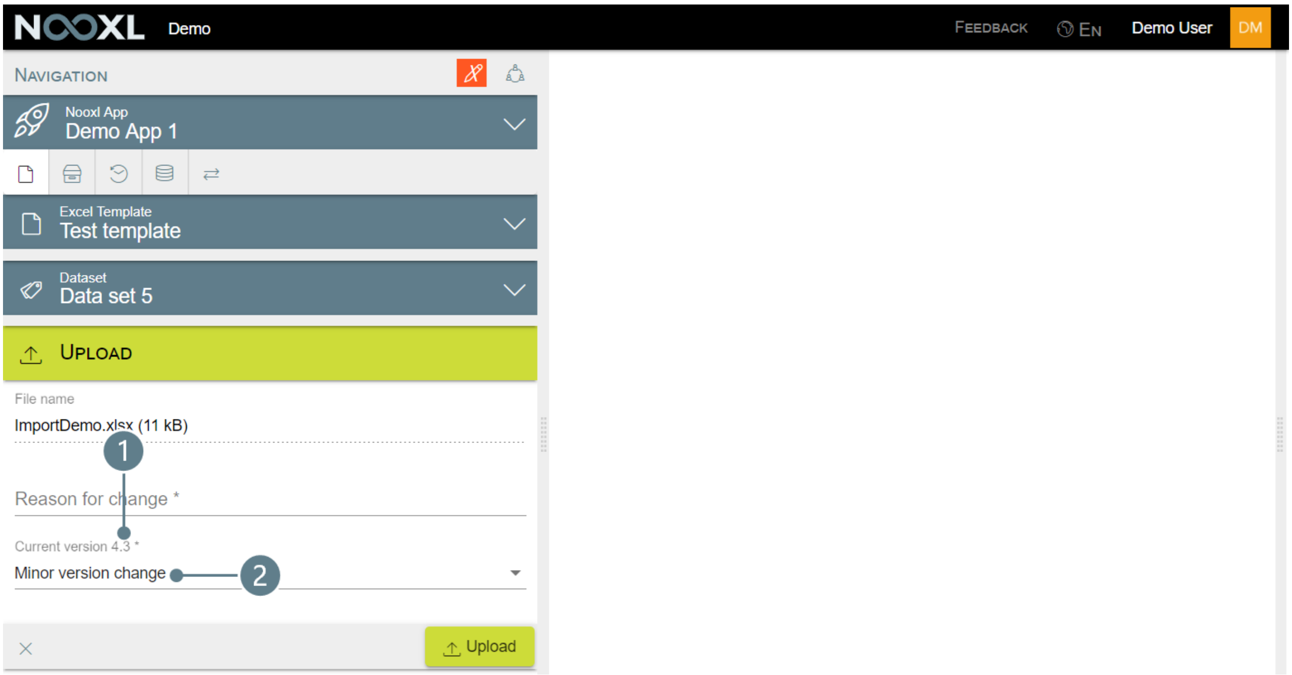
ⓘ If your data set uses more than one selection, Nooxl will add up the `prioritySave` permissions for all elements involved. If it is `>=0` then the user can save the data set. Is the sum `<0` he can not.

Selection

TBD.

3.7.10 Version management and file versions

All templates in your Nooxl App are subject to a strict version management. When you upload an excel file to Nooxl (siehe Seite 26), it will be versioned automatically. The current version of your template is shown here **(1)**. By default, a new minor release is always created and the main version is not changed **(2)**.

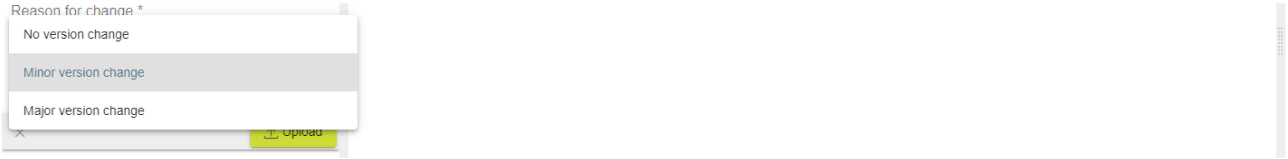


File name
ImportDemo.xlsx (11 kB)

Reason for change *

Current version 4.3 *
Minor version change

When clicking on *Minor version change*, a context menu opens where you can choose between the following options:

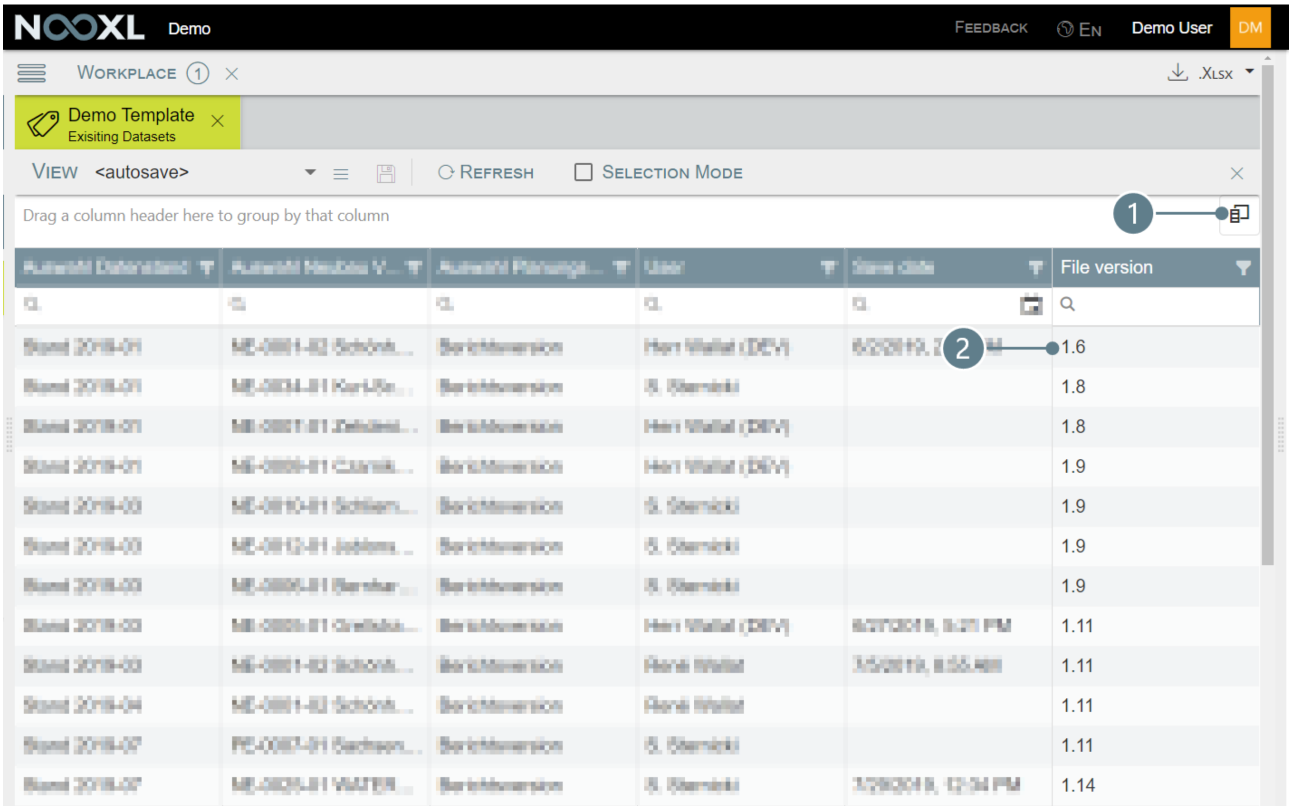


- No version change
- Minor version change (create a new *minor release* inside the current *major release*)
- Major version change (create a new *major release*)

File versions and data sets

When you save a data set (defined from the settings of all selections), this also stores which file version was used.

You can view this information for all records in the list view by adding the column "File version" via the button to edit the columns **(1)**. This is then displayed in the list view **(2)**:

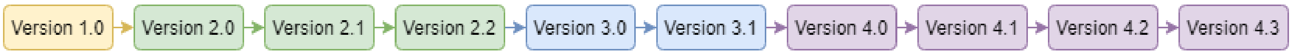


[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	File version
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.6
[illegible]	[illegible]	[illegible]	[illegible]		1.8
[illegible]	[illegible]	[illegible]	[illegible]		1.8
[illegible]	[illegible]	[illegible]	[illegible]		1.9
[illegible]	[illegible]	[illegible]	[illegible]		1.9
[illegible]	[illegible]	[illegible]	[illegible]		1.9
[illegible]	[illegible]	[illegible]	[illegible]		1.9
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.11
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.11
[illegible]	[illegible]	[illegible]	[illegible]		1.11
[illegible]	[illegible]	[illegible]	[illegible]		1.11
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.14

Automatic use of the latest file version when displayed

Nooxl will always automatically select the latest available file version within a *major release* to display a record.

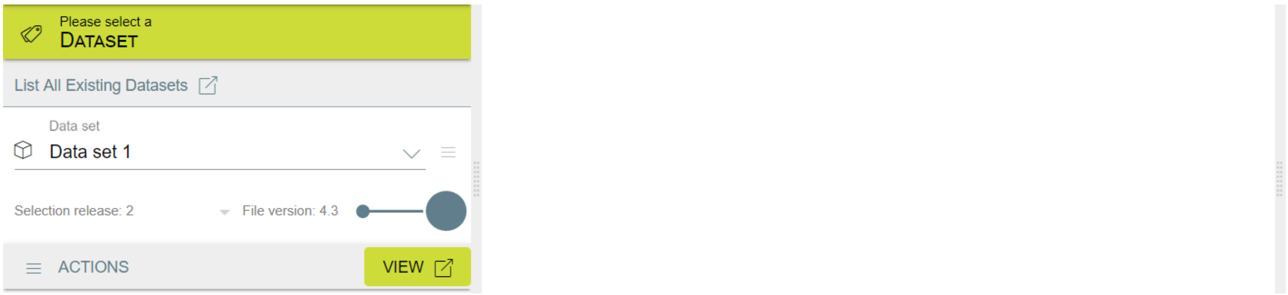
For a better understanding, let us imagine the following version history with a total of 9 versions, unevenly distributed over three major releases:


Version 1.0 → Version 2.0 → Version 2.1 → Version 2.2 → Version 3.0 → Version 3.1 → Version 4.0 → Version 4.1 → Version 4.2 → Version 4.3

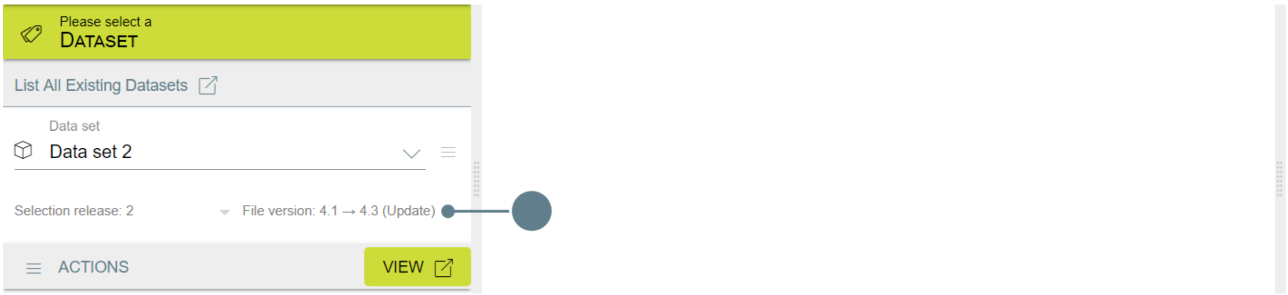
Additionally the following five data sets:

Data set	Save date	File version
Data set 1	2019-07-31 08:21 PM	Version 4.3
Data set 2	2019-07-31 07:10 PM	Version 4.1
Data set 3	2019-07-31 03:46 PM	Version 3.1
Data set 4		
Data set 5	2019-07-31 10:13 PM	Version 2.1

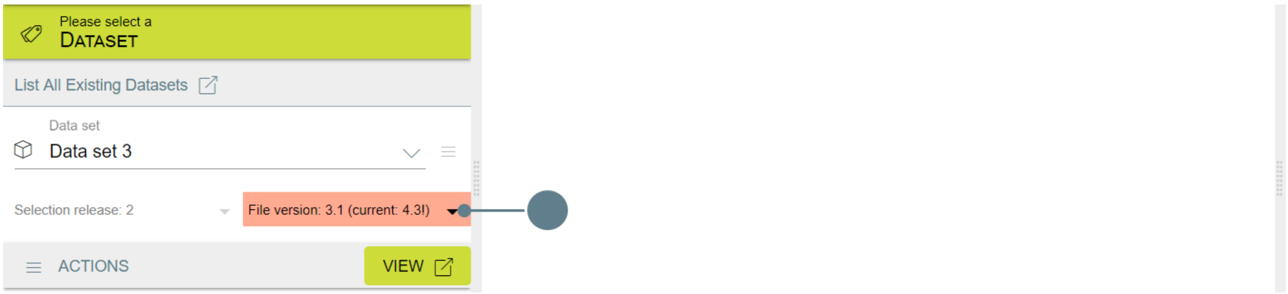
If the user now selects **data set 1**, Nooxl will display below the selection **File version: 4.3**. This means that no newer template is used.



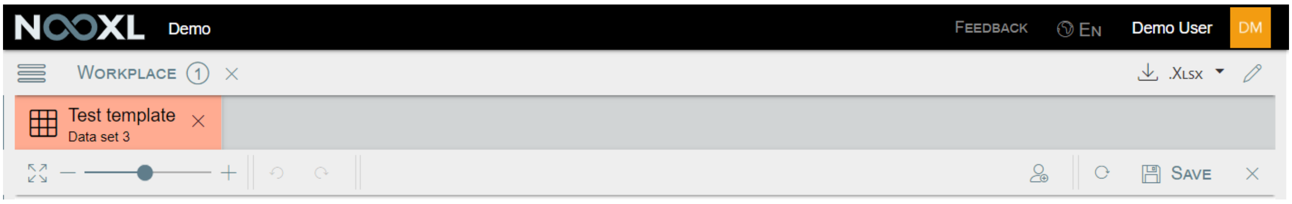
For **data set 2**, the user will get the following hint: **File version: 4.1 → 4.3 (Update)**. This means that the dataset was last saved with the file version 4.1 and would now be opened with the newest version within the *major release* 4, which is file version 4.3.



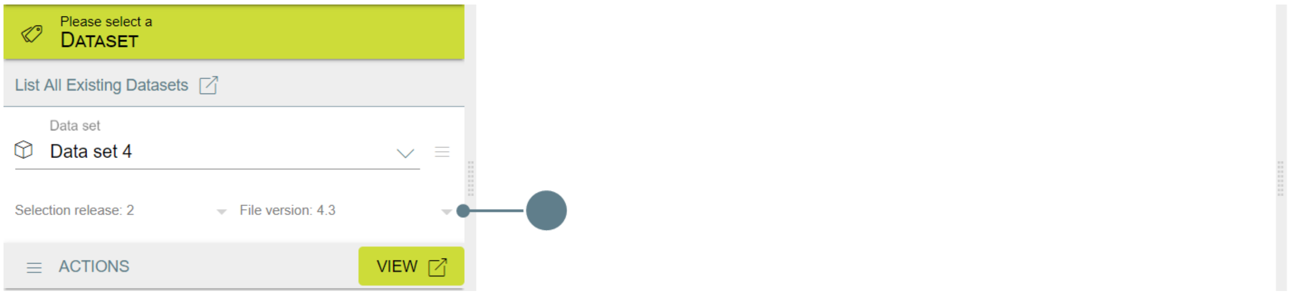
For **data set 3**, the following would be displayed: **File version: 3.1 (current: 4.3!)**. This is the information that the data set uses a version of *major release* 3 and therefore no "upgrade" takes place when opening it. Additionally, Nooxl will warn you that there is a new *major release* 4 with the latest file version 4.3, which can be selected manually by the user.



When you open this data set, you will notice that the template name will not have a green background as usual, but a red background.



Since **data set 4** has not been saved yet, **File version: 4.3** is displayed for this record, and thus the latest file version of the template is automatically used.



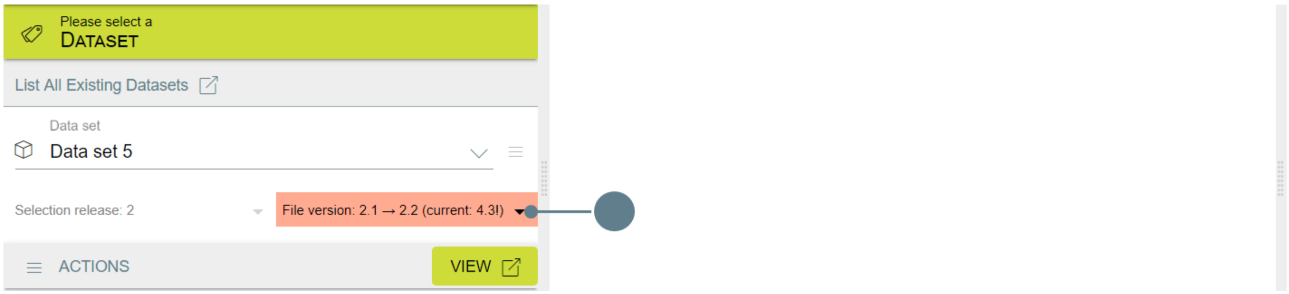
Please select a DATASET

Data set: Data set 4

Selection release: 2

File version: 4.3

Data set 5 shows **File version: 2.1 → 2.2 (current: 4.3!)**. This means that Nooxl will upgrade to the latest file version 2.2 within *major release* 2, but the latest version of the template is 4.3.



Please select a DATASET

Data set: Data set 5

Selection release: 2

File version: 2.1 → 2.2 (current: 4.3!)

⚠ New markups or changes to existing markups in the design mode will not automatically lead to a new version of the template. If you want to create a new version of the template, you have to download it and upload it again in Nooxl.

Selection release

Similar to the templates, the created selections are versioned in Nooxl. In *design mode* you can create new versions of selections and delete them.

⚠ When you create a new selection release, Nooxl will automatically create a new major release of the template. Also a new selection release is automatically created when you add or remove selections.

3.7.11 Show charts and pictures from templates in your app

Nooxl will automatically scan your templates for Excel charts and pictures to show inside the app. This means that as long as the charts and pictures are located in cells included in a tab page (siehe Seite 159), they will show in your app.

Supported file types for pictures

Nooxl supports the following file types:

- JPG
- PNG
- BMP

- SVG

⚠ Transparencies in SVG and PNG files are not supported! Transparent areas will show up black in Nooxl.

Supported chart types

Nooxl does not support all chart types that Excel knows. Please refer to the following list to see which ones are displayed correctly and which ones are not:

Category	Chart Typ	Supported
Column	2-D Column	✓
	2-D Stacked Column	✓
	2-D 100% Stacked Column	✓
	3-D Clustered Column	✗
	3-D Stacked Column	✗
	3-D 100% Stacked Column	✗
	3-D Column	✗
Line	Line	✓
	Stacked Line	✓
	100% Stacked Line	✓
	Line with markers	✓
	Stacked Line with markers	✓
	100% Stacked Line with markers	✓

Category	Chart Typ	Supported
	3-D Line	✗
Pie	Pie	✓
	3D Pie	✗
	Pie of Pie	✗
	Bar of Pie	✗
	Doughnut	✗
Bar	Clustered Bar	✓
	Stacked Bar	✓
	100% Stacked Bar	✓
	3-D Clustered Bar	✗
	3-D Stacked Bar	✗
	3-D 100% Stacked Bar	✗
Area	Area	✓
	Stacked Area	✓
	100% Stacked Area	✓
	3-D Area	✗
	3-D Stacked Area	✗
	3-D 100% Stacked Area	✗

Category	Chart Typ	Supported
X Y (Scatter)	Scatter	✓
	Scatter with smooth lines and markers	✓
	Scatter with smooth lines	✓
	Scatter with straight lines	✓
	Scatter with straight lines and markers	✓
	Bubble	✓ ⚠ **Trendlines** inside a bubble chart are not supported.
	3-D Bubble	✓
Map	Filled Map	✗
Stock	High-Low-Close	✓
	Open-High-Low-Close	✓
	Volume-High-Low-Close	✓
	Volume-Open-High-Low-Close	✓
Surface	3-D Surface	✗
	Wireframe 3-D Surface	✗
	Contour	✗

Category	Chart Typ	Supported
	Wireframe Contour	✗
Radar	Radar	✓ ⚠ **Axis labels** are **not rendered** in Nooxl but exported correctly.
	Radar with Markers	✓ ⚠ **Axis labels** are **not rendered** in Nooxl but exported correctly.
	Filled Radar	✓ ⚠ **Axis labels** are **not rendered** in Nooxl but exported correctly.
Treemap	Treemap	✗
Sunburst	Sunburst	✗
Histogram	Histogram	✗
	Pareto	✗
Box & Whiskers	Box & Whiskers	✗
Waterfall	Waterfall	✗
Funnel	Funnel	✗

Tips for working with charts in Nooxl

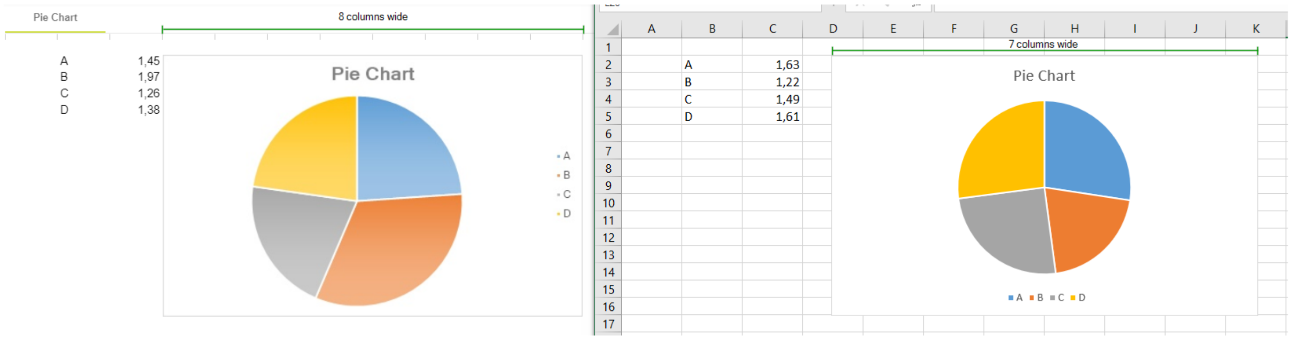
If you want to include charts in Nooxl (siehe Seite 243), there are a few points you should consider.

Excel chart type support

Not all chart types are supported by Nooxl. A complete list can be found here: Excel Chart Types (siehe Seite 257)

Blurry charts in Nooxl

Even if you did not align the chart in your excel template with the cells, Nooxl will always do so.



A	1,45
B	1,97
C	1,26
D	1,38

A	1,63
B	1,22
C	1,49
D	1,61

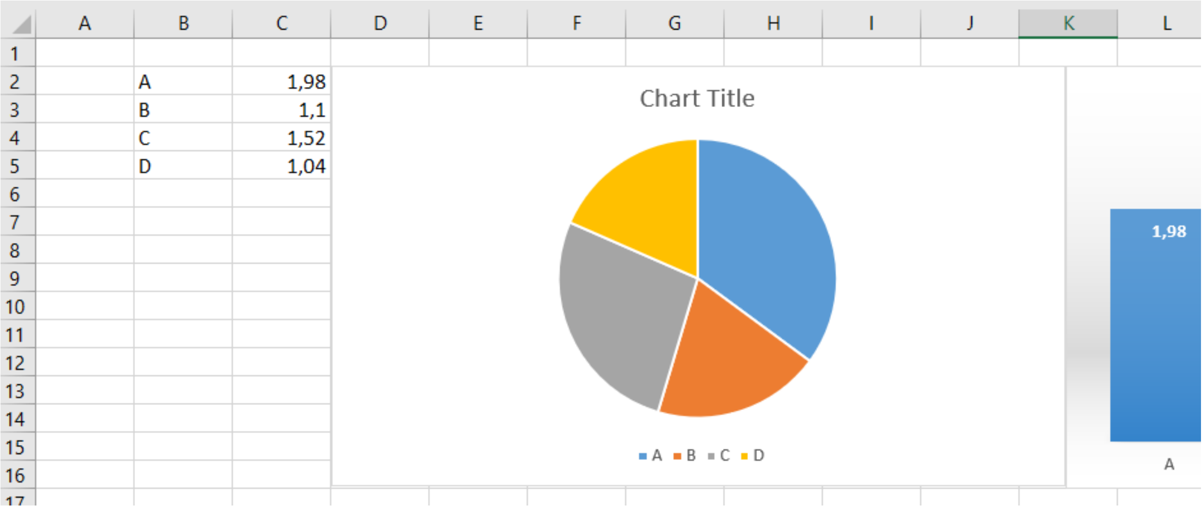
In the example above the pie chart in Excel spans 7 columns (middle of column D to the middle of column K). In Nooxl however the chart spans over 8 columns (from D to K).

Since Nooxl renders the chart in the original size from the excel template, it is maybe stretched in the web and therefore blurry.

Charts from Excel are not displayed in Nooxl in design mode

This problem is also related to the aforementioned cell-precise alignment of charts.

If two charts share a column (or row) as in the following picture, the second chart will not be displayed in Nooxl.



A	1,98
B	1,1
C	1,52
D	1,04

The reason is that the first chart in this example takes up the columns D to K completely. However, the second chart would also have to start in column K and since a double occupancy of cells is not possible, the second chart is ignored.

So if you miss a chart, check if it shares a cell with another chart on the sheet in Excel.

Another possible reason is that the chart object ends in a hidden column. In this case Excel automatically reduces the chart to the visible columns and in Nooxl the chart is not displayed.

Cell accurate alignment of charts in Excel

Since Nooxl displays the charts as cell contents, these must be "correctly" aligned in the Excel template to avoid missing or blurry charts.

To position the charts exactly, proceed as follows:

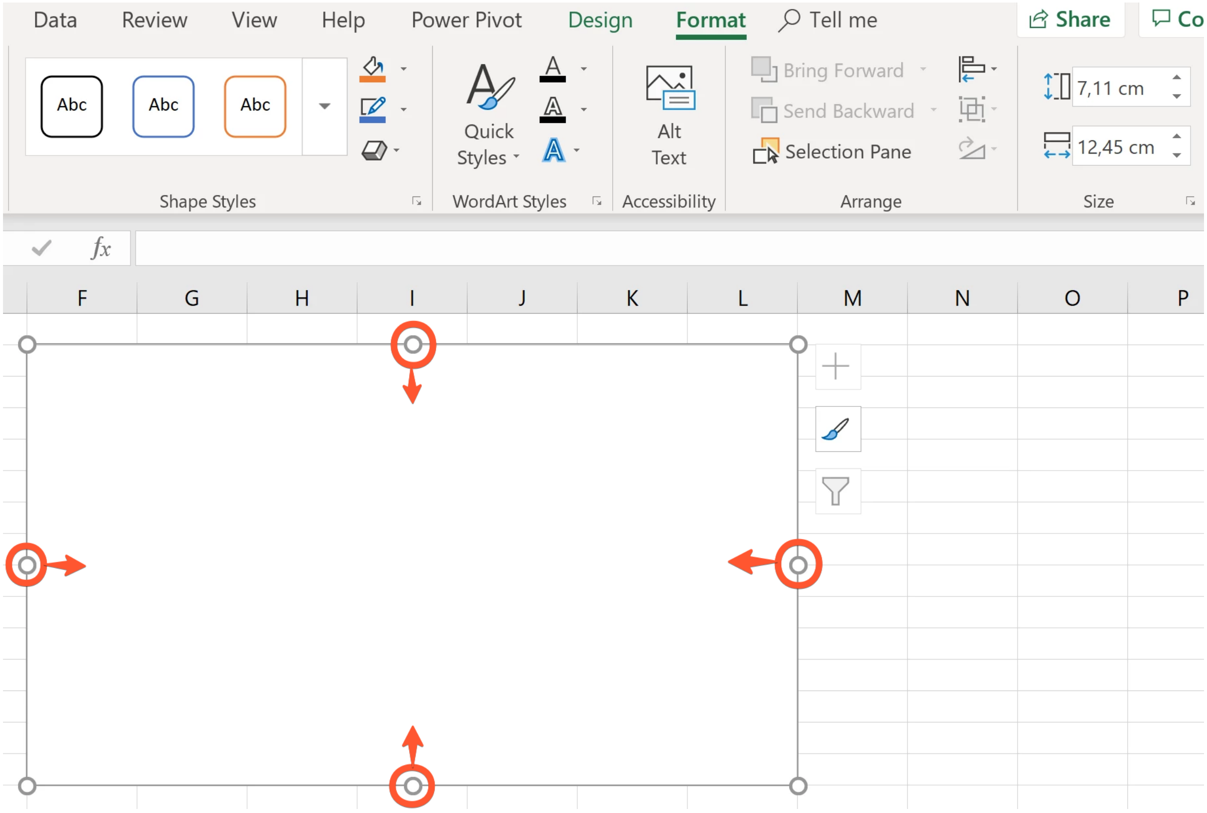
Step 1

Activate the *Snap to Grid* option in the *Format* tab.

> To see the *Format* tab, you must have selected a chart.

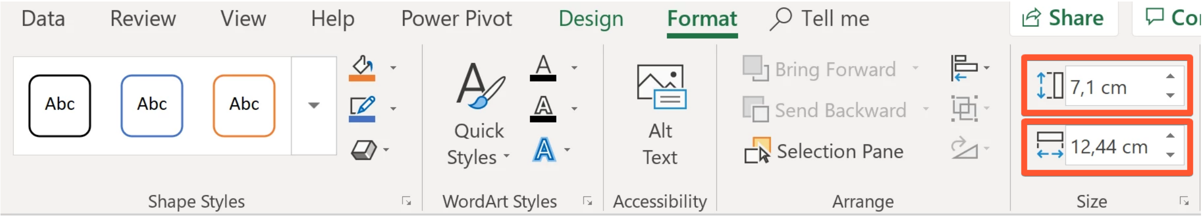
Step 2

Change the size of the chart so that it ends with cells.



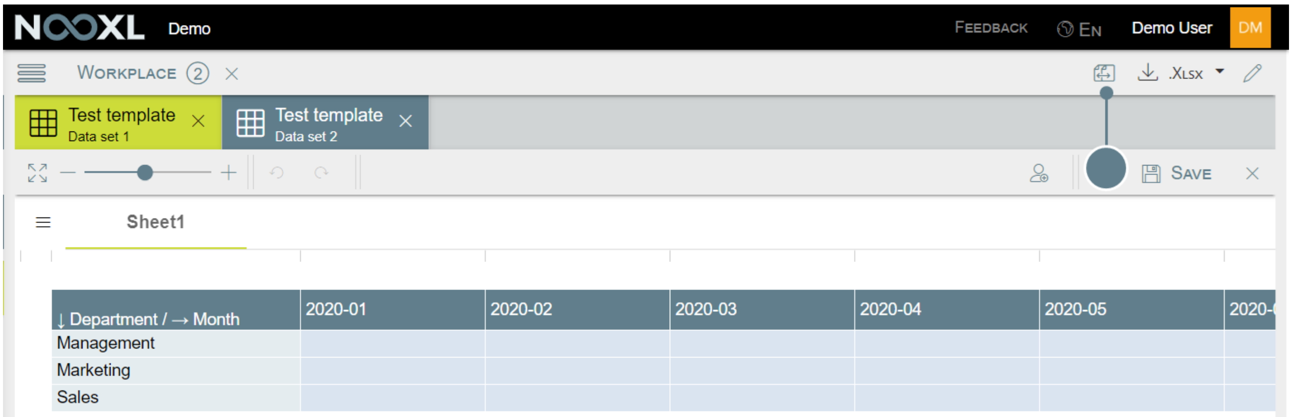
Step 3

Reduce the *height* and *width* by **0.01 cm**



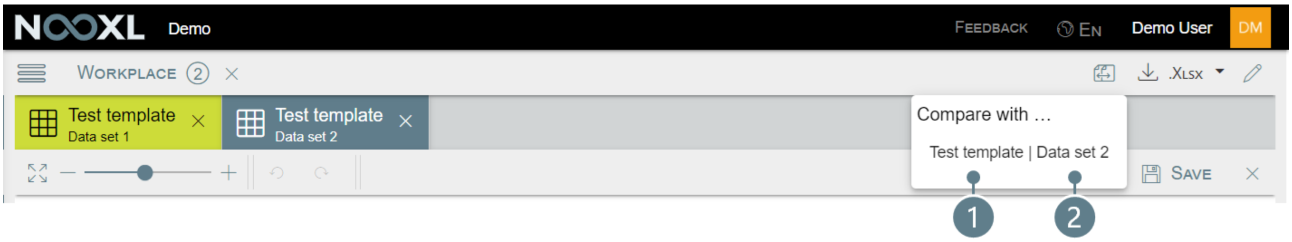
3.7.12 Compare data sets

When you have multiple data sets opened in your workplace, you will see a button *Compare Current spreadsheet with ...*

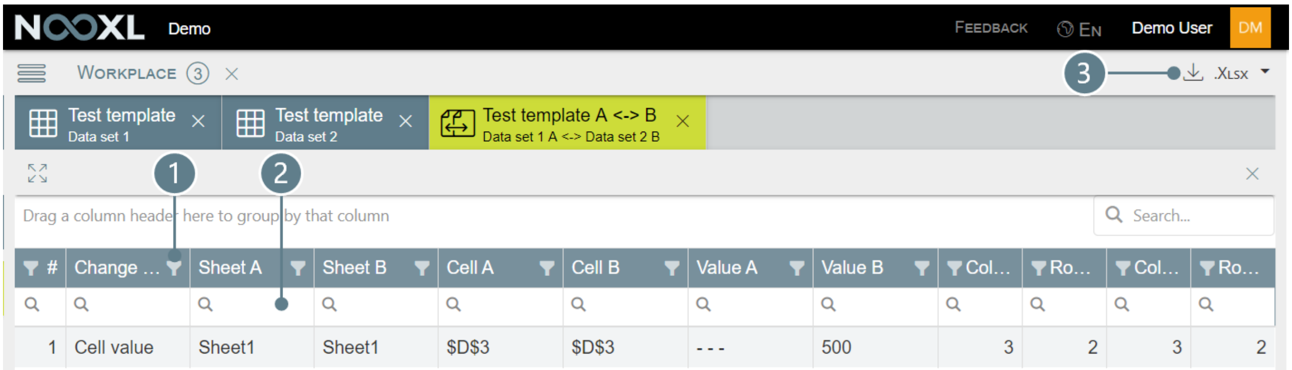


↓ Department / → Month	2020-01	2020-02	2020-03	2020-04	2020-05	2020-(
Management						
Marketing						
Sales						

When you click on the button you will get a list of all (other) currently opened template **(1)** data sets **(2)** combinations.



When you have chosen another data set, Nooxl will compare both and give you a list with all cells with different cell values in a new tab. You can filter **(1)** and search **(2)** the list directly in Nooxl or export the result to excel **(3)**.



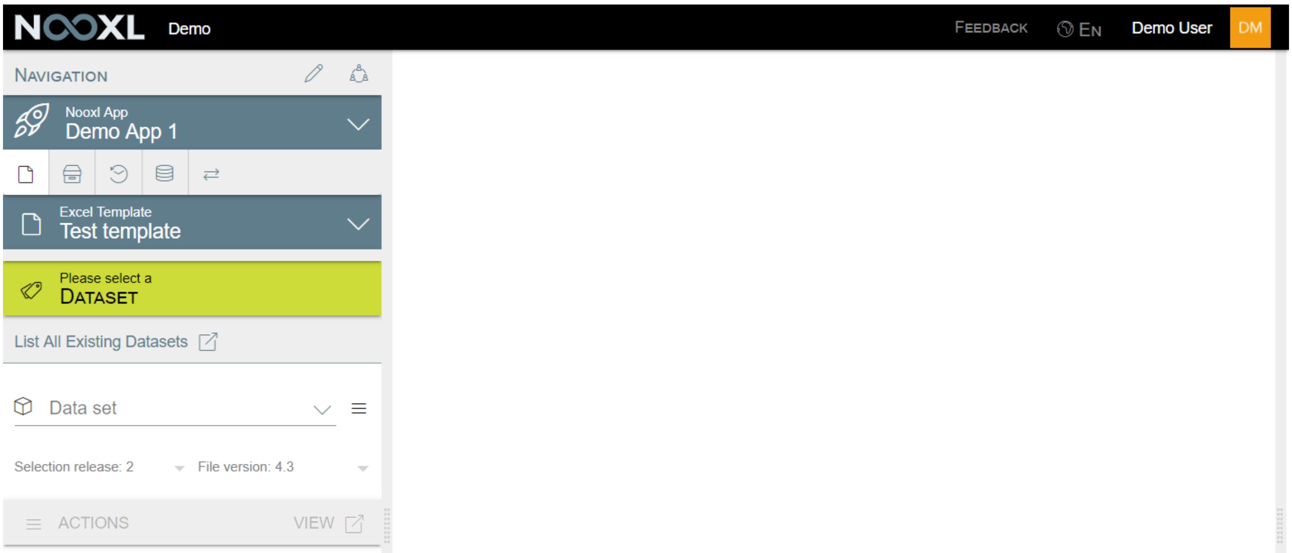
#	Change …	Sheet A	Sheet B	Cell A	Cell B	Value A	Value B	Col…	Ro…	Col…	Ro…
1	Cell value	Sheet1	Sheet1	$D$3	$D$3	- - -	500	3	2	3	2

3.7.13 Mass export of data sets

Nooxl gives you the ability to export multiple data sets of a template at once if you need to. This could for example be useful for auditing purposes, were you are required to hand over all calculations to an auditor.

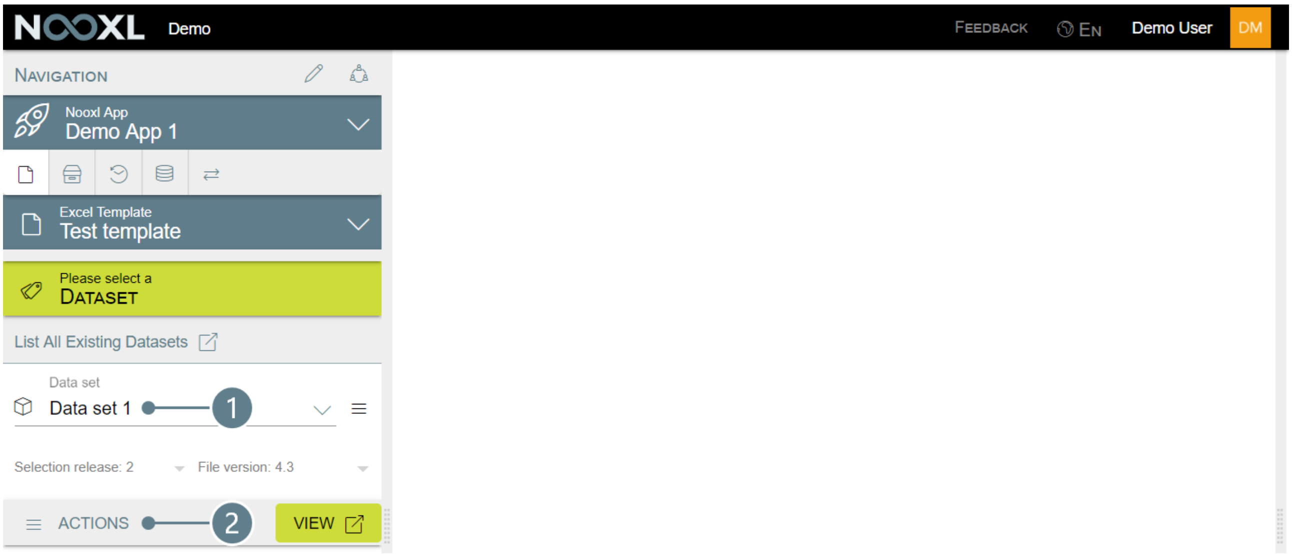
Step 1: Navigate to the data set selection of the template

First you need to go to the data set selection of your template.



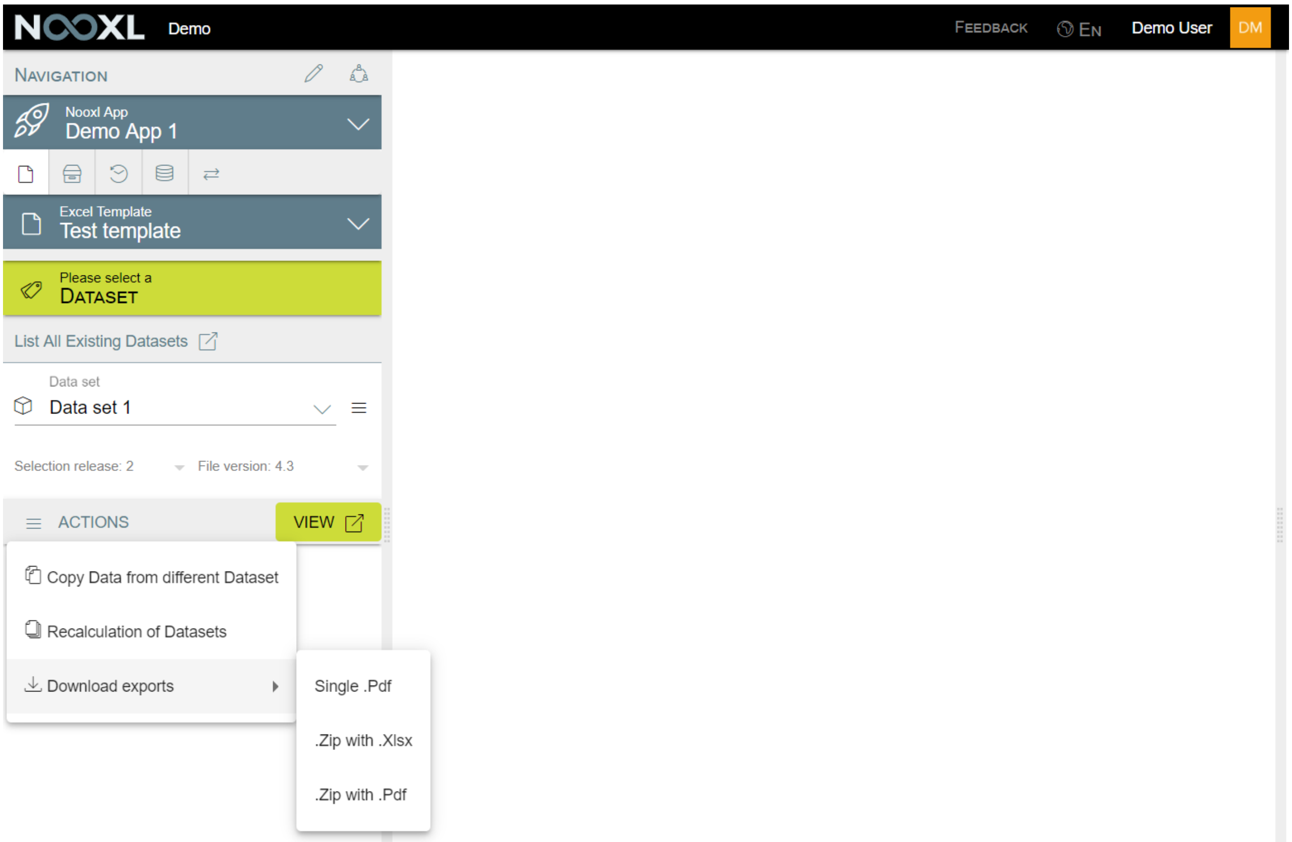
Step 2: Choose any data set

Next you need to select any data set **(1)**, in order to activate the *ACTIONS* menu **(2)**.



Step 3: Choose the export format

Click on **ACTIONS** → **Download exports** and choose one of the formats.

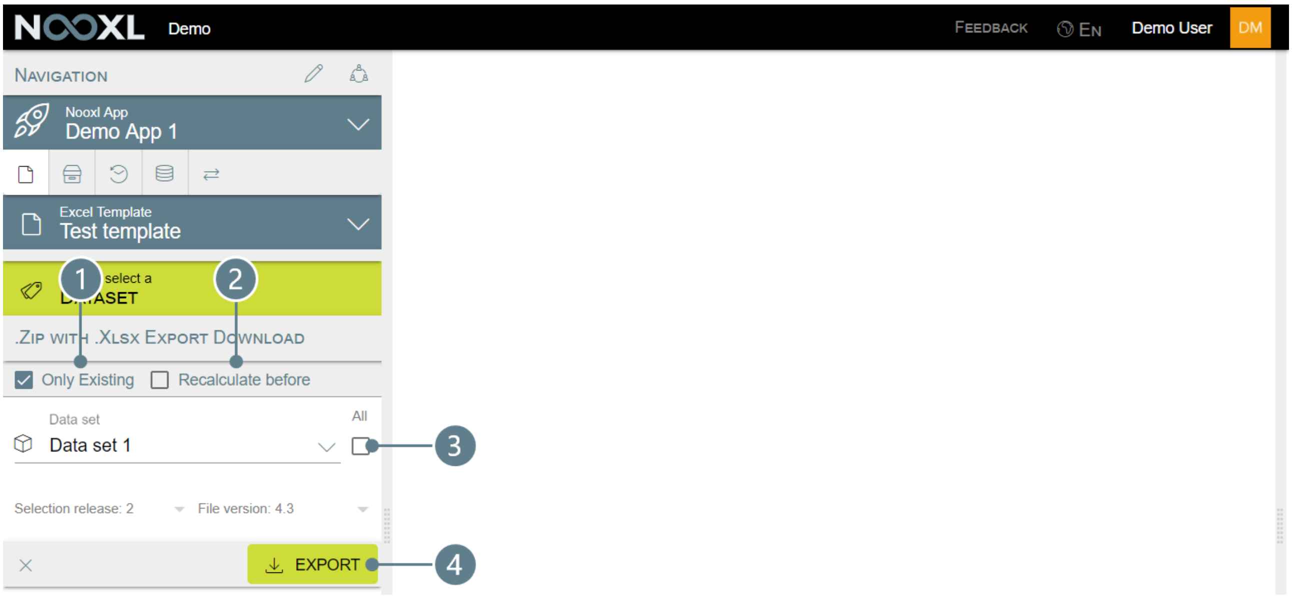


Data set: Data set 1

Selection release: 2

File version: 4.3

Step 4: Configure the export and export the data sets



☑ Only Existing □ Recalculate before

Data set: Data set 1

Selection release: 2

File version: 4.3

Only existing

In the export configuration you will see that Nooxl will only export existing data sets per default **(1)**.

Recalculate before

Next you need to decide whether you want the latest viewed data set or if you want Nooxl to update all values in the data set prior to exporting them **(2)**.

This could be useful if your template (template A) reads data from another template (template B) and you are not sure if every data set was last viewed with the latest data from template B. Please note that recalculating the data sets before the export will increase the wait time for the download significantly.

Select the data sets

Please use the selections to select the data sets you want to export **(3)**. Depending on the selection properties you can choose All for them or not.

Export

When everything is set up you can export the data sets **(4)**.

3.7.14 Limitations of Nooxl

Nooxl is not Excel, but simulates Excel functionalities as good as possible. The capabilities of Nooxl and Excel are in constant change due to further development, which is why the deviations are also subject to change.

The following pages try to inform about the current limitations.

ⓘ If you discover unsupported functionality, please let us know[7] so we can share the information here with other users.

List of unsupported excel formulas

Nooxl supports almost all existing Excel formulas **up to Excel 2016**. The (known) exceptions can be found in the following list. If you discover formulas that are also not supported, please contact us[8]so that we can extend the list accordingly.

❗ Unsupported formulas are neither supported as part of the calculation logic in templates nor in those of Function Marks!

Unsupported Functions

Formula	**Comment**
`FORMULATEXT()`	**NO WORKAROUND AVAILABLE**

[7] mailto:info@nooxl.com
[8] mailto:info@nooxl.com

Related links

New Excel Function 2019[9] which are not supported.

New Excel Functions 365[10] which are not supported.

Support for excels conditional formatting

The following table shows which parts of the conditional formattings stored in Excel are interpreted and which are not.

Format	Feature	Supported?
Number	Everything	✓
Font	Font	✗
Font	Font style	✓
Font	Size	✓
Font	Underline	✗
Font	Color	✓
Font	Effects	✗
Border	Style	✗
Border	Color	✓ ⚠ **Attention** You must specify a color for all four frames, otherwise no frame will be rendered!
Fill	Color	✓

[9] https://bettersolutions.com/excel/functions/updates-2019-new-functions.htm
[10] https://bettersolutions.com/excel/functions/updates-365-new-functions.htm

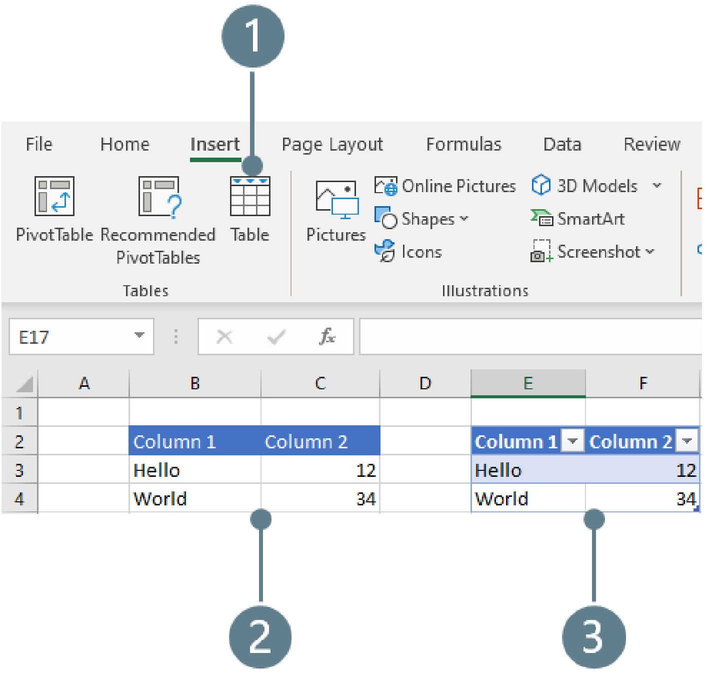
Format	Feature	Supported?
Fill	Pattern Color	❌
Fill	Pattern Style	❌

Example in Nooxl

1	1.000,00

Excel table and referencing them in your excel logic

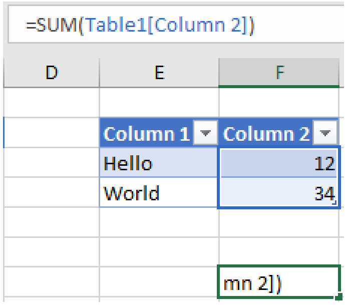
In Excel you can create tables (go to *Insert* → *Table*) **(1)** which will convert normal cells **(2)** to a table like structure **(3)** providing some advanced functionality like sorting and filtering.



	A	B	C	D	E	F
1						
2		Column 1	Column 2		Column 1	Column 2
3		Hello	12		Hello	12
4		World	34		World	34

If those tables were used in an Excel template, they will be displayed in Nooxl as normal cells. All advanced functionalities do not work in Nooxl.

Also, formulas which reference the contents of the table (see example below) and do not use the cell address for this, will result in `#REF!` errors.



=SUM(Table1[Column 2])

Column 1	Column 2
Hello	12
World	34

mn 2])

Excel chart types

Nooxl does not support all chart types that Excel knows. Please refer to the following list to see which ones are displayed correctly and which ones are not:

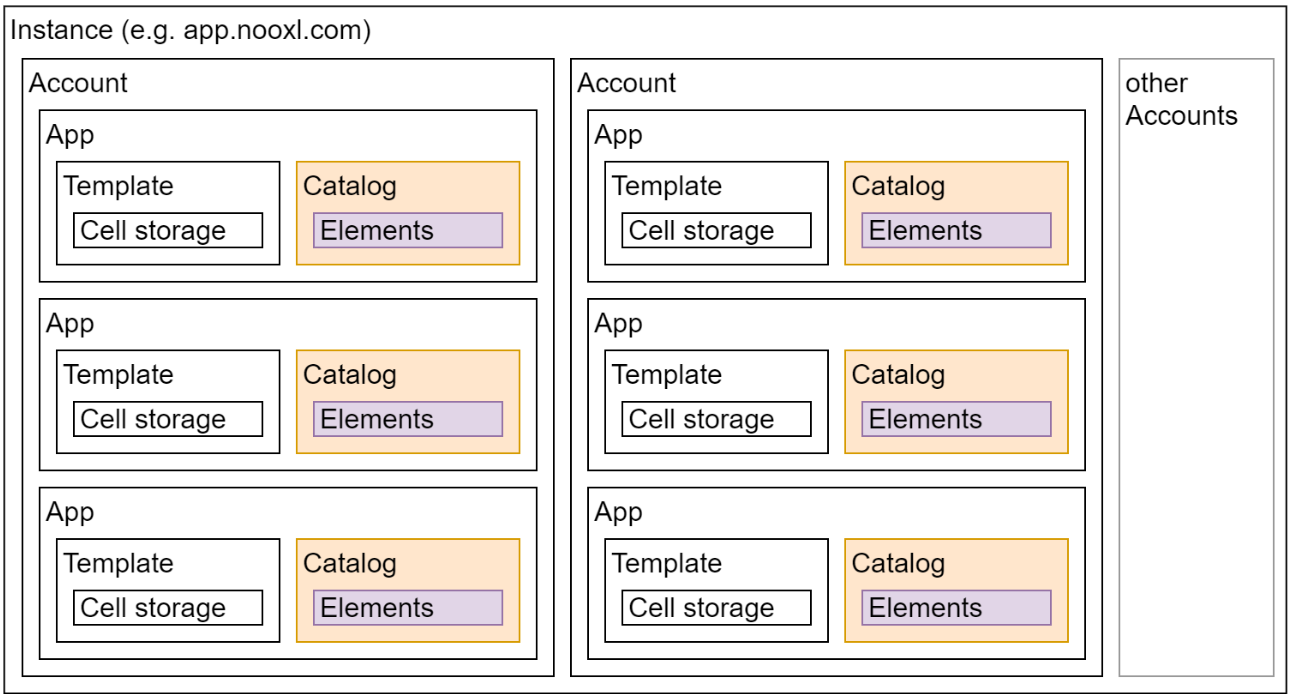
Category	Chart Typ	Supported
Column	2-D Column	✓
	2-D Stacked Column	✓
	2-D 100% Stacked Column	✓
	3-D Clustered Column	✗
	3-D Stacked Column	✗
	3-D 100% Stacked Column	✗
	3-D Column	✗
Line	Line	✓
	Stacked Line	✓
	100% Stacked Line	✓
	Line with markers	✓
	Stacked Line with markers	✓

Category	Chart Typ	Supported
	100% Stacked Line with markers	✓
	3-D Line	✗
Pie	Pie	✓
	3D Pie	✗
	Pie of Pie	✗
	Bar of Pie	✗
	Doughnut	✗
Bar	Clustered Bar	✓
	Stacked Bar	✓
	100% Stacked Bar	✓
	3-D Clustered Bar	✗
	3-D Stacked Bar	✗
	3-D 100% Stacked Bar	✗
Area	Area	✓
	Stacked Area	✓
	100% Stacked Area	✓
	3-D Area	✗
	3-D Stacked Area	✗

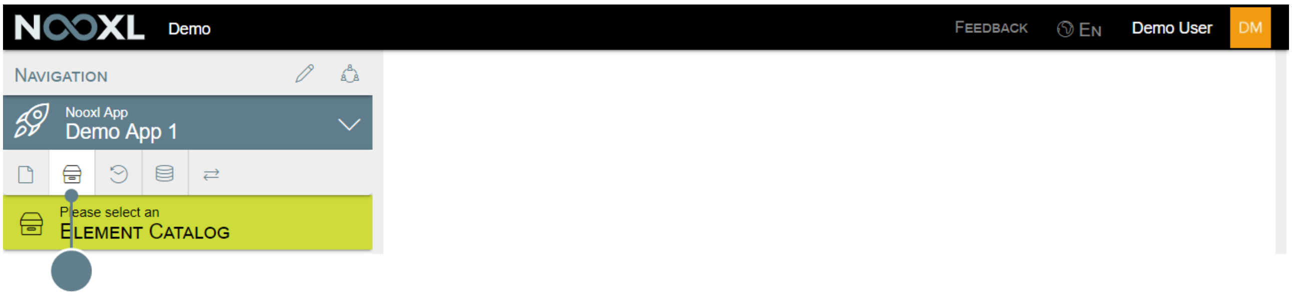
Category	Chart Typ	Supported
	3-D 100% Stacked Area	✗
X Y (Scatter)	Scatter	✓
	Scatter with smooth lines and markers	✓
	Scatter with smooth lines	✓
	Scatter with straight lines	✓
	Scatter with straight lines and markers	✓
	Bubble	✓ ⚠ **Trendlines** inside a bubble chart are not supported.
	3-D Bubble	✓
Map	Filled Map	✗
Stock	High-Low-Close	✓
	Open-High-Low-Close	✓
	Volume-High-Low-Close	✓
	Volume-Open-High-Low-Close	✓
Surface	3-D Surface	✗
	Wireframe 3-D Surface	✗

Category	Chart Typ	Supported
	Contour	✗
	Wireframe Contour	✗
Radar	Radar	✓ ⚠ **Axis labels** are **not rendered** in Nooxl but exported correctly.
	Radar with Markers	✓ ⚠ **Axis labels** are **not rendered** in Nooxl but exported correctly.
	Filled Radar	✓ ⚠ **Axis labels** are **not rendered** in Nooxl but exported correctly.
Treemap	Treemap	✗
Sunburst	Sunburst	✗
Histogram	Histogram	✗
	Pareto	✗
Box & Whiskers	Box & Whiskers	✗
Waterfall	Waterfall	✗
Funnel	Funnel	✗

3.8 Catalogs, elements and selections



Using the left hand navigation you can access you Apps Catalogs, Elements and Selections.



Catalogs (siehe Seite 262) are collections of elements (siehe Seite 268). Selections (siehe Seite 277) are subsets of those elements. Each element is part of exactly one catalog but can be in any number of selections. Selections can only contain elements of the same catalog.

The table below tries to illustrate this: we have *Catalog 1*, which contain four elements. For this catalog we have also two selections:

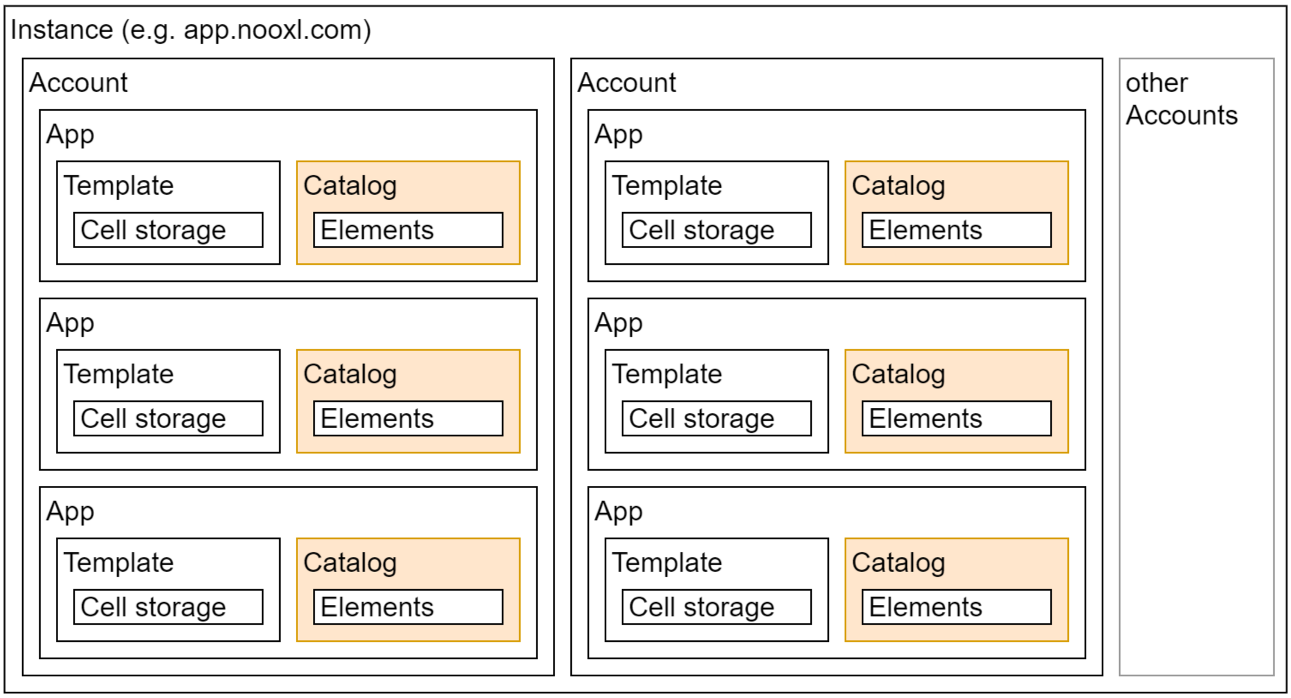
- *Selection 1* contains *Element 1* and *Element 2*.
- *Selection 2* contains also *Element 2* but also *Element 4*.

Catalog	Elements	Selection 1	Selection 2
Catalog 1	Element 1	Element 1	
	Element 2	Element 2	Element 2

Catalog	Elements	Selection 1	Selection 2
	Element 3		
	Element 4		Element 4

Note that *Element 3* is neither part of *Selection 1* or *Selection 2*.

3.8.1 Catalogs

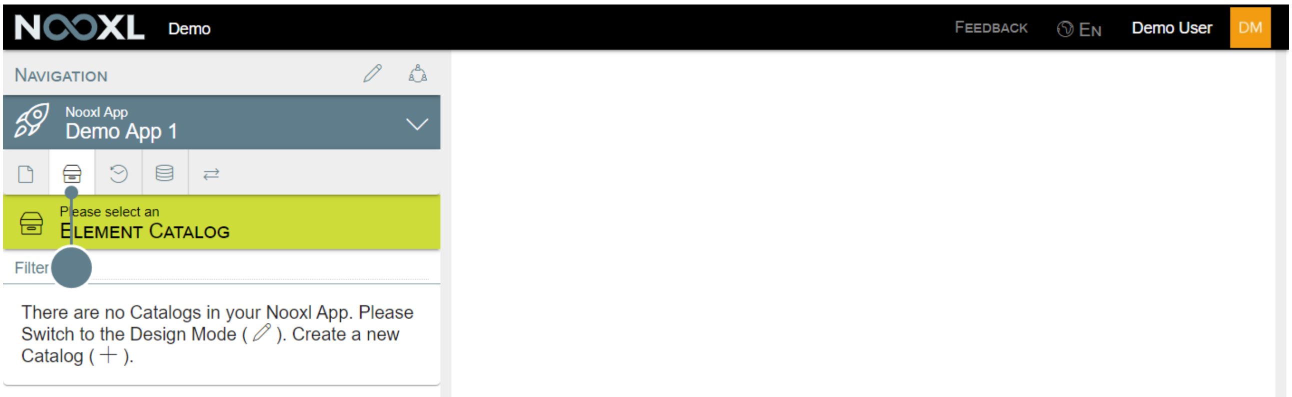


Catalogs in Nooxl are collections of elements. You can create as many catalogs for your application as you want. Within a catalog you create elements (siehe Seite 268). Each element is part of exactly one catalog.

The elements of catalogs are used for data set selections and to "describe" the content of cell storages (siehe Seite 166).

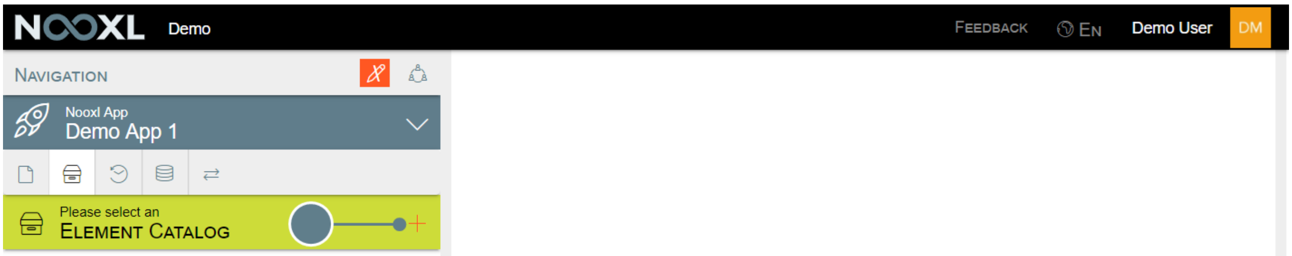
Create a new catalog

In the left hand navigation click on *Catalog and Elements*.

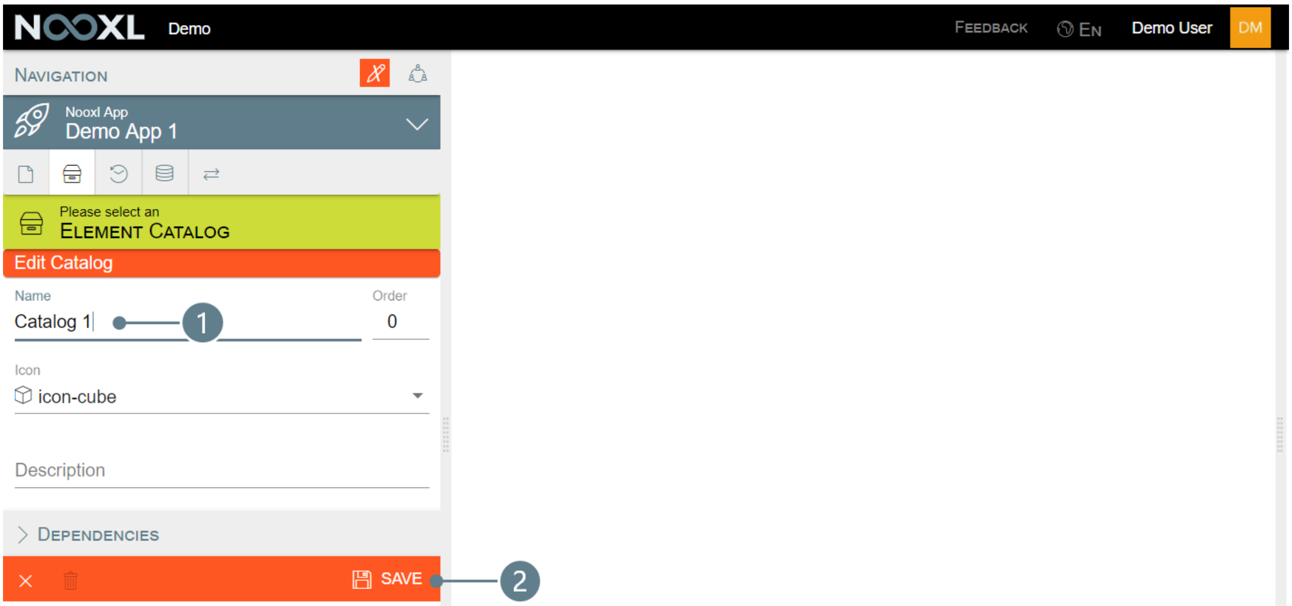


There are no Catalogs in your Nooxl App. Please Switch to the Design Mode (✎). Create a new Catalog (+).

Next enter the design mode (✎). After this click on the red + to enter the create catalog dialog.



At least give your catalog a name **(1)** and click on save **(2)** to create the catalog.



Name: Catalog 1

Order: 0

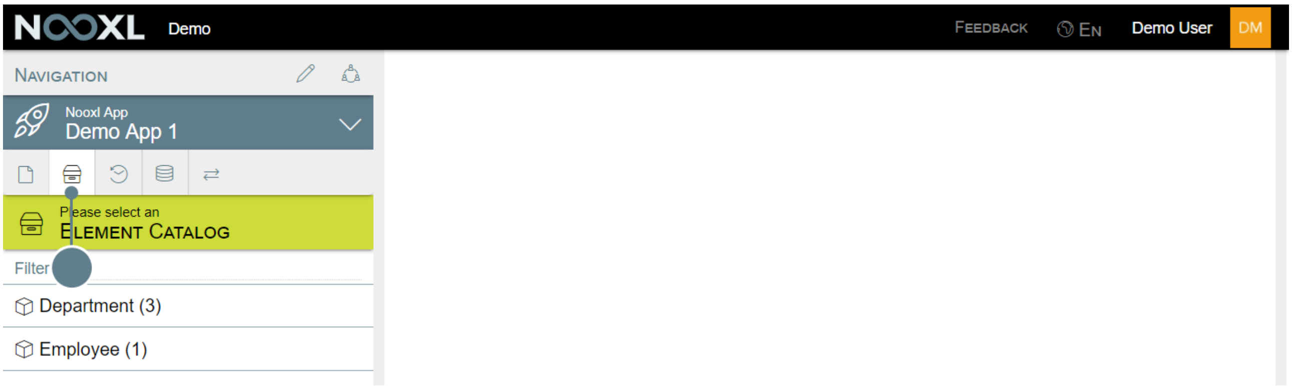
Icon: icon-cube

Description

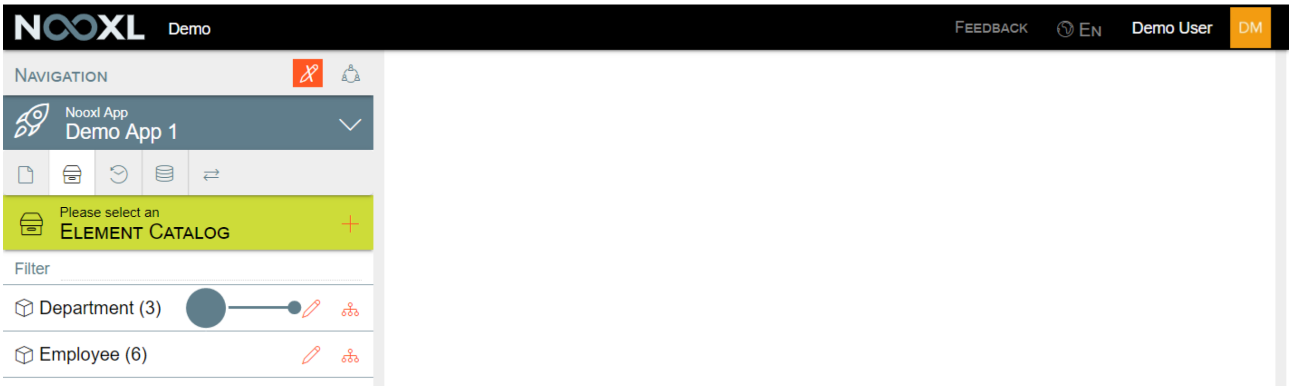
For more detailed information about the meaning of the different fields, please see the section catalog properties (siehe Seite 266).

Edit an existing catalog

In the left hand navigation click on *Catalog and Elements*.



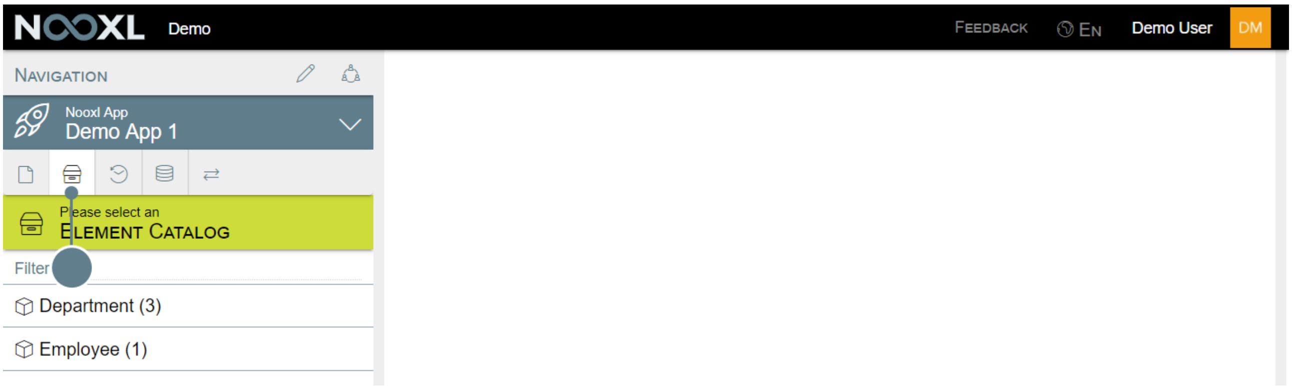
Next enter the design mode (✎) and click on the *Edit Catalog* button next to your catalog.



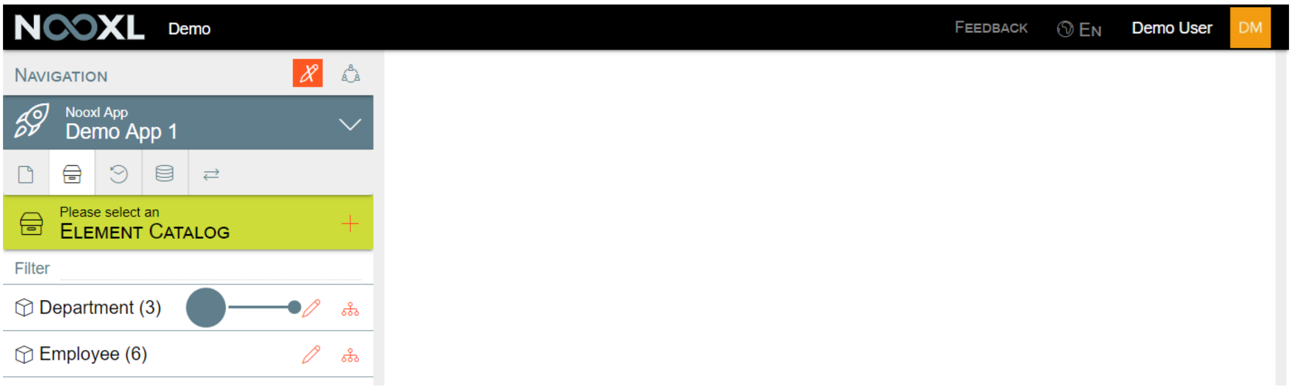
After this you find the same mask with the catalog properties (siehe Seite 266) as when you create a new catalog.

Delete a catalog

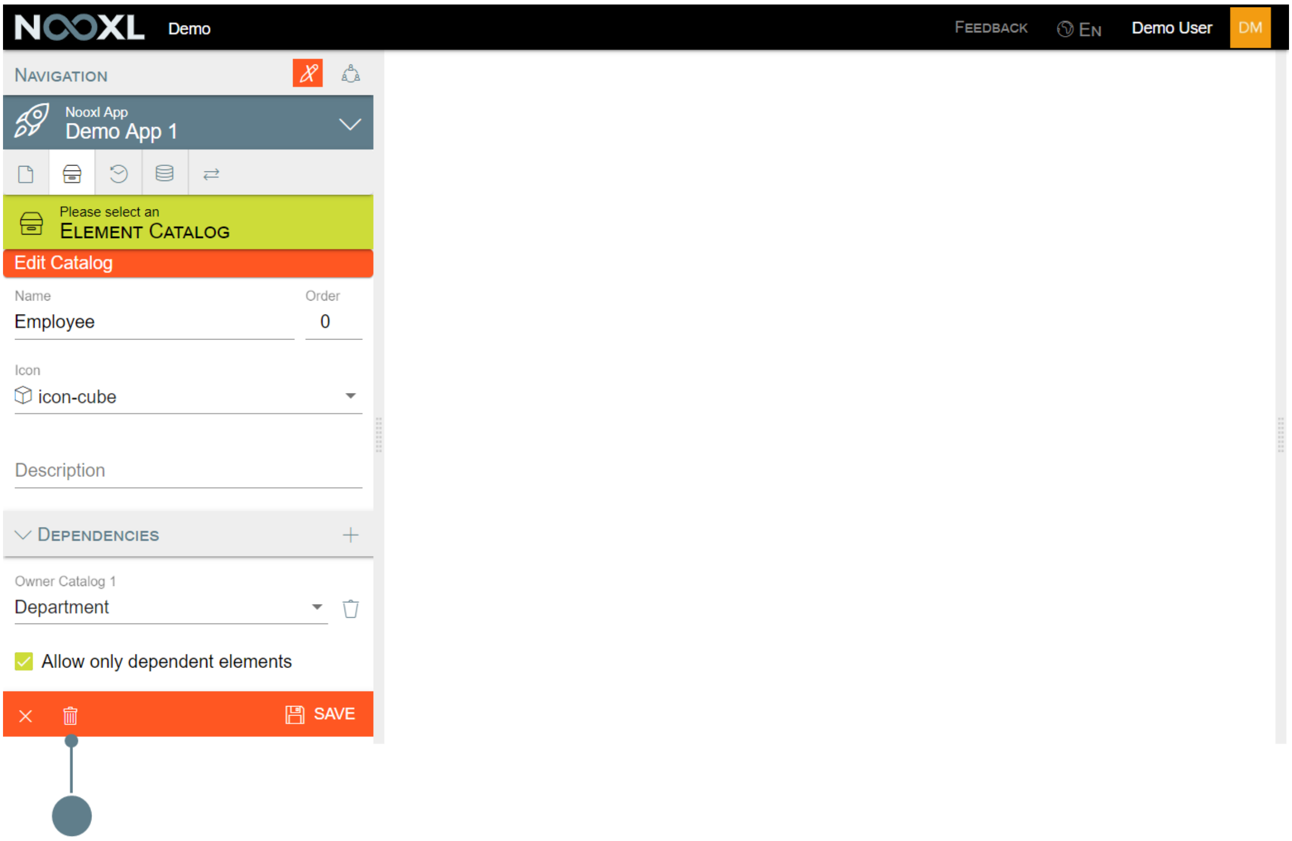
In the left hand navigation click on *Catalog and Elements*.



Next enter the design mode (✎) and click on the *Edit Catalog* button next to the catalog you want to delete.



After this click on the **trash can** icon in the catalog properties to delete the catalog.



Name: Employee

Order: 0

Icon: icon-cube

Description

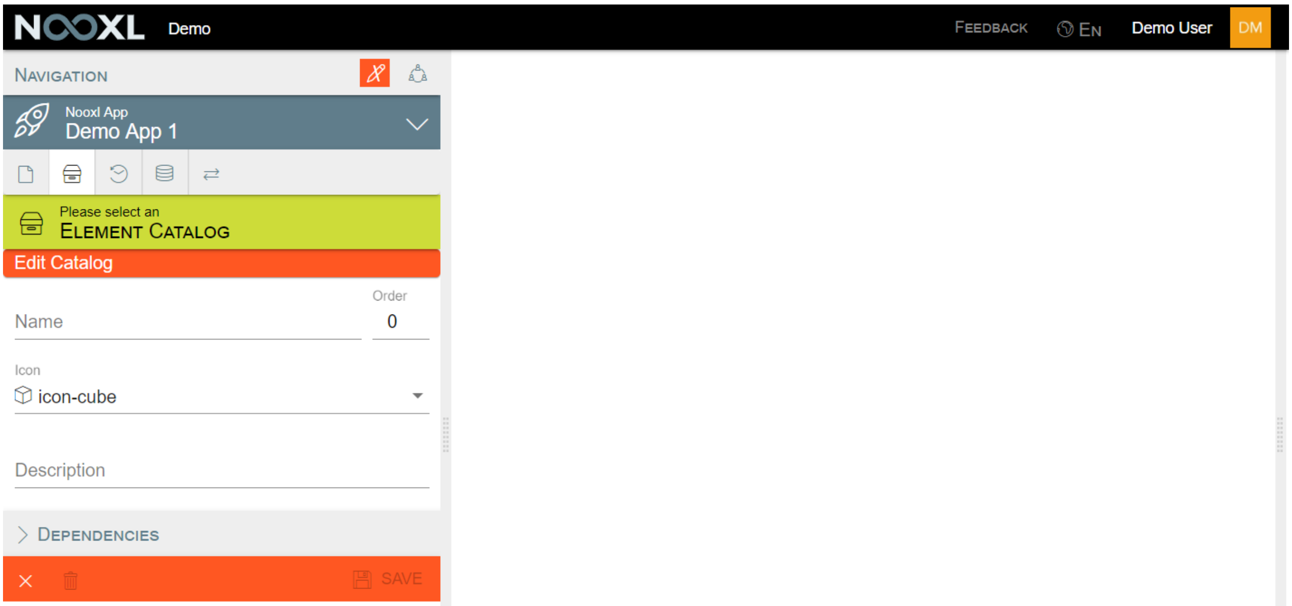
Owner Catalog 1: Department

☑ Allow only dependent elements

Please acknowledge that you are aware that all data save using the catalogs items will also be deleted.

> ⚠ Depending on how much data is already stored using the catalog, the process to delete the catalog and elements may take a while.

Catalog Properties



The edit and create dialog for catalogs contains the following fields:

Name

The name of the catalog. This should give everyone an idea what type of elements to expect within. It is displayed along side with the icon throughout your app. This includes for example the selections of your templates were a selection of the catalog is used.

Icon

An icon from the icon collection (siehe Seite 306). The icon will be displayed along with the catalogs name throughout your app. This includes for example the selections of your templates were a selection of the catalog is used.

Order

Changes the position of the catalog in the Catalog and Elements view of the app. If more than one catalog has the same order assigned, these will be ordered alphabetically.

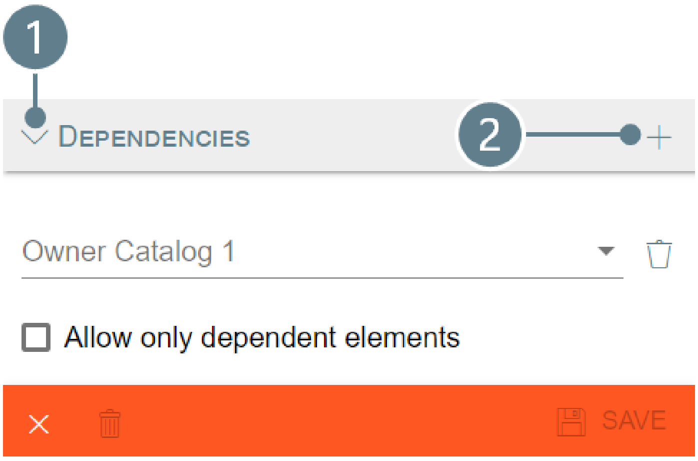
Description

A free text description of the catalog and elements within.

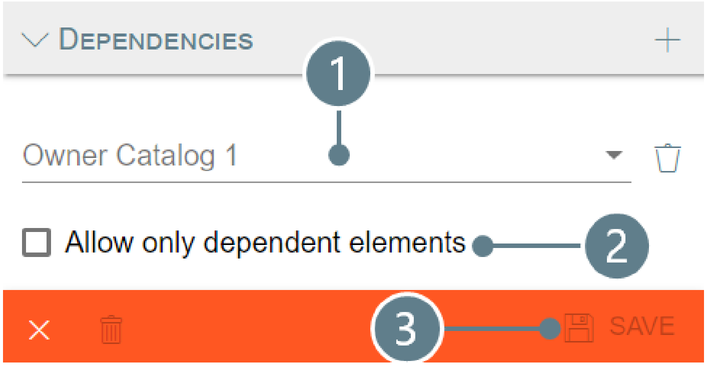
Dependencies

Per default elements of catalogs are "independent". This means the catalog can be used stand alone for data set selections and to store data in templates. This is fine for most use cases. However sometimes you want to show certain elements of a catalog only together with a specific element of another catalog. This is where dependencies can be used.

To create a dependency open the dependencies section **(1)** and click on the + **(2)**.



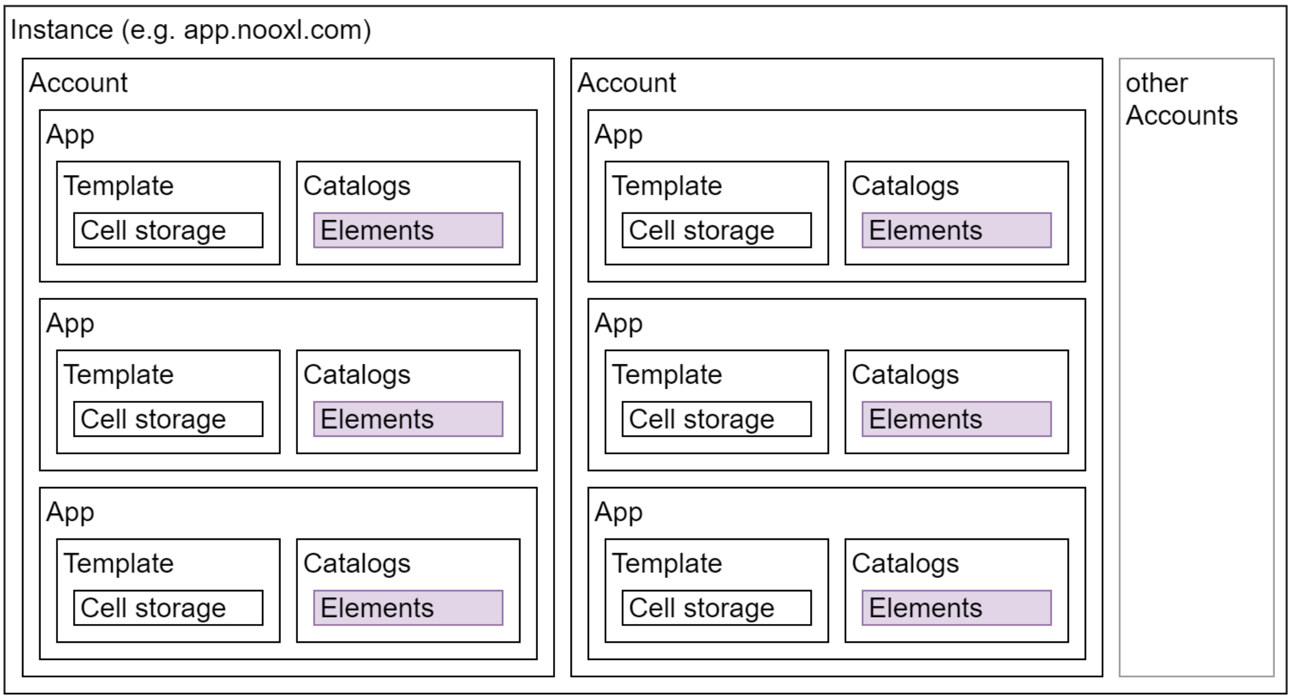
Next you can select any other catalog as the owner catalog **(1)**. If you save now **(3)** Nooxl will let you and your users create both kinds of elements in your catalog: dependent elements and independent. If you restrict the elements to only be dependent please make sure to check the box at *Allow only dependent elements* **(2)**.



In the element section you can find an **dependent elements example** (siehe Seite 272).

- Dependent elements will be marked with a ^{1} appended to its original name.
- Elements of a catalog can depend on more than one other catalog.

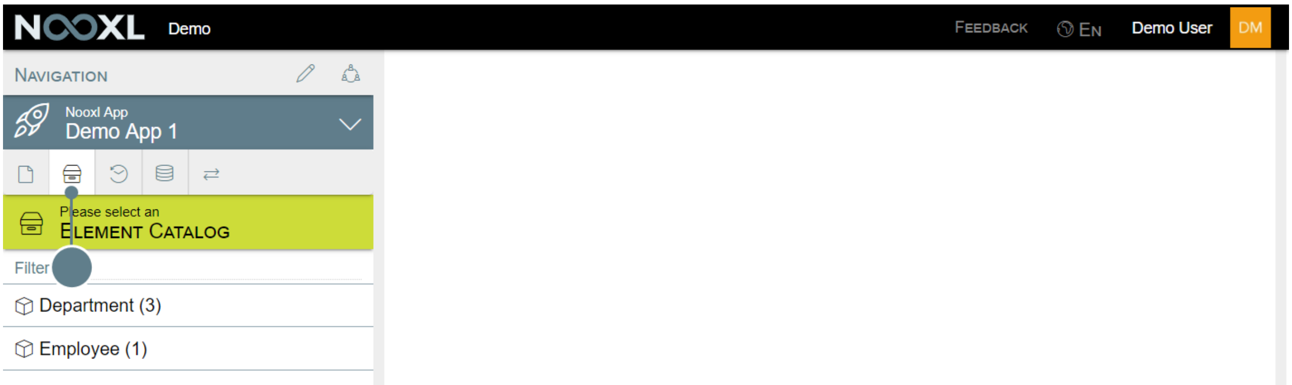
3.8.2 Elements



Elements are part of a catalog (siehe Seite 262). You can build selections (siehe Seite 277) of elements of one catalog and use those selections in your app to determine a dataset or to further "describe" data in a cell storage. Each element can be part of as many selections as you want.

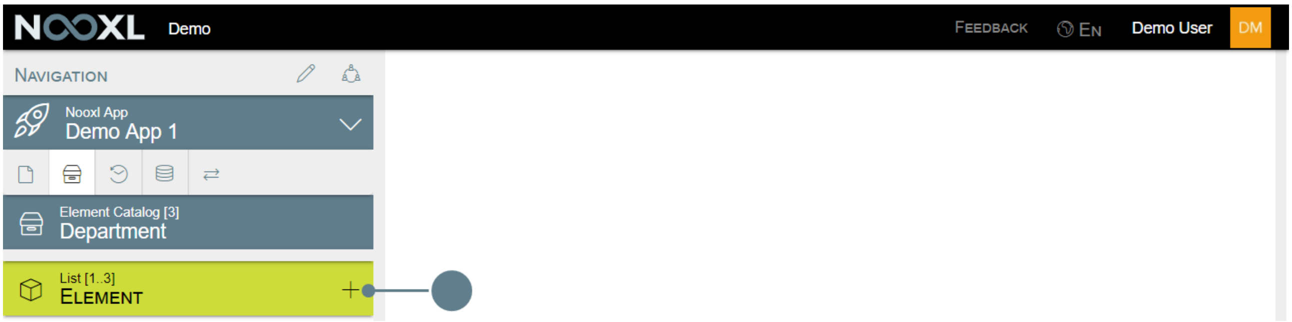
Create new elements

In the left hand navigation click on *Catalog and Elements*.

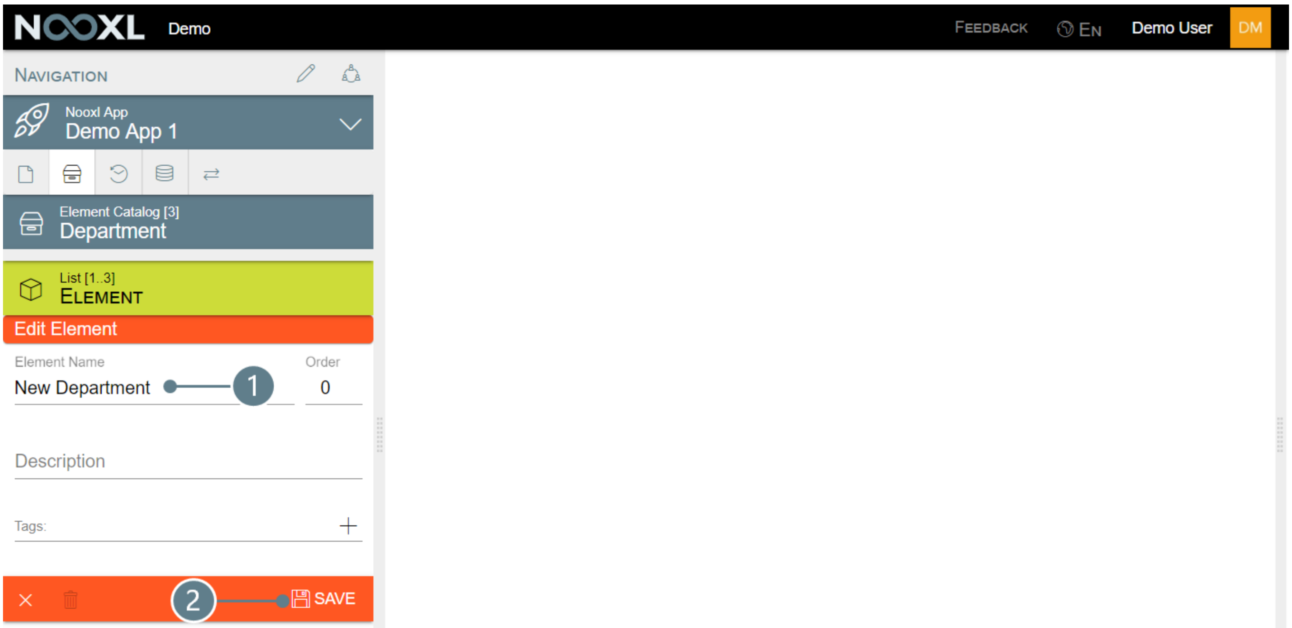


Please select an ELEMENT CATALOG

Click on the catalog you want to create a new element for. In the Element view click on the + to open the create Element dialog.



Give your element at least a name **(1)** and save to create it **(2)**.

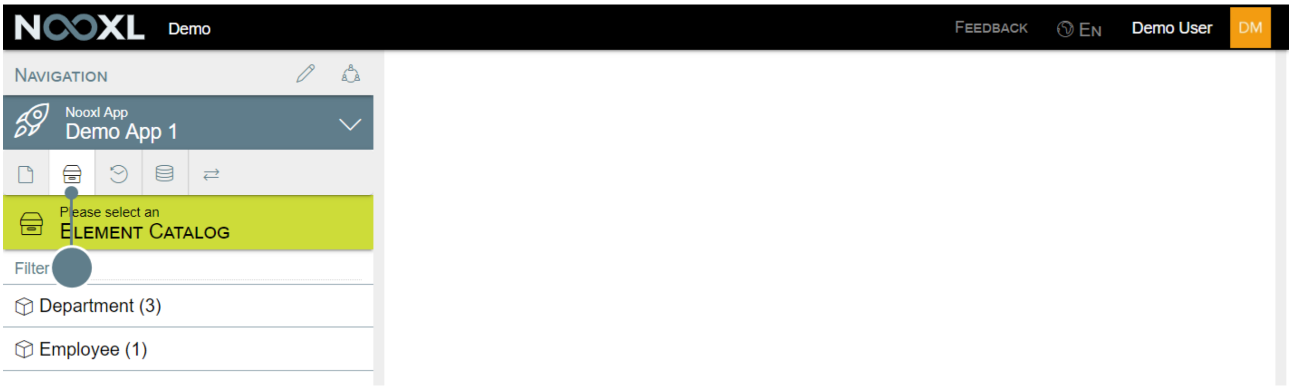


For more detailed information about the meaning of the different fields, please see the section element properties (siehe Seite 272).

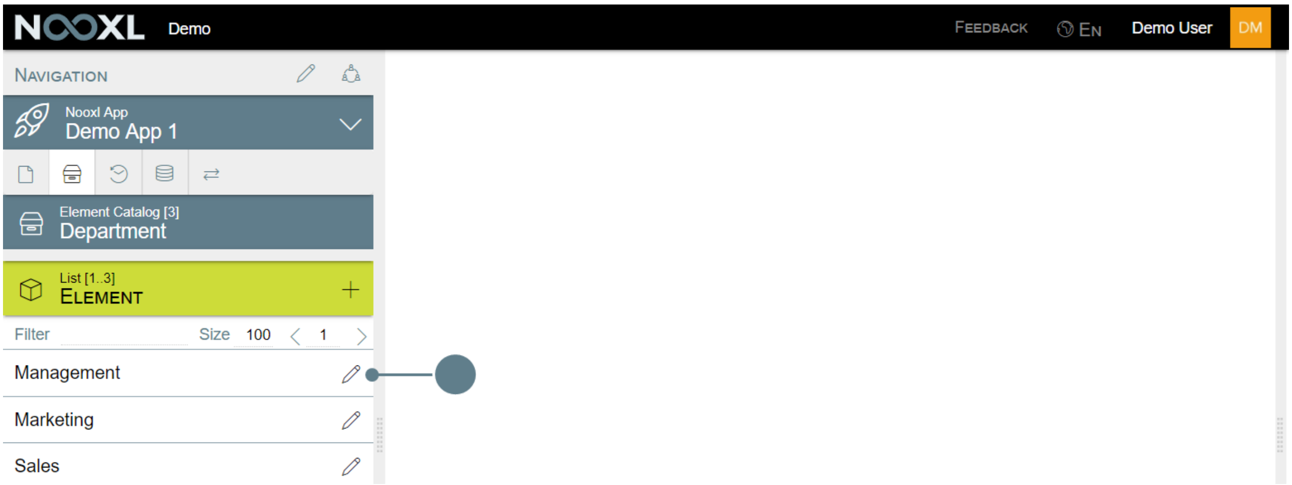
You can also utilize modifications to create new elements (siehe Seite 228).

Edit elements

In the left hand navigation click on *Catalog and Elements*.



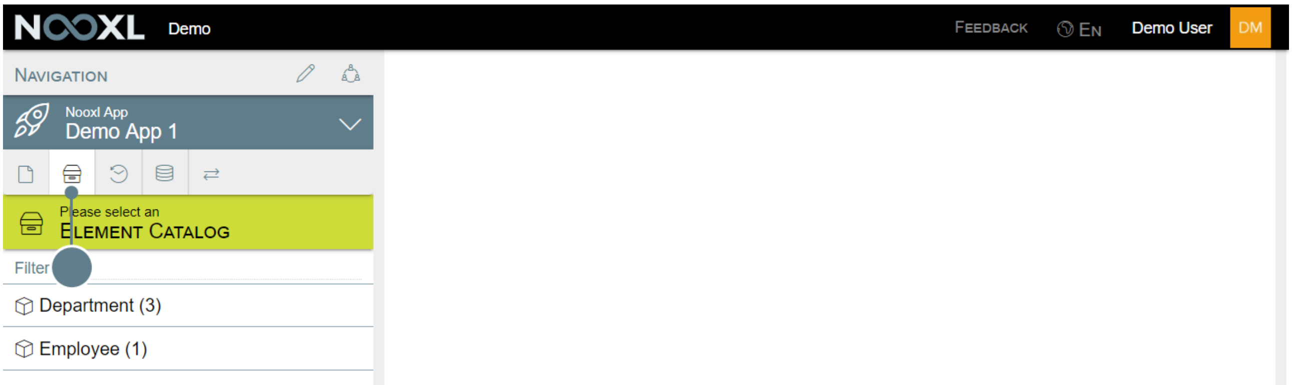
Click on the elements catalog you want to edit. In the Element view click on the ✎ to open the edit Element dialog.



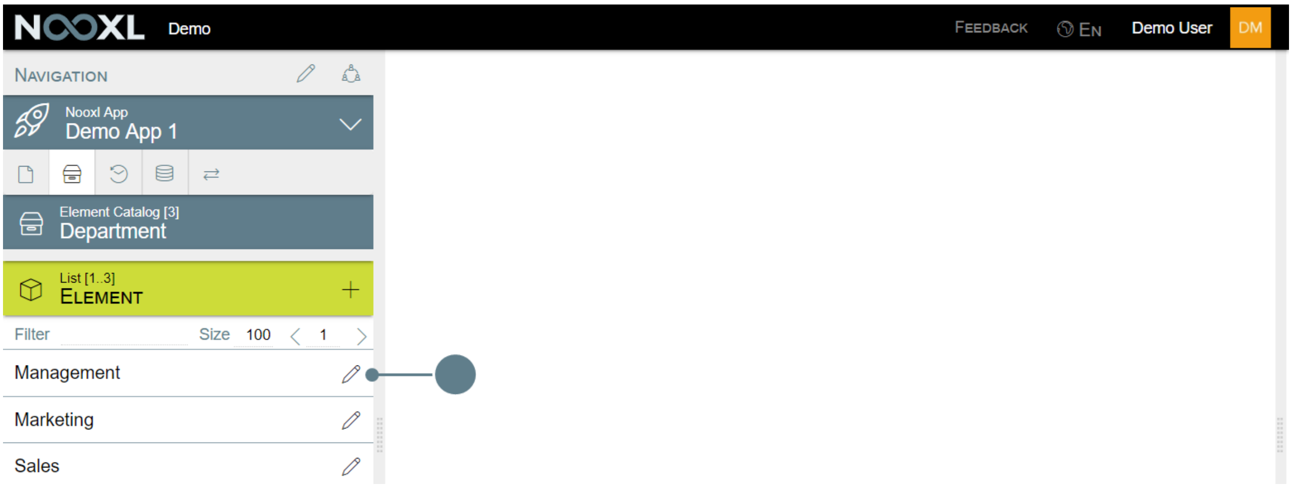
After this you find the same mask with the element properties (siehe Seite 272) as when you create a new element.

Delete elements

In the left hand navigation click on *Catalog and Elements*.



Click on the elements catalog you want to edit. In the Element view click on the ✎ to open the edit Element dialog.

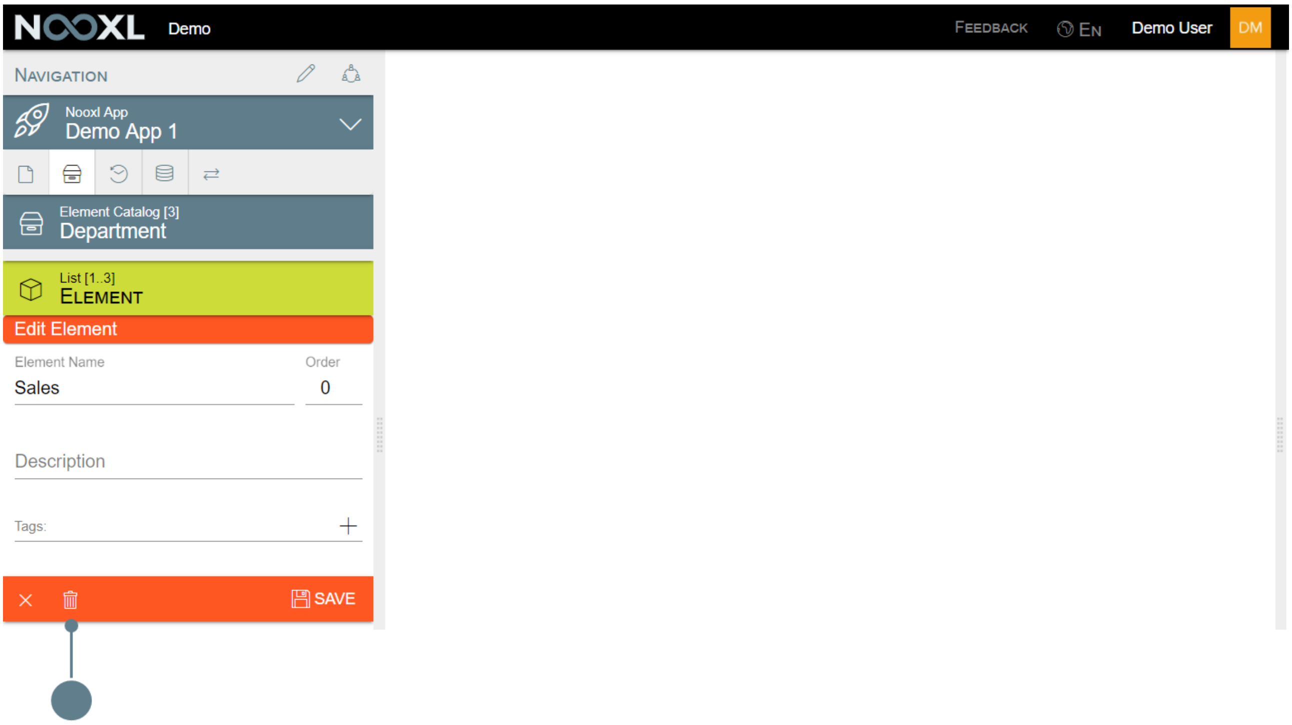


Management

Marketing

Sales

After this click on the **trash can** icon in the element properties to delete the element.



Element Name: Sales

Order: 0

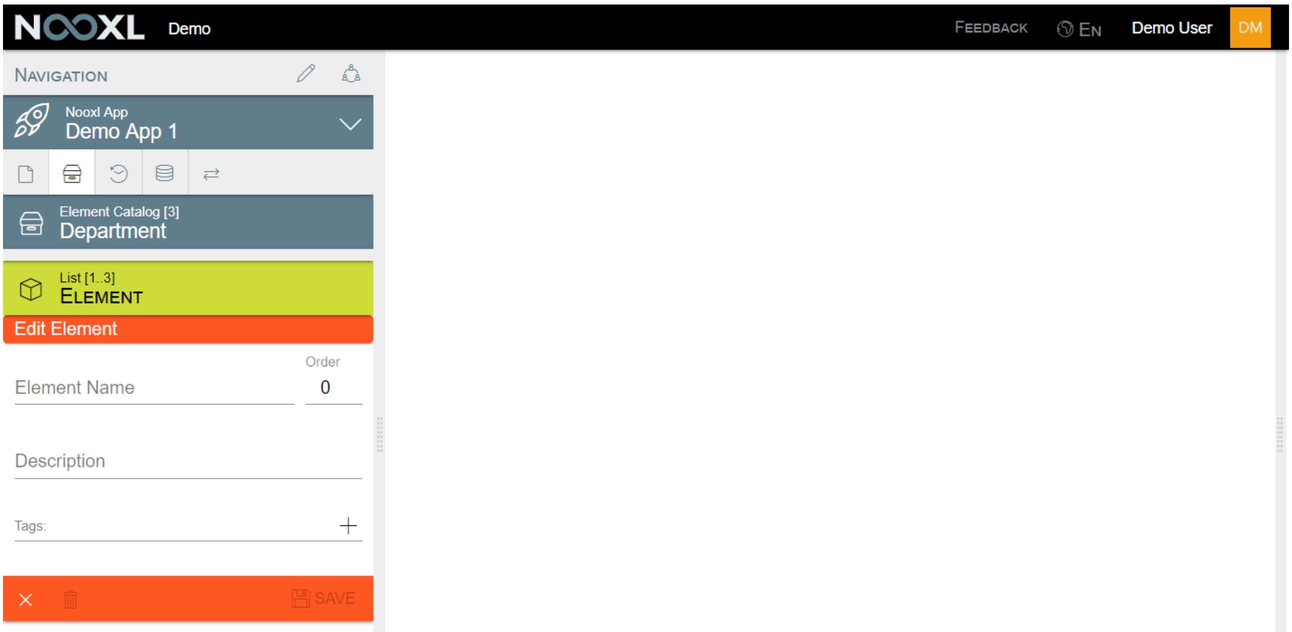
Description

Tags:

Please acknowledge that you are aware that all data save using the element will also be deleted.

> ⚠ Depending on how much data is already stored using the element, the process to delete the element may take a while.

Element Properties



The edit and create dialog for elements contains the following fields:

Element Name

The name of the element.

Description

An optional description of the element.

Order

Changes the position of the element within the catalog in the Catalog and Elements view of the app, as well as in selections. If more than one element has the same order assigned, these will be ordered alphabetically.

Tags

You can tag your elements and use those tags in templates.

> ⚠ Tags can not contain spaces. If you need to separate words, use underscores or camel casing.

Dependent elements example

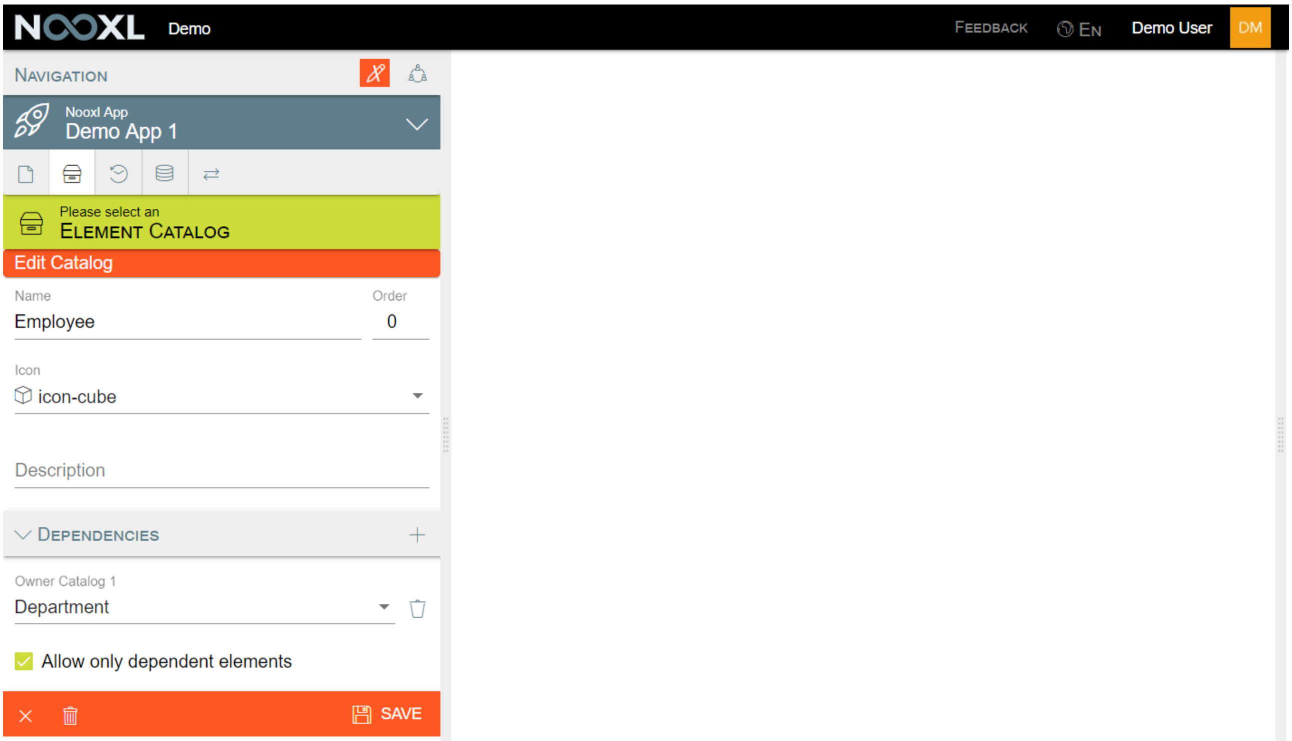
Let us look at company departments and employees for example. Every employee is part of one department:

Department	Employee
Sales	Susi
	Stella
Marketing	Bob
	Anthony
	Phillis
Management	Bill Boss

Create the catalogs

The first catalog *Department* will be create by just stating the name.

The second catalog *Employee* will be setup like this:



Name: Employee

Order: 0

Icon: icon-cube

Description

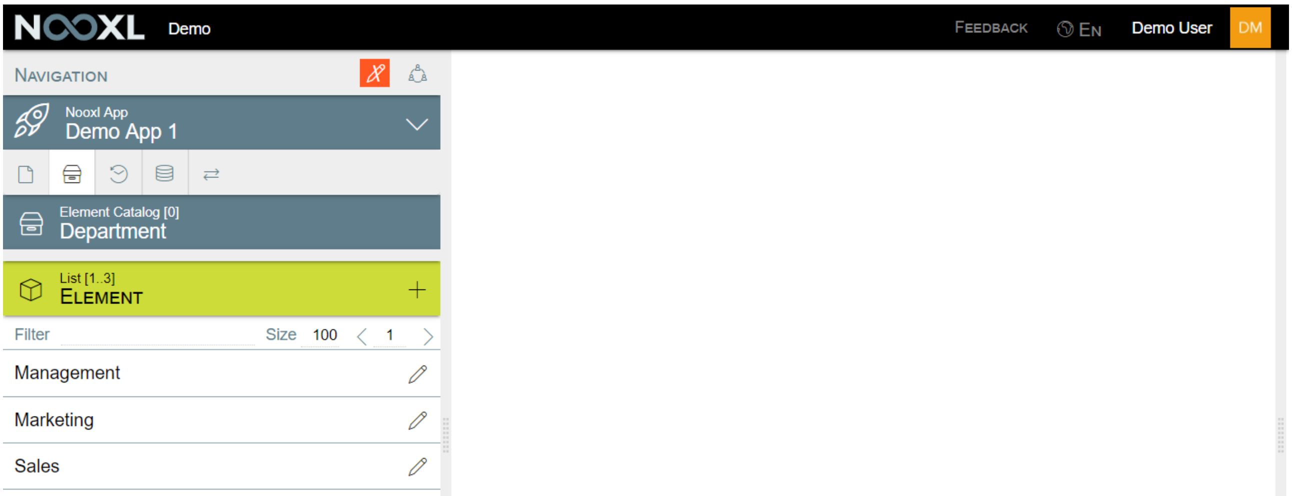
Owner Catalog 1: Department

☑ Allow only dependent elements

Note that we set Department as the Owner Catalog 1 and choose to only allow dependent elements.

Create the department elements

Go ahead and create the three departments of our example as elements (siehe Seite 268) in the department catalog.



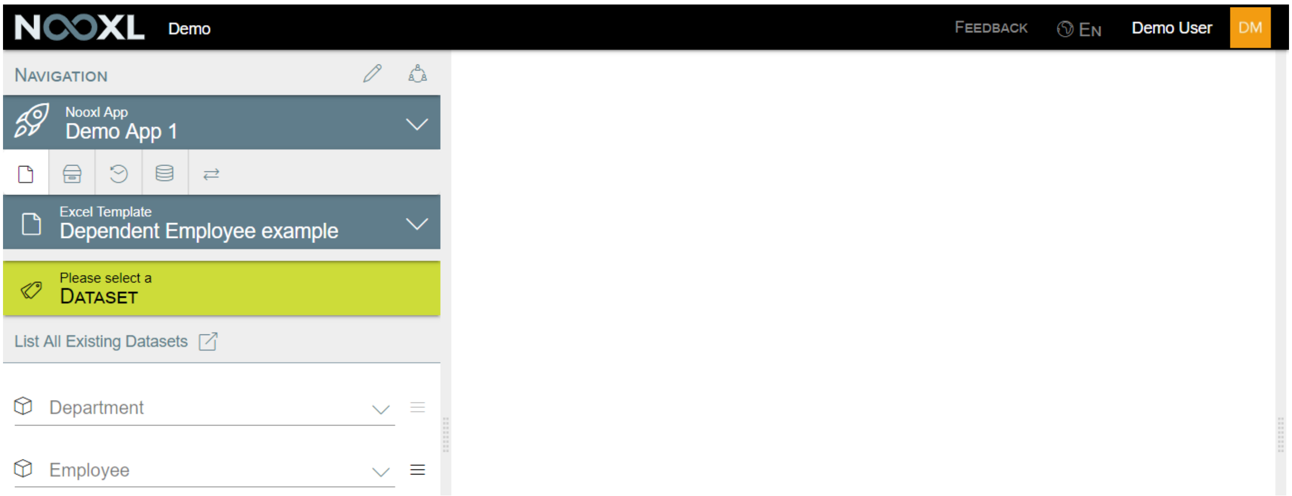
Management

Marketing

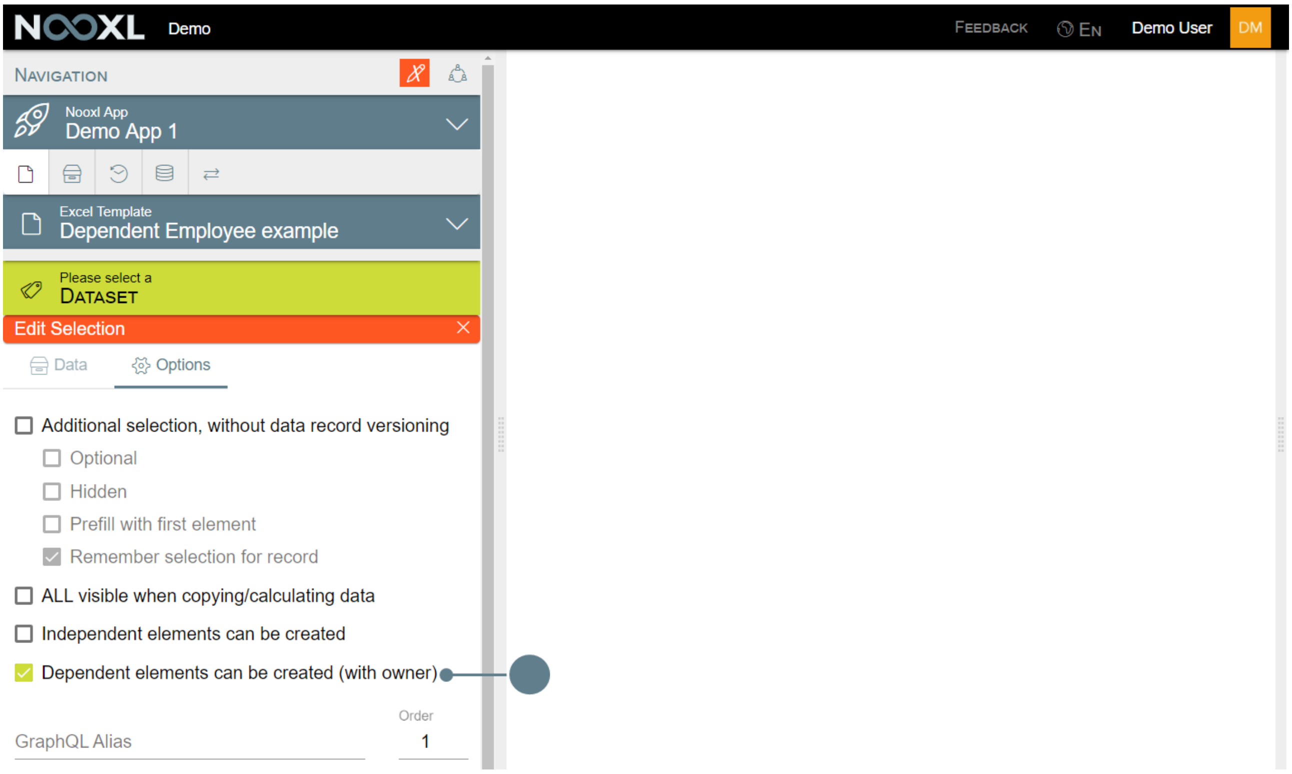
Sales

Create the employee elements

To create a new dependent element in the employee catalog, we will need a template with our two catalogs as dataset selections.



The Employee selection needs to have the option *Dependent elements can be created (with owner)* turned on.

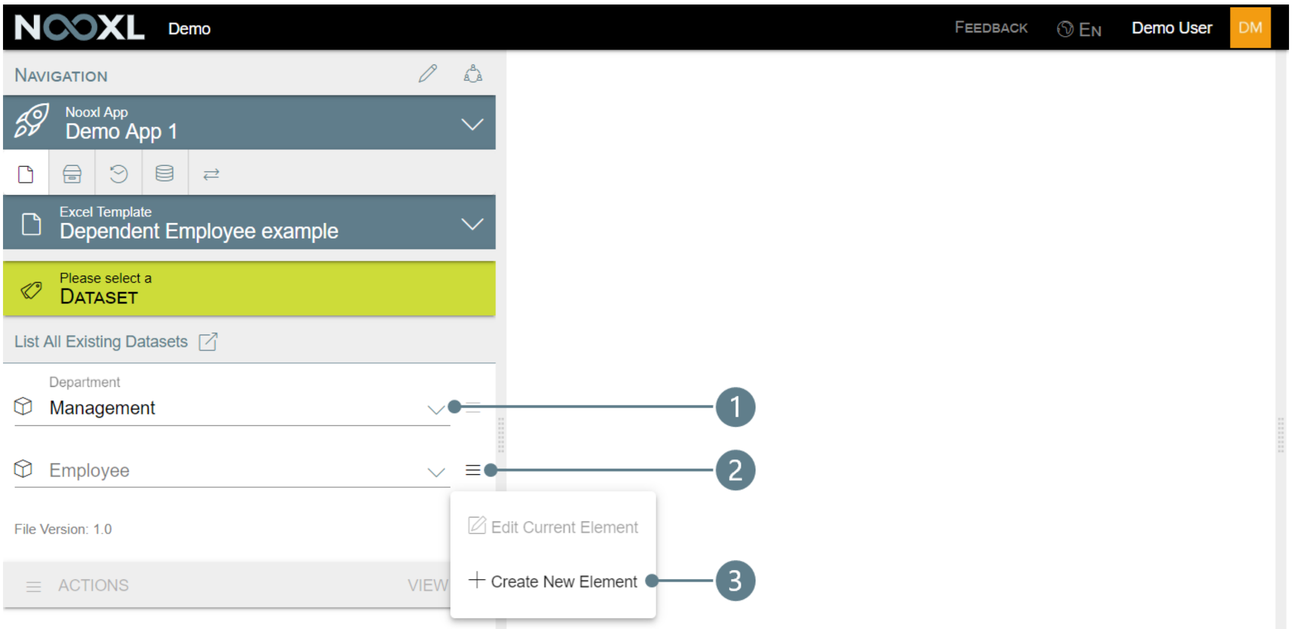


- ☐ Additional selection, without data record versioning
  - ☐ Optional
  - ☐ Hidden
  - ☐ Prefill with first element
  - ☑ Remember selection for record
- ☐ ALL visible when copying/calculating data
- ☐ Independent elements can be created
- ☑ Dependent elements can be created (with owner)

GraphQL Alias

Order: 1

Then you can leave the design mode and select the Management department **(1)**. With the department selected click on the burger icon of the employee selection **(2)** to open up the context menu. Here please click on *Create New Element* **(3)**.

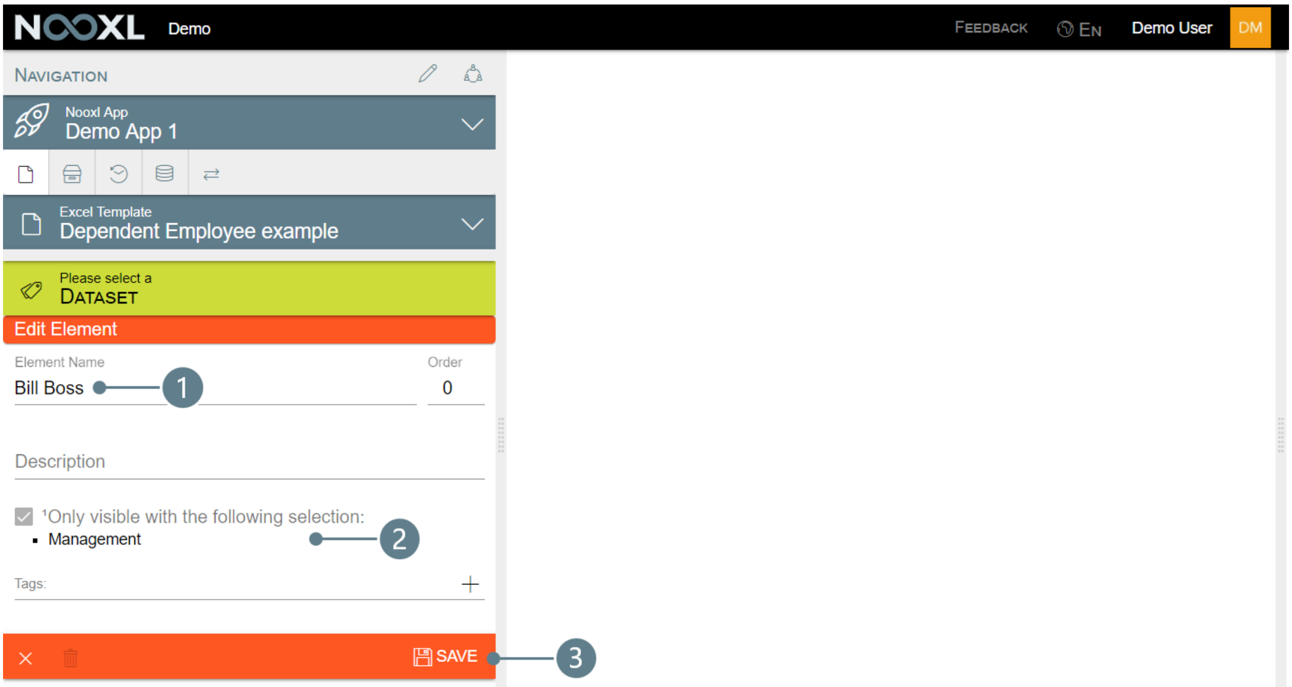


Department: Management

Employee

File Version: 1.0

Give the element the name *Bill Boss* **(1)**. Note that it will only be visible with the *Management* selection **(2)**. Click save **(3)** to create the element.

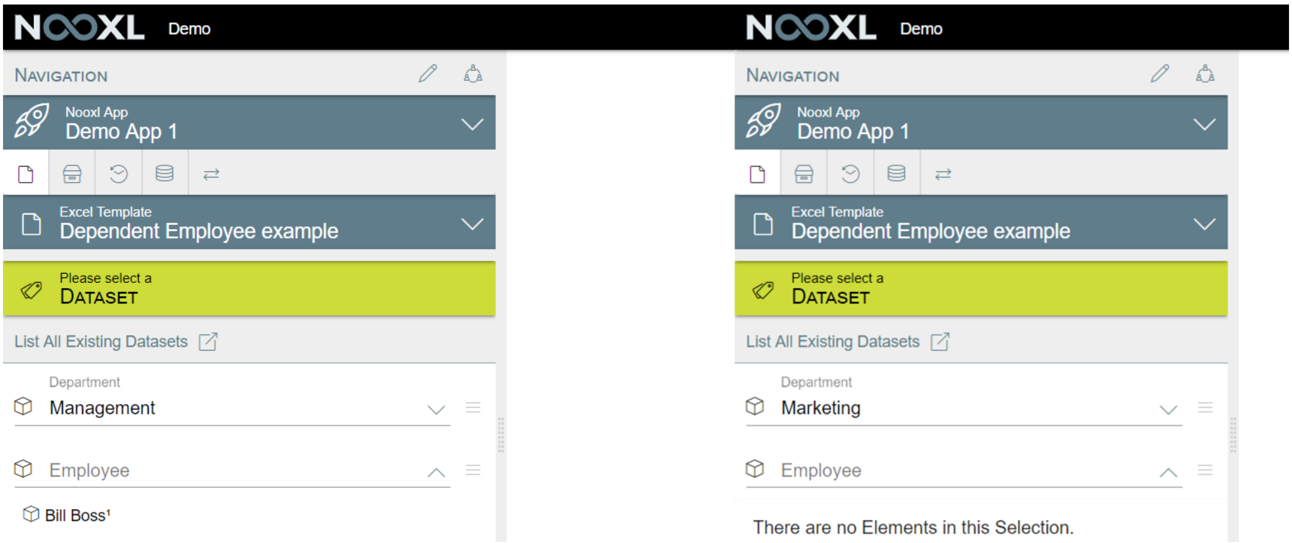


Element Name: Bill Boss
Order: 0
Description
☑ ¹Only visible with the following selection:
- Management

Tags:

× SAVE

Our *Bill Boss* will now be an option to choose from when the *Management* Department is selected (left side). When you select any other department, Bill will no longer show up (right).

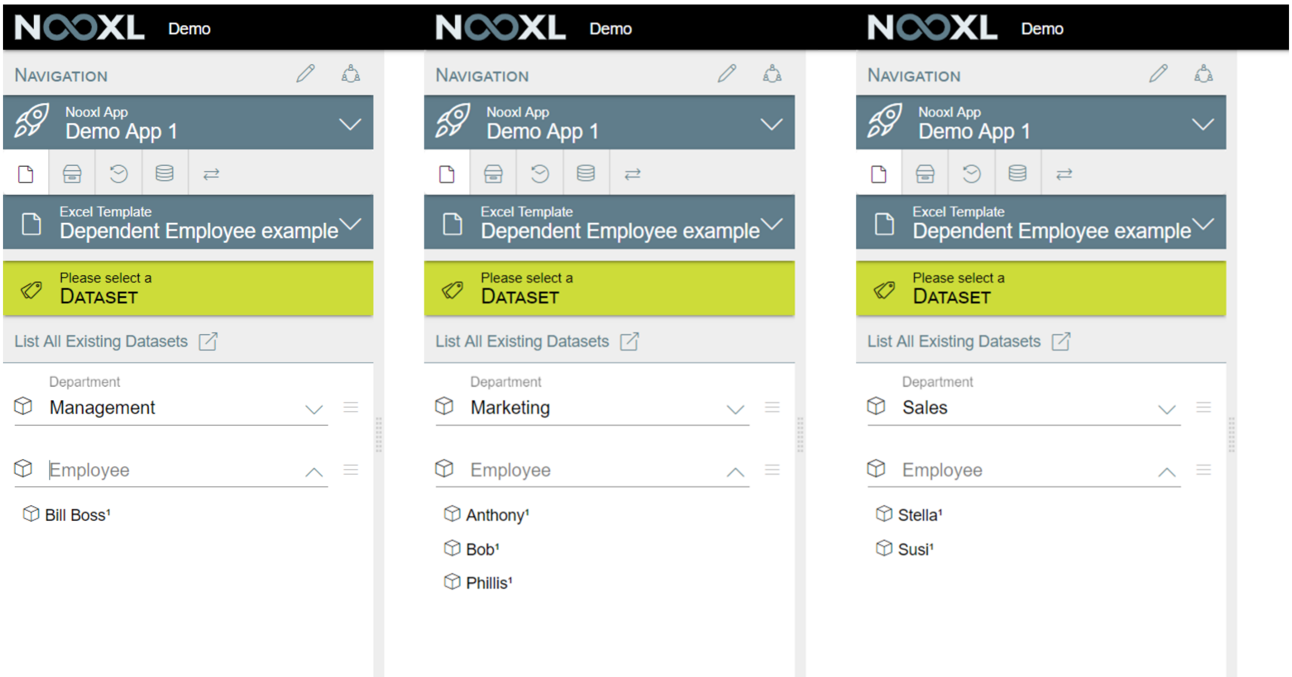


Department: Management
Employee
Bill Boss¹

Department: Marketing
Employee
There are no Elements in this Selection.

Result

When you created all elements, you can switch through the different departments and see the respective employees.



3.8.3 Selections

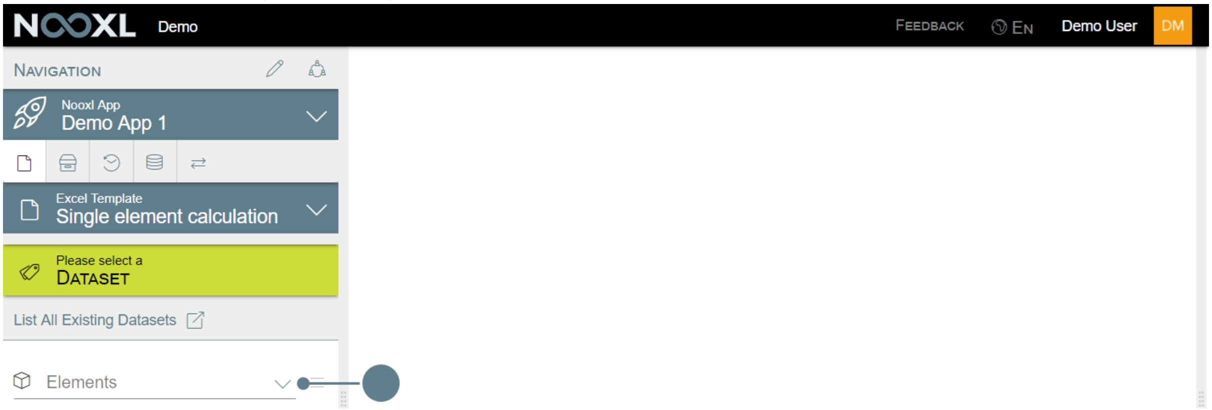
As you already know, Selections in Nooxl are subsets of catalogs (siehe Seite 262). They can contain, all catalog elements (siehe Seite 268), a few or only one.

> ✓ The terms *selection* and *condition* are used synonymous in Nooxl.

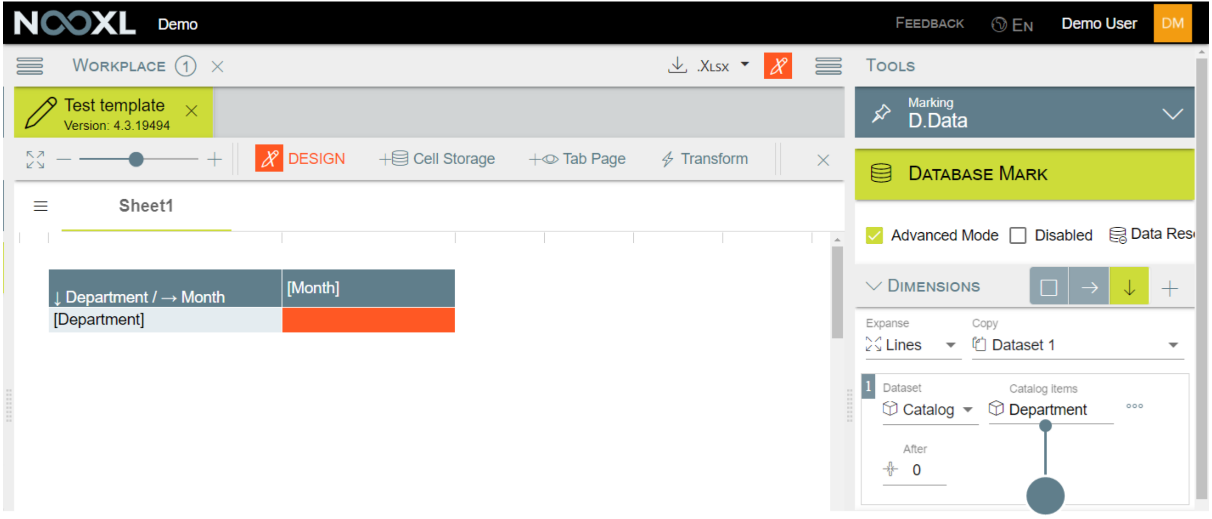
Where are Selections used?

Selections serve two purposes in your Nooxl App:

1. To determine data sets (siehe Seite 44).



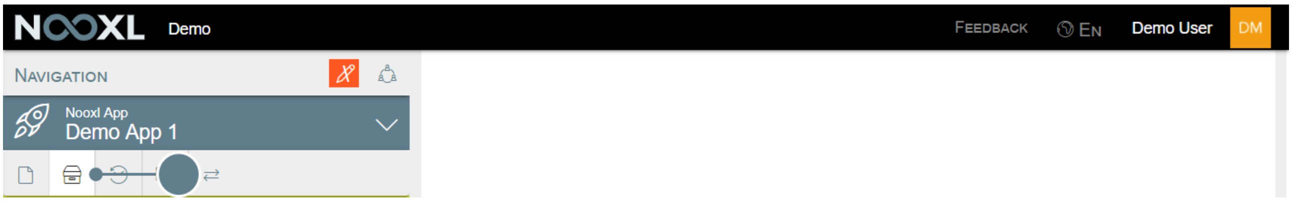
2. To determine the catalog elements used to store data in advanced cell storages (siehe Seite 166).



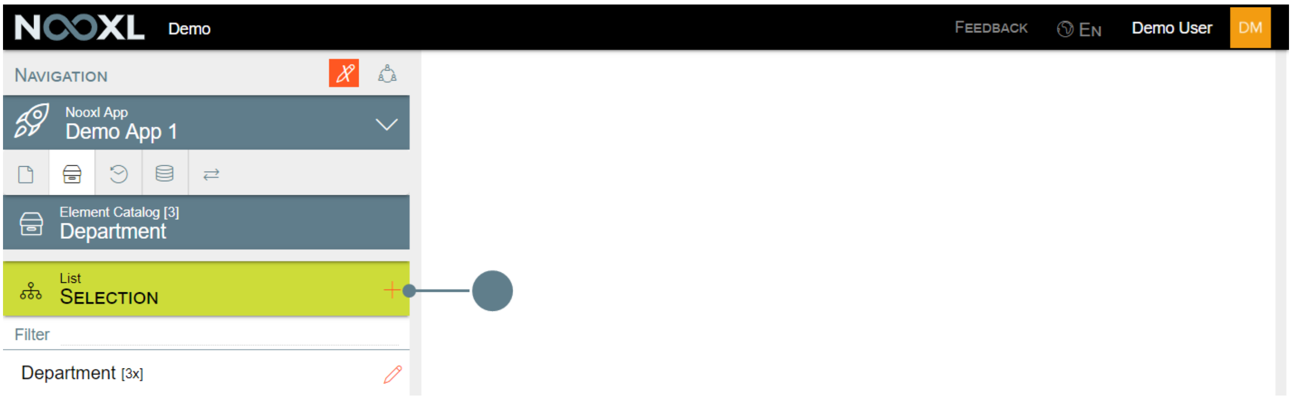
When you use a selection to store cell data the size of the markup is irrelevant.

Create a selection

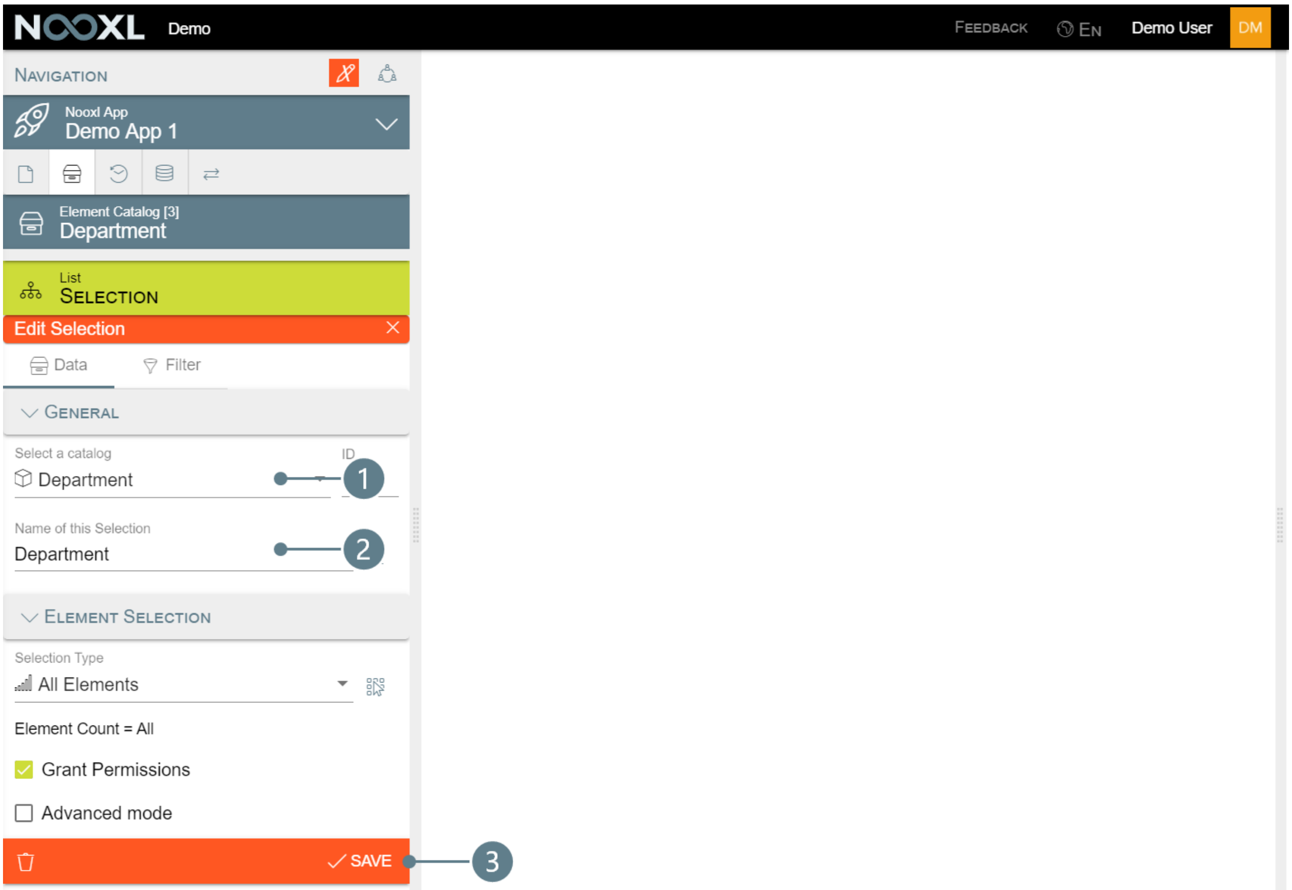
To create a new selection, turn on the design mode of you App and go to *Catalogs and Elements*.



Next to each catalog you see the selections icon . Click on it for the catalog you need to create a selections for. Then Nooxl will show you a list of all selections for this catalog. To create a new selection click on the red plus.



Next you need to select the catalog **(1)** you want to create a selection for. Nooxl will automatically use the catalogs name as the *Name of this Selection* **(2)**. Feel free to use this name or to specify another. Next you can save your new selection **(3)**.



Select a catalog: Department

ID

Name of this Selection: Department

Selection Type: All Elements

Element Count = All

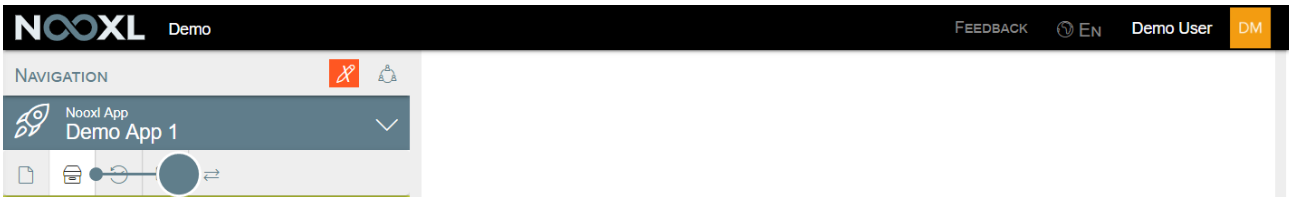
☑ Grant Permissions

□ Advanced mode

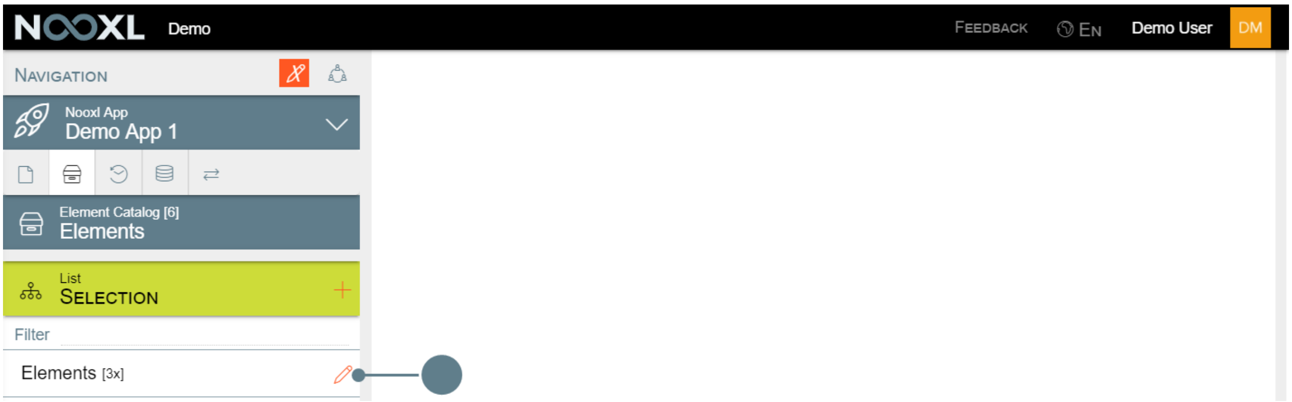
For more detailed information about the meaning of the different fields, please see the section selection properties (siehe Seite 281).

Edit a selection

To edit a selection, turn on the design mode of you App and go to *Catalogs and Elements*.



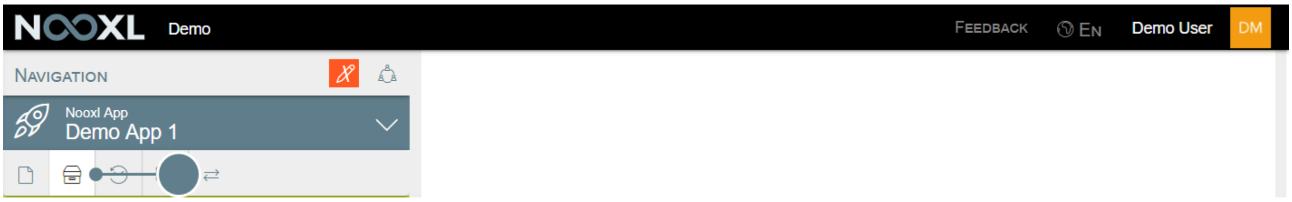
Next to each catalog you see the selections icon . Click on it for the catalog you need to edit a selection. Then Nooxl will show you a list of all selections for this catalog. To change a selection click on the ✎ .



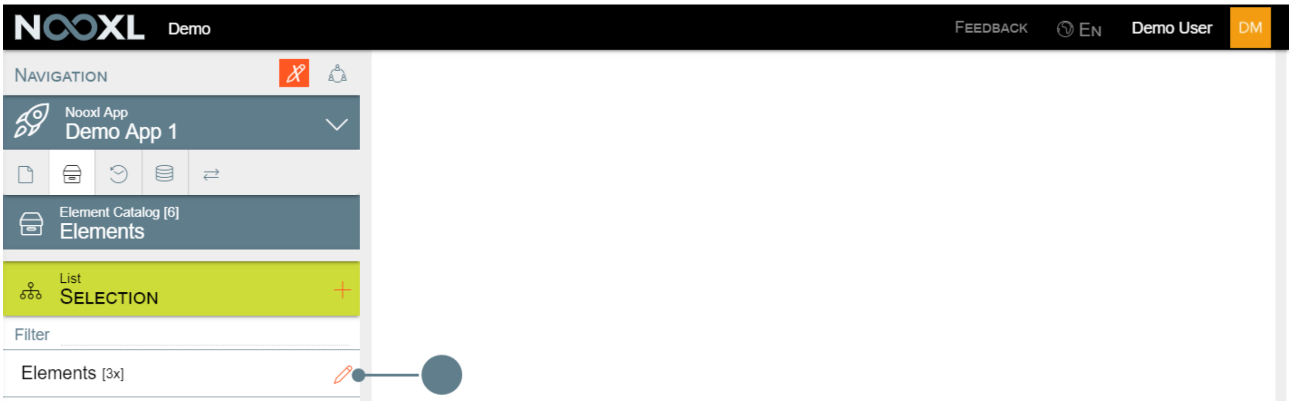
After this you find the same mask with the selection properties (siehe Seite 281) as when you create a new selection.

Delete a selection

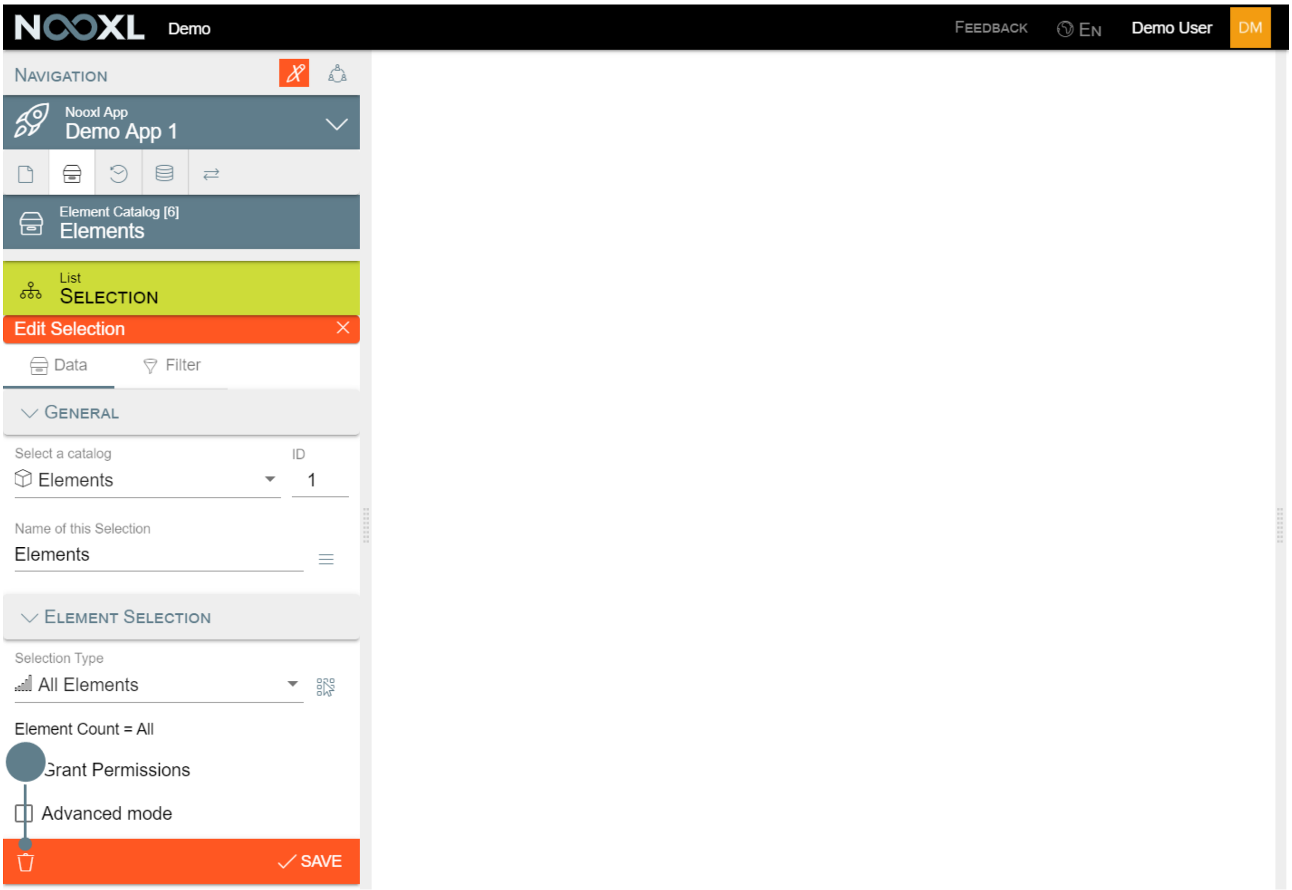
To delete a selection, turn on the design mode of you App and go to *Catalogs and Elements*.



Next to each catalog you see the selections icon 品 . Click on it for the catalog you want to delete a selection. Then Nooxl will show you a list of all selections for this catalog. To delete a selection click on the ✎ .



After this click on the **trash can** icon in the selection properties to delete the selection.



Select a catalog: Elements

ID: 1

Name of this Selection: Elements

Selection Type: All Elements

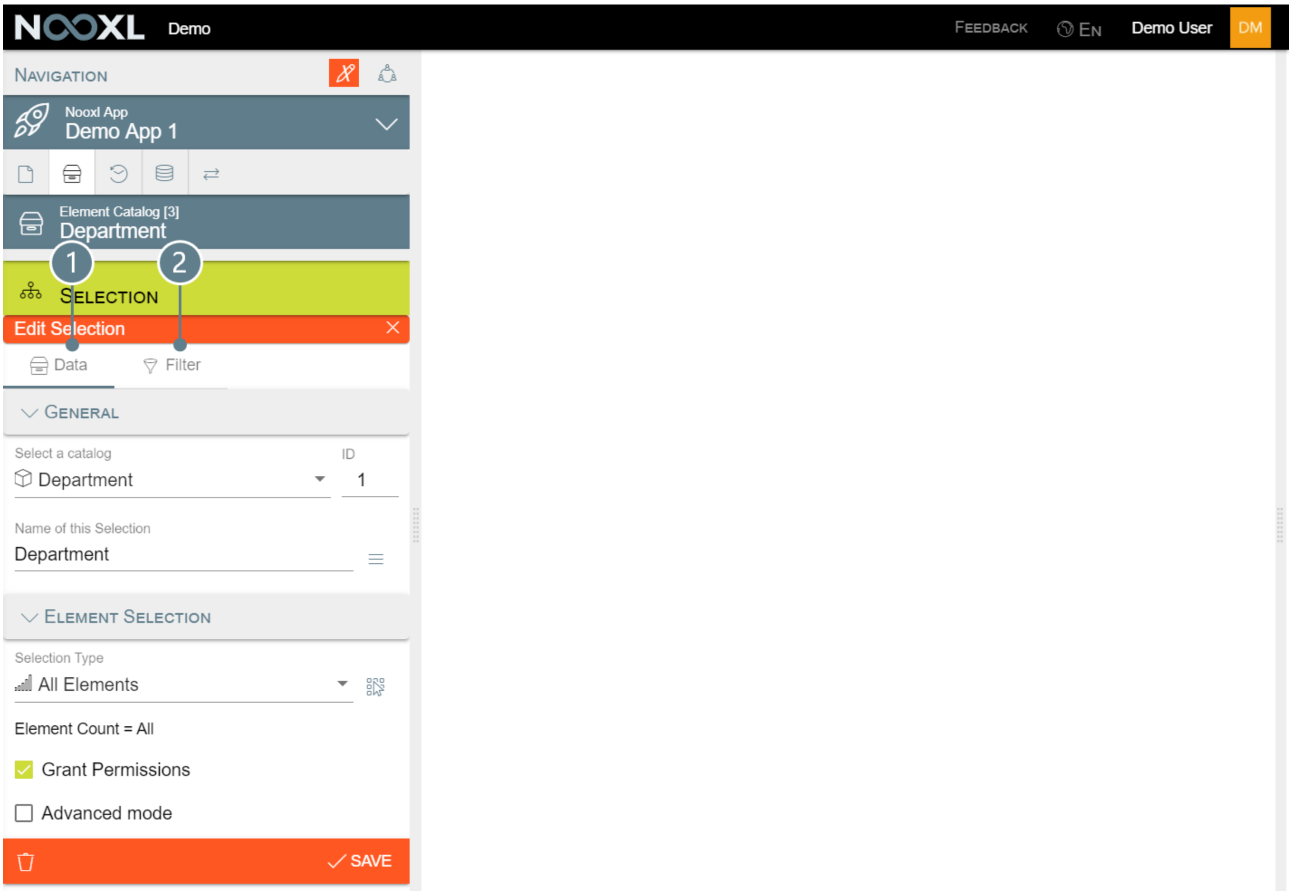
Element Count = All

Grant Permissions

□ Advanced mode

Selection properties

In the properties of your selections you find two tabs. The data tab **(1)** which is where you will work most of the time and the filter tab **(2)**. Here you can create dynamic selections using spreadsheet filters (siehe Seite 286). Additionally there is an Options tab, when you use your selection in a data set selection.



Select a catalog: Department

ID: 1

Name of this Selection: Department

Selection Type: All Elements

Element Count = All

☑ Grant Permissions

□ Advanced mode

Data

Select a catalog

A dropdown where you need to specify for which catalog you want to create a selection for.

ID

The ID field is necessary when you use multiple selections of the same catalog for your data set selection. Then you need to make sure that each of the selections have a unique ID which can be used to identify the data records.

Name of this Selection

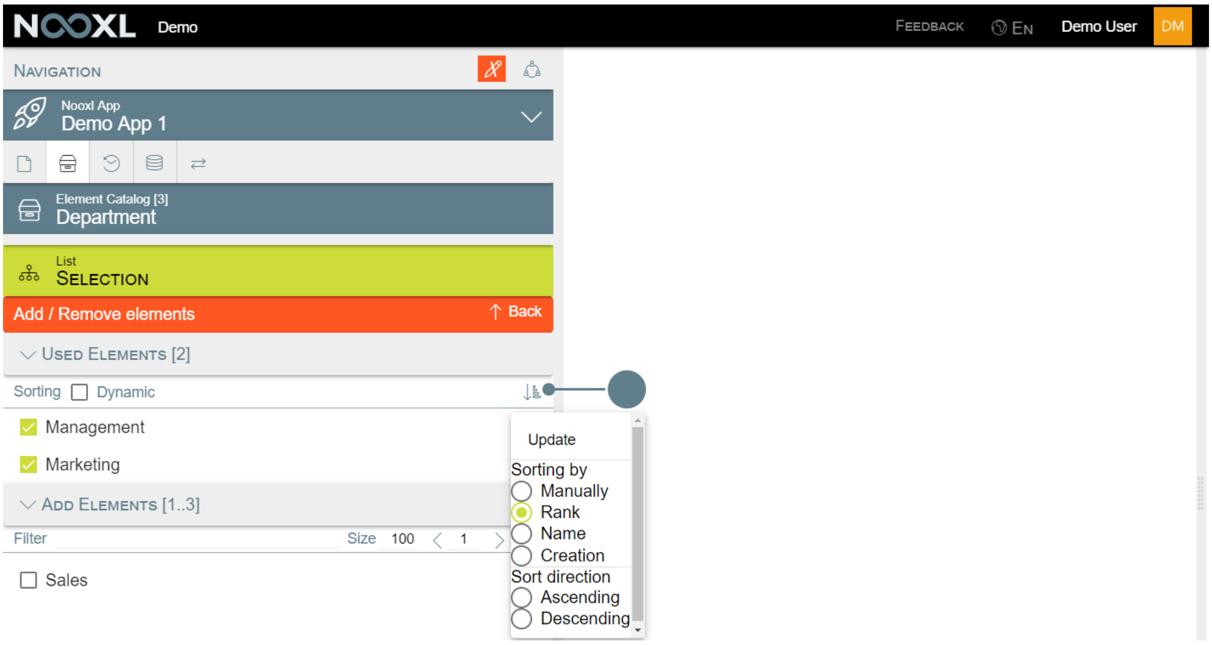
A free text name of your selection. This name is used throughout your App to display your selection.

Selection Type

There are three types of selections:

- *All Elements*: this type will ensure that always all catalog elements are part of the selection. This includes elements which will be created in the future.
- *One Element*: lets you select exactly one element of the catalog. Nooxl will rename your selection automatically to whatever element you chose.

- *Selected Elements*: lets you select multiple elements from the catalog. Per default Nooxl will sort the elements by their order (rank). However you can choose between different sorting methods for the elements.



Sorting □ Dynamic

☑ Management

☑ Marketing

□ Sales

Sorting by
○ Manually
● Rank
○ Name
○ Creation

Sort direction
○ Ascending
○ Descending

Grant Permissions

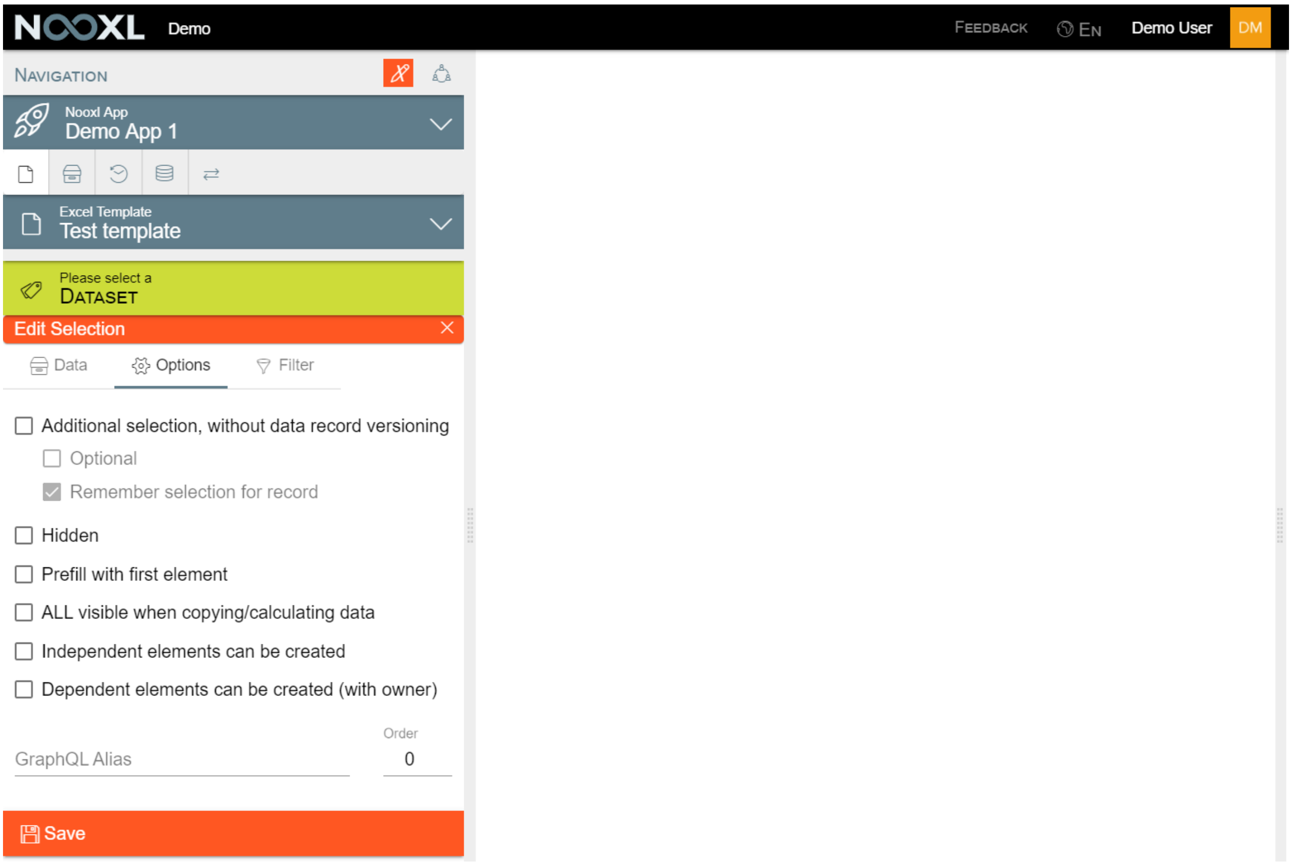
If this box is checked, users who can view the template where you use the selection are also allowed automatically to access all included elements. If you do not check this box, you will need to explicitly grant access to the elements for your user groups in the collaboration (siehe Seite 90) section of the system.

Advanced mode

DEPRECATED this was used to toggle the GraphQL tab.

Options

> ⓘ This tab is only visible when you use the Selection as a data set selection.



□ Additional selection, without data record versioning
□ Optional
☑ Remember selection for record
□ Hidden
□ Prefill with first element
□ ALL visible when copying/calculating data
□ Independent elements can be created
□ Dependent elements can be created (with owner)

GraphQL Alias
Order: 0

Additional selection, without data record versioning

If this box is checked the selection will not be used to determine the data sets.

For example if you have two selections with two, respectively three elements for your template, you have six different data sets:

Selection 1	**Selection 2**	**Data sets**
Element 1	Element A	Element 1 & Element A
Element 2	Element B	Element 1 & Element B
	Element C	Element 1 & Element C
		Element 2 & Element A
		Element 2 & Element B
		Element 2 & Element C

Now when Selection 2 is set to be an additional selection, will end up with only two data sets:

- Element 1
- Element 2

Optional

If this box is checked, the user will not need to select an element of this selection. If it is checked, the user can only view the data set when he selected an element.

Remember selection for record
Lets you save the selected element with your data set.

Hidden

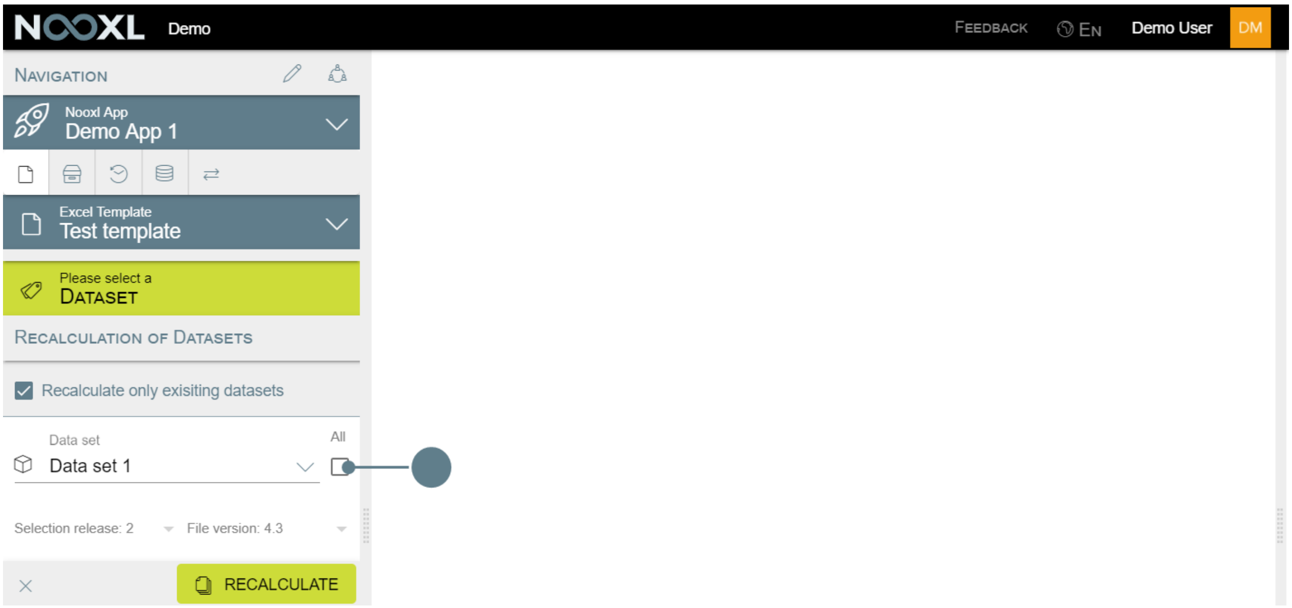
If this box is checked, the selection will not be shown to the users. This can be useful when you have a selection with only one element. Since the user can not choose anything, there is no need to show the selection at all.

Prefill with first element

If this box is checked, Nooxl will use the first element of the selection as the default value.

ALL visible when copying/calculating data

If this box is checked, the users will have the option to check an "All" checkbox for this selection when recalculating (siehe Seite 125) or copying data sets (siehe Seite 123).



☑ Recalculate only exisiting datasets

Data set: Data set 1

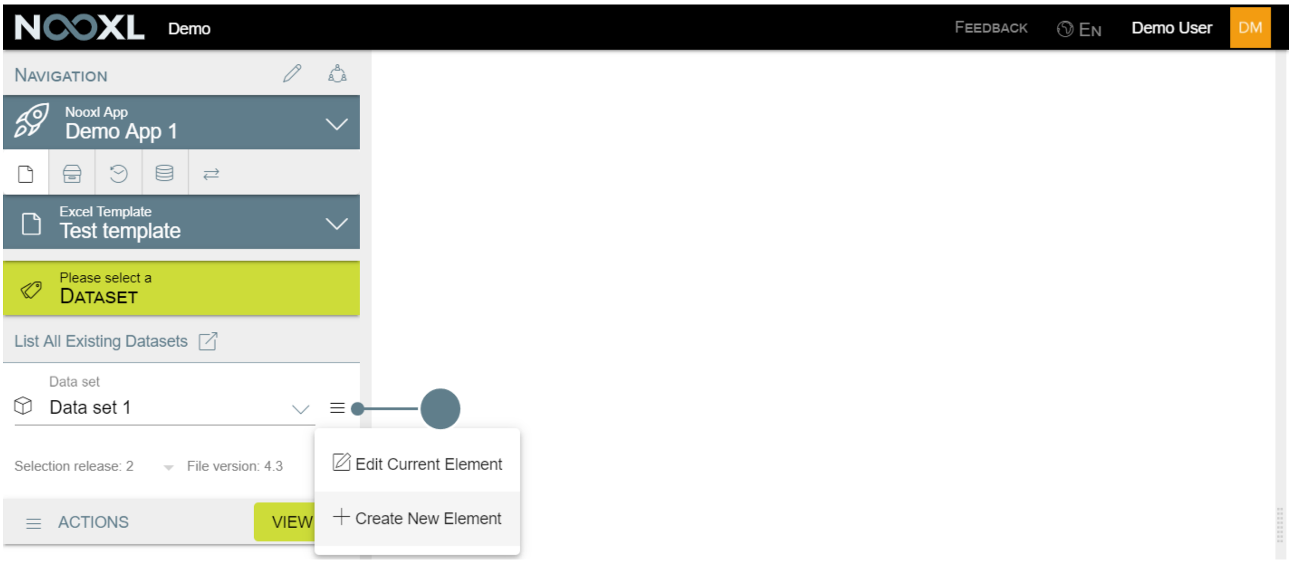
All □

Selection release: 2

File version: 4.3

Independent elements can be created

Enables the user to create independent elements using the selections context menu.



Dependent elements can be created (with owner)

Enables the user to create dependent elements (siehe Seite 272) using the selections context menu. Nooxl will automatically use all other selections of the data set to determine the owner of the new element.

Order

Lets you change the order of the selections.

Filter

You find a separate article regarding the filter functionality (siehe Seite 286).

3.8.4 Dynamic selections using Spreadsheet-Filters

As you learned in the section about Selections (siehe Seite 277)those are pretty static. You can create a Selection with exactly one element, with a bunch of elements or with all available elements of a catalog. Only the last is kind of dynamic, because if a new element is created it is automatically part of this selection and therefore available to the users.

If your use case demands truly dynamic selections you can use Spreadsheet-Filters. With Spreadsheet-Filters you create a template which contains all the necessary logic to determine what elements are currently in the selection.

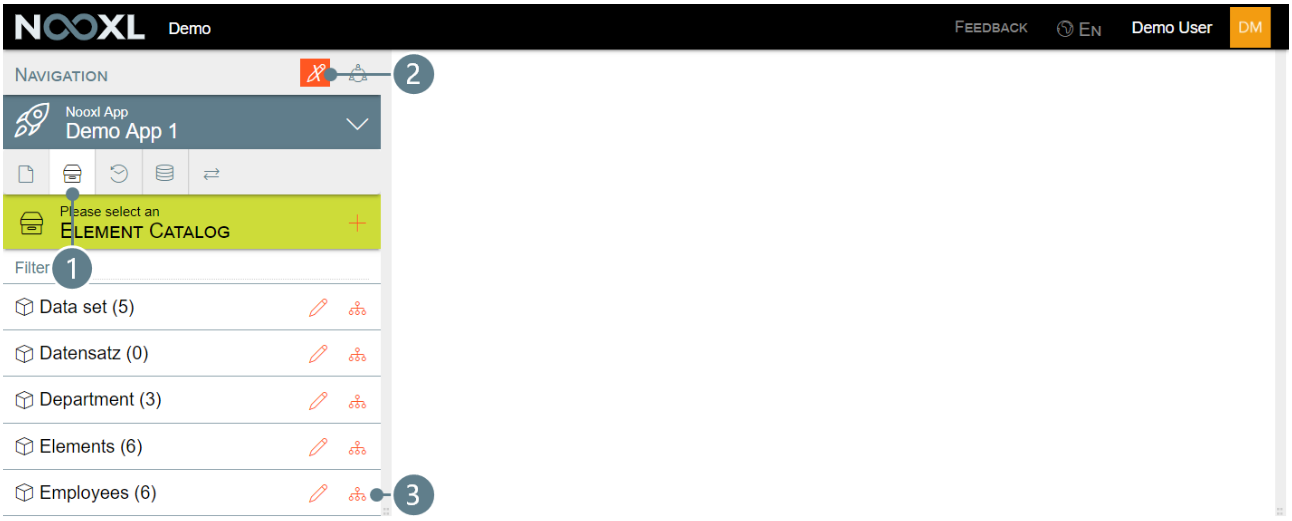
A simple example for such a use case is that you have departments and employees in your app and you want create a selection of employees which takes into account which department was selected in the previous selection. You could create something like this by using dependent elements (siehe Seite 272) but this approach is very limited compared to Spreadsheet-Filters and has some downsides:

- no easy change of dependencies
- no multi dependencies
- a ^{1} appended to the element name
- no easy way to just get all elements

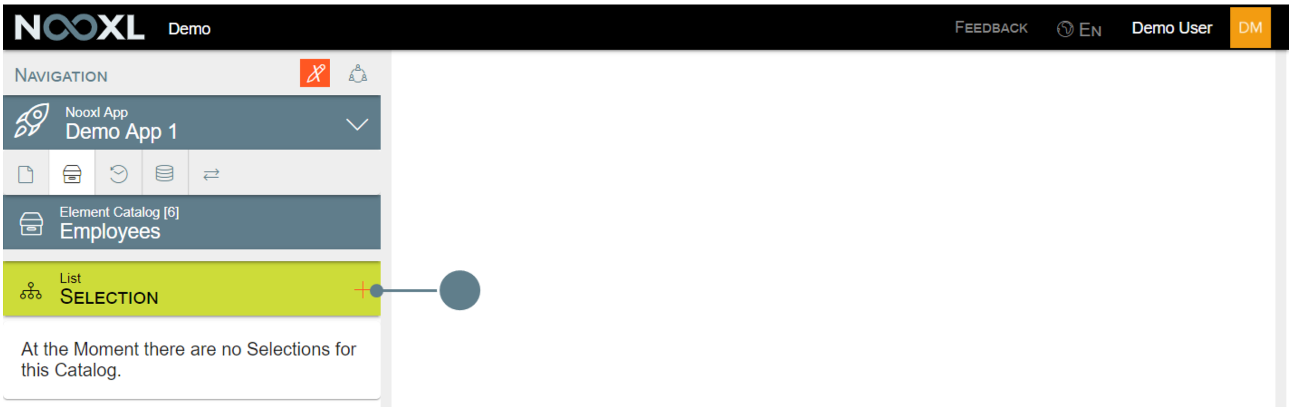
✓ Spreadsheet-Filters are also a great way to hide old elements without deleting them to preserve the data for auditing purposes.

Create a Spreadsheet-Filter Selection

Go to Catalogs and Elements **(1)**, turn on the design mode **(2)** and click on the Selections icon 品 **(3)** next to the catalog you want to create a Spreadsheet-Filter selection for.

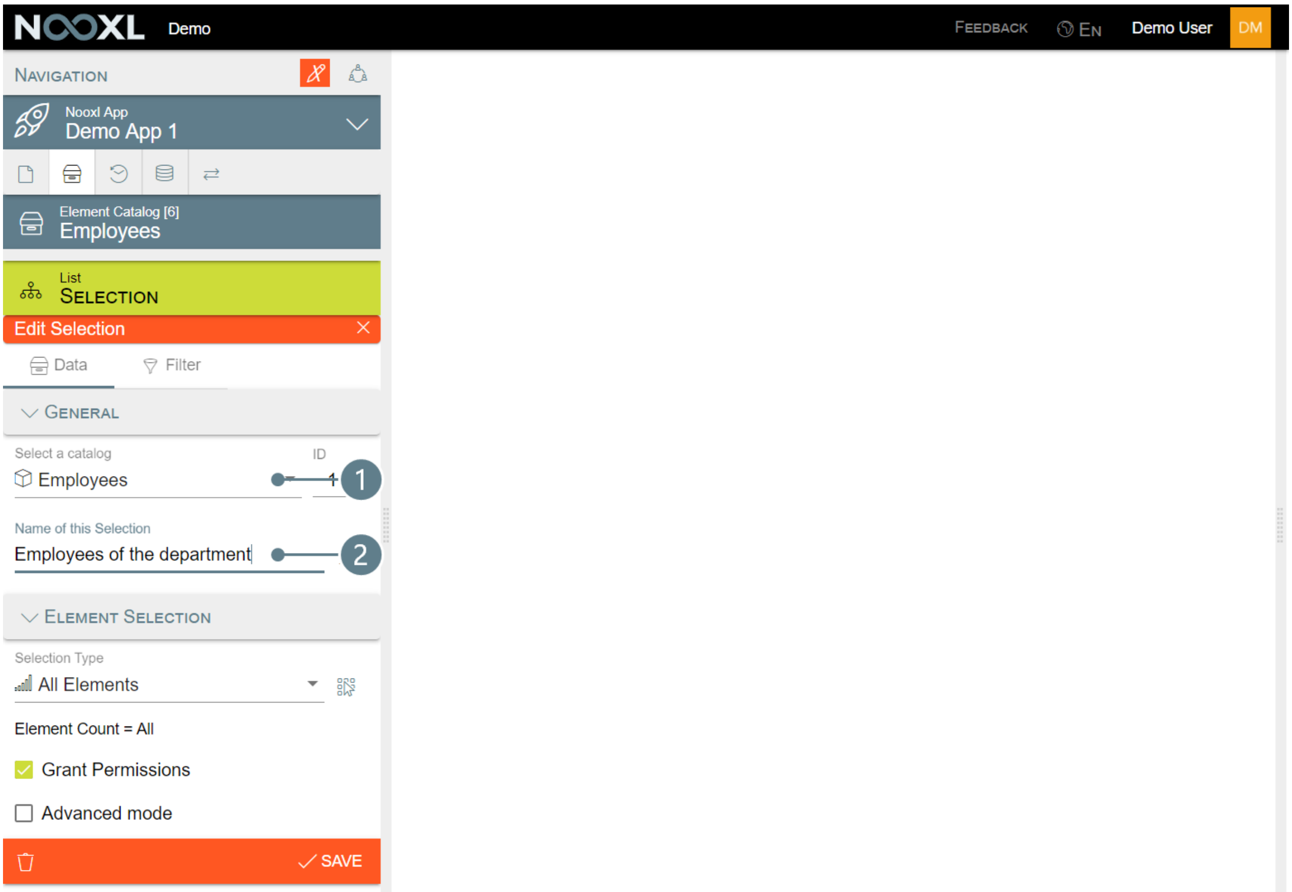


Then click on the + to create a new Selection.



At the Moment there are no Selections for this Catalog.

Next you need to select the catalog **(1)** and name the selection appropriately **(2)**. Also please make sure that the *Selection Type* is *All Elements*.



Select a catalog: Employees

ID: 1

Name of this Selection: Employees of the department

Selection Type: All Elements

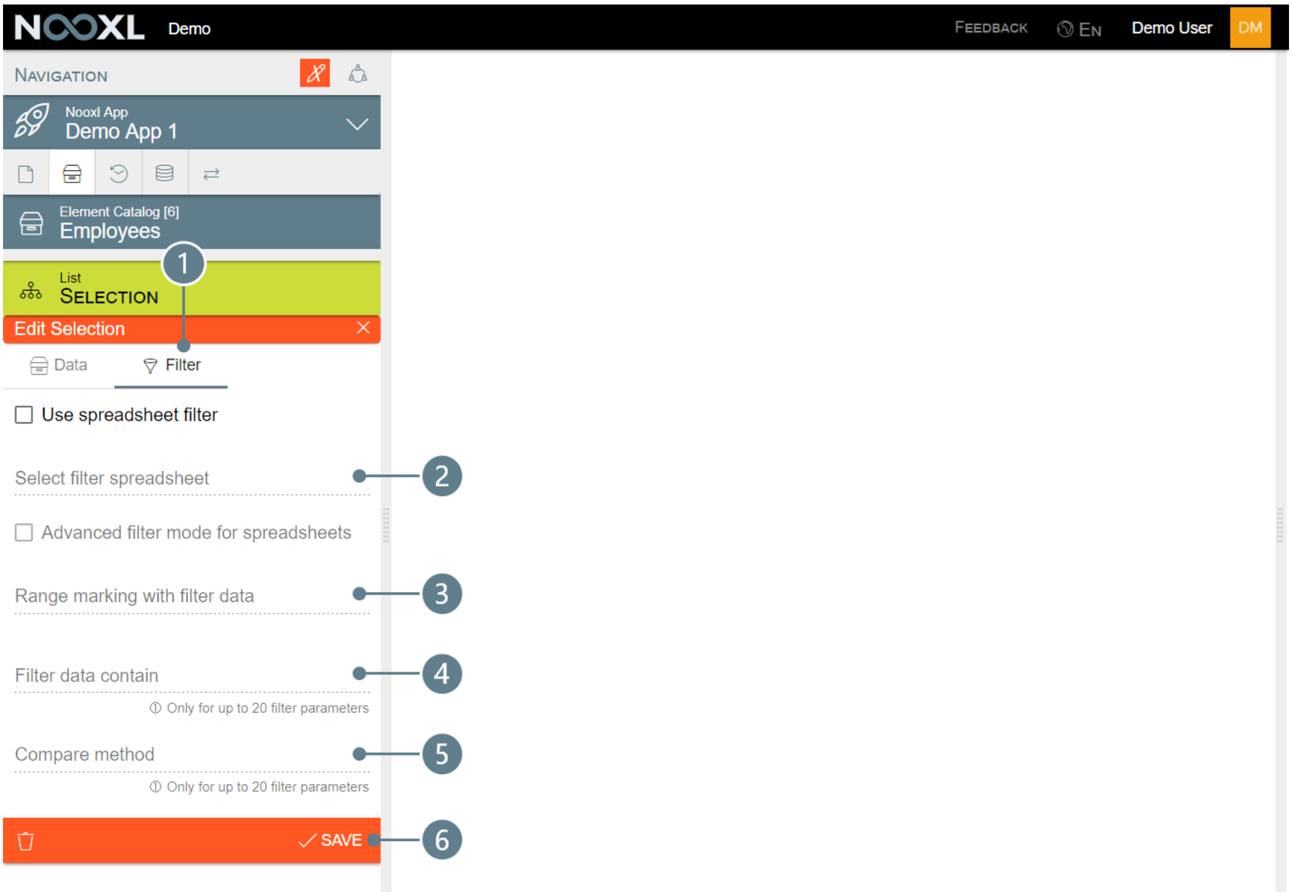
Element Count = All

☑ Grant Permissions

□ Advanced mode

Switch to the tab Filter **(1)**. Here you can see what you need to provide to Nooxl. First of all we have to create a template which will then be set up as the filter spreadsheet **(2)**. Inside this template there needs to be a markup containing the filtered elements **(3)**. And at last we need to specify the kind of data contained **(4)** (element names, IDs, descriptions or tags) and what the compare method is **(5)**. You find further information about everything in the properties section (siehe Seite 294) of this article.

For now click on Save **(6)** to create the selection in its current state. We will come back after we created our template with the filter logic.



□ Use spreadsheet filter

Select filter spreadsheet

□ Advanced filter mode for spreadsheets

Range marking with filter data

Filter data contain

ⓘ Only for up to 20 filter parameters

Compare method

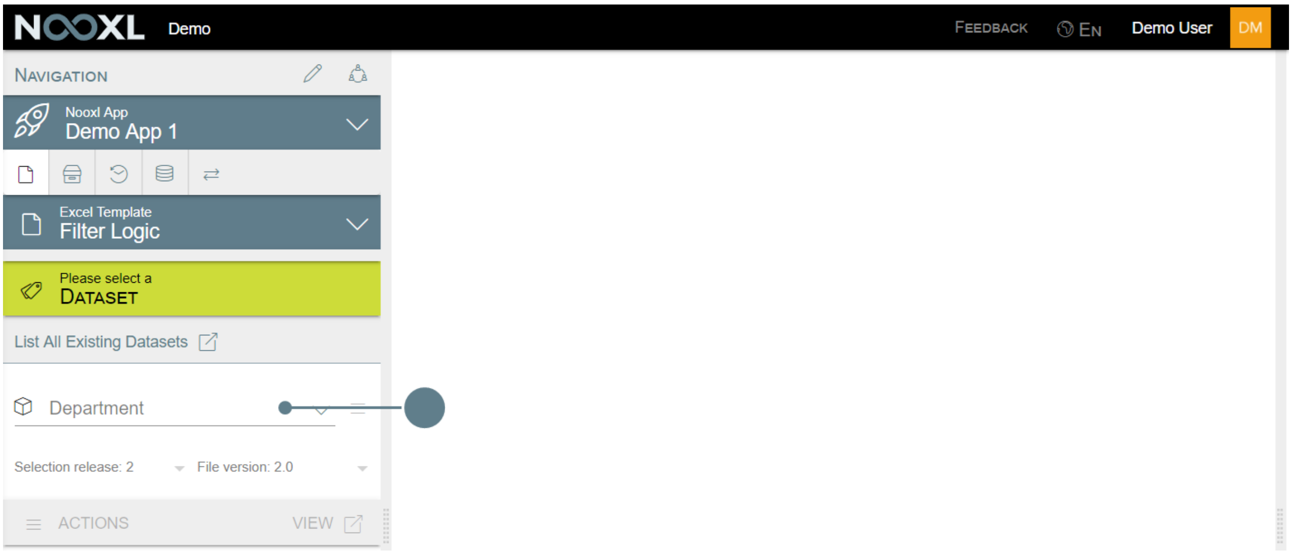
ⓘ Only for up to 20 filter parameters

Create a Spreadsheet with filter logic

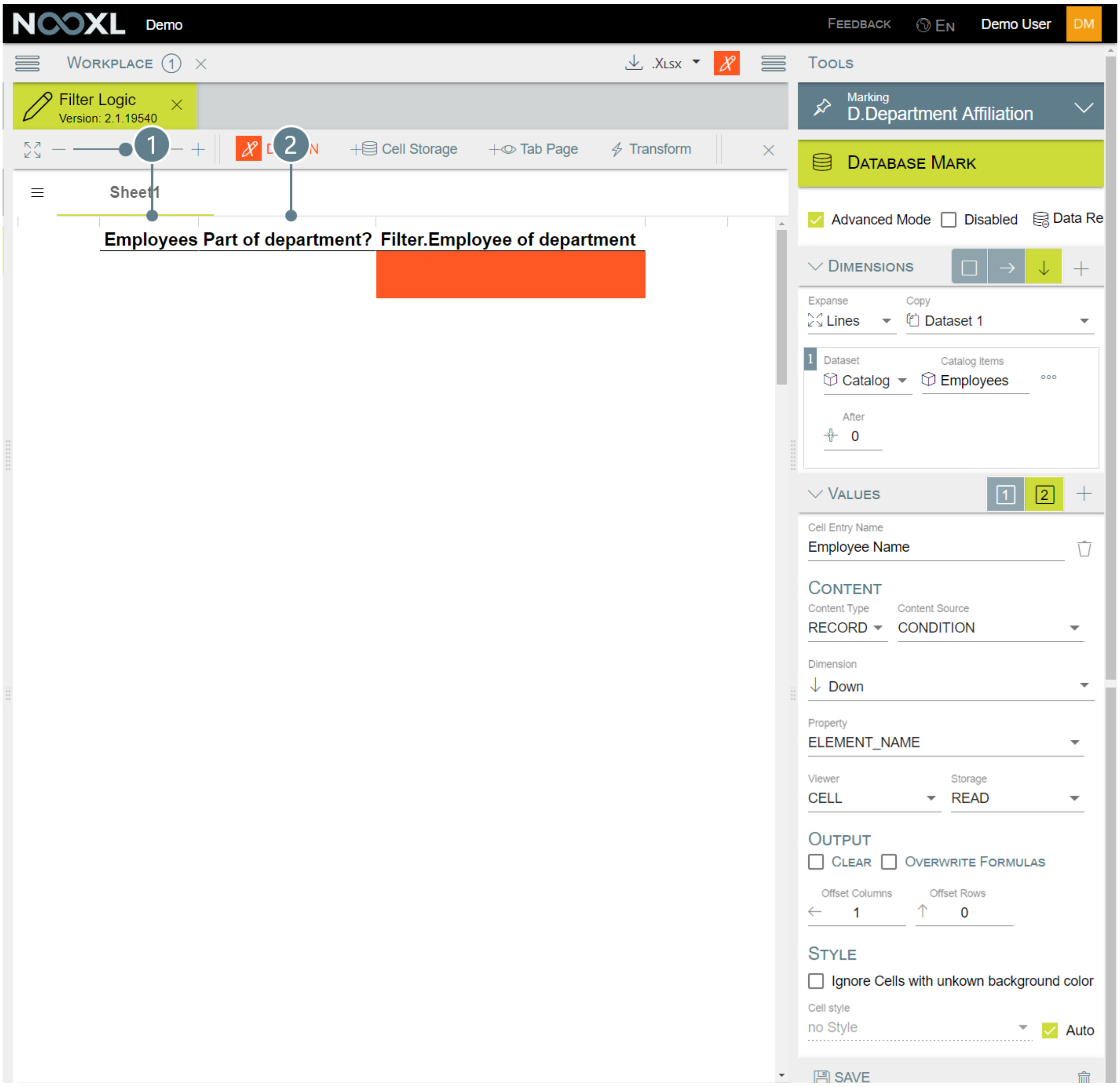
To populate our Spreadsheet-Filter we need a template containing the logic. To do this, we need to understand what Nooxl needs in order to work. In the end all you need is a markup with the *element names, IDs, tags* or *descriptions* of the elements you want to have in your selection.

In our example we want to filter the employees depending on their department. For this we create a new template and add the departments as a selection, so we can store which employees work for which department.

ⓘ To set this up that way, enables us to have more than one department for an employee.



In the design mode of the template we set up three columns. Create a Cell storage (siehe Seite 189) for column **(2)** and set it up with the advanced mode to use the employees catalog as the dimension down (with expanse = Lines) and additionally output the names of the elements in column (siehe Seite 166) **(1)**.



Filter Logic
Version: 2.1.19540

Employees Part of department? Filter.Employee of department

Marking: D.Department Affiliation

Database Mark

☑ Advanced Mode ☐ Disabled Data Re

Expanse: Lines
Copy: Dataset 1

1 Dataset: Catalog
Catalog items: Employees
After: 0

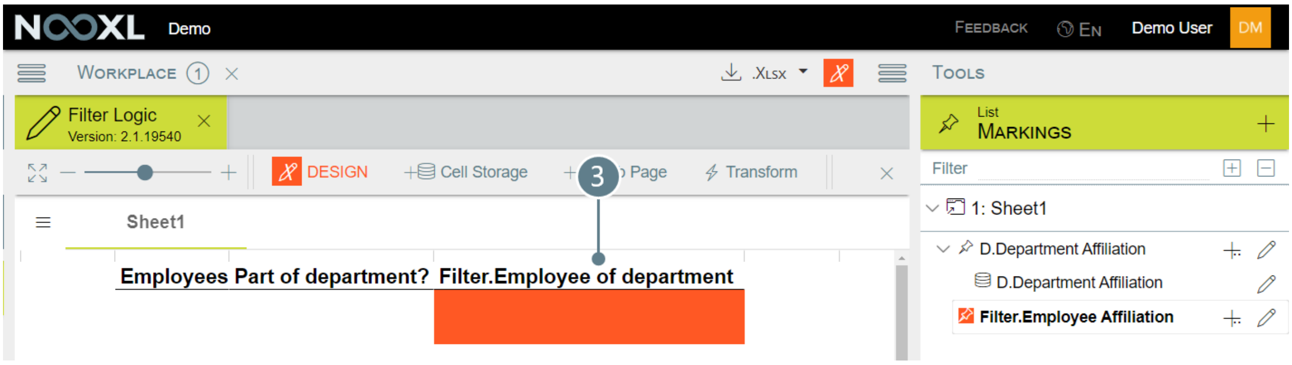
Cell Entry Name: Employee Name

Content
Content Type: RECORD
Content Source: CONDITION
Dimension: Down
Property: ELEMENT_NAME
Viewer: CELL
Storage: READ

Output
☐ Clear ☐ Overwrite Formulas
Offset Columns: 1
Offset Rows: 0

Style
☐ Ignore Cells with unkown background color
Cell style: no Style ☑ Auto

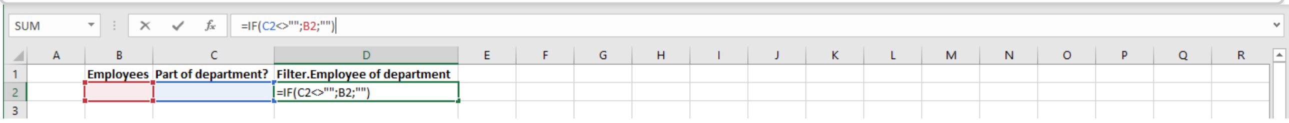
For column **(3)** create a markup, which spans over two rows. This markup will grow dynamically depending on the amount of employees, since we said that the Lines should be expanded.



Employees	Part of department?	Filter.Employee of department

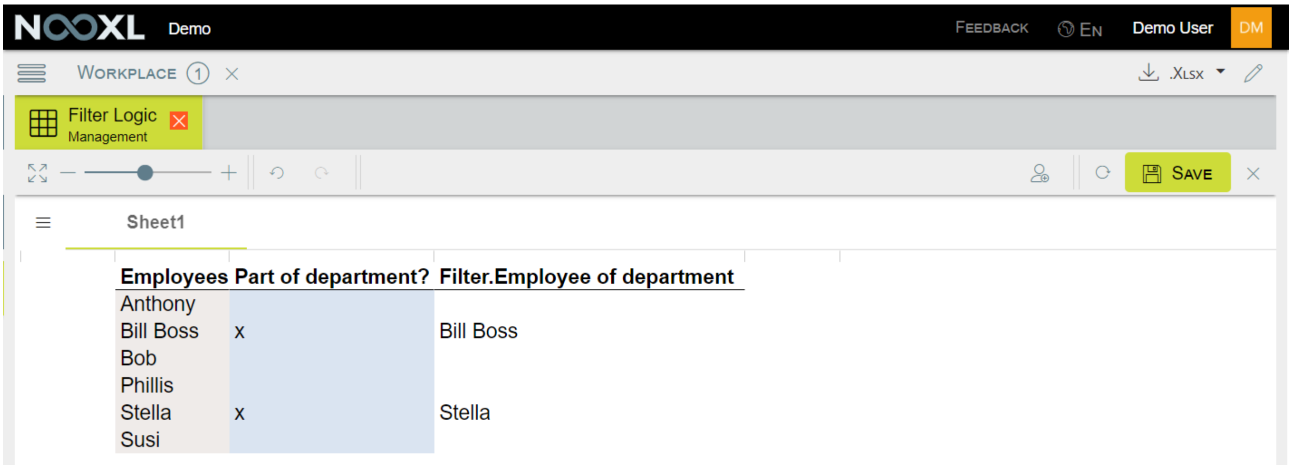
In Excel please set up a formula in the first row of the third column, which checks for any content in column 2 and then takes the content of column 1.

```
=IF(C2<>"";B2;"")
```



Employees	Part of department?	Filter.Employee of department
		=IF(C2<>"";B2;"")

With this setup we can go through all departments and save which employees are part of that department.

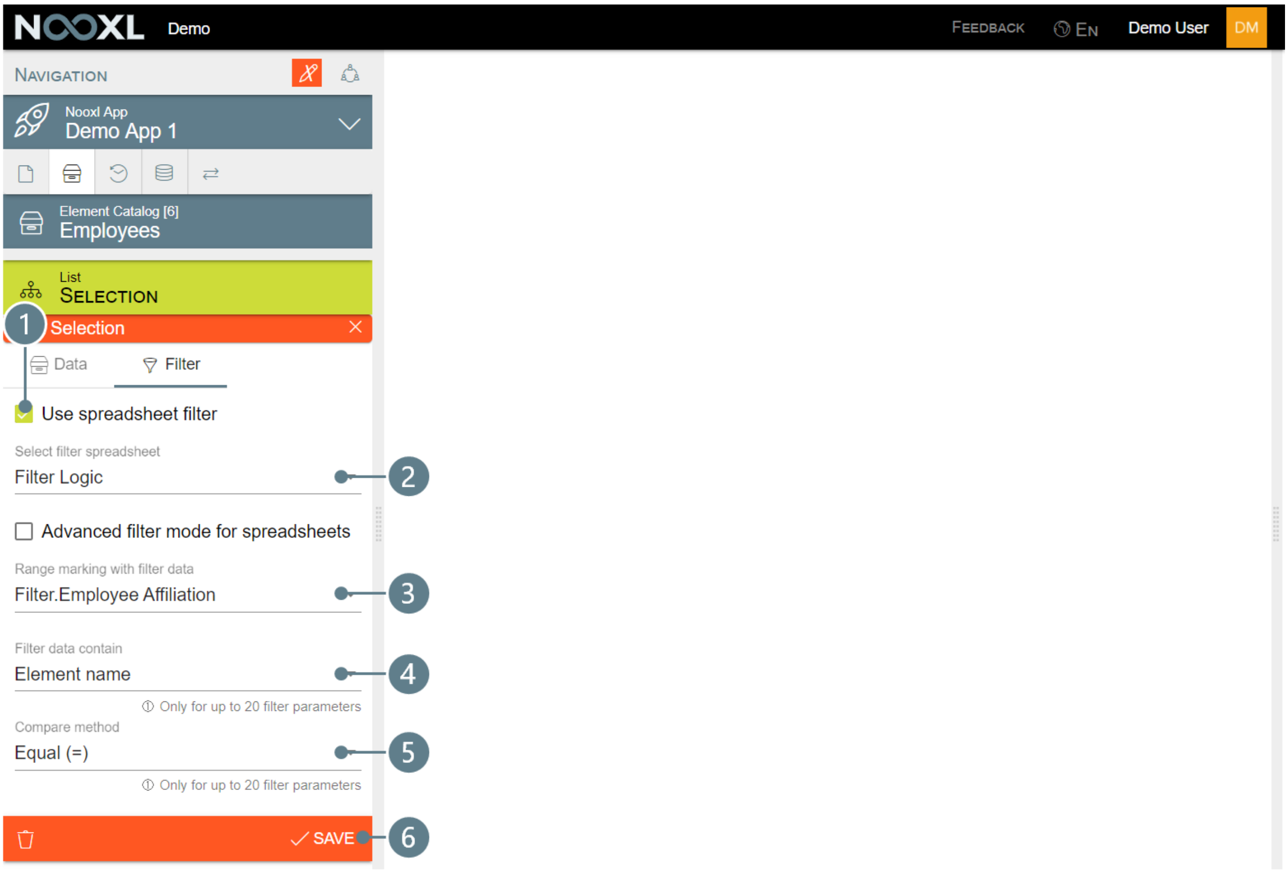


Employees	Part of department?	Filter.Employee of department
Anthony		
Bill Boss	x	Bill Boss
Bob		
Phillis		
Stella	x	Stella
Susi		

Using the *element IDs* in the markup instead of using the *element names*, would increase the performance to process larger catalogs.

Set up the Spreadsheet-Filter properties

Now we can go back to the selection and turn on the option *Use spreadsheet filter* **(1)** on the filter tab. Select the template **(2)** we created in the last step and choose the markup containing the element names **(3)**. Since the markup contains the names of the elements, specify *Element name* in the next drop down **(4)** and that the content of the markup should *equal* **(5)** the content of the catalog. Then go ahead and save the changes **(6)**.



☑ Use spreadsheet filter

Select filter spreadsheet
Filter Logic

☐ Advanced filter mode for spreadsheets

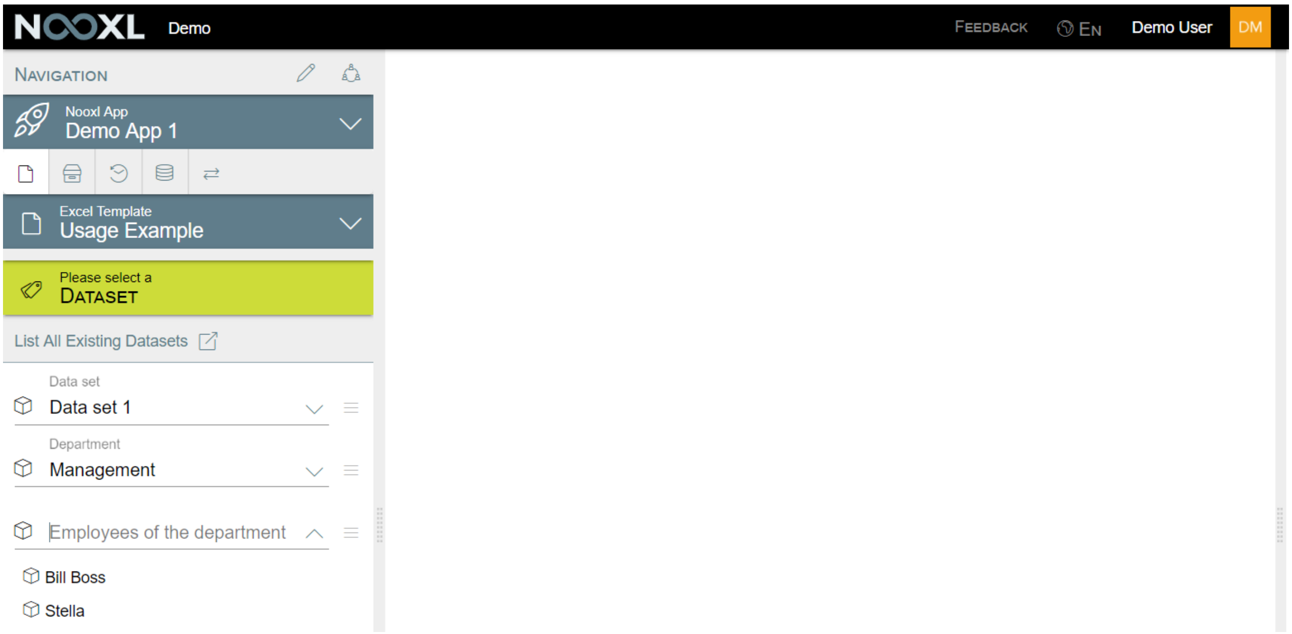
Range marking with filter data
Filter.Employee Affiliation

Filter data contain
Element name
ⓘ Only for up to 20 filter parameters

Compare method
Equal (=)
ⓘ Only for up to 20 filter parameters

Use the Spreadsheet-Filter in a template

Now when you use your Spreadsheet-filter selection as an option in a data set selection. You will see that the content will be determined by the department selection.



Data set
Data set 1

Department
Management

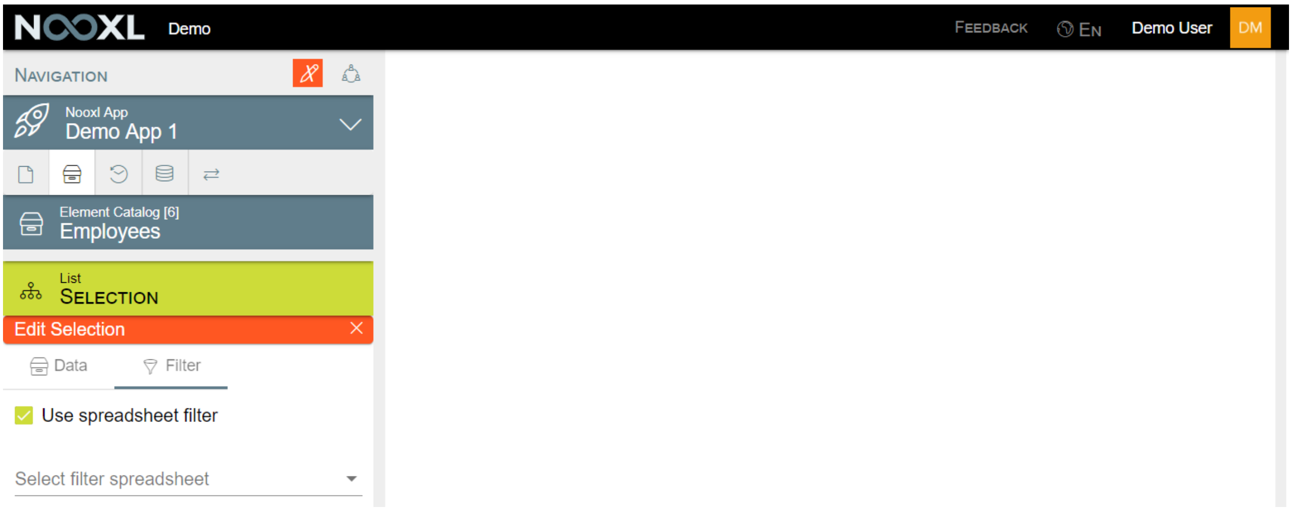
Employees of the department
Bill Boss
Stella

Please note

You must at least use all selections of the filter spreadsheet, but you can have more.

Nooxl will execute the spreadsheet filter template every time it is used by a user. This means, if your logic depends on data from another template you do not need to worry of updating the spreadsheet filter data manually.

Properties of the Spreadsheet-Filter



☑ Use spreadsheet filter

Select filter spreadsheet

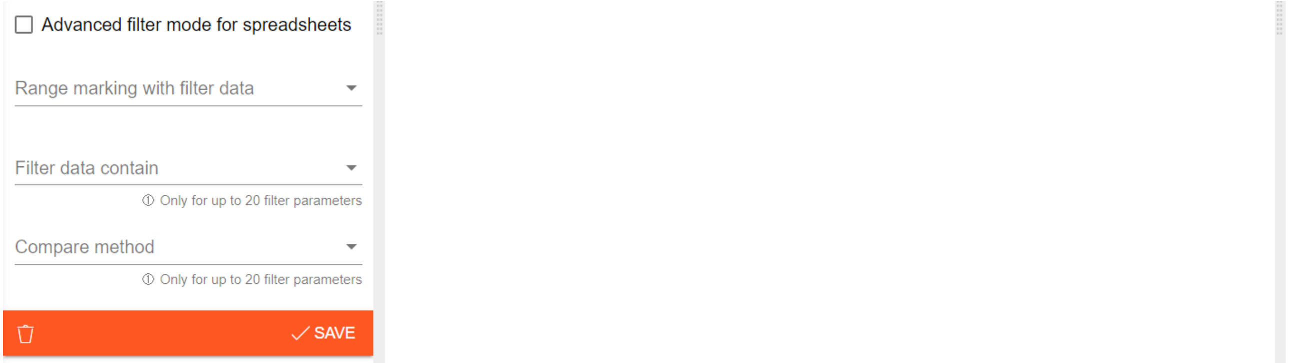
Use spreadsheet filter

Check this box if you want to use a Spreadsheet-Filter logic for the selection.

Select filter spreadsheet

From this dropdown you need to select the template containing your filter logic.

No advanced filter mode for spreadsheets



□ Advanced filter mode for spreadsheets

Range marking with filter data

Filter data contain

Only for up to 20 filter parameters

Compare method

Only for up to 20 filter parameters

If you do not want to use any advanced filter logic, leave the checkbox *Advanced filter mode for spreadsheets* unticked.

Range marking with filter data

Select the markup containing your filtered data. This does not need to be a cell storage, a simple markup is sufficient.

Filter data contain

Specify what "part" of the element is located inside the markup.

Element id	The element ids. This is the most performant approach.
Element name	The names of the elements.
Element description	The description of the elements. This would enable you to get multiple elements with one description, because descriptions do not need to be unique.
Element tags	The tags of the elements. This would enable you to get multiple elements with one tag, because tags do not need to be unique.

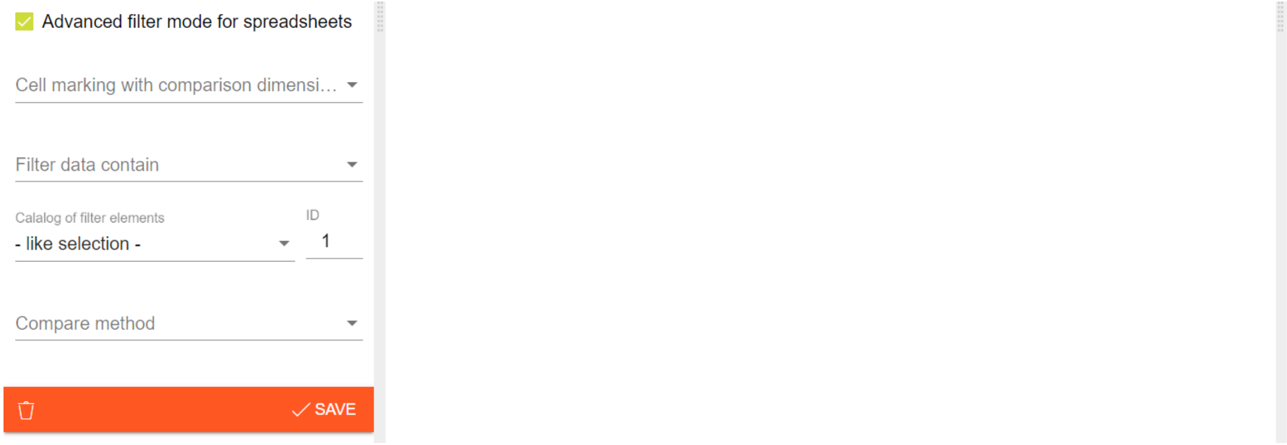
Compare method

What type of comparison should be done.

Equal (=)	What is stored in the cells of the markup is exactly the specified part of the element.
Contains	What is stored in the cell of the markup is part of the specified part of the element. ⓘ This can lead to unwanted results. If you go for element names and you have for example *Stella* and *Another Stella*, the later would also be part of the selection, as soon as *Stella* is part of it and you choose *Contains* as the compare method.
Like (*,?,[abcd],[a-d],[^abcd])	You can also define patterns in your markup and have all elements be part of your dynamic selection which match against this pattern.

Character	Description
`*`	Any string of zero or more characters.
`?`	Any single character.
`[]`	Any single character within the specified range (`[a-f]`) or set (`[abcdef]`).
`[^]`	Any single character not within the specified range (`[^a-f]`) or set (`[^abcdef]`).

Advanced filter mode for spreadsheets



☑ Advanced filter mode for spreadsheets

Cell marking with comparison dimensi…

Filter data contain

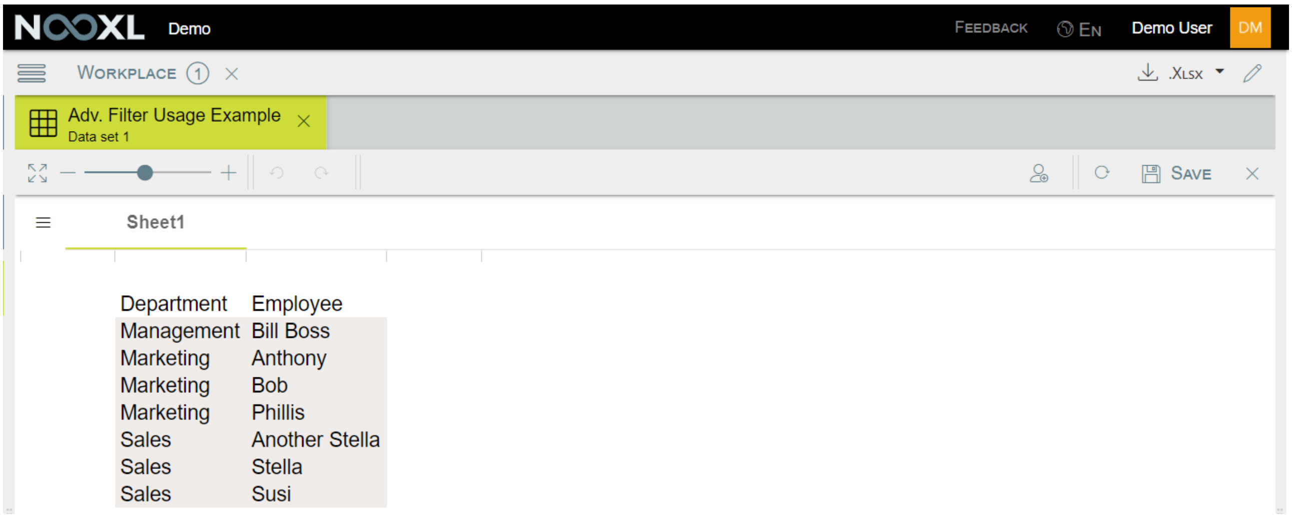
Calalog of filter elements: - like selection -

ID: 1

Compare method

If you need to use advanced filter logic, please check the *Advanced filter mode for spreadsheets* checkbox.

The advanced filter mode enables you for example to link two elements together, in a way that they can be used like dependent elements (siehe Seite 272), meaning that you can output the two selections and Nooxl will automatically group your elements together.



Department	Employee
Management	Bill Boss
Marketing	Anthony
Marketing	Bob
Marketing	Phillis
Sales	Another Stella
Sales	Stella
Sales	Susi

⚠ By doing this you are again limited to 1:n pairs.

Cell marking with comparison dimensions

The cell storage containing the information about "the other" catalogs elements.

Filter data contain

Information what Nooxl finds in the cell storage.

comparison value	If you set the Filter data to a *comparison value*, you are essentially only filtering the catalogs elements based on a specific value. For example only elements with an "x" saved in this cell storage should be displayed. ⓘ You could achieve the same result with the standard spreadsheet filter, but you would create some overhead.
Element Id	If your cell storage contains the element IDs of a "parent" element, then choose *Element Id*.
Element name	If your cell storage contains the elements names of a "parent" element, then choose *Element name*. ⓘ Using the *Element Id* instead of the *Element name* will improve the performance on large catalogs.

Catalog of filter elements

In case you choose *Element Id* or *Element name* as the Filter data, then you need to specify the catalog of the elements you are referencing.

ID

If you use a catalog multiple times in your data set selection, you need to specify unique ID's so that Nooxl knows what selection is which.

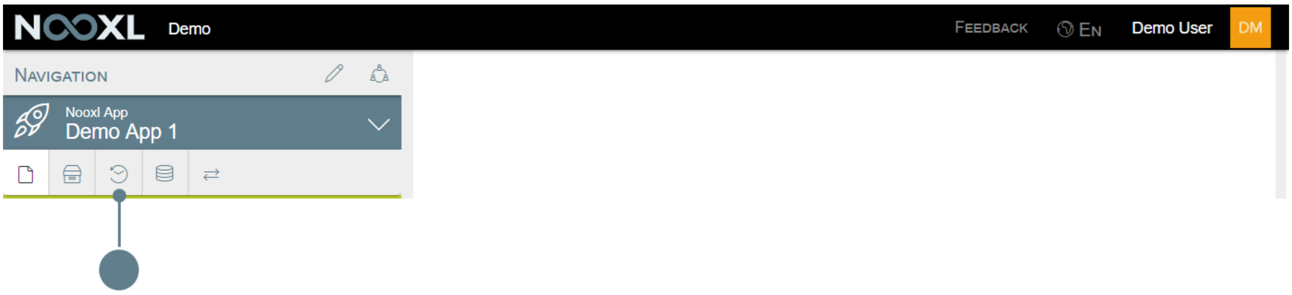
Compare method

Currently there is only `Equal (=)`.

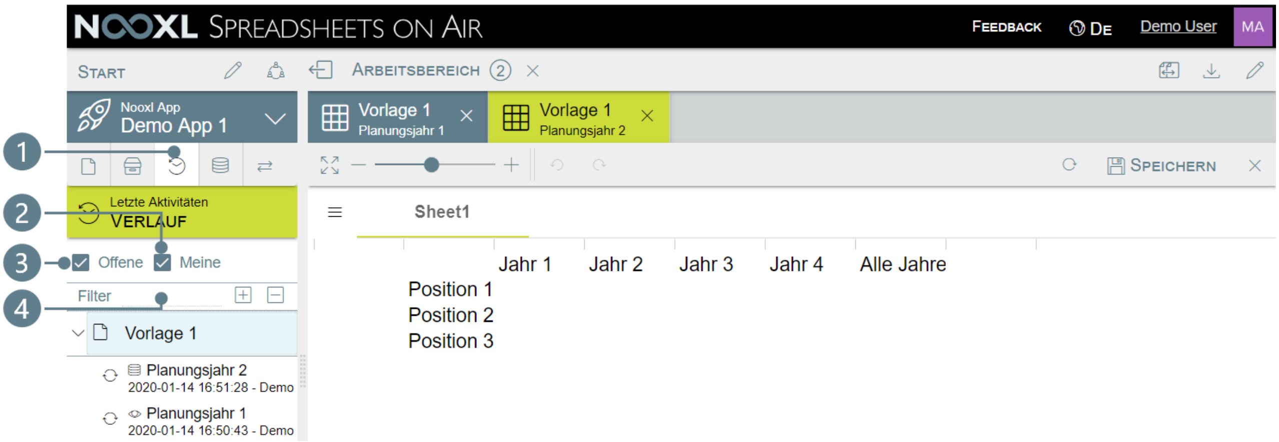
Include element if cell value =

If you want to filter your elements based on a specific value (`Filter data contain = comparison value`) then you specify this value here.

3.9 History of Activities



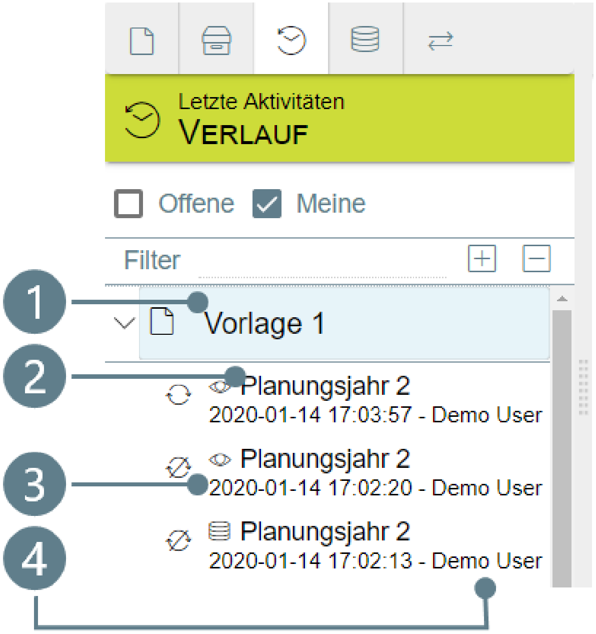
In the course of the activities (1) there is an overview of the activities of the users in the system. Depending on the rights of the user and the configuration of the app, these can be only the own activities or the activities of all users.
In the standard system, the list is filtered on the own (2) open (3) activities and is grouped by templates.
With the help of the filter (4) entries can be searched.



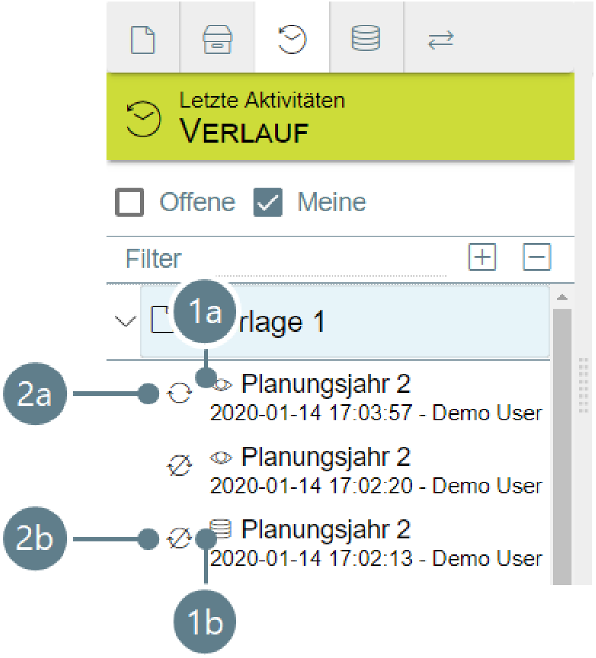
	Jahr 1	Jahr 2	Jahr 3	Jahr 4	Alle Jahre
Position 1					
Position 2					
Position 3					

Directly in the list you can see the following information for all activities:

1. Template
2. Data set
3. Time of the last activity
4. User



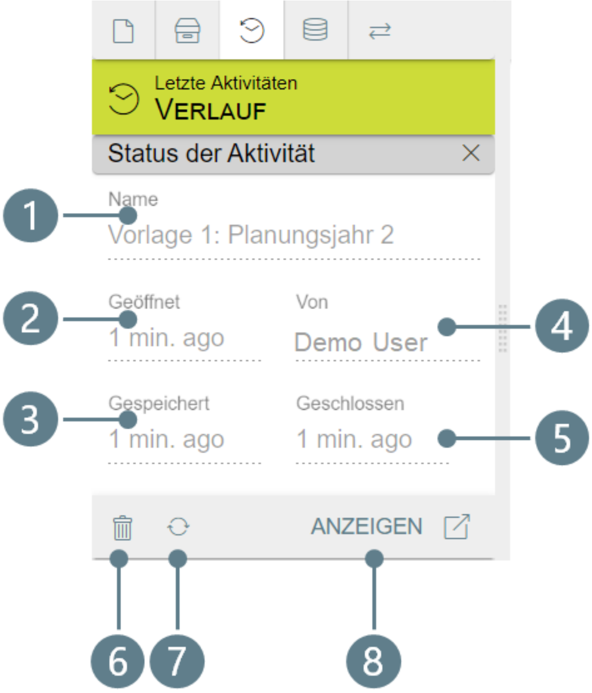
1. Type of activity
   a. User has viewed data set (eye)
   b. User has changed record (database)
2. If the record is still open
   a. Record is still open (arrows in circle)
   b. Record is no longer open (crossed out arrows in the circle)



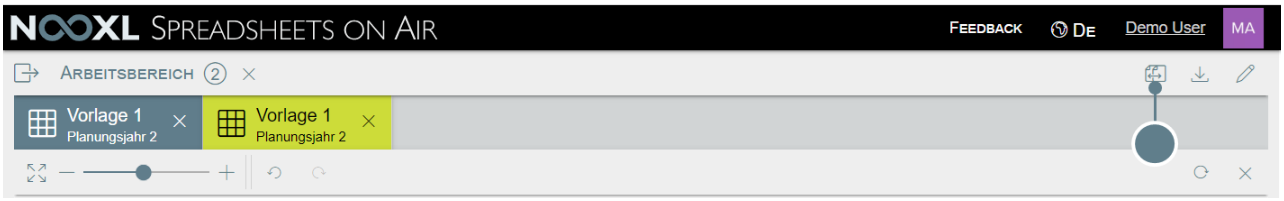
3.9.1 Viewing and changing the status of the activity

If you click on one of the activities in the history list, the status of the activity opens. Here you can view the following information and perform actions according to the set permissions:

1. Template and record
2. When was the activity started
3. If saved, when was last savedt
4. Who is the user
5. If the activity was closed; when
6. Delete activity entry from the logs
7. Open or close activity (depending on current status)
8. Open record as it was during the activity

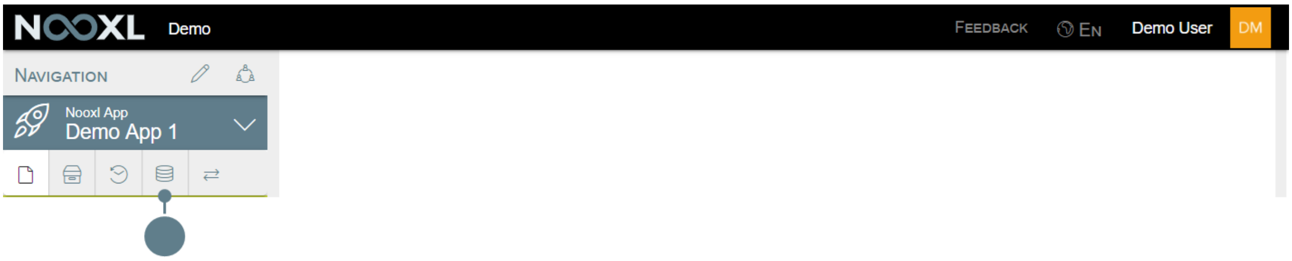


The last feature can be used, for example, to track who made what changes to a record and when. To do this, the old activity is opened parallel to the currently stored record.
Nooxl then displays an additional button in the workspace with which two records can be compared:

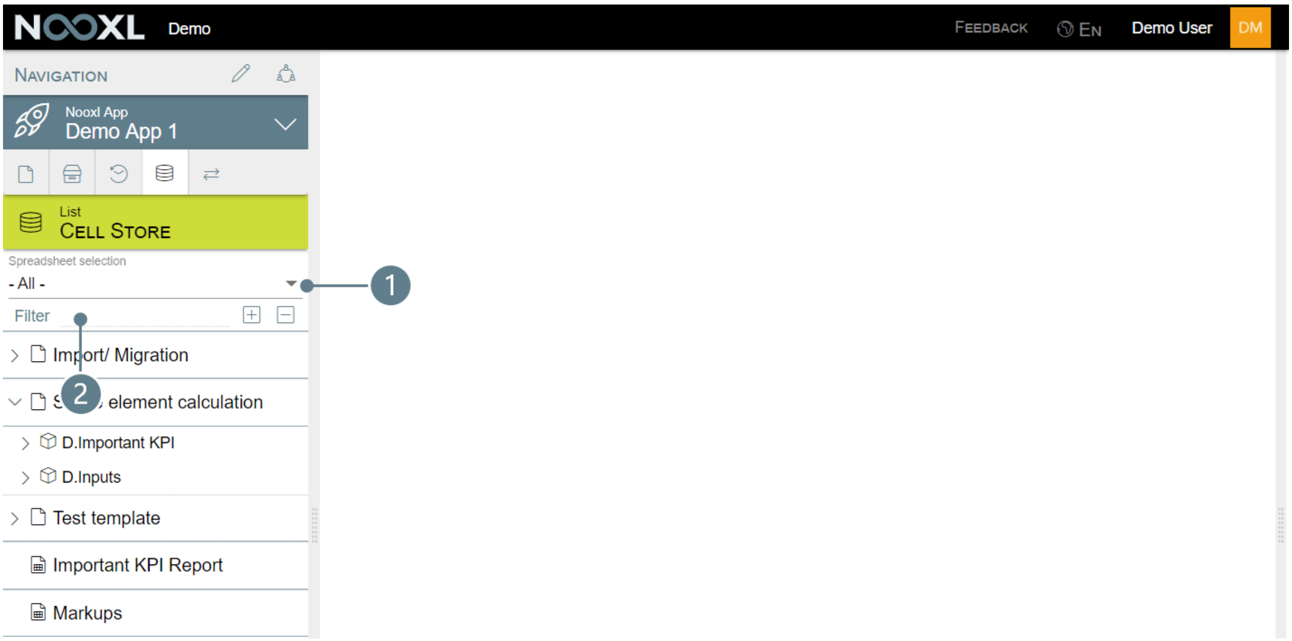


3.10 Cell Store

The cell store of your App provides access to the data stored in all cell storage markups throughout the different templates. You find it in the left navigation panel.



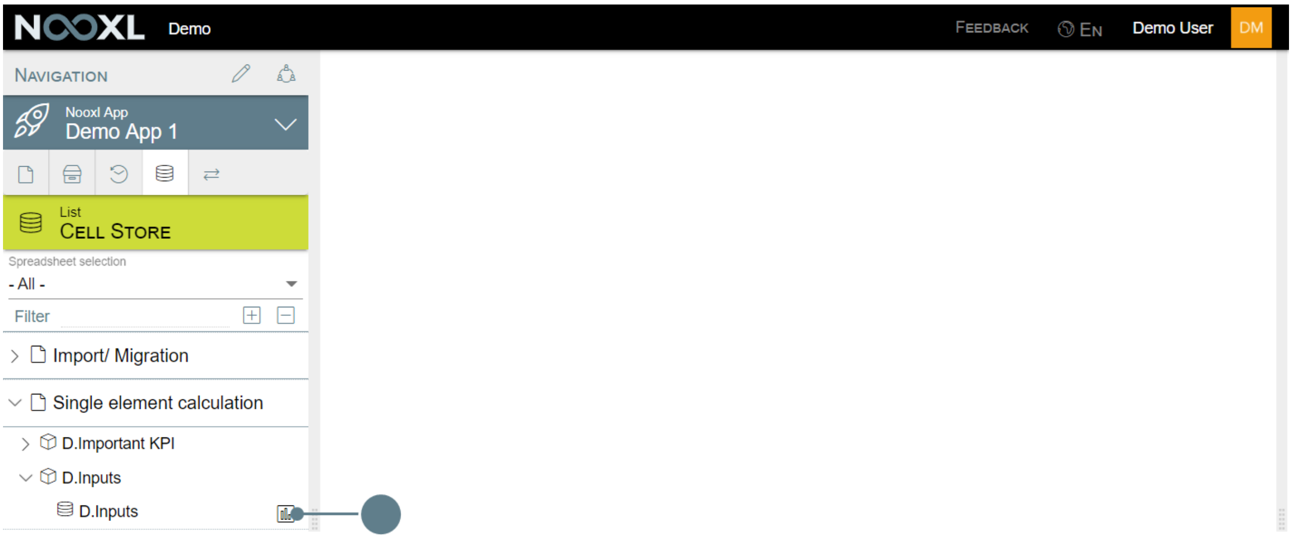
The cell store allows you to directly filter for cell storage markups of a specific template **(1)**. Additionally you can use a free text search to further filter down the markups **(2)**.



At the beginning of the list you find all templates with cell storage markups 🗋. All templates with the icon ▦ in front of its name do not contain any cell storage markups. The markups use the following icon ⬡ and if you open those you find the cell storages: ⛁

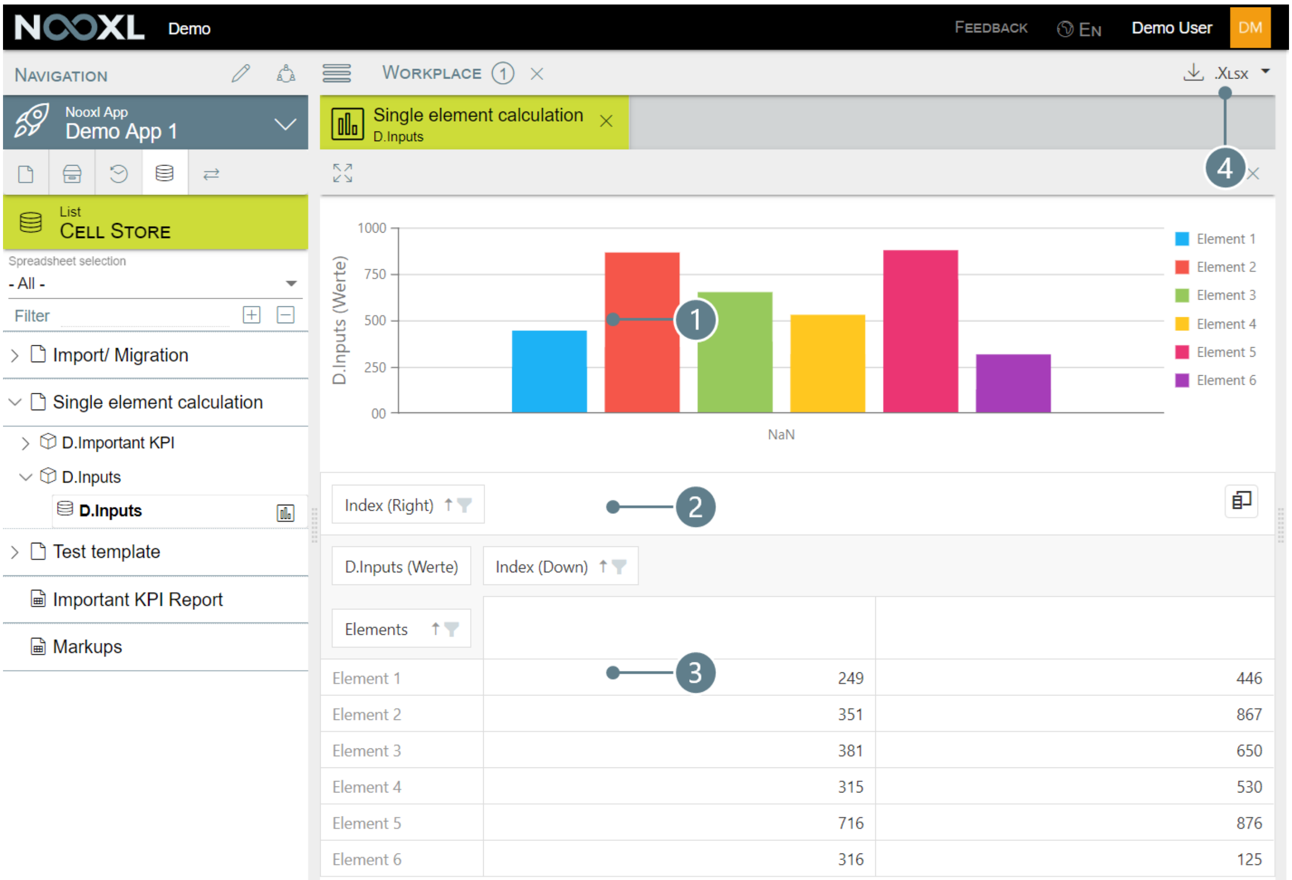
3.10.1 View the data of a cell storage (cell store pivot grid)

When you click on the icon 📊 you open up the cell storage viewer.



The cell storage viewer provides the users the functionality to slice and dice all data stored in it. The usage is similar to excels pivot functionality and very intuitive. All results are visualized as a column chart on top of the data table itself.

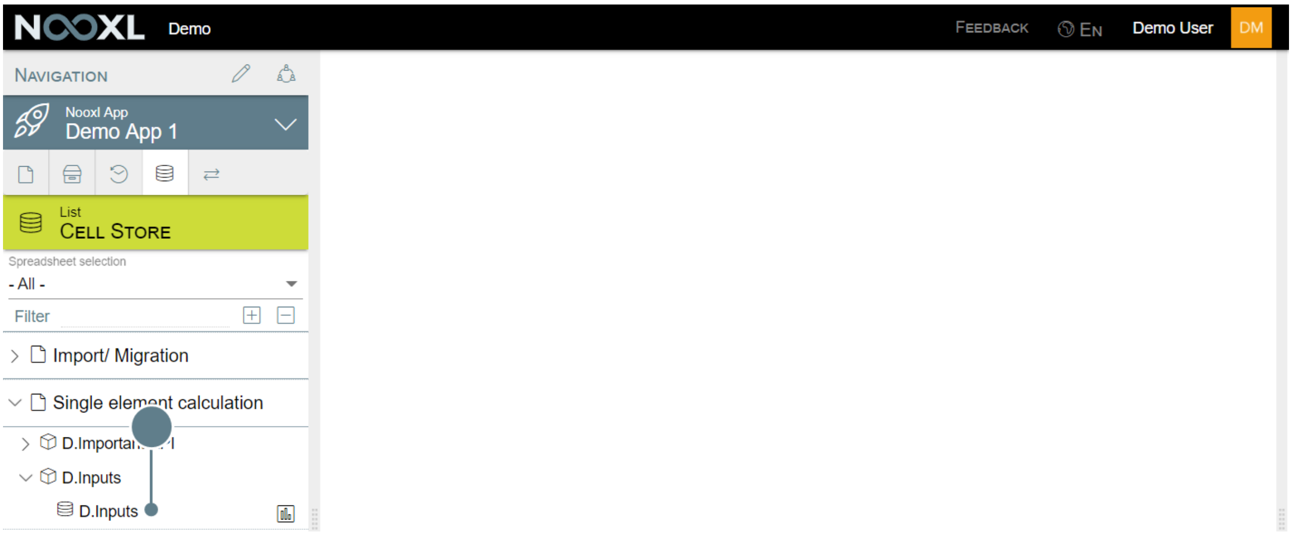
1. Visualized results of the data table.
2. Filter area and column/ row setup.
3. Data table.
4. Export the data table to Excel.



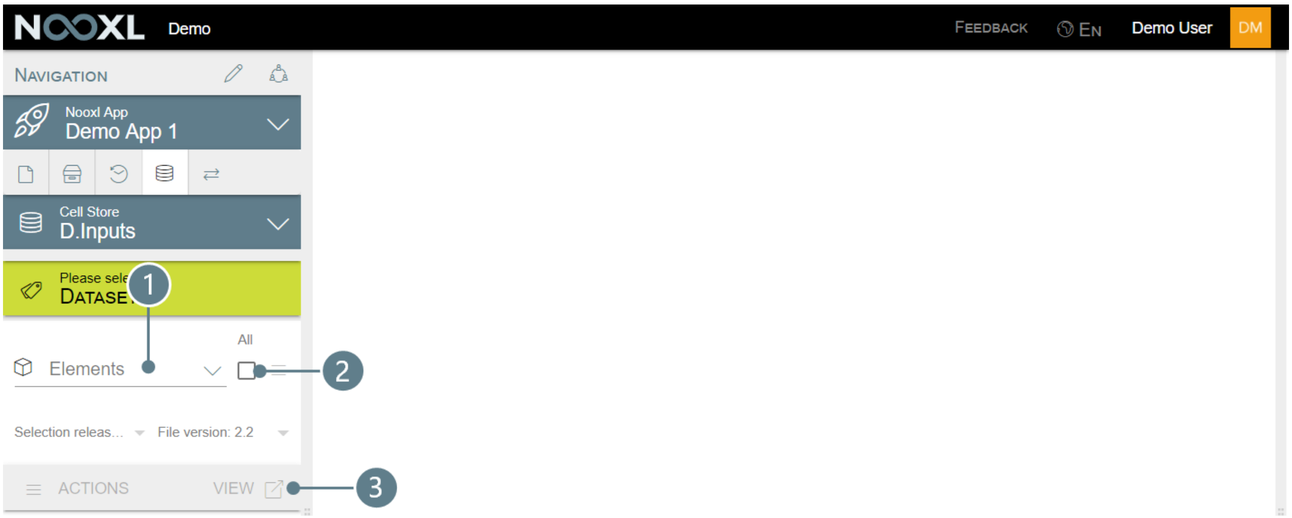
Elements	D.Inputs (Werte) Index (Down)	
Element 1	249	446
Element 2	351	867
Element 3	381	650
Element 4	315	530
Element 5	716	876
Element 6	316	125

3.10.2 Data edit mode of a cell storage

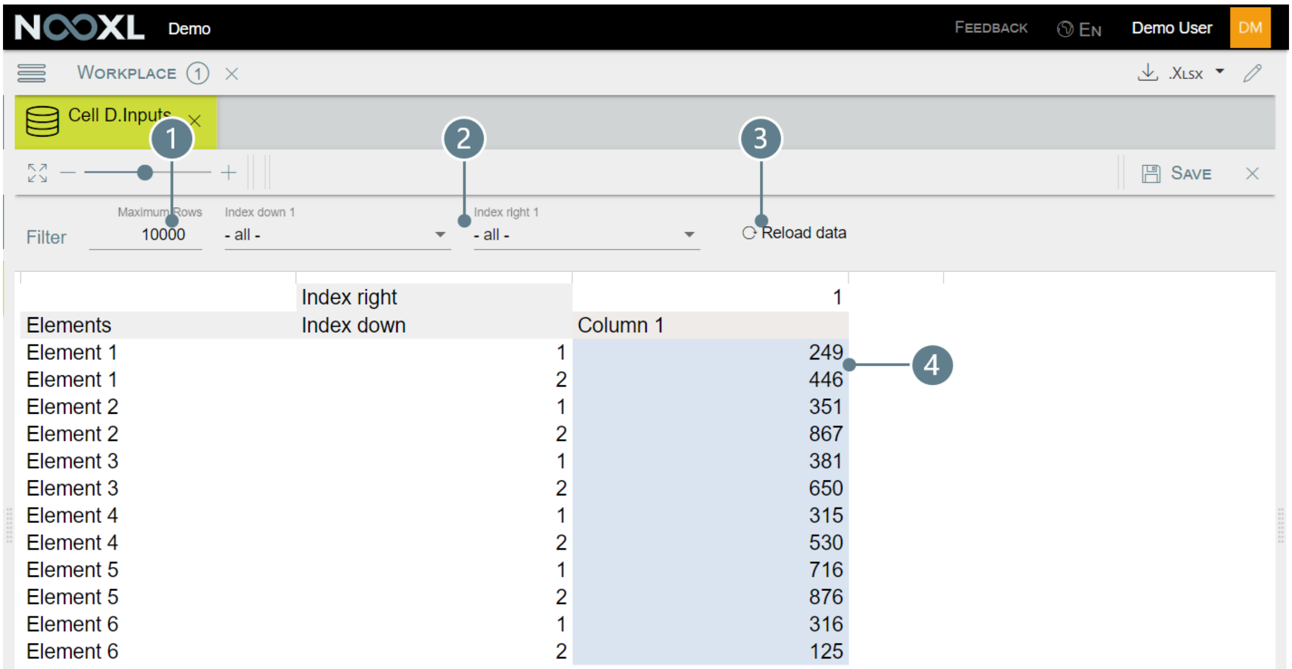
When you click on the name of the cell storage you enter the edit mode for this cell storage.



You need to select a data set **(1)** or all datasets **(2)** and click on view **(3)**.



Per default you will only see the first 10k rows, if you need to view more data please adjust the filter *Maximum Rows* accordingly **(1)**. The cell storage editor will provide you all dimensions used for the cell storage as single filters **(2)**. When you change any of the filters, you need to manually reload the data **(3)**. Down in the edit grid **(4)** you can freely change the data currently stored in the cell storage.



Filter

Maximum Rows: 10000

Index down 1: - all -

Index right 1: - all -

	Index right	1
Elements	Index down	Column 1
Element 1	1	249
Element 1	2	446
Element 2	1	351
Element 2	2	867
Element 3	1	381
Element 3	2	650
Element 4	1	315
Element 4	2	530
Element 5	1	716
Element 5	2	876
Element 6	1	316
Element 6	2	125

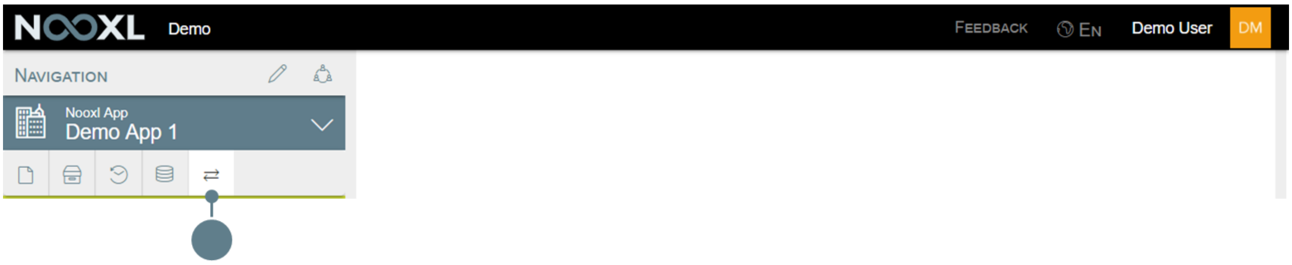
Please note

The editor does only that, edit the raw data stored in the cell storage.

- Any data quality checks you setup in your templates (data validation) will not be considered by the data editor!

- Any editing of the data does not trigger a recalculation for the templates, meaning that any values using the edited data as input in your template will not change until you manually calculated the data sets.

3.11 Data exports for analytics

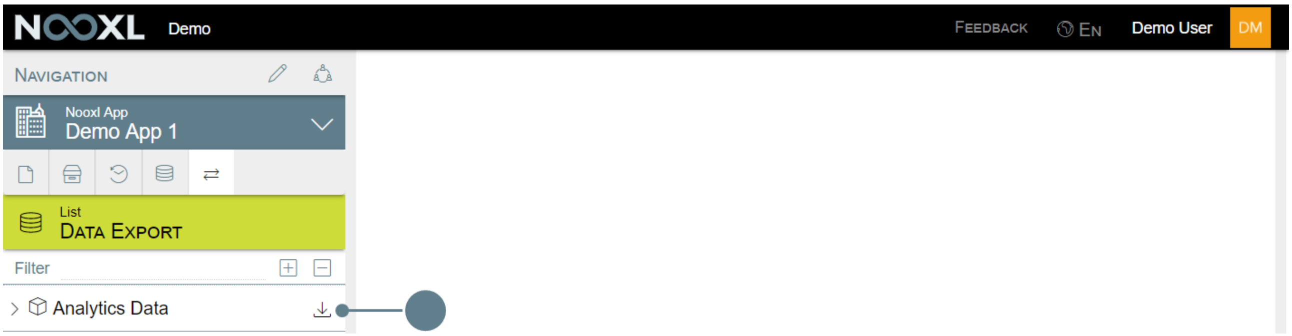


In the Data Export section of a Nooxl App you find extracts of your applications data, meant for analysis purposes. The data is provided as excel files containing all the data on the different sheets, which can for example be used to create a simple data model in pivot to do data analytics.

Of course the data can also be analyzed in any other tool which can import data from excel.

3.11.1 Download data exports

Depending on your App there maybe multiple data exports available to you. You can download a data export as an excel file, by clicking on the ⤓ button.



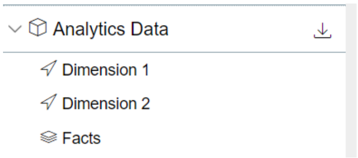
3.11.2 Exploring the content of data exports

You can take a peek into the data extract by clicking on the > button to open the exports details. Inside you find a list of all dimensions[11] and fact tables[12] which contain the actual data, called grains[13].

[11] https://www.kimballgroup.com/data-warehouse-business-intelligence-resources/kimball-techniques/dimensional-modeling-techniques/dimensions-for-context/

[12] https://www.kimballgroup.com/data-warehouse-business-intelligence-resources/kimball-techniques/dimensional-modeling-techniques/facts-for-measurement/

[13] https://www.kimballgroup.com/data-warehouse-business-intelligence-resources/kimball-techniques/dimensional-modeling-techniques/grain/



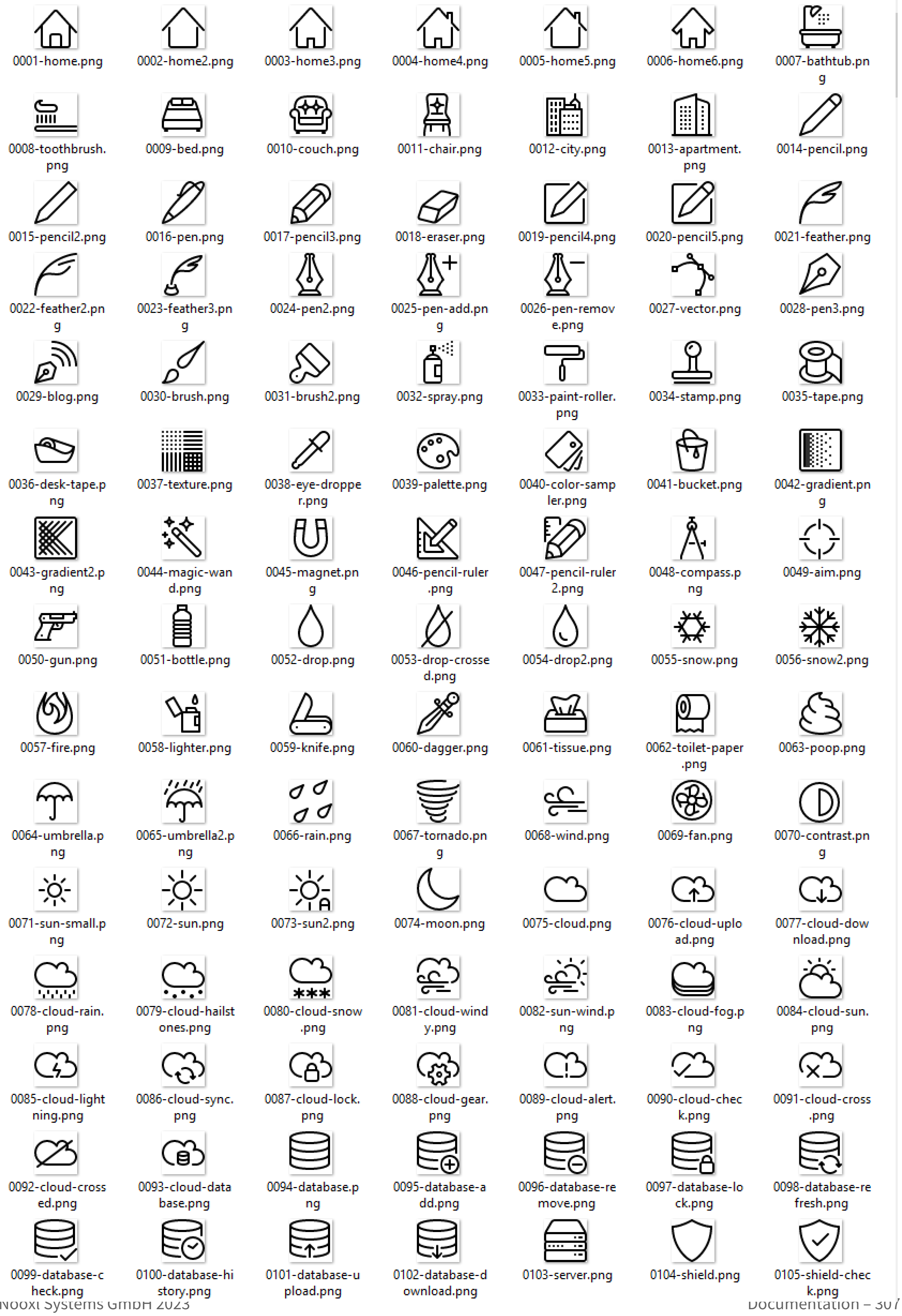
3.12 Icons in Nooxl

In Nooxl the icon pack of linear icons[14] is integrated and can be used for catalogs and apps. Support for the use of icons in the left navigation for your templates is in progress.

The icons are stored in Nooxl with the designation after the four-digit code and without ".png".

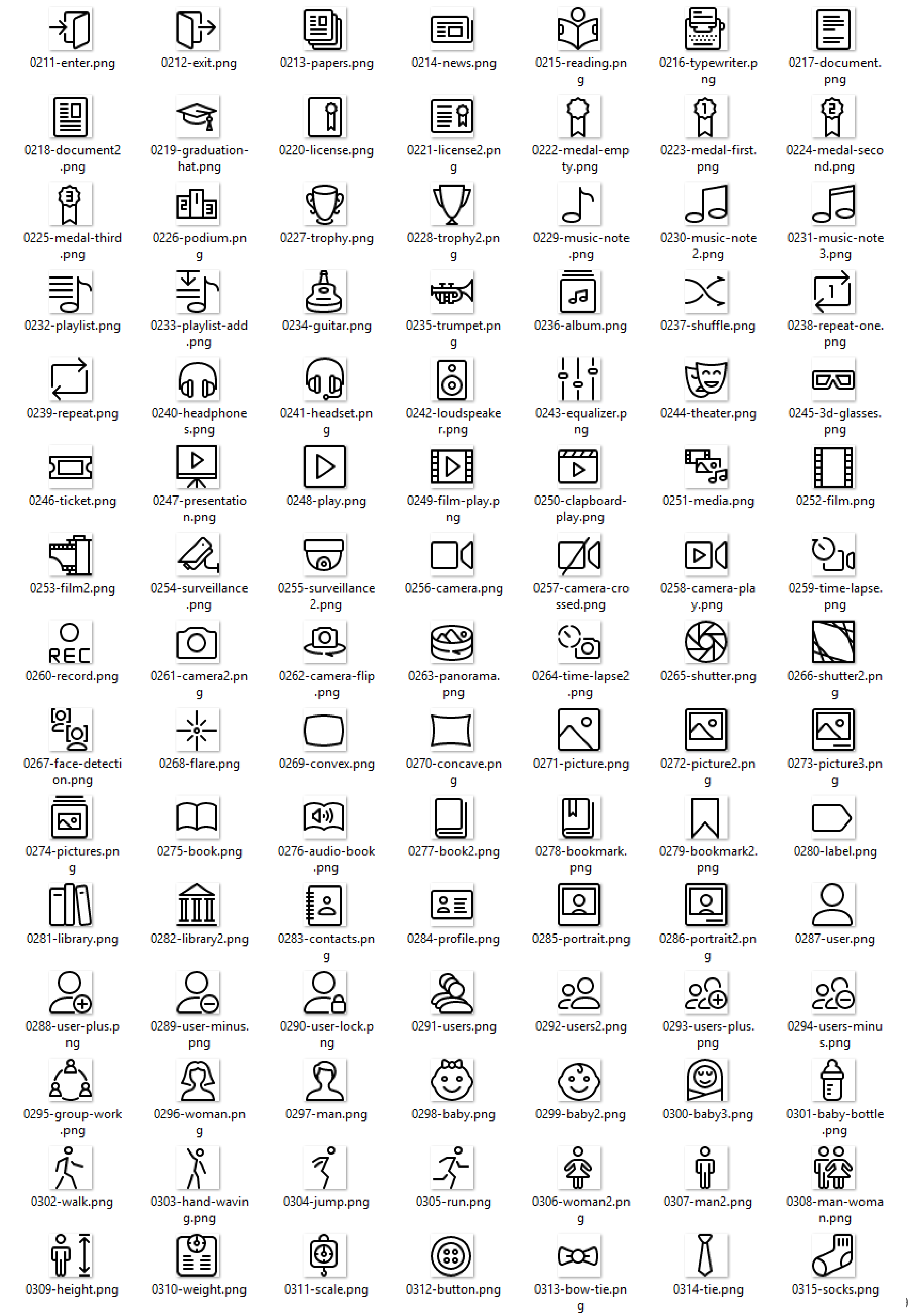
So the icon `0024-pen2.png` is stored as `pen2`.

[14] http://linearicons.com/



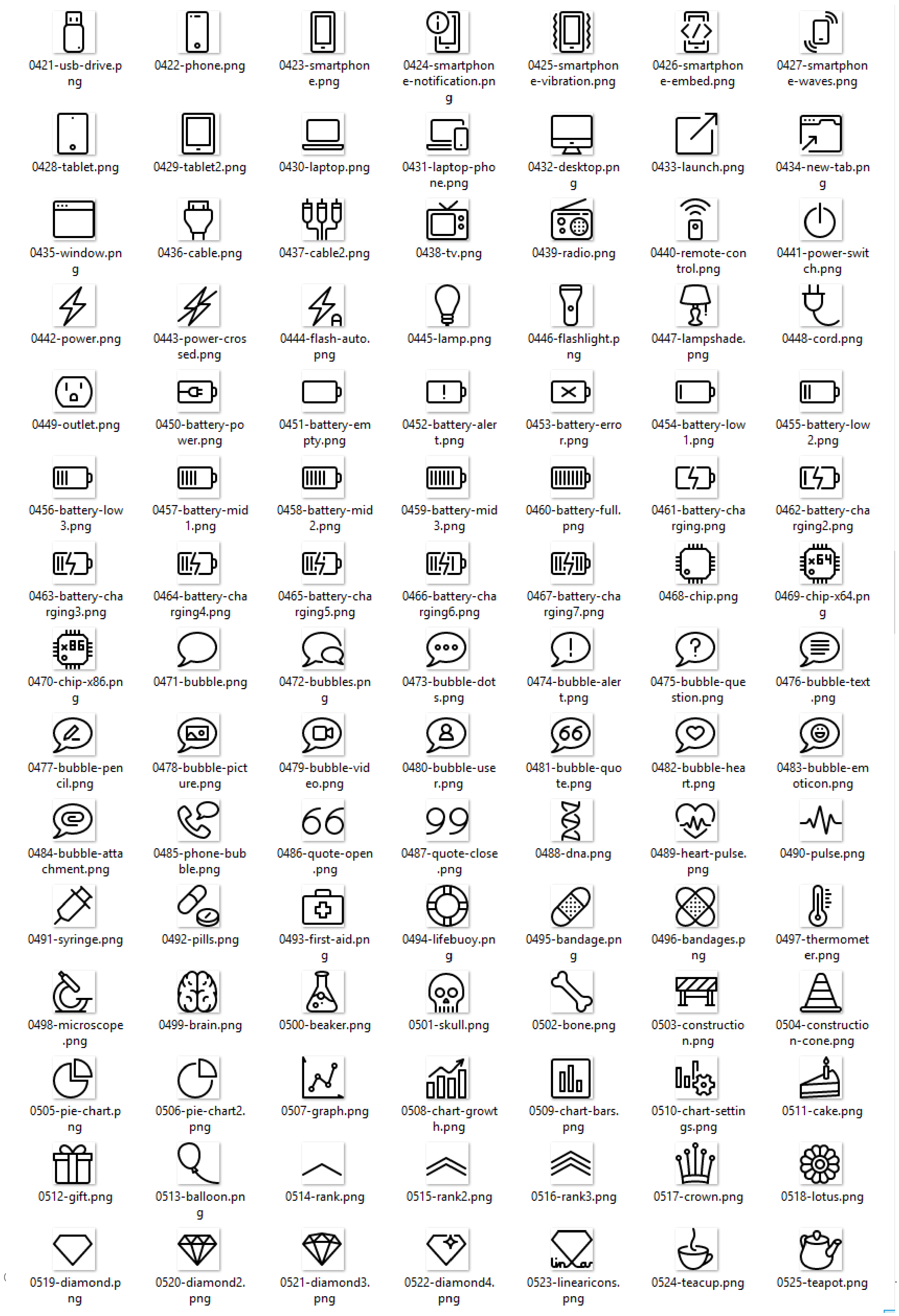
0001-home.png	0002-home2.png	0003-home3.png	0004-home4.png	0005-home5.png	0006-home6.png	0007-bathtub.png
0008-toothbrush.png	0009-bed.png	0010-couch.png	0011-chair.png	0012-city.png	0013-apartment.png	0014-pencil.png
0015-pencil2.png	0016-pen.png	0017-pencil3.png	0018-eraser.png	0019-pencil4.png	0020-pencil5.png	0021-feather.png
0022-feather2.png	0023-feather3.png	0024-pen2.png	0025-pen-add.png	0026-pen-remove.png	0027-vector.png	0028-pen3.png
0029-blog.png	0030-brush.png	0031-brush2.png	0032-spray.png	0033-paint-roller.png	0034-stamp.png	0035-tape.png
0036-desk-tape.png	0037-texture.png	0038-eye-dropper.png	0039-palette.png	0040-color-sampler.png	0041-bucket.png	0042-gradient.png
0043-gradient2.png	0044-magic-wand.png	0045-magnet.png	0046-pencil-ruler.png	0047-pencil-ruler2.png	0048-compass.png	0049-aim.png
0050-gun.png	0051-bottle.png	0052-drop.png	0053-drop-crossed.png	0054-drop2.png	0055-snow.png	0056-snow2.png
0057-fire.png	0058-lighter.png	0059-knife.png	0060-dagger.png	0061-tissue.png	0062-toilet-paper.png	0063-poop.png
0064-umbrella.png	0065-umbrella2.png	0066-rain.png	0067-tornado.png	0068-wind.png	0069-fan.png	0070-contrast.png
0071-sun-small.png	0072-sun.png	0073-sun2.png	0074-moon.png	0075-cloud.png	0076-cloud-upload.png	0077-cloud-download.png
0078-cloud-rain.png	0079-cloud-hailstones.png	0080-cloud-snow.png	0081-cloud-windy.png	0082-sun-wind.png	0083-cloud-fog.png	0084-cloud-sun.png
0085-cloud-lightning.png	0086-cloud-sync.png	0087-cloud-lock.png	0088-cloud-gear.png	0089-cloud-alert.png	0090-cloud-check.png	0091-cloud-cross.png
0092-cloud-crossed.png	0093-cloud-database.png	0094-database.png	0095-database-add.png	0096-database-remove.png	0097-database-lock.png	0098-database-refresh.png
0099-database-check.png	0100-database-history.png	0101-database-upload.png	0102-database-download.png	0103-server.png	0104-shield.png	0105-shield-check.png

0106-shield-alert.png
0107-shield-cross.png
0108-lock.png
0109-rotation-lock.png
0110-unlock.png
0111-key.png
0112-key-hole.png
0113-toggle-off.png
0114-toggle-on.png
0115-cog.png
0116-cog2.png
0117-wrench.png
0118-screwdriver.png
0119-hammer-wrench.png
0120-hammer.png
0121-saw.png
0122-axe.png
0123-axe2.png
0124-shovel.png
0125-pickaxe.png
0126-factory.png
0127-factory2.png
0128-recycle.png
0129-trash.png
0130-trash2.png
0131-trash3.png
0132-broom.png
0133-game.png
0134-gamepad.png
0135-joystick.png
0136-dice.png
0137-spades.png
0138-diamonds.png
0139-clubs.png
0140-hearts.png
0141-heart.png
0142-star.png
0143-star-half.png
0144-star-empty.png
0145-flag.png
0146-flag2.png
0147-flag3.png
0148-mailbox-full.png
0149-mailbox-empty.png
0150-at-sign.png
0151-envelope.png
0152-envelope-open.png
0153-paperclip.png
0154-paper-plane.png
0155-reply.png
0156-reply-all.png
0157-inbox.png
0158-inbox2.png
0159-outbox.png
0160-box.png
0161-archive.png
0162-archive2.png
0163-drawers.png
0164-drawers2.png
0165-drawers3.png
0166-eye.png
0167-eye-crossed.png
0168-eye-plus.png
0169-eye-minus.png
0170-binoculars.png
0171-binoculars2.png
0172-hdd.png
0173-hdd-down.png
0174-hdd-up.png
0175-floppy-disk.png
0176-disc.png
0177-tape2.png
0178-printer.png
0179-shredder.png
0180-file-empty.png
0181-file-add.png
0182-file-check.png
0183-file-lock.png
0184-files.png
0185-copy.png
0186-compare.png
0187-folder.png
0188-folder-search.png
0189-folder-plus.png
0190-folder-minus.png
0191-folder-download.png
0192-folder-upload.png
0193-folder-star.png
0194-folder-heart.png
0195-folder-user.png
0196-folder-shared.png
0197-folder-music.png
0198-folder-picture.png
0199-folder-film.png
0200-scissors.png
0201-paste.png
0202-clipboard-empty.png
0203-clipboard-pencil.png
0204-clipboard-text.png
0205-clipboard-check.png
0206-clipboard-down.png
0207-clipboard-left.png
0208-clipboard-alert.png
0209-clipboard-user.png
0210-register.png



0211-enter.png	0212-exit.png	0213-papers.png	0214-news.png	0215-reading.png	0216-typewriter.png	0217-document.png
0218-document2.png	0219-graduation-hat.png	0220-license.png	0221-license2.png	0222-medal-empty.png	0223-medal-first.png	0224-medal-second.png
0225-medal-third.png	0226-podium.png	0227-trophy.png	0228-trophy2.png	0229-music-note.png	0230-music-note2.png	0231-music-note3.png
0232-playlist.png	0233-playlist-add.png	0234-guitar.png	0235-trumpet.png	0236-album.png	0237-shuffle.png	0238-repeat-one.png
0239-repeat.png	0240-headphones.png	0241-headset.png	0242-loudspeaker.png	0243-equalizer.png	0244-theater.png	0245-3d-glasses.png
0246-ticket.png	0247-presentation.png	0248-play.png	0249-film-play.png	0250-clapboard-play.png	0251-media.png	0252-film.png
0253-film2.png	0254-surveillance.png	0255-surveillance2.png	0256-camera.png	0257-camera-crossed.png	0258-camera-play.png	0259-time-lapse.png
0260-record.png	0261-camera2.png	0262-camera-flip.png	0263-panorama.png	0264-time-lapse2.png	0265-shutter.png	0266-shutter2.png
0267-face-detection.png	0268-flare.png	0269-convex.png	0270-concave.png	0271-picture.png	0272-picture2.png	0273-picture3.png
0274-pictures.png	0275-book.png	0276-audio-book.png	0277-book2.png	0278-bookmark.png	0279-bookmark2.png	0280-label.png
0281-library.png	0282-library2.png	0283-contacts.png	0284-profile.png	0285-portrait.png	0286-portrait2.png	0287-user.png
0288-user-plus.png	0289-user-minus.png	0290-user-lock.png	0291-users.png	0292-users2.png	0293-users-plus.png	0294-users-minus.png
0295-group-work.png	0296-woman.png	0297-man.png	0298-baby.png	0299-baby2.png	0300-baby3.png	0301-baby-bottle.png
0302-walk.png	0303-hand-waving.png	0304-jump.png	0305-run.png	0306-woman2.png	0307-man2.png	0308-man-woman.png
0309-height.png	0310-weight.png	0311-scale.png	0312-button.png	0313-bow-tie.png	0314-tie.png	0315-socks.png

0316-shoe.png	0317-shoes.png	0318-hat.png	0319-pants.png	0320-shorts.png	0321-flip-flops.png	0322-shirt.png
0323-hanger.png	0324-laundry.png	0325-store.png	0326-haircut.png	0327-store-24.png	0328-barcode.png	0329-barcode2.png
0330-barcode3.png	0331-cashier.png	0332-bag.png	0333-bag2.png	0334-cart.png	0335-cart-empty.png	0336-cart-full.png
0337-cart-plus.png	0338-cart-plus2.png	0339-cart-add.png	0340-cart-remove.png	0341-cart-exchange.png	0342-tag.png	0343-tags.png
0344-receipt.png	0345-wallet.png	0346-credit-card.png	0347-cash-dollar.png	0348-cash-euro.png	0349-cash-pound.png	0350-cash-yen.png
0351-bag-dollar.png	0352-bag-euro.png	0353-bag-pound.png	0354-bag-yen.png	0355-coin-dollar.png	0356-coin-euro.png	0357-coin-pound.png
0358-coin-yen.png	0359-calculator.png	0360-calculator2.png	0361-abacus.png	0362-vault.png	0363-telephone.png	0364-phone-lock.png
0365-phone-wave.png	0366-phone-pause.png	0367-phone-outgoing.png	0368-phone-incoming.png	0369-phone-in-out.png	0370-phone-error.png	0371-phone-sip.png
0372-phone-plus.png	0373-phone-minus.png	0374-voicemail.png	0375-dial.png	0376-telephone2.png	0377-pushpin.png	0378-pushpin2.png
0379-map-marker.png	0380-map-marker-user.png	0381-map-marker-down.png	0382-map-marker-check.png	0383-map-marker-crossed.png	0384-radar.png	0385-compass2.png
0386-map.png	0387-map2.png	0388-location.png	0389-road-sign.png	0390-calendar-empty.png	0391-calendar-check.png	0392-calendar-cross.png
0393-calendar-31.png	0394-calendar-full.png	0395-calendar-insert.png	0396-calendar-text.png	0397-calendar-user.png	0398-mouse.png	0399-mouse-left.png
0400-mouse-right.png	0401-mouse-both.png	0402-keyboard.png	0403-keyboard-up.png	0404-keyboard-down.png	0405-delete.png	0406-spell-check.png
0407-escape.png	0408-enter2.png	0409-screen.png	0410-aspect-ratio.png	0411-signal.png	0412-signal-lock.png	0413-signal-80.png
0414-signal-60.png	0415-signal-40.png	0416-signal-20.png	0417-signal-0.png	0418-signal-blocked.png	0419-sim.png	0420-flash-memory.png



0421-usb-drive.png
0422-phone.png
0423-smartphone.png
0424-smartphone-notification.png
0425-smartphone-vibration.png
0426-smartphone-embed.png
0427-smartphone-waves.png
0428-tablet.png
0429-tablet2.png
0430-laptop.png
0431-laptop-phone.png
0432-desktop.png
0433-launch.png
0434-new-tab.png
0435-window.png
0436-cable.png
0437-cable2.png
0438-tv.png
0439-radio.png
0440-remote-control.png
0441-power-switch.png
0442-power.png
0443-power-crossed.png
0444-flash-auto.png
0445-lamp.png
0446-flashlight.png
0447-lampshade.png
0448-cord.png
0449-outlet.png
0450-battery-power.png
0451-battery-empty.png
0452-battery-alert.png
0453-battery-error.png
0454-battery-low1.png
0455-battery-low2.png
0456-battery-low3.png
0457-battery-mid1.png
0458-battery-mid2.png
0459-battery-mid3.png
0460-battery-full.png
0461-battery-charging.png
0462-battery-charging2.png
0463-battery-charging3.png
0464-battery-charging4.png
0465-battery-charging5.png
0466-battery-charging6.png
0467-battery-charging7.png
0468-chip.png
0469-chip-x64.png
0470-chip-x86.png
0471-bubble.png
0472-bubbles.png
0473-bubble-dots.png
0474-bubble-alert.png
0475-bubble-question.png
0476-bubble-text.png
0477-bubble-pencil.png
0478-bubble-picture.png
0479-bubble-video.png
0480-bubble-user.png
0481-bubble-quote.png
0482-bubble-heart.png
0483-bubble-emoticon.png
0484-bubble-attachment.png
0485-phone-bubble.png
0486-quote-open.png
0487-quote-close.png
0488-dna.png
0489-heart-pulse.png
0490-pulse.png
0491-syringe.png
0492-pills.png
0493-first-aid.png
0494-lifebuoy.png
0495-bandage.png
0496-bandages.png
0497-thermometer.png
0498-microscope.png
0499-brain.png
0500-beaker.png
0501-skull.png
0502-bone.png
0503-construction.png
0504-construction-cone.png
0505-pie-chart.png
0506-pie-chart2.png
0507-graph.png
0508-chart-growth.png
0509-chart-bars.png
0510-chart-settings.png
0511-cake.png
0512-gift.png
0513-balloon.png
0514-rank.png
0515-rank2.png
0516-rank3.png
0517-crown.png
0518-lotus.png
0519-diamond.png
0520-diamond2.png
0521-diamond3.png
0522-diamond4.png
0523-linearicons.png
0524-teacup.png
0525-teapot.png

0526-glass.png

0527-bottle2.png

0528-glass-cocktail.png

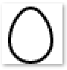
0529-glass2.png

0530-dinner.png

0531-dinner2.png

0532-chef.png

0533-scale2.png


0534-egg.png

0535-egg2.png

0536-eggs.png

0537-platter.png

0538-steak.png

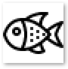
0539-hamburger.png

0540-hotdog.png

0541-pizza.png

0542-sausage.png

0543-chicken.png


0544-fish.png

0545-carrot.png

0546-cheese.png

0547-bread.png

0548-ice-cream.png

0549-ice-cream2.png

0550-candy.png

0551-lollipop.png

0552-coffee-bean.png

0553-coffee-cup.png

0554-cherry.png

0555-grapes.png

0556-citrus.png

0557-apple.png

0558-leaf.png

0559-landscape.png

0560-pine-tree.png

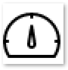
0561-tree.png

0562-cactus.png

0563-paw.png

0564-footprint.png

0565-speed-slow.png

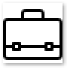

0566-speed-medium.png

0567-speed-fast.png

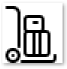
0568-rocket.png

0569-hammer2.png

0570-balance.png


0571-briefcase.png

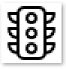
0572-luggage-weight.png


0573-dolly.png

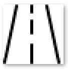
0574-plane.png

0575-plane-crossed.png

0576-helicopter.png

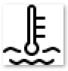

0577-traffic-lights.png

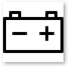
0578-siren.png


0579-road.png

0580-engine.png

0581-oil-pressure.png


0582-coolant-temperature.png


0583-car-battery.png

0584-gas.png

0585-gallon.png

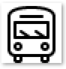
0586-transmission.png

0587-car.png

0588-car-wash.png

0589-car-wash2.png

0590-bus.png


0591-bus2.png

0592-car2.png

0593-parking.png

0594-car-lock.png

0595-taxi.png

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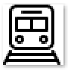
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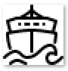
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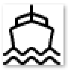
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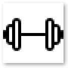
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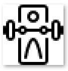
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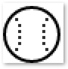
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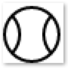
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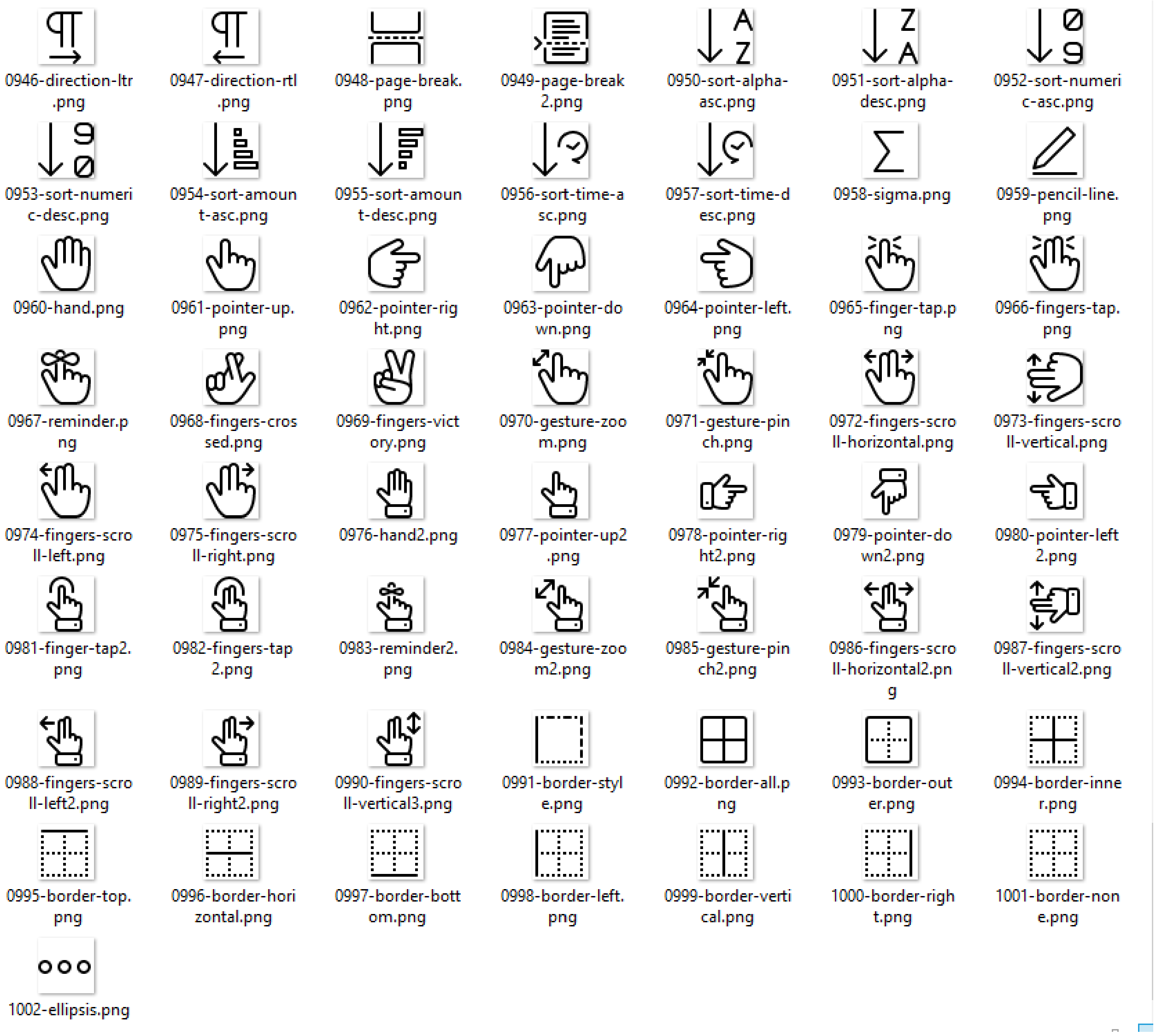

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0953-sort-numeric-desc.png 0954-sort-amount-asc.png 0955-sort-amount-desc.png 0956-sort-time-asc.png 0957-sort-time-desc.png 0958-sigma.png 0959-pencil-line.png

0960-hand.png 0961-pointer-up.png 0962-pointer-right.png 0963-pointer-down.png 0964-pointer-left.png 0965-finger-tap.png 0966-fingers-tap.png

0967-reminder.png 0968-fingers-crossed.png 0969-fingers-victory.png 0970-gesture-zoom.png 0971-gesture-pinch.png 0972-fingers-scroll-horizontal.png 0973-fingers-scroll-vertical.png

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1002-ellipsis.png

3.13 Placeholder

3.13.1 Placeholder for missing english translations

⚠ The translation of this documentation from German into English is currently in progress.

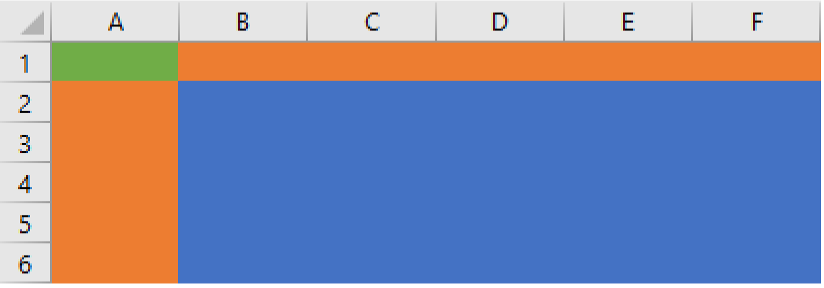
3.13.2 Placeholder for unfinished pages

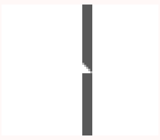
⚠ **NOTE**

The following content represents a current state of work. The information contained herein will be supplemented and adapted in the course of time.

4 FAQ

Collection with frequently asked questions and answers.

Question	Answer
How long can strings be in cell storages?	4000 characters.
If my Excel template contains a VBA macro, does this remain in Nooxl?	No, neither in Nooxl itself are macros executed, nor are macros contained in exports from Nooxl. Both is not possible due to security risks.
The cell borders are not displayed in Nooxl as in Excel - why?	Nooxl renders the cells as a HTML table. A main attribute of those is that there is only one border at the point of contact between two cells. When rendering, the assignment of borders to the cells is as follows: - **Cell A1**: all four borders are rendered - **Cells starting in column B in row 1**: all borders except the left one are rendered - **Cell starting in row 2 in column A**: all borders except the upper one are rendered - **All remaining cells**: only the right one and the lower one are rendered  These cell addresses are only valid if the visible range (tab) starts in A1! For example, if it starts in C5, this is the cell with all 4 frames. Those with three borders are located in row 5 from column D, or in column D from row 6. Borders are also rendered if no border has been set in Excel. It is then automatically rendered in the color which also applies to the **background** of the cell.

Question	Answer
	Attention, this does not apply to the right border of connected cells! This border is not rendered at all and therefore ALWAYS appears white. This circumstance can lead to "staircase effects" at the intersections of borders: 
With which precision are numbers stored in Nooxl?	The maximum precision in MS Excel is 15 digits (before and after the decimal point together). Nooxl can store values with a maximum of 15 places before the decimal point plus a maximum of 14 places after the decimal point (before Nov. 2019 only 4 places after the decimal point). Values greater than 10^{16-1} can only be stored in Nooxl with database adaptations (decimal [29,14]).

5 Glossary

Overview of Nooxl terms and their meaning.

✓ Use the browser search (`Ctrl + F`) to find a term faster.

Term	Meaning
Account	An account includes one or more Nooxl Apps. Within an account, data can be "exchanged" between apps, so that, for example, cross-departmental work (one app per department) can be carried out on the basis of a single data source.
App	A Nooxl application consisting of at least one Excel template.
Template	A menu item in the left navigation.
Catalog	Catalogs or element catalogs are collections of (similar) elements. For example, you could create a catalog *User*, in which you maintain all users of your app.

Term	Meaning
	Catalogs or selections on their elements can be read into Nooxl at various places.
Element	An element of a catalog.
Condition	A subset of elements of a catalog. ⓘ Elements can be part of any number of conditions.
Release	See template versions. (siehe Seite 239)
Workmode	The normal mode in which Nooxl users find themselves when working with the app.
design mode	The design mode, which is used by administrators to customize/ develop the app
Dataset	A dataset is a combination of one element out of each of the catalogs that form the selection of the template.
Database mark	A database mark is a cell or a range of connected cells (not necessarily shown as connected cells in Excel) that has a database connection. The connection can be read and/or write.
Function	See Functions (siehe Seite 203), which can be utilized for extended program logic.
View	A special markup that is used in the template to define what should be displayed in work mode.
State	Every action (editing and saving) of a user in a template causes Nooxl to create a new state of the template and the data contained in it. This makes it possible to track changes.
Markup	Cells marked in Nooxl, which can be given further abilities:

Term	Meaning
	• Storage • Function • View

Abbildungsverzeichnis

Tabellenverzeichnis