Using BEXIS2 in SPP2089

-Data Structure-

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What does a Data Structure mean?

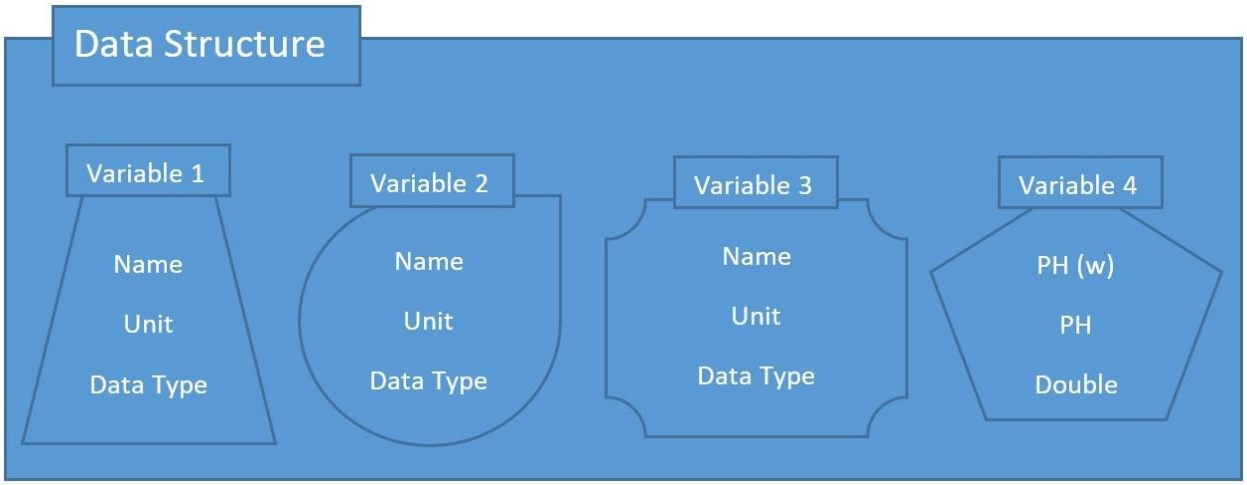
In BEXIS2 data is stored and managed as part of a dataset. A dataset may be anything, e.g. a word document, a zip file, images or a collection of millions of records and multiple variables. The maximum file size per upload is 1G. To store large datasets such as CT images, we have agreed to store only information about the images and their storage in BEXIS2.

Each dataset may have an individual structure of “File” or “Tabular”. A “File” Data Structure makes you able to store your files. The search engine of BEXIS2 provides no indexing for such datasets, but for the “Tabular”. A “Tabular” Data Structure contains one or more Variables based on variable templates. Each Variable is defined by its Unit, a Data Type, and a unique name. So defining Data Types and Units would be the first step which would be done, if they are not available yet.

One example of a **variable template** could be “Variable 4” which is used for the measure of the acidity. PH is the **unit** of variable which is measured as a double number. Double is the **data type** of the variable template. The **variable name** is up to the user. It is “PH (w)” in this example.

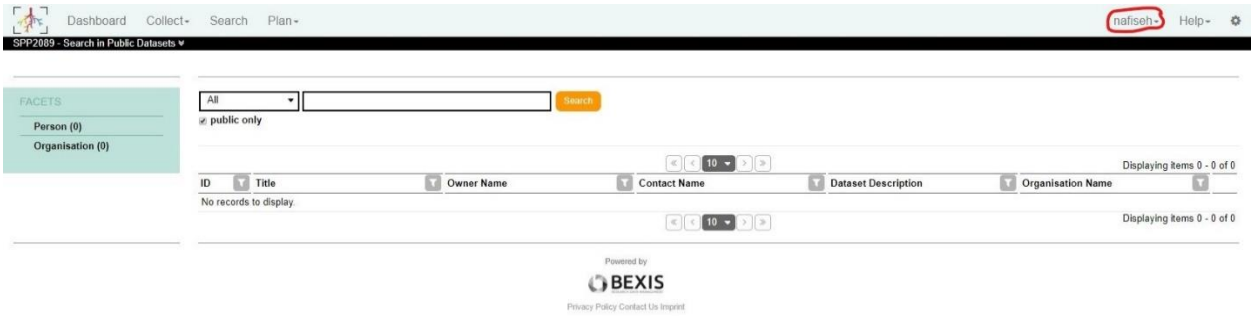
You can edit a Data Structure later. Note that a Data Structure freezes once it is connected to a Dataset. In this case, you must create, edit and associate a copy of the Data Structure with a new dataset.

It make sense to think about creating a Data Structure before collecting data.

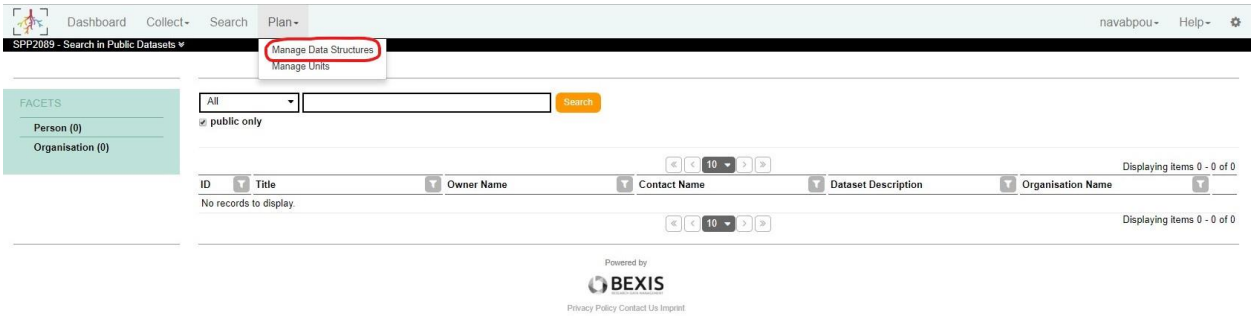


How do I create a Data Structure?

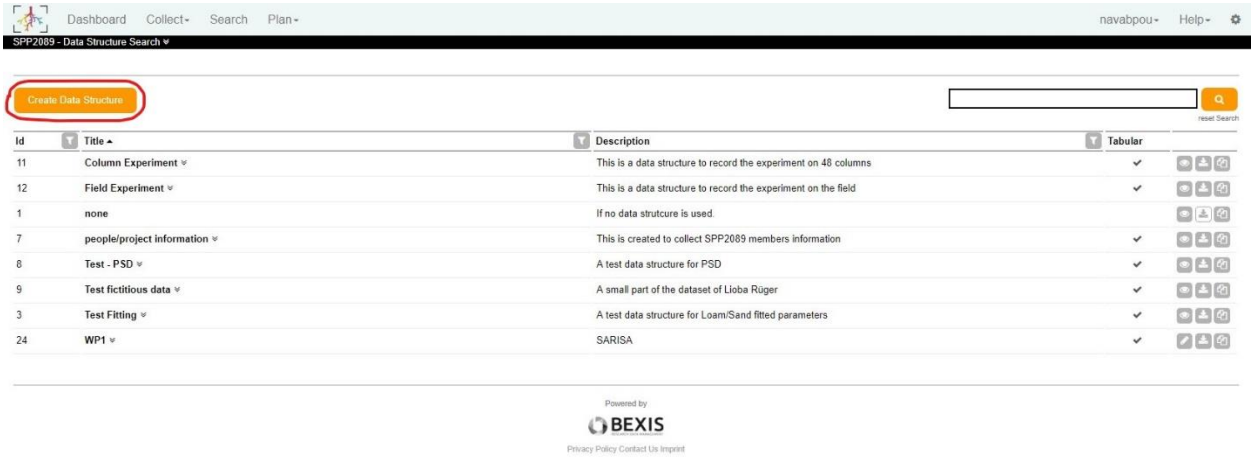
1. Be sure that you are logged in. Check if your username is written close the *Help* menu item.



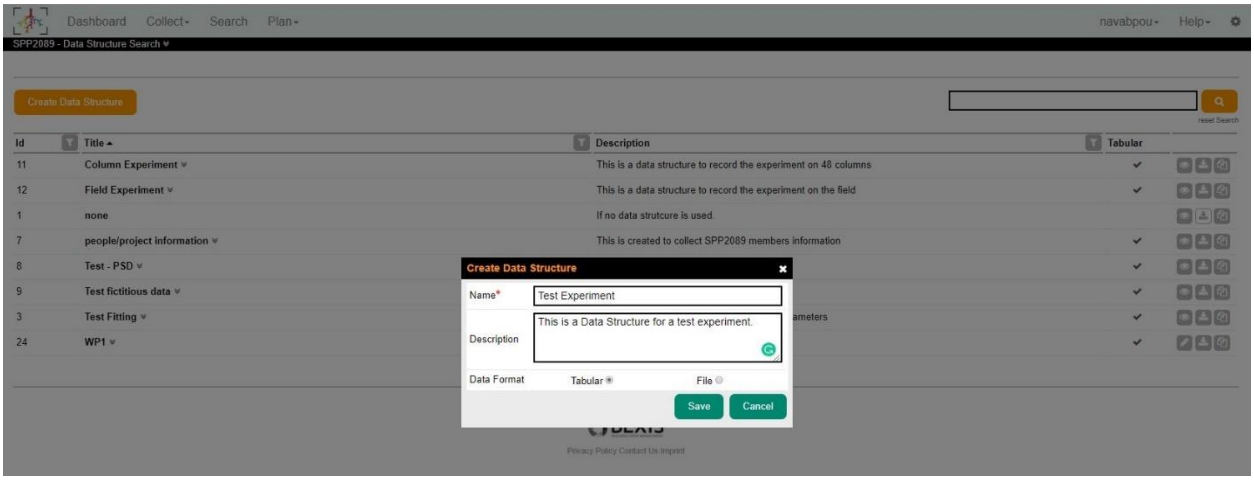
2. Click on **Manage Data Structure** under the **Plan** menu item.



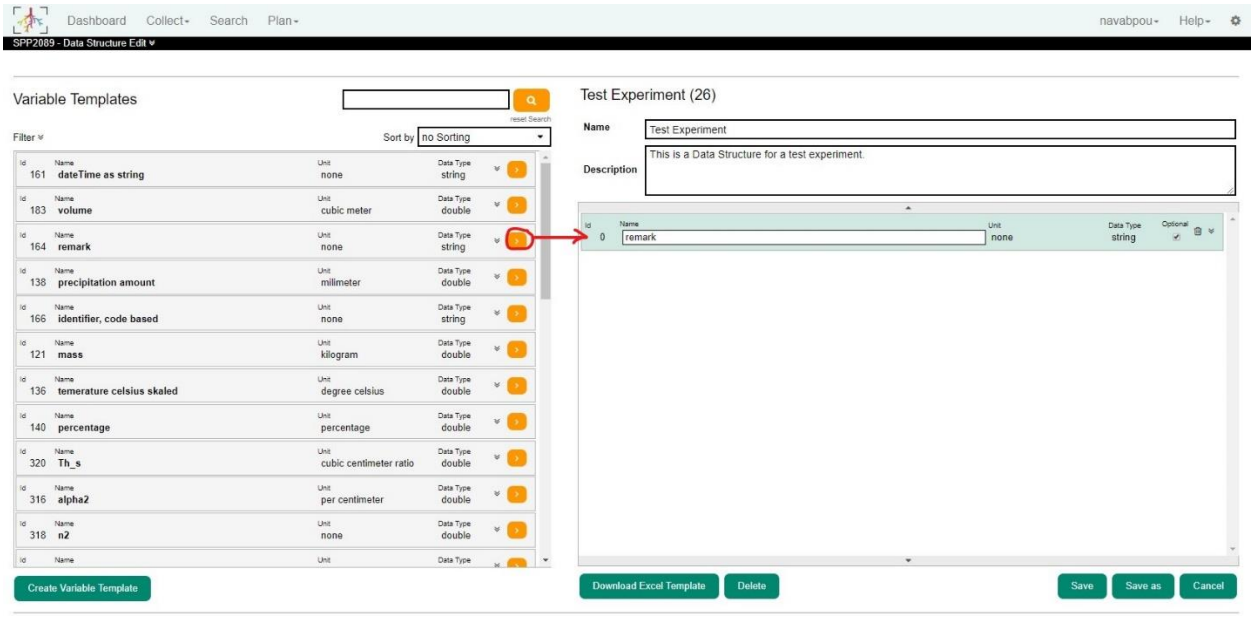
3. Click on the **Create Data Structure** button in the following window.



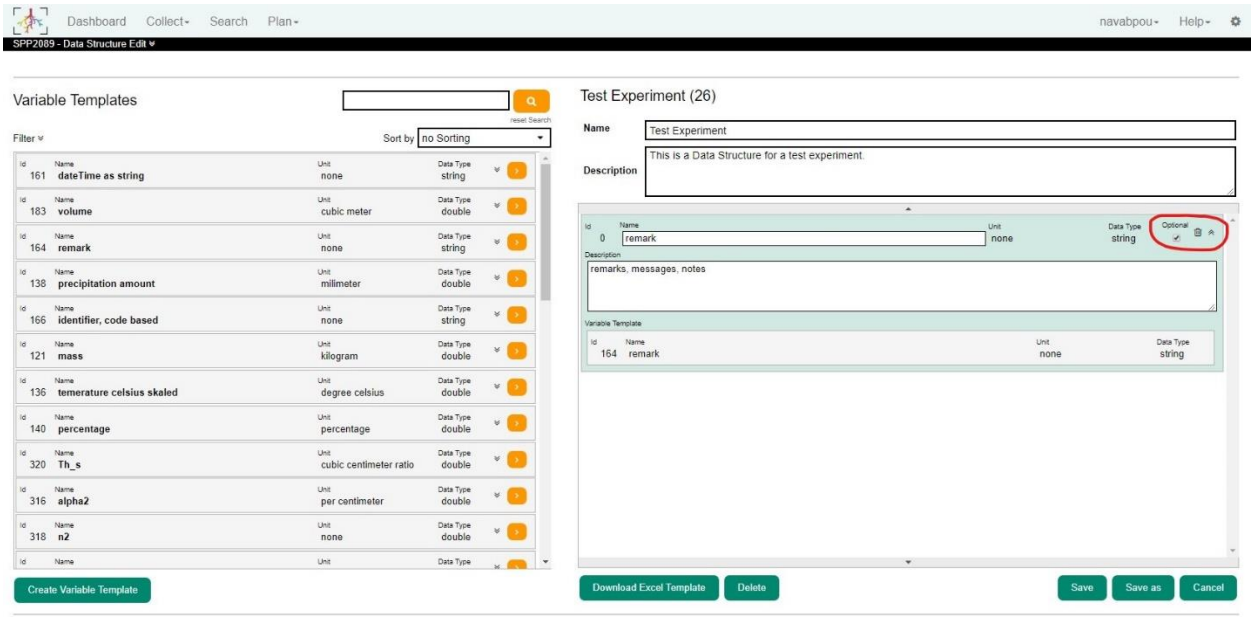
4. Enter a name and a descriptive description for your Data Structure in opened modal window and click on the **Save** button.
   Choose a **Data Format** compatible with your data structure. **Tabular** is for a data table and **File** is for non-structured data.



5. If you have created a Tabular data structure, system refers you to the next page where you are able to build your data structure by adding variables.
   Click on the right arrow close a variable template and add it to your data structure.
   Searching, sorting and filtering are available when you are looking for a variable template.



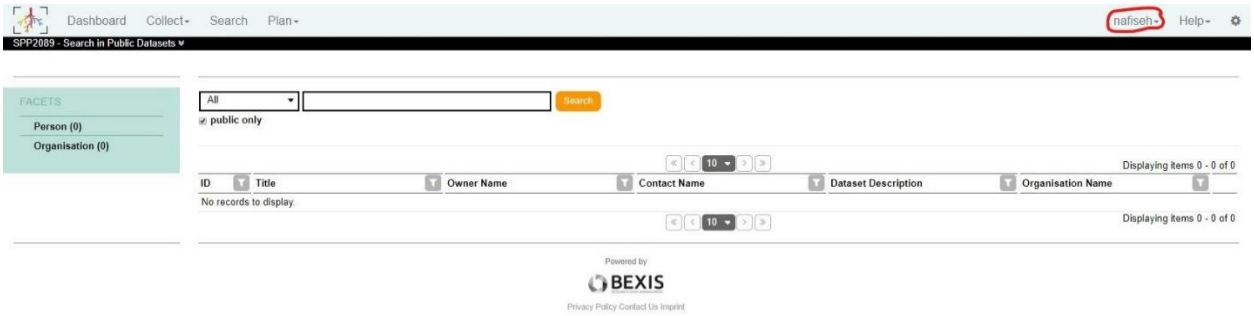
You are able to change the name of a variable in your Data Structure.
Optional variable means that the data table must not contain any data for this variable.
Click on the trash icon to delete the variable from your structure.
Click on the down arrows to have access to edit the description of a variable.



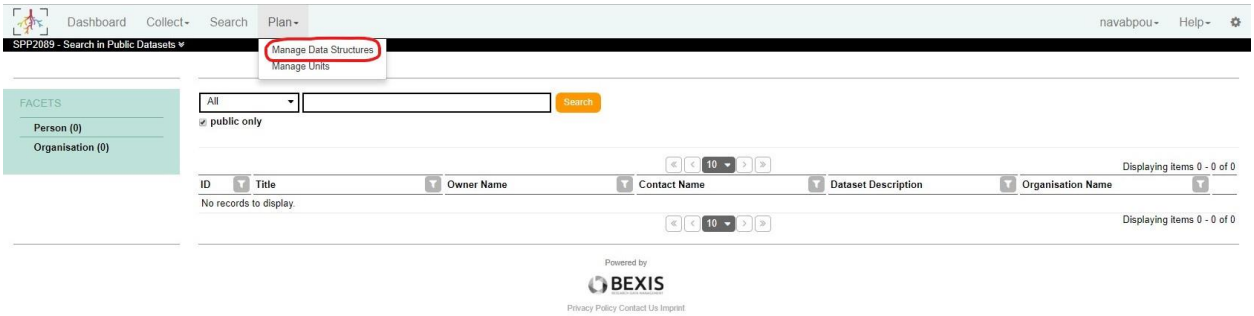
6. Click on the **Save** button to save the data structure.

How do I edit a Data Structure?

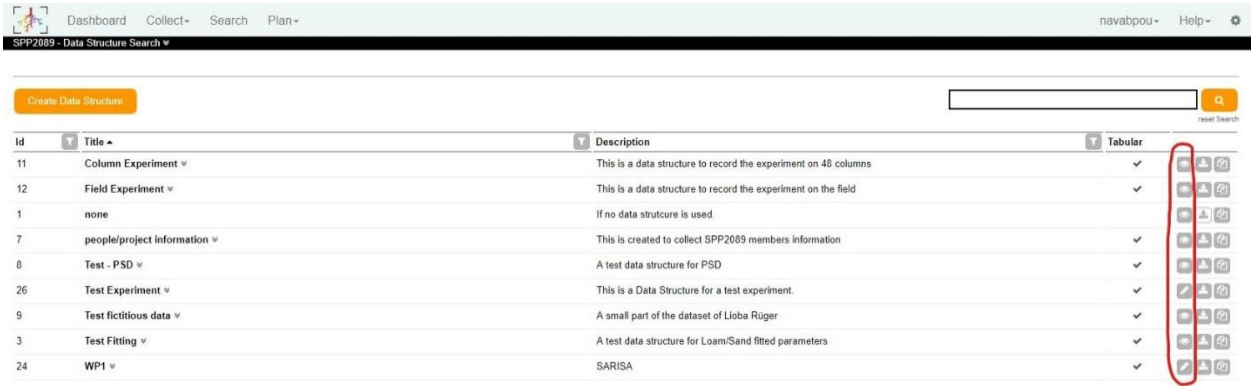
1. Be sure that you are logged in. Check if your username is written close the *Help* menu item.



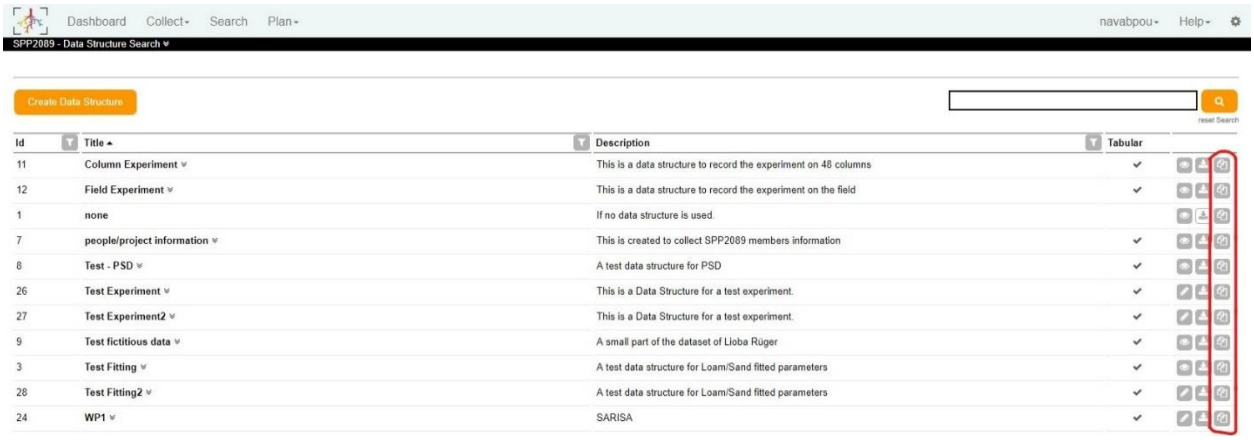
2. Click on **Manage Data Structure** under the **Plan** menu item.



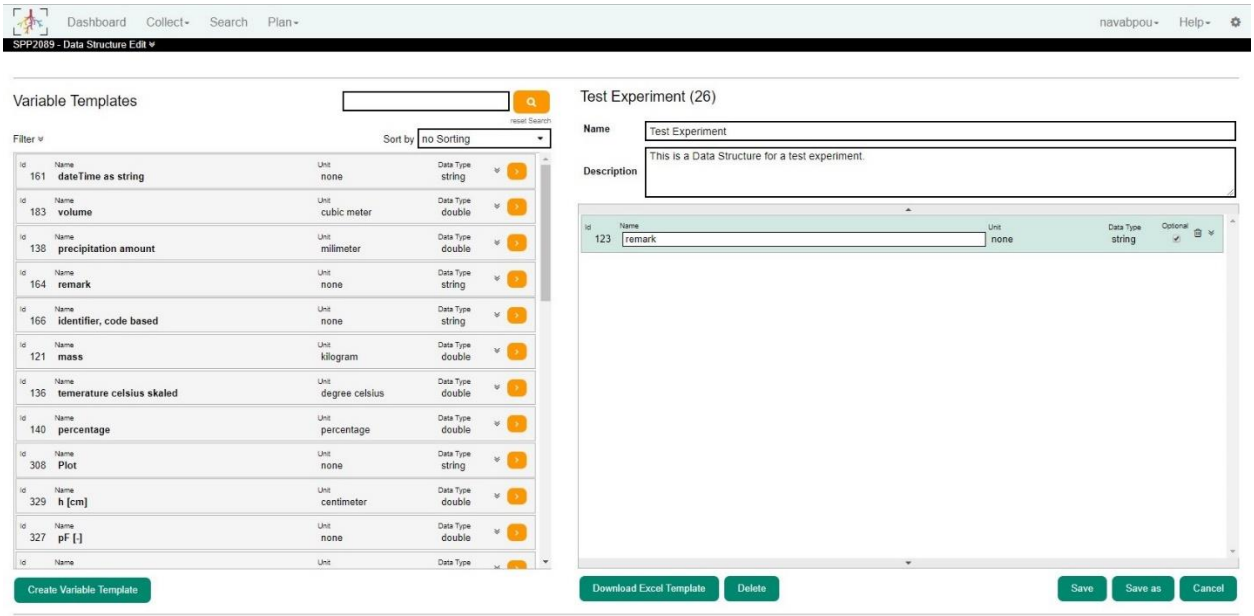
3. In the following page you can see different buttons close data structures.
   The **Eye** means that you are able to edit only the name and the description of a data structure.
   The **Pen** means that you are able to edit the structure in addition.



Note: A data structure is not editable means that it is connected to a dataset.
Clicking the **Copy Data Structure** button next to a data structure creates a copy of the data structure. You should just change the name to be unique.

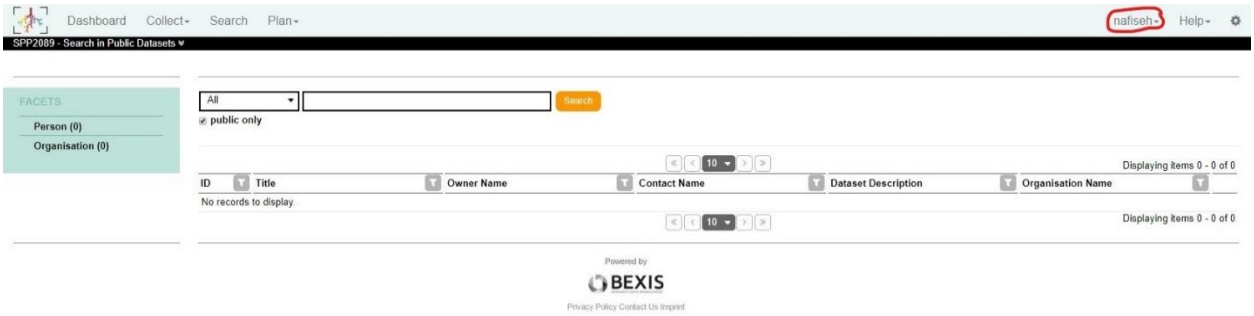


4. Edit the data structure and click on the **Save** button.

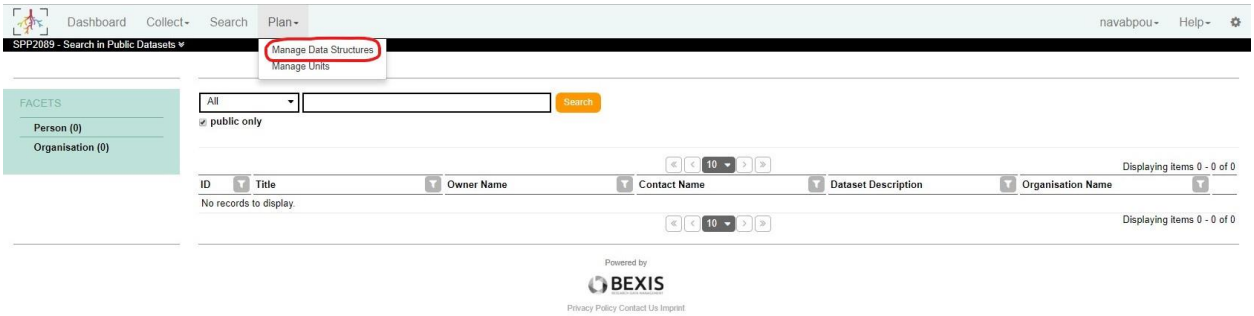


How do I download a Data Structure?

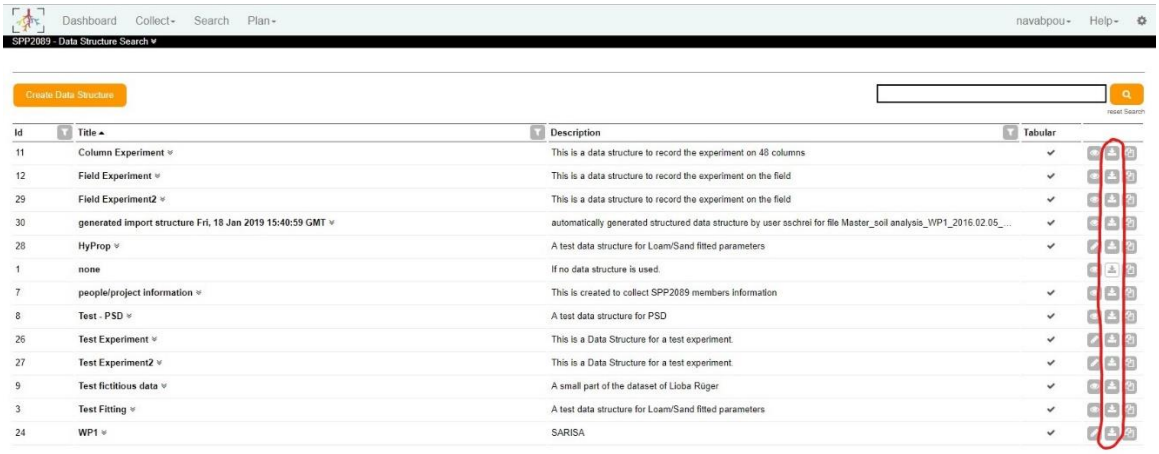
1. Be sure that you are logged in. Check if your username is written close the *Help* menu item.



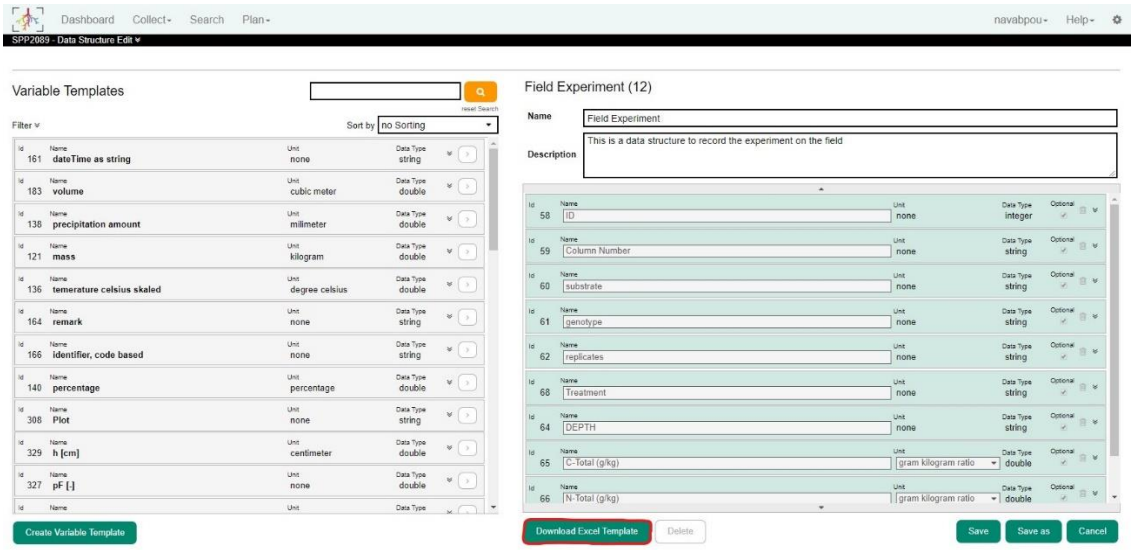
2. Click on **Manage Data Structure** under the **Plan** menu item.



3. You are able to download a Data Structure in two ways.
   a. In the Data Structure management page, click on the **Download** button next to a Data Structure.



   b. In the Edit Data Structure page, click the **Download Excel Template** button. BEXIS2 creates an Excel Template from the current Data Structure.

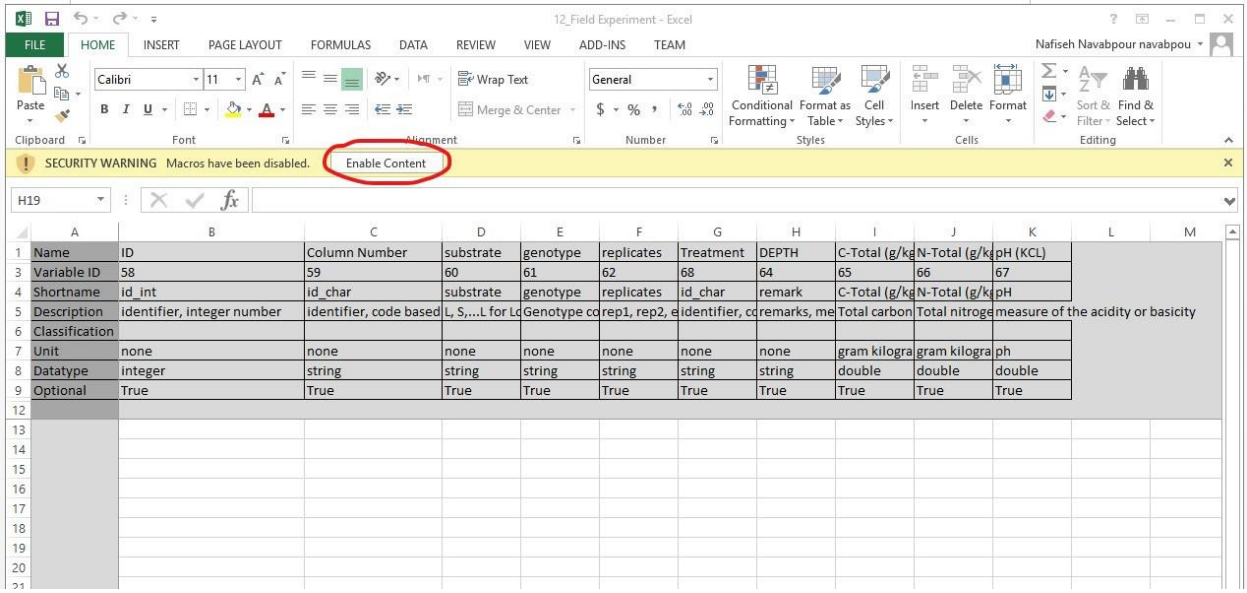


Save the Excel Template to your preferred location on your computer.

How do I work with an Excel Template?

Excel Template is an excel file created by the BEXIS2 based on a Data structure. The header contains information about variables, their units, data types and more. The Excel Template can examine the quality of the data based on the Data Type and Optional definition.

To work with an Excel Template, You must first enable macros. Macros automate frequently-used tasks, in our case quality control of the data table. Enabling or disabling macros varies depending on the version of Microsoft you are using. Macro security settings are generally located in the *Trust Center*.



	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Name	ID	Column Number	substrate	genotype	replicates	Treatment	DEPTH	C-Total (g/kg	N-Total (g/kg	pH (KCL)		
3	Variable ID	58	59	60	61	62	68	64	65	66	67		
4	Shortname	id_int	id_char	substrate	genotype	replicates	id_char	remark	C-Total (g/kg	N-Total (g/kg	pH		
5	Description	identifier, integer number	identifier, code based	L, S,...L for Lo	Genotype co	rep1, rep2, e	identifier, co	remarks, me	Total carbon	Total nitroge	measure of the acidity or basicity		
6	Classification												
7	Unit	none	none	none	none	none	none	none	gram kilogra	gram kilogra	ph		
8	Datatype	integer	string	string	string	string	string	string	double	double	double		
9	Optional	True	True	True	True	True	True	True	True	True	True		
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