



The integrated total solution for service providers: projects, processes, knowledge.

Help, Part 10: Report Generator

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10.1 Report Generator

A report generator is an application for creating reports (also called reports) from the data of a database or other data sources. In order that reports can be created not only by software developers but also by end users, the necessary database queries are defined via a graphical user interface and the database-specific statements (here SQL) are generated automatically. In Projectile, the report generator consists of the **Query Manager**, the **Report Designer** and the **Dashboard Builder**. The report generator in Projectile offers, in addition to the standard reports, a further possibility to evaluate the data stock of Projectile and to adapt existing reports.

The queries in Projectile can be used, for example, in the portals or the standard evaluations.

10.2 Query Manager

The **Query Manager** has a database language for searching for information. The result of a query is a subset of the underlying information. This is why it is also referred to as filtering the data.

The query language (internally called IDQL) is similar to the query language SQL, but has important differences:

- The access rights of Projectile are respected - you cannot load data that you cannot see in Projectile
- The links between different tables (e.g. project and employee) work differently than JOINS in SQL
- Queries can be combined into compound queries

Note: Queries can put so much strain on the database that the function of Projectile is no longer guaranteed. Therefore queries are comparable to development tasks and should be checked on a test system before you use them productively.

10.2.1 Structure and Syntax of the Query

Queries always return a list of documents of one type.

For example

Employee:

a list of employees.

Without any further restrictions, the query returns all documents of one type, in this case all employees. Of course, only those documents are listed to which the user has access rights.

With conditions you can restrict the list of delivered documents. A condition has the following structure:

"FIELD NAME" OPERATOR "VALUE",

e.g. for projects with planned expenditure > 100

Project: Planned Expenditure > 100

Several conditions can be connected by **AND**, **OR**, and **NOT** and by using **brackets**:

Project: Planned Expenditure > 100 AND Name LIKE "Consulting

- both conditions must apply

Project: Planned Expenditure < 100 OR actual expenditure > 100

- at least one condition must apply:

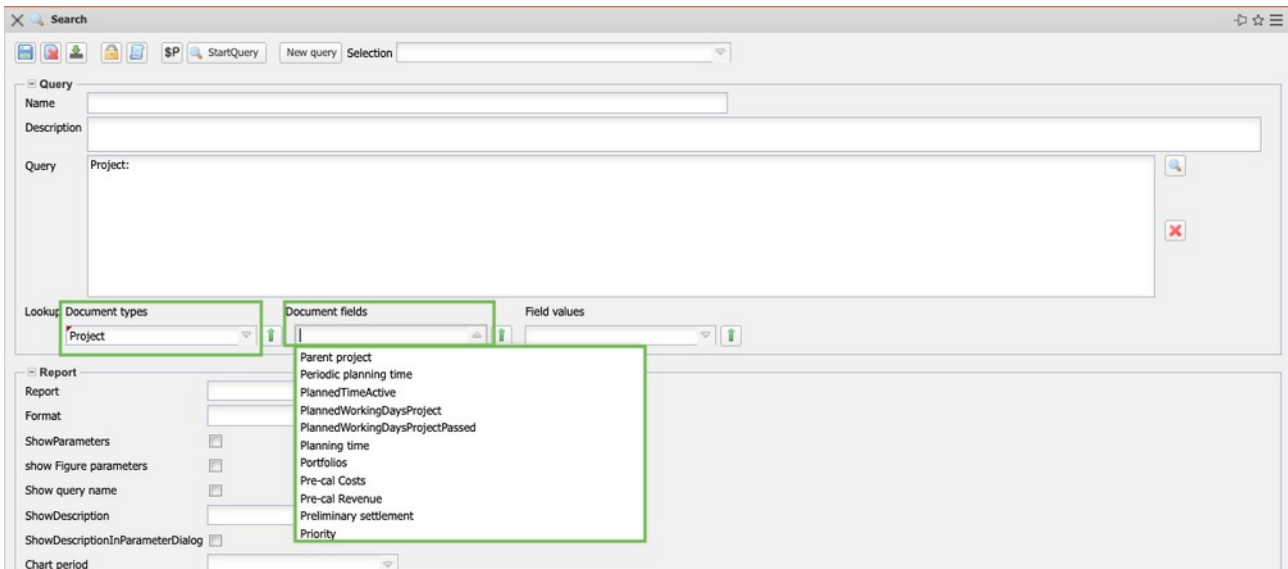
Employee : NOT Name LIKE "Müller"

- the condition must not apply

Contact : Category = "Customer" AND (Country = "D" OR Country = "CH")

- The brackets () are used to combine several conditions into one

The Query Manager provides a list of all available field names of a document type if you select the "Document Type" and then open the "Document Fields" field.



The following expressions are currently supported as comparison operators:

No.	Operator	Description
1	=	Checking the field content for equality.
2	!=	Checking the field content for inequality.
3	<	Check if field content is smaller than the value.
4	<=	Check if field content is smaller or equal to the value.
5	>	Check if field content is greater than the value.
6	>=	Check if field content is greater or equal to the value.
7	LIKE	Check if the field content contains the value.
8	CONTAINS	Check if the field content of a multiple selection contains the value.
9	STARTS_WITH	Check if the field content starts with the value.
10	ENDS_WITH	Check if the field content ends with the value.

Examples:

The expression 1 **Status = "Active"** finds all documents where the field content Status is exactly "Active" and the expression 2 **Status != "Active"** finds all documents where this content is not equal to "Active".

The expression 3 **Plan effort < 100** finds all documents that are smaller than 100 and the expression 4 **Plan effort <= 100** finds all documents that are smaller or exactly equal to 100.

The expression 7 **employees LIKE "Meier"** compares whether the value is contained in the field content (for example "Klaus Meier", "Monika Meier-Grund", ...).

The expression 8 **Project Team CONTAINS "Meier"** compares whether the value "Meier" is contained in a multiple selection field (like the project team, where there can be several entries).

The expression 9 **Name STARTS_WITH "Meier"** finds all documents where the field contents begin with the value ("Meier", "Meierle", and query 10 **Name ENDS_WITH "Meier"** finds all documents where the field contents end with the value ("Meier", "Altmeier", ...).

You can also use references. References are used to formulate conditions not only for the searched document, but also for documents that are linked to the searched document.

For example, you can search for work packages that are in active projects:

First, the "Project" field in the work package is used to establish a relationship to the project document: **Project → Project**

After that you can formulate conditions for all fields of the project by putting the text "Project" in front of the field name: **Project.status = "active"**

Work Package : Project -> Project AND project status = "active"

You can use the **SORT** addition to sort the results.

Example: **SORT name**, sorted by the field "Name". Ascending (ASC) is the default setting for sorting and does not need to be specified explicitly. DESC sorts in descending order. Example: **SORT name DESC**, sorted in descending order by the field "Name".

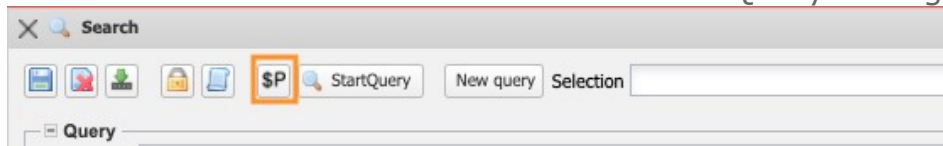
If you want to use several fields for sorting, you must separate the fields with commas (note spaces):

Employee : SORT Name , First Name

In the Query Manager you can also use fixed variables, if for example the logged in user or the current date is needed as value.

No.	Variable	Description
1	\$today	Current day
2	\$user	Link to current (registered) employees
3	\$userlastname	Last name of the current employee
4	\$userlogin	Login of the current employee
5	\$userlanguage	Language of the current employee
6	\$usercountry	Country of the current employee
...

The available variables can be viewed in the Query Manager:



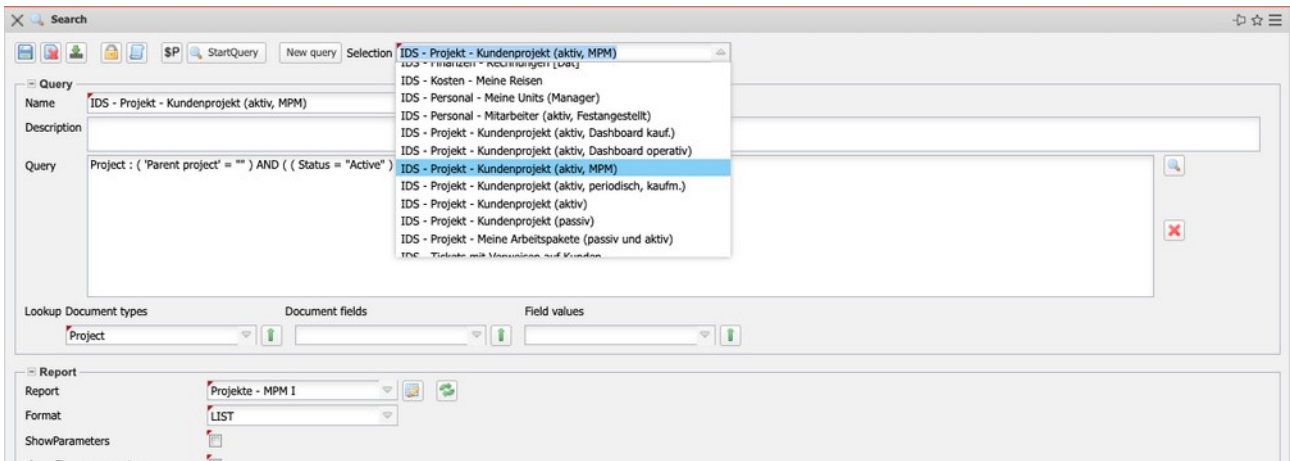
In addition, **parameters** can be used if the user should enter the value himself. An example of how to use parameters is given in the next section.

10.2.2 Structure of the Query Manager

The Query Manager is located in the left main menu. In the field "Selection" you find the queries and can select a saved query.

After selecting an existing query, the query appears in the "Query" area and can be changed or executed. In the frame "Report" the selected queries can then be assigned to existing report definitions or new report definitions can be created.

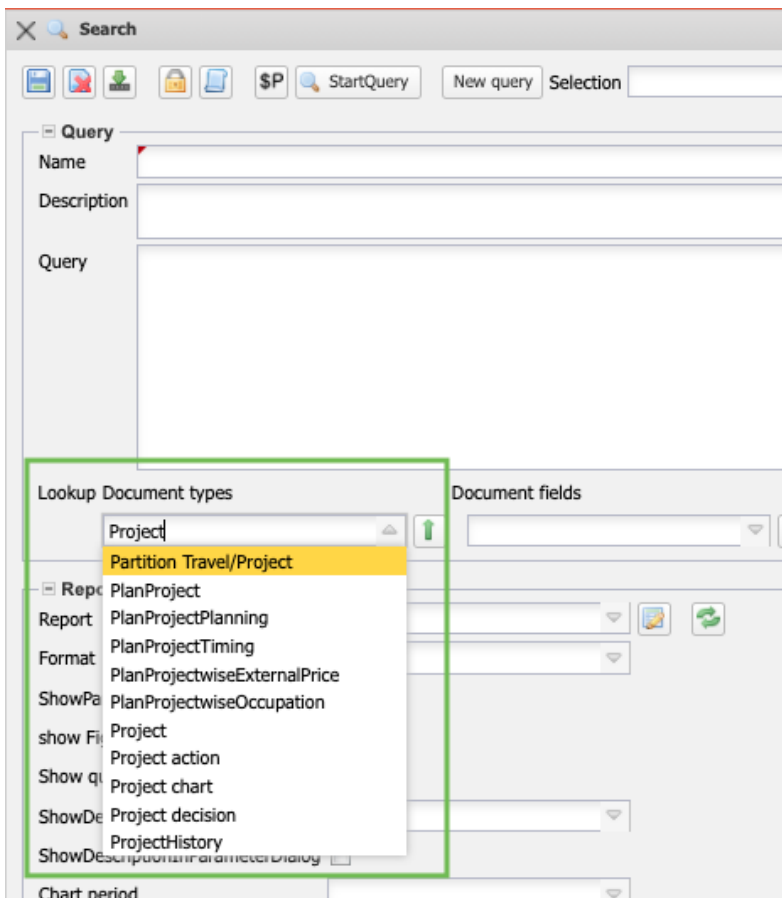
If an existing query, such as "IDS - Active Customer Projects (MPM)", is to be called up, all you have to do is select the corresponding entry from the list and the query appears in the corresponding field:



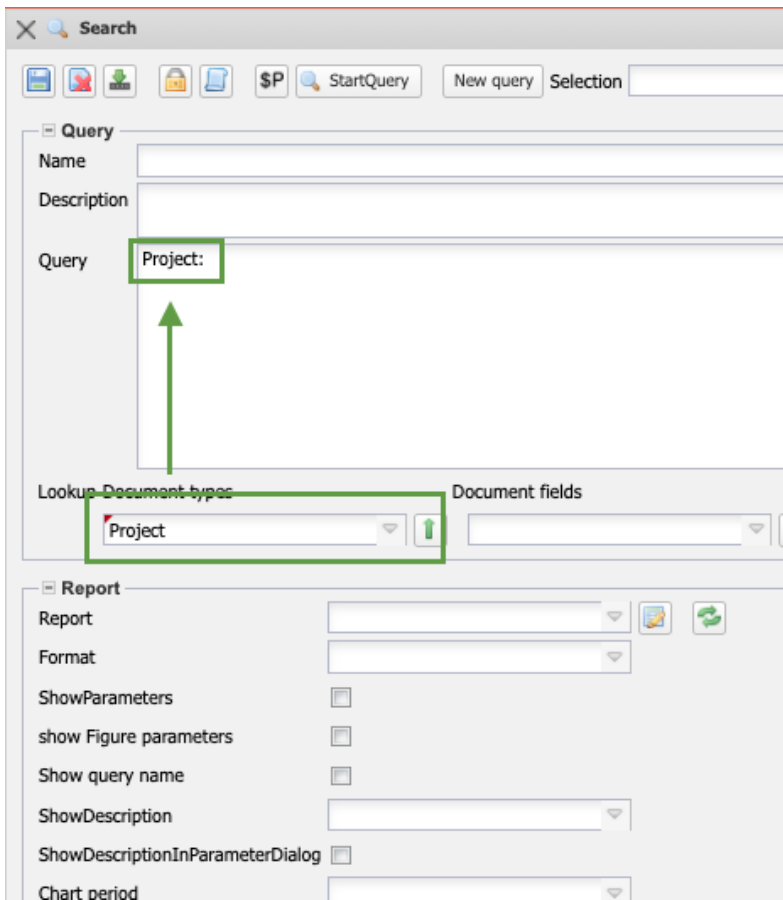
10.2.3 Create Queries

Besides using saved queries, it is also possible to create new queries yourself. In the following example we create a query about all active customer projects. Queries can be typed in directly or compiled with the help of the "Look Up" wizard.

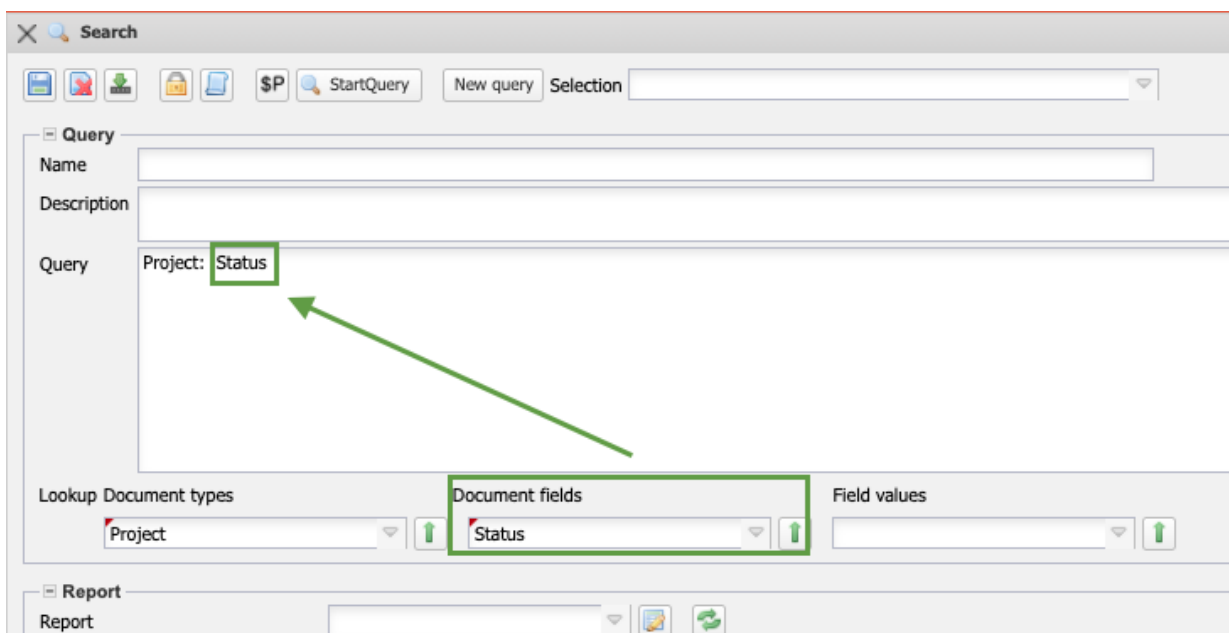
First select the entry "Project" from the left selection box "Document types":



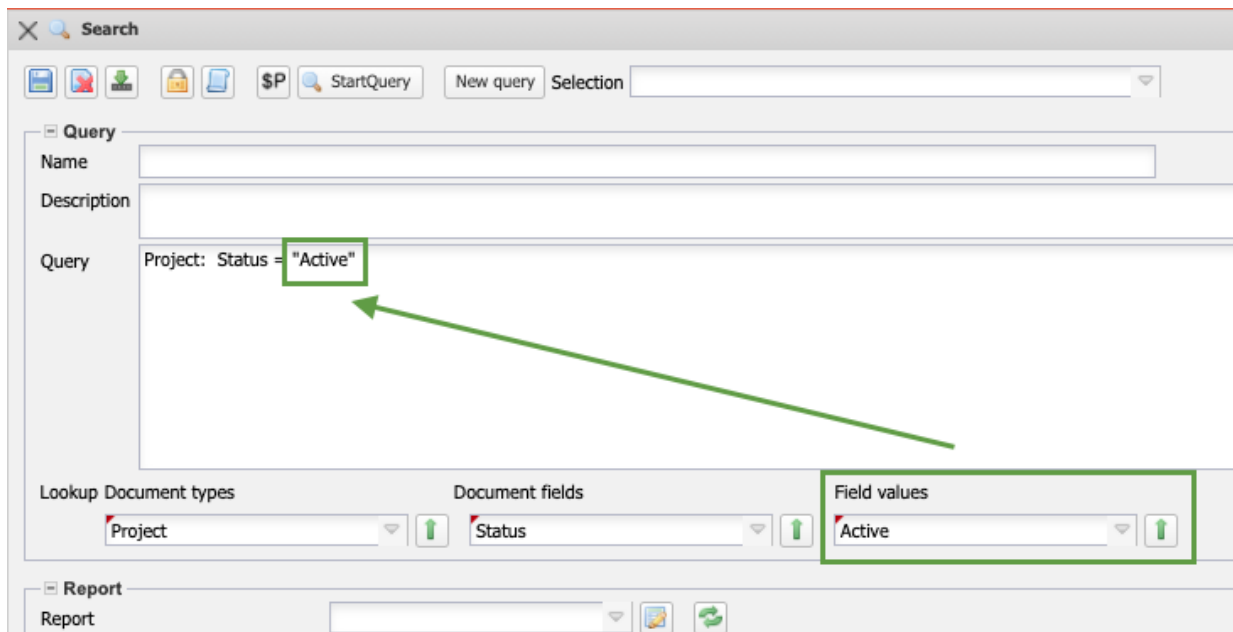
The selection then generates the query **Project**: The query returns all projects from the database.



With the help of the selection box "Document fields" the fields for the conditions can be selected and in the selection box "Field values" ...

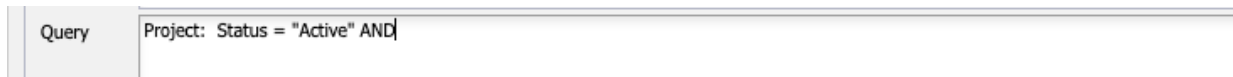


... then the values of the selected field (here "Status") are available (here "passive", "advance", "active", ...)

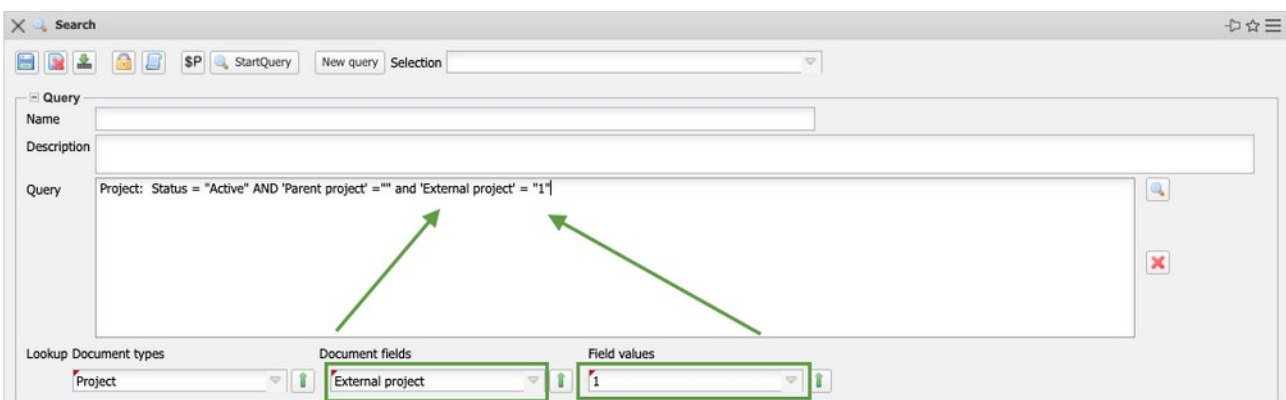


The query **Project: Status = „active“** then returns all projects from the database with the status "active".

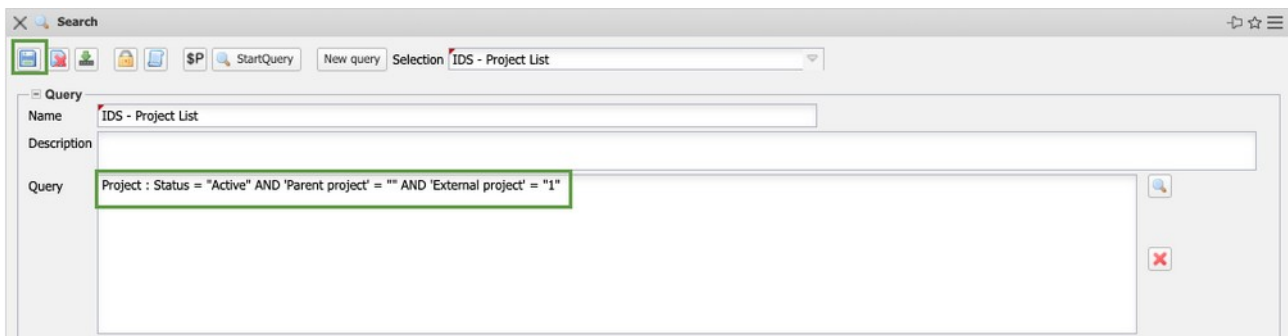
You can link further conditions with **AND** or **OR**. In the example, the next condition should also apply.



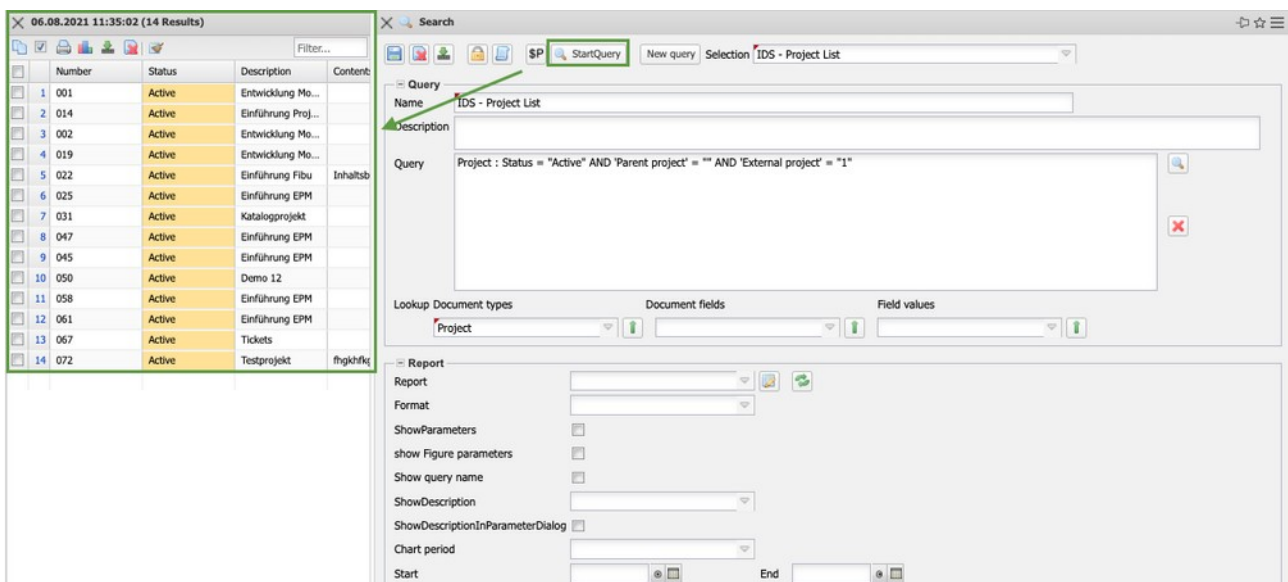
So an AND is typed in and then the next condition is composed. The query **Project: Status = "active" AND Master project = "" AND 'ext. Order' = "1"** then returns all projects from the database with the status "active" and parent project = "" (empty) and external order = "1", ...



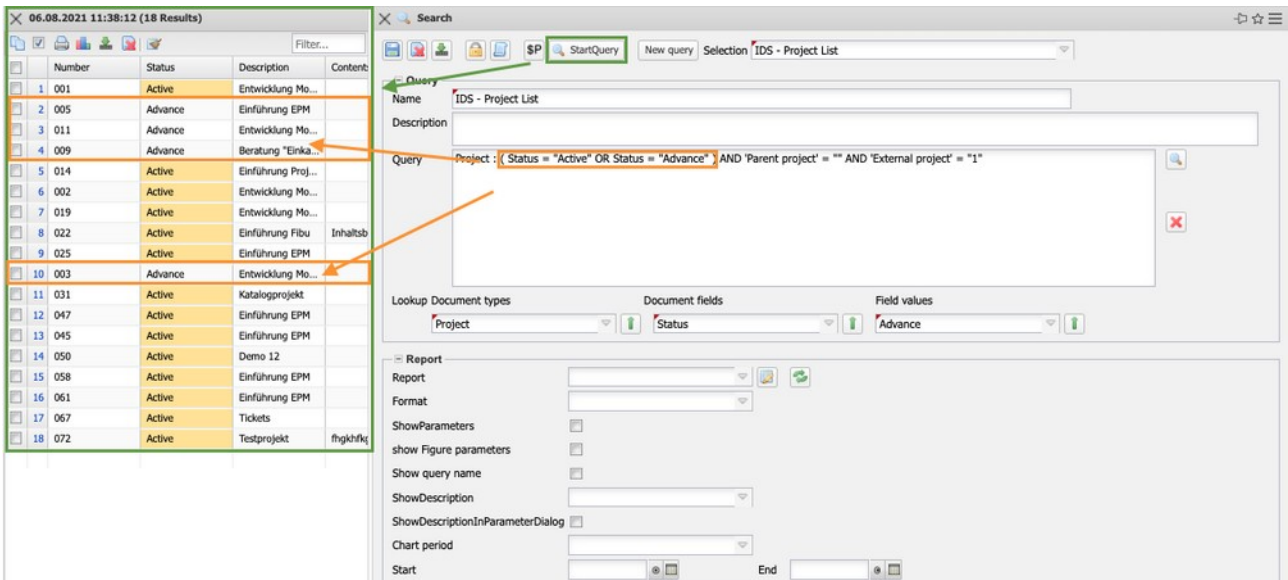
... all active customer projects that do not have any major projects. These projects are then a parent project. The query is saved ...



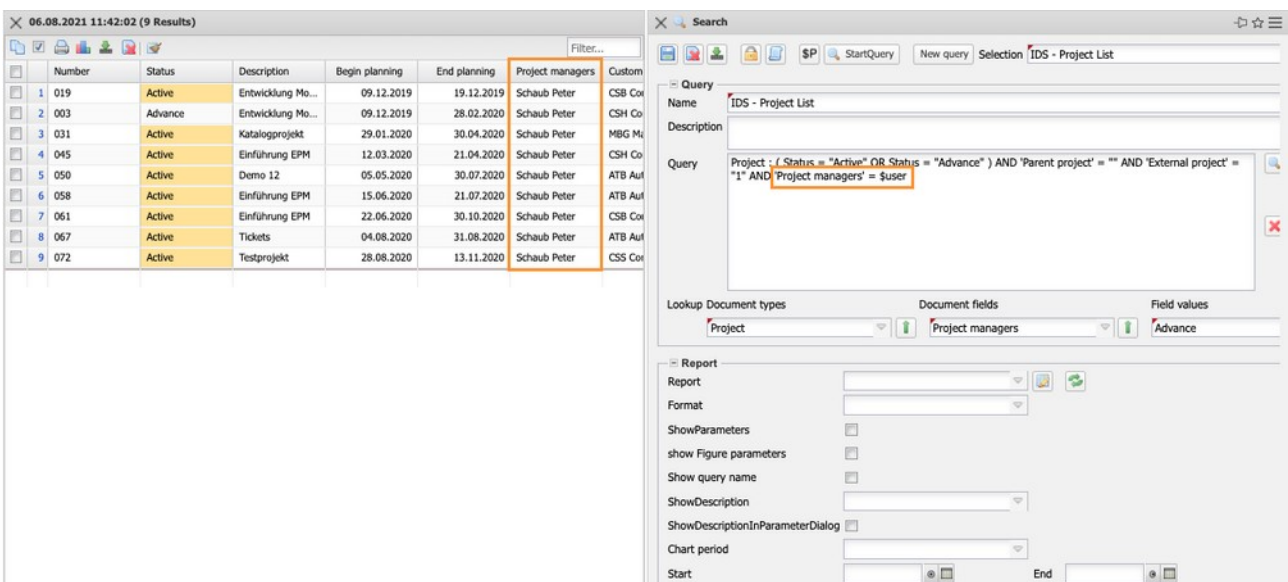
... and executed. Projectile delivers as result a hit list with the active customer projects (here 14 hits).



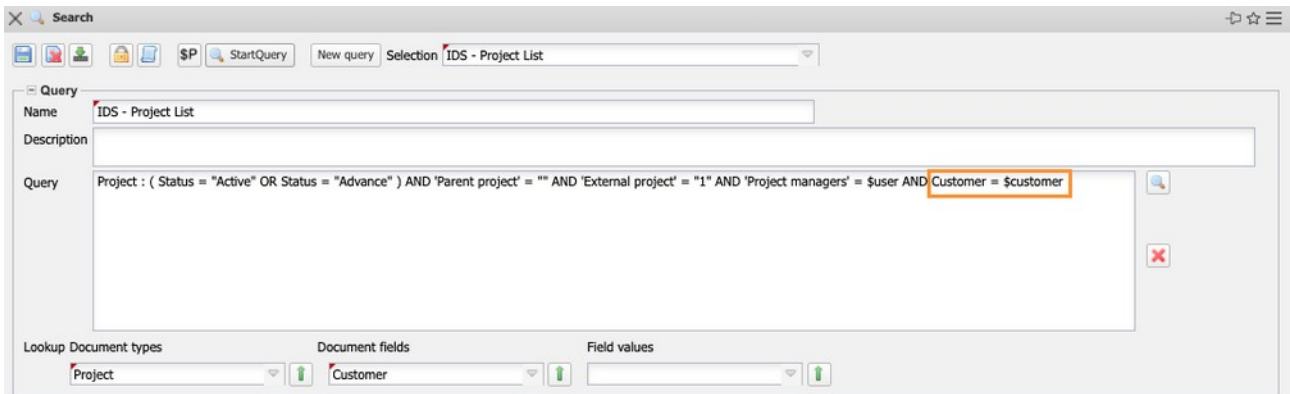
If two values are searched for a field, an OR is used. The example is extended to all customer projects that have the status "active" or "advance performance": **Project: (status = "active" OR status = "advance") AND master project = "" AND 'ext. Order' = "1"**. Projectile then delivers as a result a hit list with the active customer projects and pre-production projects (here 14 hits).



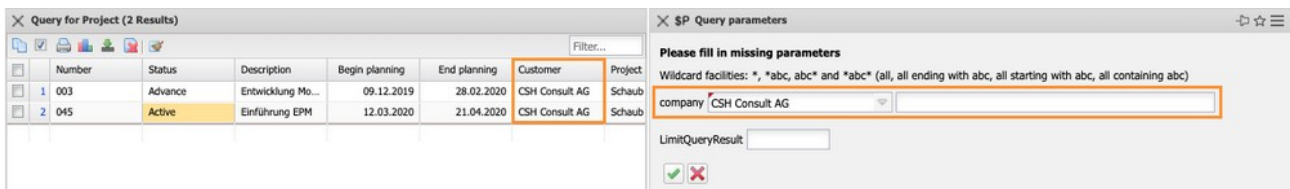
You can also use variables and parameters in the queries. The example is extended by the condition that the project manager is the logged in user:



The variable "\$user" is the placeholder for the logged in user. You can also use parameters. Parameters are capitalized after the "\$". When using a parameter, as in **customer = \$customer**, ...

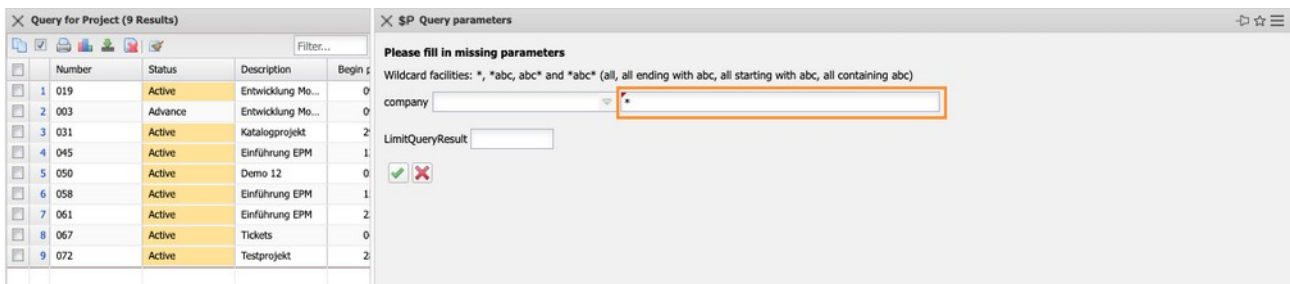


... the result of the query is not displayed directly. Instead, the intermediate dialog "Query parameters" appears and the user selects the parameter (here "Customer") and confirms the intermediate dialog.



Projectile then filters out from the projects only those for the customer "CS Consult AG".

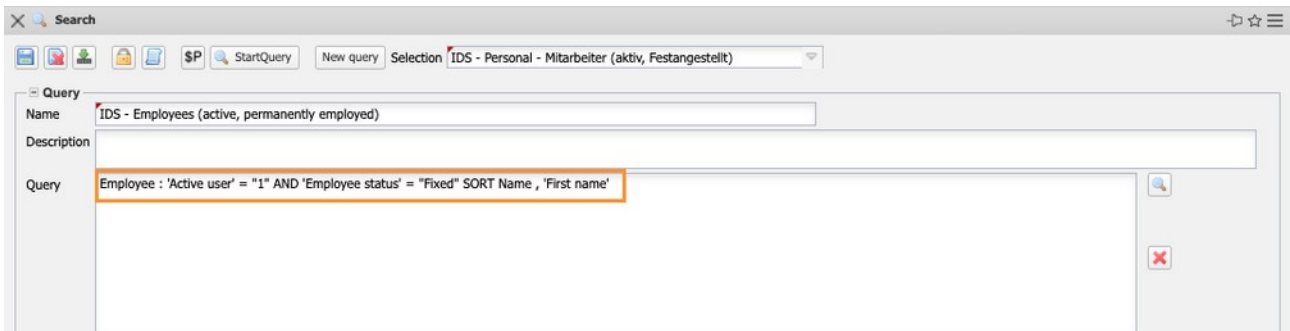
In the intermediate dialog the user can also ...



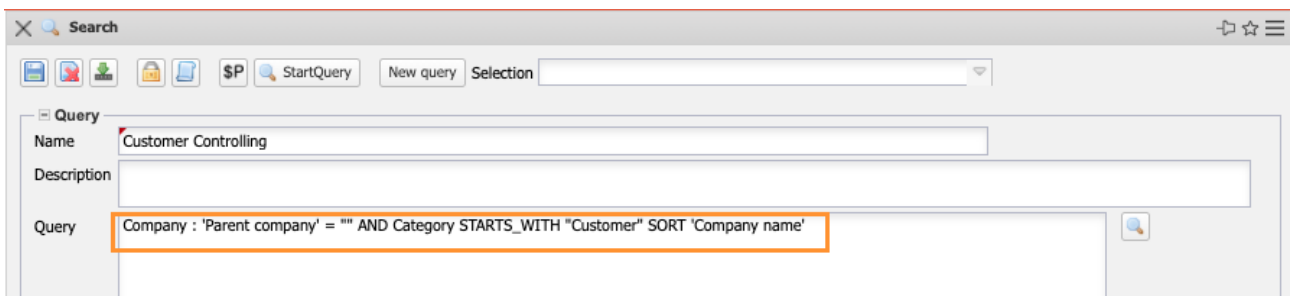
... use a wildcard (*) to filter for all customers.

Another example:

The following examples show a query about all active employees with the status "permanently employed" sorted by (last) name and first name ...

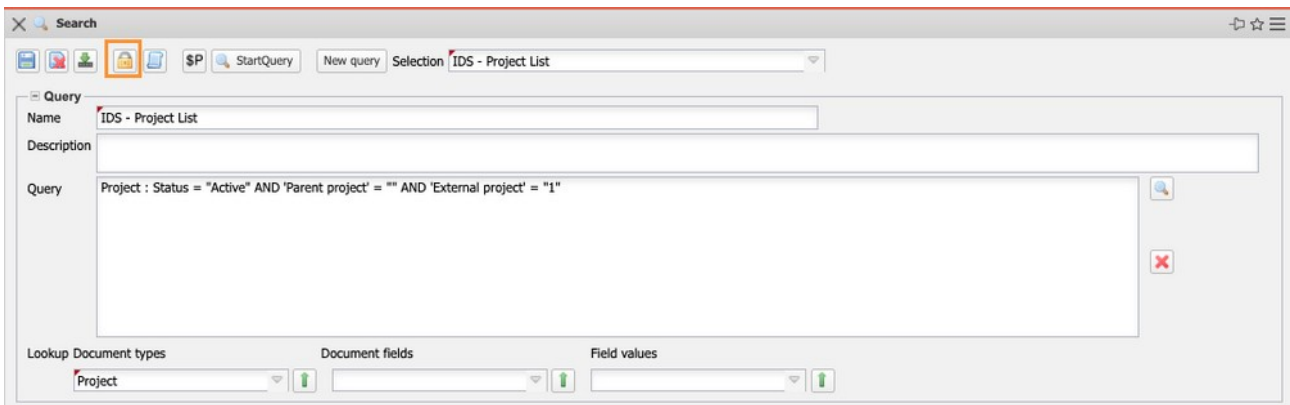


... and a query about all (main) contacts starting with "Customer" in the category (sorted by company name).

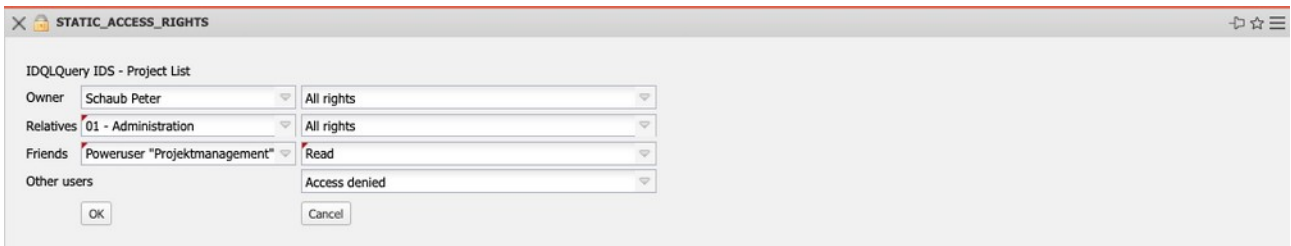


10.2.4 Set Permissions

When the query is finished, it must be assigned permissions. The permission is set using the "lock" symbol.



The creator of the query is preset as "owner", you have to set the other permissions then. In the example the administrators, like the owner, get the highest permission and a composite group "Poweruser" gets the permission level "2 - Read". All other users do not get permission to query:



Further information on the authorization system can be found in the administration guide.

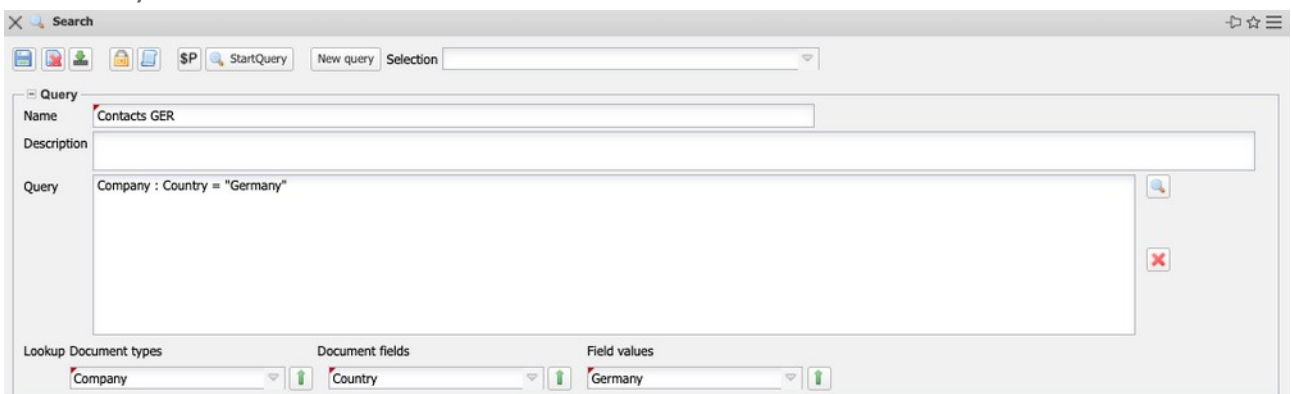
10.2.5 Combination of Queries

Combining queries can be useful in the following cases:

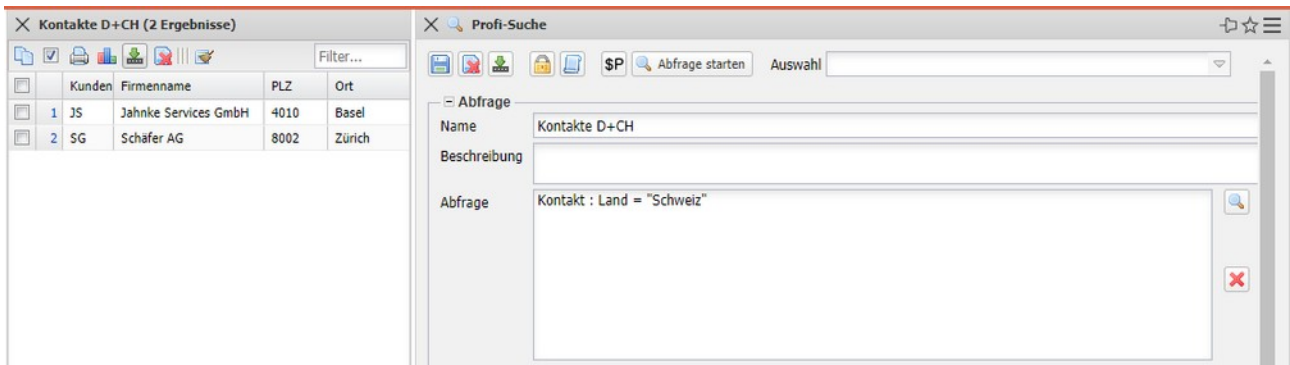
- Two different queries return partial results, which cannot be created with a single query. By simply joining the two queries together, a complete result list is generated from the parts.
- A query is so complex that the database is overloaded, so that the function of Projectile is limited. In this case the query can be split into two simpler parts.

Merging Two Lists

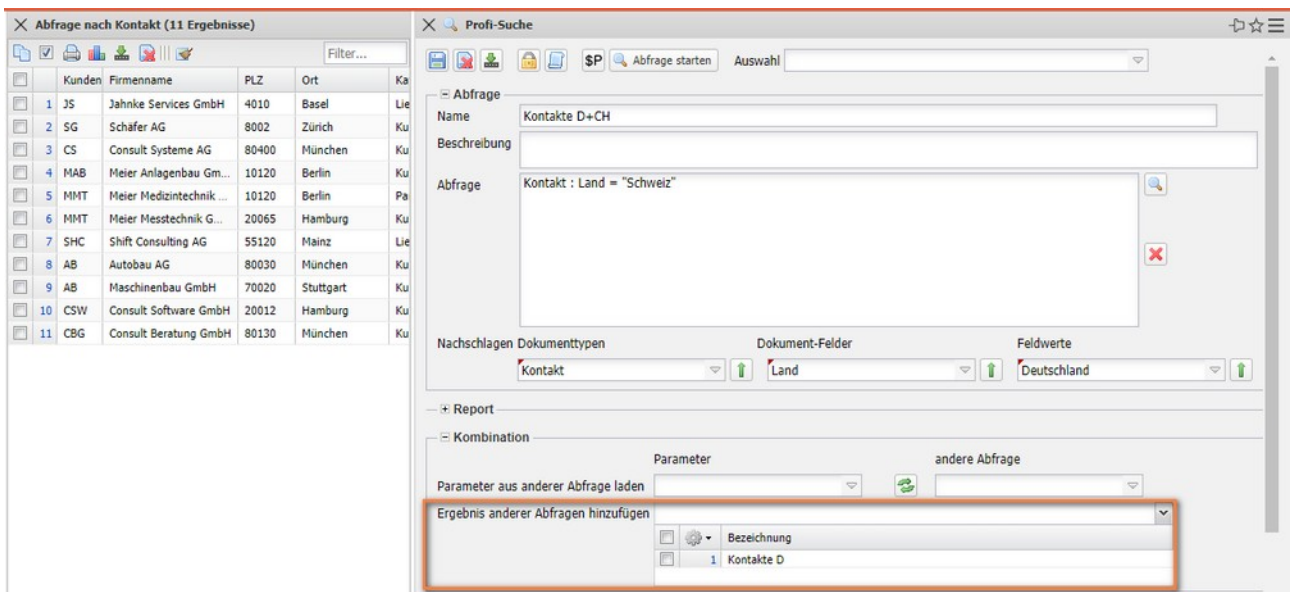
To merge two lists, two queries are first created that both return the same document type (here contacts). The first query returns the companies from Germany ...



... and the second query the companies from Switzerland (2 hits):



The final query is then saved under a new name (here "Contacts D+CH") and the first query is added to the "Add result of other queries" field. The hit list now shows all contacts from Switzerland Germany and Switzerland (11 hits):

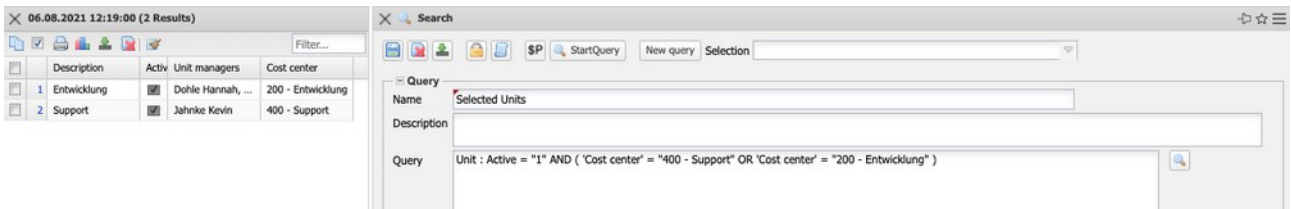


Note: The query Contact: Country = "Germany" OR Country = "Switzerland" results in the same hit list.

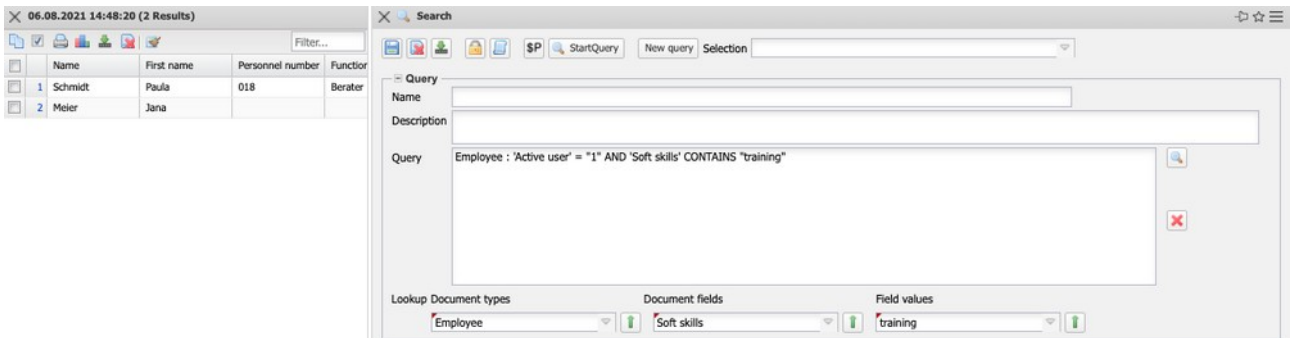
Result of a query as parameter of a second list

If a query becomes too complex, you can split it into several parts, each of which is easier to create and faster to execute. For example, employees with certain skills should be searched for, whose units fulfill certain conditions (here certain cost centers).

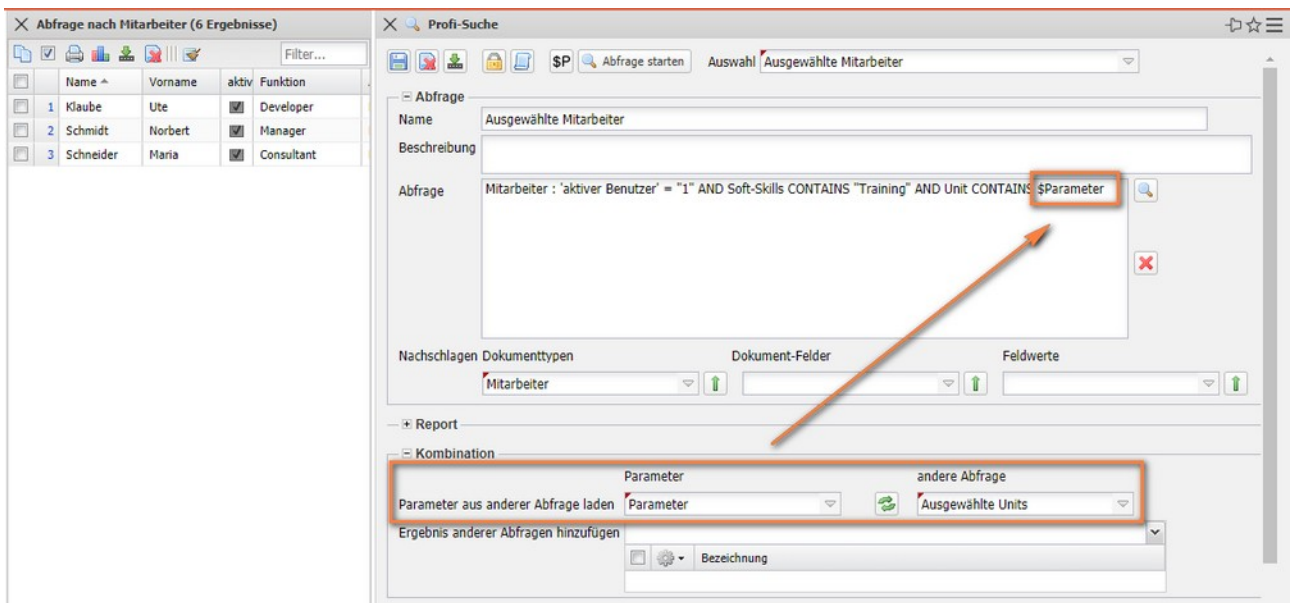
First, a query is created that returns the selected units and is saved:



The next step is to create another query that returns selected employees (all active employees who have assigned "training" as soft skill).



After saving, you can use the "Selected_Units" query for the "Load parameters for other queries" field (as shown below):



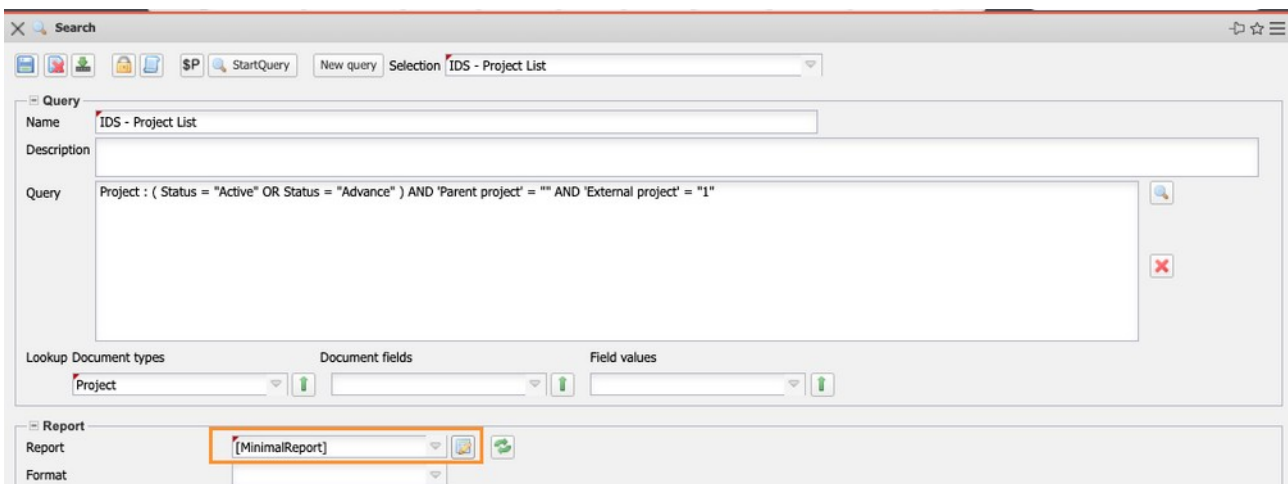
The system first executes the query "Selected_Units" and returns 3 hits in the example. For each of the 3 units, the query "Selected_Employees" is executed once and the unit is entered and used for the parameter "\$Parameter".

10.3 Report Designer

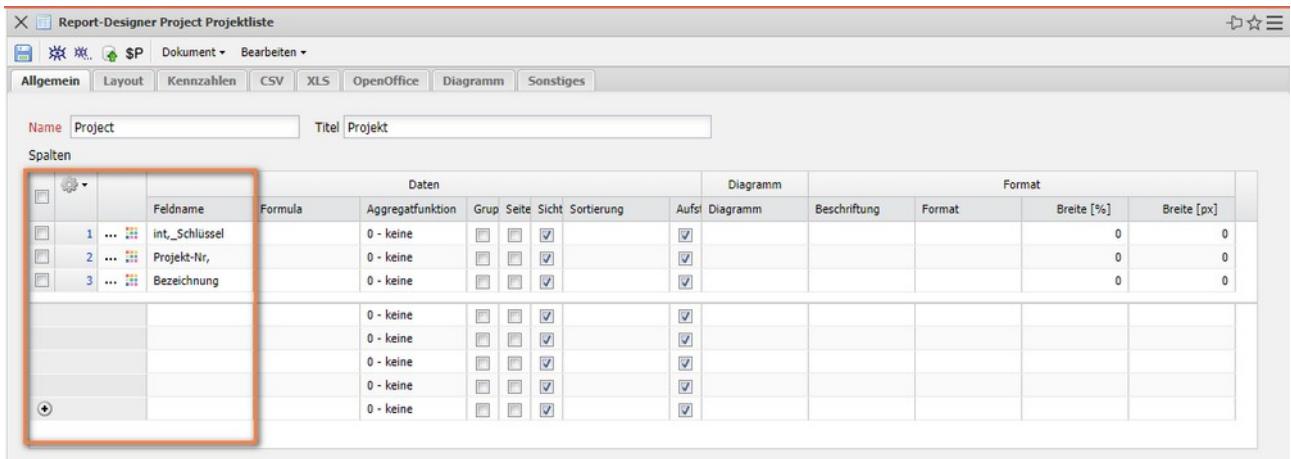
With the help of the Report Designer, you can prepare the results of the queries or most standard evaluations (see Help, Part 9) in tabular or graphical form and export them if necessary. As output format CHART (for graphical evaluations), CSV (for interfaces), DASHBOARD, EDIT (for editing master data), HTML, LIST (list view within Projectile), PDF, RTF (standard format for word processing), XLS and XLSX (MS EXCEL) and XML are available.

10.3.1 Tabular Reports

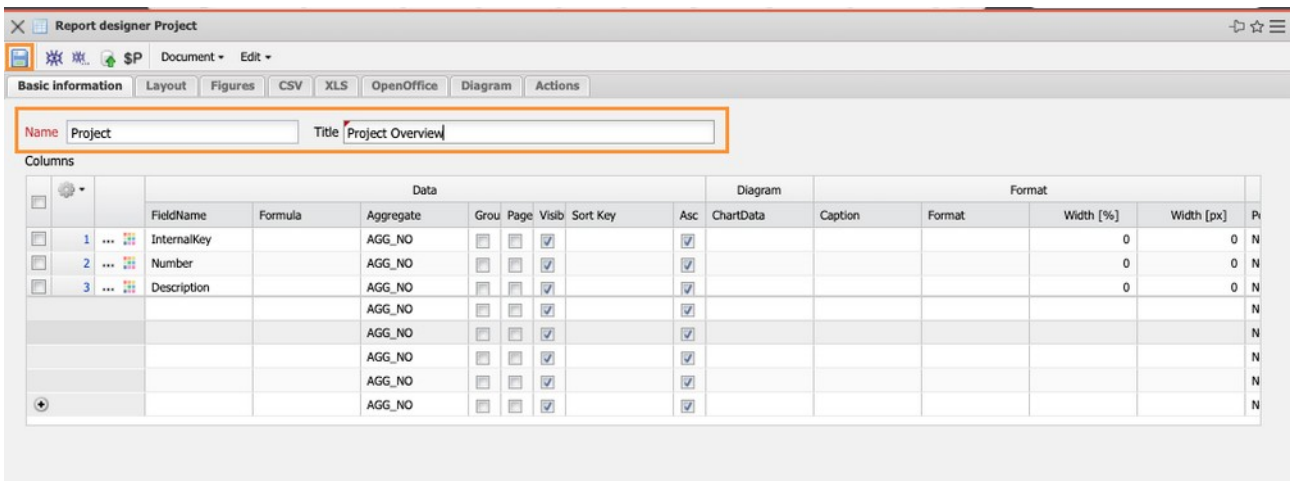
To create a new report for a query (here the example "IDS - Project List"), the Report Designer is called up with the [Minimal Report]. The minimal report contains only a few columns. The alternative [Standard report] contains all columns and is more suitable for small tables.



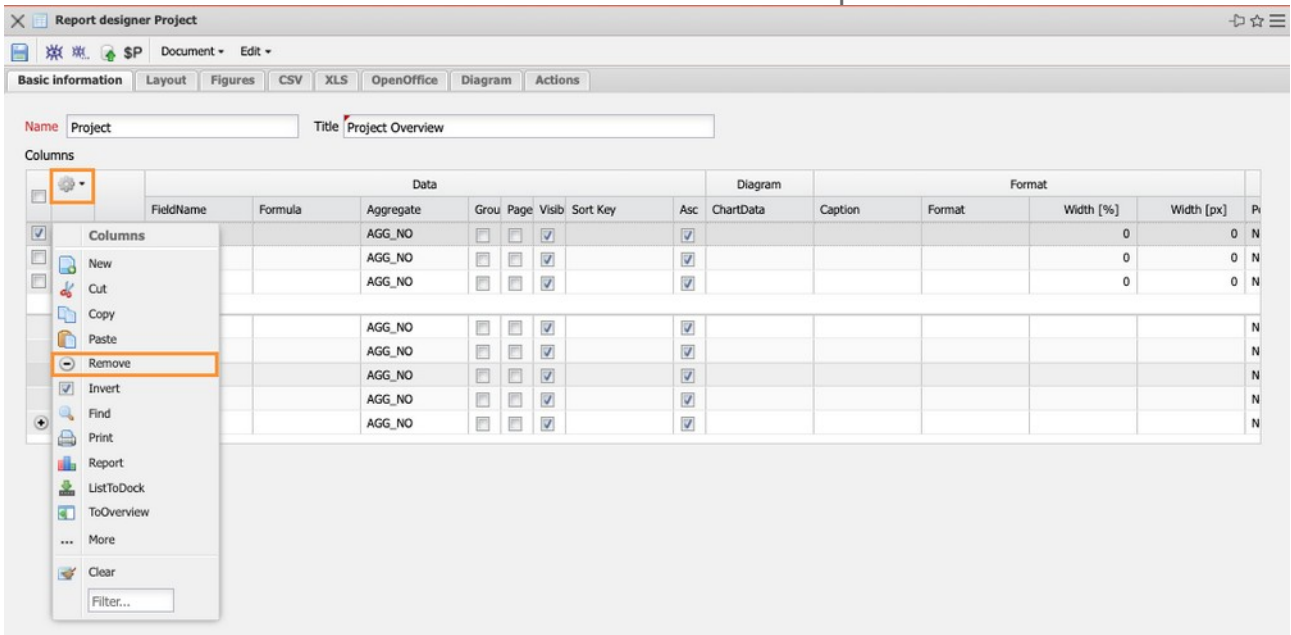
The Report Designer will then open. When selecting [Minimal- report] for the type "Project", only the fields "Int._Key", "Project-No." and "Name" will be preset. The Designer consists of the areas for "Data", "Diagram", "Format", "Key figure" and "Import". In the "Data" area, the fields of the table are selected, formulas can be stored, data of the fields can be aggregated as well as grouped and sorted. The "Diagram" area is used for the graphical reports and the dashboards and "Format" is used to format the columns.



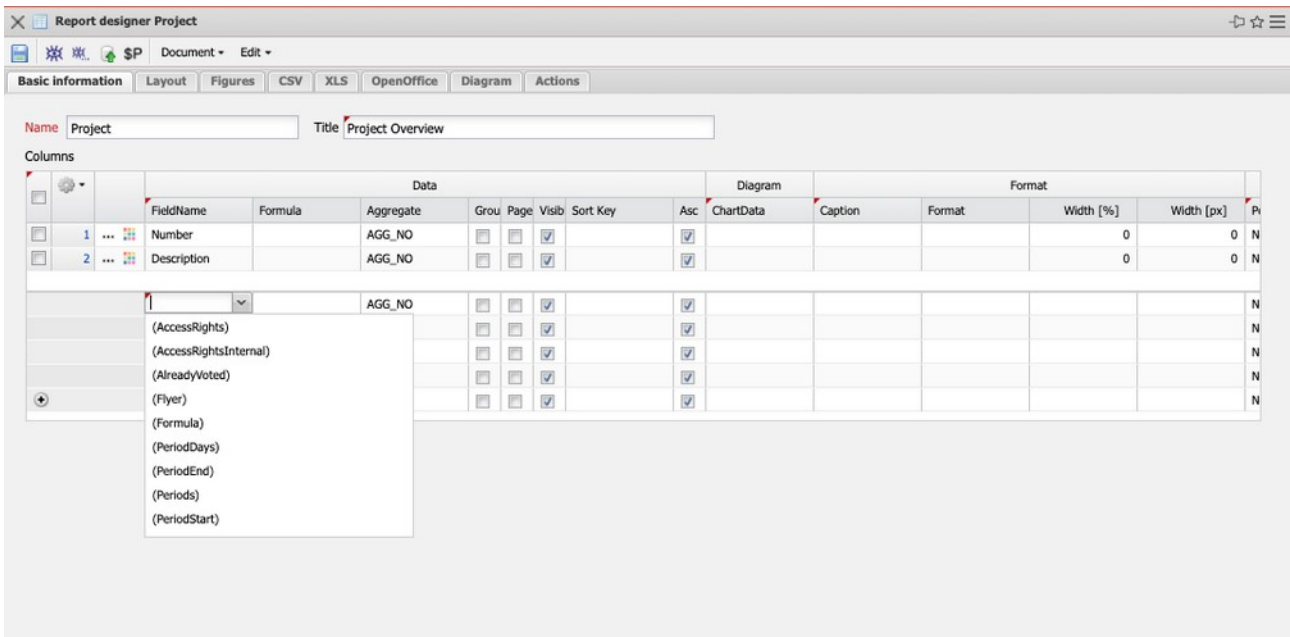
The report is named (here "Project"), the title of the evaluation is defined (the later headline in the report) and saved.



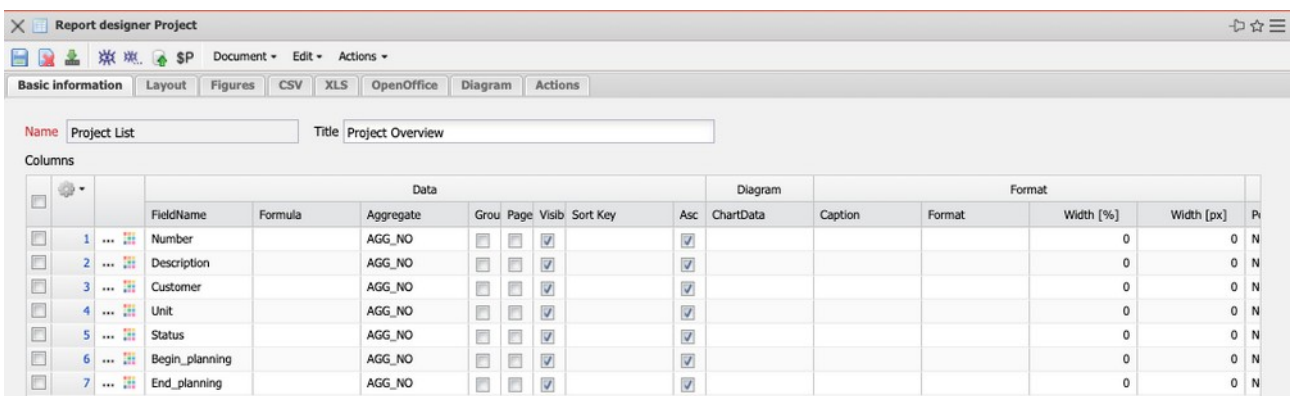
You can remove fields that are not needed in the report...



... and add any number of new fields. To do this, simply select the required field in the "Field name" selection.



In the example the fields "Customer", "Unit", "Status", "Begin Planning" and "Plan End" are selected and saved.



In the next line a formula is defined ...

Report designer Project

Name: Project List Title: Project Overview

FieldNo	FieldName	Formula	Data						Diagram		Format		
			Aggregate	Grou	Page	Visib	Sort Key	Asc	ChartData	Caption	Format	Width [%]	Width
1	Number		AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	
2	Description		AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	
3	Customer		AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	
4	Unit		AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	
5	Status		AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	
6	Begin_planning		AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	
7	End_planning		AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	
8	(Formula)	Planning_time - Actual_time	AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>					
9	Planning_time *		AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>					
10	Actual_time *		AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>					

... Planning Time - Actual Time (Please note upper and lower case letters and spaces!) and then a further field "expected remaining effort" added. Afterwards you can enter the field names in the column "Label" (for the formula) or adapt them for existing fields (e.g. "customer" becomes "client").

Report designer Project

Name: Project List Title: Project Overview

FieldNo	FieldName	Formula	Data						Diagram		Format		
			Aggregate	Grou	Page	Visib	Sort Key	Asc	ChartData	Caption	Format	Width [%]	Width [px]
1	Number		AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0
2	Description		AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0
3	Customer		AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		Client		0	0
4	Unit		AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0
5	Status		AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0
6	Begin_planning		AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0
7	End_planning		AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0
8	(Formula)	Planning_time - Actual_time	AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		Difference			
9	Planning_time *		AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		Plan			
10	Actual_time *		AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		Actual			
11	Estimated_rem...		AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		Rest			

Finally, it is first sorted by "Client" and then by "Project No." and also grouped according to the first sorting criterion. In the report, subtotals per group (in this case the client) are also created as standard.

Report designer Project

Basic Information | Layout | Figures | CSV | XLS | OpenOffice | Diagram | Actions

Name: Project List | Title: Project Overview

Columns

	FieldName	Formula	Aggregate	Group	Page	Visib	Sort Key	Asc	Diagram	Caption	Format	Width [%]	Width [px]
1	Number		AGG_NO			✓	2	✓				0	0
2	Description		AGG_NO			✓		✓				0	0
3	Customer		AGG_NO			✓	1	✓		Client		0	0
4	Unit		AGG_NO			✓		✓				0	0
5	Status		AGG_NO			✓		✓				0	0
6	Begin_planning		AGG_NO			✓		✓				0	0
7	End_planning		AGG_NO			✓		✓				0	0
8	(Formula)	Planning_time - Actual_time	Agg_Sum			✓		✓		Difference			
9	Planning_time *		Agg_Sum			✓		✓		Plan			
10	Actual_time *		Agg_Sum			✓		✓		Actual			
11	Estimated_rem...		Agg_Sum			✓		✓		Rest			

After saving and closing the report, the "Report" selection box in the Query Manager must be updated, the report assigned ...

Report

Report: Project List

Format: []

... and an output format can be selected. In the example "List" is selected as format to generate the report as a list in the system.

Search

Lookup Document types | Document fields | Field values

Report: Project List

Format: LIST

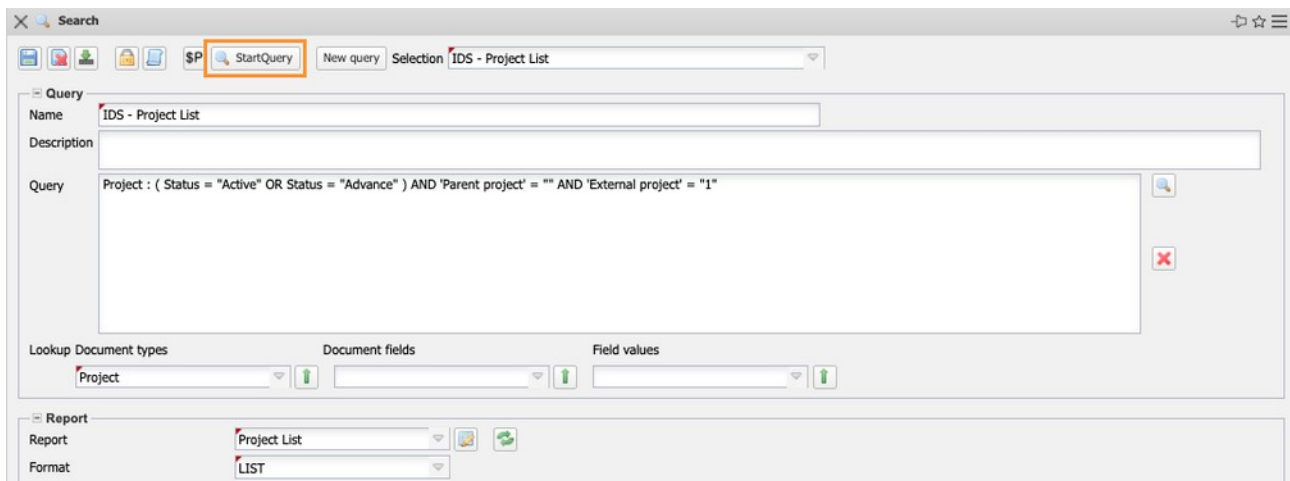
ShowParameters: CHART, CSV, DASHBOARD, EDIT, HTML, LIST, OPENOFFICE, PDF, RTF, VIEW

Chart period: []

Start: []

Period: []

"Start query" ...



... then generates the evaluation in the system. The query first determined all active customer projects and pre-production projects and then prepared these projects with the defined report definition.

The columns in the report correspond to the rows in the report definition, the projects are sorted and grouped by customer and provided with subtotal and grand total.

	Number	Description	Client	Unit	Status	Begin planning	End planning	Difference	Plan	Actual	Rest
1	005	Einführung EPM	ATB Autobau AG	Beratung	Advance	05.12.2019	10.03.2020	189,75	216,00	26,25	212,00
2	025	Einführung EPM	ATB Autobau AG	Entwicklung	Active	08.01.2020	24.02.2020	232,00	232,00	0,00	232,00
3	050	Demo 12	ATB Autobau AG	Entwicklung	Active	05.05.2020	30.07.2020	24,83	40,00	15,17	12,00
4	058	Einführung EPM	ATB Autobau AG	Beratung	Active	15.06.2020	21.07.2020	256,00	256,00	0,00	256,00
5	067	Tickets	ATB Autobau AG	Beratung	Active	04.08.2020	31.08.2020	16,00	24,00	8,00	16,00
6	019	Entwicklung Mo...	CSB Consult Be...		Active	09.12.2019	19.12.2019	8,50	27,00	18,50	0,00
7	061	Einführung EPM	CSB Consult Be...	Entwicklung	Active	22.06.2020	30.10.2020	256,00	256,00	0,00	256,00
8	001	Entwicklung Mo...	CSH Consult AG	Entwicklung	Active	02.12.2019	31.01.2020	217,25	288,00	70,75	218,00
9	002	Entwicklung Mo...	CSH Consult AG	Entwicklung	Active	04.12.2019	24.01.2020	161,75	230,00	68,25	179,00
10	003	Entwicklung Mo...	CSH Consult AG	Entwicklung	Advance	09.12.2019	28.02.2020	177,50	230,00	52,50	184,00
11	011	Entwicklung Mo...	CSH Consult AG	Entwicklung	Advance	02.01.2020	27.03.2020	228,00	242,00	14,00	232,00
12	014	Einführung Proj...	CSH Consult AG	Beratung	Active	06.12.2019	25.01.2020	197,00	224,00	27,00	200,00
13	045	Einführung EPM	CSH Consult AG	Firm 1	Active	12.03.2020	21.04.2020	179,50	214,00	34,50	188,25
14	022	Einführung Fibu	CSS Consult Sof...	Firm 1	Active	08.01.2020	05.09.2020	244,00	358,00	114,00	268,00
15	047	Einführung EPM	CSS Consult Sof...	Entwicklung	Active	13.02.2020	11.07.2020	387,00	444,00	57,00	330,50
16	072	Testprojekt	CSS Consult Sof...	Beratung	Active	28.08.2020	13.11.2020	360,00	360,00	0,00	360,00
17	031	Katalogprojekt	MBG Maschinen...	Beratung	Active	29.01.2020	30.04.2020	219,50	232,00	12,50	0,00
18	009	Beratung "Einka...	PBA Privatbank ...	Beratung	Advance	05.12.2019	29.02.2020	120,00	120,00	0,00	40,00
19								3.474,58	3.993,00	518,42	3.183,75

In the Report Designer you can use not only the direct fields of the table, but also referenced data. For this purpose, a field name with the ending "... " is selected. Only in these fields there are references (as in the field "Customer ..." which points to the contact mask). By clicking the button "..." the fields of the referenced mask are loaded and ...

3	...	Description	AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0	None	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	...	Customer...	AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0	None	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

... you can select them. In the example, the corresponding customer number is to be displayed for the client of the projects.

3	...	Description	AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0	None	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	...	Customer.Vendor_number	AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0	None	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

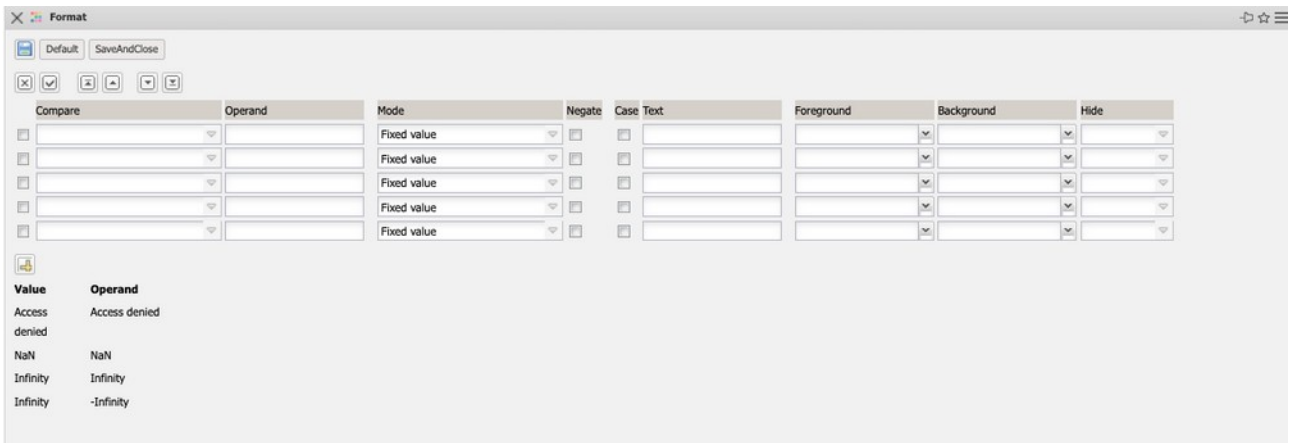
You can then drag and drop the field to another position. In the example, the new field "Customer.Vendor_number" is moved from the last line to the four lines behind the field "Customer".

	FieldName	Formula	Aggregate	Group	Page	Visible	Sort Key	Asc	ChartData	Caption	Format	Width [%]	Width [px]	Periodic	Flat	Is
1	InternalKey		AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0	None	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	Number		AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0	None	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Description		AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0	None	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	Unit		AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0	None	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	Vendor_number		AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0	None	<input type="checkbox"/>	<input checked="" type="checkbox"/>
			AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>						None	<input type="checkbox"/>	<input type="checkbox"/>
			AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>						None	<input type="checkbox"/>	<input type="checkbox"/>
			AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>						None	<input type="checkbox"/>	<input type="checkbox"/>
			AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>						None	<input type="checkbox"/>	<input type="checkbox"/>

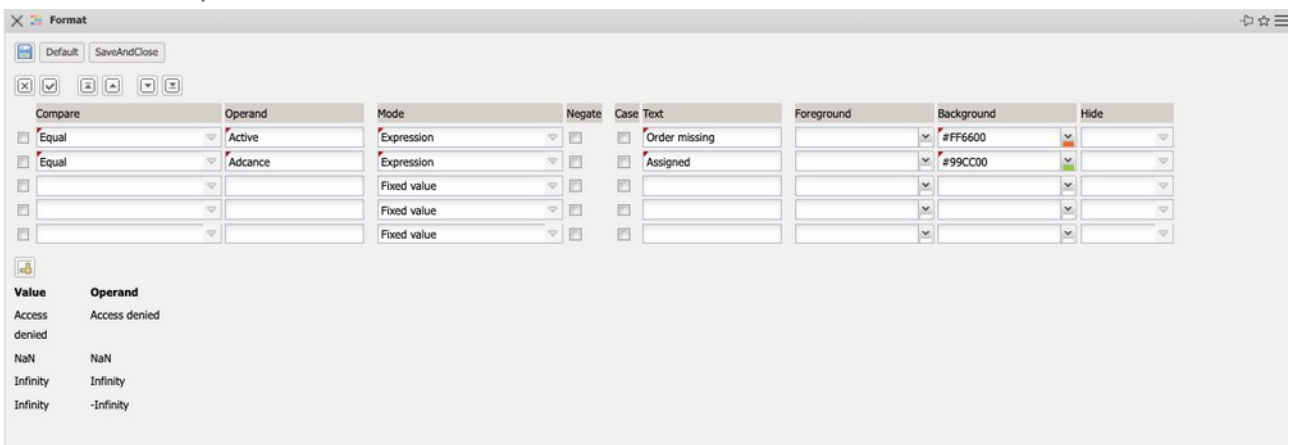
In the next example, the "Status" field is to be highlighted with the value-dependent formatting "Status colors".

	FieldName	Formula	Aggregate	Group	Page	Visible	Sort Key	Asc	ChartData	Caption	Format	Width [%]	Width [px]	Periodic	Flat	Is
1	InternalKey		AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0	None	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	Number		AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0	None	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Description		AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0	None	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	Customer.Vendor_number		AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0	None	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	Unit		AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>						None	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6	Status		AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>						None	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	ValueBasedFormat		AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>						None	<input type="checkbox"/>	<input type="checkbox"/>
			AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>						None	<input type="checkbox"/>	<input type="checkbox"/>
			AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>						None	<input type="checkbox"/>	<input type="checkbox"/>
			AGG_NO	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>						None	<input type="checkbox"/>	<input type="checkbox"/>

In the dialog you can set the comparison operators and the operand in the field "Comparison". The values can either be converted to text (text) or color (foreground or background color).



In the example the field "Status" ...



... set the value "active" (internally "Active") to green background and change the text to "Commissioned". the value "Advance" (internal "Advance") is provided with an orange background and the text is changed to "Order missing" .

Comparison operators are currently supported:

No.	Operator	Description
1	starts with	Check if the field content starts with the value.
2	ends with	Check if the field content ends with the value.
3	contains elements	Field contains a multiple selection.
4	contains text	Check if the field content contains the value.
5	equal	Checking the field content for equality.
6	bigger	Check if field content is greater than the value.
7	bigger or equal	Check if field content is greater or equal to the value.
8	smaller	Check if field content is smaller than the value.
9	smaller or equal	Check if field content is smaller or equal to the value.
10	unequal	Checking the field content for inequality.
11	refers to	Check documents for links to other documents.

The result of the two examples (loading information from referenced tables and value-based formatting):

InternalKey	Number	Description	Vendor number	Unit	Status
1	001	Entwicklung Modul B0	2809	Entwicklung	Order missing
10	005	Einführung EPM		Beratung	Advance
13	011	Entwicklung Modul B	2809	Entwicklung	Advance
14	009	Beratung "Einkauf und Beschaffung"		Beratung	Advance
17	014	Einführung Projectile	2809	Beratung	Order missing
2	002	Entwicklung Modul A	2809	Entwicklung	Order missing
22	019	Entwicklung Modul J	4781		Order missing
25	022	Einführung Fibu		Firm 1	Order missing
28	025	Einführung EPM		Entwicklung	Order missing
3	003	Entwicklung Modul C	2809	Entwicklung	Advance
34	031	Katalogprojekt		Beratung	Order missing
38	047	Einführung EPM		Entwicklung	Order missing
48	045	Einführung EPM	2809	Firm 1	Order missing
52	050	Demo 12		Entwicklung	Order missing
60	058	Einführung EPM		Beratung	Order missing
62	061	Einführung EPM	4781	Entwicklung	Order missing
68	067	Tickets		Beratung	Order missing
73	072	Testprojekt		Beratung	Order missing

You can adapt existing reports at any time. The query is selected, the corresponding report definition is opened and modified. In the following example three additional fields are added to the existing report ...

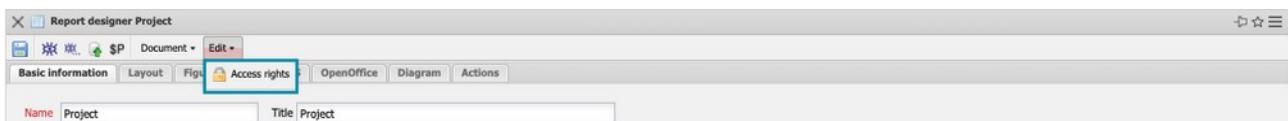
Columns		Data						Diagram	Format		Figure							
	FieldName	Formula	Aggregate	Group	Page	Visible	Sort Key	Asc	ChartData	Caption	Format	Width [%]	Width [px]	Periodic	Flat	Is im	Impc	Lo
1	InternalKey		AGG_NO			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0	None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
2	Number		AGG_NO			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0	None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
3	Description		AGG_NO			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0	None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
4	Customer.Vend...		AGG_NO			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0	None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
5	Unit		AGG_NO			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0	None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
6	Status		AGG_NO			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0	None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
7	Order_value *		AGG_NO			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0	None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
8	Invoice_value *		AGG_NO			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0	None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
9	(Formula)	Order value - I...	AGG_NO			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0	None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
			AGG_NO			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>						None	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

... assigned: "order value", "invoice value" and a formula.

InternalKey	Number	Description	Vendor number	Unit	Status	Order value	Invoice value	Column 9
1	001	Entwicklung Modul B0	2809	Entwicklung	Order missing	140.231,11	416,00	139.815,11
10	005	Einführung EPM		Beratung	Advance	24.720,00	8.720,00	16.000,00
13	011	Entwicklung Modul B	2809	Entwicklung	Advance	0,00	0,00	0,00
14	009	Beratung "Einkauf und Beschaffung"		Beratung	Advance	0,00	0,00	0,00
17	014	Einführung Projectile	2809	Beratung	Order missing	38.790,00	8.420,56	30.369,44
2	002	Entwicklung Modul A	2809	Entwicklung	Order missing	29.580,00	0,00	29.580,00
22	019	Entwicklung Modul J	4781		Order missing	0,00	0,00	0,00
25	022	Einführung Fibu		Firm 1	Order missing	51.950,00	0,00	51.950,00
28	025	Einführung EPM		Entwicklung	Order missing	0,00	0,00	0,00
3	003	Entwicklung Modul C	2809	Entwicklung	Advance	27.080,00	0,00	27.080,00
34	031	Katalogprojekt		Beratung	Order missing	0,00	0,00	0,00
38	047	Einführung EPM		Entwicklung	Order missing	47.780,00	30.000,00	17.780,00
48	045	Einführung EPM	2809	Firm 1	Order missing	37.490,00	4.336,15	33.153,85
52	050	Demo 12		Entwicklung	Order missing	4.200,00	0,00	4.200,00
60	058	Einführung EPM		Beratung	Order missing	26.680,00	0,00	26.680,00
62	061	Einführung EPM	4781	Entwicklung	Order missing	19.160,00	16.280,00	2.880,00
68	067	Tickets		Beratung	Order missing	0,00	0,00	0,00
73	072	Testprojekt		Beratung	Order missing	20.790,00	0,00	20.790,00

10.3.2 Set Permissions

When the report is finished, you must assign authorizations to the report (analogous to the queries). You can view and change the permissions in the menu "Edit - Permissions".



The creator of the report is preset as "owner", the other permissions must be set by the creator. In the example the administrators, like the owner, get the highest permission and a composite group "Poweruser" gets the permission level "2 - Read". All other users do not get permission to query:



10.3.3 Periodic Reports, Key Figures

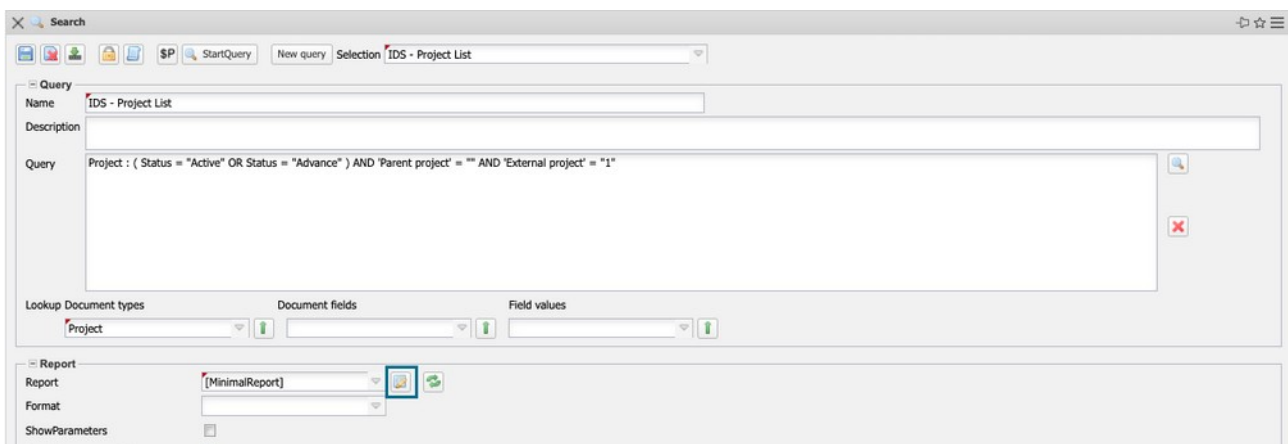
All shown examples show the current data. Often, however, evaluations on de-

defined key dates (until the end of the month, ...) or periodic evaluations (last quarter per month, next month per week, ...) are required. In the system, so-called key figures are available for the central objects "contact", "employee", "project", "work package".

Key figures are consolidated values that can be calculated from document data or other key figures using algorithms and that describe a document. Each key figure is assigned an ID for unique identification.

The use of key figures in Projectile allows the user to create total values, values at any time and values for any period. The values generated by a key figure are assigned a creation date so that they can be stored and reused without the need for recalculation. Furthermore, each key figure can be assigned to a document, which can be used to integrate key figures into screen views and reports.

The following example shows the use of key figures in the context of a periodic evaluation. First the query about the active customer projects is loaded and ...



... then a new report is created:

		Data							Diagram		Format			Figure					
		FieldName	Formula	Aggregate	Group	Page	Visib	Sort Key	Asc	ChartData	Caption	Format	Width [%]	Width [px]	Periodic	Flat	Is im	Impc	Lo
1	...	InternalKey		AGG_NO			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0	None	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
2	...	Number		AGG_NO			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0	None	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
3	...	Description		AGG_NO			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0	None	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4	...	Customer		AGG_NO			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		Customer		0	0	None	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
5	...	Status		AGG_NO			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0	None	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
6	...	Unit		AGG_NO			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0	None	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
7	...	StartDate		AGG_NO			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0	None	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
8	...	EndTime		AGG_NO			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0	None	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
9	...	Planning_time *		Agg_Sum			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		Planning Time [h]				Periodic	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
10	...	Actual_time *		Agg_Sum			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		Actual Time [h]				Periodic	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
11	...	(Formula)	Planning_time ...	Agg_Sum			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		Difference [h]				Periodic	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
12	...	Estimated_rem...		Agg_Sum			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		Rest [h]		0	0	Periodic	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
13	...	(Periods)		AGG_NO			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0	None	<input type="checkbox"/>	<input checked="" type="checkbox"/>		

Here the key figures are in the column "Field name", there they can be recognized by an asterisk. Once you have decided on one or more key figures, it is necessary to select "(Periods)" in the same column.

The periodic treatment of the selected key figures is then defined in the rows (column Key figure - Periodic), meaning

- "Total" - the absolute value (as without delimitation),
- "Periodic" - time limitation of the value to the selected period,
- "Accumulated" - Addition of the values of a period with the values of the previous period,
- "Sum" - the sum of the periodic values in the observation interval

In the "Key figures" tab, enter the period under consideration in the "Time interval" field and the period in the "Interval" field. In addition, you can also set the "Maximum age of the key figures" here (0h means current calculation, 24h means the key figures can be up to 24 hours old).

Time interval: Last Quarter 01.04.2021 30.06.2021

Interval: Monthly

Max figures age: 24 h

BulkOptimizer:

BulkSize: 20

After saving and closing the report ...

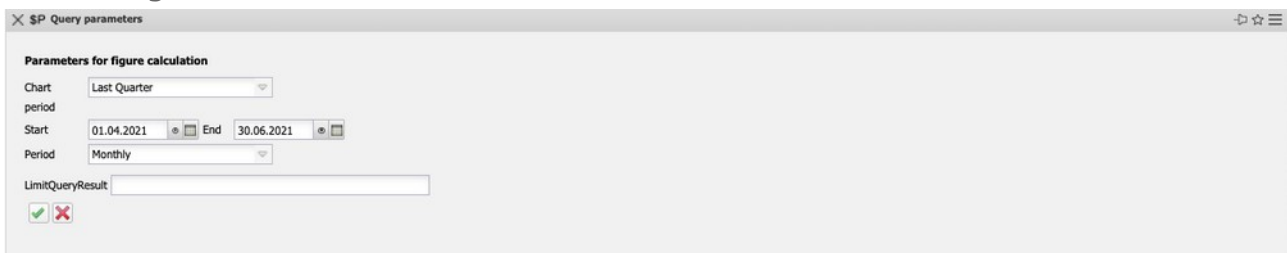


The screenshot shows a 'Report' configuration window with the following settings:

- Report: Project List (periodical)
- Format: (empty dropdown)
- ShowParameters:
- show Figure parameters:
- Show query name:
- ShowDescription: (empty dropdown)
- ShowDescriptionInParameterDialog:
- Chart period: Last Quarter
- Start: 01.04.2021
- End: 30.06.2021
- Period: Monthly

... you must update the "Report" selection box in the Query Manager, assign the report and enter the evaluation period. Most of the time the evaluation period in the report is the same as in the query.

If the report is then created with "Start query", an intermediate dialog appears first. Here you can change the analysis interval and the period and confirm with the green tick ...



The screenshot shows the 'SP Query parameters' dialog box with the following settings:

- Parameters for figure calculation
- Chart period: Last Quarter
- Start: 01.04.2021
- End: 30.06.2021
- Period: Monthly
- LimitQueryResult: (empty text field)
- Confirmation buttons: (green tick) and (red X)

...the report can be started. Projectile delimits in the report the four selected key figures "Plan[h]", "Actual[h]", "Difference[h]" and Rest[h]" over the three months of the last quarter:

InternalKey	Number	Description	Company	Status	Unit	StartDate	EndTime	Planning Time [h] 04/21	Actual Time [h] 04/21	Difference [h] 04/21	Rest [h] 04/21	Planning Time [h] 05/21	Actual Time [h] 05/21	Difference [h] 05/21	Rest [h] 05/21	Planning Time [h] 06/21	Actual Time [h] 06/21	Difference [h] 06/21	Rest [h] 06/21
1	001	Entwicklung Modul B0	CSH Consult AG	Active	Entwicklung	05.12.2019		1,00	0,00	0,00	218,00	0,00	0,00	0,00	218,00	0,00	0,00	0,00	218,00
10	005	Einführung EPM	ATB Autobau AG	Advance	Beratung			1,00	0,00	0,00	212,00	0,00	0,00	0,00	212,00	0,00	0,00	0,00	212,00
13	011	Entwicklung Modul B	CSH Consult AG	Advance	Entwicklung	29.12.2019		1,00	0,00	0,00	232,00	0,00	0,00	0,00	232,00	0,00	0,00	0,00	232,00
14	009	Beratung "Einkauf und Beschaffung"	PBA Privatbank AG	Advance	Beratung			1,00	0,00	0,00	40,00	0,00	0,00	0,00	40,00	0,00	0,00	0,00	40,00
17	014	Einführung Projectile	CSH Consult AG	Active	Beratung			1,00	0,00	0,00	200,00	0,00	0,00	0,00	200,00	0,00	0,00	0,00	200,00
2	002	Entwicklung Modul A	CSH Consult AG	Active	Entwicklung	05.03.2020		0,00	0,00	0,00	179,00	0,00	0,00	0,00	179,00	0,00	0,00	0,00	179,00
22	019	Entwicklung Modul J	CSB Consult Beratung GmbH	Active				1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
25	022	Einführung Fibu	CSS Consult Software GmbH	Active	Firm 1			0,50	0,00	0,00	268,00	0,00	0,00	0,00	268,00	0,00	0,00	0,00	268,00
28	025	Einführung EPM	ATB Autobau AG	Active	Entwicklung			1,00	0,00	0,00	232,00	0,00	0,00	0,00	232,00	0,00	0,00	0,00	232,00
3	003	Entwicklung Modul C	CSH Consult AG	Advance	Entwicklung			1,00	0,00	0,00	184,00	0,00	0,00	0,00	184,00	0,00	0,00	0,00	184,00
34	031	Katalogprojekt	MBG Maschinenbau GmbH	Active	Beratung			1,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
38	047	Einführung EPM	CSH Consult Software GmbH	Active	Entwicklung	13.02.2020		0,85	0,00	0,00	330,50	0,00	0,00	0,00	330,50	0,00	0,00	0,00	330,50
48	045	Einführung EPM	CSH Consult AG	Active	Firm 1			0,97	0,00	0,00	188,25	0,00	0,00	0,00	188,25	0,00	0,00	0,00	188,25
52	050	Demo 12	ATB Autobau AG	Active	Entwicklung			1,00	0,00	0,00	12,00	0,00	0,00	0,00	12,00	0,00	0,00	0,00	12,00

10.4 Dashboard Builder

With the help of the Dashboard Builder you can create dashboards with main and detailed evaluations. The Dashboard Builder is a paid extension of the ReportMaker.

The following example shows how to use the Dashboard Builder. First the query about the active customer projects is loaded and ...

The screenshot shows the 'Query' configuration window in the Dashboard Builder. The 'Name' field is 'IDS - Project List (Dashboard)'. The 'Description' field is empty. The 'Query' field contains the following SQL query: `Project : (Status = "Active" OR Status = "Advance") AND 'Parent project' = "" AND 'External project' = "1"`. Below the query field, there are sections for 'Lookup Document types' (set to 'Project'), 'Document fields', and 'Field values'. At the bottom, there is a 'Report' section with a dropdown menu set to '[MinimalReport]' and several checkboxes for report options: 'ShowParameters' (unchecked), 'show Figure parameters' (unchecked), 'Show query name' (unchecked), 'ShowDescription' (unchecked), and 'ShowDescriptionInParameterDialog' (unchecked).

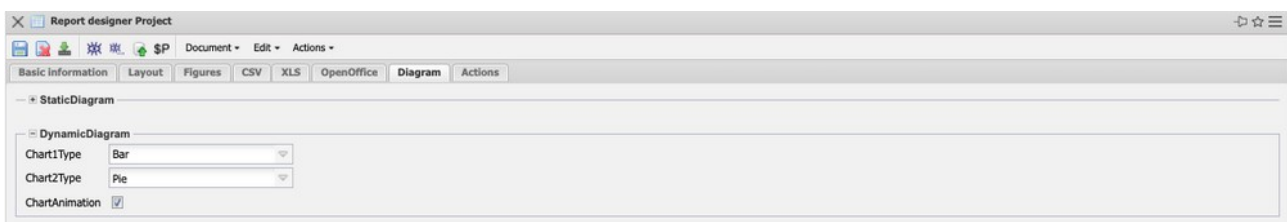
... then a new report is created.

In the report definition only a few additional steps are necessary to create a dashboard from a tabular report. In the column Diagram the axes must be

determined. In the example, the project number becomes the x-axis and the four key figures "Plan [h]", "Actual [h]", "Difference [h]" and Rest [h]" become the y-axis.

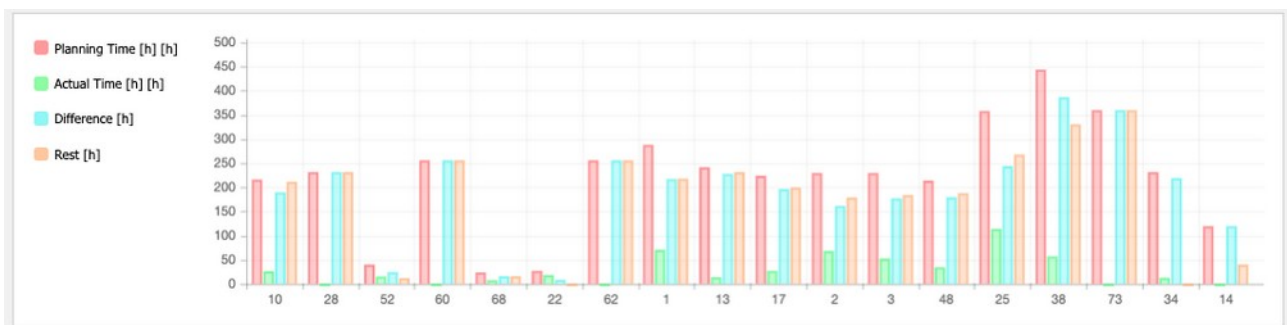
Columns		Data	Diagram	Format	Figure													
FieldNo	FieldName	Formula	Aggregate	Group	Page	Visib	Sort Key	Asc	ChartData	Caption	Format	Width [%]	Width [px]	Periodic	Flat	Is im	Impc	Lo
1	InternalKey		AGG_NO			<input checked="" type="checkbox"/>	2	<input checked="" type="checkbox"/>	INDEX			0	0	None	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
2	Number		AGG_NO			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0	None	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
3	Description		AGG_NO			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0	None	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
4	Customer		AGG_NO			<input checked="" type="checkbox"/>	1	<input checked="" type="checkbox"/>		Customer		0	0	None	<input type="checkbox"/>	<input type="checkbox"/>		
5	Status		AGG_NO			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				0	0	None	<input type="checkbox"/>	<input type="checkbox"/>		
6	Planning_time *		Agg_Sum			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	DATA	Planning Time [h]		0	0	None	<input type="checkbox"/>	<input type="checkbox"/>		
7	Actual_time *		Agg_Sum			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	DATA	Actual Time [h]		0	0	None	<input type="checkbox"/>	<input type="checkbox"/>		
8	(Formula)	Planning_time - ...	Agg_Sum			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	DATA	Difference [h]		0	0	None	<input type="checkbox"/>	<input type="checkbox"/>		
9	Estimated_rem...		Agg_Sum			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	DATA	Rest [h]		0	0	None	<input type="checkbox"/>	<input type="checkbox"/>		

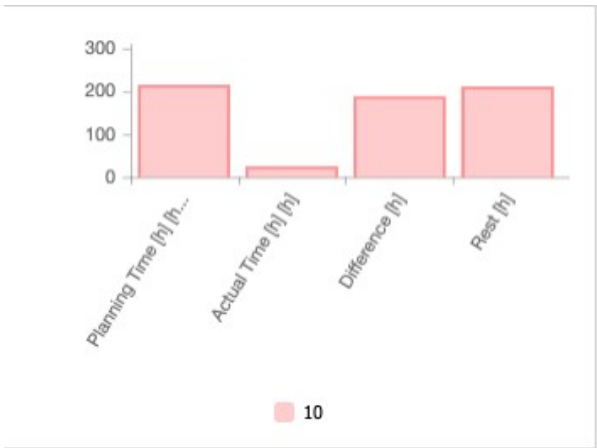
The name is less suitable as X-axis, because this field is too long. In the "Diagram" tab, the "Main Evaluation" (here bar stack) and the "Detail Evaluation" (here pie) are then selected.



Currently, the following diagram types are available and suitable as main evaluation:

Bars and bar stacks:

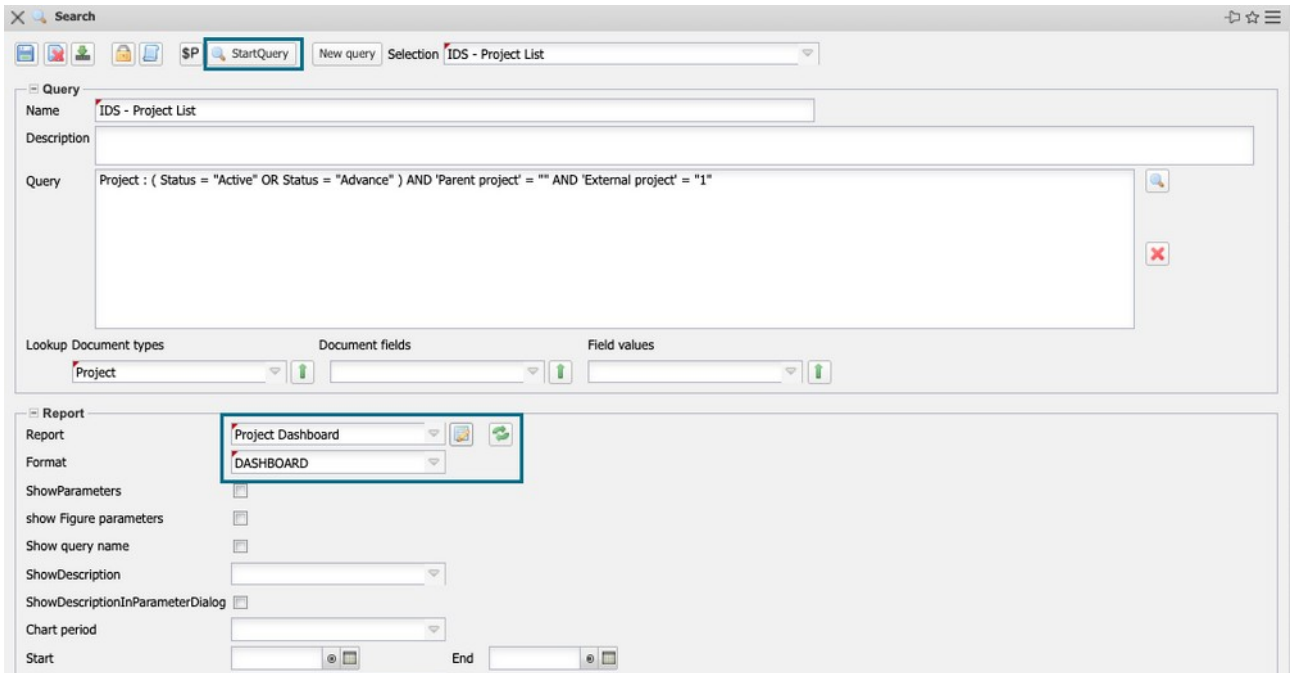




Line Chart:



After saving and closing the report ...



... click "Start query" to generate the dashboard with the 4 key figures (plan, actual, difference, rest) as a stack of bars:

