Projetex 9 ð Custom Queries Guide

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1 Custom Queries

SQL queries can be made to Projetex database with administrative access rights. This feature recommended for system administrators and IT specialists since it requires basic knowledge of SQL.

Structured Query Language (SQL) is a language of structured requests. It is intended for working with relational databases, which constitute the sets of interrelated data, stored in tables.

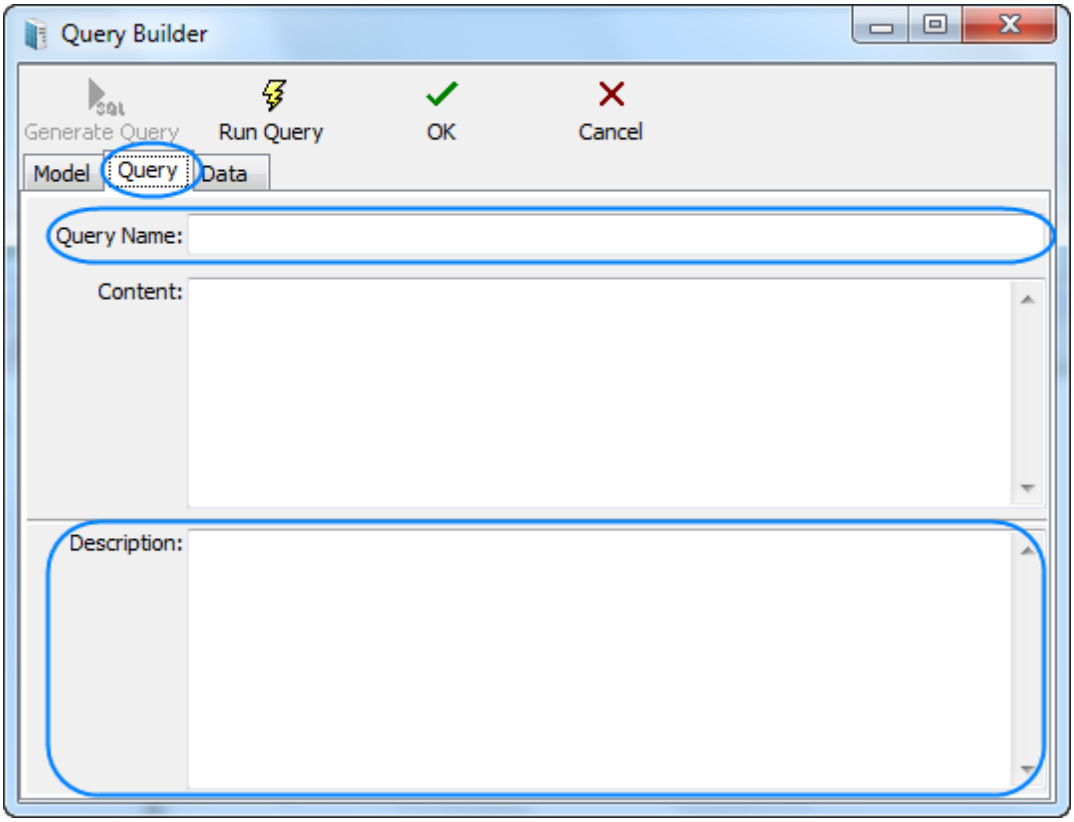
Nowadays SQL is a part of a large number of programs, executed on various types of computers. "Owing to its elegance and machine independence, as well as to the industrial leaders support in relational base technology, SQL was acknowledged the standard language and will keep this position in the foreseeable future."[2000, Mastering SQL, Martin Grubber]

2 Query Building Tutorial

User queries are built and managed with the help of **Custom Queries** section of **Corporate Settings** tab of the Projetex <%VAERSION%> Server Administrator.

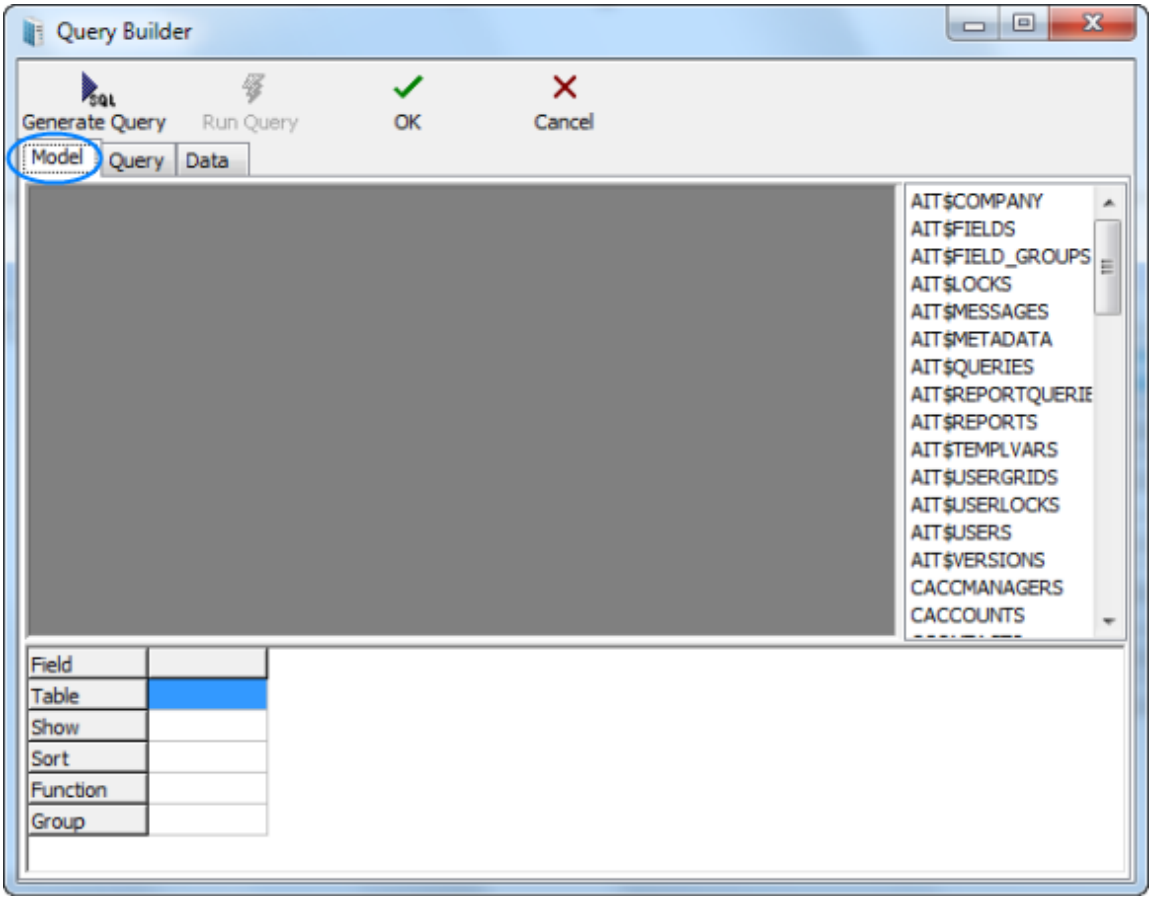
1. Beginning creating a query

Click the **New** button and the **Query Builder** window shown below appears. Enter the name of your query in **Query Name** field, and (optionally) description of the new query in the **Description** field.



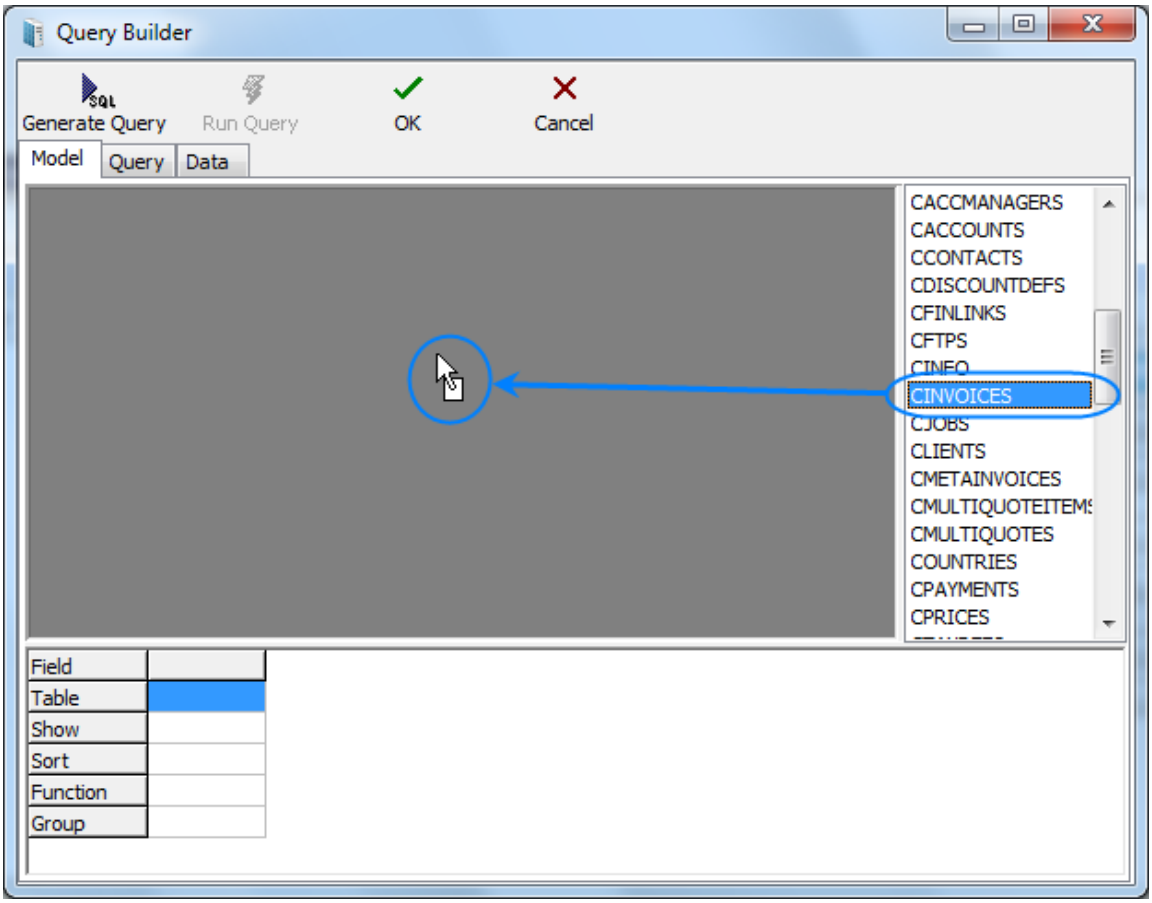
2. Beginning creating the model of the query

Switch to the **Model** tab:



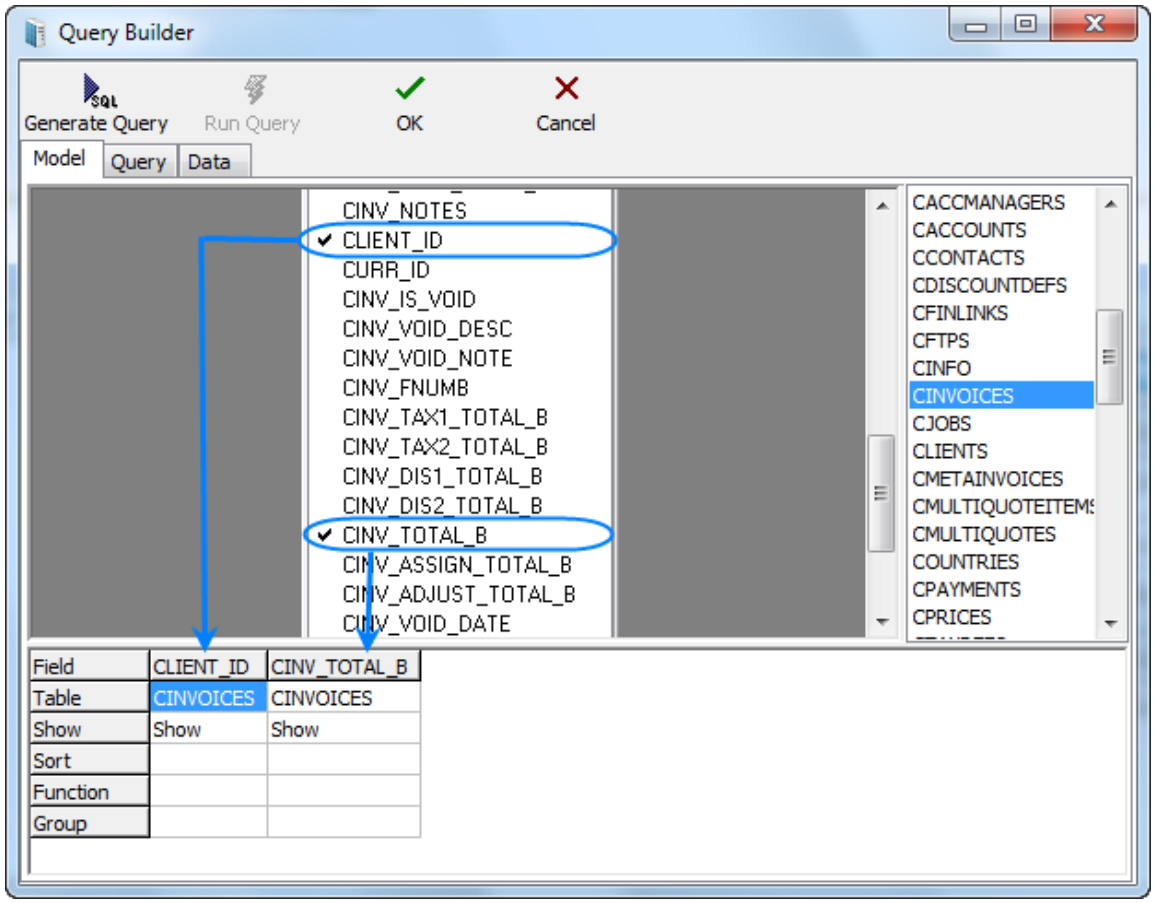
3. Selecting database tables

Locate the required tables on the list to the right (in this case — *CINVOICES* table) and drag them to the gray field of the **Model** tab of **Query Builder** window.



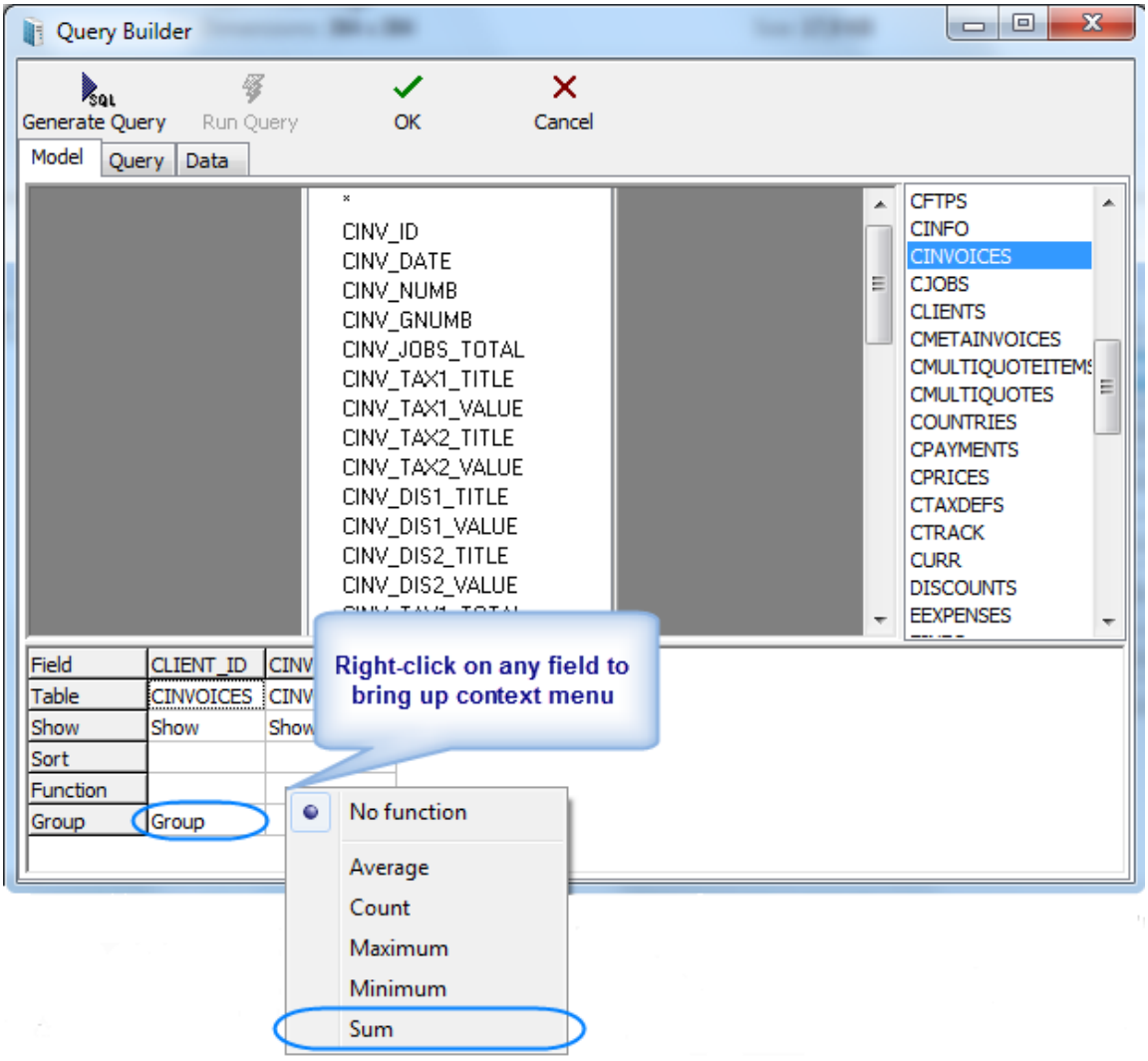
4. Selecting fields to be added to query

Select two fields, (in this case *CLIENT_ID* and *CINV_TOTAL_B* — client ID and sum of the invoice in basic currency) by clicking near the names of this fields in the table windows. These fields will appear in the lower area, which represents the list of selected fields.



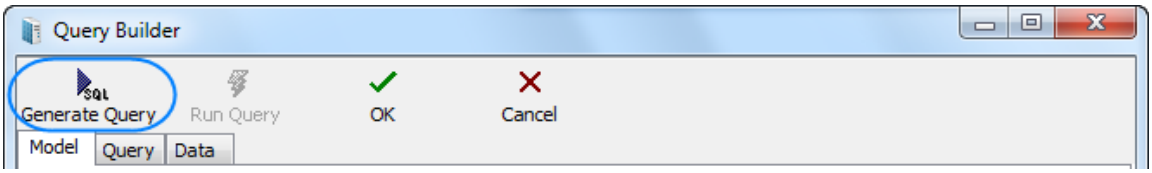
5. Assigning functions

Right-click on the cell where fields CLIENT_ID (the selected field) and GROUP (SQL section Group by) intersect and select the **Group** option. Similarly in the cell of intersecting CINV_TOTAL_B and **Function** fields we select the **Sum** option:

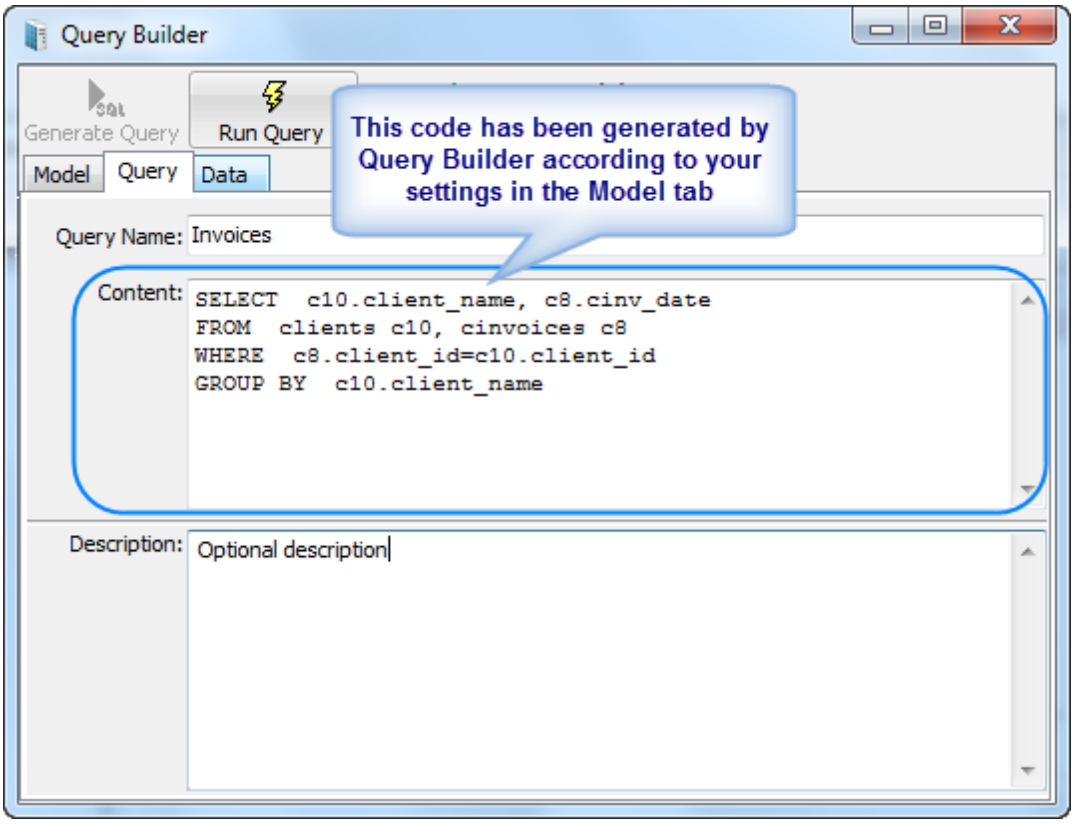


6. Generating query

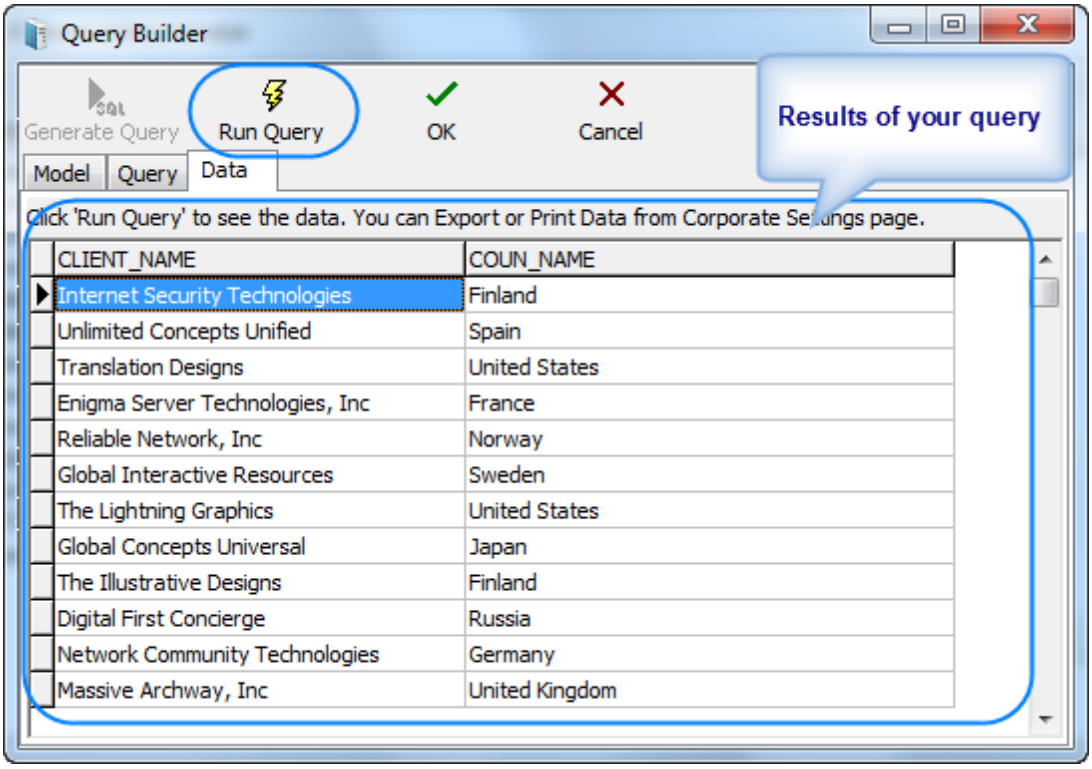
Click the Generate Query button.



Newly built SQL-query will appear.



Start executing the query (clicking **Run Query** button from the toolbar in the upper part of the window) and you will see the results.



Note: Although for most basic queries you are not required to write the SQL code of the query manually, any additional code can be added by SQL-versed users to fully customize their queries.

Example:

The following strings can be added to this particular query:

```
SELECT FIRST 10 c4.client_id, SUM(c4.cinv_total_b),
(select client_name from clients where client_id = c4.client_id)
FROM cinvoices c4
GROUP BY c4.client_id
ORDER BY 2 DESC
```

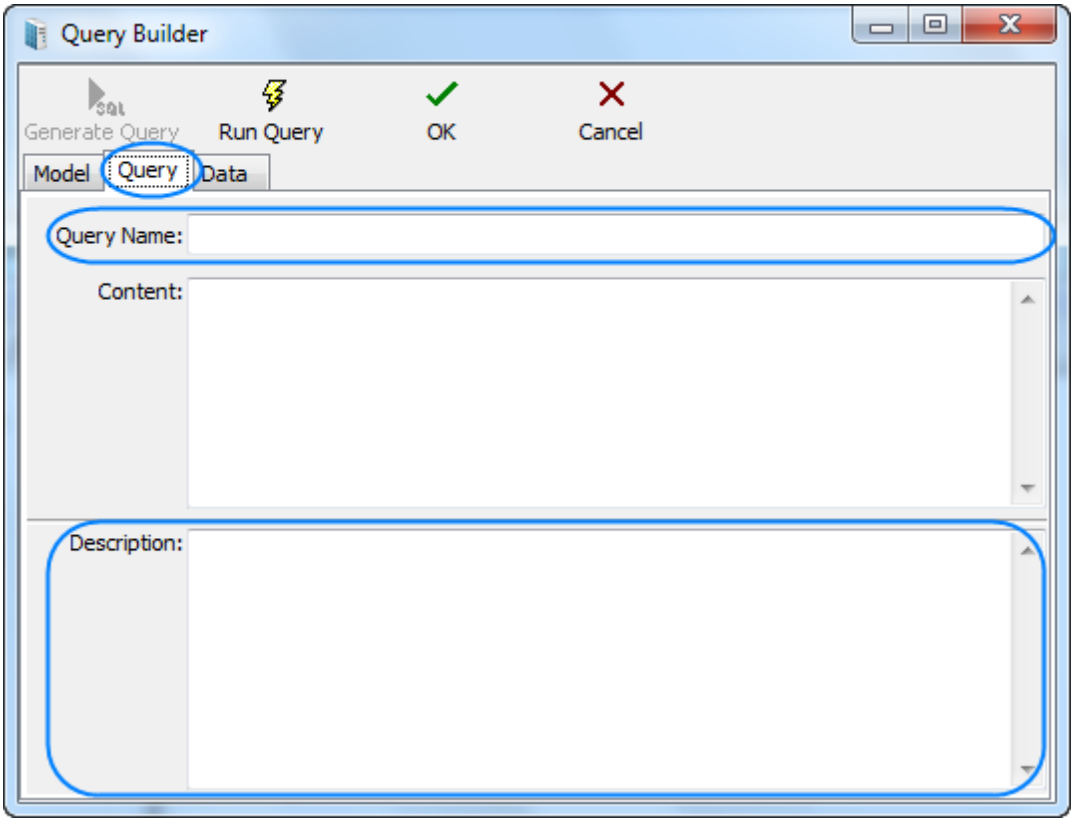
In simple words it will mean the following: To select first ten clients (first 10 client_id) by counting the sum of invoices and display them in the order of sum reduction (`ORDER BY 2 DESC`).

Click **Run Query** button once again to see the new result.

Note: If you click **Generate SQL** after editing the query manually the query will be rebuilt and the results of your work will be lost.

7. Saving newly created query

To save the query model switch to the **Query** tab, specify the **Query Name** and **Description** (optionally) and click **OK** button.

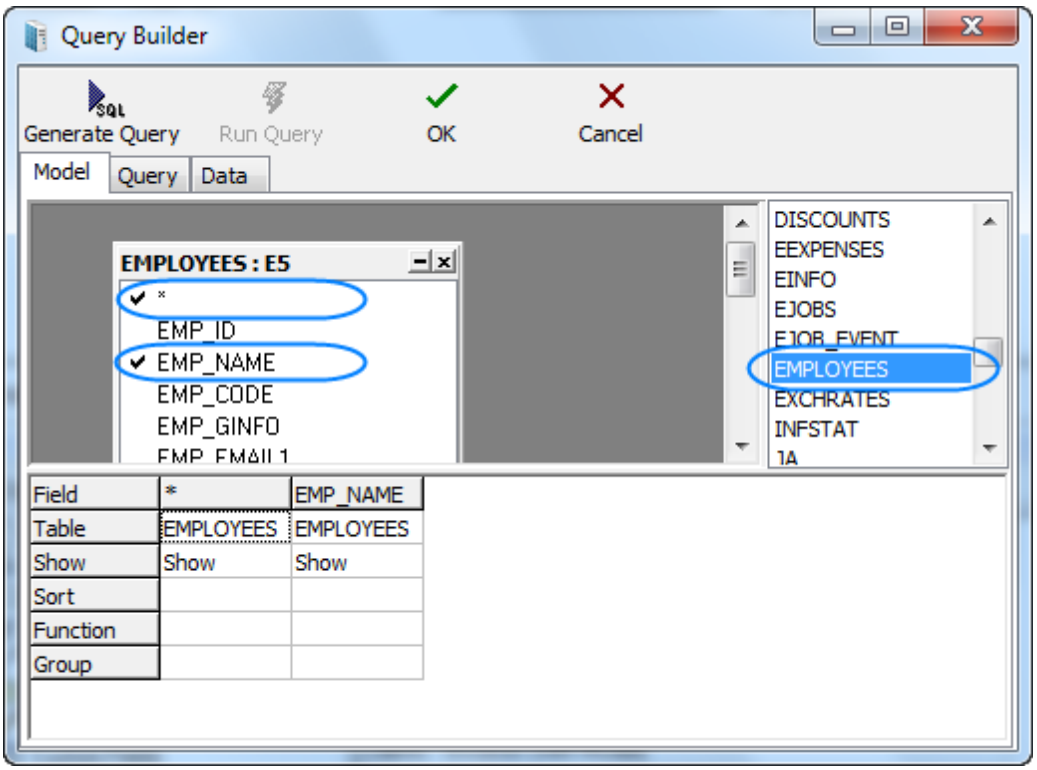


3 Example: Single Table Query

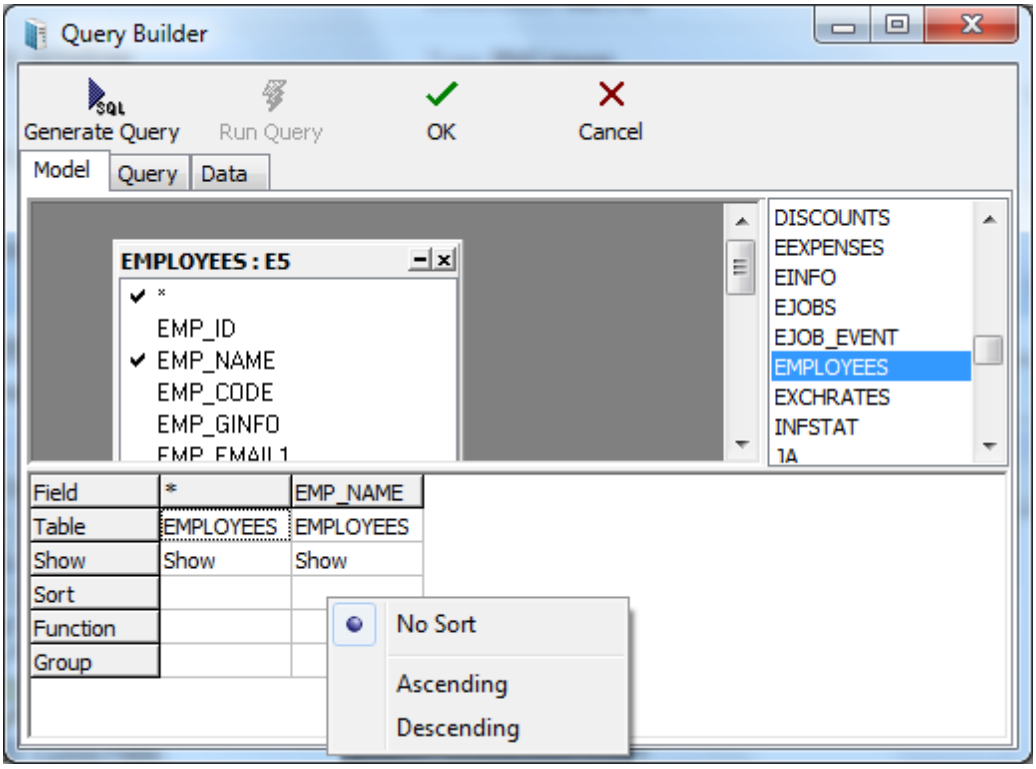
Objective: Get the list of corporate experts with all data sorted by experts' names.

1. Drag&drop EMPLOYEES table at the working area.

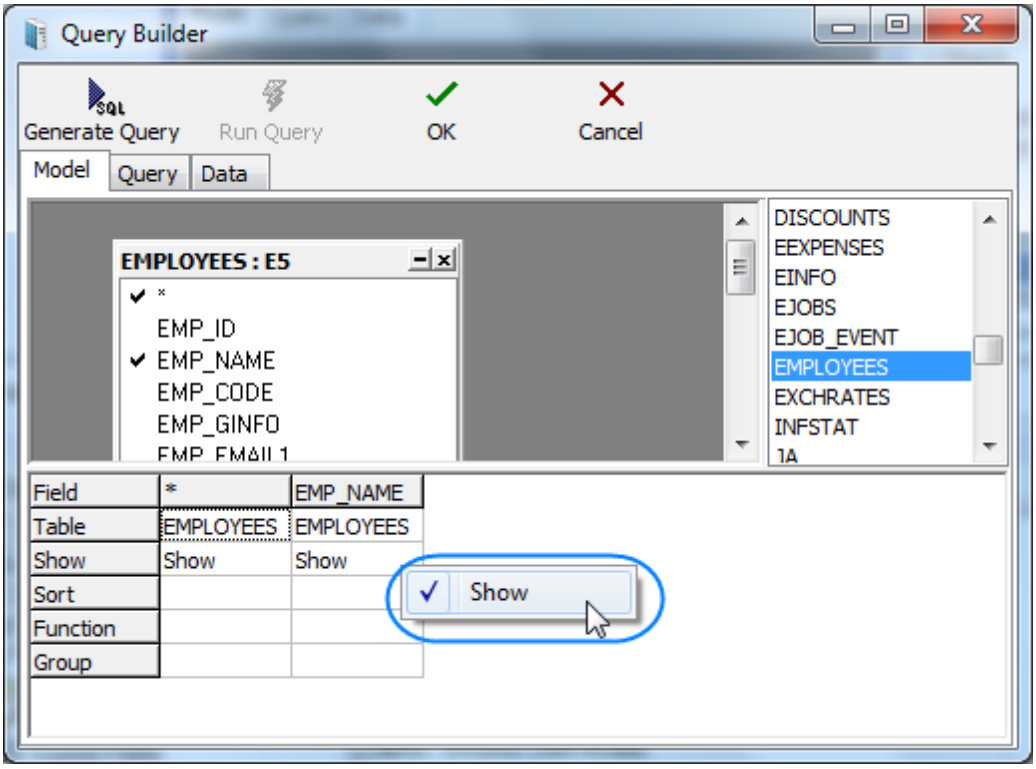
2. Select the asterisk "*" (to display all table fields) and the field EMP_NAME (needed for sorting). After performing of these actions we can see the following picture under model working area:



3. In order to sort data by the corporate experts names you need to right-click the cell where EMP_NAME column and the Sort row intersect, and choose the sorting type:

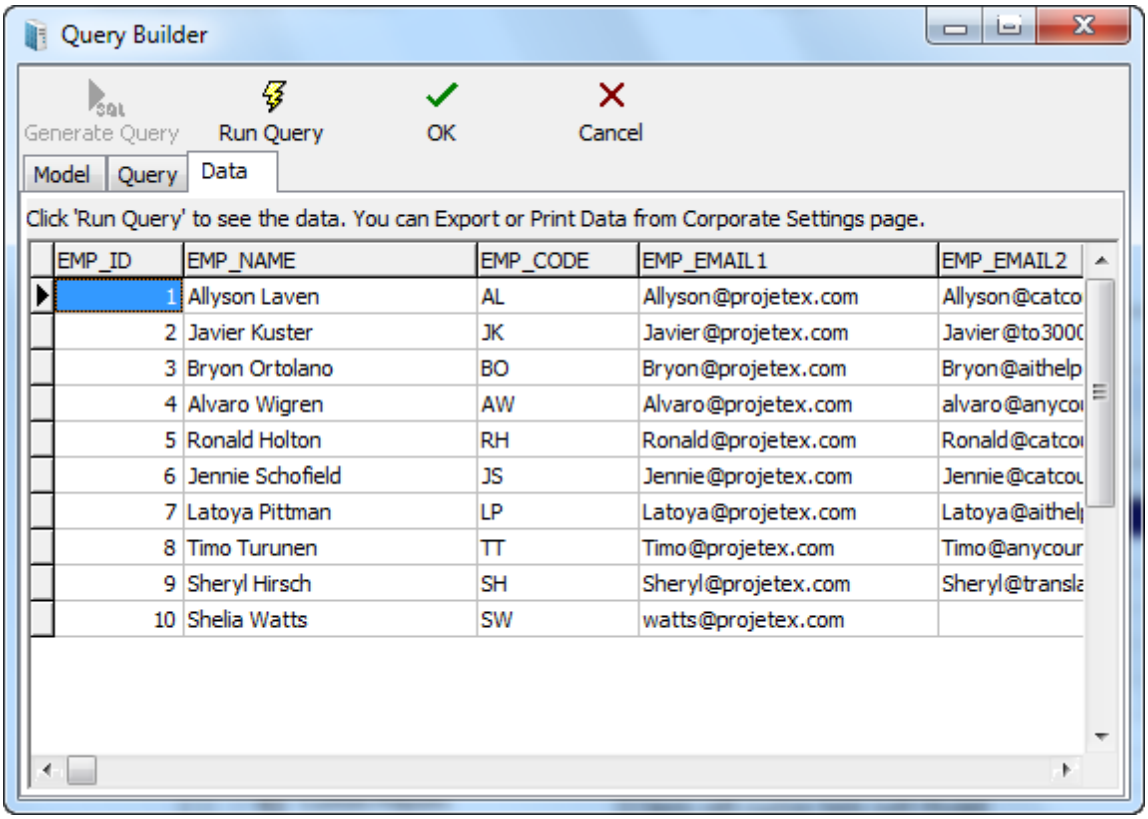


4. The EMP_NAME field will be displayed twice in the results of this given model. To avoid this problem, right-click the cell where the EMP_NAME column and Show row intersect and clear the **Show** option.



5. Click the **Generate Query** button to generate and see the SQL code. Generated request will be located in **Content** field on the **Query** tab.

6. You can view results by clicking the **Run Query** button. You will get a table with a list of all the **Corporate Experts** and their data including service data.



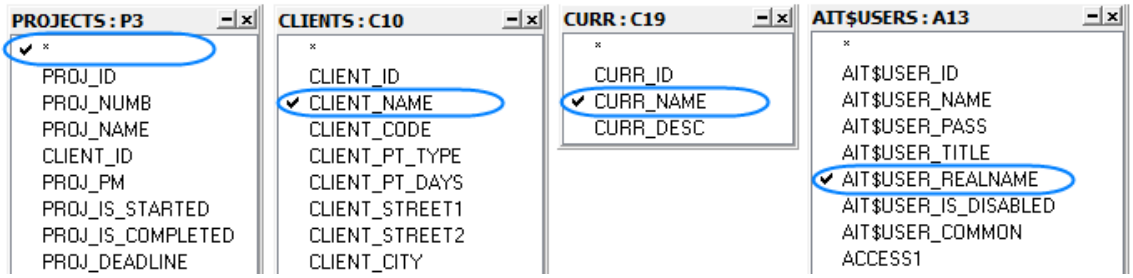
7. To save the request model switch to **Query** tab, specify **Query Name** and **Description** (optionally) and click **OK** button.

Note: You can export or print these data from the **Custom Queries** tab of the Server Administrator **Corporate Settings** (using **Export Data** and **Print Data** buttons) (the query should be saved as described in the previous paragraph).

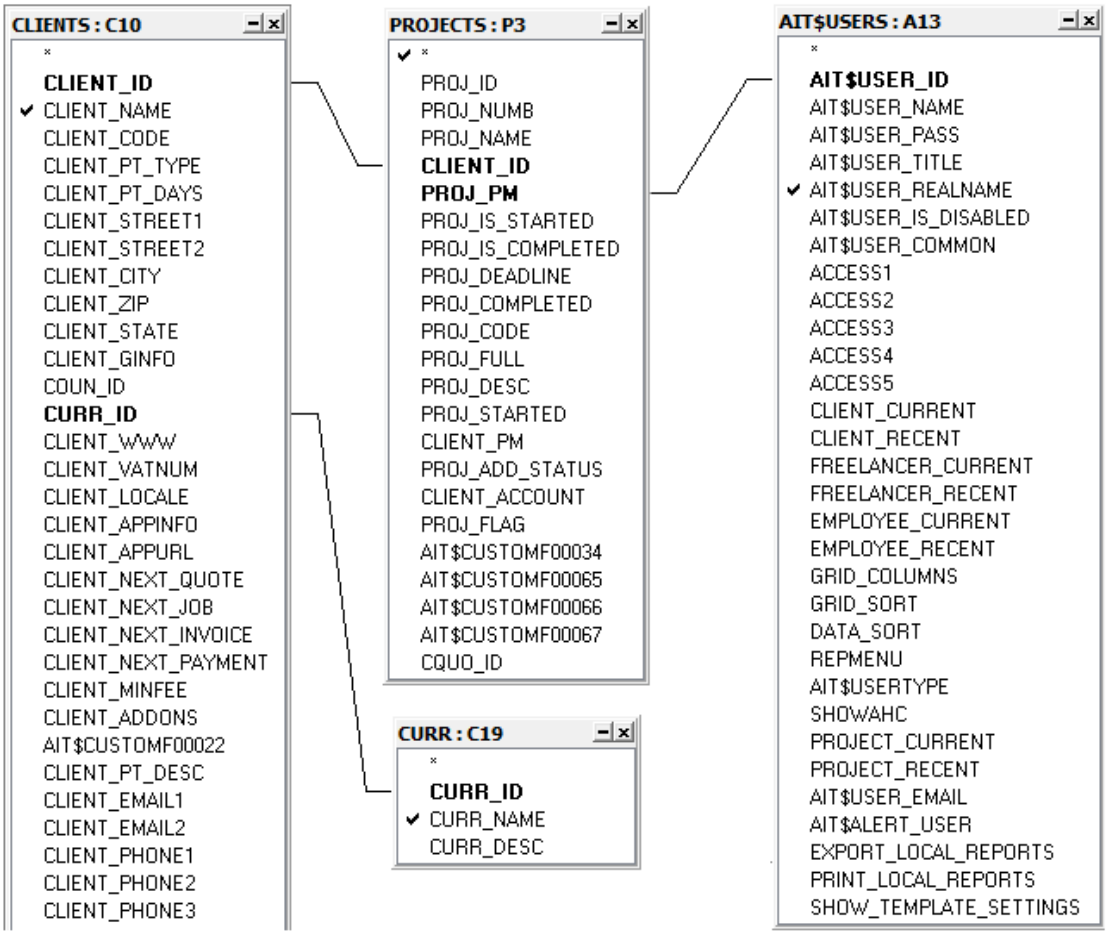
4 Example: Linking Tables

Objective: Get a list of all the projects with all their data sorted by experts names, with client, project manager name and currency names.

1. Drag&drop PROJECTS, CLIENTS, CURR and AIT$USERS tables to the working area. In the PROJECTS table select "*" field (to display all table fields); select also CLIENT_NAME field in the CLIENTS table, CURR_NAME field in the CURR table and AIT$USER_REALNAME field in the AIT$USERS table.

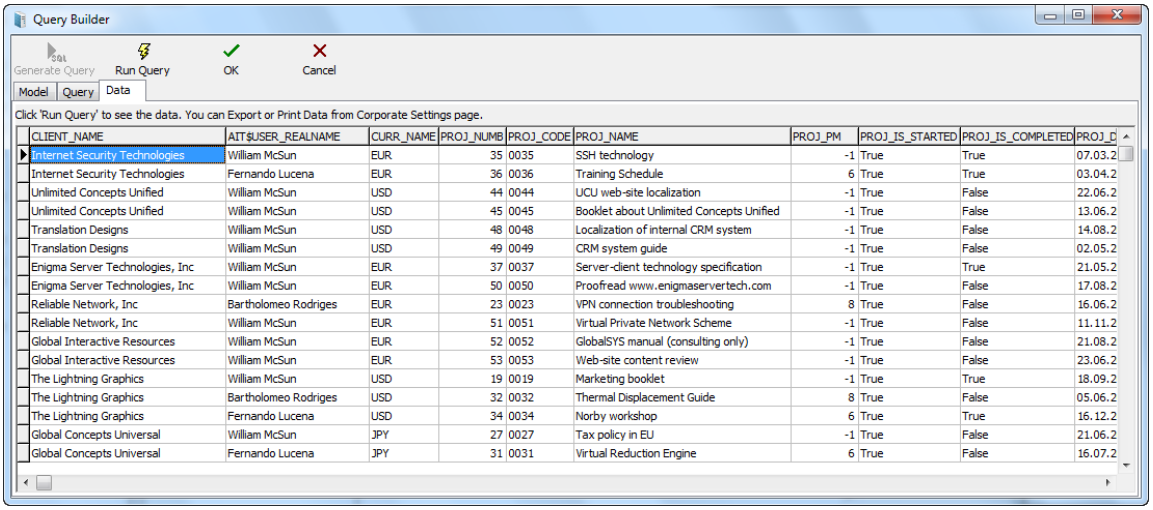


2. In order to get the name of the client the project is assigned to, you need to set connection between PROJECTS and CLIENTS tables by unique field CLIENT_ID: click and hold left mouse button on CLIENT_ID field in PROJECTS field, drag it to CLIENT_ID field in CLIENTS table, and release the button. Similarly you need to connect the tables CLIENTS and CURR by unique CURR_ID field, PROJ_PM field of the PROJECTS table and AIT$USER_ID field of the AIT$USERS table. As a result you get the following:



3. After the request model has been created, click **Generate Query** button. SQL code of the request will be generated and displayed in the **Content** field on the **Query** tab.

4. You can view the results clicking **Run Query** button: you will get a table with a list of all the projects and their data including service data.



CLIENT_NAME	AIT$USER_REALNAME	CURR_NAME	PROJ_NUMB	PROJ_CODE	PROJ_NAME	PROJ_PM	PROJ_IS_STARTED	PROJ_IS_COMPLETED	PROJ_D
Internet Security Technologies	William McSun	EUR	35	0035	SSH technology	-1	True	True	07.03.2
Internet Security Technologies	Fernando Lucena	EUR	36	0036	Training Schedule	6	True	True	03.04.2
Unlimited Concepts Unified	William McSun	USD	44	0044	UCU web-site localization	-1	True	False	22.06.2
Unlimited Concepts Unified	William McSun	USD	45	0045	Booklet about Unlimited Concepts Unified	-1	True	False	13.06.2
Translation Designs	William McSun	USD	48	0048	Localization of internal CRM system	-1	True	False	14.08.2
Translation Designs	William McSun	USD	49	0049	CRM system guide	-1	True	False	02.05.2
Enigma Server Technologies, Inc	William McSun	EUR	37	0037	Server-client technology specification	-1	True	True	21.05.2
Enigma Server Technologies, Inc	William McSun	EUR	50	0050	Proofread www.enigmaservertech.com	-1	True	False	17.08.2
Reliable Network, Inc	Bartholomeo Rodriges	EUR	23	0023	VPN connection troubleshooting	8	True	False	16.06.2
Reliable Network, Inc	William McSun	EUR	51	0051	Virtual Private Network Scheme	-1	True	False	11.11.2
Global Interactive Resources	William McSun	EUR	52	0052	GlobalSYS manual (consulting only)	-1	True	False	21.08.2
Global Interactive Resources	William McSun	EUR	53	0053	Web-site content review	-1	True	False	23.06.2
The Lightning Graphics	William McSun	USD	19	0019	Marketing booklet	-1	True	True	18.09.2
The Lightning Graphics	Bartholomeo Rodriges	USD	32	0032	Thermal Displacement Guide	8	True	False	05.06.2
The Lightning Graphics	Fernando Lucena	USD	34	0034	Norby workshop	6	True	True	16.12.2
Global Concepts Universal	William McSun	JPY	27	0027	Tax policy in EU	-1	True	False	21.06.2
Global Concepts Universal	Fernando Lucena	JPY	31	0031	Virtual Reduction Engine	6	True	False	16.07.2

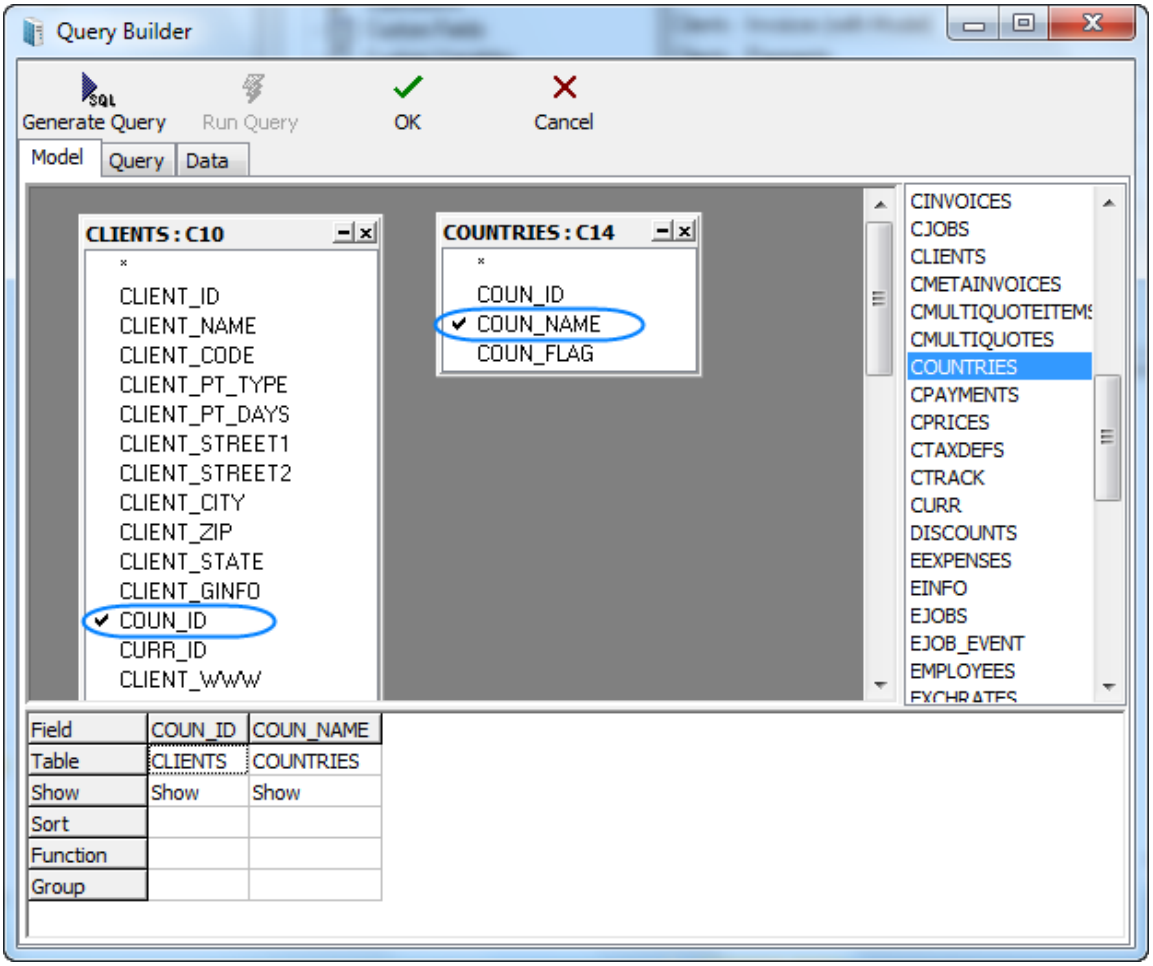
5. To save the request model switch to the **Query** tab, specify the query name and description (optionally) and click **OK** button.

Note: You can export or print these data from the **Custom Queries** tab of the Server Administrator **Corporate Settings** (using **Export Data** and **Print Data** buttons) (the query should be saved as described in the previous paragraph).

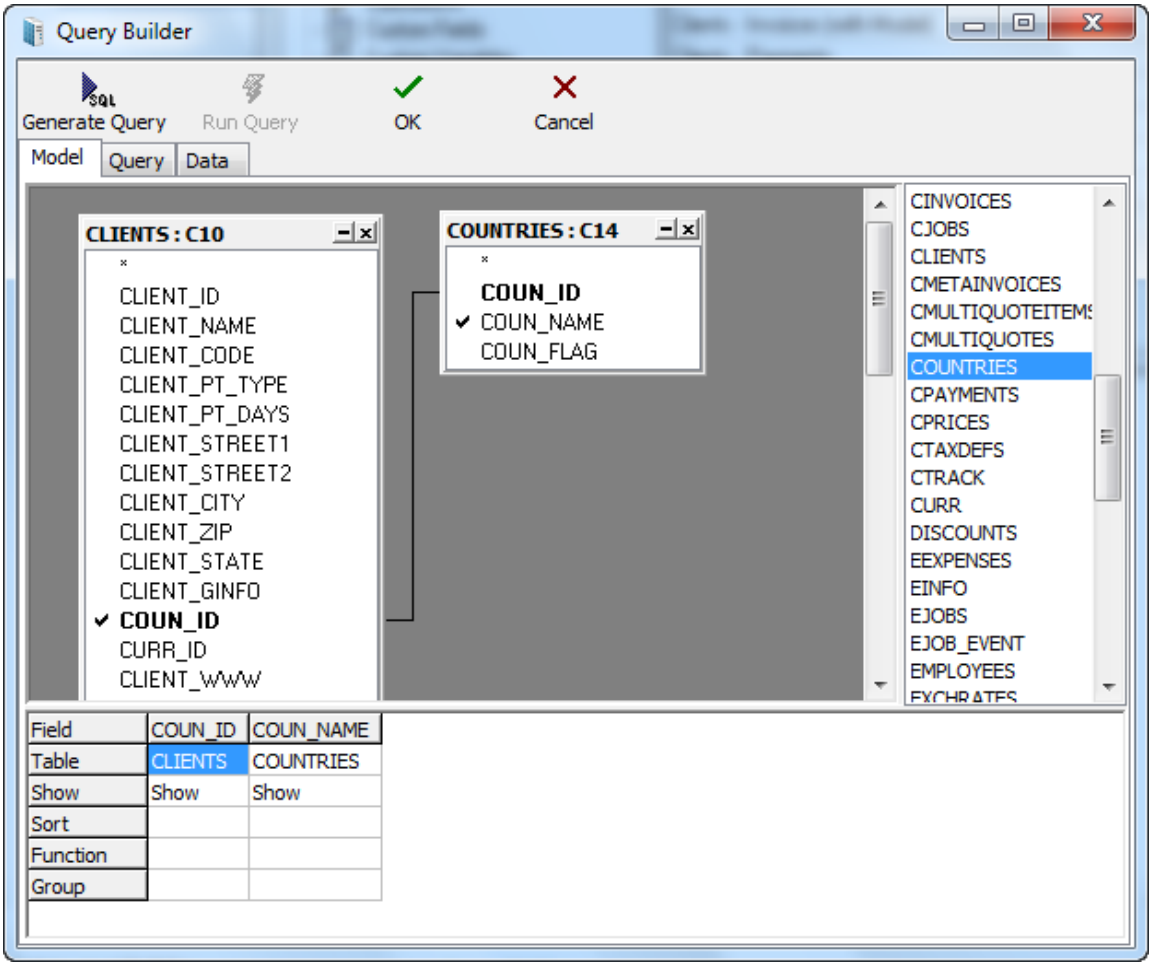
5 Example: Using Functions in Queries

Objective: Get statistics on clients by countries (i.e. the number of clients from each country).

1. Drag&drop the tables CLIENTS and COUNTRIES to the working area. In the CLIENTS table check the COUN_ID field, and also COUN_NAME field in the COUNTRIES table.



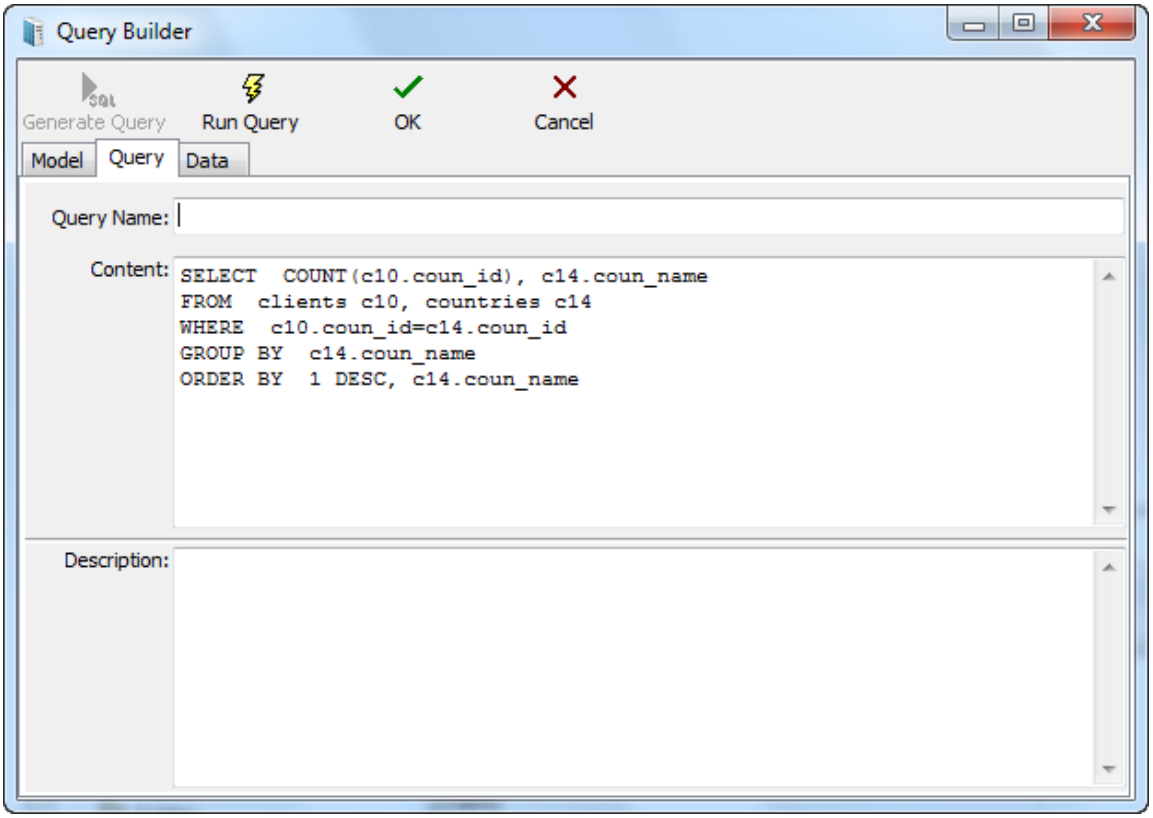
2. Set the connection between the tables CLIENTS and COUNTRIES by unique field COUN_ID: click and hold left mouse button on the COUN _ID field in the CLIENTS field, drag it to the COUN _ID field in the COUNTRIES table, and release the button. As a result you get the following:



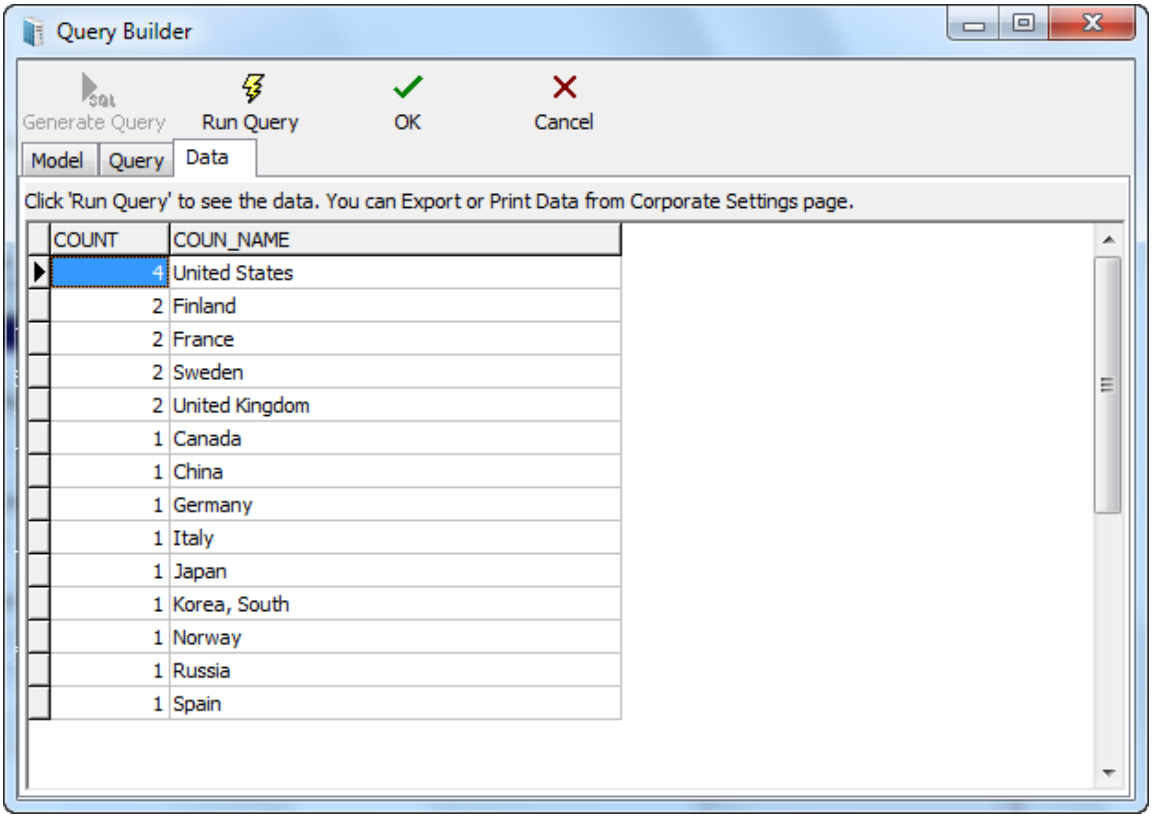
3. Now you need to specify the selection conditions. Set the necessary sorting order: number of countries (in the CLIENTS table) — descending, names of the countries — ascending). For the COUN_ID field choose the Count function, and also set grouping by country name:

Field	COUN_ID	COUN_NAME
Table	CLIENTS	COUNTRIES
Show	Show	Show
Sort	Desc	Asc
Function	Count	
Group		Group

4. After the request model was created, click **Generate Query** button. SQL code of the request will be generated and displayed in **Content** field of **Query** tab.



5. You can view the results by clicking **Run Query** button. You will get the table with countries rating according to the number of your clients from each country. For example:



COUNT	COUN_NAME
4	United States
2	Finland
2	France
2	Sweden
2	United Kingdom
1	Canada
1	China
1	Germany
1	Italy
1	Japan
1	Korea, South
1	Norway
1	Russia
1	Spain

6. To save the request model switch to the **Query** tab, specify the **Query Name** and **Description** (optionally) and click **OK** button.

Note: You can export or print these data from the **Custom Queries** tab of the Server Administrator **Corporate Settings** (using **Export Data** and **Print Data** buttons) (the query should be saved as described in the previous paragraph).