Create a Union Query

Create a union query to combine two or more queries into one result set.

You can combine queries that use different data sources. For example, you can combine a query that returns data from a dimensional data source with a query that returns data from a relational data source.

To combine two or more queries, the following conditions must be met:

- The queries must have the same number of data items.
- The data items must have compatible types and appear in the same order.

Example - Create a Two-column List Report for Three Data Items

You are a report author at The Great Outdoors Company, which sells sporting equipment. You are requested to create a list report that shows revenue for all product lines, order methods and sales territories. However, you want the product lines, order methods and sales territories to appear in a single column. To create this report, you use a union query to join the Product line, Order method and Sales territory data items.

Steps to Create a Report

1. Open Report Studio with the GO Sales (query) package.
2. In the Welcome dialog box, click Create a new report or template.
3. In the New dialog box, click Blank.
4. Pause the pointer over the query explorer button and click Queries.
5. In the Insertable Objects pane, do the following:
   - Drag Query to the work area.
   - Drag Union to the right of the query. Two drop zones appear to the right of the operator.
   - Drag a Query object to each drop zone.
   - Drag a third Query object just below Query3 to include it in the Union Query.

Steps to Define the Queries

Double-click Query2.

1. In the Insertable Objects pane, on the Source tab, drag the following data items to the Data Items pane:
2. from the Sales(Query) namespace
   - open the Product query subject and drag the Product line data item into Data Items pane.
   - open the Sales query subject, drag the Revenue data item into the Data Items pane.
3. In the Insertable Objects pane, on the Toolbox tab, drag Data Item to the Data Items pane.
4. The data item will be used to sort product lines and order methods in the report.
5. In the Expression Definition box, type 'A' and click OK.
6. In the Properties pane, set the Name property to Sort key.
7. On the toolbar, press the back button to return to the Queries work area.

Double-click Query3.

1. In the Insertable Objects pane, on the Source tab, drag the following data items to the Data Items pane:
   - open the Order method query subject and drag Order method into the Data Items pane.
   - open the Sales query subject and drag Revenue into the Data Items pane.
2. Repeat steps 3 to 5 to create a Sort key data item in Query3 with 'B' as its definition.

Double-click Query4.

1. In the Insertable Objects pane, on the Source tab, drag the following data items to the Data Items pane:
   - open the Sales staff query subject and drag Sales Region into the Data Items pane.
   - open the Sales query subject and drag Revenue into the Data Items pane.
2. Repeat steps 3 to 5 to create a Sort key data item in Query4 with 'C' as its definition.

Steps to Define the Operator

1. On the toolbar, press the back button to return to the Queries work area.
2. Click the Union operator.
3. Double-click the Projection List property.
   - The Product line item in the projection list contains both product lines and order methods.
5. Click Product line, and then click the edit button .
6. In the Edit box, type the following after Product line: Order method & Sales region
7. Click OK twice.

Steps to Define the List Properties

1. Double-click Query1.
2. In the Insertable Objects pane, on the Source tab, drag the following data items to the Data Items pane:
   - Product line, Order method & Sales region
   - Revenue
   - Sort key
3. Select the Sort key data item and, in the Properties pane, set the Pre-Sort property to Sort ascending.
When you run the report, all product lines will appear first followed by all order methods and then by all sales regions.

4. Pause the pointer over the page explorer button and click Page1.
5. In the Insertable Objects pane, on the Toolbox tab, drag List to the work area.
6. Click the list.
7. Click the select ancestor button in the title bar of the Properties pane and click List.
8. In the Properties pane, set the Query property to Query1.
   The list is linked to the union query.
9. Double-click the Properties property.
10. Select the Sort key check box and click OK.
    Since the Sort key data item does not appear in the list, you must make it a property of the list before it can sort product lines and order methods.
11. In the Insertable Objects pane, on the Data Items tab drag the following items from Query1 to the list:
    - Product line, Order method & Sales Region
    - Revenue
12. Run the report.

A list report with two columns is produced. All product lines, order methods and sales regions appear in the first column.

Steps to Add a Page Header and Footer to a Report

Add a page header or footer when you want information to appear on every page in the report, such as a title or page numbers.

1. To add a page header or footer, from the Structure menu, click Headers & Footers, Page Header & Footer, select the appropriate check boxes, and click OK.

   **Tip:** You can also click the headers & footers button on the toolbar.

2. Select the Header object and use the Padding property to add a 10 pixel padding to the bottom of the Header.
3. Select the Footer object and use the Padding property to add a 10 pixel padding to the top of the Footer.
4. In the Insertable Objects pane, on the Toolbox tab drag the Layout Component Reference object to the Header.
   - In the Component Location box and click Another report, click the ellipsis (...) button. Navigate to Public Folders -> Cognos Training -> Master Templates and Reports -> Page_Layout_Template_Pieces report.
5. In the Available components to reference box, click the Portrait_Header object and click OK.
6. Select the Layout Component and in the Overrides property override these named objects:
   Header_OVERRIDE1
7. Select OK.

8. In the **Insertable Objects** pane, on the **Toolbox** tab, drag the **Text** object into the **Drop item to override child** area of the header. Enter this text in the text box:
   
   Your name’s Report.

9. Select OK

10. Repeat steps 4 through 9 for the **Footer** using the **Portrait_Footer** object in step 5 and the **Footer Override1** in Step 6. Replace the ‘Your name’s Report’ text in the footer item with ‘Sample Union Query Report.’

11. Select the **Page Body** and set the Font to Garamond 8.

12. Select the **Page Footer** and set the Font to Garamond 8.

13. Select the **Page Footer** and set the Font to Garamond 7.

14. Run the report as a PDF. It should look like this:

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**Steps to finish formatting the report.**

1. In the **Insertable Objects** pane, click the **Toolbox** tab.

2. Drag a **Table** to the report.
The Insert Table dialog box appears.

3. In the Number of columns and Number of rows boxes, type the number of columns (1) and rows (2) for the table.

4. Select both Table Cells and from the Properties Pane use the Padding property and apply a 5 pixel (5px) padding to all four sides of the cell. Select OK.

5. Select the List object and drag it into the bottom Table Cell.

6. Select the bottom Table Cell and set the Horizontal Alignment from the Properties Pane to Center.

7. Select the top Table Cell and set the Classes to Report Title Area.

8. In the Insertable Objects pane, click the Toolbox tab.

9. Drag the Text Item object ☑️ to the report.
   The Text dialog box appears.

10. Type the text ‘Go Sales and Retailers’ and click OK.

11. Select the top Table Cell and from the Properties Pane increase the Padding property on top of the cell to 35 pixels (35px) and the bottom of the cell to 15 pixels (15px). Say OK.

12. Select the List Column Body for the Product Line, Order Method & Sales Region Data Item. Use the Horizontal Alignment from the Properties Pane to Left justify the contents.

13. Run the report. It should look like this: