



Beginners and Intermediate Training for SAP Business One Users

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Created By: Oren Tabib & Elizabeth Cameron

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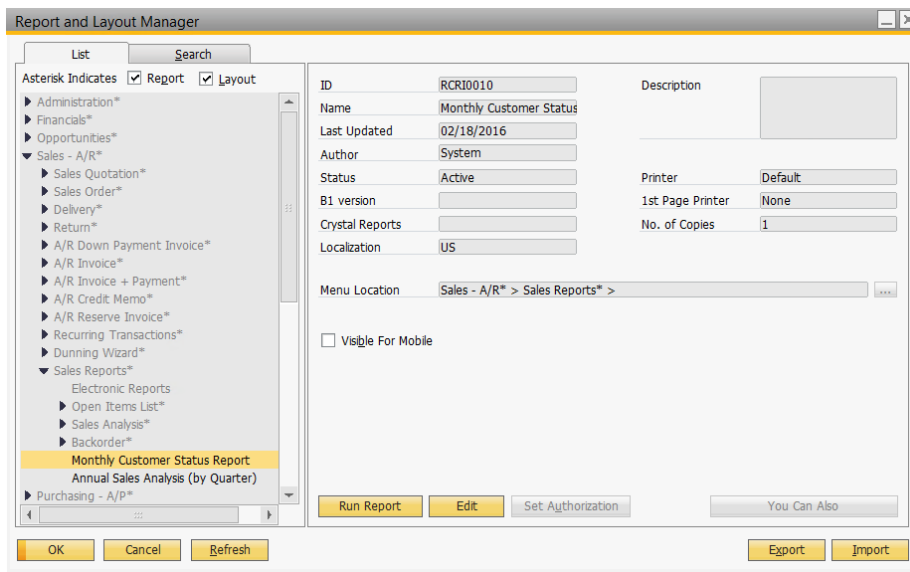
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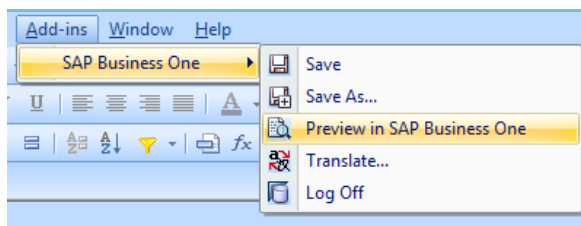
Chapter 1: Overview – SAP Business One & Crystal Reports

SAP Business One provides integration with SAP Crystal Reports and includes the following features:

- SAP Crystal Reports Viewer
- Report and Layout Management



- SAP Crystal Reports, version for the SAP Business One application



- Master layouts
- Multilanguage translator
- Accessibility of source documents

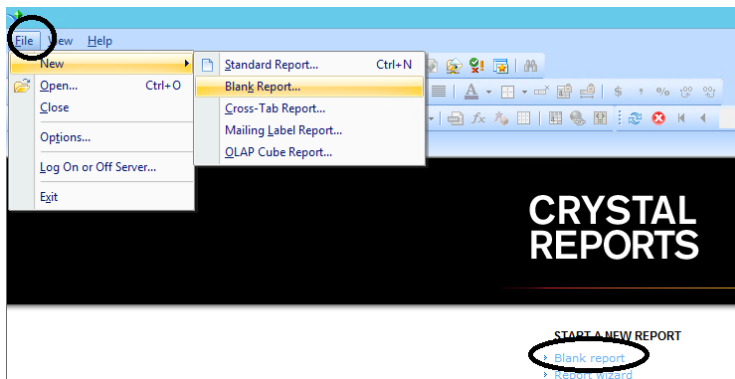
Documentation:

- How to Design Reports using CR:
<http://www.pioneerb1.com/wp-content/uploads/2012/04/How-to-work-with-Crystal-Reports-8.8.pdf?x42527>
- SAP Business One Academy Videos:
<https://wiki.scn.sap.com/wiki/display/B1/SAP+Business+One+Academy+-+Analytics#Crystal>
- How to Work with SAP Crystal Reports in SAP Business One
<http://www.pioneerb1.com/crystal-reports-sap-business-one/>
- **Exercise:**
 - Connect to Crystal Reports Server using credentials received from your IT administrator
 - Connect to your SAP environment and go to the 'Report and Layout Manager' to make sure you can access this area of the software

Chapter 2: Getting Started – Creating a New Report

The following procedures involved in creating a new report and layouts with SAP Crystal Reports:

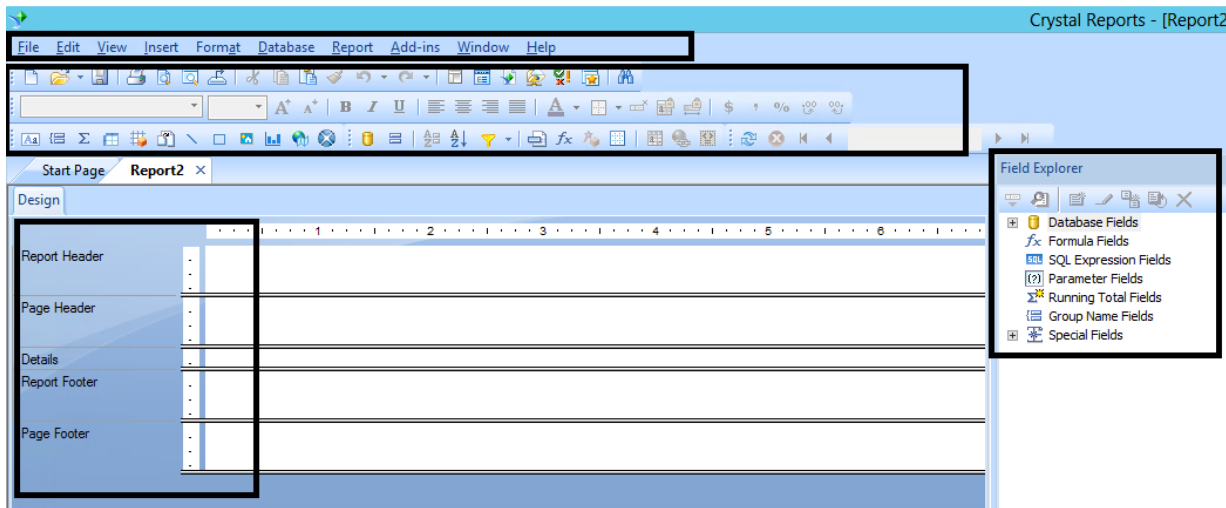
1. On the SAP Crystal Reports start page, choose Blank report.



2. In the Database Expert window, in the Available Data Sources pane, choose one of the data source options. SAP Business One supports the following data sources (SAP Business One is preferred):
 - SAP Business One
 - ODBC
 - OLE DB (ADO)
 3. In the SAP Business One window, enter the required information and choose the Finish pushbutton.
 4. In the Database Expert window, in the Available Data Sources pane, under the Tables node, select one or more tables and move the selected tables to the Selected Tables pane using the Add (>) arrow button and choose the OK pushbutton.
 5. If you have selected more than one table, the Links tab appears and displays the selected tables and their relationships. Review relationships and joins and choose the OK pushbutton to exit the database expert and start designing your report
- **Exercise:**
 - Log in to Crystal Reports and start a new report on OPOR table – Purchase Orders

Chapter 3: Crystal Reports Designer Overview

This section will guide you through the first report creation and get you familiar with some basic tools.



Main Sections:

- Main Menu
- Icons/ Quick menu
- Field Explorer
- Report Design Area

Example of initial report – Open sales order report:

- Choose table ORDR
- Display in the report relevant columns: DocNum, Customer, Date, Total
- Using the **Select Expert** Icon - **Filter** the report to show only open orders
- Click View> Print Preview to see a print preview of the report
- Insert **Text Object** in the Report Header and give the report a title. Also add the printing date and time in the same section of the report
- Using the **Format Editor**, Format the date field to show only date with no time
- **Conditional Formatting** - Use the Format Editor to Highlight any order that is greater than \$10,000

- **Exercise – Open POs Report:**
 - Create a new report shows all open POs
 - Show in the report: DocNum, Posting Date, DueDate, Vendor Code and Name, Total, Remarks
 - Highlight the due date field in color if the due date is past due (smaller than today's date)
 - Bring the report to SAP business one and make sure you can execute it

Chapter 4: Formulas and Grouping

- Formula: Creating a new formula

Open the Field Explorer. Right-click on Formula Fields. Select New. Enter a name for the formula. Click OK. Use the Formula Editor to write the formula.

- Exercise:
 - Show in the report the month of the document
 - Replace the month number with actual month name

Documentation: Helpful Crystal Reports Formulas

- <http://www.pdssoftware.com/newsletter/mar10/page4.htm>

Documentation: 32 Useful Crystal Reports Formulas

- <http://www.kenhamady.com/formulas/>

- Grouping
The software's grouping feature provides the additional flexibility many businesses need to meet their reporting needs. Separating your data into groups often helps you focus the information you share with clients and staff, making the report more informative and easier to read.
- Create Standard Groups
 1. Click the "Insert" menu and select "Group" to open the Insert Group dialog box.
 2. Select the desired field to group from the first drop-down list of the dialog box.
 3. Select how you want the group sorted within the report from the options available.
 4. Click "OK." The dialog box closes and returns you to the Design view of your report.
- Exercise:
 - Group the report by BP name
 - Add to the report OCRD table
 - Show in the report additional info from the BP – Balance and Main contact

Chapter 5: Adding Visuals

Using the tools learned in the previous sections – select expert and grouping – along with a couple additional tools, you can create visuals from your data!

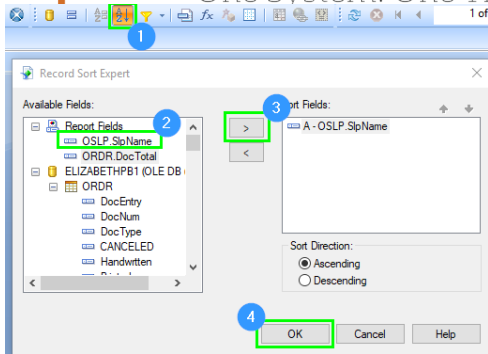
For this example, you'll pull in the ORDR and the OSLP tables. From those tables, you'll want to pull OSLP.SlpName and ORDR.DocTotal into the details section of the report.

Report Header	-		
	-		
Page Header	-		
	-		
	-	SlpName	DocTotal
Details	-	SlpName	DocTotal
	-		
Report Footer	-		
	-		
Page Footer	-		
	-		

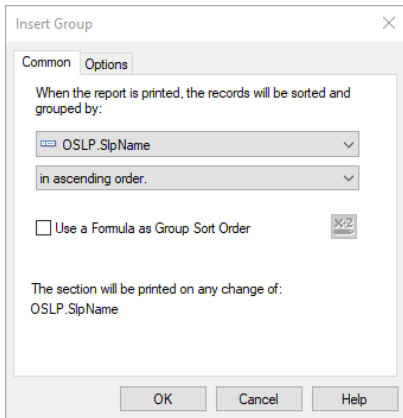
You can then View -> Print Preview the raw data.

<u>SlpName</u>	<u>DocTotal</u>
Sales Manager	14,310.00
Bill Levine	2,976.88
Sophie Klogg	12,535.00
Brad Thompson	7,473.00
Jim Boswick	18,391.00
Bill Levine	8,795.31
Sophie Klogg	10,573.00
Sales Manager	6,996.00
Brad Thompson	10,494.00
Bill Levine	36,172.50
Jim Boswick	16,387.51
Brad Thompson	28,174.99
Brad Thompson	7,000.00
Jim Boswick	20,122.51
Sophie Klogg	41,120.25
Jim Boswick	4,107.50
Bill Levine	21,412.00
Brad Thompson	35,210.00
Sales Manager	26,076.00
Brad Thompson	22,959.60

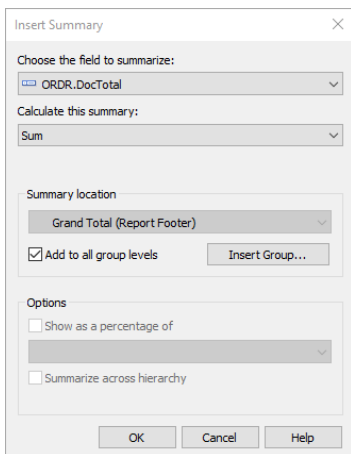
Using the record sort expert, sort the data by OSLP.SlpName so that all data is organized by Sales Employee.



Group the data by sales employee:



Using the 'Insert Summary' tool, create a summary of the data as follows:



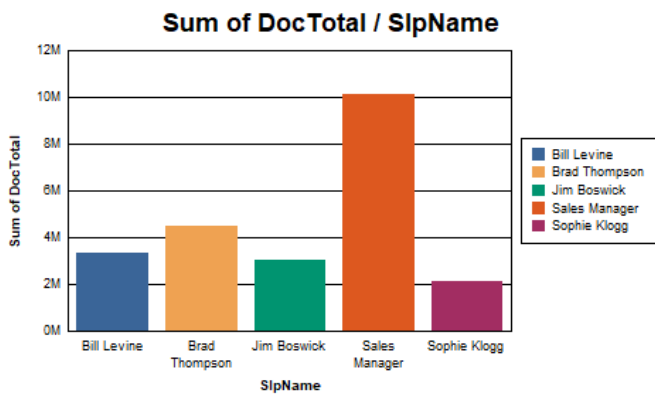
Hide the Details and Group Footer #1 sections and move the **DocTotal** field to the Group Header #1 section.

Report Header	.	.
Page Header	.	.
	.	SlpName DocTotal
Group Header #1:	.	Group #1: SlpName DocTotal
Details	.	SlpName DocTotal
Group Footer #1:	.	.
Report Footer	.	DocTotal
Page Footer	.	.

This gives us a clean, summarized data set with which to create a graph.

<u>SlpName</u>	<u>DocTotal</u>
Bill Levine	3,314,669.78
Brad Thompson	4,490,511.53
Jim Boswick	3,017,721.71
Sales Manager	10,094,015.28
Sophie Klogg	2,104,204.52
	23,021,122.82

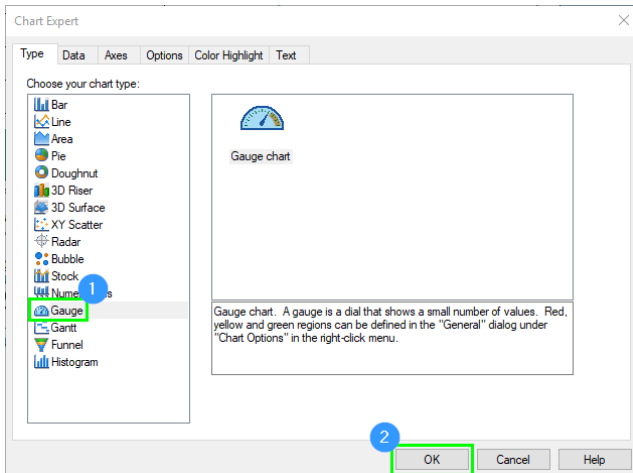
On the main menu, select Insert > Chart, and place the chart in the Report Header area.



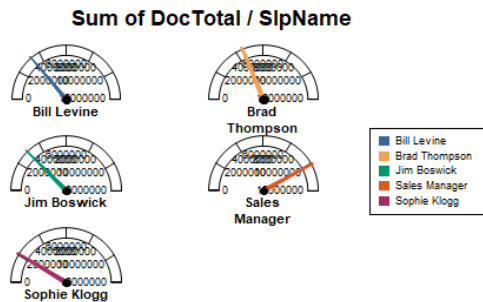
<u>SlpName</u>	<u>DocTotal</u>
Bill Levine	3,314,669.78
Brad Thompson	4,490,511.53
Jim Boswick	3,017,721.71
Sales Manager	10,094,015.28
Sophie Klogg	2,104,204.52
	23,021,122.82

A standard chart will appear.

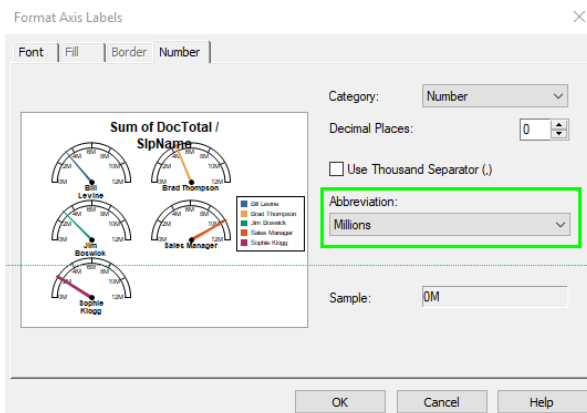
Right-click the chart and select 'Chart Expert'. Select 'Gauge' as your chart type and click 'OK'.



You may want to adjust your labels if they populate as below:



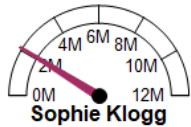
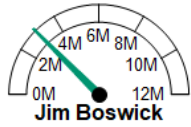
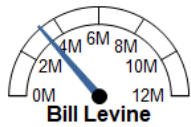
To do so, just right-click one of the labels and select 'Format Axis Label'. Under the 'Number' tab, change the abbreviation to fit your dataset.



Adjusting the title, axes, colors, font, etc.. can all be done in the Chart Expert area.

You have successfully made your first chart! Try playing around with other data tables and summary options to create your own charts!

Sales Person KPI



Chapter 6: Parameters in reports and SAP Business One tokens

Parameters and Tokens enable the user to have a selection criteria when running the report.

Procedure:

1. Create a new Parameter by right click on Parameter Fields>New
2. Use the Select Expert to connect the appropriate filter with the parameter

Example:

- Create a new report showing OITM table with Item Code and Name, On Hand and On Order Fields
- Create a new parameter for the user to choose 1 single item

Procedure to create Token – Example choose from list of Items

Please follow the below syntax and rules when using Token parameters:

- ItemsSelect@SELECT * FROM OITM
[Parameter]+[@]+[Query for selection]
- Business Partners: <parameter_name>@FROM OCRD
 - Only customers: <parameter_name>@FROM OCRD WHERE cardType='c'
- GL Accounts Selection: <parameter_name>@SELECT * FROM OACT
- Warehouses and Locations: <parameter_name>@SELECT * FROM OWHS
- Special Token only for date fields - DocDates@
- Formula to string chosen values of parameter: Join({parameter},',')
- It's advised to always use **Static** at the 'List of Values'
- DocKey@ token

This token is mandatory when you want to use Crystal Reports as an SAP layout.

The DocKey@ token is used to identify the current active document. SAP Business One populates its value when you preview or print a layout. When you apply the DocKey@ token, in the Select Expert window, you need to specify a filter condition in the following way: {OINV.DocEntry}={?DocKey@}

If the DocKey@ token does not exist, create a new parameter with the following settings:

- In the Name field, enter DocKey@.
- In the Type dropdown list, select Number or String, depending on the type of the DocEntry value.

- In all other fields, leave the default settings.
- SQL Token can also have a where conditions. Please find below code examples:
 - <WorldProject>@SELECT * FROM OPRJ WHERE PrjName LIKE 'World%'
This expression returns all projects whose name starts with “World”
 - <Currencies>@SELECT CurrCode FROM OCRN WHERE ISOCurrCod <> 'CAD'
This expression returns all currency codes defined in SAP Business One except for the Canadian dollar.
 - <USBanks>@SELECT * FROM ODSC WHERE CountryCod = 'US'
This expression returns all U.S. banks defined in SAP Business One.

Documentation:

Parameters in Crystal Reports Video:

- <https://www.youtube.com/watch?v=NkmXGu2fqF8>

How to Work with SAP Crystal Reports in SAP Business One Document: * *

- <http://www.pioneerb1.com/crystal-reports-sap-business-one/>

- **Exercise 1:**
 - Add to the BP report the option to choose specific client or groups of clients using SAP Business One Token
- **Exercise 2:**
 - Add to the PO report the option to select POs between dates

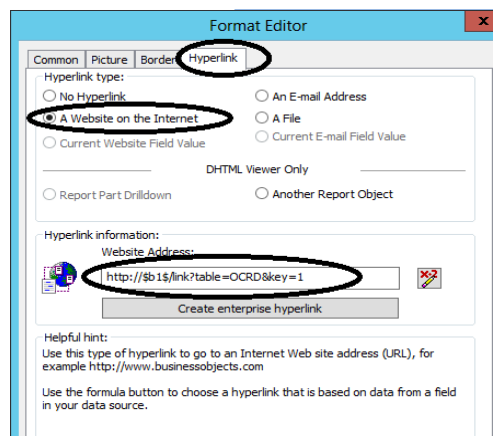
Chapter 7: Adding Golden Arrow Drill Downs

One of the nice features in SAP Business One is the ability to drill down into the objects to receive additional information. Crystal Reports for SAP Business One enable the user to drill down to specific objects directly from the report.

Method:

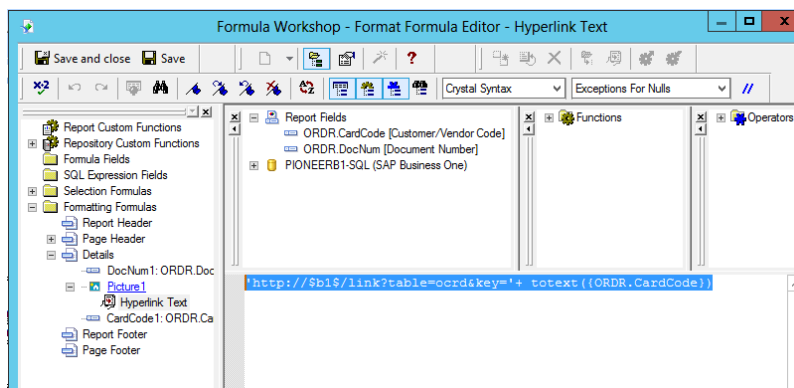
1. Adding a picture of golden arrow in the appropriate place of the report
2. Use Format Editor> Hyperlink tab> Website and use the below formula:

`http://$b1$/link?table=OCRD&key=1`



3. Click on formula and add the code below:

- Master Data (Customer in sales orders as example):
'http://\$b1\$/link?table=ocrd&key='+ totext({ORDR.CardCode})
- Documents (Delivery document as example):
'http://\$b1\$/link?table=ODLN&key='+CStr ({ODLN.DocEntry}, 0)
- UDOs: 'http://\$b1\$/link?table=@TEST&key='+CStr ({_TEST.DocEntry}, 0)



The drilldown functionality supports the following windows:

- Documents:
 - A/P Invoice
 - A/R Credit Memo
 - A/R Invoice
 - Delivery
 - Goods Receipt
 - Inventory Transfer
 - Journal Entry
 - Purchase Order
 - Sales Order
 - Sales Quotation
- Master data:
 - Business Master Data
 - Item Master Data
 - GL Accounts
- User-defined objects (UDOs)
- Exercise:
 - Create a report showing the GL account details and account balance
 - Add to the report a drill down into the GL account

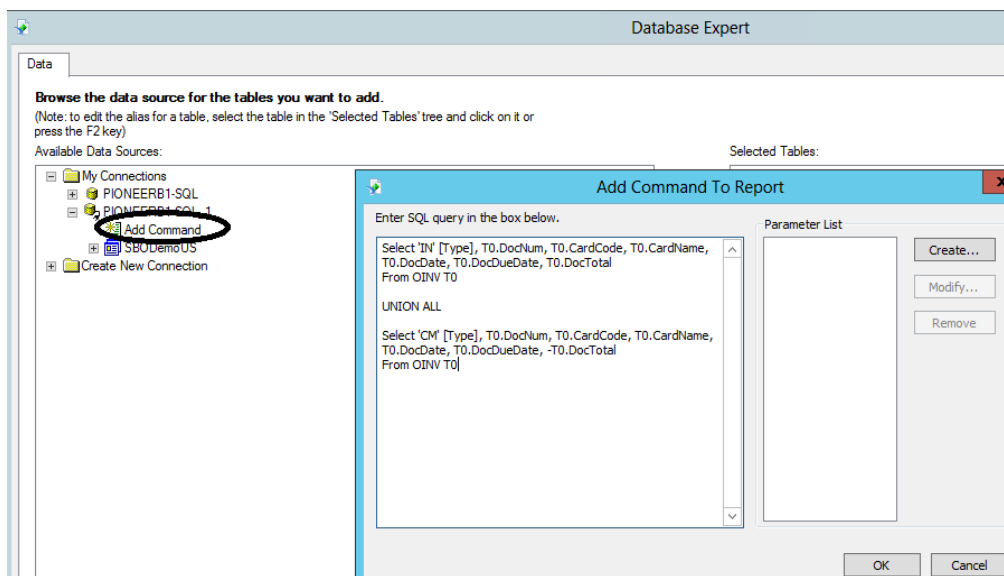
Chapter 8: Working with Commands and Stored Procedures

A Command is an SQL Select statement that the user can write to extract data for a report.

SQL Commands allow you to create a pass-through SQL statement that performs more database-specific query processes on the database server, such as aggregate functions, UNION queries, or sub-SELECT queries. Once you've created a SQL Command, you can base a report on it (it looks like a table) and much more.

In a very similar way you can connect with existing Stored Procedure that is located under the database folder.

Adding a command is through the Database Expert – See example below:



- **Exercise**

- Write a query that shows all invoices and credit memos for all clients
- Add the query as a command and create a 'Sales Analysis Crystal Report'
- Reports should group by customer and should show the invoices and Credit memos to customers by date range
- **Chart** – insert a Bar Chart or Pie Chart to show top 10 customers at the report header section of the report

Chapter 9: Sub-reports

Sub-reports in Crystal Reports allow you to access and display information from two unrelated reports, or display multiple views of report data in a single report.

You can create either linked or unlinked subreports. In linked subreports, the data in the subreport is matched to data in the primary report. For example, if you create an “Orders” report, you can create a linked subreport that displays the “Order Details” for each record in the “Orders” table.

Instructions for creating sub-report:

1. To create subreports, select “Insert> Subreport” from the Menu Bar or click the “Insert Subreport” button in the Insert toolbar.
2. Select how to create the subreport by choosing one of the two options shown in the: “Choose an existing report” or “Create a subreport with the Report Wizard.”
3. If you select the “Choose an existing report” option, click the “Browse...” button to invoke the “Open” dialog box and choose the report to embed as a subreport within the main report.
4. To create the subreport “on-the-fly” within the primary report, instead choose the “Create a subreport with the Report Wizard” option button and then click the “Report Wizard...” button to launch the Report Wizard dialog box to step through the creation of a standard report.
5. To create a subreport that does not display its data until the user double-clicks the subreport link, check the “On-demand subreport (similar to a hyperlink)” checkbox.
6. To create an unlinked subreport, click the “OK” button and then click into the place in the report where you want to display the subreport data.
7. To create a linked subreport instead, click the “Link” tab in the “Insert Subreport” dialog box.
8. On the “Link” tab, use the “For subreport:” drop-down to choose the subreport to link.
9. In the “Container Report field(s) to link to” list, select the report field or underlying database field which will serve as the basis for the link between the data in the two reports.
10. Click the “>” arrow button to move the selected field(s) into the “Field(s) to link to:” list at the right side of the dialog box.
11. At the bottom of the dialog box, use the drop-down at the left side of the dialog box to select the parameter field to use from the primary report.
12. Select the associated field from the subreport to use for the link from the drop-down at the right side of the dialog box.
13. After creating the association between the fields, click “OK” at the bottom of the dialog box.
14. Click into the place within the report where you want to create the linked subreport.

- **Exercise:**
 - Add to the PO report created in one of the exercises above a sub report
 - The subreport should present the PO item details: Item Code, Description, Quantity and Price
 - Place the subreport in the detail section of the main report and present it in two ways:
 - So the user need to double click to see details
 - The report shows below each PO the items related to the PO

Feedback

We hope the training was beneficial. Any feedback would be greatly appreciated and please let me know at Oren@PioneerB1.com