Report Studio Developer Training
Part 2

IBM Cognos

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***Notes pages are in the back of this binder for your use.

Chapter 1 – Crosstab Reports

Review – Create a Simple Crosstab

In this chapter we first review the creation of a simple 2 Dimension, 1 Measure crosstab. We then expand on this by adding additional dimensions and measures while learning the behavior of drop zones.

Review from Beginner Course: Crosstabs are a very effective way to view typically aggregated (summarized) data in rows and columns. Generally speaking you analyze one or more measures across two or more dimensions. In this section we demonstrate the creation of a 2 Dimension, 1 Measure crosstab.

Step-By-Step

Crosstab Reports

1. Create a new Crosstab report using the **UCAR Training** package.
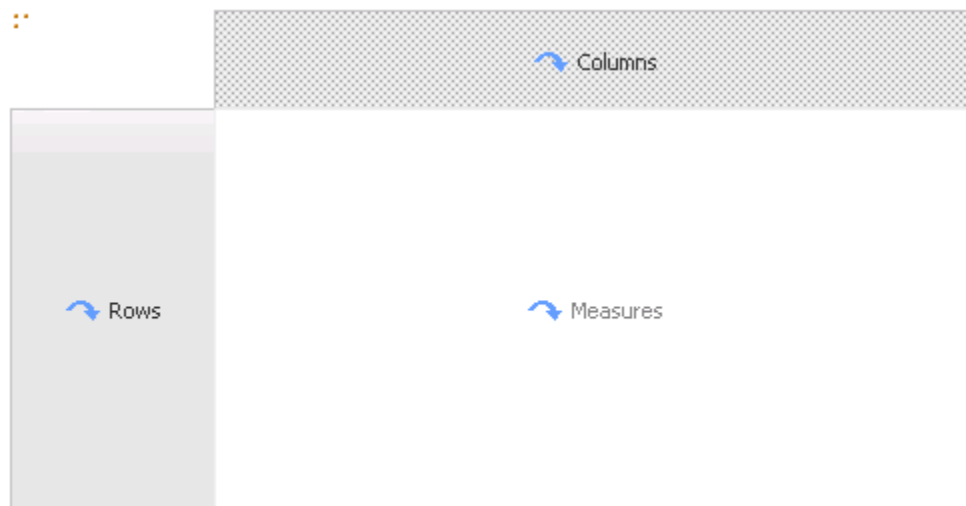
2. Save the report specification as **Crosstab** in My Folders.
3. From the CPM Training Data namespace, General Ledger namespace, Date query subject, drag Fiscal Year into the Rows drop zone. Note that the "drop zone indicator" appears as if the entire Rows area is flashing in black.

4. From the Account query subject, drag Entity Code into the Columns drop zone. The "drop zone indicator" again flashes black when you reach the Columns area of the crosstab.
5. Drag Net Amount from the General Ledger Details query subject into the flashing black Measures drop zone.
6. Highlight the Net Amount measures area, click on the Data Format icon, and format it as **Currency** with **0** decimal places.
7. Add borders to the report by Ctrl-clicking all cells. Select Border from the Properties pane, set Border properties as follows, and then click OK:
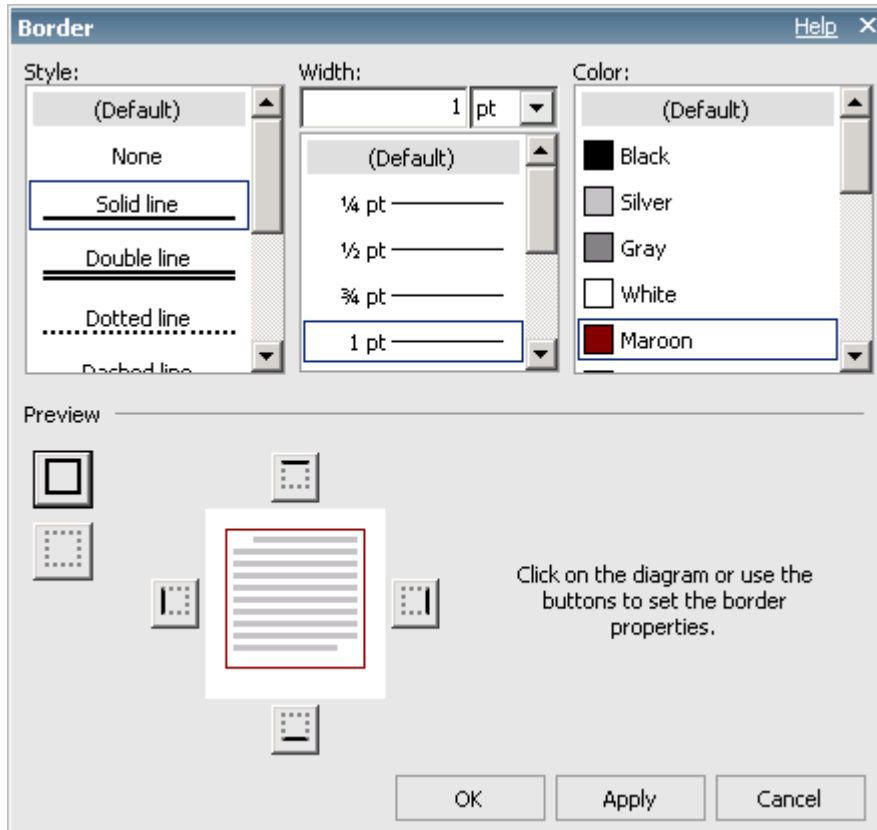
8. Sort both the Fiscal Year and the Entity Code ascending using the Sort icon in the Toolbar.
9. Add the following Advanced Detail filters:

Expression Definition:
[General Ledger].[Date].[Fiscal Year] <> 2011

Expression Definition:
[General Ledger].[Object Code].[Object Code] starts with '54'

Expression Definition:
[General Ledger].[Account].[Entity Code] in ('NCAR', 'UCAR', 'UOP')

10. Run the report as it stands:

Net Amount	NCAR	UCAR	UOP
2006	$5,889,083	$684,845	$3,812,979
2007	$6,192,212	$703,121	$3,642,233
2008	$6,751,431	$654,013	$4,167,438
2009	$6,613,806	$565,826	$3,791,743
2010	$6,785,749	$715,628	$4,430,814

11. From the menu, choose **Structure, Swap Rows and Columns**. Note that Fiscal Year and Entity Code have changed position.
12. Swap Rows and Columns again to return them to their original positions, this time using the ⬛ icon in the Toolbar.

Add Additional Dimensions and Measures

Next we add a second measure to our Crosstab.

13. Use the Query Explorer to open Query1.
14. From the Toolbox, drag a new Data Item object into your query.

Insertable Objects

- Query Calculation
- Intersection (Tuple)
- Data Item
- Filter
- Slicer Member Set
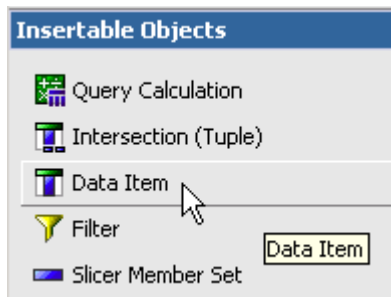
15. Complete the expression as follows:

Expression Definition:
count (distinct [General Ledger].[General Ledger Details].[Document Id])

16. In the Data Item properties, change the Name to "Travel Expense Record Count".

Properties - Data Item

Data Item	
Type	Data Item
Name	Travel Expense Record Count
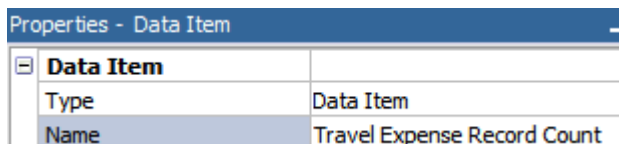
17. Change the Aggregate Function and the Roll-up Aggregate properties to **Total**.

Properties - Data Item		−
⊟ **Data Item**		
Type	Data Item	
Name	Travel Expense Record Count	
Label		
Expression	count (distinct [General Ledge...	
Aggregate Function	Total	
Rollup Aggregate Function	Total	▼

18. Return to the report page.
19. Cut the existing measure (use the Select Ancestor arrow to highlight the **Crosstab Fact Cells**).
20. From the Data Items tab, Ctrl-click first the new Travel Expense Record Count item, then the Net Amount item, and drag them into the Measures drop zone.

Note that both measures are nested underneath Entity Code:

	<#Entity Code#>△		<#Entity Code#>	
	<#Travel Expense Record Count#>	<#Net Amount#>	<#Travel Expense Record Count#>	<#Net Amount#>
<#Fiscal Year#>△	<#1234#>	<#1234#>	<#1234#>	<#1234#>
<#Fiscal Year#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>

21. Run your report:

	NCAR		UCAR		UOP	
	Travel Expense Record Count	Net Amount	Travel Expense Record Count	Net Amount	Travel Expense Record Count	Net Amount
2006	4,086	5,889,082.68	510	684,844.92	3,118	3,812,978.61
2007	4,142	6,192,212.34	696	703,120.71	3,124	3,642,233.38
2008	4,127	6,751,431.46	681	654,012.52	3,099	4,167,437.89
2009	4,128	6,613,805.88	685	565,825.93	2,947	3,791,742.96
2010	4,262	6,785,749.3	691	715,627.77	3,320	4,430,813.56

22. Change the Font size and Borders for the entire Crosstab:
    a. Click the three red dots in the Crosstab Corner to select the Crosstab object.

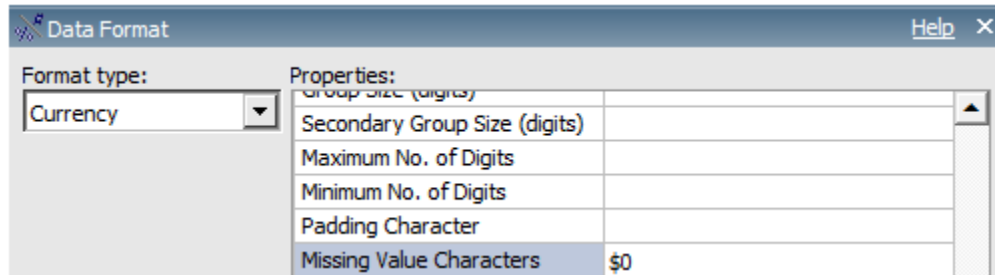|	<#Entity Code#> ▲		<#Entity Code#>	
	<#Travel Expense Record Count#>	<#Net Amount#>	<#Travel Expense Record Count#>	<#Net Amount#>
<#Fiscal Year#> ▲	<#1234#>	<#1234#>	<#1234#>	<#1234#>
<#Fiscal Year#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>

   b. From the Toolbar, change the Font Size to **9 pt**.

Font ▼	9 pt ▼	**A** ▼
Insertable Objects	Font Size	

   c. In the Border property, apply the Maroon border around the entire Crosstab.

23. Select the Net Amount measure cells and click on the Data Format icon in the Toolbar to set the data format to **Currency** with no decimal places and then use the Missing Value Character property to reflect any blank cells as zero (include a dollar sign for consistency).

Data Format — Help ✕

Format type:	Properties:	
Currency ▼	Group Size (digits)	
	Secondary Group Size (digits)	
	Maximum No. of Digits	
	Minimum No. of Digits	
	Padding Character	
	Missing Value Characters	$0

24. Select the Travel Expense Record Count measure cells and change the Data Format type to **Number**; then again use the Missing Value Characters property to reflect any blank cells as zero.
25. Add the maroon border, as in Step 7 above, around the Travel Record Expense Count and Net Amount headers.

26. Select the Travel Expense Record Count and Net Amount cells and add a dark border to the bottom and top. This will make the crosstab easier to read.
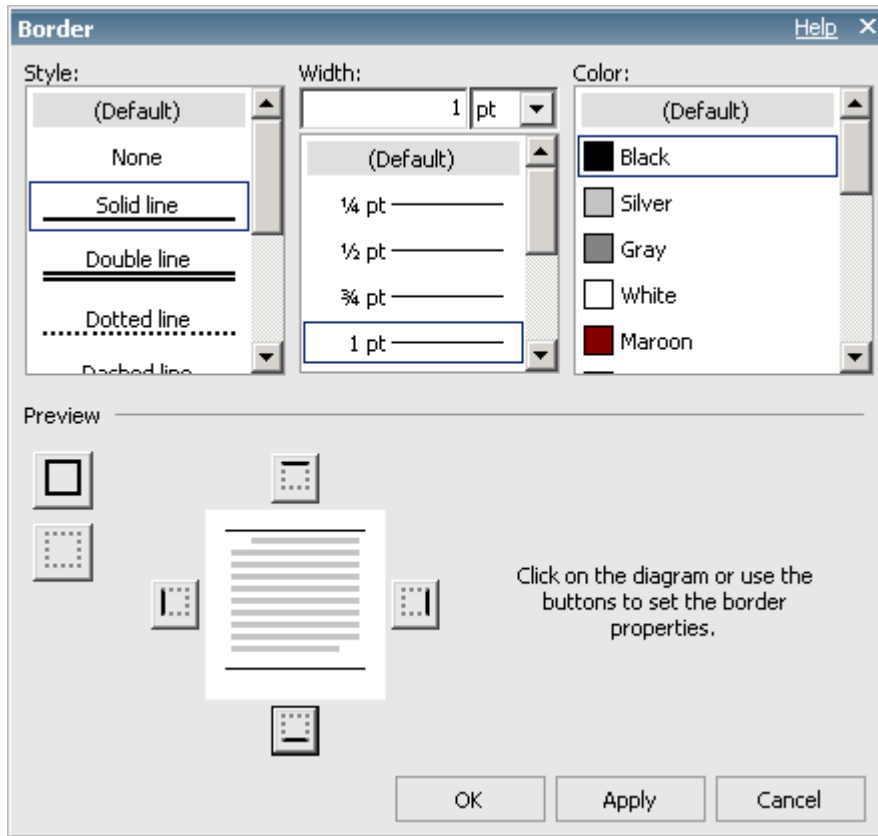
27. Disable the Entity Code Filter as shown:

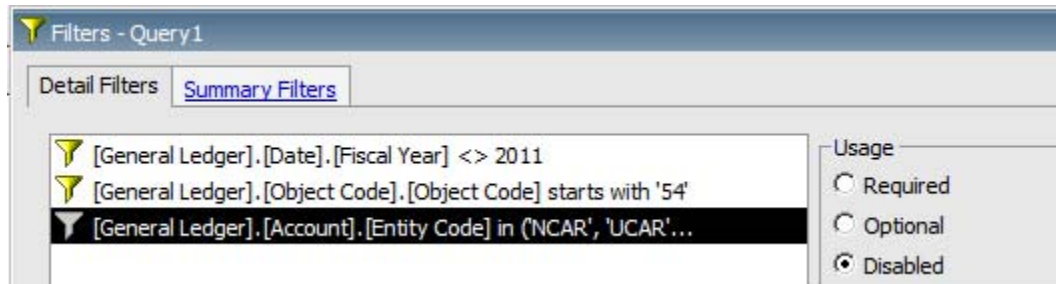28. Run your report to verify that the row headings sort properly and that the borders and data formatting have been applied:
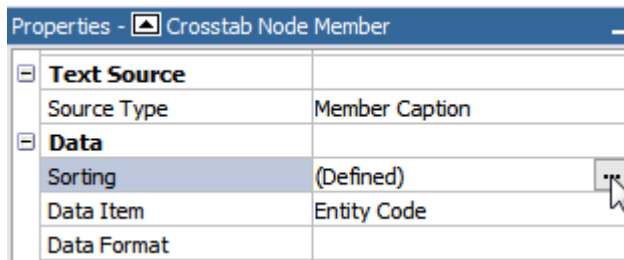
	CASH		NCAR		PEAK		STAR		UCAR		UCARF		UOP	
	Travel Expense Record Count	Net Amount	Travel Expense Record Count	Net Amount	Travel Expense Record Count	Net Amount	Travel Expense Record Count	Net Amount	Travel Expense Record Count	Net Amount	Travel Expense Record Count	Net Amount	Travel Expense Record Count	Net Amount
2006	0	$0	4,086	$5,889,083	0	$0	0	$0	510	$684,845	10	$6,918	3,118	$3,812,979
2007	0	$0	4,142	$6,192,212	2	$1,643	8	$7,423	696	$703,121	2	$576	3,124	$3,642,233
2008	0	$0	4,127	$6,751,431	0	$0	2	($2,674)	681	$654,013	0	$0	3,099	$4,167,438
2009	45	$25,623	4,128	$6,613,806	0	$0	0	$0	685	$565,826	0	$0	2,947	$3,791,743
2010	47	($33,570)	4,262	$6,785,749	0	$0	0	$0	691	$715,628	0	$0	3,320	$4,430,814

Sort

Now assume that we want to sort the crosstab by the Travel Expense Record Count data in the measures cells rather than the Column and Row headings. We want the greatest Travel Expenses Record Count to appear in the first cell of the crosstab.

29. Enable the Entity Code filter.
30. Highlight the Entity Code heading cell and click the ellipsis in the Sorting property.
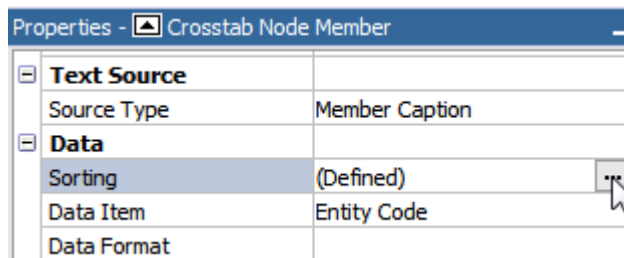
Properties - ▲ Crosstab Node Member		▬
⊟ **Text Source**		
Source Type	Member Caption	
⊟ **Data**		
Sorting	(Defined)	⋯
Data Item	Entity Code	
Data Format		

NOTE

In Step 7 we applied the Sort function in the page design view using a menu drop-down, and it set the above property. We can control the sort directly in this property as well.

Properties - ▲ Crosstab Node Member		▬
⊟ **Text Source**		
Source Type	Member Caption	
⊟ **Data**		
Sorting	(Defined)	⋯
Data Item	Entity Code	
Data Format		

31. Delete Entity Code from the Sort List column.

32. Drag Travel Expense Record Count into the Sort List, and toggle the Sort

    [A↕Z icon] icon to select descending. Click OK.

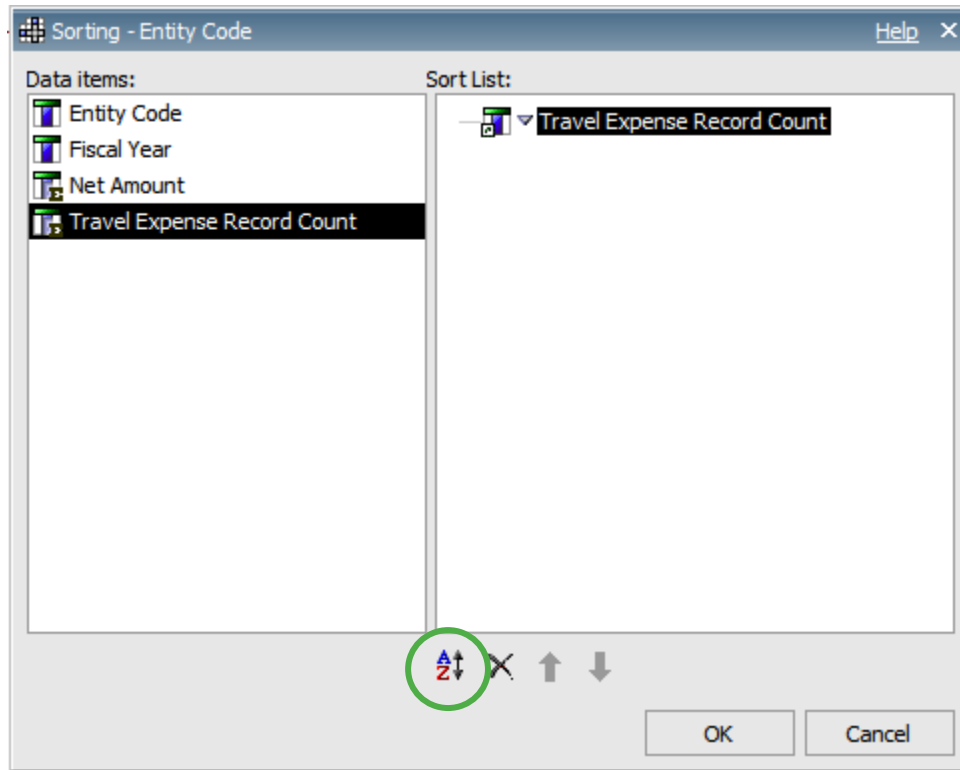33. Run your report. Note that the Crosstab **is not sorted** by Travel Expense Record Count because the sort on Fiscal Year has overridden the Measure sort.

	NCAR		UOP		UCAR	
	Travel Expense Record Count	Net Amount	Travel Expense Record Count	Net Amount	Travel Expense Record Count	Net Amount
2006	4,086	$5,889,083	3,118	$3,812,979	510	$684,845
2007	4,142	$6,192,212	3,124	$3,642,233	696	$703,121
2008	4,127	$6,751,431	3,099	$4,167,438	681	$654,013
2009	4,128	$6,613,806	2,947	$3,791,743	685	$565,826
2010	4,262	$6,785,749	3,320	$4,430,814	691	$715,628

34. Highlight Fiscal Year and click the ellipsis in the Sorting property.

35. Again, delete Fiscal Year from the Sort List, drag Travel Expense Record Count into the Sort List, and toggle the Sort icon to select Descending.

Sorting - Fiscal Year	Help ✕
Data items:	**Sort List:**
▦ Entity Code	▦ ▽ Travel Expense Record Count
▦ Fiscal Year	
▦ Net Amount	
▦ Travel Expense Record Count	
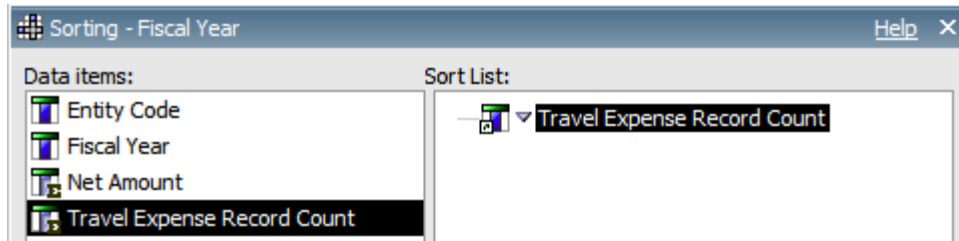
36. Run your report again.

	NCAR		UOP		UCAR	
	Travel Expense Record Count	Net Amount	Travel Expense Record Count	Net Amount	Travel Expense Record Count	Net Amount
2010	4,262	$6,785,749	3,320	$4,430,814	691	$715,628
2007	4,142	$6,192,212	3,124	$3,642,233	696	$703,121
2008	4,127	$6,751,431	3,099	$4,167,438	681	$654,013
2009	4,128	$6,613,806	2,947	$3,791,743	685	$565,826
2006	4,086	$5,889,083	3,118	$3,812,979	510	$684,845

Note that we now have the sort we want on Travel Expense Record Count in the first cell of the crosstab, showing the greatest number of travel records with Net Amount in the NCAR entity code, Fiscal Year 2010.

37. Click Save.
38. In My Folders, create a new folder called **Report Studio Part 2 Training.**
39. Save the report specification as **Crosstab**.

Chapter 2 – Conditional Formatting

In the beginner course we examined how to use a simple Boolean expression to highlight exceptional data. Specifically we configured a Crosstab to display data with a Green background when the Average Travel Expense was greater than 1500.

In this exercise, we use our nested Crosstab from the last exercise. We review the application of Boolean variables for conditional formatting of data, introduce the String variable and its usage, and show some additional techniques utilizing conditional formatting.

Step-By-Step

Highlighting Exceptional Data (Boolean Variable Review)

We first review the creation of a Boolean variable and its application to a simple conditional format on one of our crosstab cells.

1. Return to the crosstab created in the first lesson, **Crosstab**, and using **Save As,** change to a different report name - **Conditional Formatting - Boolean Variable**.
2. Using the Condition Explorer, navigate to the Variables folder.
3. Drag a new Boolean Variable into the Variables panel.
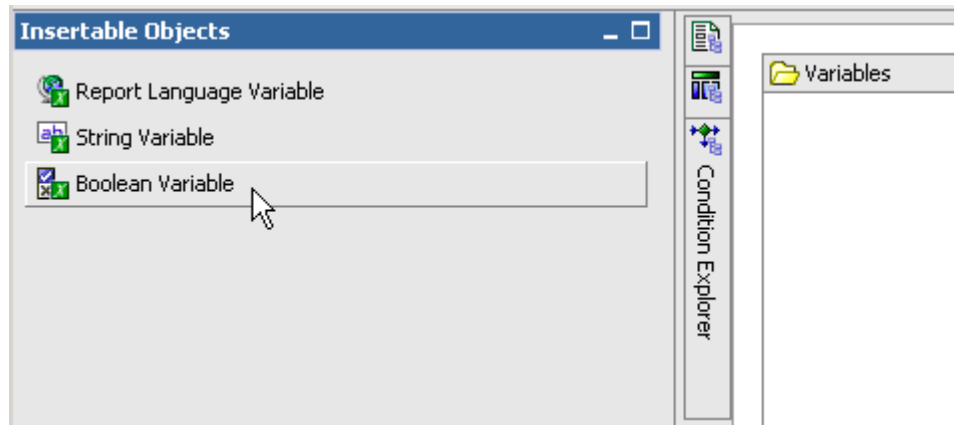
4. In the expression window, complete the following expression:

5. Change the Name property to "HighNetAmounts".
6. Return to the crosstab report page and select the Net Amount measure cell (use the Select Ancestor arrow to make sure you have selected the **Crosstab Intersection** object). Set the Style Variable property of the measure cell by choosing your new variable from the available drop-down. Recall that this action "ties" the report object (the crosstab measure) to the variable and allows us to then change other properties of this object based on the variable's outcome.
7. Click OK.
8. Using the Condition Explorer, navigate to your variable's Yes condition. Recall that the Condition Explorer allows us to simulate a given outcome for a variable so that we can indicate on the report layout what type of changes are desired in this state.
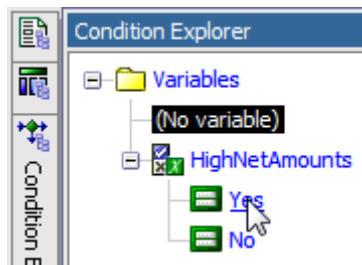

9. Change the Background Color of Net Amount to Blue and the Foreground Color to White.
10. Double-click the explorer bar to turn off the condition explorer.
11. Save your **Conditional Formatting - Boolean Variable** report specification.
12. Run your report.

	NCAR		UOP		UCAR	
	Travel Expense Record Count	Net Amount	Travel Expense Record Count	Net Amount	Travel Expense Record Count	Net Amount
2010	4,262	$6,785,749	3,320	$4,430,814	691	$715,628
2007	4,142	$6,192,212	3,124	$3,642,233	696	$703,121
2008	4,127	$6,751,431	3,099	$4,167,438	681	$654,013
2009	4,128	$6,613,806	2,947	$3,791,743	685	$565,826
2006	4,086	$5,889,083	3,118	$3,812,979	510	$684,845

We next examine the use of a **String Variable** to highlight exceptional data. String variables allow the report author to provide for more conditions than a Boolean variable. Boolean variables, of course, only allow for two possible outcomes, True or False. String variables, by the use of Case statements or nested If/Then statements, allow for an infinite number of potential outcomes.

Step-By-Step
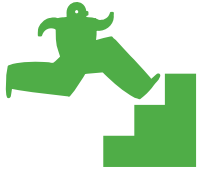
Highlighting Exceptional Data (String Variable)

In this example, we use a string variable to highlight the Net Amount column when it falls into certain ranges.

1. Continue with the report from the example above, but save as
   Conditional Formatting – String Variable.
2. From the menu, choose **View, Variables**…
3. Drag a new String Variable into the Variables panel.
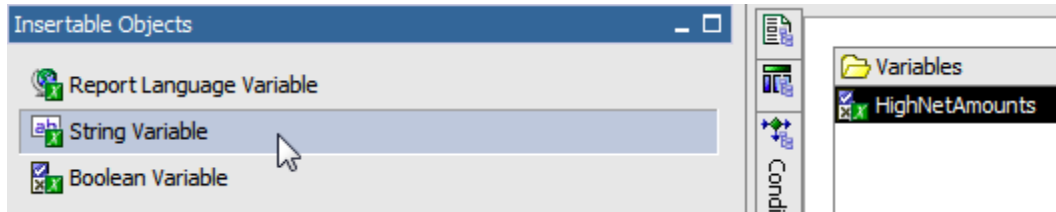
4. Create the following expression for your new variable and note that the use of the simple case statement allows for the "bracketing" of outcomes into user defined levels.


```
Expression Definition:

CASE

WHEN [Query1].[Travel Expense Record Count] < 3000
THEN 'Low'

WHEN [Query1].[Travel Expense Record Count] BETWEEN 3000 AND 4000
THEN 'Medium'

WHEN [Query1].[Travel Expense Record Count] > 4000
THEN 'High'

END
```

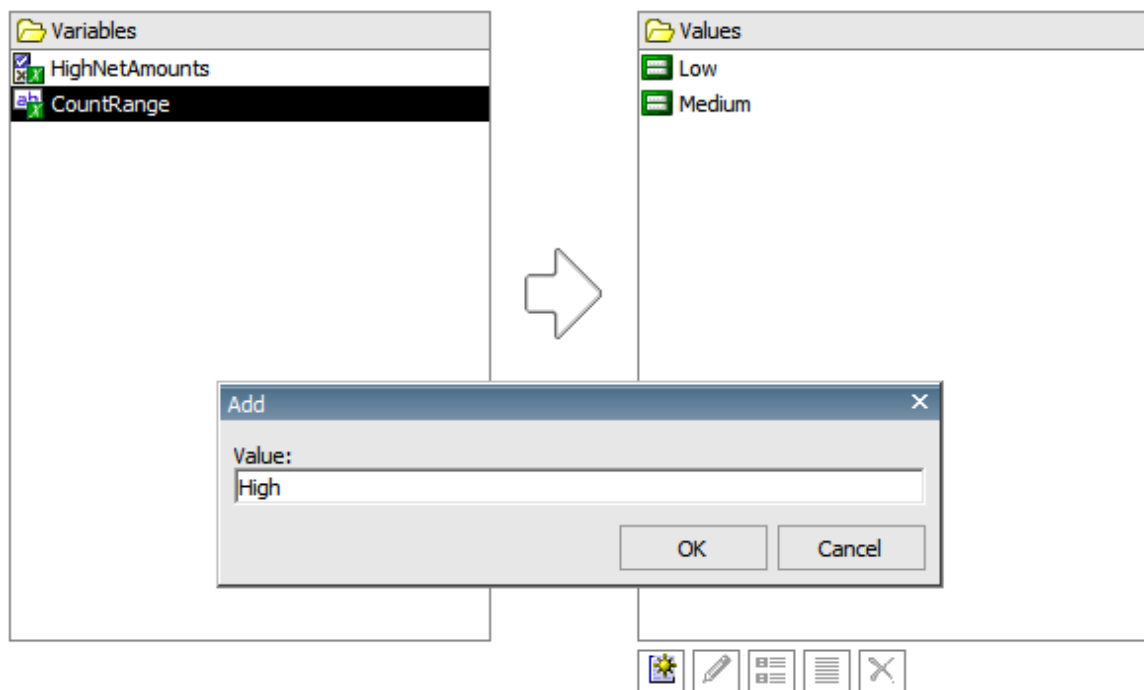5. Name the new variable "CountRange".

NOTE

You must SPECIFICALLY list the possible outcomes of your Case statement in the **Values** area of your variable definition, using the **Add** icon. Note that you must list them exactly as they were typed in your case statement, including case sensitivity. If you add possible values after you associate the conditional style, you need to re-associate the condition.

6. Click on the New icon and list the outcomes of your Case statement:

🗀 Variables	🗀 Values
📊 HighNetAmounts	🟩 Low
🔤 CountRange	🟩 Medium

Add ✕

Value:

| High |

           OK   Cancel

7. Now we associate our new String Variable with the Travel Expense Record Count measure item. Return to the crosstab report page, and highlight Travel Expense Record Count (use the Select Ancestor arrow to ensure that you have selected the **Crosstab Intersection** object). Click the ellipsis in the Style Variable property and choose **CountRange** from the drop-down box.

8. Using the Condition Explorer, we navigate to each variable outcome in turn, and set the color of the Foreground Color for Travel Expense Record Count, so that it changes for each outcome. Set the Foreground Color to Red for Low, Blue for Medium, and Green for High:
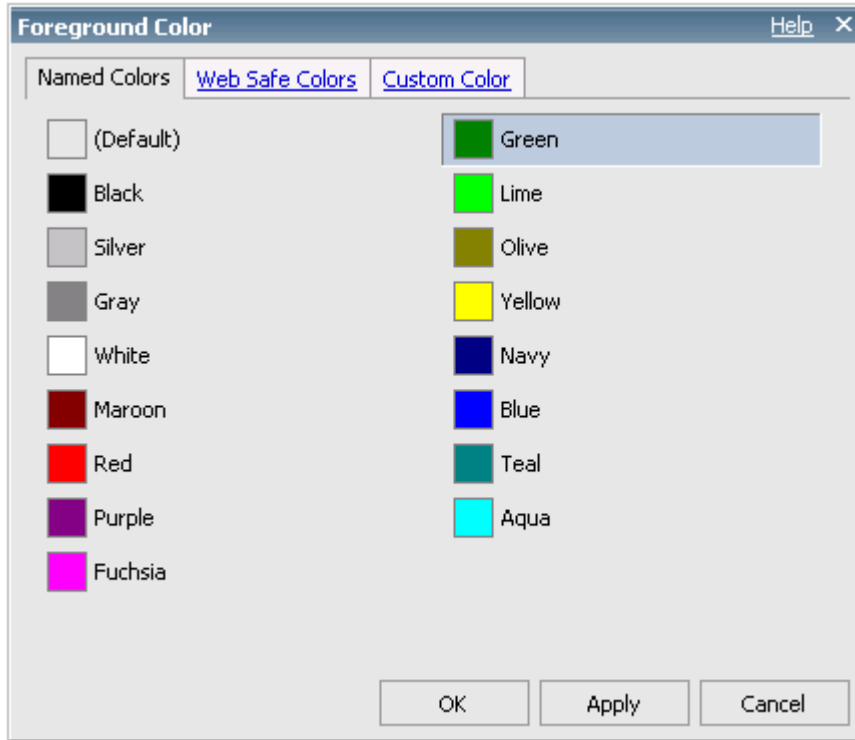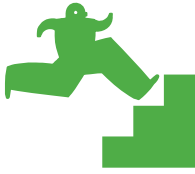

9. Double-click the explorer bar to turn off the condition explorer.
10. Save your **Conditional Formatting – String Variable** report specification.
11. Run your report. We have provided a 3 "bracket" conditional format that highlights Travel Expense Record Count based on a case statement.

	NCAR		UOP		UCAR	
	Travel Expense Record Count	Net Amount	Travel Expense Record Count	Net Amount	Travel Expense Record Count	Net Amount
2010	4,262	$6,785,749	3,320	$4,430,814	691	$715,628
2007	4,142	$6,192,212	3,124	$3,642,233	696	$703,121
2008	4,127	$6,751,431	3,099	$4,167,438	681	$654,013
2009	4,128	$6,613,806	2,947	$3,791,743	685	$565,826
2006	4,086	$5,889,083	3,118	$3,812,979	510	$684,845

Demo

Conditional Formatting (Hide/Show Objects)

In this instructor demonstration, we use conditional formatting to Hide and Show page objects based on a user's prompt choice.

1. Continue with the previous report specification and save it as **Demo - Hide/Show**.
2. We first add a Prompt by highlighting the Entity Code Crosstab Node

   Member and clicking on the Build Prompt page ⬚ icon in the Toolbar.

Note that this creates a prompt page, the default prompt type for alphanumeric characters (Value Prompt), a query to populate the value prompt, and a parameterized filter.

3. Next, add an additional Value Prompt to your prompt page and allow the Prompt Wizard to create a new parameter called "ShowNamePrompt".
4. Click Next.
5. Click Finish.

6. This new prompt will have two Static Choices, Yes and No, which you add manually in the Properties of the prompt. In the Properties pane, click on the ellipsis next to Static Choices to add the two new values.
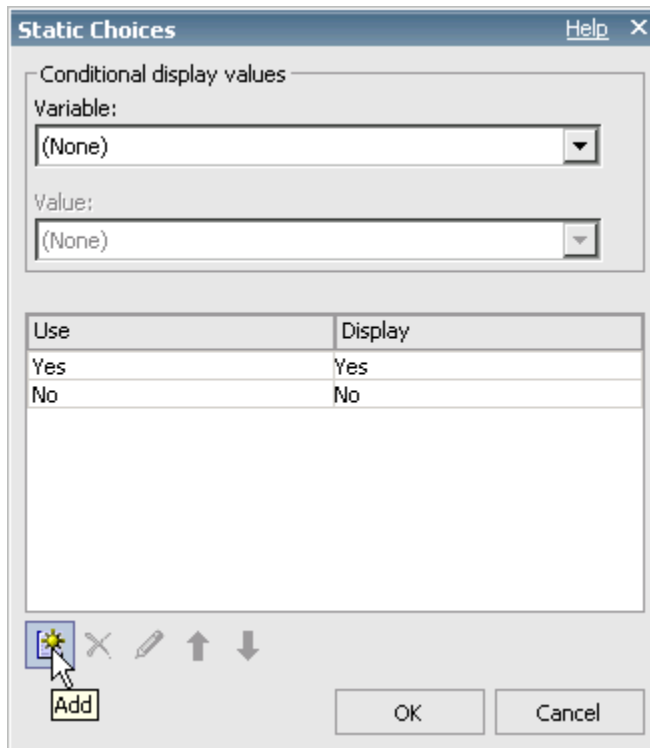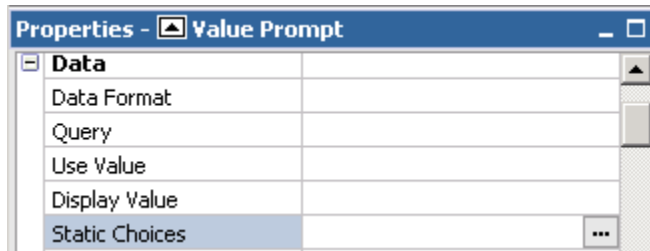

7. Return to your report page.
8. Use the Unlock 🔒 icon in the Toolbar to unlock your crosstab.
9. Add a Text Item (a dash with a space on either side) to the right of your Entity Code data item. Note that unlocking the crosstab allows us to place this text item inside the cell.
10. In the Entity Code row cell, drag in Entity Long Description from the Account query subject to the right of the "dash" text item. Now we have both a code and description displaying in the first row heading cell of our crosstab.

We now create a Boolean Variable called "ShowName" that monitors the user's selection for this prompt. This variable is "Yes" if the user chooses "Yes" for the ShowName prompt and "No" otherwise.

11. Using Condition Explorer, click on the Variables folder and add a new Boolean variable. Create the following expression from the Parameters tab:
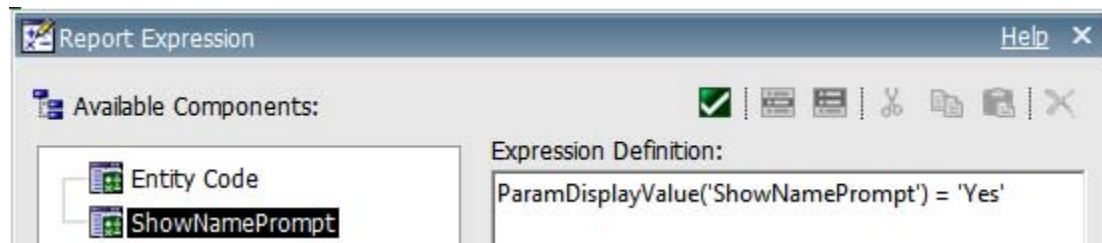
The result of this combination of Prompt and Variable is that the user can then choose whether or not to show the Entity Long Description listed in the crosstab row headers.

12. Name this new variable "ShowName".
13. We next tie our variable to two very specific objects on the Report Page. Set the Style Variable property for Entity Long Description and then for the "dash" text object, by selecting our new variable from the available drop-down for that property.
14. Using the Condition Explorer, navigate to the "No" condition for our ShowName variable.
15. For each of the objects associated with our variable, set the Box Type property to **None**. This effectively hides the descriptions when the user would rather not see them.
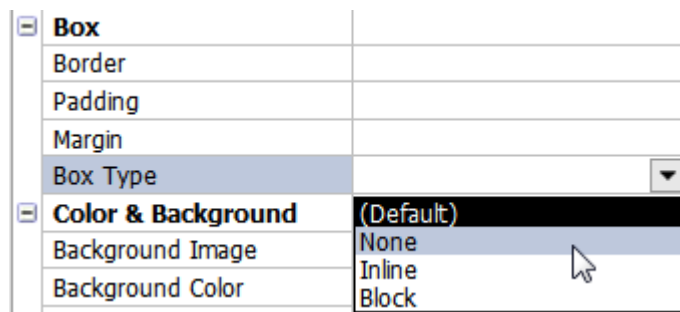
16. Disable the Advanced filter on Entity Code (not the parameter).
17. Save as **Demo - Hide/Show**.

18. Run the report twice selecting all options for the Entity Code, once with **Yes** and once with **No** at the ShowName prompt to verify your conditional prompt is working.

Yes

	NCAR - Natl Center Atmospheric Res		UOP - UCAR Community Programs		UCAR - University Corp Atmos. Res	
	Travel Expense Record Count	Net Amount	Travel Expense Record Count	Net Amount	Travel Expense Record Count	Net Amount
2010	4,262	$6,785,749	3,320	$4,430,814	691	$715,628
2008	4,127	$6,751,431	3,374	$4,167,438	681	$654,013
2007	4,142	$6,192,212	3,133	$3,642,233	696	$703,121
2009	4,128	$6,613,806	2,947	$3,791,743	685	$565,826
2006	4,086	$5,889,083	3,118	$3,812,979	510	$684,845

No

	NCAR		UOP		UCAR	
	Travel Expense Record Count	Net Amount	Travel Expense Record Count	Net Amount	Travel Expense Record Count	Net Amount
2010	4,262	$6,785,749	3,320	$4,430,814	691	$715,628
2008	4,127	$6,751,431	3,374	$4,167,438	681	$654,013
2007	4,142	$6,192,212	3,133	$3,642,233	696	$703,121
2009	4,128	$6,613,806	2,947	$3,791,743	685	$565,826
2006	4,086	$5,889,083	3,118	$3,812,979	510	$684,845

Chapter 3 – Enhancing Report Layout

In this chapter we demonstrate techniques that enhance report layout, including report design tips, how to add additional report pages, insert page breaks, modify report structures, and add bookmarks to HTML reports.

In the following exercise we expand our knowledge of report design aesthetics by studying some basic alignment techniques for lists and crosstabs, and by adding a background image to the report.

Step-By-Step

Report Design Tips

1. Open the **Crosstab** report from Chapter 1, save as **Report Design**.
2. On the report page, select the Page Body by clicking outside of your list or crosstab object, but not in the header or footer.
3. Use the Center Alignment 🔘 icon in the Toolbar to center your report horizontally and the Middle alignment 🔘 icon to center vertically on the page. Horizontally centering objects on the page is quite common in report design, but the default horizontal orientation for objects on a page is left aligned.
4. Now re-set your Vertical Alignment to **Top,** this time using the Properties of the Page Body.
5. Add a 2 row, 1 column table by clicking on the Insert Table 🔘 icon.
6. Select the top table cell of the new table. We are going to add a background image to the top cell of the new table.
7. Using the Background Image property of the Table Cell, click the ellipsis and type the following address into the Image URL box:
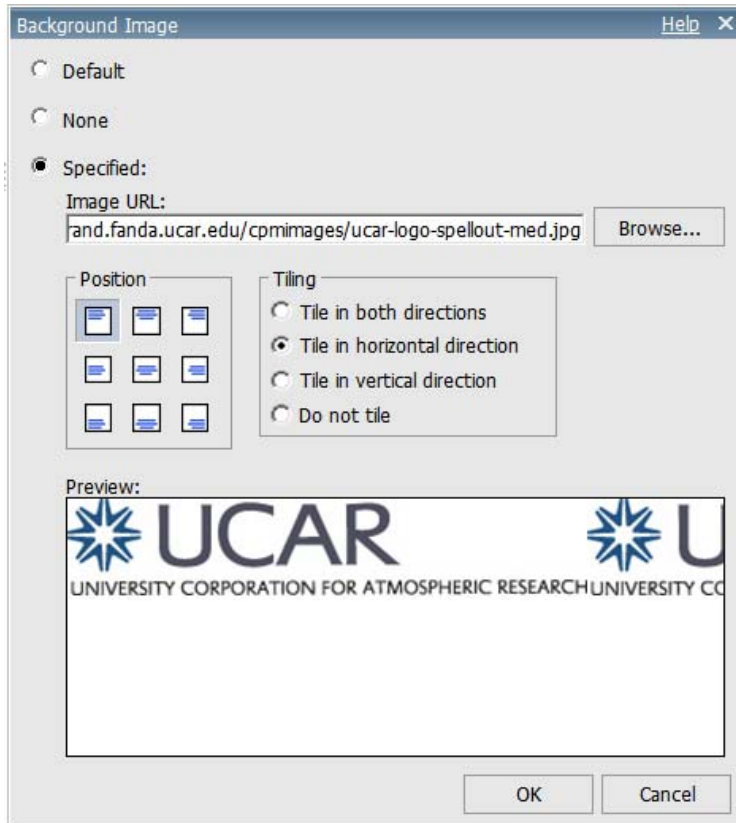
   https://fagrand.fanda.ucar.edu/cpmimages/ucar-logo-spellout-med.jpg

NOTE

You can add images from the Web as well as from the IBM Cognos server.

8. Choose from a variety of Position and Tiling settings to find one that is appropriate for the report.

Note that the background image may not display in Report Studio but will always display properly when the report is run. Also note that for this example, we selected Tile in horizontal direction and set the Position to be top left.

9. For the top table cell, set the Size and Overflow property to a height of 75 px.
10. Select the crosstab and drag it into the bottom table cell.
11. Set the bottom table cell Horizontal Alignment to **Center**.
12. Set the bottom table cell Vertical Alignment to **Top**.
13. Save your report specification as **Report Design**.
14. Run the report.

	NCAR		UOP		UCAR	
	Travel Expense Record Count	Net Amount	Travel Expense Record Count	Net Amount	Travel Expense Record Count	Net Amount
2010	4,262	$6,785,749	3,320	$4,430,814	691	$715,628
2007	4,142	$6,192,212	3,124	$3,642,233	696	$703,121
2008	4,127	$6,751,431	3,099	$4,167,438	681	$654,013
2009	4,128	$6,613,806	2,947	$3,791,743	685	$565,826
2006	4,086	$5,889,083	3,118	$3,812,979	510	$684,845

NOTE

Sometimes it is difficult to click on the correct report object to complete a task. The Select Ancestor arrow in the Properties pane is a useful tool to ensure you have chosen the correct object with which to work. If you select an object and do not find the property you expected to find in the Properties pane, check the object displayed by the Select Ancestor arrow. Click the arrow to find the correct object.
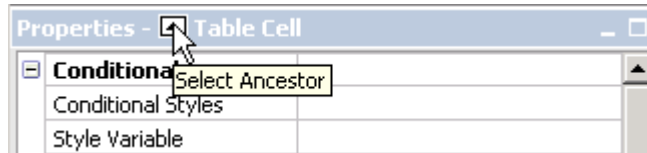
Demo

Viewing Page Structures

As with most development and report writing tools, the developer/author designs by way of adding "objects" to a page or form, arranging objects in certain ways, and setting the properties or behavior of those objects. Although we have not examined it yet, a report page in Report Studio contains an **Object Hierarchy**. Each object that you place on a page is "contained" within some higher level object, with the **Page** residing at the top of the hierarchy.

1. Let's examine the object hierarchy of the report we completed in the first chapter. Open the report **Crosstab** (from Chapter 1) and recall that one of the "lowest level" objects on the page happens to be the column heading Net Amount. Make sure that you have "unlocked" your report design, using the 🔒 button.
2. Save your report specification as **Crosstab – Page Structure**.

3. Select the Net Amount column heading item with your mouse. Click the Select Ancestor button on the Properties pane on the left. Note that the Net Amount object is a **Text Item**, which is contained by the **Crosstab Node Member**, which itself is contained by a higher level object, and so on all the way up to the **Page**, which is the highest level object.
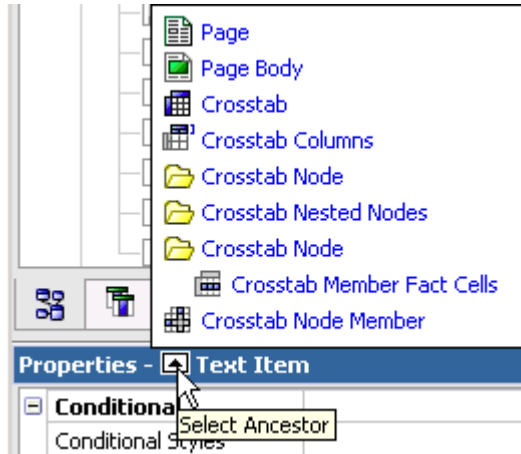
4. Select the **Page Body** object.
5. Select **Page Structure** from the **View** menu as an alternative means for viewing the report's object hierarchy or structure. (The default view is the Page Design view.)
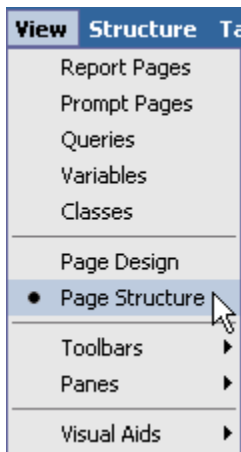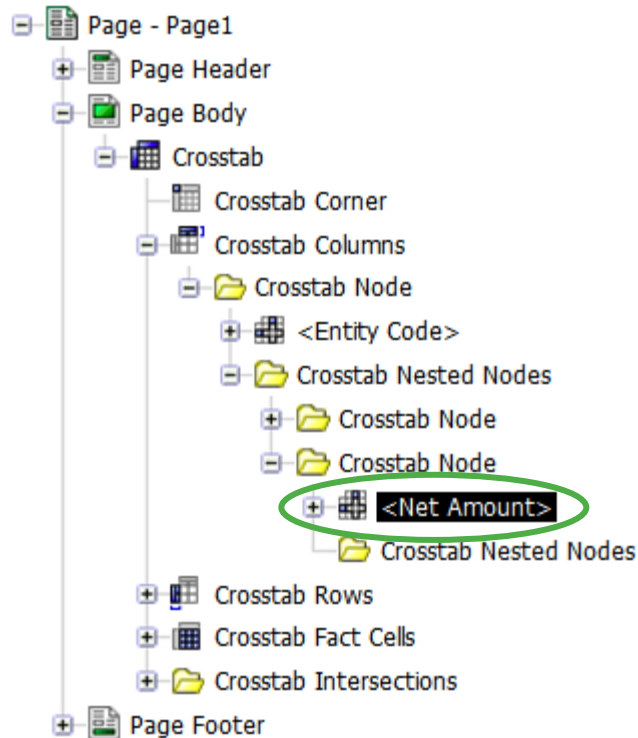

6. You are shown an "Object Tree" type of layout as shown below:
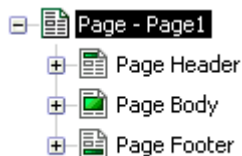
7. By expanding the levels, navigate the tree until you are able to select the Net Amount item as shown below:

Note that the Properties pane is still available on the left as it is when you are in the Page Design view. You are free to edit an object's properties in this view in the same fashion as you would in the Design view.
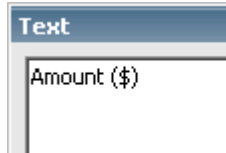
Let's make a change and see how the report responds.

8. Expand **Crosstab Node > Net Amount**.
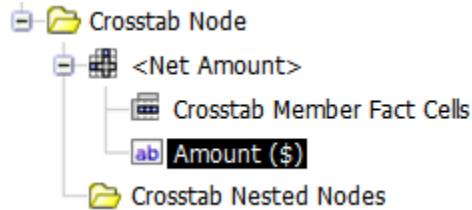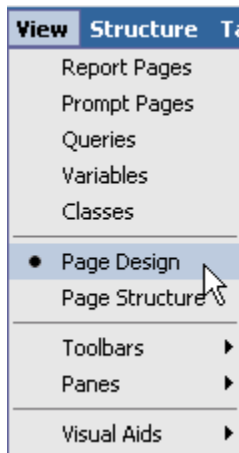9. Click the Member Caption under Crosstab Member Fact Cells.
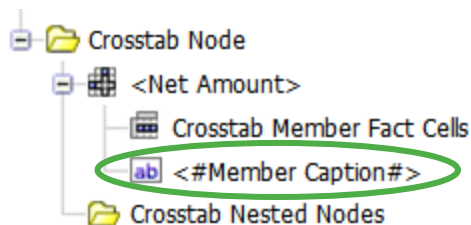
10. In the Properties pane, change the Text Source Type to **Text** and type the following for the Text property:

Text

Amount ($)

11. Notice how the Page Structure reflects the change.

⊟ 📂 Crosstab Node
    ⊟ ⊞ <Net Amount>
        ── 🖩 Crosstab Member Fact Cells
        ── 🔤 Amount ($)
      └ 📂 Crosstab Nested Nodes

12. Select **Page Design** in the **View** menu to see your change.

View | **Structure** | Ta
Report Pages
Prompt Pages
Queries
Variables
Classes
● Page Design
   Page Structure
Toolbars ▶
Panes ▶
Visual Aids ▶

	<#Entity Code#> ▽		<#Entity Code#>	
	<#Travel Expense Record Count#>	Amount ($)	<#Travel Expense Record Count#>	Amount ($)
<#Fiscal Year#> ▽	<#1234#>	<#1234#>	<#1234#>	<#1234#>
<#Fiscal Year#>	<#1234#>	<#1234#>	<#1234#>	<#1234#>

13. Save your report specification as **Crosstab – Page Structure**.
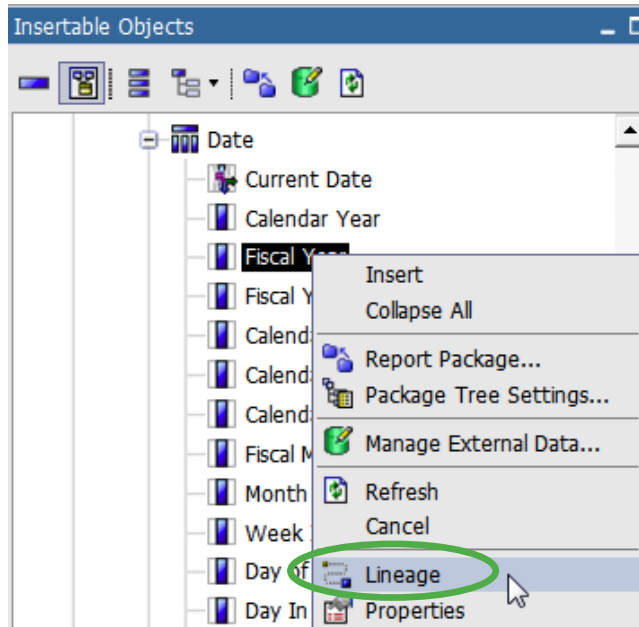
NOTE

You can right-click on an object in the metadata tree in Report Studio, Business Insight Advanced, Query Studio, and Analysis Studio to access lineage information for query items and model filters.

For example, here we right-click on Fiscal Year and select **Lineage** in the context menu.
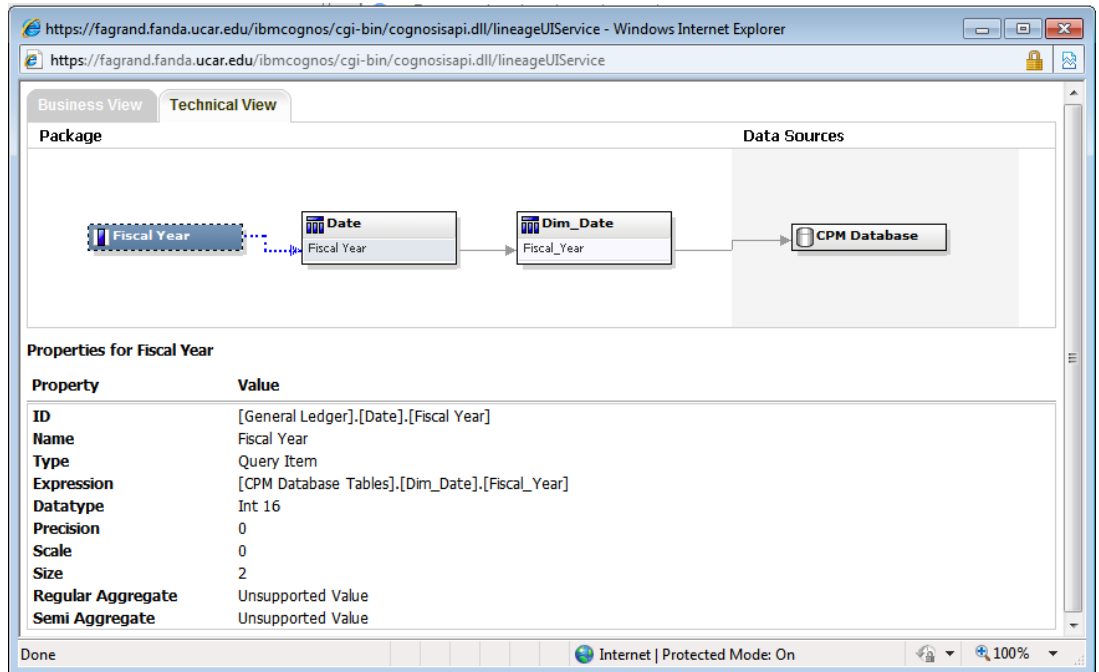

Another window opens with both a Business and a Technical View of the model lineage for Fiscal Year.
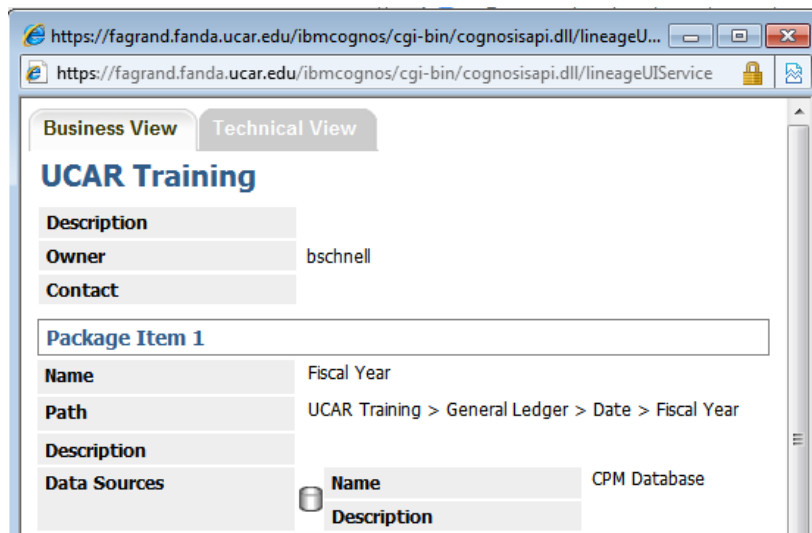
In the Technical View you can also review model filter information included by technical users (none in this training model).

Step-By-Step

Combine Two Reports

We learn in this exercise how to create one report specification that combines two existing reports. This exercise also demonstrates that multiple reports can be in one report, and examines the behavior of a report with multiple report objects on a page.

1. Open two report specifications from **Public Folders > IBM Cognos Training > Report Studio Part 2 Training > Chapter 3** in separate browsers:
   - List Sample
   - Crosstab Sample

   You can do this by clicking the Open with Report Studio 📐 icon in IBM Cognos Connection.
2. Add a table to your List Sample report page with 1 column and 2 rows.

3. Drag your List report, using the Select Ancestor arrow if necessary to find the List object, into the first row of the table.
4. From the Crosstab Sample report, copy the Crosstab Query from Query Explorer to the Query Explorer of your List Sample report. (Click on the Queries folder and right-click on the Crosstab Query to copy it.)
5. Again from the Crosstab Sample report, copy the Crosstab from the Page Explorer to your List Sample report and paste it in the second row of your table.
6. Save your report specification as **Combined Report**.
7. Run your report, and click on ⤓ Bottom to review the results.

We now have two unrelated reports on one report page. These report objects could be on separate pages if you want the bottom report to start a new page after the other report object displays all its data.

Fiscal Year	Person Entity Identifier - PEID	Name	Account Number	Travel Expense Record Count	Net Amount	Average Amount per Travel Expense Record
2009	023818	MCCRAY, SHELDON	123682	6	$3,258.46	$543.08
			150020	15	$3,610.89	$240.73
			195001	9	$1,353.03	$150.34
	023818 - Summary			30	$8,222.38	$274.08
	047192	MCGUIRE, SANTOS	149415	14	$4,499.27	$321.38
			740000	33	$7,172.22	$217.34
	047192 - Summary			47	$11,671.49	$248.33
2009 - Summary				189	$37,903.51	$200.55
2010	011337	ORR, EDDIE	150011	5	$1,952.63	$390.53
			150022	49	$10,720.49	$218.79
			290001	20	$7,763.25	$388.16
			290003	7	$13,067.56	$1,866.79
	011337 - Summary			81	$33,503.93	$413.63
	023818	MCCRAY, SHELDON	150018	1	$30.00	$30.00
			150020	39	$10,055.30	$257.83
	023818 - Summary			40	$10,085.30	$252.13
	047192	MCGUIRE, SANTOS	150001	47	$7,540.81	$160.44
			312010	1	$3.15	$3.15
			740000	43	$7,933.56	$184.50
			740121	4	$5,483.94	$1,370.98
	047192 - Summary			95	$20,961.46	$220.65
2010 - Summary				216	$64,550.69	$298.85
Overall - Summary				795	$193,027.80	$242.80

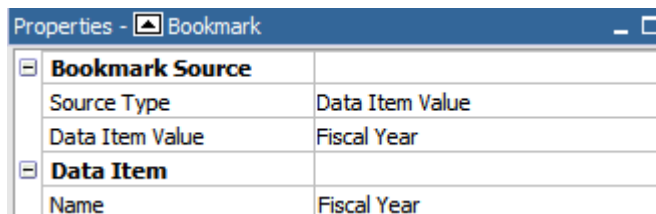| Net Amount	NCAR	UCAR	UOP
2006	$21,857		$893
2007	$25,973	$126	
2008	$41,493		$232
2009	$37,904		
2010	$64,548	$3	

Step-By-Step
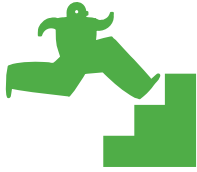
Utilizing Bookmarks/Modifying Report Structures

The Bookmark functionality of Report Studio provides the report consumer the ability to "jump" from one area of a report (a summary table for example) to another area of a report (the corresponding detail for the summary information). Bookmarks are effective only in saved HTML versions of reports, and those on which the output is entirely on one HTML page. In this example, we begin with the report from the last exercise and modify it to allow the report consumer to hyperlink from the summary crosstab directly to the supporting detail for that crosstab row.

1. Begin by opening the report from the prior example (**Combined Report**) and Save As under a new report name, **Bookmarks**.
2. Navigate to Page1 of the report. Click in the bottom row of the table.
3. From the **Table** menu, select **Insert**, then **Rows Below…**, and add 1 additional row.
4. Move the existing list that is in the first table row into the lowest cell of the table (Use the Select Ancestor arrow to select and drag the list.).
5. Center-align all table cells horizontally.
6. Verify that the filters are the same for both reports.
7. Add 25 pixels of lower margin to your crosstab.
8. Ensure that your page design is Unlocked 🔓.
9. From the Toolbox tab in Insertable Items, drag a Bookmark 📖 Bookmark item into your List (into the first list row, not the header), and drop it beside the Fiscal Year data item.
10. Select the Bookmark item, and set its Source Type to **Data Item Value** and the Data Item Value to **Fiscal Year**.

| Properties - 🔲 Bookmark	_ □
⊟ **Bookmark Source**	
Source Type	Data Item Value
Data Item Value	Fiscal Year
⊟ **Data Item**	
Name	Fiscal Year

11. Run your report. Note that although we have placed a Bookmark into the list, it does not display.
12. Return to Report Studio.

13. In your crosstab, select the **Fiscal Year** row item (**Crosstab Node Member** object).
14. Right-click with the mouse and select **Drill Through Definitions**… from the pop-up menu.

A Drill Through dialog box appears.

15. Use the Add 🖼 button to add a Drill Through. First select the Bookmark tab.
16. Select **Data Item Value** from the Source type drop-down.
17. Select **Fiscal Year** as the Data Item.
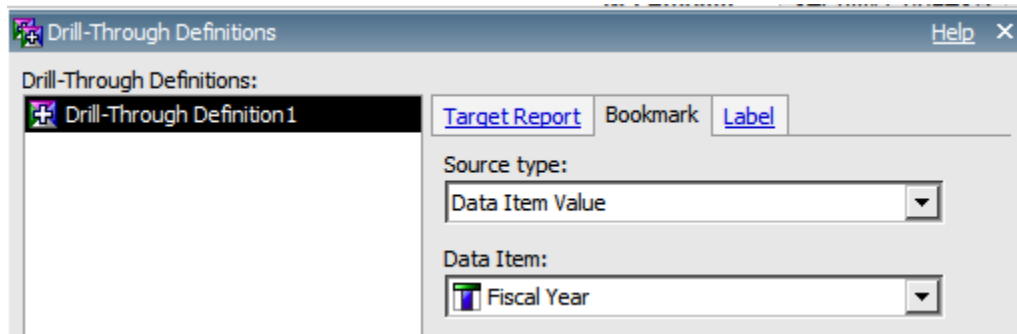
18. Click OK.

Note that the Fiscal Year row headings change and that Fiscal Year appears as a blue hyperlink.

19. Select your List again, using the Select Ancestor arrow to ensure that you have the entire list object selected.
20. Set the Rows Per Page property to "5000".
21. Save your report specification as **Bookmarks**, and return to IBM Cognos Connection.
22. Navigate to your newly saved Bookmarks report, and select Run with options from the Actions menu.
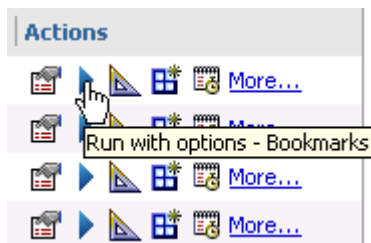
23. Change the format to HTML, elect to Save the report, and click Run.

Run with options - Bookmarks

Select how you want to run and receive your report.

Format:
HTML

Accessibility:
☐ Enable accessibility support

Language:
English (United States)

Delivery:
○ View the report now
◉ Save the report
○ Print the report:
    Printer location:
    [   ]   Select a printer...

Prompt values:
No values saved
☑ Prompt for values

24. Click OK if the following dialog box appears.

IBM Cognos software

You selected to run 'Bookmarks' as follows:
   Time: now
   Formats: HTML
   Languages: English (United States)
   Save the report: Bookmarks

☐ View the details of this report after closing this dialog

Click OK to submit the report or click Cancel to return to your selection.

☑ Show this dialog in the future

[OK] [Cancel]

25. Click the Refresh [icon] button until the Output [icon] icon shows up in the Actions menu.
26. Click on the Output icon, then the HTML link to view the output.
27. Click on 2009 in your summary crosstab and you are automatically taken to the corresponding detail for that row.

Net Amount	NCAR	UCAR	UOP
2006	$21,857		$893
2007	$25,973	$126	
2008	$41,493		$232
2009	$37,904		
2010	$64,548	$3	

2009	011337	ORR, EDDIE	150008	14	$4,715.54		$336.82
			150011	24	$8,075.08		$336.46
			150022	46	$6,035.97		$131.22
			150954	28	($816.95)		($29.18)
	011337 - Summary			**112**	**$18,009.64**		**$160.80**
	023818	MCCRAY, SHELDON	123682	6	$3,258.46		$543.08
			150020	15	$3,610.89		$240.73
			195001	9	$1,353.03		$150.34
	023818 - Summary			**30**	**$8,222.38**		**$274.08**
	047192	MCGUIRE, SANTOS	149415	14	$4,499.27		$321.38
			740000	33	$7,172.22		$217.34
	047192 - Summary			**47**	**$11,671.49**		**$248.33**
2009 - Summary				**189**	**$37,903.51**		**$200.55**

NOTE

You could add a second bookmark to take the user back to the top of the report.

Step-By-Step

Singletons

Singletons allow for a single value to be added to a report without having to set the page-query association. When you place a Singleton into a report, it creates a new query and returns data from the first row of that query. Singletons can be used anywhere on the page where you can place a block.

1. Open your **Bookmarks** report and save the report specification as **Singletons**.
2. Ensure that your report is Unlocked
3. Working with the crosstab report, drag a Singleton from the Toolbox, to the right of the Label in the crosstab corner as shown:

Insertable Objects

Repeater
Singleton
Conditio Singleton
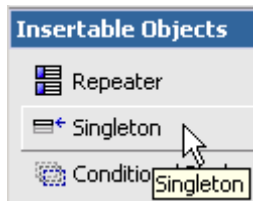
Net Amount	Drop item here to show a single value	<#Entity Code#>△	<#Entity Code#>
<#Fiscal Year#>△		<#1234#>	<#1234#>
<#Fiscal Year#>		<#1234#>	<#1234#>

4. From the Source tab, drag Net Amount into the Singleton from the General Ledger Details query subject**.**
5. In Query Explorer, open the new Query2 that was created by inserting the Singleton.
6. Highlight the Net Amount data item, and click on the ellipsis to edit the Expression property.

Properties - Data Item

Data Item	
Type	Data Item
Name	Net Amount
Label	
Expression	[General Ledger].[General Ledger D...
Aggregate Function	Total
Rollup Aggregate Function	Automatic

7. In the window, edit the expression as follows:

Expression Definition:
total ([General Ledger].[General Ledger Details].[Net Amount])

This expression returns the total Net Amount for the entire report.

8. Since the Singleton query is totally unrelated to our crosstab report's query, we have to apply the same filters to Query1 in order to reflect a comparable scope for the Total Net Amount:

Expression Definition:
[General Ledger].[Date].[Fiscal Year] <> 2011

Expression Definition:
[General Ledger].[Object Code].[Object Code] starts with '54'

Expression Definition:
[General Ledger].[Account].[Entity Code] in ('NCAR', 'UCAR', 'UOP')

Expression Definition:
[General Ledger].[Person].[Person Entity Identifier - PEID] in ('011337', '023818', '047192')

9. Back on the report page, highlight the label (text item) in the crosstab corner.

Net Amount <Net Amount>
✥<#Fiscal Year#>△
✥<#Fiscal Year#>
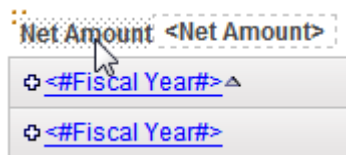
10. In the Properties, change the Source Type to **Text**.
11. Click on the ellipsis in the Text property to change it to "Total Net Amount: ".
12. Select the Net Amount data item in the singleton and change the Data Format to **Currency** with **0** decimal places.

13. Save the report specification as **Singletons** and run the report.

Total Net Amount: $193,028	NCAR	UCAR	UOP
2006	$21,857		$893
2007	$25,973	$126	
2008	$41,493		$232
2009	$37,904		
2010	$64,548	$3	

NOTE

Singleton queries are not supported when producing report output in CSV format.

Chapter 4 – Auto Group & Summarize

We looked at the Auto Group & Summarize functionality in the Part 1 course. It is extremely useful to be able to aggregate a report automatically at the appropriate level of detail. However, there are situations where a combination of the Aggregation property, in conjunction with the Auto Group & Summarize setting, may not produce accurate results. The following exercises demonstrate possible pitfalls you may encounter.

Step-By-Step

Auto Group & Summarize

1. Create a new List report using the **UCAR Training** package.
2. From the Source tab, CPM Training Data namespace, General Ledger namespace, Account query subject, insert Account Number into your report page.
3. From the Object Code query subject, add Object Code.
4. From the General Ledger Details query subject, add Net Amount.
5. Sort Account Number descending.
6. Group on Account Number and Object Code.
7. Click the Net Amount cells and format the data as a **Currency** with **0** decimal places.
8. Use the Aggregate Σ icon in the Toolbar to Total the Net Amount.
9. Create the following Advanced Detail filters:

Expression Definition:

[General Ledger].[General Ledger Details].[Account Key] in ('160001', '160002', '160004')

Expression Definition:

[General Ledger].[Date].[Fiscal Year] = 2010

Expression Definition:

[General Ledger].[Date].[Fiscal Year Quarter] = 1

10. From Query Explorer, click on Query1 and note the Auto Group & Summarize property is set to Yes.

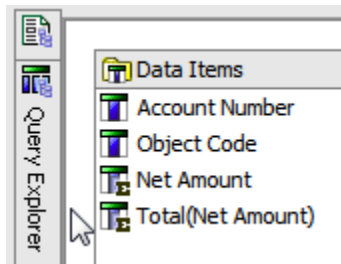| Properties - Query	_ □
⊟ **Data**	
Auto Group & Summarize	Yes
Generated SQL	

11. Save the report specification as **Auto Group & Summarize**.
12. Click ▶ Run Report from the Toolbar. Navigate to the bottom to see the Summary at the Account Number level and the overall report.

Account Number	Object Code	Net Amount
160002	5274	$0
	5711	$1,890
160002 - Total		$5,740
160001	5260	$25
	5274	$310
	5281	$1,800
	5320	$197
	5324	$359
	5350	$9
	5355	$0
	5363	$6
	5391	$5
	5401	$159
	5420	$266
	5430	$416
	5440	$97
	5450	$99
	5451	$8
	5473	$350
	5711	$1,846
	5712	$170
160001 - Total		$6,121
Overall - Total		$30,570

13. Use Query Explorer to return to Query1 and ensure that the Query properties are displayed by clicking anywhere in the white space between the Explorer Bar and the Data Items.

14. In the Properties of the Query, change the Auto Group & Summarize property to **No**:
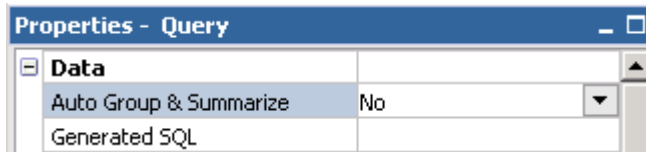
15. Save the report specification as **No Auto Group & Summarize**.
16. Click ▶ Run Report from the Toolbar:

There are now several more pages of records since we are seeing the detail rows from the database. Click **Bottom** to see the Summary level. Notice that the totals at the summary levels are the same as those in the previous report.

| Account Number	Object Code	Net Amount
160001	5440	($33)
	5450	$50
		$50
	5451	$4
		$4
	5473	$410
		($60)
	5711	($29)
		$22
		$80
		$1,060
		$201
		$82
		$138
		$163
		$130
	5712	$4
		$157
		$2
		$7
160001 - Total		**$6,121**
Overall - Total		**$30,570**

Detail rows

WATCH OUT!

This will be the case IF the fact item in your query is set to an aggregate such as Average or Total. This can be the default setting in Framework Manager, or you may need to set this in your report manually. With Auto Group & Summarize set to **Yes** and the fact item set to an aggregate of **None**, you'll get the wrong totals as we'll see next.

Step-By-Step
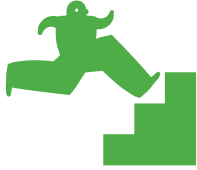
Auto Group & Summarize without "Total" on Fact Item

1. Start with your **No Auto Group & Summarize.**
2. Set the Aggregate Function for Net Amount to **None**.

3. Save the report specification as **Auto Group & Summarize without Fact Total**.

4. Click ▶ Run Report from the Toolbar and examine the records for the Account Number 160001 Object Codes '5450' and '5451'.

Account Number	Object Code	Net Amount
160001	5440	($33)
	5450	$50
		$50
	5451	$4
		$4
	5473	$410
		($60)
	5711	($29)
		$22
		$80
		$1,060
		$201
		$82
		$138
		$163
		$130
	5712	$4
		$157
		$2
		$7
160001 - Total		**$6,121**
Overall - Total		**$30,570**

5. Now, Set the Auto Group & Summarize property for Query1 back to **Yes** and run your report again.

Account Number	Object Code	Net Amount
160001	5440	$15
		$15
		$100
	5450	$50
	5451	$4
	5473	($60)
		$410
	5711	($29)
		$22
		$80
		$82
		$130
		$138
		$163
		$201
		$1,060
	5712	$2
		$4
		$7
		$157
160001 - Total		**$5,721**
Overall - Total		**$29,290**

Note that the report shows incorrect totals for the Account Number (as well as the overall Summary) because it is aggregating by each *unique* Net Amount rather than each *distinct* record. For example, note now that we have only one record for the two $50 amounts and one record for the two $4 amounts for Object Code 5450 and 5441 with an Account Number of 160001.

Review

Now that we've done the exercises in Report Studio, let's review. Assume you have a table with three records as shown below and the Auto Group & Summarize property and the **Net Amount** Aggregate Function property is set as shown. Which will produce the correct results? What will the result set look like?

Data:

Account Number/Object Code	Total Amount
160001/5420	106
160001/5420	160
160001/5420	106

Auto Group & Summarize	Aggregate Function	Correct Result?
Yes	Total	Yes
No	Total	Yes
No	None	Yes
Yes	None	No

Why will the last one not produce valid results?

Because it will bring back *distinct* values for all fields, which will only return one record for 106 and one for 160.

If you happen to have a data set without any "duplicates" in an aggregated column, you will get the correct result. We mention this so you're careful to include this case when testing.

In summary, Auto Group & Summarize on numeric fact fields when the aggregation on the fact is set to **Total** is very useful and unique to IBM Cognos. If the aggregation on the numeric fact field is set to **None**, then Auto Group & Summarize will produce inaccurate results and should be turned off.

Chapter 5 – Designing Effective Prompts

In this chapter we examine several ways to effectively use prompts in a report to maximize flexibility, increase functionality, and enhance the user-interface. We learn how to use prompts to control the display of a report by showing or hiding objects, controlling conditional formatting, and how to sort data.

Step-By-Step

Creating an Effective Prompt for Selection

In this exercise we create a user prompt that contains both a code and a description so that the report consumer can more easily select the desired conditions.

1. Create a new List report using the **UCAR Training** package. Save your report specification as **Effective Prompts – Example 1**.
2. From the Source tab, add the following data items from the CPM Training Data namespace, General Ledger namespace, General Ledger Details query subject:
   - Account Key
   - Object Code
   - Post Date
   - Net Amount

3. From the Account query subject, insert Medium Title after Account Key.
4. From the Object Code query subject, insert Medium Description after Object Code.
5. Group on Account Key and Object Code.
6. Group Span Medium Title based on Account Key and Medium Description based on Object Code.
7. Sort descending on Net Amount.
8. Create the following Advanced Detail filters:

Expression Definition:

[Post Date] in_range ?DatePrompt?

Expression Definition:

[Account Key] in ?AccountPrompt?

9. Using the Page Explorer, navigate to the Prompt Pages folder and add a new prompt page.
10. On your new prompt page, use the Table tool to add a 4 row x 2 column table on to the page.

NOTE

If you don't correctly set the number of rows and columns the first time you create a table, you can modify it in the **Table** menu drop-down.

11. In the two top cells add Text Items (labels) for your date range and Entity prompts that we will add next.

Select Date Range:	Select Account Key:

12. Drag a new Date Prompt from the Toolbox tab to the left cell of the second row of your table. Choose your existing parameter for **DatePrompt** from the Prompt Wizard, and then click Finish.

Prompt Wizard - Date Prompt   Help ✕

○ Create a new parameter
  Parameter1

◉ Use existing parameter
  DatePrompt ▼

13. Select your new prompt and set the Multi-Select property to **No**.
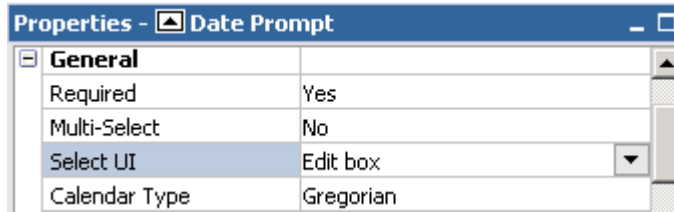
Properties - ⬛ Date Prompt   _ ☐

⊟ **General**	
Required	Yes
Multi-Select	No ▼
Select UI	Calendar

14. Change the Select UI property to **Edit box**.

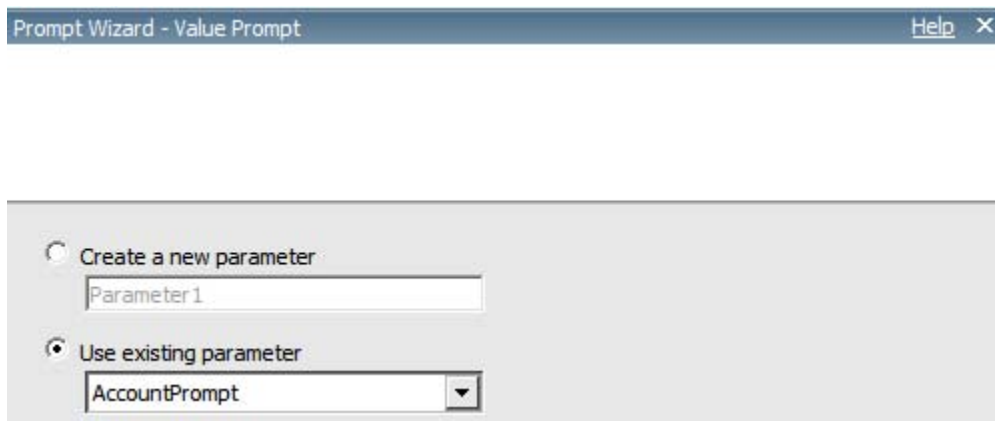| Properties - ▲ Date Prompt		
☐ **General**		▲
Required	Yes	
Multi-Select	No	
Select UI	Edit box	▼
Calendar Type	Gregorian	

NOTE

The Select UI property for prompts offers space-saving alternatives dependent on the type of prompt and Multi-Select option chosen. For example, the Edit Box prompt for choosing date ranges provides the same capability as the calendar, but conserves space on the prompt page (which will become important as your reports become more complex and you have many user prompts).

15. Next, drag a Value Prompt from the Toolbox into the second row right cell. In this example we utilize several steps of the Prompt Wizard as follows:
16. Choose your existing **AccountPrompt** parameter in the first step of the wizard and then choose Next to proceed.

Prompt Wizard - Value Prompt	Help X
○ Create a new parameter	
Parameter1	
● Use existing parameter	
AccountPrompt ▼	

17. In the next step of the wizard, we allow Report Studio to create a new, separate query that provides the list of values for this prompt. Name this query "Account Query", and in this case, we select Account Key (from the General Ledger Details query subject) and Medium Title (from the Account query subject) for the Values to use and Values to display drop-downs, respectively. The Values to use property indicates the data item that is submitted as the actual parameter value to Report Studio. The Values to display property indicates which data the users will actually see in the prompt when making their selection.

18. Click Finish in the wizard.
19. Run your prompt page.
20. Examine the Account prompt. Note that the Account descriptions are displayed in the list even though we are actually filtering on the Account Key:

21. Return to the prompt page.

22. Change the Account Key Multi-Select to **No**, and change the Select UI property to **Radio button group**. The List Box and Radio Button styles are options for a single selection prompt that are visually superior to the drop-down, and that hide the name of the data item that underlies the prompt.

Next we improve this prompt to include both the Account Key and the Medium Title.

23. Using the Query Explorer, navigate to your new query, Account Query.
24. Drag a new Data Item from the Toolbox into the Data Items panel of your query, and define it as shown below:

```
Expression Definition:
[Account Key] + ' - ' + [Medium Title]
```

The above expression concatenates the Account Key and the Medium Title.

25. Change the Name property of this new Data Item to "Account Key and Title".
26. Return to your prompt page, select your Account Key Prompt, and re-set the Display Value property of your Account prompt to your new Account Key and Title data item.

Properties - ▲ Value Prompt	_ □
⊟ **Data**	
Sorting	
Data Format	
Query	Account Query
Use Value	Account Key
Display Value	Account Key and Title ▼
Static Choices	
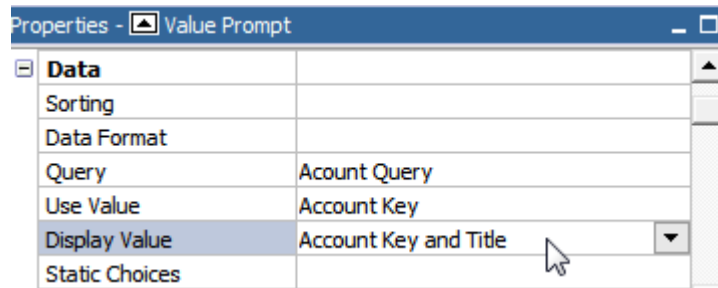
27. In the Sorting property, click on the ellipsis to open the Sorting window and drag Account Key into the Sort List.
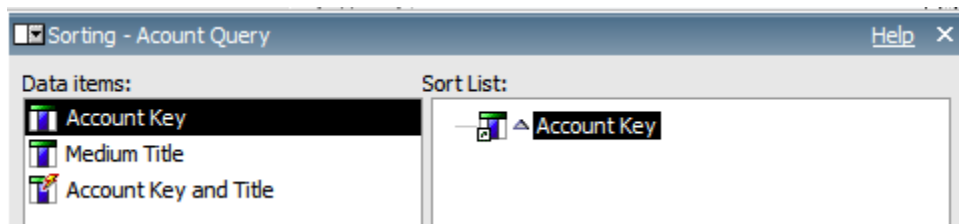
Sorting - Account Query	Help ✕
Data items:	Sort List:
Account Key	△ Account Key
Medium Title	
Account Key and Title	

28. Save your report specification as **Effective Prompts – Example 1**.

29. Run your report using December 1 through 31, 2010 and the 000001 – Cash Fund Account Key. Note that the prompt now contains both the Account Key and Medium Title, and that entries are sorted by Account Key in ascending order.

If you were querying on a data item with a large number of selections, further filtering may be added to your query to reduce the number of selections and to "weed out" certain selections that may appear to be unnecessary.
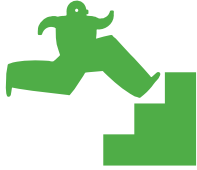

When using **Value Prompts**, there is a default limit to the number of choices that Report Studio can display of 5000. There is a Rows Per Page property on the **Value Prompt** where that can be changed.

Prompts for Performance & Large Lists

Step-By-Step

**Creating Prompts for Performance and Large LOVs
Is it your Data Source?**

Using Reference / Alias (**Dimension**) tables to populate prompt pages instead of **Fact** tables will generally improve performance because there are usually fewer records in Reference tables.

In addition, the response time of the report itself can decrease dramatically when the prompt is executing a SELECT query on a **Dimension** table to retrieve the list of Programs as opposed to a **Fact** table.

Options to change a Fact prompt to a Dimension prompt include:
- Delete the existing prompt; add a new one, creating a new query to use data items from the reference table instead of the fact table.
- Edit the existing query to select data items from the reference table, then edit the properties of the prompt to reflect the new data items.

Please be careful to ensure the prompt values returned are a complete and accurate representation of the data you'd like the user to filter on in the report.

1. In this exercise, we will continue with the **Effective Prompts – Example 1** report. Save your report specification as **Effective Prompts – Example 2.**
2. Open the Account query.
3. From the CPM Training Data namespace, General Ledger namespace, Account query subject, add Account Number.
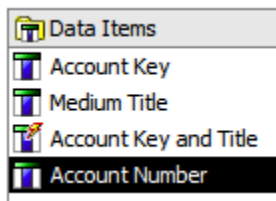

4. Change the Account Key and Title data item to read.

Expression Definition:
```
[Account Number] + ' - ' + [Medium Title]
```
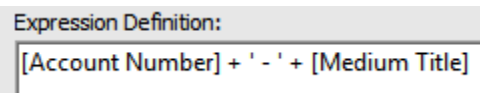
5. Change the Name of this Data Item to "Account and Title".
6. Delete Account Key from the Account query.
7. Back on the Prompt page, change the Text item above the Account prompt to "Select Account:".
8. Select the current prompt for Account and change the Use Value property to Account Number and the Display Value to Account and Title.
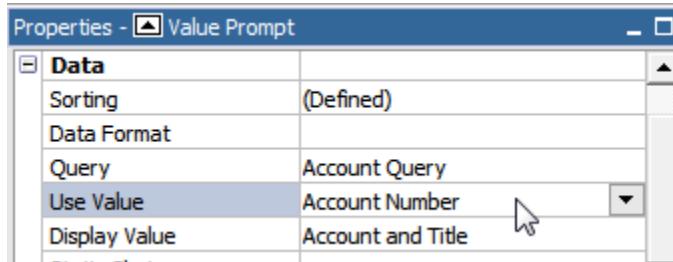
9. Click on the ellipsis in the Size and Overflow property to change the width to 300 pixels.
10. Add Account Number to the sort list in the Sorting property (ascending).
11. Preview the report and notice that the prompt page loads somewhat faster.
12. Return to Page Explorer.
13. On your Prompt Page1, right click the existing prompt for the Account Prompt.
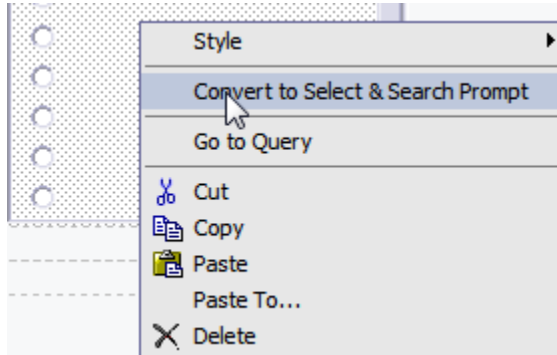
14. Select **Convert to Select and Search Prompt** from the dropdown.

15. Preview your report, again using December 1 – 30, 2010.

Note that you may now search for an Account Number to find a potential match for your desired selection.

16. You may also use the "Options" link to enhance the type of search that is conducted.

When there is a significant amount of data in the Fact tables, you will notice that the response time will improve dramatically.

Next we will further enhance this report, by allowing for more than one Account Number selection to be made by the user.

17. Return to your Prompt Page, select the Account Prompt, and set the **Multi-Select** property to **Yes**. Note that the Prompt control will change slightly and that this is possible because in the previous steps we used "in" instead of "=" as the operator in the parameterized filter.

18. Preview your report.

Note that you can repeatedly search for and select Account Numbers and insert them into the "Choices" box for submission to the ?AccountPrompt? parameter.

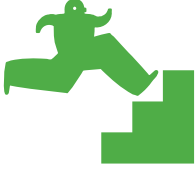19. Save your report as **Effective Prompts – Example 2**.

NOTE

The technique to use a "reference" table to pass prompt values to the main query is standard (best) practice and important to emphasize.
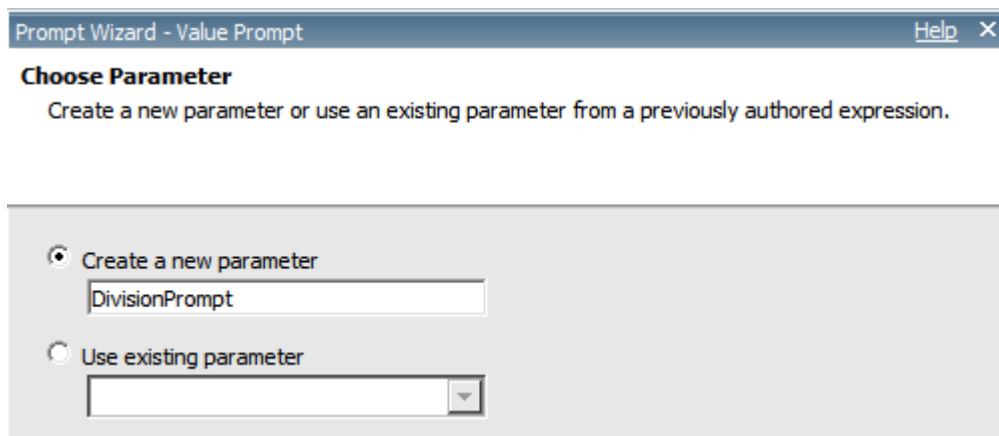
Cascading Prompts

Step-By-Step

Create a Prompting Hierarchy

The Search & Select prompt that we created in the previous exercise provides a lot of flexibility for users to find the specific parameter to use for a report. There are situations, however, when it may be useful to add another level of filtering, or a prompting "hierarchy", that allows the user to first filter at a higher level, and then pass this parameter to a lower level of detail in order to return a smaller, more focused subset of options.

1. Start with the **Effective Prompts – Example 2** exercise, save the report specification as **Effective Prompts - Cascading** and open the report page.
2. Ungroup Object Code and Account Key.
3. From the CPM Training Data namespace, General Ledger namespace, Account query subject, insert Division_Program Code to the beginning (far left) of your report.
4. Group Division_Program Code, Account Key, and Object Code.
5. Group span Medium Title based on Account Key and Medium Description based on Object Code.
6. Open the prompt page and delete the existing Search and Select Prompt and the "Select Account" text item.
7. Drag a new Value Prompt into the bottom left cell of the table.
8. In the Wizard, create new Parameter, "DivisionPrompt", and click Next.

Prompt Wizard - Value Prompt   Help   X

Choose Parameter
Create a new parameter or use an existing parameter from a previously authored expression.

◉ Create a new parameter
[DivisionPrompt]

○ Use existing parameter
[▼]

9. Create a parameterized filter, selecting Division_Program Code from the Account query subject, and click Next.

10. Create a new query as shown, leaving the defaulted Division_Program Code as the Values to use and click Finish.

11. Select your new Value prompt, and in the Properties, change Select UI to **Radio button group**, and the Auto-Submit property to **Yes**.

12. Add Division_Program Code to the sort list in the Sorting property.
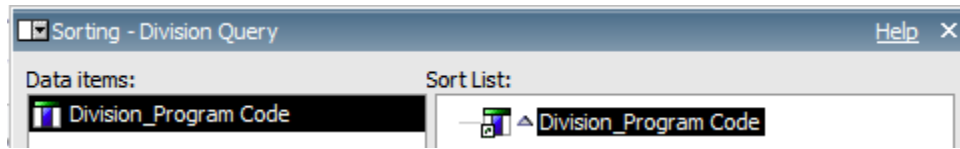
13. In the table cell above your new prompt, add a text item, "Select Division Code:"
14. Next, add a second Value prompt in the bottom right cell of your table and create a new parameter for Account Number. Click Next.
15. Set the Package Item to the Account Number from the Account query subject. Change the Operator to "in" and click Next.

16. Select Query1 as the query to filter and click Next.

17. Create a new query as shown, leaving the defaulted Account Number as the Values to use, and selecting Medium Title from the Account query subject in the Values to display. Note the drop-down box to select a Cascading source. Select **DivisionPrompt**, and click Finish.
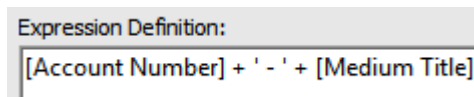
18. Using the Query Explorer, navigate to your new query, Account Number Query.
19. Drag a new Data Item from the Toolbox into the Data Items panel of your query, and define it as shown below:

20. Change the Name property of this new Data Item to "Account Number and Title".
21. Return to your prompt page, select your Account Number Prompt, and re-set the Display Value property to your new Account Number and Title data item.
22. Add Account Number to the sort list in the Sorting property (ascending).

23. Add a text item for the "Select Account Number:" prompt.
24. Add 20 pixels of padding to the bottom of the Date Range prompt table cell.

25. Back on the report page (or in Query1) change the Usage property of the AccountPrompt parameter to **Disabled**.
26. Save your report specification as **Effective Prompts – Cascading**.
27. Run your report, selecting the month of December 2010 for the date range, and select 20 in the Division prompt.

Note that the Account Number prompt then fills with only those accounts that are part of the Division item selected.

28. Click in the Account Number prompt, type "202" to move more quickly to the selections of the list that start with "202", and then shift-select all names starting with "202".

29. Click Finish.

Prompts that Allow Users to Determine Formatting

Step-By-Step
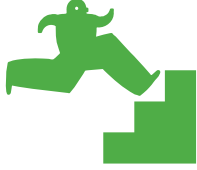
Designing Prompts for Conditional Formatting

In this exercise we demonstrate how prompts can be used to control conditional formatting, such as hiding and showing report objects or controlling other formatting options.

1. Create a new List report using the **UCAR Training** package.
2. Save your report specification as **Effective Prompts – Conditional Formatting**.
3. From the CPM Training Data namespace, General Ledger namespace, Account query subject, add the following data items to the report:
    *   Entity Code
    *   Lab Code
    *   IFAS Fund Source Code
    *   IFAS Fund Source Medium Description

4. From the General Ledger Details query subject, add Net Amount to the end of the report.
5. Using the Query Explorer, navigate to your Query1.
6. Drag a new Data Item from the Toolbox into the Data Items panel of your query, and define it as shown below:

Expression Definition:

```
total([Net Amount])/total([Net Amount] for [Entity Code], [Lab Code])
```

7. Change the Name property of this new Data Item to "% of Lab Total".
8. Return to your report page, add % of Lab Total from the Data Items tab to your report.
9. Group Entity Code and Lab Code.
10. Highlight the Net Amount column and format the data as **Currency** type.
11. Highlight the % of Lab Total and format the data as **Percent** type with **2** decimal places.
12. Aggregate (Automatic Summary) on Net Amount and % of Lab Total.

13. Add two parameterized Advanced Detail filters:

Expression Definition:

[IFAS Fund Source Code] in ?IFASPrompt?

Expression Definition:

[General Ledger].[General Ledger Details].[Post Date] in_range ?PostDatePrompt?

14. Create a new Prompt Page.
15. Add a 4 rows x 2 column table to the prompt page.
16. In the top left cell add a Text Item (label) "Select Post Date Range:".
17. In the second row left cell, add a Date Prompt for your ?PostDatePrompt? parameter.
18. Highlight the new prompt, and change the Multi –Select property to **No** and the Select UI property to **Edit Box**.
19. In the 2nd column, top cell, add a Text Item "Select IFAS Fund Source:"
20. In the 2nd column, second cell, add a Select & Search Prompt using your ?IFASPrompt? parameter. Click Next.
21. Create a new Query (IFAS Query), using the default IFAS Fund Source Code as the Values to use property (IFAS Fund Source Code will automatically display as the Values to display property). Click Finish.

Prompt Wizard - Select & Search Prompt   Help ✕

Populate control

What values do you want to pick from? Use values are the retrieved data, and Display values are the selectable values that the user sees.

☑ Create new query

Name: IFAS Query

Values to use: [General Ledger].[Account].[IFAS Fund So ⋯

Values to display: ⋯

22. In the 3rd row cells of the table, add two Text Items: "Show IFAS Fund Source Code?" and "Highlight Percentages?"
23. Drag a Value Prompt from the Toolbox into the bottom left cell, and use the Prompt Wizard to create a new Parameter "Show IFAS Code".
24. Click Finish.

25. Highlight your new prompt, click the ellipsis in the Static Choices property, and enter static values for this prompt (Yes/No). (Use the Add button on the lower left of the Static Choices dialog box to enter values)
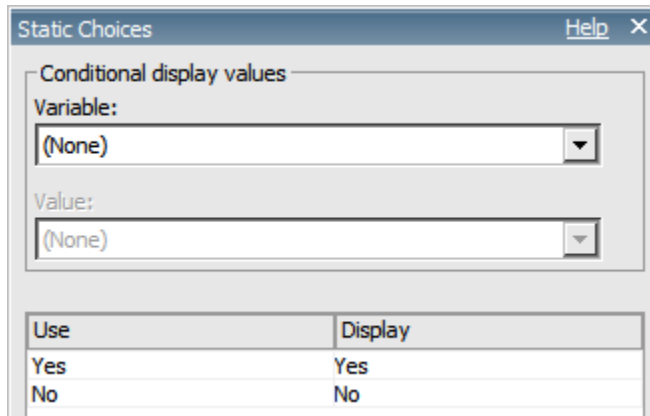
26. Using the Condition Explorer, navigate to the Variables folder and create a new Boolean Variable with the expression shown below. Name it "Show IFAS Code".
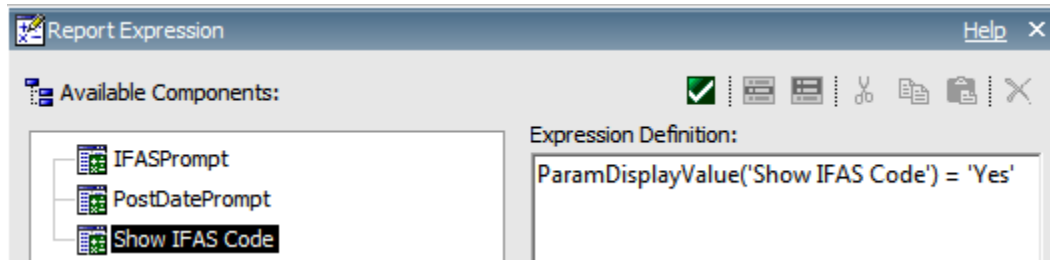
Note that in the above step, we used the Parameters tab, and dragged our Show IFAS Code parameter into the expression.

27. Navigate to the report page and, after selecting each subtotal and Summary line (List cell) for IFAS Fund Source Code, click on the Split Cell at the top. You will need to do each summary line separately.

Note that splitting the cell allows for separate formatting of each column of the summary row.

28. Set the Style Variable property for the IFAS Fund Source Code column title, column body, and all summary cells by associating them one by one with this new variable.
29. Using the Condition Explorer, navigate to the "No" condition for this new variable.
30. Set the Box Type property for the IFAS Fund Source Code column title, column body, and all summary cells (Ctrl-click) to **None**.
31. Run your report selecting December 1 through 31, 2010; search for and select all IFAS Fund Sources beginning with NSF for the IFAS Fund Source prompt.
32. Choose **No** in the Show IFAS Fund Source Code prompt. Note that the column will not be shown.

Next we add a prompt to allow the user to optionally highlight % of Lab Total by color choice.

33. Return to your prompt page. Drag a new Value Prompt into the empty table cell.
34. Allow the Prompt Wizard to create a new parameter, "HighlightPercent", and click Finish.
35. Highlight the new prompt and set its Static Choices property as shown below:

36. Using the Condition Explorer, navigate to the Variables folder.

37. Create a new String Variable with the following expression. Name it "Highlight Percent".

38. Recall you must also manually add the possible Prompt choices into the Values area of your variable definition as shown below:
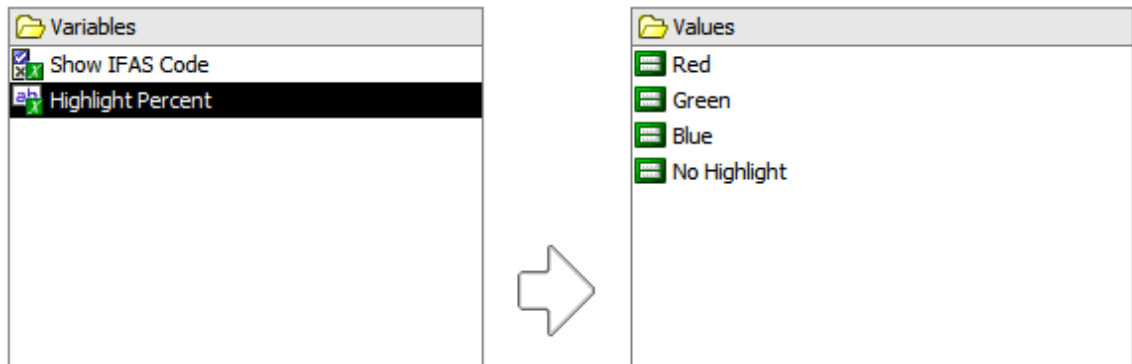
39. Return to the report page and associate the Summary(% of Lab Total) summary rows with this new variable by setting the Style Variable property.
40. Using the Condition Explorer, navigate to each of the possible variable outcomes in turn, and set the Foreground Color property appropriately for the % of Lab Total.

Your prompt page should now look like this:

41. Save your report as **Effective Prompts - Conditional Formatting**.
42. Run your report (December 1 through 31, 2010; search for and select all fund sources beginning with the 'NSF'), choose to show or not show the IFAS Fund Source Code, and choose a color to display. Note that the % of Lab Total summary rows are shown in the chosen color.

Dynamically Display Prompt Selections

Step-By-Step

Using Prompts to Sort Data

In this example we use a prompt to allow the user to choose a sort order for a list report.

1. Create a new List report using the **UCAR Training** package and save the report specification as **Effective Prompts – Sort**.
2. Add the following fields from the CPM Training Data namespace, General Ledger namespace, Person query subject**:**
   - Person Entity Identifier - PEID
   - Name

3. From the Date query subject add Fiscal Year.

4. From the General Ledger Details query subject, add the following fields:
   - Account Key
   - Net Amount

5. Add Advanced Detail filters as shown:

Expression Definition:
[Fiscal Year] <> 2011
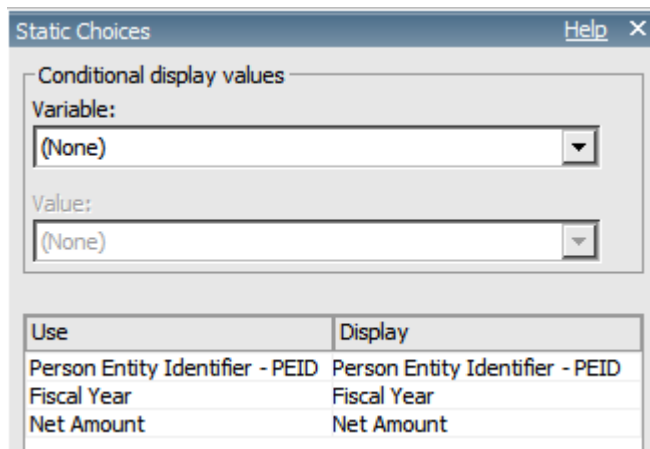
Expression Definition:
[General Ledger].[Object Code].[Object Code] between '5200' and '5699'

Expression Definition:
[Person Entity Identifier - PEID] in ('011337', '023818', '047192')

6. Create a new prompt page.
7. Drop a 2 row x 1 column table onto your prompt page.
8. In the top cell of the table, create a Text Item (label) "Sort By:"
9. In the bottom cell of the table, drag a Value Prompt from the Toolbox.
10. Allow the Prompt Wizard to create a new parameter, "SortField", and click Finish.
11. Create static values for your prompt as shown below:

Static Choices   Help ✕

Conditional display values
Variable:
(None)   ▼

Value:
(None)   ▼

Use	Display
Person Entity Identifier - PEID	Person Entity Identifier - PEID
Fiscal Year	Fiscal Year
Net Amount	Net Amount

12. Using the Page Explorer, navigate to your Page1.

13. Drag a new Query Calculation into the list, select Other Expression, name it "SortField", and define it as shown below:

```
Expression Definition:
CASE

WHEN ?SortField? = 'Person Entity Identifier - PEID'
THEN [Person Entity Identifier - PEID]

WHEN ?SortField? = 'Fiscal Year'
THEN [Fiscal Year]

WHEN ?SortField? = 'Net Amount'
THEN [Net Amount]

END
```

14. Select the SortField list item, and click the Sort icon in the Toolbar, and select Ascending.
15. Run your report several times and prove that the report is sorted based upon the prompt choice.
16. Hide the SortField column by Ctrl-clicking the List Column Title and the List Column Body and changing the Box Type Property to **None**.

Note that you can control the visibility of hidden items on your report page by selecting the Visual Aids icon in the Toolbar.
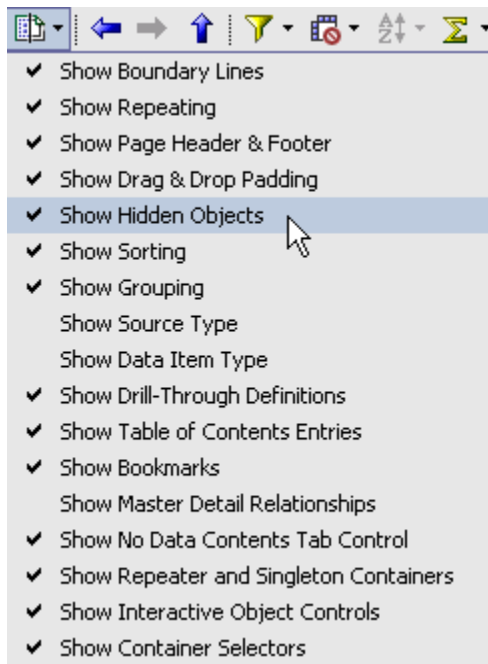
17. Return to your report page.
18. Set the report title to "Sorted by: ".

19. Drag a new Layout Calculation from the Toolbox, dropping it just to the right of your report title.
20. In the Expression Editor, drag your SortField parameter into the expression as shown below:

Expression Definition:
ParamDisplayValue('SortField')

21. Click OK.
22. Set the Classes property (Global Class) for your new calculation to **Report title text**.
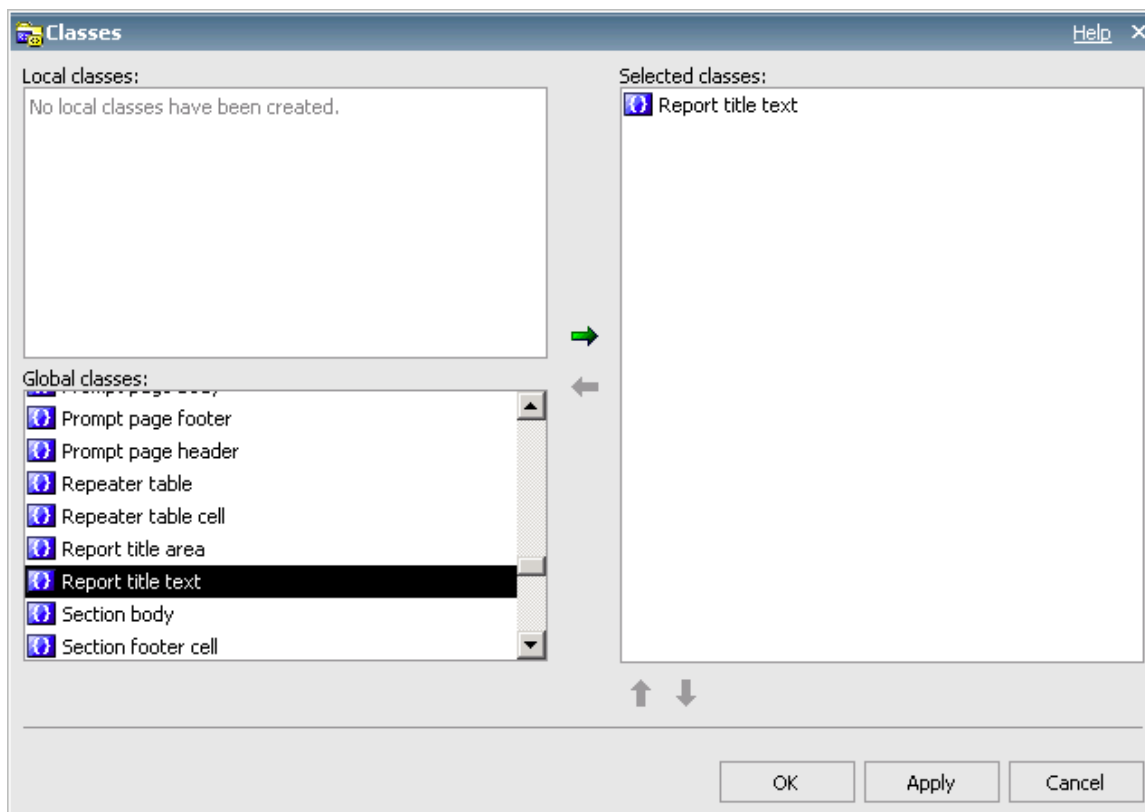
23. Save your report specification as **Effective Prompts - Sort**.

24. Run your report, selecting Net Amount as the SortField, and note that your parameter choice is displayed as part of the report title.

Sorted by: Net Amount

Person Entity Identifier - PEID	Name	Fiscal Year	Account Key	Net Amount
011337	ORR, EDDIE	2009	150954	-816.95
023818	MCCRAY, SHELDON	2007	195003	-169
011337	ORR, EDDIE	2007	309278	0
023818	MCCRAY, SHELDON	2008	123685	0
047192	MCGUIRE, SANTOS	2010	312010	3.15
011337	ORR, EDDIE	2006	150011	12
023818	MCCRAY, SHELDON	2010	150018	30
011337	ORR, EDDIE	2007	780700	39.3
023818	MCCRAY, SHELDON	2006	195004	58.84
047192	MCGUIRE, SANTOS	2010	309274	92.49
047192	MCGUIRE, SANTOS	2010	151150	95
023818	MCCRAY, SHELDON	2006	195001	108.45
011337	ORR, EDDIE	2010	309158	114.1
047192	MCGUIRE, SANTOS	2010	309275	115
047192	MCGUIRE, SANTOS	2006	309274	129.5
023818	MCCRAY, SHELDON	2007	123612	156.19
047192	MCGUIRE, SANTOS	2008	406131	231.57
011337	ORR, EDDIE	2006	309278	248.21
023818	MCCRAY, SHELDON	2007	195001	300.83
047192	MCGUIRE, SANTOS	2009	309274	307.88

Chapter 6 – Working with Multiple Queries

As you build more and more advanced reports, you frequently have the need to use multiple queries in a report. We saw before the ability to combine several reports and report types on one page. You may also discover the need to override a join that is inherited from the Framework Manager package, or establish new joins for a particular format. This chapter demonstrates some of the techniques available in Report Studio to accommodate these requirements.

Step-By-Step

Creating Relationships between Queries

In this example, we create a "Master – Detail" relationship between two queries. Let's set up a report to first return information for Account Numbers, with the total Net Amount for expenses. We then want to follow each Account Number's information with details about the expense categories.

1. Create a new List report using the **UCAR Training** package and save as **Relationships**.
2. Navigate to the Queries folder using Query Explorer.
3. Using the Name property, rename the default Query1 to "Account".
4. Double-click your Account query.
5. From the CPM Training Data namespace, General Ledger namespace, Account query subject, drag the following query items into your new Account query's Data Items panel.

6. From the General Ledger Details query subject, add Net Amount.

7. Add the Advanced Detail filters as follows:

Expression Definition:
[General Ledger].[Account].[Status] = 'A' and
[General Ledger].[Account].[Lab Code] = 'HAO' and
[General Ledger].[Account].[Research Type Code] = 'NCAR'

Expression Definition:
[General Ledger].[Object Code].[Type Description] = 'Expense'

Expression Definition:
[General Ledger].[Date].[Fiscal Year] = 2010

8. Add a parameterized filter for Fiscal Month Number.

Expression Definition:
[General Ledger].[Date].[Fiscal Month Number] in ?Month Prompt?

9. Using Query Explorer, navigate to the Queries folder and drag in a new query from the Toolbox. Name this query "Details".
10. Double-click the Details query.
11. Drag the following query items into the Data Items panel from the Account query subject, Object Code query subject, and General Ledger Details query subject:

Data Items
Account Number
Medium Title
Expense Class Description
Object Code
Medium Description
Net Amount
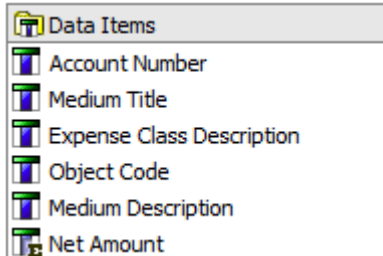
12. Add the following Advanced Detail filters:

Expression Definition:
[General Ledger].[Account].[Status] = 'A' and
[General Ledger].[Account].[Lab Code] = 'HAO' and
[General Ledger].[Account].[Research Type Code] = 'NCAR'

Expression Definition:
[General Ledger].[Object Code].[Type Description] = 'Expense'

Expression Definition:
[General Ledger].[Date].[Fiscal Year] = 2010

13. Next, navigate to your Report Page1.
14. From the Data Items tab, shift-click and drag the items from the Account query into your list report.
15. Group your existing list by Account Number.
16. Select the Net Amount data item and change the Data Format property to **Currency** with **0** decimal places.
17. Add an Account footer by using the **Structure, Headers & Footers, List Headers & Footers** menu selection.

List Headers & Footers   Help ×
☐ 🖩 List page header
☐ 🖩 Overall header
   ☐ 🖩 Account Number (header)
   ☑ 🖩 Account Number (footer)
☐ 🖩 Overall footer
☐ 🖩 List page footer
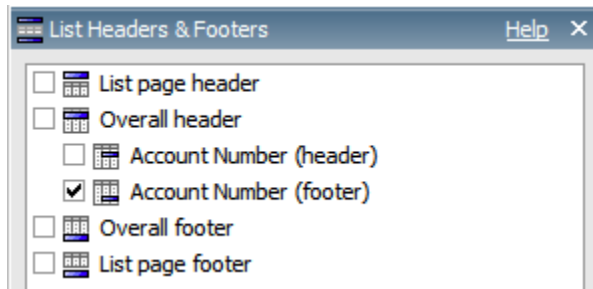
18. Unlock your report and delete the Account Number text item (object) that was placed in your new footer by default.
19. From the Data Items tab, drag your Details query into your new footer.
20. Lock your report.
21. Sort Ascending on Object Code.
22. Select the Net Amount data item in the second list and change the Data Format property to **Currency** with **0** decimal places.
23. Add a Total aggregate from the Toolbar on Net Amount .

Note that we have created a "List within a list", which is one way to display Master/Detail data in Report Studio.

24. Run the report (select 12 as the Fiscal Month Number):

Account Number	Long Title	Director	Entity Code	Division_Program Long Description	Lab Medium Description	Research Type Medium Description	Net Amount
121130	HAO General Administration	Rivas, T.	NCAR	High Altitude Observatory	High Alt.Obsv.	NCAR Research Type	$123,319

Account Number	Medium Title	Expense Class Description	Object Code	Medium Description	Net Amount
123603	Model Storm-Time	Salaries	5001	Salaries-PHD Sci	$4,485
128353	ViSP Base	Salaries	5001	Salaries-PHD Sci	$14,699
128520	SCOSTEP	Salaries	5001	Salaries-PHD Sci	$23,237
123302	CCS	Salaries	5001	Salaries-PHD Sci	$10,201
123522	MDL SOLAR CYCLE	Salaries	5001	Salaries-PHD Sci	$8,630
128710	SP WEATHER CMES	Salaries	5001	Salaries-PHD Sci	$14,430
121131	HAO - B&P	Salaries	5001	Salaries-PHD Sci	$88,174
123437	CORONAL MORPH	Salaries	5001	Salaries-PHD Sci	$7,736
124612	SPACE WX	Salaries	5001	Salaries-PHD Sci	$11,299
123652	SOLAR IRRADIANCE	Salaries	5001	Salaries-PHD Sci	$13,170

When your report is displayed you see only information for a specific Account Number in the first list, but the detail report is displaying information for all Account Numbers in each Account Number footer. You may also notice that the time to display this report is rather long. This is because we have not yet specified a relationship between these two queries. In this scenario we must specify a relationship between our two queries in order for the report to work properly.

25. On your Report page, highlight a column in the bottom list, and use the Select Ancestor arrow to select the "nested" **List** object.
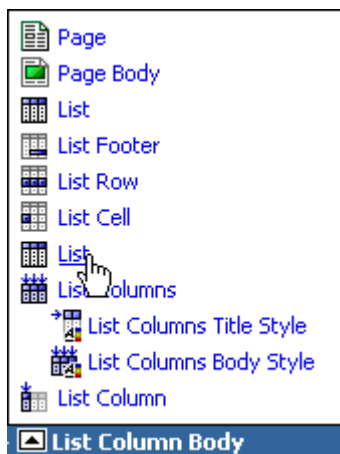
26. Click on the ellipsis in the Master Detail Relationships property.
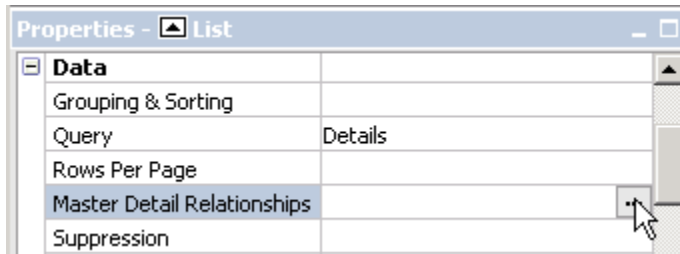
27. In the Master Detail Relationships window, click on New Link, and establish the JOIN between your two queries using Account Number by highlighting the field in both the Master and the Detail.
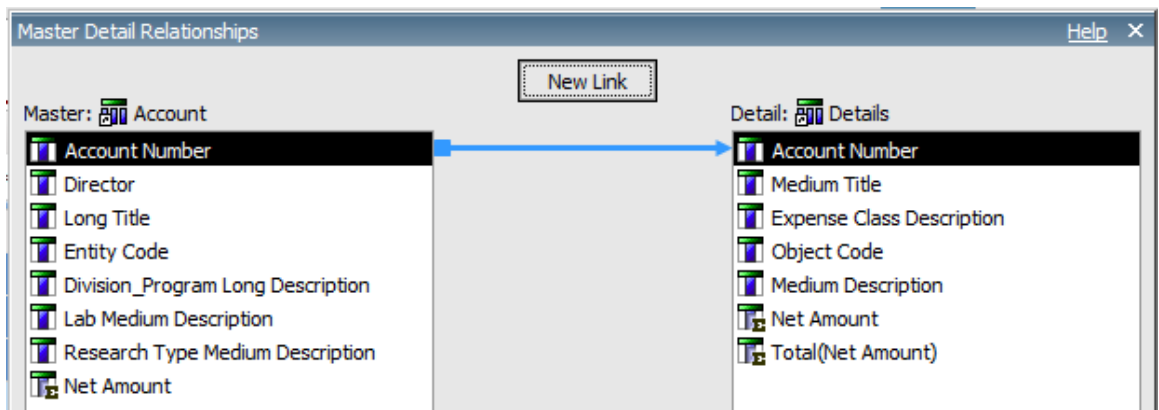
28. Click OK.
29. Run your report again using 12 as the Fiscal Month Number.

Now the detail is displaying information for the correct Account Number; however, note that the Net Amount in the main list does not reflect the correct totals in the detail.

30. Click in the Details list, and add a parameterized filter to match the Fiscal Month Number query filter:

Expression Definition:

[General Ledger].[Date].[Fiscal Month Number] in ?Month Prompt?

31. Save your report specification as **Relationships**.
32. Run the report again.

Account Number	Director	Long Title	Entity Code	Division_Program Long Description	Lab Medium Description	Research Type Medium Description	Net Amount
121130	Rivas, T.	HAO General Administration	NCAR	High Altitude Observatory	High Alt.Obsv.	NCAR Research Type	$123,319

Account Number	Medium Title	Expense Class Description	Object Code	Medium Description	Net Amount
121130	HAO Gen Admin	Salaries	5001	Salaries-PHD Sci	$14,627
121130	HAO Gen Admin	Salaries	5007	Salaries-Admin.	$17,831
121130	HAO Gen Admin	Salaries	5008	Salaries-Secreta	$21,171
121130	HAO Gen Admin	Benefits	5101	Full Benefits	$27,833
121130	HAO Gen Admin	Materials & Supplies	5246	Misc Off Supp	$1,312
121130	HAO Gen Admin	Materials & Supplies	5260	Mat-General	($844)
121130	HAO Gen Admin	Materials & Supplies	5271	Maint. Materials	$769
121130	HAO Gen Admin	Materials & Supplies	5272	SCD Materials	$400
121130	HAO Gen Admin	Materials & Supplies	5280	Computer periphe	$1,363

Note that the report now displays all Account Numbers, followed by pertinent information about each Expense by Account Number.

It is important to consider that when you have a master-detail relationship design for your report, filters can and should be applied carefully to ensure that you are getting the correct results. When the filters are not applied to both queries the results can be invalid. Note also that several queries can utilize the same prompt as long as the parameter is identical.

NOTE

In this exercise we created a report that displays detail information for each Account Number AND displays expense information detail if that data exists for the Account Number. This is not exactly the same as if we had used a single List object that contained data items from both query subjects and was simply grouped by Account Number. The reason behind this is that the join type defined between the two query subjects in the single list example controls the output, whereas with the "list within a list" approach the report author controls the output.

In other words, you will come across situations where the defined join (defined in the Framework Manager model) between two query subjects, "A" and "B" for example, is a "left inner join", meaning data from query subject A is only shown when there is associated data from query subject B. In these cases, the report author can avoid the join restriction of the model by creating a master-detail query.

Step-By-Step
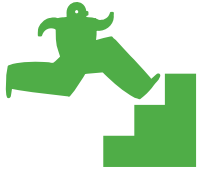
Creating Discontinuous Crosstab Reports

Discontinuous Crosstabs are those in which the row or column dimension contains a combination of more than one dimension in the same level. In this example we create a crosstab that contains Net Amounts by Fiscal Year. The rows dimension display by Fiscal Year, but the column dimension displays by **both** Entity Code and Lab Code. This type of Crosstab report is generated by using a "Union" object in Report Studio.

1. Create a new Crosstab Report using the **UCAR Training** package and save it as **Union**.
2. Using Query Explorer, navigate to Query1.
3. Insert the following items from the CPM Training Data namespace, General Ledger namespace, Date, Account, and General Ledger Details query subjects respectively:

4. Add the following Advanced Detail filters:

Expression Definition:
[General Ledger].[Date].[Fiscal Year] <> 2011

Expression Definition:
[General Ledger].[Account].[Entity Code] in ('NCAR', 'UOP', 'UCAR')
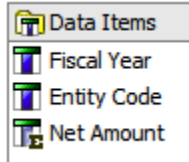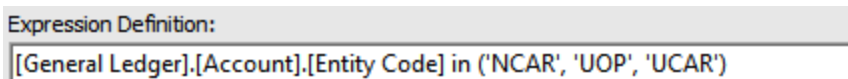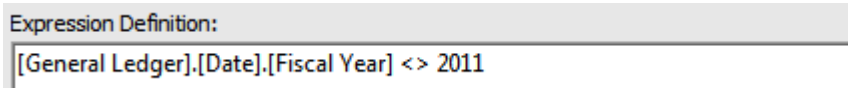
5. Using Query Explorer, click on Queries and add a new query, Query2.
6. Double-click on the Query2 icon, and add the following items from the Date, Account, and General Ledger Details query subjects respectively:
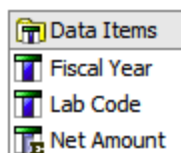
7. Add the following Advanced Detail filters:

Expression Definition:
[General Ledger].[Date].[Fiscal Year] <> 2011

Expression Definition:
[General Ledger].[Account].[Entity Code] in ('NCAR', 'UOP', 'UCAR')

8. Again using Query Explorer, click on Queries and add a Union item.
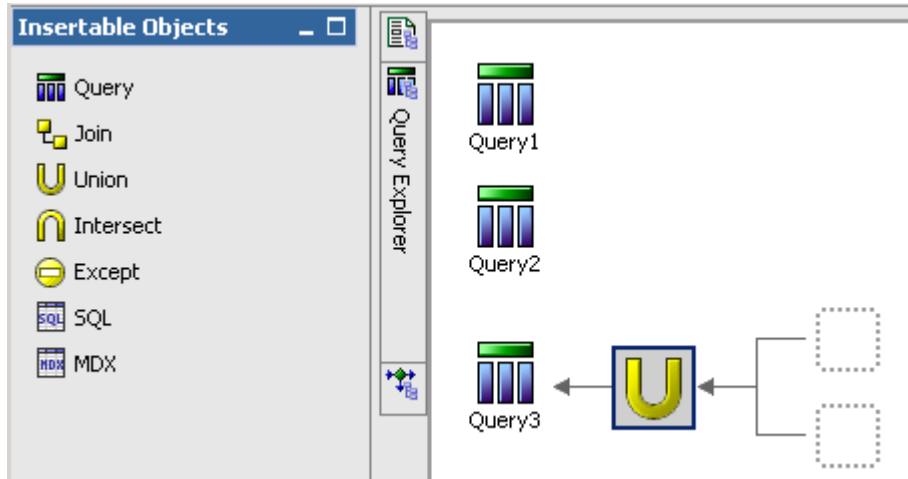
9. Drag Query1 into the top dotted line box of the Union Query, and Query2 into the bottom.
10. Double-click on Query3.

Note that the second data item in Insertable Objects is Entity Code. This is the same behavior as with an SQL union in that the column names in the result set are taken from the first query executed by the Union. This data item actually contains both Entity Code and Lab Code.

11. Drag the three Union1 Insertable Objects into the Data Items panel.
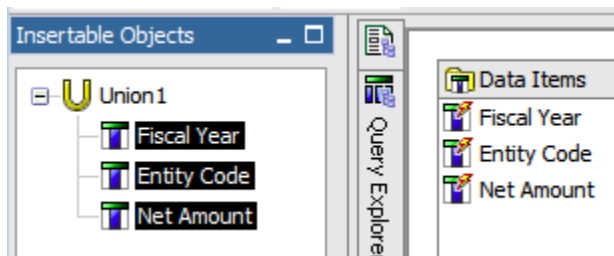
12. Mouse over your Query Explorer. The Query structure should now look like this:
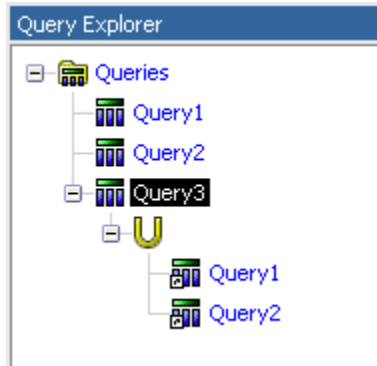
13. Return to your Crosstab Report Page1.
14. Click in the Crosstab (use the Select Ancestor arrow to ensure that you have selected the **Crosstab** object).
15. Change the Query property to **Query3**.
16. From the Data Items tab, drag Entity Code from Query3 into the Columns drop zone.
17. Drag Fiscal Year into the Rows drop zone.
18. Drag Net Amount into the Measures drop zone.
19. Sort ascending on the Fiscal Year row headings and the Entity Code column headings.
20. Highlight the Net Amount measures area, click on the Data Format icon, and format it as **Currency** with **0** decimal places.
21. Save your report specification as **Union**.
22. Run your report:

Net Amount	CISL	CSMP	DIR	EOL	ESSL	HAO	NCAR
2006	$22,730,655	$670		$31,681,708	$41,035,765		($15,479,944)
2007	$29,105,724	$392		$31,244,660	$41,891,635		($16,533,165)
2008	$31,470,852	$221	($890,895)	$28,615,992	$42,371,990		($8,188,372)
2009	$31,443,385	($2,681)	($10,938,496)	$35,071,044	$41,179,799	$248,670	($8,673,251)
2010	$39,154,153		($8,954,176)	$39,385,423		$8,533,446	($4,937,923)

We now have two dimensions shown in our columns that are not nested dimensions.

NOTE

You could sort this crosstab by the separate dimensions in the column heading (first by Entity, then by Lab) by adding a new data item into both Query1 and Query2, with the text "'Group1'" and "'Group 2'", respectively. Use the Pre-Sort property for Entity in Query1 and for Lab in Query2. Add the new data item to your Union query (Query3); then add the new Group data item to the Sorting property of the Entity column heading in your Crosstab. The result would look like this:

Net Amount	UOP	NCAR	UCAR	CISL	CSMP	DIR	SERE	ESSL	RAL	ZZ	EOL	NESL	HAO	SWCL
2006	15,190,356.76	-15,479,944.2	289,587.44	22,730,654.76	670.29		6,696,760.98	41,035,764.63	12,573,174.16	-114,718,732.74	31,681,707.92			0
2007	13,542,967.05	-16,533,164.96	2,990,197.91	29,105,723.79	392.07		7,000,051.97	41,891,634.77	13,352,766.56	-122,595,229.33	31,244,660.17			
2008	7,411,188.21	-8,188,371.94	777,183.73	31,470,851.9	220.53	-890,895.17	6,765,000.03	42,371,989.76	13,714,577.65	-122,047,736.81	28,615,992.11			
2009	7,781,378.41	-8,673,250.77	891,872.36	31,443,385.45	-2,681.3	-10,938,495.92	740,899.43	41,179,799.17	12,834,131.23	-111,836,740.25	35,071,043.79	1,259,988.12	248,670.28	
2010	3,788,481.65	-4,937,922.8	1,149,441.15	39,154,152.59		-8,954,175.93	-26,144.6		24,169,227.12	-137,131,098.43	39,385,423.26	34,869,170.06	8,533,445.93	

Step-By-Step

Creating an Inner Join between Queries

In this exercise, we learn another technique to create relationships between multiple queries in order to more precisely control the report output, and utilize an "inner join".

1. Create a new List report using the **UCAR Training** package and save as **Join.**
2. Use Query Explorer to open the Query1.
3. Drag the following items from the CPM Training Data namespace, General Ledger namespace, Account query subject:
   - Entity Code
   - Entity Medium Description
   - Lab Code
   - Lab Medium Description
   - Division_Program Medium Description

4. Add Document Id from the General Ledger Details query subject into the end of your list.

5. Add the following Advanced detail filter:

Expression Definition:

[General Ledger].[Date].[Fiscal Year] = 2009

6. Change the Aggregate Function of Document Id to **Count** and the Rollup Aggregate Function to **Total**.
7. Change the Name property of the Document Id data item to "2009".
8. Again using Query Explorer, click on the Queries folder.
9. Right-click on Query1 and select **Copy**.
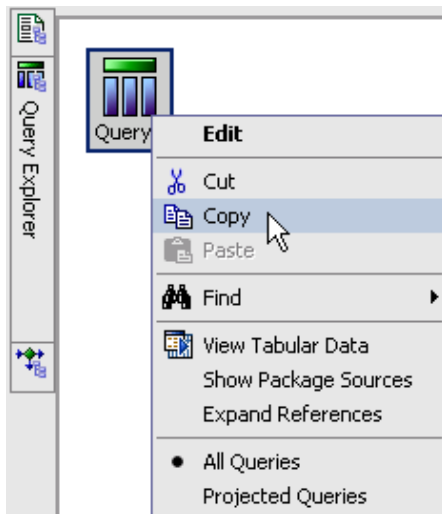
10. Click anywhere on the page, right-click again, and select **Paste**.
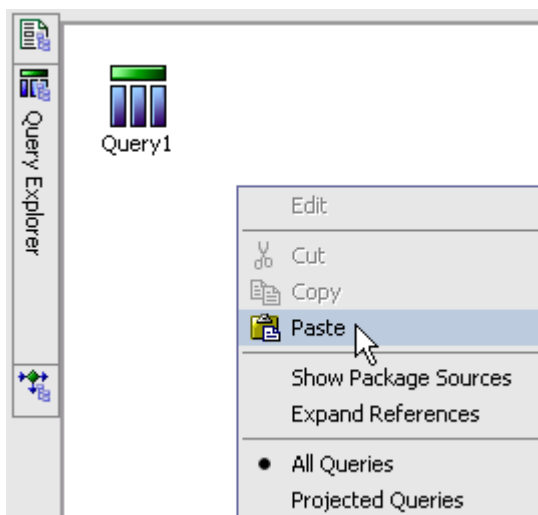
11. Double-click on the new Query2.

12. Edit the Fiscal Year filter as follows:

Expression Definition:
[General Ledger].[Date].[Fiscal Year] = 2010

13. Modify the Name property of the 2009 data item to "2010".
14. Using Query Explorer, click on Queries.
15. From Insertable Objects, add a Join object to the page.
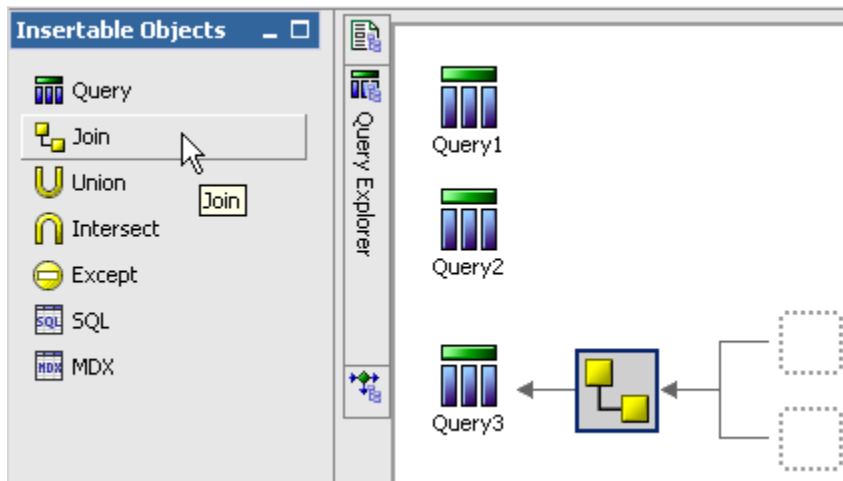
16. Drag Query1 into the top dotted line box of the Join query, and Query2 into the bottom.

17. Double-click on the Join icon to open the Join Relationships window.
18. Click on New Link to establish a relationship between Entity Code in both queries.
19. Click on New Link again to establish a relationship between Lab Code (click on the data item in both queries).
20. Establish a third relationship between Division_Program Medium Description.
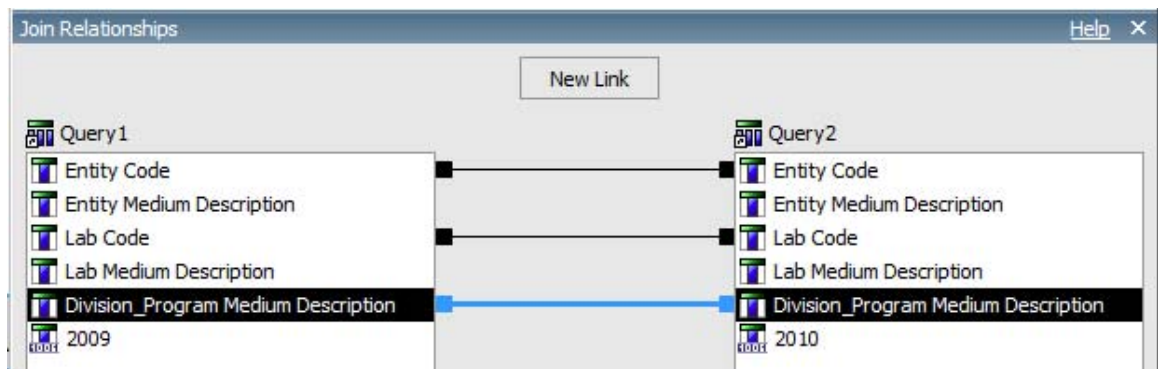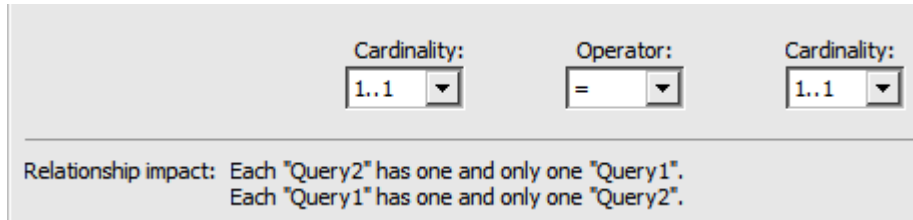
21. Change the Cardinality settings to 1..1 on both sides, but note the options to change the Operator, or the type of join (i.e., left or right outer join).
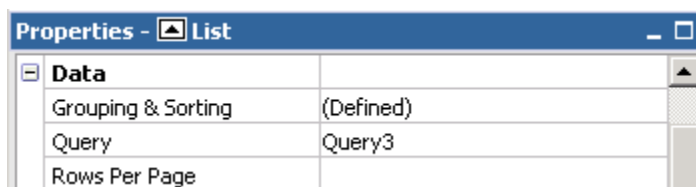
22. Click OK.
23. Double-click on Query3.
24. From Query1, drag Entity Code, Entity Medium Description, Lab Code, Lab Medium Description, Division_Program Medium Description, and 2009 into the Data Items panel.
25. Select the 2009 data item and change the Aggregate Function and the Roll-up Aggregate Function to **Total**.
26. Change the Label property to "2009".
27. From Query2, add 2010.
28. Select the 2010 data item and change the Aggregate Function and the Roll-up Aggregate Function to **Total**.
29. Change the Label property to "2010".
30. Add a new Data Item from the Toolbox, and complete the expression as follows:

Expression Definition:
([2010] - [2009]) / [2009]

31. Name the new item "Variance".
32. Return to the report page.
33. Use the Ancestor button to change the Query property of the List object to Query3.

34. From the Data Items tab, add all of the items from Query3 to your List.
35. Group on Entity Code and Lab Code.
36. Group span Entity Medium Description based on Entity Code and Lab Medium Description based on Lab Code.

37. Sort ascending on Division_Program Medium Description.

Entity Code	Entity Medium Description	Lab Code	Lab Medium Description	Division_Program Medium Description △	2009	2010	Variance
<Entity Code>	<Entity Medium Description>	<Lab Code>	<Lab Medium Description>	<Division_Program Medium Description>	<2009>	<2010>	<Variance>
		<Lab Code>	<Lab Medium Description>	<Division_Program Medium Description>	<2009>	<2010>	<Variance>
<Entity Code>	<Entity Medium Description>	<Lab Code>	<Lab Medium Description>	<Division_Program Medium Description>	<2009>	<2010>	<Variance>
		<Lab Code>	<Lab Medium Description>	<Division_Program Medium Description>	<2009>	<2010>	<Variance>

38. Select the Variance data item and change the Data Format property to **Percent** with **0** decimal places.
39. Ctrl-click to select both 2009 and 2010 and change the Data Format property to **Number** with a thousands separator.
40. Save the report specification as **Join**.
41. Run the report:

Entity Code	Entity Medium Description	Lab Code	Lab Medium Description	Division_Program Medium Description	2009	2010	Variance
CASH	Cash Fund	ZZ	N/A	CASH	9,873	10,159	3%
LLC	LLC	ZZ	N/A	UCAR Child Care	203	213	5%
NCAR	NCAR	CISL	Comp/Info System	CISL	13,699	20,389	49%
				IMAGe	2,043	1,146	-44%
				SCD	9,121	3,084	-66%
		DIR	NCAR Directors	ASP	3,229	3,314	3%
				ISP	78	1,327	1,601%
				NCARDIR	2,419	2,791	15%
		EOL	Earth Observ.	ATD	4,800	3,873	-19%
				EOL	37,171	39,769	7%
		HAO	High Alt.Obsv.	HAO	1,242	32,918	2,550%
		NESL	NCAR Earth Syst	ACD	1,261	35,581	2,722%
				CGD	1,356	30,026	2,114%
				EOL	17	32	88%
				ESSL	30	537	1,690%
				MMM	1,113	32,847	2,851%
				TIIMES	256	738	188%

NOTE

If your report requires an Outer Join, you must also ensure that the Outer Join Allowed property of the Query is set to Yes.

Chapter 7 – Advanced Reports

In this chapter we examine a variety of additional miscellaneous techniques and tips that you might call upon to enhance your reports.

Step-By-Step

Creating Dynamic Headers and Titles that Reflect Report Data

1. Create a new List report using the **UCAR Training** package.
2. Add the following columns to the report from the CPM Training Data namespace, General Ledger namespace, Account query subject:
   - Lab Code
   - Lab Medium Description
   - Division_Program Code
   - Division_Program Medium Description
   - IFAS Fund Source Code

3. Add Net Amount from the General Ledger Details query subject.
4. Group on Lab Code and Group Span Lab Medium Description on Lab Code.
5. Group Division_Program Code and Group Span Division_Program Medium Description on Division_Program Code.
6. Create the following Advanced Detail filters:

Expression Definition:
[General Ledger].[Date].[Fiscal Year] = 2010

Expression Definition:
[General Ledger].[Account].[Entity Code] = 'NCAR'

7. Save the report specification as **Dynamic Headers.**
8. Using Page Explorer, navigate to the Report Pages folder.

9. Add a Page Set from Insertable Objects.

10. Highlight the new PageSet1, and in the Properties pane, change the Query property to **Query1**.
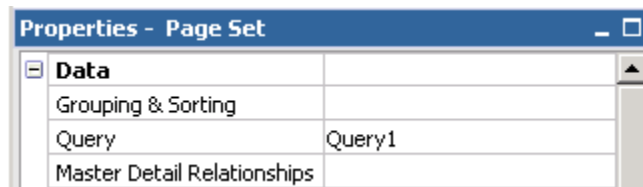
11. Click on the ellipsis in the Grouping & Sorting property.
12. Drag Lab Code into the Groups folder in the right pane and click OK.

13. On the Report Pages, drag Page1 into the Detail Pages folder.

14. Return to Page1.

15. Select the report Title. Change the Source Type property from **Text** to **Report Expession**.
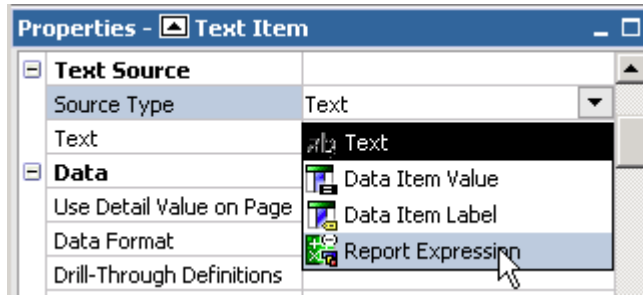
16. Define the following expression for the report title:

Expression Definition:

'Lab: ' + [Query1].[Lab Code] + ' - ' + [Query1].[Lab Medium Description]

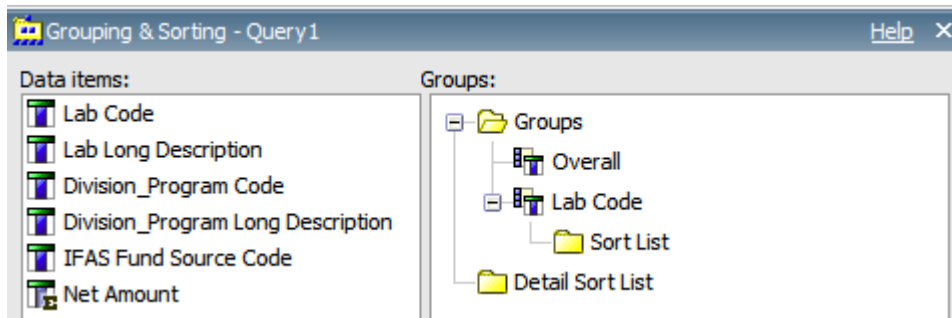17. Run your report and notice your title. Note that the defined page break is what provides the necessary context for Report Studio to display data in the header in this fashion.
18. Drag a new Block from the Toolbox into the report header, beneath the current title block.
19. Change the Classes property (Global Class) of this new block to **Report title area**.
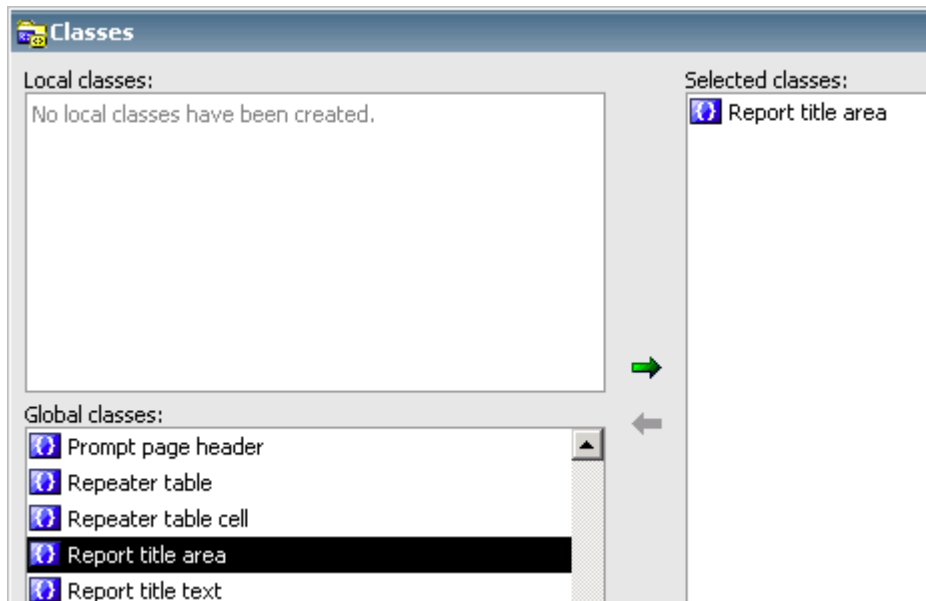
20. Drag a Text Item from the Toolbox into your new block, and type "Run on: ".

21. Now drag the Date tool from the Toolbox and place it to the right of the Text Item.

Insertable Objects

- Hyperlink
- Hyperlink Button
- Date
- Time Date
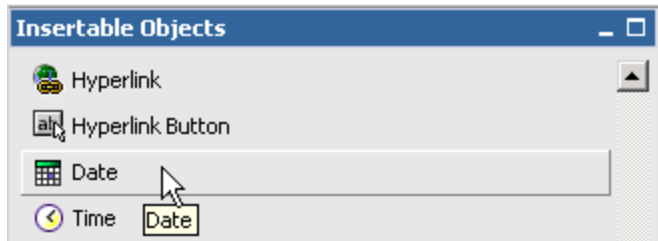
22. Highlight the Net Amount column, click on the Data Format icon, and format it as **Currency** with **0** decimal places.
23. Save your report specification as **Dynamic Headers**.
24. Run your report again, and verify that the subtitle displays properly and includes today's date.

Lab: CISL - Comp/Info System
Run on: Sep 11, 2011

Lab Code	Lab Medium Description	Division_Program Code	Division_Program Medium Description	IFAS Fund Source Code	Net Amount
CISL	Comp/Info System	13	SCD	FACGAU	$2,638
				MISCREV	$7,694
				NSFRGC	($53,033)
				RESIDUAL	($4,943)
				DONC	$0
				DOE	($24,607)
				NSFRCORE	$53,033
				UNIV	$0
				NRL	$0
				NASA	$0
				NSFGRANT	($420,987)
		23	IMAGe	NSFGRANT	$86,469
				NASA	$0

Step-By-Step

Creating a Form

1. Open the **Dynamic Headers** report, and save it as **Forms**.

We next modify this list report and use the underlying data to create a form (form letter).

2. Since the Lab Code and Lab Medium Description are in the title, we can cut ✂ them from the report.
3. Click in the Page Body. Use the Select Ancestor arrow to select the Page object.
4. Connect your Page object to Query1, using the Query property.
5. Select a list cell and use the Ancestor arrow to open the List properties.
6. In the Data section of the List object, click the ellipsis in the Properties property, and check the boxes for Lab Code and Lab Medium Description as shown.
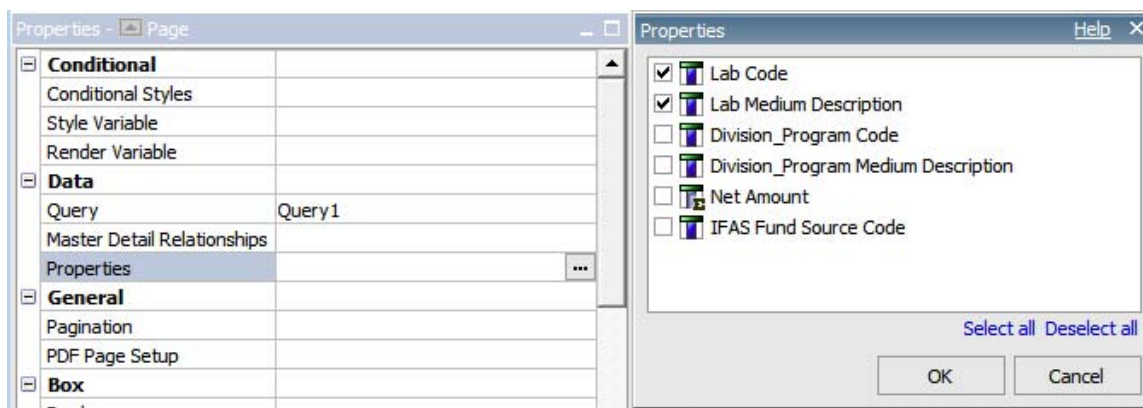
NOTE

When a Data Item exists in a query, but is not referenced in the page layout, the Query must be associated with the Page and the item(s) must be added to the Properties associated with the report. After we cut Lab Code and Lab Medium Description from the List, these steps must be taken in order for the Report Expression in the header to work properly.

7. Use Query Explorer to open Query1.
8. Add a new Data Item, and concatenate Lab Medium Description with a space, a dash, a space, the Division_Program Code and the Division_Program Medium Description in parentheses in the Expression window as shown:

Expression Definition:

[Lab Medium Description] + ' - ' + [Division_Program Code] + ' (' + [Division_Program Medium Description] + ')'

9. Change the name of your new Data Item to "Lab Division".
10. Edit the existing "hard-coded" Fiscal Year detail filter to create a parameterized filter:

Expression Definition:

[General Ledger].[Date].[Fiscal Year] in ?FiscalYearPrompt?

11. Return to Page1 and cut Division_Program Code and Division_Program Medium Description from the report.
12. Add the new Lab Division data item to the beginning of your list.
13. Group on Lab Division.
14. Use the Select Ancestor button to view the List properties.

15. In the Grouping & Sorting property, delete Division_Program Code from the Groups list.
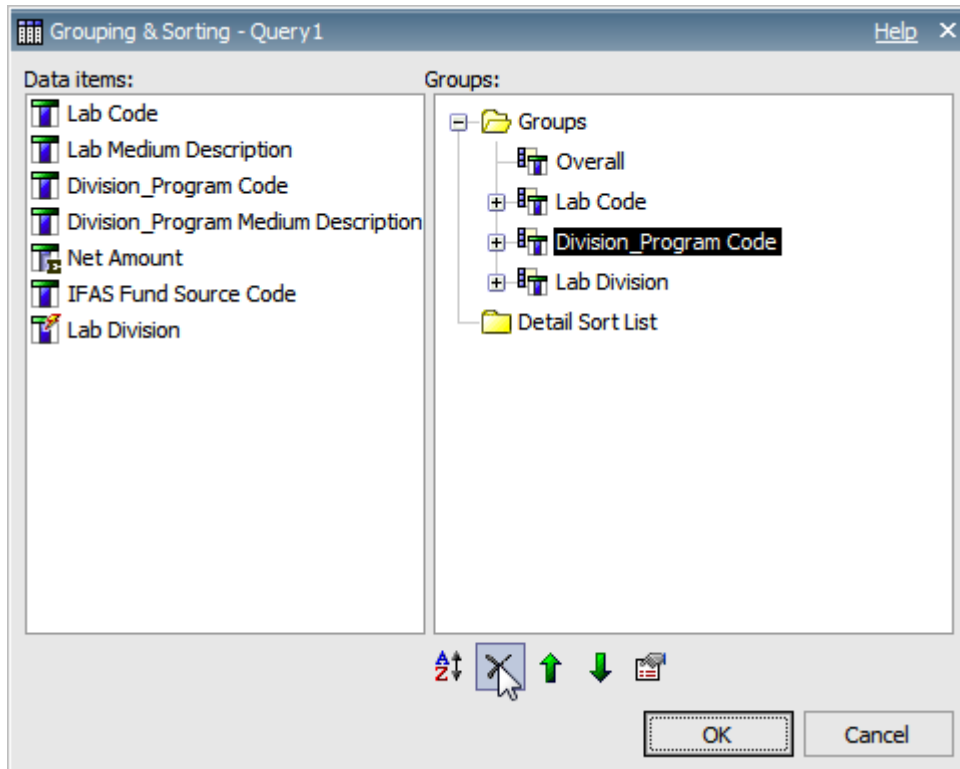
In the next steps we add a second page break to the report.

16. Using Page Explorer, return to the Report Pages folder, and view the Page Set.
17. Right click on Lab Code and then select **Edit**.

18. This allows you to add Lab Division to the Groups folder underneath Lab Code:
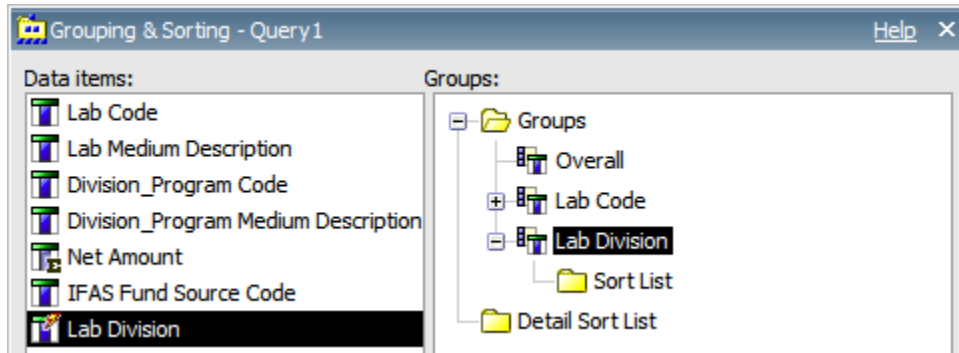
Now the report will first break on Lab Code, then on the Lab Division expression within each Lab Code.

Back in Report Pages, the layout should look as follows:
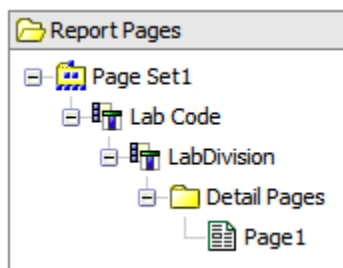
19. Return to Page1, click on the page body and add a 4 row x 1 column table to the page.
20. Drag your existing list into the 3rd row of this table (You need to use the Select Ancestor arrow to select the entire list).
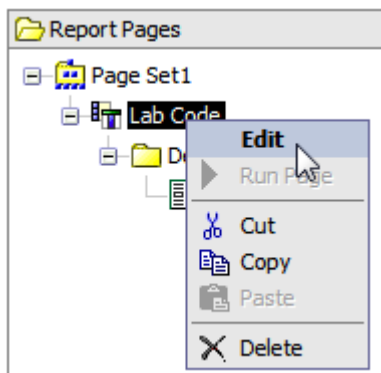21. Drag a Text Item into the top cell of the table and type "FOR: " into the text box.
22. Next, drag Lab Division from the Data Items tab into the cell just to the right of your Text Item.
23. Ctrl-click "FOR: " and Lab Division. Use the Toolbar to format the font, changing the Size to **12 pt** and the Weight to **Bold**.
24. Drag a Text item into the second row of the table and add the following text: "The following is a summary of Net Amounts for the Division in ".

25. From the Toolbox, drag a Layout Calculation to the right of the previous Text Item, and add the FiscalYearPrompt parameter to the expression:

Report Expression	Help ✕
🔲 Available Components:	☑ 📑 📑 ✂ 📋 📋 ✕
— 📊 FiscalYearPrompt	Expression Definition:
	ParamDisplayValue('FiscalYearPrompt')
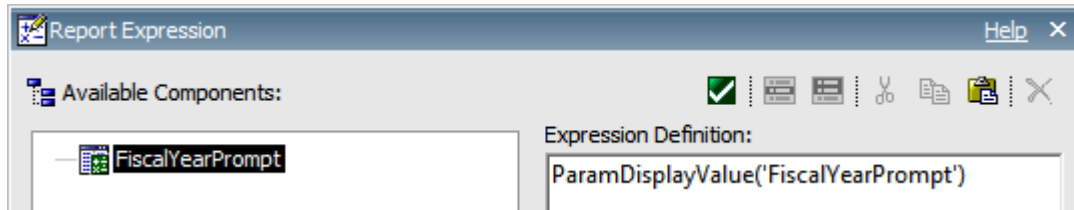
26. In the bottom cell of the table add another Text Item: "Thank you, University Corporation for Atmospheric Research (UCAR)".
27. Add 20 px padding to the bottom of the 2nd table cell and 20 px padding to the top of the 4th table cell.
28. Cut ✂ Lab Division from the list.
29. From the Account query subject, insert IFAS Fund Source Long Description in between IFAS Fund Source Code and Net Amount.
30. Save your report specification as **Forms**.
31. Run your report for Fiscal Year 2010.

Lab: CISL - Comp/Info System
Run on: Sep 11, 2011

FOR: Comp/Info System - 13 (SCD)
The following is a summary of Net Amounts for the Division in 2010

IFAS Fund Source Code	IFAS Fund Source Long Description	Net Amount
NRL	Naval Research Laboratory	$0
FACGAU	GAU FACILITY RATE	$2,638
NASA	Natl Aeronautics & Space Admin	$0
NSFRCORE	NSF Regular/CORE Funding	$53,033
RESIDUAL	RESIDUAL-FIXED PRICE CONTRACTS	($4,943)
NSFRGC	NSF Regular/Global Change Fund	($53,033)
DONC	Donation Cash	$0
NSFGRANT	NSF – Grants	($420,987)
DOE	Dept of Energy	($24,607)
UNIV	University Funding	$0
MISCREV	Miscellaneous Revenue	$7,694

Thank you, University Corporation for Atmospheric Research (UCAR)

In the following exercise we examine how to set up a "Drill Through" from one report to view related data in a second report.

Step-By-Step
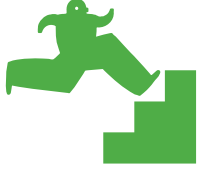
Creating Drill-Through Relationships between Reports

1. Create a new Crosstab report using the **UCAR Training** package.
2. Drag the Account Number from the CPM Training Data namespace, General Ledger namespace, Account query subject into the Rows drop zone.
3. Drag Month Name from the Date query subject into the Columns drop zone.
4. Drag Net Amount from the General Ledger Details query subject into the Measures drop zone.
5. Sort the rows and columns ascending.
6. Add a Total aggregate on the measure.
7. Control-click the Net Amount crosstab measure and Total measures, and change the Data Format to **Currency** with **0** decimal places.
8. Add the following Advanced Detail filters:

Expression Definition:
[General Ledger].[Date].[Fiscal Year] = 2010

Expression Definition:
[Account Number] starts with '1500'

Expression Definition:
[General Ledger].[Object Code].[Object Code] between '5200' and '5699'

9. Run your report to note that the months are not sorted properly.

Net Amount	October	November	December	January	February	March	April	May	June	July	August	September	Total
150001	($630)	$525	$1,345	$381	$1,861	$1,081	$2,968	$19	$1,687	$786	$2,040	$1,483	$13,547
150008	$0	$3,243	$17,637	$9,432	$7,645	$6,398	$428	$10	$20	$114	$4,029	$83	$49,040
150011	$939	$2,048	$4,172	$2,795	$1,867	$3,568	$3,934	$5,918	$12,818	$4,678	$2,592	$5,512	$50,839
150014	$2,397	$7,696	$6,803	$2,977	$2,460	$15,464	$2,233	$5,150		$5,785	($2,275)	$19,924	$68,614
150015	$41												$41
150017					$2,641	$2,988			$437		$635		$6,701
150018	($1,964)	$2,201	$569	$223	$75	$1,768	$306	$193	$191	$198	$8,364	$322	$12,447
150020	$345	$4,663	$0	$2,287		$2,133	$1,418	$90	$1,462	$0	$1,309	$3,860	$17,567
150022	$860	$12,555	$3,534	$11,083	$3,518	$11,027	$2,671	($5,130)	$7	$1,750	$3,746	$2,724	$48,344
150030	$234	$938	$2,039	$2,733	$406	$399	$4,278	$56	$3,138	$343	$821	$6,761	$22,146
Total	$2,223	$33,870	$36,098	$31,911	$20,474	$44,827	$18,235	$6,305	$19,761	$13,654	$21,262	$40,668	$289,288

10. Navigate to Query1, and add Fiscal Month Number from the Date query subject to the Data Items pane.
11. Navigate back to the report page, highlight the Month Name columns, and click on the ellipsis next to the Sorting property.
12. Delete Month Name from the Sort List, and instead insert Fiscal Month Number and sort ascending.
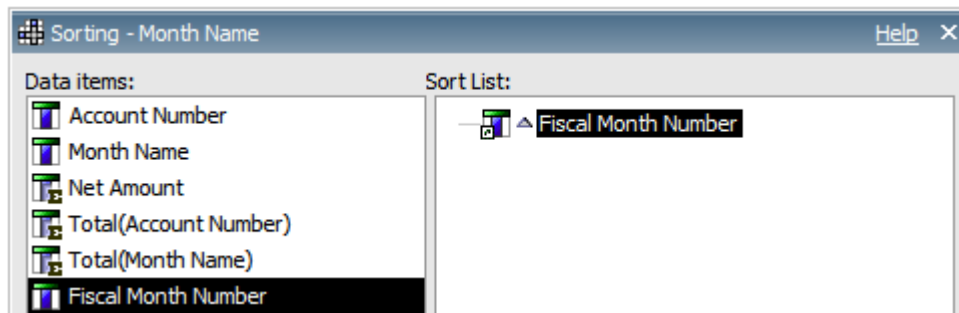
13. Save this report specification as **Source Report**.
14. Create a new List report using the **UCAR Training** package.
15. Add the following data items from the CPM Training Data namespace, General Ledger namespace, General Ledger Details query subject:
    - Document Id
    - Object Code
    - Post Date
    - Person Entity Identifier – PEID
    - Check Number
    - Batch Id
    - Units
    - Primary Reference
    - Net Amount
16. Insert Account Number to the beginning of the report (from the Account query subject).

17. Add the following Advanced Detail filters:

Expression Definition:
[General Ledger].[Date].[Fiscal Year] = 2010

Expression Definition:
[General Ledger].[Object Code].[Object Code] between '5200' and '5699'

18. Sort the Document Id column ascending.
19. Add a Total aggregate (from the Toolbar) to Net Amount.
20. Ctrl-click the Net Amount column and the Summary row and change the Data Format property to **Currency** with **0** decimal places.
21. Add the following filter (bring it in from your Data Items tab, not the Source tab):

Expression Definition:
[Account Number] in ?Account Number?

22. Save this report specification as **Target Report**.
23. Return to the **Source Report**.
24. Click on the Row Item (Crosstab Node Member). Right-click and select **Drill-Through Definitions** from the pop-up menu.
25. Add a new Drill-Through Definition using the Add 🔆 button.
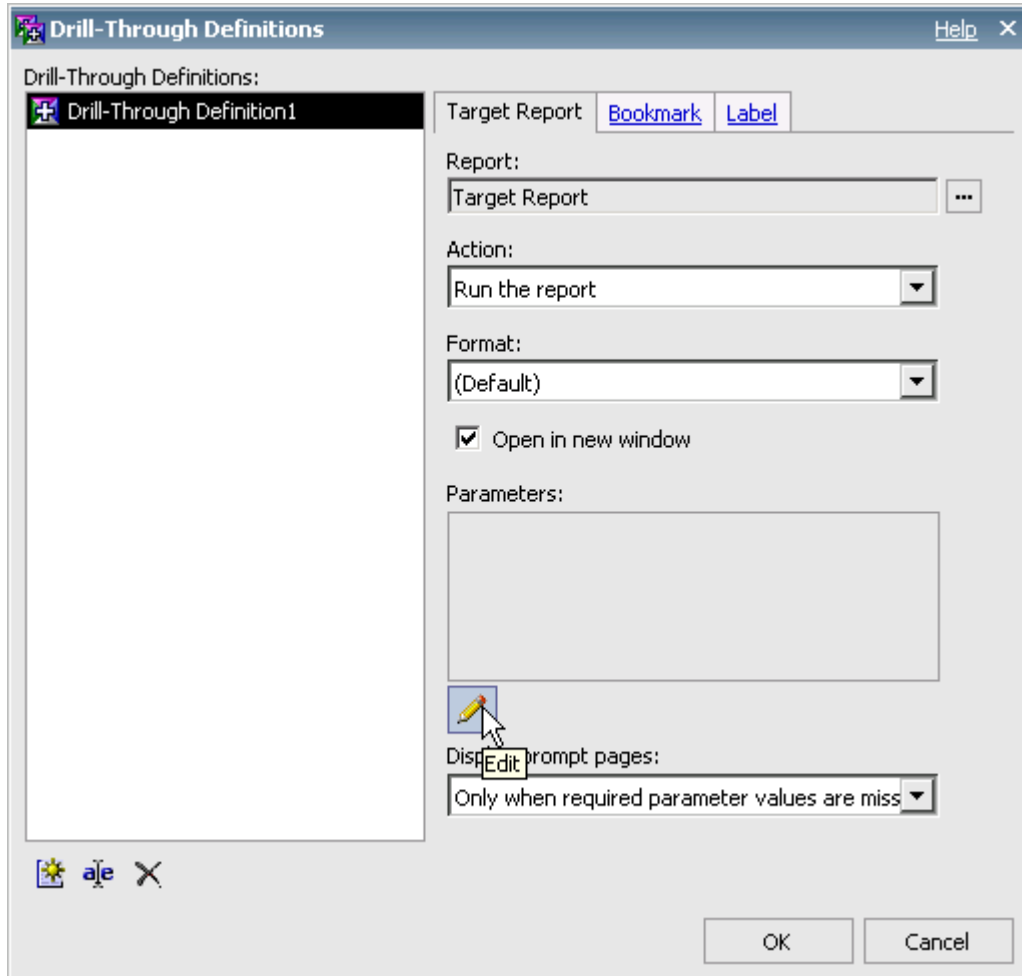26. In the Target Report tab, select your **Target Report** from the list of reports.
27. In the Action drop-down, select **Run the report**.
28. Leave the Format drop-down as **Default**.
29. Check the Open in new window box.

30. Under Parameters, click on the Edit ✎ icon.

31. Change the Method drop-down to **Pass data item value** and the Value to **Account Number**. Leave the Property to Pass as the Default.

Name	Type	Required	Multi-select	Method		Value		Property to Pass	
Account Number	String	✔	✔	Pass data item value	▼	Account Number	▼	(Default)	▼

32. Click OK twice.

Note that the row items in your report are now highlighted as a live link:

33. Save your report specification as **Drill Through**.

34. Run your report and click on 150001.

Account Key	Document Id	Object Code	Post Date	Person Entity Identifier - PEID	Check Number	Batch Id	Units	Primary Refernce	Net Amount
150001		5440	Sep 29, 2010 12:00:00 AM	011674		AJ101615	1	TE120638	($29)
150001	R1000147	5401	Oct 9, 2009 12:00:00 AM	011674		CR100065	0	TE124482	($296)
150001	TE120638	5420	Sep 29, 2010 12:00:00 AM	011674		AJ101615	1	TE120638	$29
150001	TE123563	5401	Oct 6, 2009 12:00:00 AM	011674	00022122	TL100012	1	TE123563	($331)
150001	TE123563	5440	Oct 6, 2009 12:00:00 AM	011674	00022122	TL100012	1	TE123563	$28
150001	TE123563	5440	Dec 17, 2009 12:00:00 AM	011674	00022958	TL100310	1	TE123563	$3
150001	TE123563	5451	Oct 6, 2009 12:00:00 AM	011674	00022122	TL100012	1	TE123563	($30)

Note that when your Crosstab is displayed, you can click on an Account Number and your target report is launched in a new window to display the relevant detail associated with your selection. Scroll to the bottom to ensure that the totals match the Crosstab.

The Report Specification

The IBM Cognos Report Studio report specification refers to the report design information that is stored in the content store when you design and save a report. These specifications are stored in XML format. Although it is not common for the beginning report developer to edit the XML report specification directly, the XML can be viewed, saved locally, and edited if desired.

While it is possible, it is not suggested that you attempt to hand edit the XML specification of a report unless you have an extensive knowledge of both XML and the specific format of XML required by Report Studio. If you are comfortable with your understanding of these requirements, the capability to copy a report specification to a file and reload from a file can be used to migrate a report from one Report Studio environment to another. For example, you could migrate a report from a Development environment to a Production environment in this fashion.

The XML specification is useful if you wish to manually promote a report from one IBM Cognos instance to another (such as development to test). The same idea can be applied when submitting IBM tickets for IBM Cognos support; if support receives an XML report specification that is showing an issue against their sample data (Great Outdoors) then they have a much easier time resolving those issues.

Step-By-Step

Enhancing User Interaction with HTML

In this exercise, we examine how to improve on your report by utilizing HTML to add items that allow users to send emails or navigate to web sites by clicking links in a report. We also examine how to create tool tips to clarify report data.

1. Open your **Target Report** and Save As **HTML**.
2. Insert the Medium Title from the CPM Training Data namespace, General Ledger namespace, Account query subject to the beginning of the list.
3. Group on Account Number.

Let's begin by adding an email link to the footer of our report.

4. Select a cell in the 1 X 3 table that exists in the report footer.
5. Select **Table, Insert, Rows Above** from the Menu and add **1** row.
6. In the top left cell, add a Text Item: "Report Authored By:".
7. In the middle cell, drag an HTML Item ![HTML Item], from the Toolbox.
8. Select the HTML Item, and set its HTML property as shown below, (substituting your name and email)

HTML	✕
`<a href="mailto:johndoe@company.com">John Doe</a>`	

9. Run your report (use 000001 as your Account Number). Note that the HTML item is active and will generate an email "send to" action when clicked.

Report Authored By:	John Doe		
Sep 7, 2011		1	11:56:02 AM

10. Next, drag another HTML Item into the top right cell of the table and define it as below:

    `<a href="http://www2.ucar.edu/">UCAR Web Site</a>`

11. Right justify the HTML Item within the cell using the Toolbar.

12. Run your report (use 000001 as your Account Number). Note that you now have an embedded link to a website:

Report Authored By:	John Doe		UCAR Web Site
Sep 7, 2011		1	11:58:40 AM

Next we add a tool tip (mouse-over help) which will display the Medium Title when the Account Number is "moused over".

13. Drag a new HTML Item from the Toolbox tab into your list as if you were adding a new column after the Account Number column.
14. Click the new HTML column (not the header), change the Source Type property to **Report Expression**, and edit the Report Expression property as follows:

Expression Definition:
```
'<p title="'+[Query1].[Medium Title]+'">'+[Query1].[Account Number]+'</p>'
```

The HTML code used above involves the paragraph element and its title attribute. The paragraph tags surround the data you want to display as a column (Account Number in this example), and the title attribute is set to the item you use as the screen tip (Medium Title in this example).

15. Click on the new HTML column title and set the text of the column title to "Account".
16. Next, hide the original Account Number and Medium Title columns by Ctrl-clicking on both list items and column titles, and changing the Box Type property to **None**.
17. Save your report specification as **HTML**.
18. Run your report (use several Account Numbers). Note that when you hover the mouse over any Account, the Medium Title displays as a tool tip.

| Account	Document Id	Object Code
000001		5315
00000 Cash Fund		5315

This technique is useful when you'd like the report consumer to have access to the descriptions for certain codes, but horizontal space is at a premium.

NOTE

Recall that when you hide objects, you can find them again by selecting the **Visual Aids** icon in the Toolbar, and enabling **Show Hidden Objects.** There are also other useful options to be aware of below:

WATCH OUT!
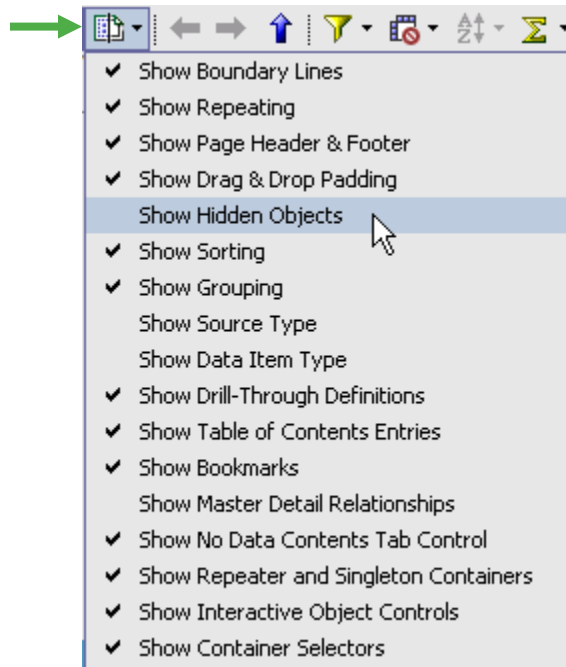
HTML Items only work in HTML. Nothing appears if you run the report in any other output format including PDF and Excel.

Chapter 8 – Bursting

Bursting is a capability of IBM Cognos 10 that allows the author to create a large report which is divided, typically with a page break, and sent or delivered to different recipients. The most common bursting scenario is a report that contains a page break on some key value, and which is emailed to the individuals who are interested in that particular chapter of the report.

The prerequisites for bursting a report are:

- The report must have a **Burst Key**, which usually corresponds to the data item on which the page break is set up.
- The report must have a **Burst Recipient**, which can be an email address, or a directory address to which that the section of the report will be sent. ("Burst" reports can also be sent to folders in IBM Cognos Connection).
- The report must be scheduled to run or can be run immediately.

Demo

Creating Burst Keys

In this example we create a simple list report, with a Burst Key and a Page Break, and set it up for bursting.

1. Create a new List report using the **UCAR Training** package.
2. From the CPM Training Data namespace, General Ledger namespace, Account query subject, insert the following data items into the list:
   - Entity Code
   - Account Number
   - Medium Title

3. Add the following columns to the report from the Object Code query subject**:**
   - Object Code
   - Medium Description

4. Add the following columns to the report from the General Ledger Details query subject:
   - Post Date
   - Net Amount

5. Save the report specification as **Burst**.
6. Group the report on Entity Code and Account Number.
7. Group span Medium Title based on Account Number.
8. Sort descending on Net Amount.
9. Add the following Advanced Detail filters to restrict the data:

Expression Definition:
[Account Number] starts with '20'

Expression Definition:
[Post Date] between 2010-12-01 and 2010-12-31

10. Highlight the list object and click on the ellipsis to open the Grouping & Sorting property.

NOTE

Recall that Grouping and Sorting is controlled here in the Properties even though you may have used the Group icon in the Page Design view.

11. Click OK to exit that pop-up.
12. Mouse over the Page Explorer, click on Report Pages, and add a Page Set from Insertable Objects.

Insertable Objects _ □

📄 Page
📄 Page Set

Page Explorer

📁 Report Pages
  📄 Page1
  ⊟ 📄 Page Set1
      📁 Detail Pages
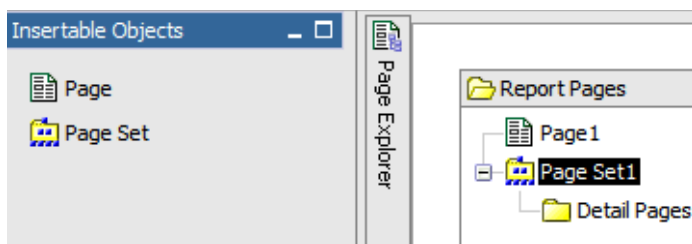
13. Highlight the new PageSet1, and in the Properties pane, set the Query property to **Query1**.
14. Click on the ellipsis in the Grouping & Sorting property.

15. Drag Entity Code into the Groups folder in the right pane and click OK.
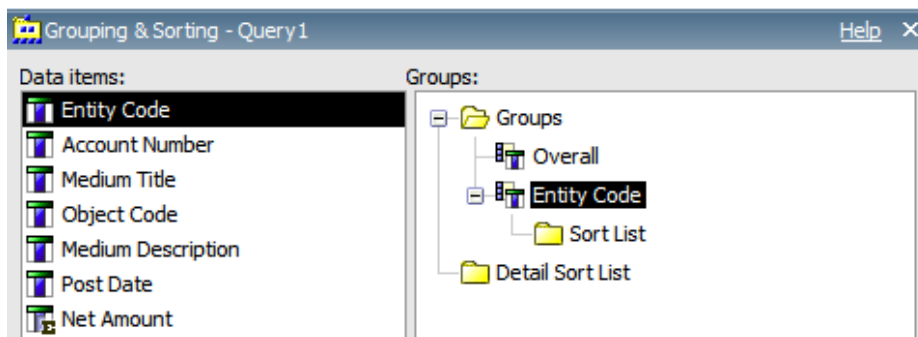
16. Back in Report Pages, drag Page1 into the Detail Pages folder.
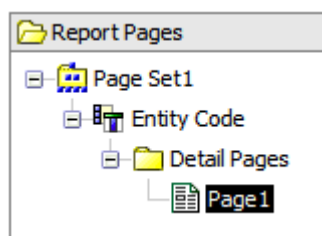
17. Run the report.

Note that your report begins a new page with the change in Entity Code.

Identify Report Recipients using Directory Entries

In this example, we manually add a **Burst Recipient** through the use of a Case statement. In this example, we use the IBM Cognos "CAMID" as the Burst Recipient and burst reports to folders in IBM Cognos Connection. Burst Recipients can also be contained in the database (and the model) and would commonly be an Email ID field that contains the email address of the appropriate recipient for the group of data.

18. From the Toolbox, drag a new Query Calculation onto the report page, as the first column of the report, select Other expression, and name it "Burst Recipient."
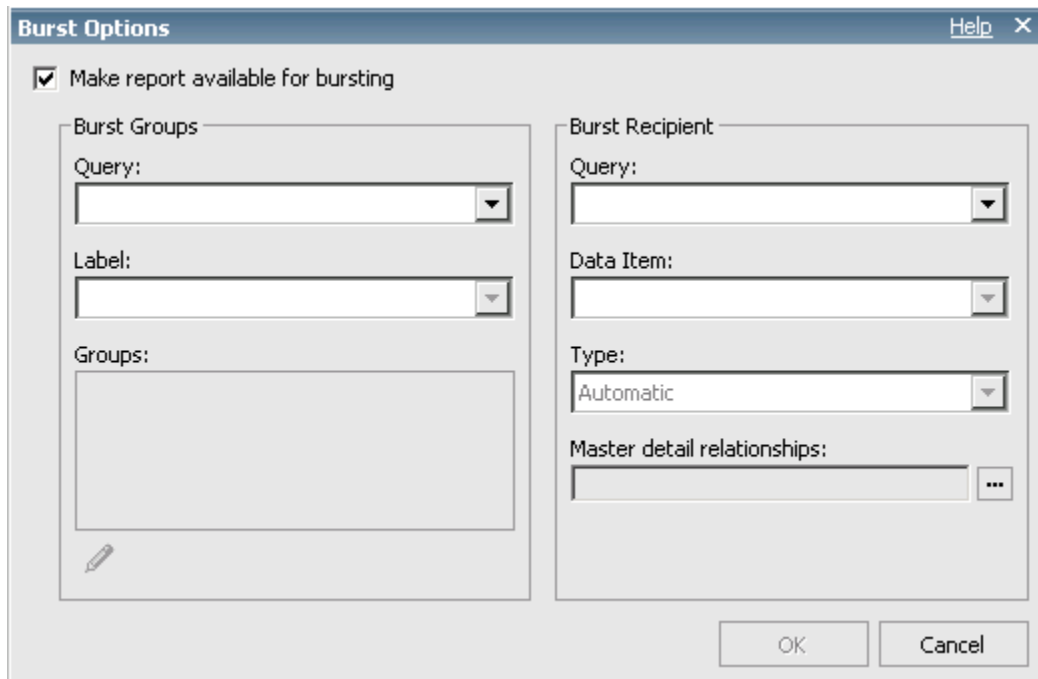
19. Define the expression of this new calculation as follows:

```
Expression Definition:
CASE

WHEN [Entity Code] = 'NCAR'
THEN ('CAMID(":ANONYMOUS")')

WHEN [Entity Code] = 'UCAR'
THEN ('CAMID(":CONSUMERS")')

END
```

20. Select the Burst Recipient column and column title, then change the Box Type property to **None**.
21. From the **File** menu, choose **Burst Options**.
22. In the Burst Options dialog box, first check Make report available for bursting.

The Burst Groups properties indicate to Report Studio how the report should be broken apart (on which query, which data item in the query, and how the break point should be labeled if desired).

23. Select **Query1** as the Query and **Entity Code** as the Label.

24. Click on the Edit icon to open the Grouping & Sorting window. Drag Entity Code into the Groups folder in the right panel and then click OK:
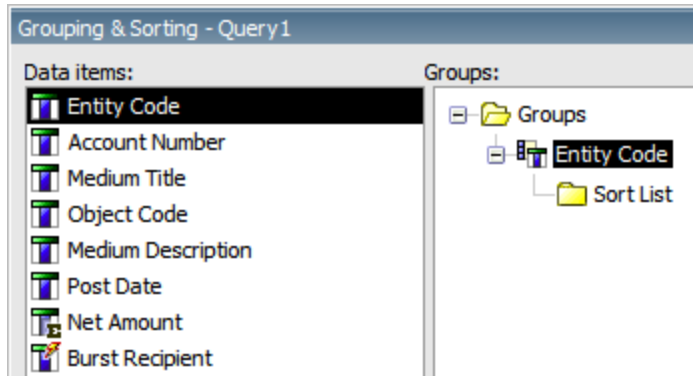
You have indicated that the Entity Code grouping level corresponds to the Burst Recipient data item that we have created.

The Burst Recipient properties indicate how and to whom each section of the burst report should be delivered.

25. Select **Query1** as the Query, **Burst Recipient** as the Data Item, and **Directory entries** as the Type. Click OK.
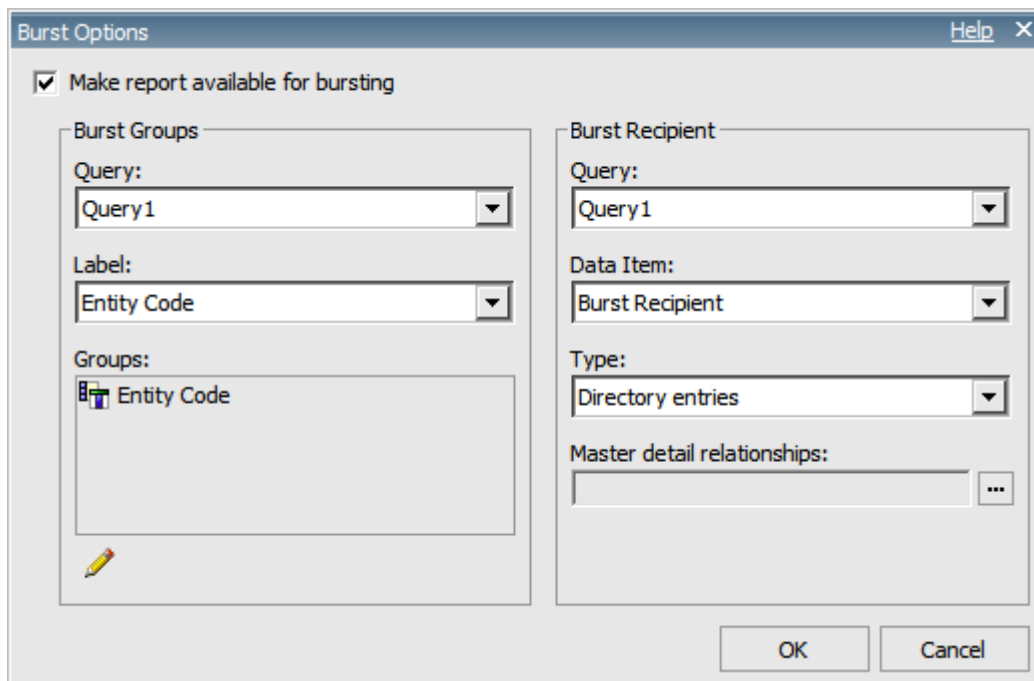
We now have both a **Burst Key** and a **Burst Recipient** defined.

26. Save your report specification as **Burst**. (It is now "enabled" for bursting, but will never be delivered without the scheduling of the report).

Distributing Reports Using IBM Cognos Connection

27. To burst the report, return to IBM Cognos Connection to the report folder where your report is saved.
28. Select the Run with options icon for your report in IBM Cognos Connection; select advanced options.

29. Check the Run in the background option, the HTML option, the PDF option, and choose to Save the report.
30. Check the Burst the Report option (you may have to scroll down).

31. Click Run and click OK.
32. Refresh ⟳ IBM Cognos Connection.
33. You will now see a new icon in the Actions menu to "View the output versions for the report".

	Name ◇	Modified ◇	Actions
☐ 🔘 Burst		September 7, 2011 1:24:09 PM	🖼️ 📋 ▶ 🔺 🏱 📖 More…
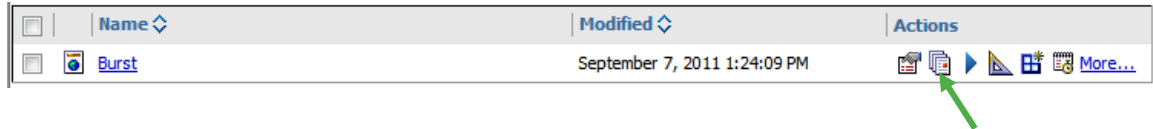
34. Click on it to see that the report has been burst with HTML and PDF versions for NCAR and UCAR.

Formats		Languages ▾	Actions
🔘 HTML	NCAR	English (United States)	
📄 PDF	NCAR	English (United States)	📋
🔘 HTML	UCAR	English (United States)	
📄 PDF	UCAR	English (United States)	📋

As we discussed earlier, you can burst via directory address or email. When sending the report by email, you have the option to include a link to the report or attach the report.

In many IBM Cognos 10 implementations, organizations create tables to store the burst recipient (Email or CAMID) and burst key. This database table can feed the report and provide an easy way for organizations to maintain the distribution lists.

Some organizations also use either email aliases for grouping email addresses or security groups for CAMIDs (directory address) to reduce the amount of data in these "burst tables".

Burst tables, email aliases and security groups are not required for bursting. However, these are common approaches used to make bursting distribution list maintenance easier.

WATCH OUT!

Sending a report LINK to a burst recipient is a secure mechanism because, in order to view the report contents, the recipient will have to click the link and be validated into the reporting environment before viewing the contents. Sending the report as an attachment would allow the recipient to view (and forward) the report without any security being enforced and therefore does not require a Report Studio license.