

The logo for 'Cal Answers' is displayed in a yellow, sans-serif font. It is set against a dark blue rectangular background that features a faint, stylized image of a classical building facade with columns and arches. A small white light flare is visible to the right of the text.

**Cal Answers**

***Cal Answers  
Analysis Training  
Part II***

***Viewing Analysis Results  
in OBIEE***

University of California, Berkeley  
March 2012

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To report any problems with the Cal Answers Portal, Reports, or Dashboards:

- Send an e-mail to [calanswers-help@berkeley.edu](mailto:calanswers-help@berkeley.edu)
- Or
- Call the Help Desk at 642-8500, Monday – Friday, 8:00am – 5:00pm

## Overview

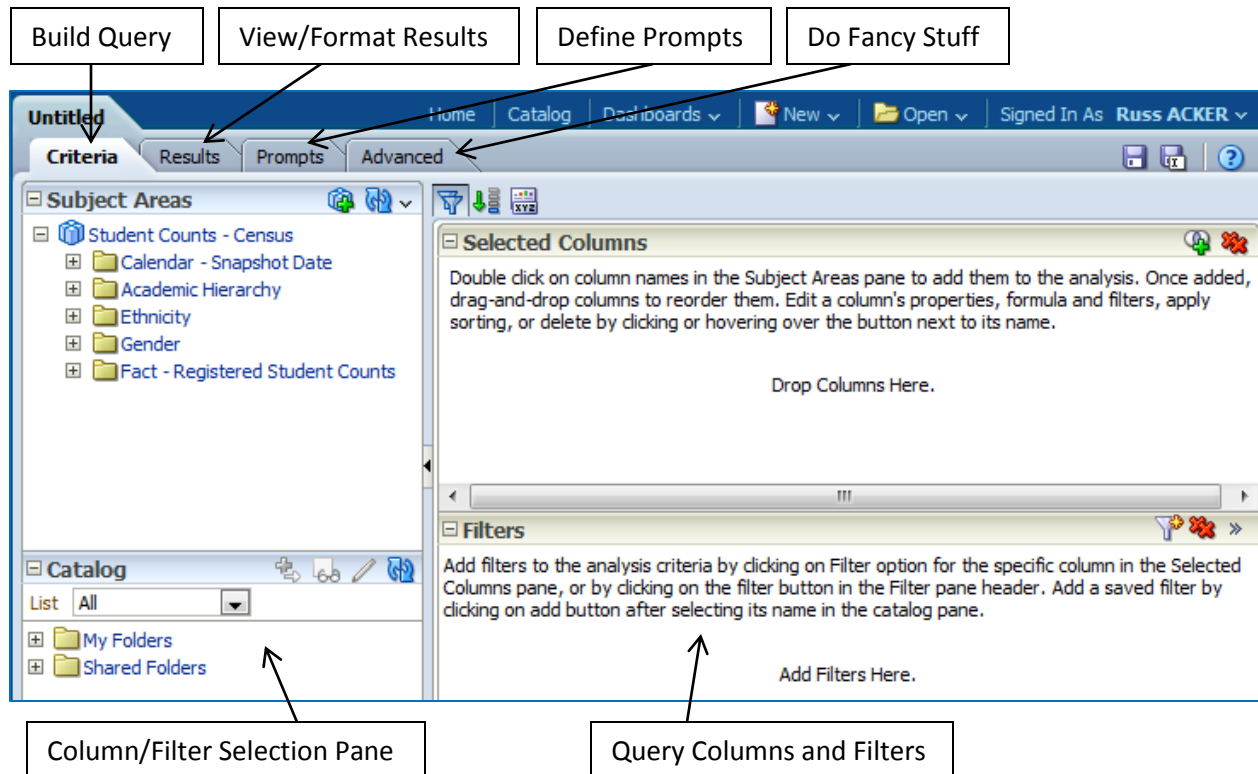
Cal Answers is the new reporting environment for UC Berkeley’s Enterprise Data Warehouse (EDW). It currently uses Oracle Business Intelligence Enterprise Edition (OBIEE) version 11g software.

This three-part training course will deal with using OBIEE, including how to write your own queries and create your own dashboard reports. Specifically, the sessions will cover:

1. Creating Analyses in OBIEE
2. Viewing Analysis Results in OBIEE
3. Advanced OBIEE – Dashboard Reports

## Remember How to Create an Analysis?

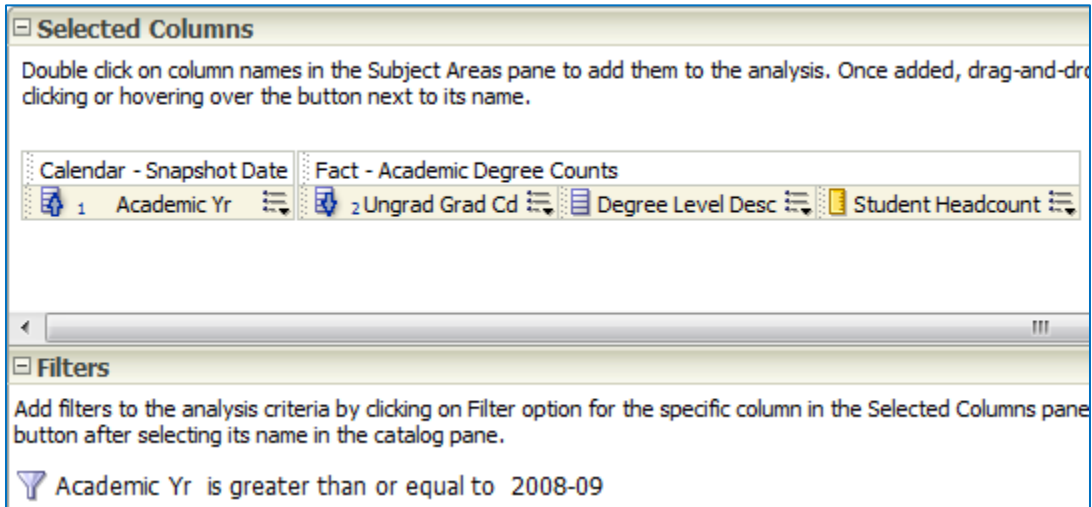
Clicking either “New > Analysis” or “Create... > Analysis,” and then choosing a data subject area will start the OBIEE ad hoc query tool:



The various fields available in a given subject area are stored in an expandable/collapsible tree. Click the plus signs ( ⊕ ) to expand a branch, and the minus signs ( ⊖ ) to collapse it. To bring a column into your query, either double-click it or drag it over into the “Selected Columns” area.

**Create a Sample Query to Use in This Class**

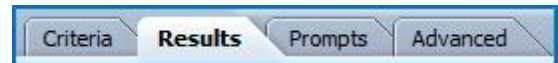
For this class, we’ll be working with a simple query that shows degree recipient headcounts by undergrad/grad status and degree level since 2008-09. Using the “Student Counts – Degrees” subject area, create the following query and then save it to your “My Folders” area:



You should get 20 rows in your results. Please make sure you save this query!

**Compound Layout**

As we discussed in the last class, you can view the results of your query by clicking on the “Results” tab.



**Default Results View**

The default results view is a table with a blank title above it, combined in OBIEE’s “Compound Layout,” as shown to the right.

As you can see, you have a blank title (if you save the query, the title defaults to the name), followed by a simple table that suppresses duplicate values. The compound view lets you show a single view of results, or it allows you to combine two or

**Compound Layout**

Title

Table

Academic Yr	Ungrad Grad Cd	Degree Level Desc	Student Headcount
2008-09	U	Bachelor	7072
		Candidate	22
	G	Certificate	136
		Doctoral	864
		Masters	1989
		Professional	352

more result views. So, for instance, you could create a compound layout that had a title, a pivot table, and a chart of the data from your query. If you're thinking that that sounds a bit like a dashboard report, that's exactly what it is. All of the dashboard reports are actually just analysis result views using compound layouts.




## **Working With Results Views**

You can make several kinds of changes to any of the views in a compound layout, including editing existing views and adding new ones.

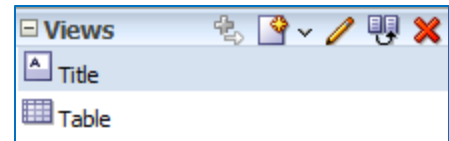
### *Editing Existing Views in a Compound Layout*

To edit an existing view in a compound layout, use the three buttons that appear in each view's title bar:




- The first button (  ) gives you access to a “Format Container” dialog box, where you can change things like alignment, colors, and border styles.
- The second button (  ) takes you to the editor for that type of view. Each view (title, table, pivot table, etc.) has its own editor with its own options. We'll be covering several of these later in this document.
- And the third button (  ) removes a given view from the compound layout.



You can also access the editor for a given view by using the toolbar in the “Views” pane that appears at the bottom left of the OBIEE screen. This will list all of the views that you've already created for a given analysis. (Notice that, by default, the “Title” and “Table” views already exist.) Selecting any of the options in this list and then clicking the pencil toolbar button will open the appropriate view editor.



Note that just because a view appears in this list (indicating that it already exists), that view doesn't necessarily appear in the compound layout. You have to add it specifically, which we'll cover below.

Just removing a view from the compound layout, by the way, does not delete it entirely. As long as the view still appears in this list, it still exists, regardless of whether it actually appears in the compound layout. You can completely delete a view by using the (  ) button on the “Views” toolbar.

### *Adding New Views to a Compound Layout*

To add a new view directly to a compound layout, use the “New View” dropdown button (  ) on the “Results” toolbar at the top of the screen. To create a new view without immediately adding it to the compound layout, use the “New View” dropdown button (  ) in the “Views” pane toolbar at the bottom left of the screen.

The “Results” toolbar at the top of the screen, by the way, has enough options to keep you busy for a while. Just hover your mouse over each button to see what it does, including: printing, exporting, scheduling, viewing as a dashboard, setting lots of options, changing properties, etc.



## Results Views

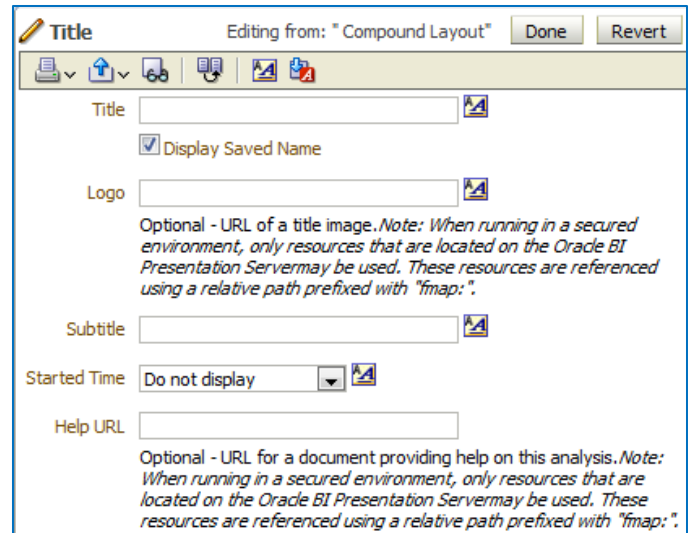
In this section, we'll cover several of the more popular results views—Title, Table, Graph, Pivot Table, Filters, and Static Text—and how to use them. In the next class, we'll cover a few more results views, such as Column Selectors and View Selectors.

### Title Views

The Compound Layout includes a Title view by default and, if you save your query, the name of the query will appear in that title.

The Title editor has only a few options:

- **Title** – The main, large-font title; by default, this is the saved query name.
- **Logo** – The URL for an image to display to the left of the title; IST has to do this for you.
- **Subtitle** – The secondary, smaller-font title.
- **Started Time** – An automatically generated start date and/or time for the report.
- **Help URL** – The URL for a help document; IST has to do this for you.






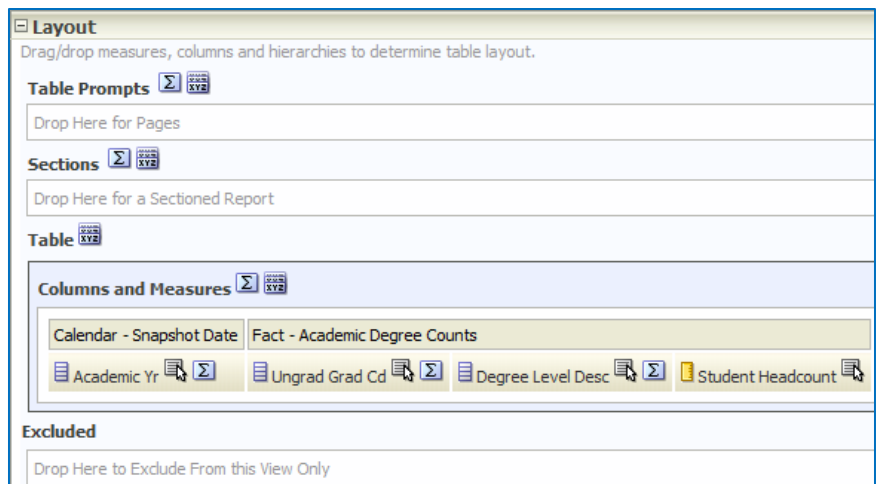
The toolbar at the top also gives you some additional printing, copying, and formatting options. To return to the compound layout, click the “Done” button. The “Revert” button will simply undo any changes that you made in the editor. Note that OBIEE adds a blue bar beneath the title.

### Table Views

The other view that OBIEE includes in the compound layout by default is a Table view.

Table views yield reasonably fancy tables, with lots of options in the editor.

In the “Layout” pane of the editor, you can add totals and subtotals, change headings for fields, exclude fields, and much more. To make changes, you can drag fields into different sections of this pane, and use the “Totals” , “Properties” , and “Options”  buttons.

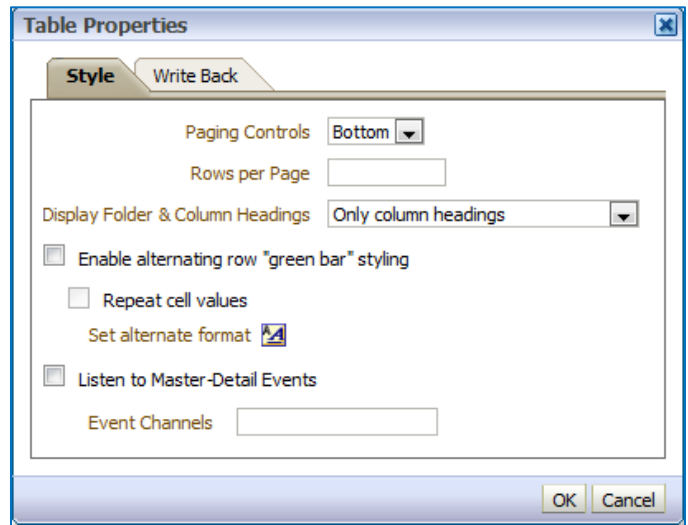


The toolbar at the top of the editor includes several of your old favorites, but has one button in particular that you'll find useful when working with tables. Clicking this button will open the "Table Properties" dialog box, where you can choose:



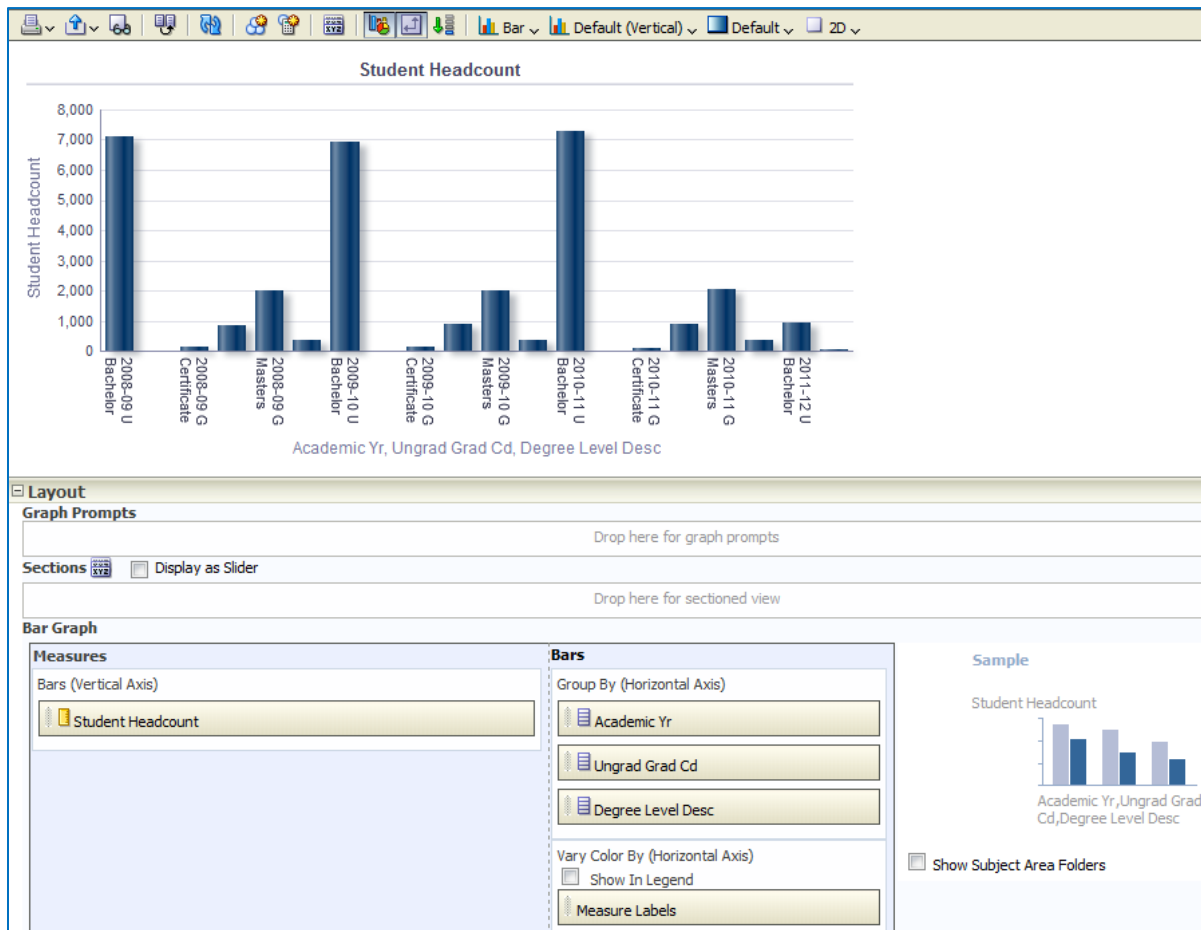
- Where paging controls appear;
- How many rows to show per page;
- What sort of headings to display;
- Whether to use green bar styling; and
- Whether to repeat cell values.

In addition, this dialog lets you work with a couple of advanced features, Master-Detail events and Write Back, that IST has not currently enabled.



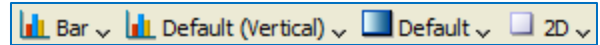
**Graph Views**

Graphs are one of the more complex views, with a very large number of options, as you can see below:




### Chart Types, Subtypes, Styles, and Effects

The Graph Editor toolbar has lots of the standard buttons, plus some specific to graphs, such as the four buttons on the far right side of the toolbar.

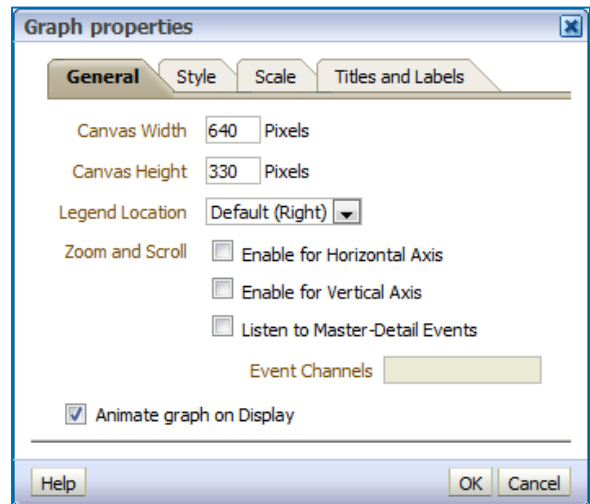


- The “Bar” button lets you choose from 10 different kinds of charts: bar, line, area, pie, line-bar, time series line, pareto, scatter, bubble, and radar. (Note: If you aren’t sure what kind of chart to use, [http://www.perceptualedge.com/articles/misc/Graph\\_Selection\\_Matrix.pdf](http://www.perceptualedge.com/articles/misc/Graph_Selection_Matrix.pdf) is a very helpful reference.)
- The second button (which says, “Default (Vertical)” here) lets you choose a subtype for selected graph type. With a bar graph, for instance, you can have vertical, horizontal, stacked vertical, or stacked horizontal subtypes. You’ll see different options here, depending on the graph type.
- The third button (“Default” here) determines the appearance of the series on your graph. For a bar graph, for instance, the bars can appear as rectangles, triangles, cylinders, diamonds, gradient rectangles, or pattern-filled rectangles. This button’s options also depend on the type of graph that you’ve selected.
- Finally, the “2D” button lets you choose whether the chart should appear in 2-D or 3-D (there’s almost no situation where a 3-D chart improves readability, so the default, 2-D, should be your choice).

### Graph Properties

The “Graph Properties” toolbar button (  ) opens a dialog box that lets you change some additional things about the appearance of the graph:

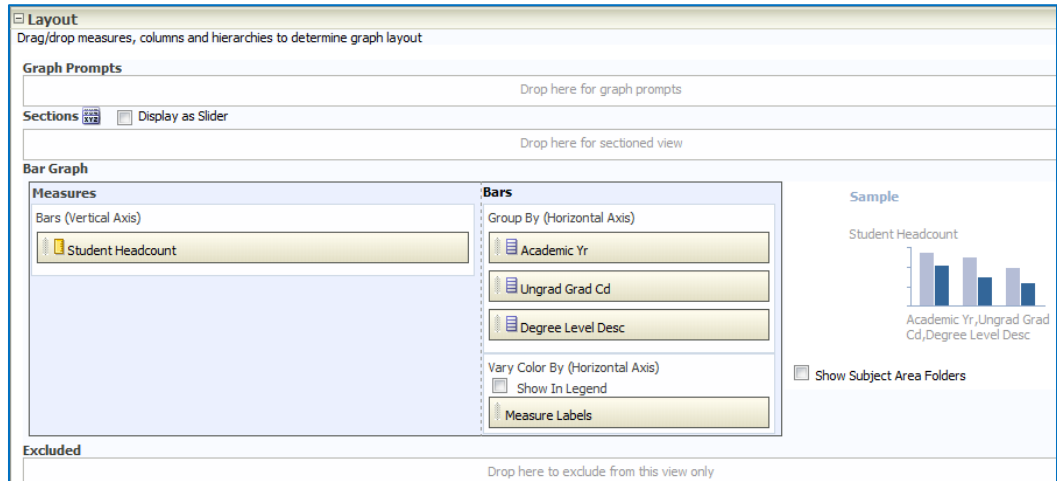
- General – size, legend location, zooming, and animation;
- Style – display effects, colors, gridlines, and borders;
- Scale – axis minimums and maximums, tick marks, and axis scales;
- Titles and Labels – graph and axis titles, and legend, axis, and data labels.






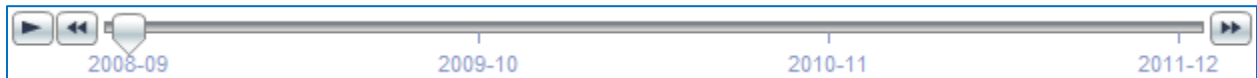
**Graph Layout**

Finally, the graph “Layout” pane at the bottom of the screen lets you create prompts and sections, add sliders, and decide what data values should appear as the categories and series of your graph.



To set categories and series, you simply drag each of the fields into the various areas of this pane; note that you can exclude fields that you don’t need. On the right side, a small sample of the chart shows you what your changes look like.

One final option for graphs in this pane is the “Display as Slider” box . When you put a field, such as a date, in the “Sections” area of your graph, and then check this box, your graph will appear with a slider:



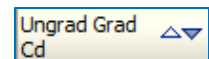
This will then display your graph as an animation that changes depending on the date value selected on the slider. You can use the double-arrow buttons to move one value at a time on the slider, or you can click the “Play” button to have it automatically advance every 2 seconds.

**Pivot Table Views**

Pivot tables are probably the view that you’ll wind up using the most, since we often report data over time, and pivot tables are good at doing that. These look and work a lot like Excel pivot tables.

The pivot table editor, shown on the next page, has a lot going on. There’s a toolbar at the top, six different table sections (pivot table prompts, sections, rows, columns, measures, and excluded) that can contain the fields in your query, and a view showing the results of your design. Note that most of the table sections have their own set of toolbar buttons, too.

Also note that sorting is handled in the results display area, rather than in the “Layout” pane. If you move your mouse over the actual pivot table, you’ll see two arrowheads appear in each row and column header. You can click on these to sort values in a given row or column.



	Student Headcount			
	2008-09	2009-10	2010-11	2011-12
Degree Level Desc				
Bachelor	7072	6893	7271	961
Candidate	22	27	25	
Certificate	136	134	109	
Doctoral	864	877	904	
Masters	1989	2005	2044	35
Professional	352	368	386	

**Layout**  
Drag/drop measures, columns and hierarchies to determine pivot table layout.

**Pivot Table Prompts**  
Drop Here for Pages

**Sections**  
Drop Here for a Sectioned Report

**Pivot Table**

**Rows**  
Fact - Academic Degree Counts  
Degree Level Desc


**Columns**  
Measure Labels  
Calendar - Snapshot Date  
Academic Yr

**Measures**  
Fact - Academic Degree Counts  
Student Headcount

**Excluded**  
Fact - Academic Degree Counts  
Ungrad Grad Cd

**Pivot Table Editor Toolbar**

The pivot table editor toolbar has lots of the standard buttons, but includes two that you’ll use specifically for pivot tables.

The first of these buttons, “Pivot Table View Properties,” (  ) shows the dialog box to the right. It lets you set paging options, show headings, apply alternating row formatting in your pivot table, and define master-detail events (an advanced drilling feature that you’re very unlikely to use).

**Pivot Table Properties**

Paging Controls: Bottom

Rows per Page: [ ]

Display Folder & Column Headings: Only column headings

Enable alternating row "green bar" styling


Alternate: Innermost Column

Set alternate format: [ ]

Listen to Master-Detail Events

Event Channels: [ ]

Buttons: Help, OK, Cancel

The “Graph Pivoted Results” button (  ) will place a chart next to or in place of the pivot table. You don’t have as much control over these pivot charts as you would with a Chart view, so use them carefully.

**Excluded, Prompts, Sections, Rows, and Columns**

The pivot table editor mostly consists of areas into which you can drag fields in order to display them in different ways inside a pivot table.

The “Excluded” section, which appears at the bottom of the “Layout” pane, is for any field in your query that you don’t want to see in your pivot table. If you drag a field to that area, it will no longer appear in the pivot.

OBIEE will remove from the pivot table any fields that you put in the “Prompts” area and combine them into a dropdown that appears just above the pivot table. In the example shown to the right, I’ve moved the “Ungrad\_Grad\_Cd” field to the “Prompts” area.




Ungrad Grad Cd U ▼			
	Student Headcount		
	2008-09	2009-10	2010-11
Degree Level Desc			
Bachelor	7072	6893	7271

The “Sections” area of the editor is for fields whose values you want to use to break the pivot table into sections. The example shown to the right moves the “Ungrad\_Grad\_Cd” field into that area. You can compare this to the pivot table shown on the previous page.

U			
	Student Headcount		
	2008-09	2009-10	2010-11
Degree Level Desc			
Bachelor	7072	6893	7271
G			
	Student Headcount		
	2008-09	2009-10	2010-11
Degree Level Desc			
Candidate	22	27	25
Certificate	136	134	109
Doctoral	864	877	904
Masters	1989	2005	2044
Professional	352	368	386

The “Rows” and “Columns” areas allow you to define the pivot table’s rows and columns, as you might have guessed. You can put multiple fields in both areas.

Finally, notice that each area and each element within each area have their own little toolbars, with up to three buttons (although there are four different buttons all together):

-  - The “Properties” button appears for each area. It lets you change formatting, define how headers look, and show or hide certain kinds of content.
-  - The “More Options” button, which accompanies each field in an area, pops up a context-specific menu, which could contain options allowing you to format headings and values, show or hide items, create new calculated items, duplicate layers, or remove columns.
-  - The “Totals” button lets you add, remove, and format a variety of grand and subtotals.

**Measures**

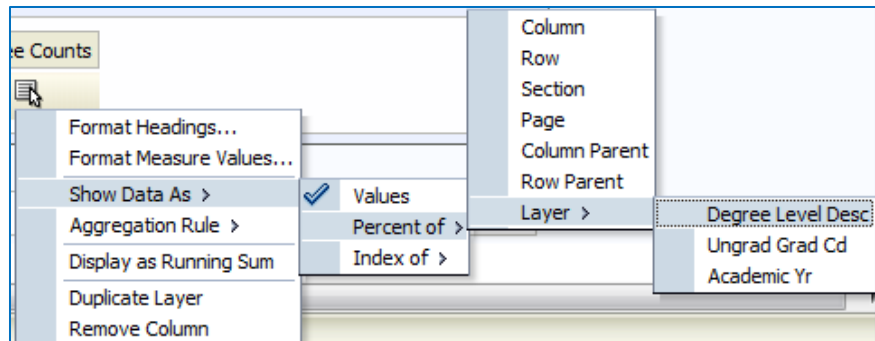
The “Measures” area is a little different from the others. It’s where you put the value field(s) that you want to appear in the pivot table. Each field in “Measures” has only one toolbar button, for “More Options.” (The popup menu for it appears to the right.)

Format Headings...
Format Measure Values...
Show Data As >
Aggregation Rule >
Display as Running Sum
Duplicate Layer
Remove Column

With this menu, you can format headings and values, as well as duplicate layers and remove columns, like with the other “More Options” buttons. The other three menu items, however, are unique to this area.

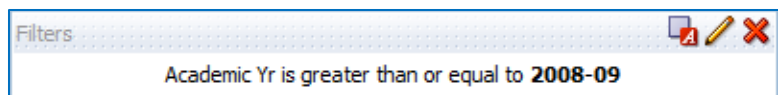
One of these options, “Display as Running Sum,” seems like it would be really useful, but may not work the way you think it should, so be careful when using it. One of the other two options, “Aggregation Rule,” lets you choose if you want to sum, count, average, etc. the pivot table values. This might occasionally be useful, but you’d usually want to do that in the query itself so that the database handles it, rather than bringing back lots of data and doing it in OBIEE.

Finally, the “Show Data As” option is one you’ll use a lot. The default is to show data as values, but you can also make it a “Percent of” based on many different possibilities, such as the row, column, or layer. The “Index of” option does the same thing, except that it returns a decimal value instead of a percentage (i.e., 0.22 instead of 22%).



**Filters Views**

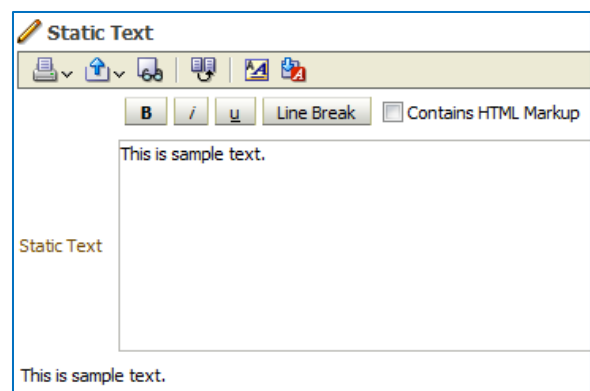
A filter view is probably more useful in a dashboard report rather than just in a query. It’s just a section of text that shows the values used to filter this particular query, as you can see in this screenshot. Using the view’s toolbar buttons, you can format the text in a variety of ways.



**Static Text Views**

Finally, the static text view lets you display formatted text along with your query results. No matter what results you get from your query, the static text will always appear the same.

Using the various buttons in the static text view editor, you can change colors, fonts, sizes, and styles. If you check the “Contains HTML Markup” box, you can even include HTML tags in your static text.



**Other Views**

There are quite a few other results views available for your use. We’ll cover at least a couple more (Column Selector and View Selector) in the subsequent class, but will leave some of the more obscure ones for your own research.

## Practice Queries and Result Views

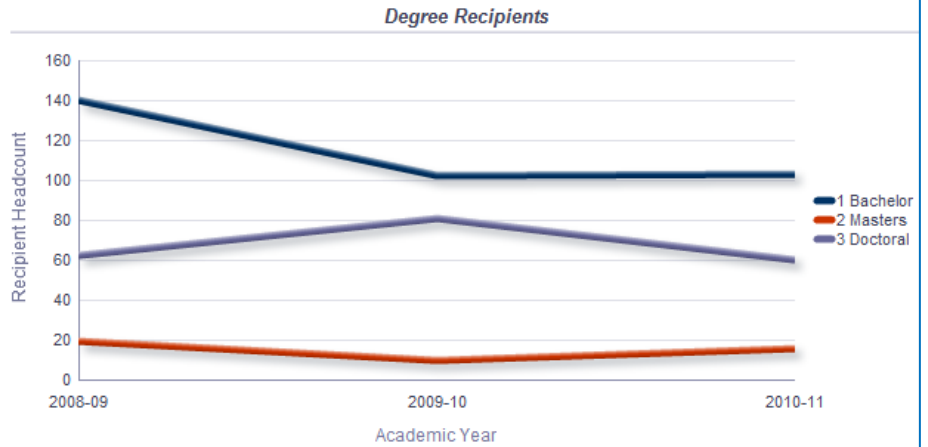
### Degree Practice Query

For the Department of Chemistry, create a query and compound layout that look as much like the following as possible (make sure you get the correct answers, too). Save your query when you're done, then try changing it so that it shows a college/school of your choice.

#### Degree Recipient Headcounts

Department of Chemistry

Degree Level Desc	Degree Recipients		
	2008-09	2009-10	2010-11
Bachelor	140	102	103
Masters	19	10	16
Doctoral	62	81	60
<b>Grand Total</b>	<b>221</b>	<b>193</b>	<b>179</b>



Academic Yr is between **2008-09** and **2010-11**  
and Academic Department Short Nm is equal to / is in **Chemistry**

**Census Count Practice Query**

For the College of Environmental Design, create a query and compound layout that look like this:

<b>Departmental Census Counts</b>					
College of Environmental Design					
		Student Census Headcount		Percentages	
		2010 Fall	2011 Fall	2010 Fall	2011 Fall
Student Level ▲▼	Department				
U	Architecture	495	489	50.3%	50.4%
	City & Regional Planning	59	59	6.0%	6.1%
	Landscape Arch & Env Plan	37	28	3.8%	2.9%
	Other Env Design Programs	2		0.2%	
<b>U Total</b>		<b>593</b>	<b>576</b>	<b>60.3%</b>	<b>59.4%</b>
G	Architecture	172	174	17.5%	17.9%
	City & Regional Planning	149	142	15.1%	14.6%
	Landscape Arch & Env Plan	74	79	7.5%	8.1%
	Other Env Design Programs	12	11	1.2%	1.1%
<b>G Total</b>		<b>391</b>	<b>394</b>	<b>39.7%</b>	<b>40.6%</b>
<b>Grand Total</b>		<b>984</b>	<b>970</b>	<b>100.0%</b>	<b>100.0%</b>

When you're done, save the query, then change it so that it shows results for the college/school of your choice.

**Cohort Grad Rates Practice Query**

Finally, here’s an existing dashboard report, using the “Student Counts - Undergrad Cohorts” subject area. Can you duplicate this pivot table?

Undergraduate Cohort Graduation Data

Entry Type	Entry Term	Total Entering	Pct Undergrads Graduating In:										Not Graduated
			2 Yrs or Less	2.5 or 3 Yrs	3.5 or 4 Yrs	4.5 or 5 Yrs	5.5 or 6 Yrs	6.5 or 7 Yrs	7.5 or 8 Yrs	8.5 or 9 Yrs	9.5 or 10 Yrs	More than 10 Yrs	
New Freshmen	2000 Fall	100.0%	0.1%	2.7%	58.4%	24.5%	3.2%	1.0%	0.6%	0.5%	0.6%	0.3%	8.2%
	2001 Fall	100.0%	0.1%	2.9%	58.0%	23.6%	3.6%	1.4%	0.9%	0.6%	0.3%		8.7%
	2002 Fall	100.0%	0.1%	2.5%	61.2%	22.6%	3.3%	0.9%	0.7%	0.4%			8.3%
	2003 Fall	100.0%	0.0%	2.5%	63.8%	21.2%	2.7%	1.1%	0.4%				8.4%
	2004 Fall	100.0%	0.1%	2.9%	65.8%	19.8%	2.4%	1.0%					7.9%
	2005 Fall	100.0%	0.2%	2.9%	68.0%	16.7%	2.7%						9.5%
	2006 Fall	100.0%	0.2%	2.7%	68.1%	17.1%							11.9%
	2007 Fall	100.0%	0.2%	3.1%	68.9%								27.8%
	2008 Fall	100.0%	0.3%	3.2%									96.5%
	2009 Fall	100.0%	0.1%										99.9%
	2010 Fall	100.0%											100.0%
	2011 Fall	100.0%											100.0%

The filters used to display these values are:

Semester Year Name Concat is equal to **2011 Fall, 2010 Fall, 2009 Fall, 2008 Fall, 2007 Fall, 2006 Fall, 2005 Fall, 2004 Fall, 2003 Fall, 2002 Fall, 2001 Fall, 2000 Fall** and CASE Applicant Type Cd WHEN '4' THEN 'New Freshmen' WHEN '6' THEN 'Transfers' ELSE 'Other' END is equal to **New Freshmen**