Cognos Analytics
v11.1.7

A Complete Guide
For Report Writers/Authors
Part 2
Icons Used In This Guide

**Information:** This icon serves as a general “FYI” and is used to provide you with background information that you may find useful.

**Alert:** This icon is used to signify a warning or alert that something involved in the current process could potentially cause a problem.

**Note:** This icon is used to inform you that there could be something here worth paying attention to.

**Try It:** This icon demonstrates that it’s time to try to perform an action yourself. Follow the steps provided and give it a try.

**Stretch Your Thinking:** This icon encourages you to stretch your thinking with both introduced and unintroduced material.
Visualizations
A visualization is data represented in graphic form. It can be a graph, bar chart, map or other visual form. By viewing data in a different way, users/decision makers can identify patterns or trends in the data.

Pie Chart
A pie chart is a circular statistical graphic, which uses slices to illustrate numerical proportion. It shows how parts make up and compare to a whole.

We are going to create a chart that shows the Faculty Count in each Academic Program.

1. Create a new blank report.
3. Open the Training Package. (return to Page1 from the Report tab.)
   Path: Team Content > Training Data Reports > Training Data Cognos Package > Training Data
4. Click the in the middle of the content explorer.
5. Choose Visualization.
   The visualization Gallery will open, prompting you to choose a visualization type.
6. In the left scroll bar choose Pie.
7. Click OK in the bottom right of the window.
8. When the Object and query names window opens name the viz Pie Chart.
9. Navigate to the Courses and Classes query subject and open the Department query.
10. Ctrl + click Academic Program and Faculty Count and drag them into the pie area.

   Notice that Cognos has strategically placed your data items in the Tabular data set window.
   Faculty Count appears in the Value area.
   Academic Program is in the Categories area.
11. Switch to **page preview** mode.  
   You may also run the report to HTML.

The faculty count for each **Academic Program** is displayed in 4 respective parts. The **Academic Program** legend appears in the top right of the visualization.

12. If you hover over each piece of the pie a tool tip opens giving you additional information about that slice.

13. **Save** the report in your **My Content** area as **Pie Chart**.
Clustered Bar Chart with Measure
Let’s create a Stacked Bar Chart that will show Financial Aid requested by Academic Career.

1. Create a New Blank report.
2. Turn interactivity mode off. Return to Page1.
3. Choose the Training Data package.
4. Click the in the middle of the report canvas.
5. Choose Visualization.
6. From the Visualization Gallery, (icons area) select Clustered Bar Chart. Double click or click OK.

7. The Object and query names window opens. Select OK to accept the defaults.
8. The **Bar Chart** template opens.
9. Open the **Financial Aid** query subject in **Student Data**.
10. Drag **Financial Aid Award Requested** to **Value**.
11. In the **Student Data** folder open the **Student Class Data** query subject.
12. Drag **Academic Career** to **X axis**.
13. Drag **Academic Program** to **Color**.
14. View in Page preview or Run to HTML.
15. The New report window shows the Clustered Bar Chart.
16. If you hover over a bar a tooltip will open to give Financial Aid Award detail info by Academic Career.
17. Close the Reporting tab if you ran the report.
18. Save the report in My Content as Financial Aid Requested by Academic Career.
Clustered Bar Chart with Measure

To use EmplID as a measure in a report we need to change the Detail Aggregation from None to Count, so each unique EmplID can be counted.

Let’s create a Clustered Bar Chart and change EmplID to a measure to use it in our visualization. When you’re trying to add an attribute (like EmplID) to a visualization (like a stacked bar chart), Cognos will identify an error with the data type, unless we change it to a Measure.

The report will count EmplIDs by Term showing Fin Aid Award Amount Given.

1. Create a new blank report.
2. Turn interactivity mode off. Return to Page1.
3. Select and open the Training Data package. Team Content > Training Data – Reports > Training Data Cognos Package > Training Data
4. Click the from the middle of the Content Explorer.
5. Choose Visualization.
6. When the Visualization gallery opens go to the top right Visualizations window and select the 11.0 visualizations from the pull-down menu. When you have some time explore this area to see the Legacy visualizations available from prior versions of Cognos.
7. Select the Clustered Bar.
   Double click on the Clustered Bar or select it and click OK.

8. When the Object and query names window opens name your visualization Financial Aid Awarded by Term. Select OK.
9. The **Clustered Bar** template opens.

10. Change your view from *Page design* to *Page preview* in the top right white toolbar.

11. Expand the **Student Data > Financial Aid** folder/query subject.

12. Drag **Financial Aid Award Amount Given** to the *Value* area.

13. Drag **EmplID** to the *X axis* area (middle row).

14. Drag **Term Code** to *Color*.

Notice that the visualization appears with many EmplIDs that don’t provide useful information.

We need to re-define the EmplID value as a **Measure**.

15. To do this we need to modify **Query1**.
Changing Values to Measures - EmplID as a Measure

1. From the Report tab select Query1.
2. In the Data Items box highlight EmplID.

3. Open the Properties pane in the top right white toolbar. Click on the Show properties button. The Properties pane is displaying the values for EmplID. Notice that the Detail and Summary Aggregation values are set to None.

4. In the Data Items Properties window change the Detail Aggregation to Count. The EmplIDs will now be counted. You will need to scroll up in the menu to view Count.
5. From the **Report** tab, select **Page1** to return to the visualization.
6. Click on the visualization canvas to make it active.
   If you cannot see the viz then **Run** the report to **HTML**.
7. Notice that the visualization is now counting all **EmpID’s** (students) by **Term**.
   When you hover over one of the single colored bars the tooltip tells you the **Count of EmpID’s**, the **Term Code**, and the **Total Financial Aid Award Amount Given** during that **Term**.

8. **Close** the **Reporting** tab when ready.
9. Save the report in **My Content** as **Fin Aid Awarded by Term**.
Filters

Concepts
A filter reduces the amount of data in a report based upon the criteria you set. You can filter one or more items, to a precise match or to a partial match.

Expressions:
A filter expression includes:

- A column name, which can be taken from the report
- An operator, such as “=” or “<>”
- The data we are searching for

Example of Filter Expression:

\[
[Fictitious\ Training\ Data].[Person\ Data].[Last\ Name] = 'Balboa'
\]

1. Namespace
2. Query Subject
3. Query Item
4. Operator
5. Value

The Operator indicates what kind of match is made. Below is a list of common operators:

- \(=\) Equal to. Must find a precise match.
- \(< >\) Not equal to. Shows everything except the match.
- \(\text{In}\) Matches a list of items.
- \(\text{Not In}\) Shows everything except the matches.
- \(\text{Starts With}\) Retrieves everything that begins with the characters of the phrase.
- \(\text{Contains}\) Retrieves everything that contains the matching characters or phrase.
- \(\text{Is Missing}\) Retrieves blanks.
Opening the Filters Dialog Window
Let’s familiarize ourselves with the Filters dialog window.


1. Turn off Interactivity Mode.
2. Click the Select Sources button. Navigate to: Team Content > Training Data Reports > Training Data Cognos Package > Training Data. Select Open.
4. From the Person Data Query Subject, bring the following fields into the report:
   • Last Name
   • First Name
   • Home Address Street
   • Home Address City
   • Home Address State
   • Home Address Postal Code
   • Home Address Country
   • Birth Date
5. Open Student Data > Student Class Data and add Academic Career to the report.
6. Save the report as Pre-Filter in your My Content area.

7. Select the entire Report table (click the three dots on the top left corner of the first field).
   Note: In the Properties pane to the right the List is now selected. Do not click on the three-dots in the top left of the Princeton label field. That will select the Header table.

8. From the contextual toolbar, click the Filters icon and choose Edit Filters from the pull-down menu.
9. Explore the Filters Dialog window.

The Filters window consists of two tabs: **Detail Filters** and **Summary Filters**. **Detail Filters** apply to the rows in the report. **Summary Filters** apply to grouped (or aggregate) data in the report. **Summary filters** also apply to an item not in the package, such as a calculated item that has been created.

**The Usage Area**
- Consists of three options
  - **Required**: The filter is required. In the case of a prompt, the report will not run until you have made a choice from the prompt.
  - **Optional**: The filter is optional. In the case of a prompt, the report will run even if you do not choose anything from the prompt.
  - **Disabled**: The filter is disabled. Disabling a filter allows the report to run without applying the filter. The filter is not removed; it is deactivated which may help in trouble-shooting the report.

**The Application Area**
- Consists of two options
  - **Before auto aggregation**: Apply a filter before a summary is calculated, non-aggregated records are filtered.
  - **After auto aggregation**: Apply a filter after a summary is calculated, aggregated rows are filtered.

**Filter Expression Actions**
The following actions are available for the filter expression:

<table>
<thead>
<tr>
<th>Icon</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="add-icon" alt="Add" /></td>
<td><strong>Add</strong>: Use this icon to add a new filter.</td>
</tr>
<tr>
<td><img src="delete-icon" alt="Delete" /></td>
<td><strong>Delete</strong>: Use this icon to delete an existing filter.</td>
</tr>
<tr>
<td><img src="edit-icon" alt="Edit" /></td>
<td><strong>Edit</strong>: Use this icon to edit an existing filter.</td>
</tr>
</tbody>
</table>

**Note**: The **Delete** and **Edit** buttons are grayed out because we have not created a filter yet.
The Filters Dialog Window

- Check you are on the **Detail Filters** tab.
- From the filters window, bottom left, click the **Add** icon (+).
- The **Create Filter** window opens.
- Select **Advanced**.
- Click **OK**.

- The **Detail filter expression window** opens.

**Detail Filter Expression**

Let’s look at the different tabs across the bottom of the window:
**Source Tab**
The Source tab allows you to filter on any item in the package.

**Data Items Tab**
The Data items tab allows you to filter on items in the report.

**Query Items Tab**
The Queries tab allows you to filter on items from other queries in your report.

**Functions Tab**
The Functions tab allows you to create filter calculations.

When building a filter, you can specify the data type. This is optional. If you already know the data that you are looking for you can type it directly into the expression box, provided you use the correct syntax.

Use the Constants folder to locate a list of available data types.

**Parameters Tab**
The Parameters tab allows you to use the input derived from users when they answer the parameter.

**Macros Tab**
The Macros tab is used to insert a fragment of code in a statement of a query or expression.

For example, add a macro to insert a new data item containing a user’s name or netid. It is also used to test report output formats or to apply conditional formatting.

The Tips Information area provides you with background information for available components as well as an example of how to use that component.
Creating Filters

Cognos Analytics provides the flexibility to either filter on an item in the model or on an item in the report. The **Source** tab is the location to use to filter on an item in the model.

1. **Cancel** out of both windows to get back to the report window.
2. **Change to Page preview** mode or **Run** the report to view it before any filters are applied.

Notice that the **Academic Career** column is showing all careers.

We are going to create a filter that searches on **Academic Career** to return only the students who are **Undergraduates (UG)**.

3. If you ran the report close the **New report** results window and return to the **Pre-Filter** tab.

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>Home Address Street</th>
<th>Home Address City</th>
<th>Home Address State</th>
<th>Home Address Postal Code</th>
<th>Home Address Country</th>
<th>Birth Date</th>
<th>Academic Career</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barker</td>
<td>Wanda</td>
<td>95092 Sage Court</td>
<td>Utica</td>
<td>NY</td>
<td>122571</td>
<td>USA</td>
<td>Aug 27, 1992 12:00:00 AM</td>
<td>GR</td>
</tr>
<tr>
<td>Bayles</td>
<td>Per</td>
<td>951 Lillian Center</td>
<td>Houston</td>
<td>TX</td>
<td>77326</td>
<td>USA</td>
<td>Apr 23, 1992 12:00:00 AM</td>
<td>LG</td>
</tr>
<tr>
<td>Belknap</td>
<td>Whee</td>
<td>9416 Johnson Point</td>
<td>Fort Pierce</td>
<td>FL</td>
<td>33327</td>
<td>USA</td>
<td>Oct 18, 1991 12:00:00 AM</td>
<td>GR</td>
</tr>
<tr>
<td>Beltran</td>
<td>Alxan</td>
<td>9444 Hoffman Point</td>
<td>Gatterburg</td>
<td>MD</td>
<td>20850</td>
<td>USA</td>
<td>Jan 14, 1990 12:00:00 AM</td>
<td>LG</td>
</tr>
<tr>
<td>Bell</td>
<td>Paul</td>
<td>95698 Thompson Terrace</td>
<td>New York City</td>
<td>NY</td>
<td>10923</td>
<td>USA</td>
<td>Nov 24, 1992 12:00:00 AM</td>
<td>LG</td>
</tr>
<tr>
<td>Beltran</td>
<td>Jacenta</td>
<td>96 International Point</td>
<td>Boston</td>
<td>MA</td>
<td>01778</td>
<td>USA</td>
<td>May 22, 1993 12:00:00 AM</td>
<td>GR</td>
</tr>
<tr>
<td>Bendi</td>
<td>Ovida</td>
<td>96 Marcy Drive</td>
<td>Arlington</td>
<td>VA</td>
<td>221813120</td>
<td>USA</td>
<td>Jul 27, 1993 12:00:00 AM</td>
<td>GR</td>
</tr>
<tr>
<td>Berry</td>
<td>Madeleine</td>
<td>9640 Forster Court</td>
<td>San Antonio</td>
<td>TX</td>
<td>78109</td>
<td>USA</td>
<td>Oct 6, 1992 12:00:00 AM</td>
<td>GR</td>
</tr>
<tr>
<td>Bertrand</td>
<td>Hija</td>
<td>9670 Wauback Way</td>
<td>Staten Island</td>
<td>NY</td>
<td>10704</td>
<td>USA</td>
<td>Dec 4, 1991 12:00:00 AM</td>
<td>LG</td>
</tr>
<tr>
<td>Carr</td>
<td>Tim</td>
<td>117 Twin Pines Point</td>
<td>Lancaster</td>
<td>PA</td>
<td>18901</td>
<td>USA</td>
<td>Jan 17, 1993 12:00:00 AM</td>
<td>LG</td>
</tr>
<tr>
<td>Gibson</td>
<td>Lao Ling</td>
<td>2773 Sunnbeck Junction</td>
<td>Norfolk</td>
<td>VA</td>
<td>22153</td>
<td>USA</td>
<td>Jan 13, 1990 12:00:00 AM</td>
<td>LG</td>
</tr>
<tr>
<td>Bhattacharya</td>
<td>Abhijnacy</td>
<td>97079 Village Green Parkway</td>
<td>Houston</td>
<td>TX</td>
<td>77478</td>
<td>USA</td>
<td>Oct 8, 1991 12:00:00 AM</td>
<td>VI</td>
</tr>
<tr>
<td>Barker</td>
<td>Delander</td>
<td>95 Conocott Point</td>
<td>Montgomery</td>
<td>AL</td>
<td>35242</td>
<td>USA</td>
<td>Sep 6, 1993 12:00:00 AM</td>
<td>GR</td>
</tr>
<tr>
<td>Bishen</td>
<td>Yim Quan</td>
<td>9726 Barnett Street</td>
<td>Young America</td>
<td>MN</td>
<td>55439</td>
<td>USA</td>
<td>Jun 7, 1992 12:00:00 AM</td>
<td>LG</td>
</tr>
<tr>
<td>Chang</td>
<td>Jalaya</td>
<td>123 Gudith Drive</td>
<td>Oakland</td>
<td>CA</td>
<td>92853</td>
<td>USA</td>
<td>Jun 17, 1991 12:00:00 AM</td>
<td>LG</td>
</tr>
<tr>
<td>Cole</td>
<td>Vitaly</td>
<td>16 Oak Drive</td>
<td>Huntington Beach</td>
<td>CA</td>
<td>90621</td>
<td>USA</td>
<td>Nov 23, 1993 12:00:00 AM</td>
<td>LG</td>
</tr>
<tr>
<td>Cochran</td>
<td>Zew</td>
<td>15 Summer Ridge Parkway</td>
<td>Rochester</td>
<td>NY</td>
<td>11753</td>
<td>USA</td>
<td>Oct 25, 1991 12:00:00 AM</td>
<td>LG</td>
</tr>
<tr>
<td>Clarkson</td>
<td>Madeleine</td>
<td>156 Nova Plaza</td>
<td>Chicago</td>
<td>IL</td>
<td>69031</td>
<td>USA</td>
<td>Dec 30, 1993 12:00:00 AM</td>
<td>LG</td>
</tr>
<tr>
<td>Cole</td>
<td>Deltgando</td>
<td>162 Mitchell Avenue</td>
<td>Canton</td>
<td>OH</td>
<td>40419</td>
<td>USA</td>
<td>Dec 14, 1993 12:00:00 AM</td>
<td>LG</td>
</tr>
<tr>
<td>Cox</td>
<td>Luba</td>
<td>1784 David Terrace</td>
<td>Findi Gheb</td>
<td>54770</td>
<td>PAK</td>
<td>May 26, 1993 12:00:00 AM</td>
<td>GR</td>
<td></td>
</tr>
</tbody>
</table>

4. **Select Save as** from the **Save** pull-down menu.
   **Save** the report as in your **Inbox** sub-folder as **Student Data with UG Filter**.
Creating a Single Item Filter

5. We are going to create a filter to return only Undergraduates who have an Academic Career = UG. The new filter expression will be:

   [Fictitious Training Data].[Student Class Data].[Academic Career] = ‘UG’

6. Select the table.
7. From the contextual toolbar, click the Filters icon and choose Edit Filters.
8. Click the Add button (+ button below the filter window).

9. Select Advanced in the Create filter window that opens, and click OK.

10. The Detail Filter expression window opens.
11. From the Source tab, navigate to the Student Data > Student Class Data and double-click Academic Career to add it to the Expression Definition window.

   Adding Items: You can drag the data item into the expression window or double-click on it.
12. Select the **Functions** (f(x)) tab below the Available Components window.

13. Expand the **Operators** folder.
14. Double-click the equal “=” sign to add it to the expression.
   
   **Adding Items:** if you drag the component into the expression, be sure that your cursor is located where you want the component to be added to the expression.

   ![Diagram of selecting the equal sign]

   *You can also type next to your cursor to add the component (=).*

15. Click back to the **Source** tab and make sure **Academic Career** is selected.
16. Click the **Select Value** icon in the top right of the window, next to the blue & white **Validate** button.
17. The **Select value** window opens.
18. Select **UG** (for Undergraduate). Click the **Insert** button to add it to the expression.
19. You return to the **Detail filter expression** window.
   The expression should look like the below one.
   
   ![Image of Select value window]
   
   
   [Fictitious Training Data].[Student Class Data].[Academic Career]='UG'
20. Validate the expression by clicking the **Validate** button.
   
   ![Image of Validate button]
   
   If valid a **No errors** message appears in the **Information** window.
   If your expression does not validate you will be given information in the window which may help you to identify the issue.
21. Click **OK** once your expression is validated.

   ![Image of Detail filter expression window]

Adding spaces within the expression is fine to do. For some this makes the expression easier to read.

*Do not add spaces between single quotes ‘*.

*This is the exact string Cognos uses to search records in the Database.*
The new filter will appear in the Filters window in the Detail Filters tab.

22. Click **OK** to accept the new filter expression.

![Image of Filters window with new filter added]

23. Move **Academic Career** to the 3rd column of the report.
24. Sort the report on **Last Name** ascending.
25. View in **Page preview** mode or run the report.
26. Page down to the **Bottom**. If your page is not maximized you may not see the **Page up, Page down** buttons.
27. Notice that only Academic Career = **UG** data is showing.
   1. Close the **New report** results window tab.
   2. **Save** the report.

![Image of student data table with UG filter applied]

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Content in this document is based on fictitious data sets represented in CeDAR's Training Package.
*Thinking Back*

If we wanted to see this same report (with the filter applied) but omit the Academic Career column from the report, what steps would we take?

Hint: Cut not Delete.

If we Delete Academic Career from our data items in the report the filter will not run.

Sorting by Last Name ascending makes it easier to see that cutting the Academic Career column still returns the same data in both reports.

---

**Student Data with UG Filter**

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>Home Address Street</th>
<th>Home Address City</th>
<th>Home Address State</th>
<th>Home Address Postal Code</th>
<th>Home Address Country</th>
<th>Birth Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abare</td>
<td>Dar</td>
<td>40 8th Road</td>
<td>Reston</td>
<td>VA</td>
<td>22181</td>
<td>USA</td>
<td>Dec 9, 1993 12:00:00 AM</td>
</tr>
<tr>
<td>Abblasov</td>
<td>Poland</td>
<td>60 Almo Circle</td>
<td>New Castle</td>
<td>PA</td>
<td>19041</td>
<td>USA</td>
<td>Jan 9, 1991 12:00:00 AM</td>
</tr>
<tr>
<td>Abbott</td>
<td>Megan</td>
<td>70 Alpine Park</td>
<td>Lexington</td>
<td>KY</td>
<td>42971</td>
<td>USA</td>
<td>Jan 31, 1993 12:00:00 AM</td>
</tr>
<tr>
<td>Abbot</td>
<td>Molly</td>
<td>100 2nd Pass</td>
<td>North Las Vegas</td>
<td>NV</td>
<td>89148</td>
<td>USA</td>
<td>Mar 4, 1992 12:00:00 AM</td>
</tr>
<tr>
<td>Able</td>
<td>Guyse</td>
<td>70 Bonner Junction</td>
<td>New York City</td>
<td>NY</td>
<td>112834</td>
<td>USA</td>
<td>Dec 20, 1992 12:00:00 AM</td>
</tr>
<tr>
<td>Abra</td>
<td>Aidan</td>
<td>30 Cottonwood Trail</td>
<td>Rockville</td>
<td>MD</td>
<td>20747</td>
<td>USA</td>
<td>Dec 26, 1993 12:00:00 AM</td>
</tr>
<tr>
<td>Abraham</td>
<td>Ava</td>
<td>0380 Pleasure Way</td>
<td>Boston</td>
<td>Massachusetts</td>
<td>02186</td>
<td>USA</td>
<td>Sep 18, 1993 12:00:00 AM</td>
</tr>
<tr>
<td>Abraham</td>
<td>Ava</td>
<td>90 Comanche Parkway</td>
<td>Los Angeles</td>
<td>CA</td>
<td>91754</td>
<td>USA</td>
<td>Sep 18, 1993 12:00:00 AM</td>
</tr>
<tr>
<td>Abraham</td>
<td>Illynn</td>
<td>10 Buena Vista Crossing</td>
<td>San Jose</td>
<td>NJ</td>
<td>95826</td>
<td>USA</td>
<td>Feb 14, 1992 12:00:00 AM</td>
</tr>
<tr>
<td>Abraham</td>
<td>Illynn</td>
<td>330 8th Junction</td>
<td>Trenton</td>
<td>NJ</td>
<td>00070</td>
<td>USA</td>
<td>Feb 14, 1992 12:00:00 AM</td>
</tr>
<tr>
<td>Abraham</td>
<td>Indian</td>
<td>40 Cardinal Junction</td>
<td>Belfast</td>
<td>Northern Ireland</td>
<td>SN1910DE</td>
<td>GER</td>
<td>Jun 22, 1993 12:00:00 AM</td>
</tr>
<tr>
<td>Abraham</td>
<td>Oliver</td>
<td>60 Blue Hill Park Drive</td>
<td>Atlanta</td>
<td>GA</td>
<td>36326</td>
<td>USA</td>
<td>Jun 21, 1993 12:00:00 AM</td>
</tr>
<tr>
<td>Abraham</td>
<td>Sebastian</td>
<td>8 Knudson Court</td>
<td>Brooklyn</td>
<td>NY</td>
<td>10573</td>
<td>USA</td>
<td>Jun 21, 1993 12:00:00 AM</td>
</tr>
<tr>
<td>Abraham</td>
<td>Sebastian</td>
<td>56 Brown Way</td>
<td>Denver</td>
<td>CO</td>
<td>80126</td>
<td>USA</td>
<td>Jun 21, 1993 12:00:00 AM</td>
</tr>
<tr>
<td>Abrahamda</td>
<td>Rabicca</td>
<td>2 Banker Hill Hill</td>
<td>Jersey City</td>
<td>NJ</td>
<td>07817</td>
<td>USA</td>
<td>Jul 31, 1992 12:00:00 AM</td>
</tr>
<tr>
<td>Aceredo</td>
<td>Wondeer</td>
<td>70 Lakewood Place</td>
<td>Kalamazoo</td>
<td>MI</td>
<td>49291</td>
<td>USA</td>
<td>Apr 7, 1992 12:00:00 AM</td>
</tr>
<tr>
<td>Acks</td>
<td>Goodalehug</td>
<td>80 Derek Point</td>
<td>Ipoh</td>
<td>Penak</td>
<td>47300</td>
<td>MYS</td>
<td>May 26, 1992 12:00:00 AM</td>
</tr>
<tr>
<td>Adderly</td>
<td>Robert</td>
<td>600 Farnico Drive</td>
<td>Odessa</td>
<td>TX</td>
<td>75201</td>
<td>USA</td>
<td>Jan 5, 1992 12:00:00 AM</td>
</tr>
<tr>
<td>Adegalo</td>
<td>Bravuri</td>
<td>80 Ecker Drive</td>
<td>Wheelers</td>
<td>BC</td>
<td>V8V4H5</td>
<td>CAN</td>
<td>Nov 1, 1993 12:00:00 AM</td>
</tr>
<tr>
<td>Athika</td>
<td>Ugochi</td>
<td>20 Forest Junction</td>
<td>Hyattsville</td>
<td>MD</td>
<td>20817</td>
<td>USA</td>
<td>Jun 25, 1992 12:00:00 AM</td>
</tr>
</tbody>
</table>
Filtering on a Single Item from the Data Items Tab

When creating reports that contain filters, it is common to show the column in the report that corresponds to the filtered subject. For instance, if you were filtering on *Binoculars*, generally, you would want to show the *Product Type* column to re-emphasize that the report is not limited to just one product type.

*If a data item is deleted from the query, any filter referencing that data item will no longer work and the report will not run. Remember to cut (not delete) the data item so that the filter continues to work.*

1. Open the Pre-Filter report in *Edit* mode.
2. Save the report as *Canada*.
3. Select the *Home Address Country* column (body or header).
4. From the contextual toolbar, click the Filters icon and select *Edit Filters*.
5. Click the Add icon (bottom left off the Filters window).
6. Select Advanced. Click OK. The Detail filter expression window opens.
7. Select the Data Items tab next to the Source tab.

You will see a list of available components that currently exist in the report.

8. Double-click *Home Address Country* to add it to the Expression Definition window.
9. Type an = Sign
10. Click the Select Value icon in the top right of the window.

Note: The Select multiple values icon is right next to the Select value icon, when you want to add multiple values to your expression.
11. In the **Select value** window, scroll down to find and select **CAN** for Canada.
12. Click **Insert**. You return to the **Detail filter expression** window.
13. In the **Detail filter expression** window, click the **Validate button** (blue and white check) to ensure there are no errors.
14. If the report is valid click **OK** to see the newly created filter in the expression window.
   New filter: [Home Address Country] = ‘CAN’
15. Click **OK** to accept the expression, and click **OK** again to return to the report page.
16. **Run** the report or select the **Page preview** button (**Page views** drop down menu) to view the output.
   If you scroll down you will still see the **Home Address Country** column, is only showing results for Canada.
17. **Close** the **New report results window** if you ran the report.
18. **Save** the report.
Usage (Required, Optional, Disabled)

When a filter is created, there are three available Usage choices: Required, Optional, and Disabled.

The Filter default is set to Required, so the new filter ([Home Address Country] = ‘CAN’) is active when the report is run. The Filter Usage option can be manually changed to Optional or Disabled.

Required means the filter must be used.

Choosing Optional means the report will run even if a filter value(s) has not been selected.

In a prompt with Optional activated, the report runs even if you do not make a value(s) selection.

Choosing Disabled allows the report to run as if there is no filter.

Troubleshooting: When there are report issues, disabling a filter(s) helps you to de-bug or trouble-shoot the report. This feature allows you to turn the filter off temporarily.

In this exercise, we’ll adjust the Filter Usage to Disabled, in the Canada report.

1. Save the report as Canada filter disabled.
2. Select the Home Address Country column.
3. From the contextual toolbar, click the Filters icon and select Edit Filter.
4. Make sure the Detail Filters tab is selected.
5. Highlight the Canada filter.
6. Under the Usage section, choose Disabled.
7. Click OK.
8. Run the report or select the Page preview button to view the output. Page down to view the Home Address Country. All countries now appear in the report output.
You will notice that all countries show when the filter is disabled.

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>Home Address Street</th>
<th>Home Address City</th>
<th>Home Address State</th>
<th>Home Address Postal Code</th>
<th>Home Address Country</th>
<th>Birth Date</th>
<th>Academic Career</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burgess</td>
<td>Lily</td>
<td>1 North Avenue</td>
<td>Satu No</td>
<td></td>
<td>00000</td>
<td>ROU</td>
<td>Jan 5, 1992 12:00:00 AM</td>
<td>GR</td>
</tr>
<tr>
<td>Burke</td>
<td>Jonny</td>
<td>1 Park Meadow Street</td>
<td>Hartford</td>
<td>CT</td>
<td>66057</td>
<td>USA</td>
<td>Mar 13, 1993 12:00:00 AM</td>
<td>GR</td>
</tr>
<tr>
<td>Buller</td>
<td>Ollea</td>
<td>1 Vidan Lane</td>
<td>Kunman</td>
<td></td>
<td>463734</td>
<td>KOR</td>
<td>Nov 18, 1993 12:00:00 AM</td>
<td>GR</td>
</tr>
<tr>
<td>Delucia</td>
<td>Raboaa</td>
<td>2 Forest Run Center</td>
<td>Sarrauto</td>
<td>QC</td>
<td>J7AV5</td>
<td>CAN</td>
<td>Jul 27, 1992 12:00:00 AM</td>
<td>UG</td>
</tr>
<tr>
<td>Reason</td>
<td>Jamaal</td>
<td>73089 Bluestem Point</td>
<td>Orthei</td>
<td>MD</td>
<td>MD0201</td>
<td>MD6</td>
<td>Jun 11, 1992 12:00:00 AM</td>
<td>UG</td>
</tr>
<tr>
<td>Dudzick</td>
<td>Sonyum</td>
<td>207 Blue Bill Park</td>
<td>San Diego</td>
<td>CA</td>
<td>55070</td>
<td>USA</td>
<td>Mar 22, 1992 12:00:00 AM</td>
<td>UG</td>
</tr>
<tr>
<td>Motlath</td>
<td>Reeshad</td>
<td>6 Ilot Alley</td>
<td>Lafayette</td>
<td>IN</td>
<td>47801</td>
<td>USA</td>
<td>Sep 4, 1992 12:00:00 AM</td>
<td>UG</td>
</tr>
<tr>
<td>Rajagopal</td>
<td>Jacicah</td>
<td>7152 Emmet Crossing</td>
<td>Dallas</td>
<td>TX</td>
<td>77401</td>
<td>USA</td>
<td>Oct 16, 1993 12:00:00 AM</td>
<td>GR</td>
</tr>
<tr>
<td>Raoouli</td>
<td>Gaspare</td>
<td>73 Amonth Circle</td>
<td>Kansas City</td>
<td>MO</td>
<td>64114</td>
<td>USA</td>
<td>Apr 14, 1991 12:00:00 AM</td>
<td>UG</td>
</tr>
</tbody>
</table>

9. Close the New report results window if you ran the report.
10. Save the report.

Clicking the Q_List1 Query from the Report tab pull-down menu will take you to the Data Items and Detail Filters in your report. You can manage Query and Filter functionality from this area. When you double-click on either the Home Address Country data item, or the CAN Detail Filter the Detail item expression window opens.
1. Navigate to the Canada report in your My Contents area or via the Welcome menu in the Orange toolbar.
2. Open it in Edit mode. Save the report as Gender Filter.
3. Edit the report.
   Hint: Check that you are in Edit mode.
4. Check that you are on the report page.
   Hint: The breadcrumbs in the Report tab should look like:
5. From the Person Data query subject under Person Bio Data, add Gender as the third column of the report.
   Hint: Select Sources to navigate through the Training Data.
6. After adding Gender to the report you may see this message indicating the report has been updated and successfully validated.

7. Delete the existing Country (CAN) filter.
   Hint: Highlight any part of the report body and select Edit Filters from the contextual toolbar.
8. In the Filters window select the Canada filter.
   Click the Delete button below the expression window.

9. Create a new filter on Gender, and set the filter to Female. Click the Add button.
   Remember to choose Advanced in the New filter window.
   Hint: Gender = ‘F’.
   Expression: [Fictitious Training Data].[Person Data].[Gender] = ‘F’
10. Validate the expression.
11. **Hide** the **Gender** column.

**Hint:** **Cut** the **Gender** column so the filter still remains active.

**Do not Delete** the column from the report. That will also delete the filter.

The **Cut** (scissors) button can be found on the left in the context toolbar.

12. **Run** the report, or view the report in **Page preview**.

Notice that only **Female** student data is in the report output.

13. **Save** the report.

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>Home Address Street</th>
<th>Home Address City</th>
<th>Home Address State</th>
<th>Home Address Postal Code</th>
<th>Home Address Country</th>
<th>Birth Date</th>
<th>Academic Career</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barbier</td>
<td>Chiene</td>
<td>00737 Valley Edge Avenue</td>
<td>Elizabeth</td>
<td>NJ</td>
<td>00550</td>
<td>USA</td>
<td>Sep 10, 1983</td>
<td>GR</td>
</tr>
<tr>
<td>Herrera</td>
<td>Pokasade</td>
<td>2340 Bellgrove Road</td>
<td>Newark</td>
<td>NJ</td>
<td>07552</td>
<td>USA</td>
<td>Aug 19, 1981</td>
<td>GR</td>
</tr>
<tr>
<td>Anderson</td>
<td>Caroline</td>
<td>00399 Huxley Avenue</td>
<td>Singapore</td>
<td></td>
<td>510546</td>
<td>SGP</td>
<td>Aug 27, 1981</td>
<td>UG</td>
</tr>
<tr>
<td>Whalen</td>
<td>Amanda</td>
<td>944 Vermont Avenue</td>
<td>Chepaueria</td>
<td></td>
<td>80100</td>
<td>KEN</td>
<td>Apr 27, 1991</td>
<td>UG</td>
</tr>
<tr>
<td>Verqara Capole</td>
<td>Assunta</td>
<td>9037 Hoffman Drive</td>
<td>Hede</td>
<td></td>
<td>513000</td>
<td>CHN</td>
<td>Apr 21, 1993</td>
<td>UG</td>
</tr>
<tr>
<td>Price</td>
<td>Meisa</td>
<td>7 Waywood Trail</td>
<td>Phoenix</td>
<td>AZ</td>
<td>85719</td>
<td>USA</td>
<td>Mar 13, 1983</td>
<td>UG</td>
</tr>
<tr>
<td>Edelman</td>
<td>Louise</td>
<td>216 Meromontle Lane</td>
<td>Fresno</td>
<td>CA</td>
<td>91706</td>
<td>USA</td>
<td>Jul 26, 1993</td>
<td>UG</td>
</tr>
<tr>
<td>Connrie</td>
<td>Miafedia</td>
<td>169 Fallview Street</td>
<td>Palmdale</td>
<td>CA</td>
<td>94510</td>
<td>USA</td>
<td>Sep 26, 1982</td>
<td>UG</td>
</tr>
<tr>
<td>Talbotten</td>
<td>Ronee</td>
<td>874 Red Cloud Junction</td>
<td>New York City</td>
<td>NY</td>
<td>10456</td>
<td>USA</td>
<td>Dec 21, 1983</td>
<td>UG</td>
</tr>
<tr>
<td>Sander</td>
<td>Victoria</td>
<td>735 Harbot Pathway</td>
<td>Roanoke</td>
<td>VA</td>
<td>20129</td>
<td>USA</td>
<td>May 10, 1992</td>
<td>UG</td>
</tr>
<tr>
<td>Brady</td>
<td>Rachel</td>
<td>1 Anhalt Terrace</td>
<td>Springfield</td>
<td>MO</td>
<td>63069</td>
<td>USA</td>
<td>Jan 12, 1982</td>
<td>GR</td>
</tr>
</tbody>
</table>
Filtering on Multiple Items – Using “In”

When using the equal sign “=”, the filter expression can only equal one item. If you want to create a multi-value filter, the “in” statement allows you to filter on multiple values.

In this exercise, we’ll apply a filter that returns only the Home Address Country codes for Canada and Egypt.

1. Open the Canada report for editing.
   
   Hint: Go to the Welcome page and select the Canada report. The Canada More button drop-down includes the Edit report selection. You may see it in the Welcome drop-down menu

2. Save the report in your Inbox area as Multiple Countries Filter.

3. Edit the Home Address Country filter. After selecting the Home Address Country column open the Edit Filters window from your context toolbar.
   
   Hint: In the Filters window confirm that Usage is Required.
   
   Select the Pencil/Edit icon to open the Detail filter expression window.

4. Double click to open the filter and delete “=’CAN’”.

5. After [Home Address Country], type the word IN.

6. On the left, in the Available components window, go to Person Data.

7. Highlight Home Address Country. Click the Select Multiple Values icon in the top right of the expression window.

8. Select and add both CAN and EGY.
   
   Use the scroll buttons on the left to navigate to your values.

9. Add Canada. Then add Egypt.

   Note: If you are in the same window you can Control Click to select multiples values. Since Canada and Egypt are not in the same window, this functionality doesn’t work, so you have to add each value, one at a time.

10. Click on the blue arrow in the middle of the window to add the selections to the Selected values window on the right.

11. Click Insert when ready.
The new filter definition will appear in the Expression box:

[Home Address Country] in ('CAN', 'EGY')

13. **Validate** the report.
14. Click **OK** to return to the **Filters** window.
15. Click **OK** again to return to the report.
16. **Run** the report or view it in **Page Preview** mode.
    Page down to see that the report output includes **Home Address Country** codes only for **Canada** and **Egypt**.

**Note:** Kimmel is the only person with a Home Address Country of **Egypt**.

17. **Close** the **Reporting** window if you ran the report.
18. **Save** the report.
Filtering on a Date Range – Using “Between”

The “between” expression allows the user to look for anything that occurred within a range of dates. We use start and end dates to filter the output data.

In this exercise, we will create a filter on birthdate looking for output on a specific range of dates.

1. Open the Pre-Filter report for editing and Save it as Filter by Birth Date.
2. Sort by Birth Date ascending.
   - **Hint:** Select the Birth Date column or header. In the contextual tool bar select Sort ascending.
3. Select the table. Click on the 3 orange dots in the top left of the header columns.
   - **Hint:** next to Last Name header.
4. From the contextual toolbar, click the Filters icon and select Edit Filters.
5. Click the Add icon.
6. Select Advanced. Select OK.
7. From the Source tab, expand the Person Bio query subject to locate Birth Date and drag it or double-click on it to add it to the Expression Definition window.
8. Your cursor should be at the end of the expression definition, enter a single space.
9. Type the following: between 1991-01-02 and 1992-12-30.

The new filter expression is:

[Fictitious Training Data].[Person Data].[Birth Date] between 1991-01-02 and 1992-12-30

When using Date-type fields in an expression, (i.e. Birth Date field), single quotes are not needed.

Single quotes are needed for character-type fields, (like Name).

10. Click Validate to ensure there are no errors.
11. Click OK when ready to close the expression window.
12. Click OK to close the Filters window and return to the report.
13. Run the report or view it in Page Preview mode.

```
<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>Home Address Street</th>
<th>Home Address City</th>
<th>Home Address State</th>
<th>Home Address Postal Code</th>
<th>Home Address Country</th>
<th>Birth Date</th>
<th>Academic Career</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soni</td>
<td>Margely</td>
<td>567 Ridge Oak Drive</td>
<td>Dallas</td>
<td>TX</td>
<td>75094</td>
<td>USA</td>
<td>Jan 2, 1991</td>
<td>GR</td>
</tr>
<tr>
<td>Soni</td>
<td>Margely</td>
<td>567 Ridge Oak Drive</td>
<td>Dallas</td>
<td>TX</td>
<td>75094</td>
<td>USA</td>
<td>Jan 2, 1991</td>
<td>UG</td>
</tr>
<tr>
<td>Soni</td>
<td>Margely</td>
<td>8344 Buell Junction</td>
<td>Dallas</td>
<td>TX</td>
<td>76132</td>
<td>USA</td>
<td>Jan 2, 1991</td>
<td>GR</td>
</tr>
<tr>
<td>Soni</td>
<td>Margely</td>
<td>6344 Buell Junction</td>
<td>Dallas</td>
<td>TX</td>
<td>76132</td>
<td>USA</td>
<td>Jan 2, 1991</td>
<td>UG</td>
</tr>
<tr>
<td>Jain</td>
<td>Drayona</td>
<td>3922 Holy Cross Place</td>
<td>New York City</td>
<td>NY</td>
<td>12180</td>
<td>USA</td>
<td>Jan 4, 1991</td>
<td>UG</td>
</tr>
<tr>
<td>Warren</td>
<td>Lillian</td>
<td>6 Elka Pass</td>
<td>Jersey City</td>
<td>NJ</td>
<td>08080</td>
<td>USA</td>
<td>Jan 4, 1991</td>
<td>GR</td>
</tr>
<tr>
<td>Warren</td>
<td>Lillian</td>
<td>6 Elka Pass</td>
<td>Jersey City</td>
<td>NJ</td>
<td>08080</td>
<td>USA</td>
<td>Jan 4, 1991</td>
<td>UG</td>
</tr>
<tr>
<td>Warren</td>
<td>Lillian</td>
<td>930 Declaration Point</td>
<td>Trenton</td>
<td>NJ</td>
<td>08822</td>
<td>USA</td>
<td>Jan 4, 1991</td>
<td>GR</td>
</tr>
<tr>
<td>Warren</td>
<td>Lillian</td>
<td>930 Declaration Point</td>
<td>Trenton</td>
<td>NJ</td>
<td>08822</td>
<td>USA</td>
<td>Jan 4, 1991</td>
<td>UG</td>
</tr>
<tr>
<td>Sara</td>
<td>Conz</td>
<td>75 John Well Place</td>
<td>Trenton</td>
<td>NJ</td>
<td>06736</td>
<td>USA</td>
<td>Jan 5, 1991</td>
<td>UG</td>
</tr>
<tr>
<td>Liu</td>
<td>Jonathon</td>
<td>48920 Athwood Court</td>
<td>Columbus</td>
<td>OH</td>
<td>45215</td>
<td>USA</td>
<td>Jan 6, 1991</td>
<td>UG</td>
</tr>
<tr>
<td>Milnes</td>
<td>Brianna</td>
<td>57466 Judy Terrace</td>
<td>R S</td>
<td>Gujarat</td>
<td>700019</td>
<td>IND</td>
<td>Jan 7, 1991</td>
<td>UG</td>
</tr>
</tbody>
</table>
```

Using the word “between” includes the beginning and the end date that is in the expression.

January 2, 1991 and December 30, 1992 are included in the filter.

If we *Disable* (turn off) the filter we can see that there are rows for January 1, 1991, and one row for Dec. 31, 1992 that do not appear when the filter is turned on.

14. If you ran the report close the Reporting results window.
15. Save the report.
Filtering Text – Using “Starts With”

Both, the “starts with” and “contains” operators are useful if you are not sure how to spell a name, or if you only know part of the name.

To filter using “starts with”:

1. Open the Pre-Filter report for editing and Save it as Filter - Starts With.
2. Select the table. Click on the 3 orange dots in the top left of the report body window.
3. From the contextual toolbar, click the Filters icon and select Edit Filters.
4. Click the Add icon.
5. Select Advanced.
6. From the Source tab, expand the Person Data query subject to locate Last Name and double-click to add it to the expression definition box.

Your cursor should be at the end of the expression definition.

7. Add a space.
8. Click the Functions tab and expand the Operators folder.
9. Locate and double-click the starts with operator. Or type in starts with.

Notice under the Information heading, it shows a tip how to write the starts with expression.

You may also type expressions directly into the expression definition window.

10. Position your cursor immediately after the starts with expression.
    You may add a space or not. The below expression includes a space after starts with because I find it easier to read the expression with spaces. You may not need to add spaces to your expression.
11. Open the Constants folder.
    Double-click String.
12. Position your cursor between the single quotes.
13. Type am. You may also type in ‘am’.

Whatever appears in the string, (in this case: am), must exactly match the record stored in the database table.

14. Click Validate.
15. If there are no errors, click OK to return to the Filters window.
16. Click OK to return to the report page.
17. Run the report or switch to Page preview to see all the students whose last names begin with the letters “am”.

**WHY DOES THE REPORT INDICATE “NO DATA AVAILABLE”?**

**Answer:** Whatever appears in the string must exactly match the record stored in the database. The report returns no data because the first letter of all last names in the database are upper case.

We must change the filter so that the query searches for Last Names beginning with initial capitalization “Am”.

18. Close the Report Results window or return to Page design view.
19. Edit the filter. Validate the expression.
20. Run the report again.
21. Save the report.

The report will now show last names beginning with “Am”.

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>Home Address Street</th>
<th>Home Address City</th>
<th>Home Address State</th>
<th>Home Address Postal Code</th>
<th>Home Address Country</th>
<th>Birth Date</th>
<th>Academic Career</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambiotis</td>
<td>Rosanne</td>
<td>700 Westfield Road</td>
<td>London</td>
<td>England</td>
<td>S00EZ</td>
<td>GBR</td>
<td>Aug 24, 1991 12:00:00 AM</td>
<td>QR</td>
</tr>
<tr>
<td>Ambiotis</td>
<td>Roseanne</td>
<td>87 Guayside Vista</td>
<td>Canberra</td>
<td>ACT</td>
<td>2071</td>
<td>AUS</td>
<td>Aug 24, 1991 12:00:00 AM</td>
<td>GR</td>
</tr>
<tr>
<td>Ambiotis</td>
<td>Costanza</td>
<td>60000 Nevada Pass</td>
<td>Santa Ana</td>
<td>CA</td>
<td>95035</td>
<td>USA</td>
<td>Nov 25, 1993 12:00:00 AM</td>
<td>UG</td>
</tr>
<tr>
<td>Amuma</td>
<td>Natalie</td>
<td>500171 Loomis Street</td>
<td>Anaheim</td>
<td>CA</td>
<td>91607</td>
<td>USA</td>
<td>Apr 6, 1993 12:00:00 AM</td>
<td>UG</td>
</tr>
<tr>
<td>Ambiotis</td>
<td>Rosanne</td>
<td>700 Westfield Road</td>
<td>London</td>
<td>England</td>
<td>S00EZ</td>
<td>GBR</td>
<td>Aug 24, 1991 12:00:00 AM</td>
<td>UG</td>
</tr>
<tr>
<td>Ambiotis</td>
<td>Roseanne</td>
<td>87 Guayside Vista</td>
<td>Canberra</td>
<td>ACT</td>
<td>2071</td>
<td>AUS</td>
<td>Aug 24, 1991 12:00:00 AM</td>
<td>UG</td>
</tr>
</tbody>
</table>
Filtering Text – Using “Contains”

In this exercise, we’ll filter a report to find all the last names which contain the letters “am”.

1. Using the current report, **Save** it as **Filter with Contains**.
2. Select the table.
3. From the contextual toolbar, click the **Filters** icon and select **Edit Filters**.
4. Select the filter in the window and click the **Edit** (pencil) icon, or double-click on the filter expression.
5. Delete the “**starts with ‘am’**” part of the filter.
6. From the **Functions** tab, open the **Operators** folder and double-click **contains**.
7. Open the **Constants** folder and double-click **string**.
8. Position your cursor between the single quotes and type **am**.
   Or just type in **contains ‘am’**.
9. **Validate** the expression.
10. Click **OK** (twice).
11. **View** in **Page preview** or **Run** the report.
   All the Last Names contain the letters ‘am’.
12. If you ran the report close the **reporting** window
13. **Save** your report.
Filtering Using “Like” and Wildcards

When trying to retrieve records that match a certain pattern, use the “like” operator. You can use the “like” operator in two different formats.

**With a Wildcard %**: Using the percentage sign (%) allows you to match any string, of any length, including strings with zero length.

**With an Underscore _**: Using an underscore (_) allows you to match on any single character.

In this exercise, we’ll apply a filter to return only records for people who live in a **Postal Code** which begins with “K” and then modify the filter to include a “K” somewhere within the **Postal Code**.

1. Using the previous report, **Save** it as Filter w/Multiple Postal Codes.
2. Select the entire table. Select **Edit Filters**.
3. From the **Detail Filters** tab, select the **Last Name** filter. Set the **Usage** to **Disabled**.
4. Click the **Add** icon.
5. Choose **Advanced**. Select **OK**.
6. In the **Expressions** window, add the **Home Address Postal Code** field from the **Person Data** query tab. Add a space.
7. From the **Functions** tab, open the **Operators** folder and add the **like** operator. Add a space.
8. Add ‘K%’ after the **like** operator.

The Expression should read:

```
[Fictitious Training Data].[Person Data].[Home Address Postal Code] like 'K%'
```

9. **Validate** the report. Select **OK** when the expression is valid. Select **OK** again to return to the report page.
10. **Run** the report.

Starting the string with a capital letter (K) followed by the wildcard (%), requires that all **Postal Code** records returned will begin with a capital letter (K). The wildcard (%) after the capital letter (K) indicates that any character (or number), can follow the capital letter (K).

All records returned will begin with a capital K in the **Postal Code** column, followed by either characters or numbers.

11. **Close** the **New report** results window.
12. Let’s **Edit** your filter to include a “K” anywhere within the **Postal Code**. Select the entire table.
13. Select the **Edit Filters** button to open the **Filters** window. Notice 2 filters now appear in the **Detail Filters** window.
14. Select the (postal code) filter and **Disable** it. Open the filter and copy the expression.
15. Create a new filter, and paste the expression into the window.
16. In the **Expressions** window, add a wildcard value (%) before the capital letter (K).

The Expression should read: 

```
[Fictitious Training Data].[Person Data].[Home Address Postal Code] like '%K%'
```

---

**Multiple Postal Codes**

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>Home Address Street</th>
<th>Home Address City</th>
<th>Home Address State</th>
<th>Home Address Postal Code</th>
<th>Home Address Country</th>
<th>Birth Date</th>
<th>Academic Career</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lohman</td>
<td>Bains</td>
<td>490 Waxning Way</td>
<td>Kawtice</td>
<td>ON</td>
<td>K9H6V2</td>
<td>CAN</td>
<td>Aug 16, 1993 12:00 AM</td>
<td>UG</td>
</tr>
<tr>
<td>Michael</td>
<td>Bhaanu</td>
<td>56662 Messerschmidt Trail</td>
<td>Kapuskasing</td>
<td>ON</td>
<td>K1R3G5</td>
<td>CAN</td>
<td>Nov 13, 1993 12:00 AM</td>
<td>UG</td>
</tr>
<tr>
<td>Fields</td>
<td>Chauncey</td>
<td>24119 Miffin Road</td>
<td>Toronto</td>
<td>ON</td>
<td>K2K2L5</td>
<td>CAN</td>
<td>Jul 14, 1993 12:00 AM</td>
<td>UG</td>
</tr>
<tr>
<td>Guerrero</td>
<td>Vargas</td>
<td>3 Thierer Plaza</td>
<td>Ingersol</td>
<td>ON</td>
<td>M4N1K5</td>
<td>CAN</td>
<td>Sep 12, 1992 12:00 AM</td>
<td>UG</td>
</tr>
</tbody>
</table>

17. **Validate** the expression. Click OK (twice) to close both filter windows. **View** the report in **Page preview** mode.

A 4th record appears (Vargas). Editing the filter to contain a wildcard before the capital letter (K) returns Postal Code records that contain a capital K somewhere in the record.

18. **Save** the report.

**Creating a Custom Filter**

Not all filters need to go through the process we’ve been following to create them. In some cases, we can filter on a particular field by creating a custom filter and selecting the value(s) we want.

1. Open the **Pre-Filter** report to edit.
2. **Save** the report as **Custom Filter**.
3. Select the **Home Address Country** column.
4. From the contextual toolbar, click the **Filters** pull-down menu, select **Create Custom Filter**.

A list of specific values for this particular column/field will appear.

5. Use the **Page down** arrow to find USA.
6. Check the USA box to add it to the **Keep these values** window on the right. Click OK.
7. You may see a package validate message. Click OK.
8. View the report. Only USA Country values are returned.

9. **Save** your report.
Prompts

Parameters and Prompts

In Cognos Analytics, we use parameters and prompts to provide dynamic limits on a query.

When you create a filter, your filter criteria remains static. Prompts allow the user to change their criteria each time they run the report. The filter dynamically changes when the user responds to the prompt.

A parameter is a placeholder that requires a value to determine which data to report on. This placeholder is a parameterized filter. Prompts ask the user to provide a value (or values) for the corresponding parameter. Prompts can be placed on a Prompt Page.

Every prompt will have an associated parameterized filter in the query.
It is not necessary for every prompt to have a prompt page created.

In this chapter, we will explore three ways of creating parameters:
- Modifying an existing filter to create a parameterized filter
- Creating a prompt page and then adding prompts onto the page
- Using the “Building a Page” button

Modifying an existing filter to create a parameterized filter:

If you create a parameter for an item on the report, when the report is run, the user will be prompted to specify a value. Once a value is selected, the report runs searching for data based upon the given value(s) in the prompt.

Creating a prompt page and adding prompts onto the page:

If you add a Prompt page to your report, the Prompt page appears when you run the report. A prompt page can contain multiple prompts, and the prompts can select for data items that are not on the report. Prompt properties can be required or optional.

Prompt items can be added directly onto a report page. A prompt object can be selected and dragged from the Toolbox tab onto the report page next to a list, crosstab, or chart. When the report is run, the prompt page appears, enabling the user to narrow the output of the report.
If you add a prompt directly onto a report page, the user will need to set the prompt to automatically submit the selection, or add a “Finish” prompt button to the report so that the report will run using the new criteria.

Prompts are located in the Toolbox tab on the left navigation pane, under the Prompting section.

When the user selects items on a report and creates a prompt page, Cognos Analytics will choose an appropriate prompt type.

If the user adds a prompt item to a report or prompt page, the user can choose any type of prompt available in the toolbox.
The various prompt types and values are listed below:

![Prompting Diagram](Image)

<table>
<thead>
<tr>
<th>Prompt Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text Box Prompt</td>
<td>Inserts a text box prompt control where users type in values. Use this control when you know exactly what data item you want to enter, such as a name or chart string.</td>
</tr>
<tr>
<td>Value Prompt</td>
<td>Inserts a value prompt control where users select one or more values from a list. Use this control to show a list of possible values from which users can choose. The maximum number of items that can appear in a list is 5000.</td>
</tr>
<tr>
<td>Select &amp; Search Prompt</td>
<td>Inserts an advanced prompt control where users search for values. Use this control instead of a value prompt if the list of values is very long, which can slow down performance.</td>
</tr>
<tr>
<td>Date &amp; Time Prompt</td>
<td>Inserts a date and time prompt control where users select a date and time value. Use this control to filter a date/time or timestamp column. This control is useful for specifying ranges.</td>
</tr>
<tr>
<td>Date Prompt</td>
<td>Inserts a date prompt control where users select a date value. Use this control to filter a data column to retrieve records for a specific day, a set of days, or a range of days.</td>
</tr>
<tr>
<td>Time Prompt</td>
<td>Inserts a time prompt control where users select a time value. Use this control to restrict a report to a particular time or time range.</td>
</tr>
<tr>
<td>Interval Prompt</td>
<td>Inserts an advanced prompt control where users enter time duration values. Use this control to retrieve data that is related to the passage of time.</td>
</tr>
<tr>
<td>Tree Prompt</td>
<td>Inserts a data-driven prompt control that shows hierarchical information where users select one or more members.</td>
</tr>
<tr>
<td>Generated Prompt</td>
<td>Inserts a prompt control that acts as a placeholder. The report server will replace this control with an appropriate generated prompt control as if it was on a generated prompt page.</td>
</tr>
<tr>
<td>Prompt Button</td>
<td>Inserts a predefined button used in prompt pages. Its usage changes according to its type property, which can be set to “Cancel”, “Back”, “Next”, “Finish”, or “Re-prompt”.</td>
</tr>
</tbody>
</table>
Building a Parameter Filter

1. Open the Gender Filter report in edit mode.
2. Save the report as Gender Parameter.
3. Sort the report by Last Name ascending.
4. View the report in Page preview mode.

This report is a little hard to interpret since the Gender column is not in the report. When we finished this report before, we filtered it to return only females.

5. Edit the filter.
   **Hint:** Select the table by clicking on the 3 orange dots in the top left corner of the table.
   Click the Filters drop-down menu, in the contextual toolbar, choose Edit Filters.
   Highlight the Gender filter.
   Double-click the filter or click the Pencil/Edit button to open the Detail filter expression window.
6. In the Expression window, remove the single quotes on each side of the value ‘F’ and replace with question marks: ?F?

   Placing question marks around the value changes the filter into a parameter filter.
7. Validate the report.

   A Prompt window opens to validate the new prompt.

8. Select a value from the pull-down menu. Click OK.

   The Information window will show No errors.

9. Click OK to close the expression window.

10. Click OK to close the Filters window.

    If there is a validation error a message will appearing indicating that.

Let’s make the Gender field visible in our report to prove our upcoming results.

11. Select the Data tab from the Insertable objects window, to the left of the report canvas.

12. Select the Data Items tab to view the report data items.

13. Select the Gender query Item and drag it to the third column of your report, next to first name. Release when you see the blinking one lane highway.

14. Save the report.

15. Run the report to HTML.

16. Select Male or Female in the prompt pull-down men.

17. Click OK.

18. Page down the report. Notice that only rows showing your Gender selection are in the report.

20. **Save** the report.
21. Go to **Report** tab and select **Prompt pages**.

Since the prompt type is a parameter filter, we do not see any prompt pages in the **Preview** window.
Creating a Prompt Page

In this lesson, we will build a **Prompt** page creating a **Country** prompt.

1. Use the **Pre Filter** report (open to edit).
2. **Save** the report as **Prompt Page - Country**.
3. From the **Reports** tab pull-down menu, select **Prompt pages**.
4. Click the **+** sign next to **Prompt pages** to add a new **Prompt page**. **Prompt page1** will appear in the **Prompt Page** pane.

5. Double-click **PromptPage1** to open the **Prompt page** window and build the prompt.
6. The **Toolbox** tab is now active.

   Drag a **Table** from the **Pinned** section onto the **Prompt page Toolbox**.

7. The **Insert table** window opens.
8. Set the **Table size**:
   - Number of columns = 1
   - Number of rows = 5
9. Click **OK**.

10. Drag and drop a **Text Item** into the first row of the table.
11. The **Text Item** window opens. 
   Type: **Choose a Country**
12. Click **OK** to accept the text.

13. In the **Toolbox**, open the **Prompting** section.
14. Drag and drop a **Value Prompt** into the third row of the table.

A **Prompt Wizard – Value prompt** window opens.

15. Under **Create a new parameter** name the new prompt: **Country Prompt**.
16. Click **Next >** to open the **Create Filter** window.

17. Click the **More Button** (ellipse) next to the **Package Item** field.
18. Navigate to the **Person Data** query subject.
19. Select **Home Address Country**.
20. Click **OK** to add it to the **Value prompt**.

![Image of Value prompt]

21. Leave the **Operator** field set to **=**.
22. Click the **Next >** button.

**Note**: if you wanted to make the Prompt optional this is where you would check that option.

![Image of Prompt Wizard]

23. The **Populate control** window opens. This is where you select the values that you want to use or display in your prompt.
24. Change the **Query Name** to something that makes sense like: **Country Prompt Query**.
25. We’ve already selected the **Values to use**, and we can leave **Values to display** as is.
26. Click **Finish**.

![Image of Populate control]

---

Content in this document is based on fictitious data sets represented in CeDAR’s Training Package.
A **Value Prompt** is now on the **Report** page.

27. Click once in the new **Prompt** box to select it, if it is not already selected.

28. Check your **Ancestor** row at the top of the **Properties** window. This is a good way to confirm that you have selected the object that you want to select.

29. Confirm that you are in the **Value prompt** properties on the **Ancestor** row.

30. In the **Properties** window, under the **General** section, **Required** should be set to **Yes**.

31. In the Data section next to **Sorting** hover your cursor to the right of the black row until you see the **More (…)** button.

32. Click the More (…) button to open the **Sorting – Country Prompt Query** window.

**Set the Country Sort Order**

33. Move **Home Address Country** to the **Sort List** on the right.

You can drag and drop it or double-click to add it.

By default, the list sorts in ascending order alphabetically (blue arrow pointing up).

34. Click **OK**.
35. Double-click in the **Double-click to edit text** area at the top of the report page.
   The **Text** window opens.
36. Name the report: **Country Report**.
37. Click **OK**.
38. **Save** the report.

39. **Run** the report.
40. Select **USA** from the **Prompt** drop-down list.
41. Click **Finish** at the bottom of the prompt page.

If you **Page down** you can see that the report returns rows that only have **USA** as the **Home Address Country**.

42. **Close** the **New report** results window.
43. **Save** the report.
Identify and Explore the Query and Parameter Filter

When a Prompt is created on a Prompt page, an additional query is created by default. The Prompt also has a Parameterized Filter, which is created automatically.

Each time you build a prompt page, a filter is created. The report output data is narrowed down based upon the user's prompt selection(s).

In the Prompt Page - Country report, explore the Queries tab.

1. From the Report tab pull-down menu select the Q_List1 query.
   Notice that the Home Country Prompt has been created and appears in the Detail Filters window.

2. Double-click the Country Prompt filter to open the Expression Definition window.
3. The question marks around Country Prompt indicate this is a prompt.
4. Cancel out of this window.

5. Under the Report tab click on the Queries folder to view the report Queries.
   In the Data Items window only the Home Address Country data item is listed.
   The Detail Filters window is empty.
7. Save the report.
Prompts – Selecting Multiple Values in the Same Prompt

Use the current Prompt Page - Country report, we’ll modify the Prompt to select multiple values.

1. **Save** the report as Prompt Page - Multiple Values.
2. From the **Report** tab pull-down menu select **Prompt page1**.

3. Click once in the “Choose a Country” **Prompt** box, **not** in the **Text** box.

4. To confirm that you’ve selected the right object check that the **Ancestor** button is showing the **Value prompt** above the **Properties** area.
5. Click the **Properties** button (next to cog) if the **Properties** window is not already open.

6. Under the **General** section note that **Multi-Select** is set to **No** as a default.
7. Change the **Multi-Select** option to **Yes**, using the pull-down menu to the right. The **Prompt** user can now select more than one item, if desired.
8. Notice how the **Prompt** box shape becomes larger on the **Prompt page**.
9. From the **Report** tab pull-down menu select **Q-List1** under **Queries**.

10. Double-click the **Country Prompt Filter** in the **Detail Filters** window.

The **Operator** in the Parameterized filter needs to change so that the user can select more than one value.

11. Change the **Operator** from “=” to “in”.

12. Click **OK** to return to the **Filters** window.

You may be prompted to choose a **Prompt** here in order to validate the report. Choose any value.

13. In the **Report** tab pull-down menu select **Page1** to return to the **Report page**.

14. **Run** the report.

15. When the **Prompt** window appears, **Select All**.

16. Then hold down the **Ctrl** key and **de-select USA**.

17. Click **Finish** to run the report.
18. **Click Page Down** to confirm that field does not include any US addresses.

19. **Close the New Report results window. Save the Report.**
Prompt Button

1. Open the Pre Filter report for this next exercise.
2. Save as Prompt Button.
3. Click the Last Name field.
4. In the contextual toolbar open the More pull-down menu.
5. Select Build Prompt Page half way down the list.
   Cognos Analytics will automatically build the prompt page, the prompt, and the filter.
   You may automatically be sent to a validation window.
6. Select a Last Name and click OK.
   If the data is valid you will see the below message.

```
IBM Cognos Analytics - Reporting

The package has been updated. The report was updated and validated successfully based on the updated package.
```

7. Run the report to HTML.
   Select whatever name you like when the Prompt window comes up.
   To select more than one name use the Control button and Click to make your selections.
8. View your results.
10. Save the report.
11. Close the report.

Note: At this time the Select All feature in the Prompt may not work.
<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>Home Address Street</th>
<th>Home Address City</th>
<th>Home Address State</th>
<th>Home Address Postal Code</th>
<th>Birth Date</th>
<th>Academic Career</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abiajee</td>
<td>Poland</td>
<td>60 Almo Circle</td>
<td>New Castle</td>
<td>PA</td>
<td>19041</td>
<td>Jan 9, 1991 12:00:00 AM</td>
<td>UG</td>
</tr>
<tr>
<td>Abert</td>
<td>Molly</td>
<td>100 2nd Pass</td>
<td>North Las Vegas</td>
<td>NV</td>
<td>89148</td>
<td>Mar 4, 1992 12:00:00 AM</td>
<td>UG</td>
</tr>
<tr>
<td>Abraham</td>
<td>Ava</td>
<td>90 Comanche Parkway</td>
<td>Los Angeles</td>
<td>CA</td>
<td>91734</td>
<td>Sep 10, 1993 12:00:00 AM</td>
<td>UG</td>
</tr>
<tr>
<td>Abraham</td>
<td>Illyun</td>
<td>339 8th Junction</td>
<td>Trenton</td>
<td>NJ</td>
<td>08070</td>
<td>Feb 14, 1992 12:00:00 AM</td>
<td>UG</td>
</tr>
<tr>
<td>Abrahamda</td>
<td>Rebecca</td>
<td>2 Bunker Hill Hill</td>
<td>Jersey City</td>
<td>NJ</td>
<td>07017</td>
<td>Jul 3, 1992 12:00:00 AM</td>
<td>UG</td>
</tr>
<tr>
<td>Abraham</td>
<td>Ava</td>
<td>0350 Pleasure Way</td>
<td>Boston</td>
<td>Massachusetts</td>
<td>02156</td>
<td>Sep 18, 1993 12:00:00 AM</td>
<td>UG</td>
</tr>
<tr>
<td>Abraham</td>
<td>Illyun</td>
<td>10 Buena Vista Crossing</td>
<td>San Jose</td>
<td>CA</td>
<td>95026</td>
<td>Feb 14, 1992 12:00:00 AM</td>
<td>UG</td>
</tr>
<tr>
<td>Abraham</td>
<td>Iridian</td>
<td>40 Cardinal Junction</td>
<td>Belfast</td>
<td>Northern Ireland</td>
<td>SN101DE</td>
<td>Jun 22, 1993 12:00:00 AM</td>
<td>UG</td>
</tr>
</tbody>
</table>
1. Can you create a filter on something that is not visible in the report?

2. If a filter has been applied to a report you’re trying to run, but you would like to trouble-shoot and run it without the filter -- is there a way to run the report without it being applied?

3. What would the appropriate Operator be in an expression used to filter on more than one item in a column? Is there more than one you can use?

Answers:

1. Yes. A filter can be created by using fields from either the Data Items or Source Tab. If the field used in the Filter is from the Data items tab, it is a field you have pulled into your report. You can CUT the field to make it disappear from your report but still filter on it.
   You can also filter on an item that you have NOT brought into your report using the Source Tab in the Filter Expression window.

2. To run a report and not have the filter applied, you can Disable the filter in the Filters window.

3. The Operator “IN” is needed to filter on more than one item in a column.
   Example: [Home Address Country] in (‘CAN’, ‘USA’) -- think of “in the list of”

   *If you use the operator “=” it will only return one item from a column.
   *If you use the operator “BETWEEN” it will only return values between a range (as in a range of dates).
Formatting Reports

Build a Report

3. Return to Page1 via the Report tab.
4. Select sources: Team Content > Training Data - Reports > Training Data Cognos Package > Training Data
5. Create a report from the Person Data Query Subject with the fields:
   - Last Name
   - First Name
   - Home Address Country
   - Home Address City
   - Home Address State
   - Birth Date

6. Save the report as Formatting.
7. Run the report.
   Note that the Birth Date output format has abbreviated months, includes the day and year and the time down to
   the second.

8. Close the Reporting tab to return to Page1.
Formatting - Dates

Text and data within the report can be formatted to make the report easier to read or to change to a more commonly used format in your department’s reporting structure.

We’ll change the format of the Birth Date to mm/dd/yy, omitting time.

1. We begin with the Formatting report.
2. Save the report as Formatting - Birth Date.
3. Click inside the column body of the Birth Date field.
4. Go to the Properties > Data section.
5. Click on the Data Format More (...) button which opens the Data format window.
6. Click the Format Type drop-down window and select Date.

7. In the Properties window, in the Date Style row, hover at the right side and click to open the pull-down menu. You can choose Short, Medium, Long and Full. The description below the Properties window explains the differences between the style types.
8. Select Short and click OK.
9. Run the report or view in Page preview mode.
10. The **Birth Date** format shows just numbers for month, day and year, with the year abbreviated.

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First Name</th>
<th>Home Address Country</th>
<th>Home Address City</th>
<th>Home Address State</th>
<th>Birth Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campo</td>
<td>Rabeeah</td>
<td>USA</td>
<td>Sacramento</td>
<td>CA</td>
<td>7/16/01</td>
</tr>
<tr>
<td>Berry</td>
<td>Joan</td>
<td>USA</td>
<td>Milwaukee</td>
<td>WI</td>
<td>7/17/91</td>
</tr>
<tr>
<td>Bertrand</td>
<td>Hoju</td>
<td>USA</td>
<td>Staten Island</td>
<td>NY</td>
<td>12/4/91</td>
</tr>
<tr>
<td>Avery</td>
<td>Mary</td>
<td>USA</td>
<td>Long Beach</td>
<td>CA</td>
<td>5/11/93</td>
</tr>
<tr>
<td>Carr</td>
<td>Tim</td>
<td>USA</td>
<td>Lancaster</td>
<td>PA</td>
<td>1/17/92</td>
</tr>
</tbody>
</table>

11. **Close** the Reporting tab if you ran the report.
12. **Save** the report.

When you have some time return to this Data Format window to explore the many Date, Display and Character options available for your reports.

**Formatting - Text**

Report text can be changed to make it stand out or to make it easier to read.

We’ll make some style changes to the Home Address Country field.

1. **Save** this report as Formatting - Text.
2. Select Page preview mode.
3. Select the Home Address Country column body.
4. Go up to the contextual toolbar and select Font.

5. The Font window opens.
6. Make whatever style changes you like, or:
   - **Size**: 12pt
   - **Weight**: Bold
   - **Style**: Italic
   - **Foreground Color**: Blue
7. Click on the **Apply** button to see your selections applied to the **Page preview**. You can make changes and **Apply** the changes until you like what you see.

8. Click **OK** to accept the style changes and close the **Font** window.

9. **Save** the report.
Adding Headers and Footers

Cognos Analytics has several options when adding more detail to your report. Page headers and footers and/or list headers and footers can be added to provide additional information to the users about the contents of the report.

The page header and footer includes the following properties:

- Background color
- Background image
- Border
- Box type
- Conditional style
- Font
- Foreground color
- Horizontal alignment
- Padding size & overflow
- Spacing & breaking
- Text flow and justification
- Vertical alignment
- White Space

**List headers** appear at the beginning of a list for each grouped item and are good for presenting carry-forward group totals or group identifiers.

**List footers** appear at the end of the list for each grouped item and are good for presenting group totals.

Let’s add a list header to a report.

1. Save the **Formatting - Text** report as **Formatting - Headers**.
2. Remove the **Home Address Country**, **Home Address City**, and **Home Address State** columns (by cutting them). Use the **Scissors** in the contextual toolbar.
3. Open the **Student Data** folder and the **Student Class Data** query subject.
4. Add the **Academic Program Descr** and **Academic Career** to the beginning of the report.
   - Control click the data items in the order listed and drag them onto the report canvas.
   - Release the cursor when you see the blinking single lane highway.

   ![Image of a report with a list header]

   The order in which you select these fields is the order in which they are added to the report.

5. **Group** the **Academic Career** and **Academic Program Description** columns.

6. With both columns selected go up to the **More** button right most in the contextual toolbar.
7. Hover over **Headers and Footers** to open the drop-down menu.
8. Select **List Headers and Footers** from the fly-out menu.
The List headers & footers window opens.

9. **Check** the Academic Program Descr (header) box and click **OK**.
10. **Run** the report.
11. A header appears in a blue bar for **Academic Program Descr**.
    Use the **Bottom** button (at bottom of window) to go to the end of the report.
    You’ll see headers for **Veterinary Sciences**.
    If you **Page up** a few pages you’ll see the header for **Masters of Medical Sciences**.
12. **Close** the Reporting tab.
13. **Save** the report.
Formatting the Title
You can easily add formatting to the Title. Pre-defined template titles can also be formatted. Just be aware that the Title of the report will be the name you gave the report when you save it.

When you create a blank report, you have the ability to format/edit the title.

1. Using the current report, Save it as Formatting - Title.
2. Change to Page preview mode so we can see our changes as we apply them to the title.
3. Select the Title to highlight it.
4. Go to the Properties window. The Ancestor button should show “Text item”.

We edit the Title in the Properties >Font & Text section, or by clicking on the Font button in the contextual toolbar.

5. In the Properties window hover your cursor to the right of Font to reveal the More (…) button.
6. Click on it to open the Font window.
7. Select the formatting options you want for your Title.
8. Click the Apply button to view your formatting changes.
9. Continue making changes and applying them until you like the Title formatting.
10. Then Click OK to accept the changes.
The Properties window will show your formatting changes.

12. Run the report.
13. Save the report.
Adding a New Page to a Report

We can add a new page for many reasons including:

1) We want our report to have a **Title** page
2) We want our report to have multiple reporting pages
3) We may want a **Summary** page for our report(s).

In this example let’s add an **Introduction Title Page**.

1. Use the current report and **Save** it as **Report with Title Page**.
2. Go back to **Page design** view.
3. From the **Report** tab drop-down menu select the **Pages** folder.
4. The **Pages** window opens.
5. Click the **Add (+)** button and select **Page** from the drop-down menu to add a new page.

6. **Page2** now appears below **Page1**.
7. **Page2** is highlighted so we can view its **Properties**.
8. In the **Properties** window scroll down to the **Miscellaneous** section and change the **Name** from **Page2** to **Title Page**.
9. We want the **Title Page** be the first page we see on the report. The **Title Page** appears below **Page1** in the **Pages** window.

10. We need to move the **Title Page** above **Page1**.

11. Select the **Title Page** and drag it above **Page1** until you see a black line appear above **Page1**. Release your cursor. The **Title Page** should now be above **Page1**.

12. Go to the **Report** tab pull-down menu.

   We see in the **Pages** folder that the **Title Page** is now located above **Page1**.

13. Select the **Title Page** from the pull-down menu.

14. The **Title Page** report canvas opens.

15. Click the (+) sign in the middle of the canvas and select **Table**.

16. Create a **Table** with 1 column and 3 rows.

17. Click **OK**.

18. Drag a **Text item** from the **Toolbox Pinned** section to the middle row.

19. Add **Title Page** to the **Text** box. Click **OK**.

20. **Run** the report.

   Your text should appear on your **Title Page**. If you page down your report should be on **Page2**.

21. **Close** the **Reporting** window.

22. **Save** the report.
Understanding the ‘Select Ancestor’ Button

The **Ancestor** button allows the user to select a group of related elements in a report, to change their Properties individually or as a whole.

We will make the **Table** on the **Title Page** one type of format.

1. We’ll use the current **Report with Title Page**.
2. On the **Title Page** click into the 3rd row of the table.
   
   Do not click on the + sign.
3. Click **Properties**.

Check that the **Ancestor** button shows the **Table Cell** level.

4. Hover over the **Select Ancestor** button and click to open the pull-down menu.
   
   All ancestors above the **Table Cell** level will appear.
5. Select **Table** (different from Table Cell). The entire table will now be selected.
6. In the **Properties** pane go to the **Font & Text** section.
7. In the **Font** row click on the **More (…)** button to open the **Font** window.
8. Make the below changes, or choose your own format changes:
   - Size: 16pt
   - Weight: Bold
   - Foreground Color: pick the color of your choice
9. Click the **Apply** button to see if you like your changes. Change and apply until you like your results.
10. Click **OK** when ready.

11. In the **Properties Font & Text** section change the **Horizontal alignment** to **Center**.
12. Select the **Toolbox** tab.
13. Drag over a **Text item** and place it in the third row of the table.

```
Find
+ PINNED
+ Text item
+ Block
```

14. Type “**Students by Academic Program**” in the text box and click **OK**. Note that the format we’ve selected is being applied to this row.
15. Drag a second **Text Item** to the first row in the table.
16. Type “**Princeton University**” and click **OK**.
17. The formatting we’ve selected for the entire table is automatically applied to the added text.
18. Select the **Title Page** text on row 2. Remove **Title Page** and add several spaces to the window.
   This is a quick and dirty way to add spacing between 2 rows.
19. **Save** the report.
20. **Run** the report.
   The report output displays the **Title Page** first.
   Note that there is space between the 1st and 3rd rows.

```
Princeton University

Students by Academic Program
```

21. Click **Page down** button to see the first page of the report output.
22. When ready close the **Reporting** tab.

```
<table>
<thead>
<tr>
<th>Academic Program Descr</th>
<th>Academic Career</th>
<th>Last Name</th>
<th>First Name</th>
<th>Birth Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Arts</td>
<td>UG</td>
<td>Abert</td>
<td>Molly</td>
<td>3/4/92</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Abraham</td>
<td>Ava</td>
<td>9/18/93</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Abraham</td>
<td>Iridian</td>
<td>6/22/93</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Abraham</td>
<td>Oliver</td>
<td>6/21/93</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Abraham</td>
<td>Sebastian</td>
<td>6/21/93</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Acovode</td>
<td>Wooder</td>
<td>4/7/82</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ack</td>
<td>Gedailahu</td>
<td>5/28/92</td>
</tr>
</tbody>
</table>
```
**Drill Through Reports: Parent-Child**

A **Drill through** is an operation that embeds one report into another. **Drill throughs** link two (or more) reports containing related information. **Drill throughs** appear in the source report as **blue hyperlinks**. Users click the hyperlink to select the value they want passed to the target report from the source report.

**Goal:** We’d like to be able to click on a student’s **Last Name** in this report and be taken to a report that shows us that student’s **Academic Program Description**, in the embedded report.

1. Navigate to **Team Content > Training Data Reports > Cognos Analytics Class Reports > Drill Through – Parent Report**.
2. From the More (…) pull-down menu select **Edit report** to open.
3. Save this report in your Inbox as **Drill Through – Parent to Child**.
4. Repeat step 1 and navigate back to the **Class Reports** folder and open **Drill Through – Child** in **Edit** mode.
5. Save this report in your Inbox as **Drill Through – Child**.

6. From the **Welcome** pull-down menu select **Select** the **Drill Through – Parent to Child** report.
7. Highlight the **Last Name Field Column** body (not the header).
8. Open the More pull-down menu from the contextual toolbar above the page canvas and select **Drill-through definitions**.
10. Click the **plus (+)** button in the bottom the window to add a new **Drill through**.
The **Target report** tab is now active in the window.

11. Click the **Report More** button.

12. Navigate to the **Drill Through – Child** report in your **Inbox**.
13. Select and **Open** the report.
14. You are taken to the **Drill-through definitions** window and the **Drill-Through Child** report is now showing as the **Target report**.

Here you can select other **Actions** from the pull-down menu including:

- Run the report
- Run the report using dynamic filtering
- View most recent report
You can select a specific **Format** including:

- HTML
- PDF
- Excel
- Excel Data
- CSV
- XML

15. Accept the defaults and click **OK** to accept our selections.
   
   **Open in new window option.**
   
   Select this option if you want a new window to open when the report is run.
16. Run the report to HTML. The Last Names appear as hyperlinks.

Note: the links do not work when the report is run to PDF format.
Note: This hyperlink functionality does not work in Page preview mode.
It looks like a hyperlink, but doesn’t execute when clicked upon.

17. After running the report click on any Last Name in the list.
18. You should be taken to the Child report which contains a field for the Academic Program Description.
Crosstab Reports

Crosstab reports are also called pivot tables. They are useful for comparative analysis. They summarize data and display the results in a two-dimensional grid.

Similar to List reports, Crosstab reports show data in columns and rows. The values at the intersection of rows and columns show summarized information rather than detailed information.

Crosstabs must include at least three query items:

1) one on rows,
2) one on columns,
3) one to serve as a measure or performance indicator defining what data represents.

In a crosstab report, data can be nested to compare information, by using more than one query item in a column or in a row.

<table>
<thead>
<tr>
<th>EmplID</th>
<th>Veterinary Medicine</th>
<th>Graduate School of Medical Sciences</th>
<th>Agriculture and Life Sciences</th>
<th>Government and Politics</th>
<th>Architecture</th>
<th>Language and Human Development</th>
<th>Engineering</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANT</td>
<td></td>
<td></td>
<td>32</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>ARE</td>
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<tr>
<td>AUS</td>
<td>24</td>
<td>56</td>
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<td>BIH</td>
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<td>312</td>
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<td>COL</td>
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<td></td>
</tr>
</tbody>
</table>

Converting a List Report into a Crosstab

We will create a simple list report and convert it to a crosstab report.

1. Create a blank list report.
3. Return to Page1 via the Report tab pull down menu.
6. Add fields from the Person Bio Data > Person Data query subject:
   - EmplID
   - Home Address Country

7. Add the Academic Track field from the Student Data > Student Class Data query subject into the SECOND column (between Home Address Country and EmplID).


9. Save the report in your My Content area as Crosstab.

10. Run the report or view in Page preview mode.

11. Close the Reporting tab if you ran the report.

12. Select the EmplID List column body.

13. In the Properties pane, scroll down to the Data Item section.

14. Set the Detail Aggregation to Count.
   Scroll up in the pull-down menu to find Count.

15. Set the Summary Aggregation to Total.
   Scroll up in the pull-down menu to find Total.
This step is crucial to convert this list report to a crosstab. A crosstab counts one of your values. We’ve changed the EmplID into a value that can now be counted.

16. Go to Page preview mode if you are not already in it.

Note: the EmplIDs are now being counted showing the number of students grouped by Home Address Country within an Academic Track.
17. Save the report as Crosstab.

18. Click the Academic Track List Column Title on the report page.
19. In the contextual toolbar click the More button pull-down menu.

Note: if you can’t see the more button right most in the toolbar, decrease the width of the Properties pane, or the width of the Insertable objects pane.

20. Select Pivot List to Crosstab in the bottom half of the menu.
21. The report layout has changed from a list report to a crosstab with **Academic Track** as the Column, **Home Address Country** as the Row, and **EmplID** as the measure.

22. **Save** the report.

<table>
<thead>
<tr>
<th>EmplID</th>
<th>Agriculture and Life Sciences</th>
<th>Architecture</th>
<th>Education</th>
<th>Engineering</th>
<th>Graduate School of Medical Sciences</th>
<th>Language and Human Development</th>
<th>Government and Politics</th>
<th>Veterinary Medicine</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANT</td>
<td>32</td>
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<td></td>
<td></td>
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</tr>
</tbody>
</table>
Crosstab - Princeton Template

We’ll create a crosstab report using the Princeton template that counts how many students are either male or female for a given Academic Track.

1. Create a **New** report and select the **Princeton Crosstab** template.
3. Return to **Page1** via the Report tab pull down menu. Notice that the crosstab template is on the report page.
4. Navigate to **Team Content > Training Data – Reports > Training Data Cognos Package > Training Data**
5. From the **Student Class Data** Query Subject, drag the **Academic Track** into the **Rows** area of the Crosstab.
6. From the **Person Data** Query Subject, drag **Gender** into the **Columns** area of the Crosstab.

7. Drag **EmplID** from the **Person Data** Query Subject into the **Measures** area of the Crosstab.
8. **Save** your report in your **My Content** area as **Crosstab – Academic Track by Gender**.

9. **Click inside the Measures area.**
10. In the **Properties** pane, scroll down to the **Data Item** section.
11. Change the **Detail Aggregation** to **Count** (scroll up).
12. Change the **Aggregate Summary** to **Total** (scroll up).
13. **Save** the report.
14. **Run** the report or view in **Page preview** mode.
15. **Close** the Reporting tab if you ran the report.

---

Crosstab - Acad Track by Gender

<table>
<thead>
<tr>
<th>EmplID</th>
<th>M</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Veterinary Medicine</td>
<td>880</td>
<td>543</td>
</tr>
<tr>
<td>Language and Human Development</td>
<td>10337</td>
<td>9092</td>
</tr>
<tr>
<td>Education</td>
<td>4434</td>
<td>2584</td>
</tr>
<tr>
<td>Agriculture and Life Sciences</td>
<td>11028</td>
<td>9640</td>
</tr>
<tr>
<td>Graduate School of Medical Sciences</td>
<td>7220</td>
<td>5824</td>
</tr>
<tr>
<td>Engineering</td>
<td>4594</td>
<td>3112</td>
</tr>
<tr>
<td>Government and Politics</td>
<td>6752</td>
<td>4526</td>
</tr>
<tr>
<td>Architecture</td>
<td>4672</td>
<td>2782</td>
</tr>
</tbody>
</table>

Jun 3, 2020 2:34:32 PM

---

Content in this document is based on fictitious data sets represented in CeDAR’s Training Package.
Nested Crosstabs
We nest data in a Crosstab report to compare information using more than one query item in a column or row.

1. **Open** the Crosstab report. **Save** it as **Crosstab - Nested**.

   The **Academic Track** data item represents the columns.
   The **Home Address Country** data item represents the rows.

2. Select the crosstab by clicking once on the **3 orange dots** in the top left corner of the crosstab.

3. In the contextual toolbar click once on the **Swap Rows and Columns** icon.

   The **Rows** and **Columns** are now flipped.
   The **Academic Track** is on the rows and the **Home Address Country** data item represents the columns.

Nest Your Column

1. In the **Source** pane, go to the **Student Class Data** query subject.
2. Drag the **Academic Department** data item to the right of the **Academic Track** data item.
3. Release the cursor when you see a blinking 1 lane highway.

   The columns are now nested.

1. **Save** the report.
2. Run the report. This report looks pretty cumbersome and hard to read.
3. You can also see that there is no sort order on Academic Track or Academic Department.

<table>
<thead>
<tr>
<th>EmplID</th>
<th>ANT</th>
<th>ARE</th>
<th>AUS</th>
<th>AUT</th>
<th>BGD</th>
<th>BGR</th>
<th>BIH</th>
<th>BRA</th>
<th>BTN</th>
<th>BWA</th>
<th>CAN</th>
<th>CHE</th>
<th>CHN</th>
<th>COL</th>
<th>DEU</th>
<th>DOM</th>
<th>ECU</th>
<th>EGY</th>
<th>ESP</th>
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<tbody>
<tr>
<td>Veterinary Medicine</td>
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</tbody>
</table>

Let’s swap Rows and Columns to see how this report looks.

4. Figure out Edit Layout Sorting. Different in 11.1.7.
5. Highlight the Country column in the Crosstab.
6. The Sort button now appears in the contextual toolbar. It was not there before you highlighted this field.
7. From the Sort pull-down menu select Edit layout sorting.
8. Drag Academic Track into the Sort list window.
9. Drag Academic Dept into the Sort list window.
10. Add Country.
11. Click OK to accept the sort order.

12. Run the Report or view in Page preview mode.

Notice that the Academic Depts are nested under the Academic Track. Academic Tracks are sorted alphabetically in ascending order.

13. The Home Address Country needs to be sorted. Select the column.
14. Select **Sort ascending** from the contextual toolbar.

<table>
<thead>
<tr>
<th>Number of Students</th>
<th>Agriculture and Life Sciences</th>
<th>Architecture</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Animal Science</td>
<td>Biology</td>
<td>Clinical Research</td>
</tr>
<tr>
<td>ANT</td>
<td>32</td>
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<td></td>
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<tr>
<td>ARE</td>
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<tr>
<td>AUS</td>
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<td>24</td>
<td></td>
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<tr>
<td>AUT</td>
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<tr>
<td>BGD</td>
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<td>BGR</td>
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<td></td>
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<tr>
<td>BIH</td>
<td>24</td>
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<td></td>
</tr>
</tbody>
</table>

15. You can decide which **Crosstab** layout you prefer.
16. Close the **Reporting** tab if you ran the report.
17. Save your **Report**.
Crosstab with Totals
Let’s add totals to the Crosstab report.

1) Save the Crosstab - Nested report as Crosstab - Nested with Totals.
2) Select the Measure area of the report.
3) In the contextual toolbar click the Summarize icon ( ) and select Total from the pull-down menu.

4) The Total summary fields are added to the Academic Track and Academic Dept columns.

5) Save the report.
6) Run the report or view in Page preview mode.

The report is now totalling the number of students within each Academic Track, by Academic Dept, sorted by Country.

7) Scroll to the farthest right column to view the Summary Total Count of students is by Country.
Thank you for attending!

Additional documentation is being developed. As an addendum to this guide, we will be including a chapter on Dashboards as well as working with uploaded spreadsheets.

Questions?

Please feel free to email me directly, leaht@princeton.edu or cedar@princeton.edu.