Cognos 11.1 Report Writer Basics

April 2019
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For additional information regarding Cognos policies and access, or modifications to the ODS, contact the Business Intelligence Team at cognos@kent.edu. For technical assistance, contact the Help Desk at 330-672-HELP (4357) or support.kent.edu. Additional Cognos training materials are available at www.kent.edu/it/cognos-resources.
Introduction

Agenda

Cognos report Studio is a web-based application designed to allow users to easily create complex reports utilizing many different sources of data.

The purpose of this training guide is to introduce Report Studio. The course objectives are:

- Access Report Studio
- Identify key areas in Cognos Consumer
- Explore Report Studio
- Build and format queries in Report Studio

Accessing Cognos Report Studio

Cognos Report Studio is used in both test and production instances to allow for practice in creating reports and designing tested and approved reports for public use.

Navigating Report Studio

Cognos Report Studio navigation consists of a selection of Menus, Tools, and Windows to aid the writing and design of reports.

- Report Studios Toolbar
- Insertable Objects Window
- Work Area
- Properties Pane

Creating and Modifying Reports

- Creating a Report
- Editing Titles
- Filters
- Prompt Pages
- Sorting
Accessing Cognos Report Studio

If Report Writer access has been granted, users will be able to create new reports and edit personally saved reports from Cognos as accessed through FlashLine.

On the Home screen, a button labeled “New” is located in the bottom of the Navigation Menu panel on the left.
Clicking this button opens a selection panel for choosing what Cognos item is to be created.

Clicking on the desired item will display the *Templates and themes* window for selection from a listing of available preset layout templates and color themes. A blank template will allow for a custom layout.
After selecting a report layout, a page will open prompting users to *Select sources* from which to retrieve data for the report.

Clicking the *Select source* button allows users to choose from the data packages available to them as granted by the Security Access Group.

Selecting the data package and clicking the *Open* button will create the report page and allow for adding objects to build the report.
Report Writer User Interface

The working page is designed in several sections. Across the top of the page is a function banner. Directly below is a Navigation Menu banner. To the left is the Insertable Objects pane, and to the right is the Canvas, with an additional toolbar specifically for items placed on the report canvas.

The function banner, across the top of the page, includes several action buttons used in creating a report in Cognos.

On the left are buttons to save, edit, undo, redo, and run. In the center of the menu banner is a drop-down navigation tool to toggle between documents. On the right is a More button to select additional options related to the current page, as well as a button to access notifications.

Below the menu banner of action buttons is a navigation banner offering access to different pages and views of the report. Included on the left are a home button, previous and next buttons, and a breadcrumb trail. Further to the right are buttons to lock or unlock items in the work area, change the page view, manage items in the report, and set properties.

The Insertable Objects pane offers access to data items to be included in the report through the data sources, data items, and report toolbox.

The report Canvas on the right is the building space for the report items to be added. A set of design tools is located in a toolbar at the top of the canvas to design, create, and edit the report items and format.
Building a Report

The next section contains information on how to build a report. The formatting options that will be covered in this section include inserting data items, adding a title, changing column names, adding filters and prompts, grouping and aggregation.

The first step is deciding what information needs to be displayed in the report. Then, as the report is created, additional items may be added to enhance the usability of the report.

For this example, we will create a report of a Student Count by College and Major.

Adding Data Items

There are two methods for adding data items to a report; double click or drag and drop.

Either of the following steps may be used to add a data item to a report.

1. **Double click** on the data item to insert it into the report. If there are data items in the report, the data item will be added to the right of a selected column.
2. To **drag and drop** a data item, click on the item from the Insertable Objects Pane and drag it to the right of where the item should be placed.

   NOTE: *The item is in the correct spot when the thin line starts flashing.*
Example

Add the following data items to the report from the Insertable Objects Pane, in the Source Tab:

1. **College**
2. **College Description**
3. **Major**
4. **Major Description**
5. **Personal University ID (or PIDM) – (Person_UID = PIDM, the ID = KSU ID)**

NOTE: When adding data items, the *Code* item is more efficient for a query than the *Description*. It is best to sort and retrieve data using the *Code*, and display using the *Description*.

Validate the Report

Before a report is run, it is suggested to validate the report to ensure it contains no errors.

Clicking the Manage Report button opens a drop-down selection panel to access the Validate option.

If no errors are present, the report can be run to view the results in a report format.

Running a Report

Because the report data is used at the university in many different ways, various report formats are often desired. For this, reports can be produced in a variety of formats, depending on the need of the user.

Clicking on the Run Options button opens a menu of report format options to be retrieved. A saved report may be rerun in a different format at any time.

Additionally, at the bottom of the run menu is a selection noted as Show Run Options, which will allow users to set default settings for the output of a report.
Report Display

Links at the bottom allow for navigation through the pages of the report.

The report retrieves the data based upon the report page.

Though the Code Items work best for retrieving data, they may not be helpful being displayed on the report itself. These items can be removed from the Report Page without being removed completely from the report.

**Click** in the column body to select the entire column, and reveal a pop-up options window. Select **Cut** from the options.

Using the **Cut** feature will remove the Code Item only from the Report Page. Using the **Delete** function would remove the query from the report entirely.
Saving Reports

Saving report versions allows report writers to revisit previous levels of report creation without the need to develop reports from step one.

Clicking on the Save icon and selecting Save As allows users to save the current report view in a specified location. It is recommended to save items in the My content folder and naming the report for future access.

Opening Saved Reports

Once a report has been saved to the My Folders tab, it can be easily accessed to be run based on updated data, or opened to be edited or modified, among other options, by clicking the more options, or 3-ellipses button and selecting from the dropdown list.
Customizing the Report Display

Edit a Report Title

Report Studio allows the author to add and format report titles and column headers for a customized report view that is easier to read. The report title is referred to as the **Page Header** and can be added by clicking the Page Ellipses button, choosing the Headers & footers option, and selecting **Page header & footer**.

![Page header & footer](image)

If a pop-up window appears, the check box can be selected for Header, and clicking the OK button will create the Title Header on the report page.

![Page header & footer](image)

A Header Insert button will appear at the top of the report page. The type of header can be chosen by clicking the button.

![Header Insert button](image)
A variety of items will appear for selection. Most commonly the Text item is used, and a Heading can be typed in.

![Diagram of data selection options]

**Edit a Column Name**

To make the data more professional, column headers may be changed to reflect the data. **Click** on the column header to be changed. The properties for the cell will appear in the Properties Window.

![Diagram of column header properties]

In the Source Type selection, click on the label to reveal the options drop-down box and select the option for Text.
The column heading will change to a message indicating to double-click to edit the text.

A Text box will open for the entry of the new column heading.

Continue through the remaining column headings as necessary.

It may also be helpful to organize the Report Page. Selecting the column body, clicking on the Sort Button in the Toolbar, and choosing Ascending will assure the column is presented in alphabetical order.

This yields a more easily readable report.
Grouping Results

Grouping data in the Report page, simplifies the report by showing each item only one time.

Click in the column for the data group item. Use the Structure option in the Menu Bar or click on the Group/Ungroup button in the toolbar to show the same items together.

Continue to group additional data items as needed to create sub-groups.

The page is now grouped first by College, and then each College is grouped by Major. When the report is run the results will display the grouping.
Aggregation

One of the features of Cognos Report Studio is the ability to Aggregate, or summarize, data from grouped items. This helps the user more easily analyze the data.

Some of the more common types of aggregation are:

1. **Total**  
   Sums the items in the group
2. **Average**  
   Averages the items in the group
3. **Minimum**  
   Displays the lowest number in the group
4. **Maximum**  
   Displays the highest number in the group
5. **Count**  
   Counts the number of items in the group

One way to add aggregation is to edit the properties of the data in the Properties Pane.

Click in the column body of the selected item to be counted.

In the Properties Pane, and the **DATA ITEM** section, the drop-down selection button for **Detail aggregation** can be used to choose **Count** from the list.
Example

The report now displays a count of the number of students in each major by college.

<table>
<thead>
<tr>
<th>College</th>
<th>Major</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ashtabula Campus</td>
<td>Respiratory Therapy Technology</td>
<td>128</td>
</tr>
<tr>
<td></td>
<td>Technical and Applied Studies</td>
<td>129</td>
</tr>
<tr>
<td></td>
<td>Transient Student</td>
<td>468</td>
</tr>
<tr>
<td></td>
<td>Veterinary Technology</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>Viticulture</td>
<td>59</td>
</tr>
<tr>
<td>Coll of Appl Eng/Sustain/Tech</td>
<td>Aeronautical Systems Eng Tech</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Aeronautics</td>
<td>3411</td>
</tr>
<tr>
<td></td>
<td>Aerospace Engineering</td>
<td>213</td>
</tr>
<tr>
<td></td>
<td>Applied Engineering</td>
<td>2377</td>
</tr>
<tr>
<td></td>
<td>Construction Management</td>
<td>517</td>
</tr>
<tr>
<td></td>
<td>Guest Admission</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>International Exchange Student</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>No Major Required</td>
<td>62</td>
</tr>
<tr>
<td></td>
<td>Prof Flgt Crew Dev/Air Tms Op</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Technology</td>
<td>2777</td>
</tr>
<tr>
<td></td>
<td>Technology Undeclared</td>
<td>190</td>
</tr>
<tr>
<td></td>
<td>Transient Student</td>
<td>11</td>
</tr>
<tr>
<td>Coll of Arch and Env Design</td>
<td>AED-General</td>
<td>5116</td>
</tr>
<tr>
<td></td>
<td>Architectural Studies</td>
<td>1045</td>
</tr>
<tr>
<td></td>
<td>Architecture</td>
<td>7435</td>
</tr>
</tbody>
</table>

To make the report more useful, Totals can be added by group.

Again, returning to the report page, the Count column can be clicked to select the data. Then, clicking the Sum button in the toolbar, which is the Greek letter Sigma, a drop-down list appears. Choosing Total will deliver the total of the selected data.
This will create a Total Student Count at the bottom of the report as well as Sub-Totals for each College and Sub-Totals for each Major.

Running the report at this point will display a much more useful report.
Adding Filters

Adding a filter to a report will aid in assuring that the results retrieved include or omit certain parameters, such as an academic period. The author can build a custom filter, or pre-defined filters may be available.

A filter is built in terms of an Expression, comprised of
1. A data item to be the filter subject
2. An operator showing how to compare
3. Object data or value

**For Example:**

\[
[\text{Admission Application}].[\text{Admissions Application}].[\text{ACADEMIC\_PERIOD}] = '201480'
\]

<table>
<thead>
<tr>
<th>Namespace</th>
<th>Query Subject</th>
<th>Query Item</th>
<th>Operator</th>
<th>Value</th>
</tr>
</thead>
</table>

Common operators are:
- \(=\) (Equal to) - 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
- \(\text{CONTAINS}\) – Retrieves everything that includes the characters
- \(\text{IS MISSING}\) – Retrieves blanks

Pre-Defined Filters

Pre-defined filters will be located in the Insertable Objects pane.
1. Locate the pre-defined filters in the Insertable Objects to which you have access.
2. **Double-Click** on the desired filter to limit the report results.
3. A message will appear stating that the pre-defined filter has been added.
4. Click **OK**.
Custom Filters

If greater filtering is desired, a custom filter can be created to further limit the data retrieved.

Additional filters may be added from the Toolbar, via the Filter Icon and selecting Edit Filters.

The Create Filters window will appear displaying any current Detail Filters or Summary Filters. Detail Filters will affect what data is retrieved to create, or the rows of the report. Summary Filters affect the grouped, or aggregated data of the report once it is written.

Three buttons at the bottom of the Filters window allow the author to:

Create New Filters

Delete a filter

Edit a current filter

Choosing Create a New filter offers options of:

Custom based on data items: that have been chosen from the insertable objects pane

Combined: if multiple filter conditions are required

Advanced: if a singular custom filter is desired

Selecting Advanced allows the author to build a filter with a wide range of parameter options.
With **Advanced** chosen, components can be added to create the filter either by typing the code into the Expression Definition pane, or by using the Component Selection Tools to aid in building the filter.

**Source**: The Source tab allows for the filter based on any item in the package.

**Data Items**: The Data Items tab allows for filtering by items in the report.

**Queries**: The Query Items tab allows filters based on items from other queries in the report.

**Functions**: The Functions tab allows for the creation of filter calculations.

**Parameters**: The Parameters tab allows the use of the input derived from users based upon answer the parameter.

**Macros**: use Macros, or condensed instructions, as filters.
In the **SOURCE** tab, a data subject can be selected to use as a filter. **Double click**, or **drag-and-drop** the item to add it to the **EXPRESSION DEFINITION**.

The **Function** tab can be used to select an operator.
From the Operators List, several comparative options are available. A double click on the desired operator will add it to the equation.

Finally, a comparative value must be entered to complete the filter equation. The value may be typed into the equation or selected from the Tools tab in the Available Components pane.

For this example:
1. Select the **Source** tab.
2. Click **once** on the **COLLEGE** item
3. Click on the **SELECT VALUE** button to see the options for the chosen data item.
4. Select **“AC”** to choose the Ashtabula Campus
5. Click **Insert** to add the filter for the **Ashtabula Campus**.

The equation should read: \([\text{Admission Application}].[\text{Admissions Application}].[\text{COLLEGE}]=’AC’\)
The **Validate** button can be used to verify no errors are present in the expression.

![Expression Definition]

Please note: For the “ = “ operator, the value is contained in single quotation marks. If expressions are being manually typed, other operators require different punctuation.

Tw filters have now been added to the data query, **Academic Admissions**, as well as the **Ashtabula Campus**. Clicking the **OK** button will close the filters window and allow the report to be run based on the limited request for data.

![Filters - Query2]

The **Usage** field allows the report author to mark a filter as Required, Optional, or Disabled.

Please note: For this exercise, please mark the **COLLEGE** filter as disabled and click **OK**.

The report should be saved after making changes.
Prompts and Prompt Pages

When filters are used in a report, the filtering criteria remain static. This may be useful for a basic report that is run based on simple data. Prompts are filters that allow the user to select the refining criteria each time the report is run. They allow for dynamic changes to the report based upon the user response.

A Prompt Page can be created as part of the report to guide the user through filtering options that will generate a more customized report as defined by the user choices, to request more specific information.

From the Report option of the pages banner, clicking the drop-down menu and selecting Prompt Pages will display applicable items for the report.

Double-clicking on the Page tool in the insertable object pane opens the Prompt Page selections to be opened.

Double-clicking on Prompt Page 1 will open the prompt page for customization.
**Prompt Pages**

To build a prompt page, a table is needed to create spaces to hold the prompts. Prompts are located in the **Toolbox** tab of the Insertable Objects window. The author can insert any of the prompt types that are needed to allow the user to filter the data for the report.

From the **Layout** options, dragging the **Table** item onto the canvas will display a selection window to select the layout of the prompt page table. Most commonly, Prompt Pages are designed with 2 columns. The number of rows depends upon how many prompts will be added. For this example, select 2 columns and 10 rows.
Items from the Insertable Object window are added to the Prompt Page via drag-and-drop. Usually the first column is used for Text Items, designating what the user will select, and the second column houses a prompt for a selection from the user based on desired criteria.

In the TEXTUAL objects, the Text Item option may be dragged and dropped into the first cell of the table. In the text item window type a description or direction for the user.

In the second column, a corresponding Value Prompt, located in the PROMPTING objects, should be added to designate the filter parameters of the prompt. This will start the Prompt Wizard to aid in setting the parameters.
Name the new parameter consistent to the corresponding description from column 1. This will help with navigation should modifications be needed at a later time. Click NEXT to continue.

In the Create Filter window, click on the ellipses button to select the Package Item from which to retrieve the data.

Select the desired item and click OK.
Using the **Drop-Down** arrow, select the **Operator** with which to filter the data. For this exercise, select "in". Click the **Next** button.

Recall **Adding Filters** on PAGE 21

Finish the prompt filter:
1. Name the query for consistency.
2. Select values to use for data retrieval.
3. Select the display values for the Prompt Page.

*Please Note: When adding data items, the **Code** item is more efficient for a query than the **Description**. It is best to sort and retrieve data using the **Code**, and display using the **Description**.

For this exercise:
1. CollegeQuery
2. [Admission Application].[Admissions Application].[COLLEGE]
3. [Admission Application].[Admissions Application].[COLLEGE_DESC]

Click **Finish**

The Prompt Page has now been created with a single prompt that will allow the user to select one or more options from the list of colleges to retrieve data in populating the report.
Additional Prompts

Additional prompts may be added to allow the user to filter even further. Following similar steps, a filter for the Academic Period can be offered. Note there will be an additional step in the process.

Add the descriptive text in column 1.

Add the Value Prompt in Column 2 to display the Prompt Wizard.
As before, name the new parameter and click the **Next** button.

Select the Package Item and the Operator.

Select **Academic_Period** for the Package Item.
Select the equals sign as the operator to allow only one term to be selected by the user.

With multiple prompts, an additional window will appear for the author to designate which queries to filter. In most cases you will use a prompt to filter the query for the entire report, by having the check-box selected for “Query 1”.

Click **Next** to continue.
Finish the prompt filter:
1. Name the query for consistency
2. Select values to use for data retrieval
3. Select the display values for the Prompt Page

For this exercise:
1. AcademicPeriodQuery
2. [Admission Application].[Admissions Application].[ACADEMIC_PERIOD]
3. [Admission Application].[Admissions Application].[ACADEMIC_PERIOD_DESC]

Click **FINISH**

The Prompt Page now has two prompts for the user to utilize for filtering when creating the report. The first will direct them to choose *at least one College*, with the option of selecting several. The second guides the user to select *only one Academic Period*. 
Running the report requires the user to use the prompts to decide on the filters to be added to the data to restrict the retrieved information and narrow the results.

Modifications to queries and prompts can be completed by using the Report drop-down menu to select the appropriate item to navigate to a window for each.
Prompt User Interface

Many options are available for how the prompts are displayed to the report user. These can be accessed by selecting the data item and clicking the **Properties** button to edit the preference.

Prompt Sorting

Selecting the College Description data item in the prompt page and clicking the Properties button, displays the specifics for the selected data.
Properties can be edited by changing the selection menus in the field to the right of the specific property.

Sort gives the option of alphabetizing the Prompt filter for College Description, making it easier for the user to locate the appropriate information.

**Multi-Select**

Click on the **COLLEGE VALUE** field to select the item and display the Properties Pane. The **Multi-Select** option will allow the author to easily change whether the user can select one item or more than one item through the Prompt Page when running the report.
Select UI (User Interface for the Prompt List)

<table>
<thead>
<tr>
<th>Value prompt</th>
</tr>
</thead>
<tbody>
<tr>
<td>GENERAL</td>
</tr>
<tr>
<td>Required</td>
</tr>
<tr>
<td>Multi-select</td>
</tr>
<tr>
<td>Select UI</td>
</tr>
<tr>
<td>Auto-submit</td>
</tr>
<tr>
<td>Cascade source</td>
</tr>
<tr>
<td>Pre-populate</td>
</tr>
<tr>
<td>Hide adornments</td>
</tr>
<tr>
<td>Range</td>
</tr>
<tr>
<td>Parameter</td>
</tr>
<tr>
<td>Default selections</td>
</tr>
</tbody>
</table>

*Select UI* options, with multi select, allow the writer to choose whether the user chooses filter options in the Prompt Page by clicking on the selections or marking a check box.

Prompt Required

<table>
<thead>
<tr>
<th>Value prompt</th>
</tr>
</thead>
<tbody>
<tr>
<td>GENERAL</td>
</tr>
<tr>
<td>Required</td>
</tr>
<tr>
<td>Multi-select</td>
</tr>
<tr>
<td>Select UI</td>
</tr>
<tr>
<td>Auto-submit</td>
</tr>
</tbody>
</table>

The *Required* option allows the author to designate whether or not a particular prompt Filter is required to be chosen in order to run the report.