

## Writing An Advanced Query Job Aid

User Role(s): *Agency Query Writer*  
*DFS Query Writer*

Last Updated: 03/09/2023

### Table of Content

Overview .....	1
How to Create a Query with Multiple Records .....	1
How to Create a Query with a Prompt .....	4
How to Create a Query with “HAVING” Criteria .....	7
How to View a Query’s SQL .....	10

### Overview

Query Writers can create or modify queries to extract precise information using the Query Manager tool in Florida PALM. This tool allows Query Writers to develop, run, and schedule queries without writing a Structured Query Language (SQL) statement. Before creating a new query, search for an existing query to use or modify to meet your needs. Existing queries can be found in the Reports Catalog on the Solution Tab of the Florida PALM website. View the *Running a Query* course in the *PALM TECH – Florida PALM Overviews* Learning Path in the People First Learning Management System to learn how to search for an existing query.

This job aid focuses on more advanced query writing aspects like using multiple records in the same query, adding prompts, creating “HAVING” criteria, and viewing a query’s SQL. To learn the steps to write a simple query (e.g., how to fill out the query properties, name the query, and how to save the query), view *Writing a Simple Query* job aid. To see which data records hold the information you wish to extract, view the “Florida PALM Data Dictionary” (available in Smartsheet) to see a list of available records in Florida PALM.

### How to Create a Query with Multiple Records

You will create a query with multiple records when information from more than one record is needed.

1. Navigate to the **Query Manager** page and find an existing query or create a new query.
  - a. Path: NavBar > Menu > Reporting Tools > Query > Query Manager
2. On the **Records** tab, enter the name of the first record containing your desired data values using the **Search By** field.
3. Click the **Search** button.
4. Select the desired record by clicking the **Add Record** link.
  - a. For performance reasons, it is important to use the hierarchical order of records (if it exists) when creating a query with multiple records.
  - b. If complex logic is needed or a lot of joins are needed, contact the Solution Center to request a new report.

**ADVANCED SEARCH NOTES:**  
The **Advanced Search** link enables more search fields on the page

- For example, if you know the name of a field you wish to use you should use the **Advanced Search** link

**SHOW FIELDS NOTES:**  
Use the **Show Fields** link to preview the fields, if you are unsure if this is the record you wish to use

Figure 1: The Records tab before adding a record

5. Add all of your desired records and then join them by clicking the **Join Record** link.

Recname	Join Record	Show Fields
KK_CLOSE_BALSRC - How Ending Balance Calculated	Join Record	Show Fields
KK_CLOSE_CALC_S - CC Closing Calc Log - Source	Join Record	Show Fields
KK_CLOSE_CALC_T - CC Closing Calc Log - Target	Join Record	Show Fields

Figure 2: The Records tab after adding multiple records

6. Select the desired **Join Type** (see figure 4 for more information about the common types).
7. Click the **Join Record** link to select one of the previously added records to join.

Select join type and then record to join with KK\_BUDGET\_LN - KK Budget Journal Line.

Join Type

☒ Join to filter and get additional fields (Standard Join)
 ☐ Join to get additional fields only (Left outer join)

Join Record

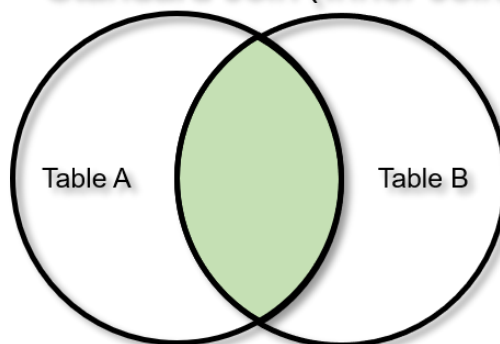
1-1 of 1

A = KK\_BUDGET\_HDR - KK Budget Journal Header

Cancel

Figure 3: The Join Type and Join Record page

### Standard Join (Inner Join)



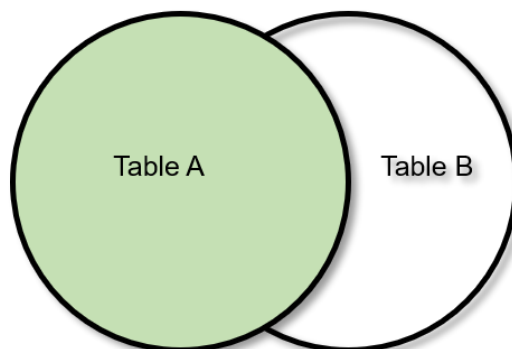
#### **STANDARD JOIN**

##### **NOTES:**

Standard Join returns only the matching rows between both the tables. Non-matching rows are eliminated.

Figure 4: A visual representation of a standard join and which area is selected by the query

### Left Outer Join



#### **LEFT OUTER JOIN**

##### **NOTES:**

Left Outer Join returns all of the rows from Table A and the matching rows between both tables.

Figure 5: A visual representation of a left outer join and which area is selected by the query

8. In the **Auto Join Criteria** window, deselect any undesired criteria.
9. Click the **Add Criteria** button.
10. Repeat steps 5 – 11, until you have all the desired records.
  - a. Be mindful of how many joins are added because joins have the potential to slowdown a query and make it harder to validate the data.

Query has detected the join conditions shown below.  
Use the checkboxes to unselect the criteria that you do not want to add to the query and click add criteria when done. The criteria added can always be modified later using the criteria tab.

<input checked="" type="checkbox"/>	A.BUSINESS_UNIT - Business Unit = B.BUSINESS_UNIT - Business Unit
<input checked="" type="checkbox"/>	A.JOURNAL_ID - Journal ID = B.JOURNAL_ID - Journal ID
<input checked="" type="checkbox"/>	A.JOURNAL_DATE - Journal Date = B.JOURNAL_DATE - Journal Date
<input checked="" type="checkbox"/>	A.UNPOST_SEQ - UnPost Sequence = B.UNPOST_SEQ - UnPost Sequence

**AUTO JOIN CRITERIA NOTES:**  
The **LETTER**.  
<FIELD\_NAME> identifies which records and which fields are being compared.  
Which record is represented by which letter can be seen on the **Query** tab

**Add Criteria** **Cancel**

Figure 6: The Auto Join Criteria page

11. Click the **Save** button.

**NOTE:** Records can be removed from the query by clicking the **Query** tab and then clicking the **Delete Record (Minus)** icon for the desired record.

### How to Create a Query with a Prompt

Adding a prompt to a query will require the end user running the query to enter the comparison value(s). This means queries with prompts will have to be run on an as needed basis and may not be scheduled.

1. Navigate to the **Query Manager** page and find an existing query or create a new query.
  - a. Path: NavBar > Menu > Reporting Tools > Query > Query Manager
2. Click the **Records** tab and select the desired record(s).
3. Click the **Fields** tab.
4. Click the **Add Criteria** icon next to the desired field.

Figure 7: The Fields tab

5. In the **Choose Expression 2 Type** section, select the **Prompt** button
6. Click the **New Prompt** link.

Figure 8: The Edit Criteria Properties screen

7. In the **Edit Type** dropdown, select the '**Prompt Table**' list item.
8. Click the **Prompt Table Look Up** icon.

**Edit Prompt Properties**

Field Name →

**FIELD NAME NOTES:**

- Pre-populates if coming from the **Edit Criteria Properties** screen
- Updates the **Type, Format, Length, Heading Type, and Heading Text** fields when a **Field Name** is specified

\*Type

\*Format

\*Unique Prompt Name

Length  ←

Decimals

**DECIMALS NOTES:**

- Defines the number of spaces to the right of the decimal that are allowed

\*Edit Type  →

**EDIT TYPE NOTES:**

- Options are:
  - 'None'
  - 'Prompt Table'
  - 'Translate Table'
  - 'Yes/No'
- 'None' is the only option that allows users to enter any value

☐ Optional →

**PROMPT TABLE NOTES:**

- If **Edit Type** is 'Prompt Table', you need to select a value
- If **Edit Type** is 'Translate Table', the value in the drop-down list box determines the values used
  - The selected field must have translated table values in the record definition

**Prompt Table**

**OPTIONAL NOTES:**

- Can select this checkbox to make a prompt optional

Default Value

Figure 9: The Edit Prompt Properties screen

9. Select the link of the desired prompt table.

**Select a Prompt Table**

Search by: Name begins with SP\_BU\_GL\_CLSVW

Search Cancel No Value

**Search Results**

Select a Prompt Table

SP\_BUNGL\_CLSVW - Netting GL Business Unit View

SP\_BU\_GL\_CLSVW - Sec Vw - PS/GL Business Units

Figure 10: The Select a Prompt Table screen

10. Click the **OK** button on the **Edit Prompt Properties** screen.
11. Click the **OK** button on the **Edit Criteria Properties** screen.
12. Click on the **Prompt** tab.

**FloridaPALM**

Records Query Expressions **Prompts** Fields Criteria Having Dependency Transformations View SQL Run

Query Name: QUARTERLY\_DEPOSIT Description: Feed

Add Prompt

**Prompts List**

Prompt Edit Delete

:1 = DEPOSIT\_BU - Unit Edit

Save Save As New Query Preferences Properties

Publish as Feed Publish as Pivot Grid New Union

Return To Search

**PROMPTS NOTES:**

- This tab shows all prompts defined for the query
- Can add a prompt using the **Add Prompt** button but you will need to tie it to a field using a criterion

Figure 11: The Prompts tab

13. Click the **Save** button.

## How to Create a Query with "HAVING" Criteria

Aggregate functions return a single value rather than multiple rows of data; they summarize your query results. Once you have added an aggregate function to a field, you cannot add standard criteria since they're based on SQL WHERE clauses. Instead, you'll use the Having tab to enter criteria (SQL HAVING clause). Florida PALM will then evaluate the summary values returned by the aggregate function rather than the individual rows. Creating HAVING criteria is very similar to adding criteria on the **Criteria** tab.

Remember that aggregate functions can be marked on the **Edit Field Properties** and the **Edit Expression Properties** screens.

The screenshot shows the 'Edit Field Properties' dialog box. The 'Field Name' is 'A.CONTROL\_AMT - Control Total Amt'. The 'Heading' section has radio buttons for 'No Heading', 'Text', 'RFT Short' (selected), and 'RFT Long'. The 'Heading Text' field contains 'Sum Control'. The '\*Unique Field Name' field contains 'A.CONTROL\_AMT'. The 'Aggregate' section, highlighted with a red dashed box, has radio buttons for 'None', 'Sum' (selected), 'Count', 'Min', 'Max', 'Average', and 'Count Distinct'. At the bottom are 'OK' and 'Cancel' buttons.

Figure 12: The Edit Field Properties screen for an aggregate field

The screenshot shows the 'Edit Expression Properties' dialog box. The '\*Expression Type' dropdown is set to 'Character'. The 'Length' field is '1'. The 'Decimals' field is empty. The 'Aggregate Function' checkbox, highlighted with a red dashed box, is unchecked. The 'Expression Text' field is empty. At the bottom are 'Add Prompt', 'Add Field', 'OK', and 'Cancel' buttons.

Figure 13: The Edit Expression Properties screen where an expression can be made into an aggregate expression

1. Navigate to the **Query Manager** page and find an existing query or create a new query.
  - a. Path: NavBar > Menu > Reporting Tools > Query > Query Manager
2. Click the **Fields** tab.
3. Click the **Add Criteria** button for a field with a value in the **Agg** column.



Figure 14: The Fields tab

4. Select the desired list item for the **Condition Type** dropdown.
5. Select the desired **Choose Expression 2 Type**.
6. Enter or select the desired value for **Expression 2**.
7. Click the **OK** button.

**EDIT HAVING CRITERIA PROPERTIES NOTES:**

- Remember this is where you specify what you want the query to return
  - For this example, the query will only return the fields with control sums greater than the value specified by the user when the query is run

Figure 15: The Edit Having Criteria Properties page

8. Click the **Having** tab to view the criteria that was just added.

**HAVING NOTES:**

- This tab is only for criteria added to aggregate fields
- Criteria added to standard fields can be viewed on the **Criteria** tab

Figure 16: The Having tab

9. Click the **Save** button.

## How to View a Query's SQL

The View SQL tab allows you to view the underlying SQL code Query Manager generated based on the query definition you have provided. The SQL code cannot be modified on this page.

1. Navigate to the **Query Manager** page.
  - a. Path: NavBar > Menu > Reporting Tools > Query > Query Manager
2. Click the **Create New Query** link.
3. Click the **Properties** link and fill in the query properties to name your query and save it as a public or private query.
  - a. See the Writing a Simple Query Job Aid for more details.
4. Click the **Records** tab and select the desired record(s).
  - a. See the Writing a Simple Query Job Aid or the How to Create a Query with Multiple Records section for more details.
5. Add any desired expressions, prompts, criteria, dependencies, and transformations.
6. Click the **View SQL** tab.

The screenshot shows the FloridaPALM Query Manager interface. The 'View SQL' tab is selected, displaying the SQL code for the 'QUARTERLY\_DEPOSIT' query. The SQL code is highlighted with a red dashed box. A callout box with a blue arrow pointing to the SQL code contains the following text:

**QUERY SQL NOTES:**  
*The generated SQL code can be copied and pasted into another application, if desired*

The SQL code is as follows:

```
Query SQL
SELECT DISTINCT A.DEPOSIT_BU, A.DEPOSIT_TYPE, SUM(A.CONTROL_AMT)
FROM PS_DEPOSIT_CONTROL A
WHERE (A.DEPOSIT_BU = :1)
GROUP BY A.DEPOSIT_BU, A.DEPOSIT_TYPE
HAVING (SUM(A.CONTROL_AMT) > :2)
ORDER BY 1, 2
```

Below the SQL code, there are buttons for 'Save', 'Save As', 'New Query', 'Preferences', 'Properties', 'Publish as Feed', 'Publish as Pivot Grid', 'New Union', and 'Return To Search'.

Figure 17: The View SQL tab

**Still have questions?**  
Please contact the [Florida PALM Solution Center](#).