

Student/Faculty Information System

Introduction to PeopleSoft Query

Part II- Query Manager



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Part II - Query Manager

Part II will present the fundamentals of building queries in PeopleSoft

- The Student/Faculty Information System (SFIS) is one of three PeopleSoft Databases currently in use at Wesleyan.
- The three databases are:
 - SFIS (also called PeopleSoft Campus Solutions)
 - HRMS (Human Resources Management System)
 - WFS (Wesleyan Financial System)
- These instructions are strictly for use with SFIS data, but the basic principles generally apply to any of these PS Databases.

Objectives: In this module you will learn how to:

Lesson 5: Select, run, and print an existing query

Lesson 6: Create and save a basic custom query

Lesson 7: Join multiple records into one query

Lesson 8: Add Expressions and use Functions

Lesson 9: Adding runtime prompts; Having and View SQL pages

Lesson 10: Basic Query organization

SFIS TEST DATABASE

- Throughout these lessons you will be working in the SFIS TEST Database.
- You can always find a link to TEST by clicking in the SFIS Blog on the SFIS Quick Links page.
- Note that the TEST Database is overwritten periodically, usually about once a month. Consequently, it should only be used for experimentation.
- Note also that TEST is not available from your **Portfolio**

Lesson 5: Running an Existing Query



In this lesson, you will focus on running an existing query.

You can use an existing query as a starting point before creating custom queries. Learning to run a query is useful if your office has multiple users who will be running queries but not necessarily creating queries.

Understanding Academic Structure

Academic Structure is the foundation of SFIS, and defines the components used within the PeopleSoft system.

Among the elements of Academic Structure with which you should be familiar when working with PS Query are these. Next to each are examples used at Wesleyan.

Academic Structure Term	Wesleyan Example
Academic Institution	WSLYN, Wesleyan
Academic Career	DCST, GLSP, Graduate; Honorary, Undergrad
Academic Program	BA, CAS, CERT, GRNON, MA, PHD, UGNON
Academic Plan	ARST, E&ES-MA, FYST, HIST, MB&B, PSYC, SFAC, TCEX, WMST
Academic Organization	AFAM, ARTS-CAS, CHEM- MA, GRNON, RLAN, WRCT

- The above terms are defined in the <u>SFIS Blog</u> under DOCUMENTATION > INTRODUCTION > <u>Glossary</u> –
 PS Campus Solutions
- Specific terminology related to Query can be found in the SFIS Blog under QUERY > QUERY TOOLS AND REFERENCES > Glossary







Notes on Searching for a query

- You can always run an existing query through Query Viewer if you do not need to look at the criteria, etc.
- Query Manager has Search options similar to those found in Query Viewer (the Search By – begins with dropdown box and the Advanced Search link). You can review those areas in <u>Lesson 3</u>.

STEPS IN OPENING A QUERY IN QUERY MANAGER

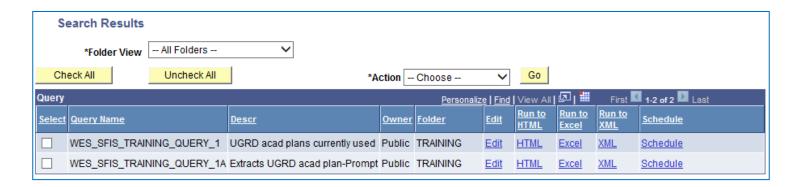
Reminder: You will be working in the **SFIS TEST DATABASE**

Navigation: Reporting Tools > Query > Query Manager

You will see that the **Query Manager** search page is almost identical to the **Query Viewer** search page. There are two additional elements: the **Find an Existing Query** label and the **Create New Query** link.

Query Manager					
Enter any information you h	ave and click Search.	O No.	blank for a list of all va	alues.	
*Search By	Query Name Advanced Search	~	begins with		

- With Query Manager, since you are able to see the records and fields that comprise existing queries, you
 can utilize that information in your searches through the Advanced Search.
- As with Query Viewer, if you know the name of the query, type it in the "begins with" field and click the Search button.
- If you are uncertain of the name of the query, you can find an existing query by entering the first few letters of the query name.
- Once you specify a value, click on the Search button or hit Enter.
- In this example, search for the query WES_SFIS_TRAINING_QUERY_1

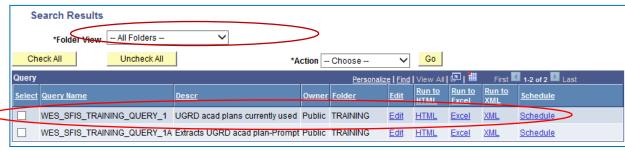


The **Search Results** section lists all the queries that match the search criteria.

- If there are Private queries that meet the criteria, they will top the list.
- Since there are two queries that start with WES_SFIS_TRAINING_QUERY_1, they are both displayed.



Search Results in Query Manager - main elements:



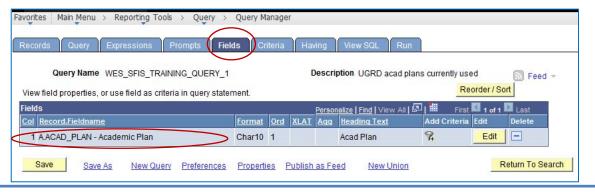


- **Folder View** dropdown: The default is "- All Folders –" A query may be stored in a folder, but it is not required. Folders can be used to categorize queries. The folder name is entered by the person who created the query when saved.
- Action dropdown and Select checkbox: These will be covered in the Advanced Query Class.
- Query related headers. These headers can be clicked on to re-sort the lists if desired.
 - Query Name: Displays all of the queries that meet the criteria you searched on. They are in alphabetical
 order. The queries are always shown in upper case. Query names do not have spaces in them. Query
 naming conventions will be discussed later.
 - **Descr:** A brief description of the query.
 - Owner: Private or Public.
 - **Folder:** If the query is in a folder, the name would appear here.
 - Edit: Click to open the guery you want to observe or modify.
 - Run to HTML: As with Query Viewer, click to view results. Can run to Excel or CSV file.
 - Run to Excel: Click to download the query to an Excel spreadsheet directly from this page.
 - Schedule: Click to schedule a time for the query to run.



Choosing and viewing the query

Click Edit next to Query Name WES_SFIS_TRAINING_QUERY_1. The Fields page will open as follows:



Overview of elements on the Fields Page:

- Col (Column) number: For multiple columns, each column is numbered here and on the query output.
- Record.Fieldname: The Alias of "A" plus the Record/Table Name plus the Field/Column Name. If there were additional Records, they would have the aliases of "B," "C," "D," etc.
- Format: Type and length of field Numeric, Date, etc. Here it is a Char Field with 10 characters.
- Ord (Order): With multiple columns, the order in which the Columns appear in the output.
- XLAT (translate): can be utilized to take advantage of translate values in your queries. If a field has an associated translate value, the column will contain one of three values: N, S, or L
- Agg (aggregate): to utilize aggregate functions in summarizing data, Avg, Count, Max, Min, Sum.
- **Heading Text:** Default header for the **Column**. This can be edited.
- Add Criteria: Apply criteria for this field.
- Edit button: Make changes to field's appearance, etc. in the Edit Field Properties page.
- **Delete:** Delete this field from the query.

Query Manager Page Descriptions

Before running the query, let's take a look at the nine pages that make up Query Manager.

The links will take you to the slides that illustrate these pages.



PAGE NAME	USAGE
Records	Starting on the opening Query Manager page, select the records upon which to base the new query.
Query	 Displays the fields in the records that are part of the query. Add fields to the query content. You can also add more records by performing joins. When you first access this page, if you have selected the record for an effective-dated table, a page informs you that an effective date criteria has been automatically added for this record. Click OK to close the page.
<u>Expressions</u>	 Expressions are calculations that PeopleSoft Query performs as part of a query. Use them when you must calculate a value that PeopleSoft Query does not provide by default. You use expressions to display a field value differently from the way you store the value.
<u>Fields</u>	 View how fields are selected for output; view the properties of each field; and change headings, order-by numbers, and aggregate values.
<u>Prompts</u>	Adding a prompt lets you further refine a query when you run it.
<u>Criteria</u>	 To selectively retrieve the data that you want, you define selection criteria. Selection criteria refine your query by specifying conditions that the retrieved data must meet.
Having	 SQL does not support the use of aggregate functions in WHERE clauses. Therefore, after you have applied an aggregate function to a field, you cannot use that field in your selection criteria, which corresponds to a SQL WHERE clause. When you want to select rows based on the results of an aggregate function, Query Manager enables you to create HAVING criteria.
View SQL	 View the underlying SQL code that Query Manager generates based on your query definition. You cannot modify SQL on this page.
Run	View the <u>results of your query</u> prior to saving in order to verify that your query yields the results that you need. Continue to adjust and preview your query as necessary. 8



Query Manager Output

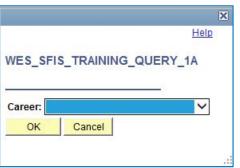
- The last step is to click the Run tab.
- The first few lines of the output of the query
 WES_SFIS_TRAINING_
 QUERY_1 appear as follows:

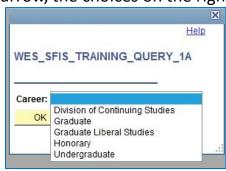
ecords Query	Expressions Prompts Fields Criteria Having Vi	iew SQL Run
ecords duery	Expressions Frompts Freids Official Fraging Vi	Null
/iew All Rerun Quer	/ Download to Excel Download to XML	First 1-100 of 123 Las
		Acad Plan
1		
2	AFAM	
3	AFST	
4	AMST	
5	ANSO	
6	ANTH	
7	ARCP	
8	ARFS	
9	ARHA	
10	ARST	
11	ART	
12	ASST	
13	ASTR	
14	ВСНМ	
15	BIOL	

- Each row has a number in the left-hand column. The Header for the field appears at the top (Acad Plan).
- View All: By default, only the first 100 rows of a query appear on the page. To display all of the rows, select View All and use the scrollbar to go through the rest of the list.
- Rerun Query: Click to run the query again.
- **Download to Excel**: As with Query Viewer, this option opens the menu for copying to Excel.
- **Download to XML:** You will most likely not be using this option.
- If the number of rows returned is very large, you may receive a message to that effect. In that case, you will need to narrow down your criteria. Another possibility is that the process may "time out" due to a number of reasons having to do with the criteria selected.

Running a Query with a Prompt

- As discussed in the Query Viewer section, some queries are designed to prompt you for information when you run them. By entering specific data, the results of your query are narrowed down to only the information you entered, instead of returning all the data from the rows in the query.
- For example, if you select "Edit" and run the query **WES_SFIS_TRAINING_QUERY_1A**, the next page will contain the dropdown box on the left. When you click on the arrow, the choices on the right will appear.





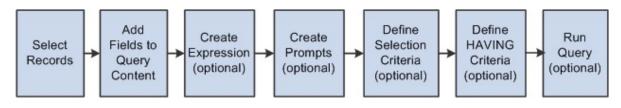
- Your options after running the query are as follows:
 - Rerun the query
 - Download to Excel
 - Download to XML
- Or you can click on one of the other tabs for further editing.

Downloading a Query as an Excel Spreadsheet

• From the Results page, you can download a Query as a Microsoft Excel spreadsheet, in a manner similar to that with Query Viewer.

Lesson 6: Creating a New Query

The following process flow illustrates the PeopleSoft Query business processes:





Before you begin a query, have a good idea of where you want to go.

In this lesson, you will create your first query. Your query will use one record as the basis for its data.



You can use either of these two methods to create a query:

- Click the Create New Query link on the Query Manager search page.
- Click the New Query link at the bottom of the pages that are within the Query Manager component.

The basic steps involved in creating and running a query are as follows:

- 1. Determine what table (record) or view you need to extract data from.
- 2. Select view(s) and/or record(s).
- 3. Select fields and add to query content.
- 4. Specify selection criteria.
- 5. Edit field properties.
- 6. Format the query output.
- 7. Remove duplicate rows.
- 8. Save the query.
- 9. Run the query.
- 10. Verify the data.



The *first* step in creating a custom query is to select the view(s) and/or record(s) that contain the data you are seeking.

A **table** or **record** is a collection of fields or columns that have something in common (i.e. the Addresses table contains fields for EmplID, Address 1, Address 2, City, State, etc.).

A **view** is a logical representation of data and may consist of **data from multiple tables** depending on how the record was defined. Many views are delivered with PeopleSoft and others are created by ITS Staff.

- A view makes it easier for the user to utilize the data without having to join the tables.
- Additionally, views may already have criteria associated with them.
- If an appropriate view of the required tables is not provided and the user requires data from multiple tables, the application user must know in which tables the data he or she requires is stored, and how to join those tables.
- Views generally end with the letters VW.



Selecting a View or Record

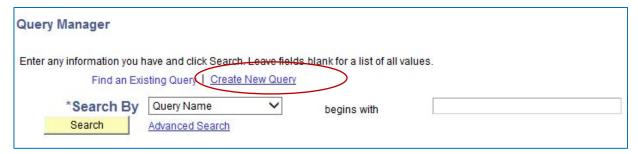
- You will use certain tables over and over again and you will know the table names without needing to do research.
- There will be times when you are familiar with the data from using PeopleSoft Pages, but you may not know what records the data exist in behind those pages. Most of the records in the database have an abbreviated name, which will give you some clues as to their contents.
- There will be existing queries used by others in your office that you can use as a starting point.
- For some suggestions on how to choose a record, take a look at the <u>SFIS Blog, Records</u> <u>Commonly Used Page</u>.



SAVE your query frequently as you are working on it. If something occurs that kicks you out or if your computer freezes, you will be very glad that you did!

Add a record from the Records Page

Begin defining a new query by selecting the Create New Query link from the main page of Query Manager.



When you click on Create New Query, the Records page will open.



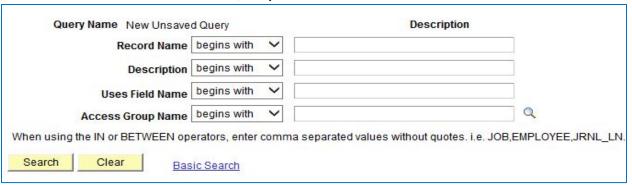




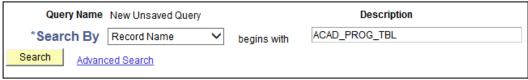
One of the most confusing aspects of working with Query (or any reporting tool) in a very complex database structure, such as PeopleSoft, is knowing what tables and fields you need in order to report correctly. This will be gone into more detail later, but for now, see the information on selecting a record on <u>Slide 12</u> and the link in the SFIS Blog on <u>Records Commonly Used</u>.

In the **Search By/begins with** field of the **Records Page** you enter the name of the appropriate view or record and click the **Search** button.

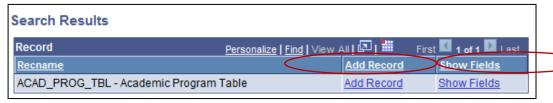
- If you are uncertain of the name, you may enter part of the name using the wildcards of % or _.
- You may also perform a partial search by clicking on the Search By arrow, and selecting the Record Name, Description, or Contains Field Name in the dropdown.
- In addition, there are more complex searches available if you click on the **Advanced Search** link, which is similar in concept to Advanced Search for queries in Part I Query Viewer. However, the options available to search for a record are different, as you see here:



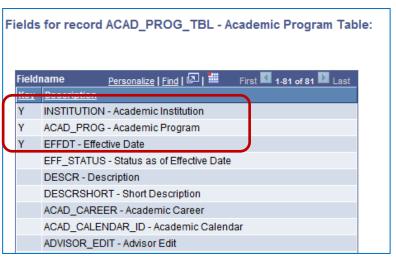
For this example, type **ACAD_PROG_TBL** (upper or lower case) in the **begins with** box and click **Search**. (This Record contains information relating to the Academic Programs.)



The Search Results section for the Record page opens:



• In order to view the fields contained in this record, on the row containing the record name, click the **Show**Fields link. The list of fields opens. In this Record, there are 81 fields all together. Displayed here is the beginning of the list.



The first three fields have a "Y" next to them, indicating they are **Key fields**, that is, **the combination of these three fields are what make each row unique.**



- Each field name has a short description next to it.
- Once you have looked at the fields, click on the Return button at the bottom to go back to the previous page. In order to add this record to your new query, click on the Add Record link.
- Effective Date Field: Once you click **Add Record**, the following message will pop up because the record you have selected has an **Effective Date** field.



• Click **OK**. The Query tool has automatically started to define criteria for you, as you will see on the **Criteria** page.



Effective Dates

Whenever you use a record that has **effective dating**, you will receive the above message.

What is important to know when you see this message is that the database will automatically give you the very latest dated row for the criteria.



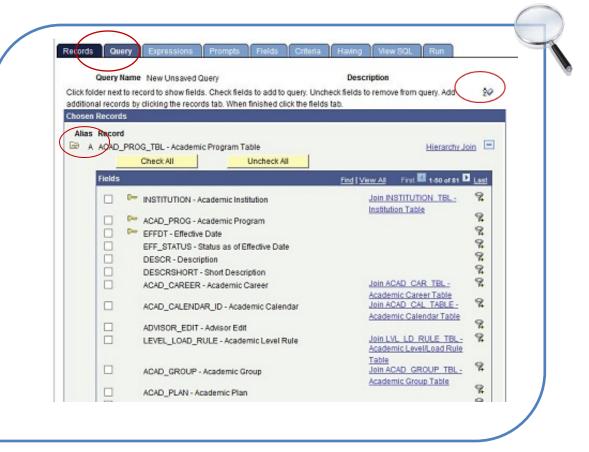
Query Page

- Once you click OK, the Query page can be viewed for ACAD_PROG_TBL.
- In order to hide or show the list of fields associated with the view or record chosen, click the **yellow folder** to the left of the Record's name. By default, 50 of the Record's 81 fields are shown.

Selecting Fields for Output

- The next step in creating a query is selecting the fields for output here on the Query Page.
- In addition, you can further define fields on the Fields Page.
- A record or view may consist of a sizeable number of fields, which can make it cumbersome for the user, so you should try to include only those that you need to display.

Creating a New Query



- To include a field in the query output, click the check box next to the field.
- To include all the fields in your output, click the **Check All** button.
- You must select at least one field in order to run a query.

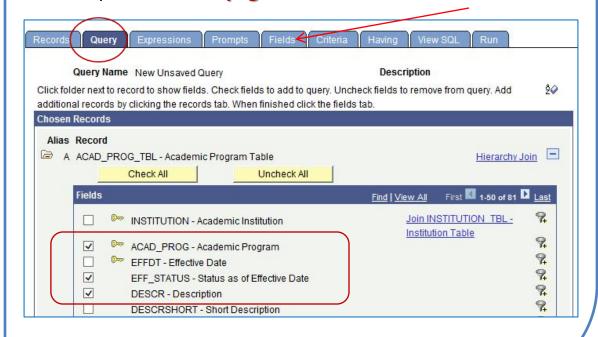


Selecting Fields for Output on the Query Page

The following are the fields and buttons on the **Query page** and their functions:

- AZ Sort fields alphabetically
- Hierarchy Join A predefined join. Join parent-child records. Use this page to view a list of child records and select the record to join to the existing record in the query.
- Delete button (minus sign) –
 Delete the displayed record
- Check All Select all of the fields in the record (for output)
- Uncheck All Clear all selected fields (for output)
- Fields column Select fields for output
- Key Key fields in a record/table
- Join link A predefined join.
 Related record joins can be made.
- Use as Criteria (funnel +) Filter data from the query

- For this example, select the following fields for output by putting a check in the Fields column checkbox for each field:
 - ACAD_PROG
 - EFF_STATUS
 - DESCR
- Once you have selected the fields, click on the Fields tab to open the Fields page.





Fields Page: The three fields you selected for output appear here.

Click the **Run** tab to view the output.



Query Output – Initial Format:

- As you will see in the next slide, the three fields/columns appear in the output in the same order displayed here.
- The rows are sorted by entries in the first column, ACAD_PROG.
- The **EFF_STATUS** field displays as the letter "A" since the **XLAT** (**Translate**) short code of "N" appears by default.
- The **Heading Text** for each column appears as shown above.

Creating a New Query Query Output



Formatting Query Output:

You can format the appearance of the query output in several ways, including:

Reorder/Sort Button

- Reorder Columns
- Sort Output

Edit button

- Edit the Field Header
- Change the display of a Translate Value

Expression page

- Using an Expression to change a field's look
- Use an Expression to add a field with a different format

Demonstrations of the first two items are shown below. **Expressions** will be discussed in Lesson 8.

Initial Query Output

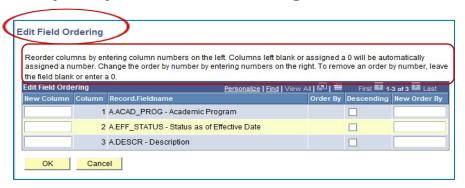
	Acad Prog	Status		Desc
1	BA	A	Bachelor of Arts	
2	CAS	A	Certificate of Advanced Study	
3	MALS	A	M.A. in Liberal Studies	
4	GLNON	A	GLS Non-degree	
5	UGNON	A	Non-Degree Undergraduate	
6	MA	A	Master of Arts	
7	PHD	A	Doctor of Philosophy	
8	GRNON	A	Graduate Non-Degree	
9	WMAPS	A	Artificial WesMaps Plan	
10	MAT	A	Master of Arts in Teaching	
11	HONR	A	Honorary	
12	CSNON	A	CCST Non-Certificate	
13	NODEG	A	Non Degree	
14	CERT	A	Cert Curatorial Practice	
15	WINS	A	Wesleyan Institute	
16	MCERT	A	Major Certification	
17	MPHIL	A	M.Phil. in Liberal Arts	
18	WINU	A	Wesleyan Institute - Undergrad	

To Reorder Columns and/or Sort Output Rows:

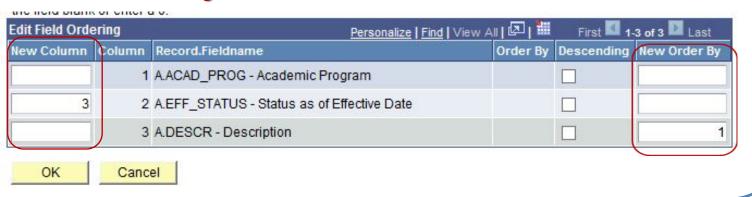
- Click on the Fields tab to return to the Fields Page.
- Click on the Reorder/Sort button. The Edit Field Ordering page opens.

Formatting Query Output – Field Ordering

The **Edit Field Ordering page** displays all the fields in the query. The instructions on how to use this page appear at the top.



- **Reorder Field:** To reorder the fields (columns) in the query results, for example, to make **EFF_STATUS** the third field on the output, enter the number "3" next to **EFF_STATUS** in the **New Column** box.
- **Sort Output:** To sort by a new field, for example, to sort by **DESCR**, add a "1" next to **DESCR** in the **New Order By** box. The default is ascending; to make it descending, check the box with that name.
- Click on the **OK** button when done.
- You're returned to the Fields Page. Click the Run tab.



Formatting Query Output – Field Ordering

When you clicked on **Run** initially, the output appeared as follows:

	Acad Prog	Status		Descr
1	BA	A	Bachelor of Arts	
2	CAS	A	Certificate of Advanced Study	
3	MALS	A	M.A. in Liberal Studies	
4	GLNON	A	GLS Non-degree	
5	UGNON	A	Non-Degree Undergraduate	
6	MA	A	Master of Arts	
7	PHD	A	Doctor of Philosophy	
8	GRNON	A Graduate Non-Degree		
9	WMAPS	A	Artificial WesMaps Plan	
10	MAT	A	Master of Arts in Teaching	
11	HONR	A	Honorary	
12	CSNON		Acad Prog	
13	NODEG		Acad Prog	

CERT

WINS MCERT

MPHIL

WINU

15

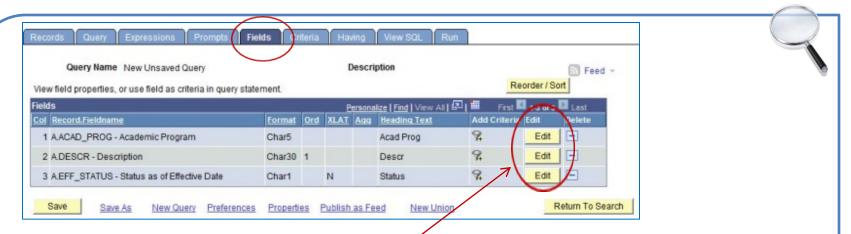
17

18

After you have made the changes on the **Edit Field Ordering** page, and clicked on **Run**, the output now looks like this:

	Acad Prog	Descr	Status
1	WMAPS	Artificial WesMaps Plan	A
2	BA	Bachelor of Arts	A
3	CSNON	CCST Non-Certificate	A
4	CERT	Cert Curatorial Practice	A
5	CAS	Certificate of Advanced Study	A
6	PHD	Doctor of Philosophy	A
7	GLNON	GLS Non-degree	A
8	GRNON	Graduate Non-Degree	A
9	HONR	Honorary	A
10	MALS	M.A. in Liberal Studies	A
11	MPHIL	M.Phil. in Liberal Arts	A
12	MCERT	Major Certification	A
13	MA	Master of Arts	A
14	MAT	Master of Arts in Teaching	A
15	NODEG	Non Degree	A
16	UGNON	Non-Degree Undergraduate	A
17	WINS	Wesleyan Institute	A
18	WINU	Wesleyan Institute - Undergrad	A

Formatting Query Output – Edit Button



When you return to the **Fields page**, you will see that since the sort order and column order have been modified, those aspects of the fields have changed on the **Fields page**.

Edit Field Header – When you select a field for query output, the system automatically assigns a header to display at the top of the column.

- The short name, or RTF Short, is used by default.
- Using the Edit button on the Fields page, you can use the field properties to change the header.
- In addition to selecting either the delivered RFT Short or RFT Long description, you can select Text and overtype the text in the Heading Text box on the Edit Field Properties page.



Formatting Query Output – Edit Field Header

- To change the Heading Text of Descr to Academic Program Description, while on the Fields
 page, click on the Edit button on that row.
- The Edit Field Properties page opens.
- The current **Heading Text** displayed is **Descr** which is the **RFT Short** version.
- You can change it to **Academic Program Description** as follows:
 - Click on the **Text** radio button, and then type **Academic Program Description** in the **Heading Text** box (overriding **Descr**).
 - Click OK. When returned to the Fields Page, click Run.





The query output now appears as follows:



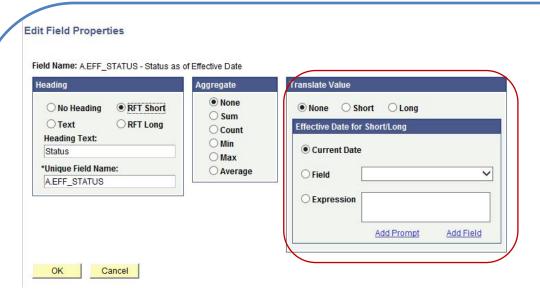
Formatting Query Output – Translate Value Display





- Translate Value: You will see that one of the elements described earlier for the Fields page appears here next to the field of EFF_STATUS, that is, the XLAT or Translate column.
- This can be utilized to take advantage of **Translate Values** in your queries.
- If a field has an associated **Translate Value**, the column can contain one of three values:
 - N (Translate code)
 - S (Short name)
 - L (Long name)
- You may leave the default of "N" or may choose "S" or "L" to display a longer form.
- In order to change the value, click on the **Edit** button to the right of the field name.
- The Edit Field Properties page opens. On this version of the page is an additional box headed Translate Value with the three options of None, Short and Long.

Formatting Query Output – Translate Value Display



- You can click on the **Short** or **Long** radio button to display a longer form.
- For the EFF_STATUS Field, either the Short or Long forms displays as "Active."
- For this example, click the Short button and click OK.

On the Fields page, the EFF_STATUS row now has an "S" for Short in the XLAT column.

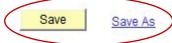


Click Run to see the results. Now "Active" is spelled out in the Status column:



Discarding or Saving a Query

- You can discard or save an in-process query at any time after you have selected one record and at least one field. The links/buttons to do so are found on the bottom of all pages (except Run), along with the other options displayed here.
 - **Properties** and **New Union** will be discussed in later lessons.
 - **Preferences** should not be altered.
 - You will probably not be using **Publish as Feed**.



New Query

Preferences

Properties Publish as Feed

New Union

Return To Search

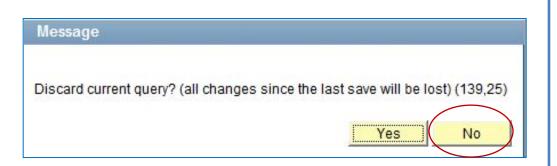
Discarding a Query

The ways to discard a query which has not yet been saved are:

- **New Query**
- **Return To Search**

If you click on either, this warning message appears.

- For this exercise, click **No**.
- Had you clicked **Yes**, all work you have done would have been erased.

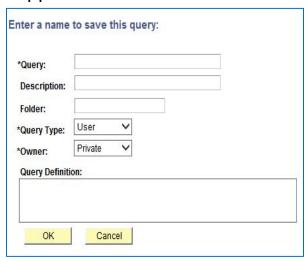


Discarding or Saving a Query

There are two ways to save a query

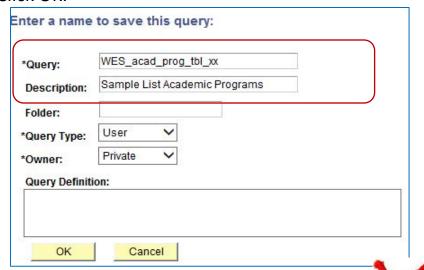
- The yellow Save button
- The Save As link (also used to save existing queries).

If you click on either, this page appears.



Saving a Query

- There will be more discussion on query naming in Lesson 10. For now, populate the Query and Description fields only as follows. Do not change the Query Type or Owner.
- For this example, make the last two characters of the query name your initials (where you see "xx").
- Click OK.



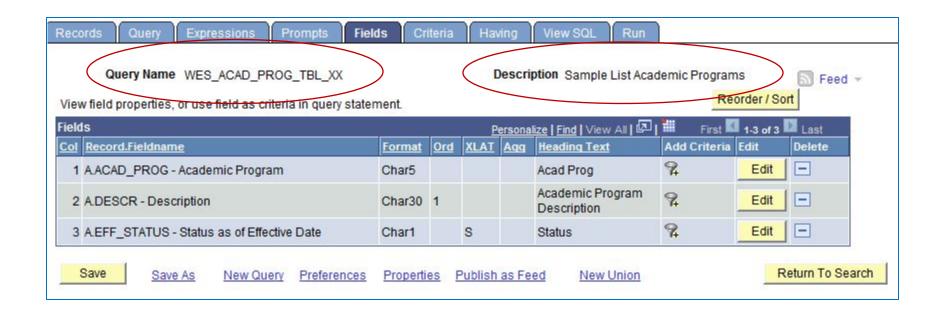
Some things to remember about **naming queries**:

- There can be no spaces in a query name. You may use underscores.
- You can type the query name in upper or lower case. When saved, it will display in upper.
- There are naming conventions which you should follow. See <u>Lesson 10</u>.

Discarding or Saving a Query

Newly named query

 Once you click OK, you are returned to the Fields page where you'll now see the new name and description displayed.





Lesson 7: Mastering Record Joins and Selection Criteria

In this lesson, you will create a query which uses data from more than one record, as well as using selection criteria to extract the data of interest.

Record Joins – First, you will create a query that will extract data related to addresses.

To complete this exercise, you should be familiar with the basics of creating a query.

- 1. Select the first record (PERS_DATA_SA_VW) from the Records page. (Note that this is a View.)
 - a) From the PeopleSoft menu select **Query Manager**.
 - b) To begin defining a new query, select the **Create New Query** link. Type the record name **PERS_DATA_SA_VW** in the "begins with" box. Click **Search** or Enter.
 - c) Select the **PERS_DATA_SA_VW Common Person Information** record/table by clicking **Add Record** to the right of **PERS_DATA_SA_VW Common Person Information**.
- 2. Select the appropriate fields in the first record
 - a) The fields for the record appear on the **Query page**. Add the following fields to the query output by putting a checkmark to the left of each:
 - **EMPLID** (the **key field** for this table)
 - NAME
 - In this query, you also want to know which students have a home address in a given state. The fields with this information are not in this table.
 - You will need to join a related table that contains (1) the State field, (2) the Address Type field, and also contains (3) one of the key fields from this table.
 - Then you can perform a simple join to combine these into one query.

NOTE: You will be adding to this query throughout Lesson 7 through 9.

Record Joins



Select the second record (ADDRESSES).

- a) Navigate to the **Records page**.
- b) The results of your previous search are still displayed.
- c) Type **ADDRESSES** in the "begins with" box.
- d) Click Search or Enter.



- e) There are two records that begin with "ADDRESSES." You want the first one.
- f) Note that instead of **Add Record**, the column to the right reads **Join Record**.
- g) Once you click on **Join Record**, you will see the **Join Type** page where you will decide how to join this record to the first record.

Creating Any Record Joins

- Using Query Manager, you can create a join between two records (any record join) by selecting your initial base record, defining its output fields and associated criteria, and then returning to the Records page to select the second record.
- When you return to the Records page, you see the link Join Record rather than Add Record to the right of all listed record names.
- If you have the Enable Auto Join preference selected in the Query Preferences page – which you do – PeopleSoft Query automatically attempts to join the new record to the existing record by looking for matching columns on the two records.

Record Joins

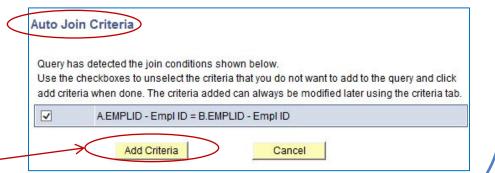


- 4. The Join Type page has two options.
 - a) The default is the first option of "Join to filter and get additional fields (Standard Join)."
 - b) The second option (Left outer join) will be covered in the advanced class.
 - c) Select the default join type for the **Join Record** displayed, i.e. **PERSON_DATA_SA_VW**, by clicking on that link under **Join Record**. There could be multiple records, in which case you could select one, some, or all of them.
- 5. The next page to open is Auto Join Criteria.

All queries default to **Auto Join**, which does *some* of the work for you and lets you verify or manipulate the criteria to be added before accepting it. This feature looks for common keys among the joining records and creates a criteria row for each common key combination. You must evaluate these predefined combinations to have a successful query.

 a) Click on the Add Criteria button to accept the proposed criteria.

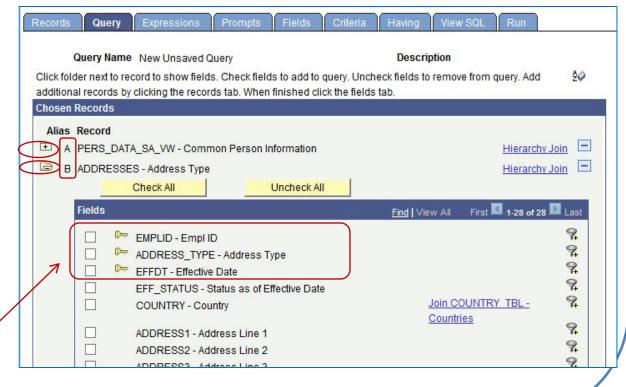




Record Joins

6. Viewing the Query Page with joined records

- a) Since the **Addresses** record has an Effective Dated row, the message "An effective date criteria has been automatically added for this effective dated record. (139,60)" will appear. Click **OK**. The Query page opens.
- b) The top of the page shows the **PERS_DATA_SA_VW** record with its fields hidden. Also note that it has an alias of **A** which will be identify the record throughout the query.
- c) The ADDRESSES record displays with all of its fields listed. It has an alias of B which will be the record's identifier throughout all pages of the query.
- d) To view the fields for the first record, click on the yellow folder with the plus (+) sign.
- e) To hide them in the second record, click on the yellow folder with the minus (-) sign.
- f) Note that the ADDRESSES record has three key fields.



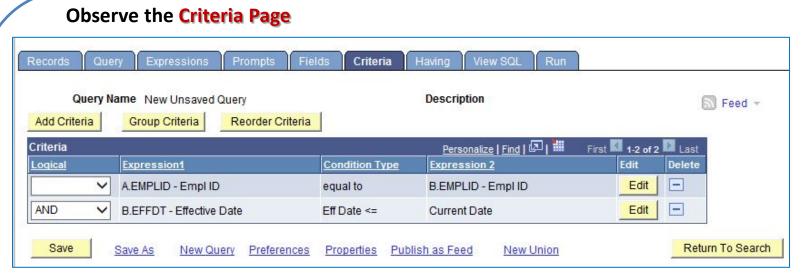


Understanding the Criteria Page

Often, you do not want to retrieve every row of data from the record(s) you are accessing. By defining criteria in the **Criteria page**, you specify what conditions you want the query to have.



Note: You do not have to select a field to show up as output to have that field as criteria.



- The first row displays the join you created associating the two records.
 - Notice that there is a one-to-one relationship with the **EMPLID** ("**equal to**"), that is, for every **EMPLID** in the first record (**A**) there one **EMPLID** in the second record (**B**).
- The second row shows that the **Effective Date** criterion has been automatically added for the second record (**ADDRESSES**). It is less than or equal to the **Current Date** (today's date).
- You have created a query that works as it should! However, you would not yet run the query since it could potentially return tens of thousands of records.
- The next section discusses how to select criteria.



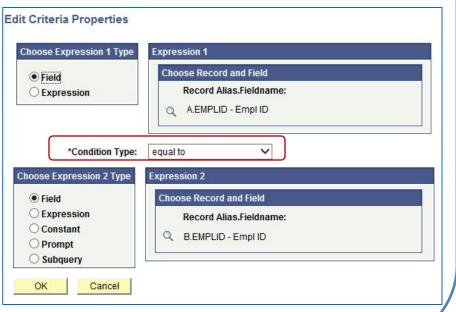
Choosing Selection Criteria

- There are three different ways to view the Edit Criteria Properties page:
 - On the Criteria page, click on the Edit button next to the field name.
 - On the Query page, click on the Funnel to the right of the field name.
 - On the Fields page, click on the Funnel to the right of the field name.
- Whichever method you use, the same page opens, the Edit Criteria Properties page.



View the Edit Criteria Properties page

- Select one of the above methods to open the page for the EMPLID field.
- The Expression 1 Type the left side of the equation can only be a Field or an Expression.
- The Condition Type field operator is "equal to." The Condition Type determines which Expression 2 Type is set for the right side of the equation.
- The Condition Type determines how Query Manager compares the values of the first (left-hand) expression to the second (right-hand) expression.
- There are a number of Condition
 Type operators that will be described later.





Choosing Selection Criteria

Adding Fields to the Criteria

To add a criterion, in addition to accessing the Edit Criteria Properties page from the Criteria page, you can also access it as follows:

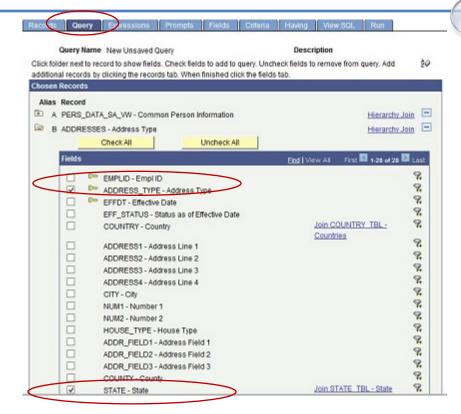
- Click the Use as Criteria button (filter icon/funnel) on the Query page
- Click the Add Criteria button (filter icon) on the Fields page (if the field has been selected for output)
- Click the Add Criteria button on the Expressions page

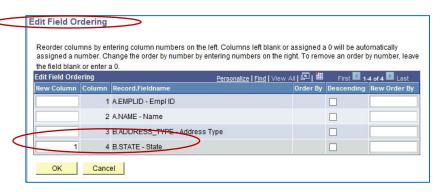
1. Adding two fields for output

- Navigate to the Query page. Add ADDRESS_TYPE - Address Type from record B as a Field for output.
- Add STATE State from record B as a Field for output.

2. Moving STATE field to first position in the output

- On the Fields page, make STATE appear as the first field using Column order by clicking the Reorder/Sort button and typing a "1" under New Column next to B.STATE.
- Click OK.





Adding Fields to the Criteria

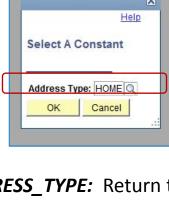
Help

Select A Constant

Country: USA Q



- 3. Adding New Criteria to two fields
- **STATE:** On the **Fields page**, select the criteria funnel icon for **STATE** from record **B**
- On the Edit Criteria Properties page
 - STATE is automatically selected as Expression 1.
 - Leave the Condition Type as equal to.
 - Click on the magnifier (lookup icon) next to the Constant box under Expression 2
 Define Constant. You are prompted for the Country and the State.
 - In the Country box select or type USA, and in the State box select or type FL (for Florida). Click OK.
 - Click OK.



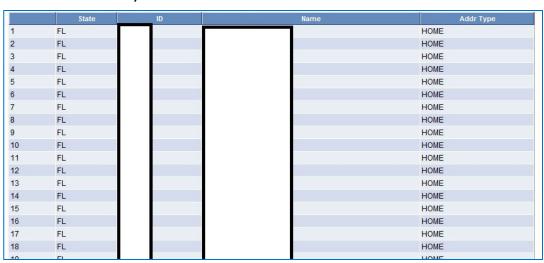
- ADDRESS_TYPE: Return to the Fields page; select the criteria funnel icon for B.ADDRESS TYPE.
- On the Edit Criteria Properties page
 - ADDRESS_TYPE is automatically selected as Expression 1.
 - Leave the **Condition Type** as **equal to**.
 - Click on the magnifier next to the Constant box under Expression 2 -Define Constant.
 - Select or type **HOME**.
 - Click OK twice.



Adding Fields to the Criteria

4. Running the Query

Click on the Run tab. Over 10,000 rows should be returned. This large result will
cause the process to move slowly. Below is partial output showing all individuals in
the database who have the State of Florida as their Home Address Type (with
identifying fields blocked out).



5. Saving the Query

- Save the query by clicking on Save or Save As at the bottom of any page (except the Run page).
- Use the name "WES_TRAINING_STATE_xxx" where "xxx" equals your initials. (The example in these lessons ends in "ZZZ.")
- In the **Description** box, type **Person Home State**.
- Leave it as a **Private** Query.
- Click OK.

Elements of a Sample Edit Criteria Properties Page

Expression 1

criteria is based on a Field or an Expression.

selected field.

Expression - An expression which Query uses to

Field – Another field's value that you want to base the

selection criterion on, usually a field in another record.

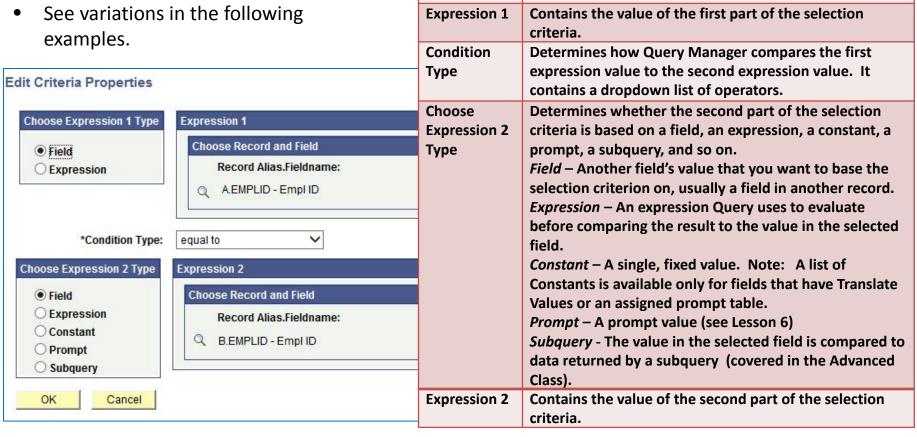
evaluate before comparing the result to the value in the

Choose

Type

Determines whether the first part of the selection

- This chart displays attributes of the components of the following page when the Condition Type is "equal to."
- With a different Condition Type, the Expression 2 Type may change.



Basic Criteria Steps



Note: Not all value types are available for all **Condition Types**. For example, when you select the **exists** operator, Subquery is the only available value type. After you select an operator, PeopleSoft Query displays only the value types that are available for that operator.

Set up Criteria – basic overview with a Field equaling a Constant:

- 1. These are the means to get to the **Edit Criteria Properties** page to set up a **new** criterion:
 - a) On the **Criteria page**, click on the yellow **Add Criteria** button, then select the field name.
 - b) On the **Query page**, click on the **Funnel** to the right of the field name.
 - c) On the **Fields page** if the field or expression appears there click on the **Funnel** to the right of the field name. (Remember, the criteria does not have to be in the query output.)
 - d) On the Expressions page
- When on the Edit Criteria Properties page, click on the magnifier under Expression 1 – Record Alias. Fieldname. A list of all fields in all available tables appears. Select one.
- 3. Leave the default **Condition Type** of "equal to."

- 4. Select the **Constant** for comparison
 - a) You can type the Constant
 - b) In many cases, you can choose it from a dropdown by clicking on the magnifier next to **Constant**. A menu similar to the following opens:

Select A Constant

Cancel

c) Click OK until back to the **Criteria page**, and then click **Run**.

Basic Criteria Steps





Below is the entire list of **Condition Types** that are available to the user on the **Edit Criteria Properties** page:

between does not exist equal to exists greater than in list in tree is not null is null less than like not between not equal to not greater than not in list not in tree not less than not like

On the following slides are demonstrations of setting some of the more commonly used Condition Types/Operators.

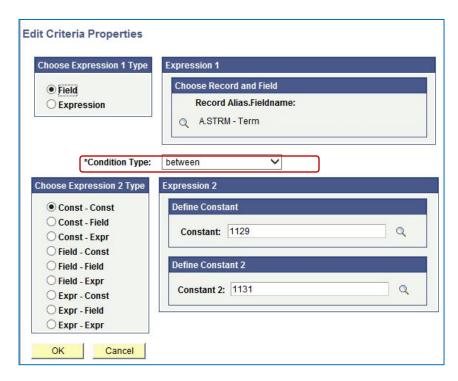
Not displayed are these :

- exists This operator is different from the others in that it does not compare a record field to the comparison value. The comparison value is a subquery. If the subquery returns any data, PeopleSoft Query returns the corresponding row.
- does not exist
- in tree The value in the selected record field appears as a node in a tree created with PeopleSoft Tree Manager. The comparison value for this operator is a tree or branch of a tree that you want PeopleSoft Query to search.
- not in tree

Commonly Used Condition Types/Operators

Between

- Selects fields having a value that is between two specified values. This is an *inclusive* range where the upper and lower values are included in the search.
- This example displays some of the fields related to academic terms.
- The user chooses the field of A.STRM for Expression 1.
- Once the user selects "between," the display in the Choose Expression 2 Type box changes to offer a number of options.
- In this example, the user can type in two Constants (1 and 2) to narrow down the criteria for the field STRM – Term.
- This is also an example of where, if available, a list of choices would show for selection, one list for each **Constant**.
- Nothing needs to be changed under Choose Expression 2 Type since both pieces of data are Constants.
- However, notice that there are a number variations available involving ranges of Constants, Fields and Expressions.
- When the query is run, in the output, the data for the span between the relevant Terms of 1129 and 1131 are displayed.
- Note: There is also a "not between" option.

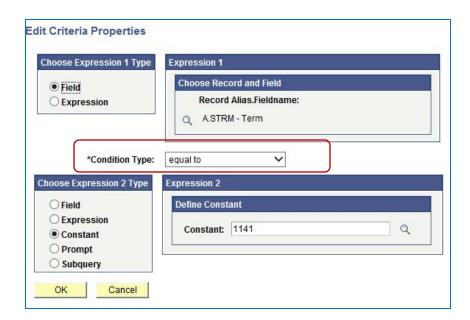


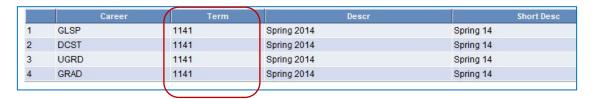
	Career	Term	Descr	Short Desc
1	DCST	1129	Fall 2012	Fall 12
2	UGRD	1129	Fall 2012	Fall 12
3	HONR	1129	Fall 2012	Fall 12
4	GRAD	1129	Fall 2012	Fall 12
5	GLSP	1129	Fall 2012	Fall 12
6	DCST	1131	Spring 2013	Spring 13
7	GLSP	1131	Spring 2013	Spring 13
8	UGRD	1131	Spring 2013	Spring 13
9	HONR	1131	Spring 2013	Spring 13
10	GRAD	1131	Spring 2013	Spring 13

Commonly Used Condition Types/Operators

Equal To

- The value in the selected record field exactly matches the comparison value.
- The user chooses the field of A.STRM for Expression 1.
- No change is made to the Condition Type so there is no change to the options under Choose Expression 2 Type.
- The user can either type in the Constant of 1141 or select it from the dropdown.
- After the query is run, in the output, the relevant rows – one for each Career – appear for each instance of the Term of 1141.





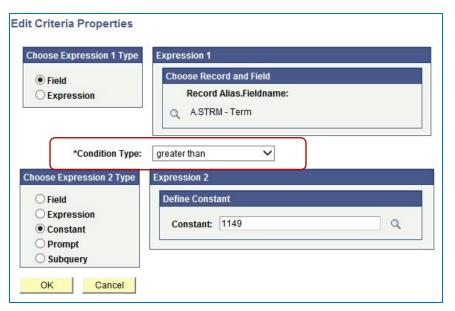


Query Manager also offers a *not* option that reverses the effect of each condition type. For example, *not equal to* returns all rows that equal to would not return.

Commonly Used Condition Types/Operators

Greater Than

- The value in the record field is greater than the comparison value.
- The user chooses the field of A.STRM for Expression 1.
- The Condition Type is changed to "greater than."
- Notice that there is no change to the options under Choose Expression 2 Type.
- The user can either type in the Constant of 1149 or select it from the dropdown.
- The user Runs the guery.
- The output displays all rows where the value is larger than 1149. This is a partial display.
- Note: There is also a "not greater than" option.



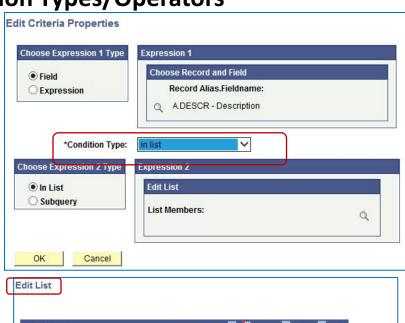
	Career		Descr	Short Desc
1	UGRD	1156	Summer 2015	Summer 15
2	GLSP	1151	Spring 2015	Spring 15
3	GLSP	1156	Summer 2015	Summer 15
4	GLSP	1159	Fall 2015	Fall 15
5	GLSP	1169	Fall 2016	Fall 16
6	GLSP	1191	Spring 2019	Spring 19
7	GLSP	1199	Fall 2019	Fall 19
8	GLSP	1201	Spring 2020	Spring 20
9	GLSP	1206	Summer 2020	Summer 20
10	UGRD	1151	Spring 2015	Spring 15
11	GLSP	1171	Spring 2017	Spring 17
12	GLSP	1176	Summer 2017	Summer 17
13	GRAD	1151	Spring 2015	Spring 15
14	GRAD	1156	Summer 2015	Summer 15
15	GRAD	1159	Fall 2015	Fall 15
16	GRAD	1161	Spring 2016	Spring 16
17	GRAD	1169	Fall 2016	Fall 16
18	GRAD	1171	Spring 2017	Spring 17
19	GRAD	1166	Summer 2016	Summer 16
20	UGRD	1158	Pre-Matric 2015	PreMtrc 15
21	UGRD	1169	Fall 2016	Fall 16
22	UGRD	1166	Summer 2016	Summer 16
23	UGRD	1168	Pre-Matric 2016	Printre 16

Commonly Used Condition Types/Operators

In List

- Finds fields having a value that matches any one of the values in a list of values. With this option, you are prompted to create a list with an Edit List dialog box.
- The user chooses the field of A.DESCR for Expression 1.
- Once the user selects "in list" as the Condition Type, the display in the Choose Expression 2 Type box changes to offer two options: In List and Subquery.
- The user clicks on the magnifier under Expression 2 – Edit List – List Members.
- The Edit List dialog box opens. The user types in Fall 2013 next to Value and clicks the yellow Add Value button. The user does the same for Fall 2012 and Fall 2011.
- After clicking Add Value for the last choice,
 Fall 2011, the user clicks OK. (Note: Be sure that you have clicked Add Value for the last Value before you click the OK button.)

[continued on next slide]



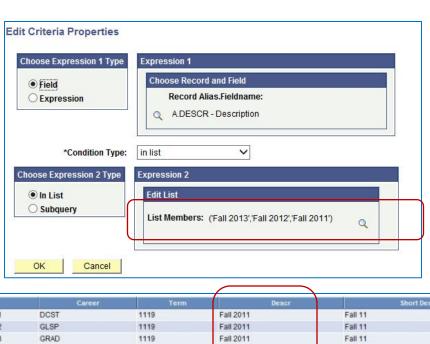




Commonly Used Condition Types/Operators

In List (continued)

- Once the user clicks OK after having entered the desired List Members, the Edit Criteria Properties page opens.
- The List Members are now displayed under Expression 2 – Edit List. Each is surrounded by single quotes. They are separated by commas.
- If edits need to be made, the user can click the magnifier again and make adjustments.
- When ready, the user clicks OK and then
 Run to view the output.
- Displayed are only the Terms whose
 Descr is equal to Fall 2011, Fall 2012 and Fall 2013.
- Note: There is also a "not in list" option.

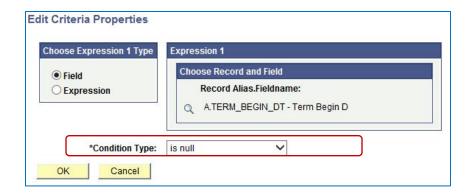


	Career	Term	Descr	Short Desc
1	DCST	1119	Fall 2011	Fall 11
2	GLSP	1119	Fall 2011	Fall 11
3	GRAD	1119	Fall 2011	Fall 11
4	HONR	1119	Fall 2011	Fall 11
5	UGRD	1119	Fall 2011	Fall 11
6	DCST	1129	Fall 2012	Fall 12
7	GLSP	1129	Fall 2012	Fall 12
8	GRAD	1129	Fall 2012	Fall 12
9	HONR	1129	Fall 2012	Fall 12
10	UGRD	1129	Fall 2012	Fall 12
11	DCST	1139	Fall 2013	Fall 13
12	GLSP	1139	Fall 2013	Fall 13
13	GRAD	1139	Fall 2013	Fall 13
14	UGRD	1139	Fall 2013	Fall 13

Commonly Used Condition Types/Operators

Is Null

- The selected record field does not have a value in it.
- You do not specify a comparison value for this operator.
- Key fields, required fields, character fields, and numeric fields do not allow null values.
- In general, Is Null is applicable to date fields and long field text fields only.
- Note: Null fields are not the same as zeros or blanks. They have no data, whereas zeros and blanks are considered data.
- Required fields cannot be null.
- If you are creating a query to find where a field was not entered and is null does not return the desired results, try creating an equal to criteria statement with blank or zero (0) in the Constant.
- Note: There is also a "is not null" option.

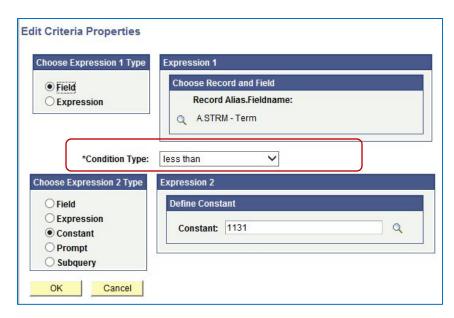


- This is an example how the Condition Type of **is null** appears.
- Once the user selects is null, Choose
 Expression 2 Type is no longer applicable.
- There is no output since all of the rows related to this field were populated, i.e., were not null.

Commonly Used Condition Types/Operators

Less Than

- The value in the record field is less than the comparison value.
- The user chooses the field of A.STRM for Expression 1.
- The Condition Type is changed to "less than."
- Notice that there is no change to the options under Choose Expression 2 Type.
- The user can either type in the Constant of 1131 or select it from the dropdown.
- The user Runs the query.
- The output displays all rows where the value is less than 1131. This is a partial display.
- Note: There is also a "not less than" option.

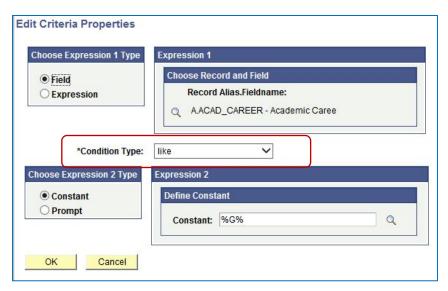


	Career	Term	Descr	Short Desc
1	UGRD	0909	Fall 1990	Fall 90
2	GLSP	0989	Fall 1998	Fall 98
3	GLSP	0986	Summer 1998	Summer 98
4	GRAD	0989	Fall 1998	Fall 98
5	UGRD	0989	Fall 1998	Fall 98
6	UGRD	0911	Spring 1991	Spring 91
7	UGRD	0991	Spring 1999	Spring 99
8	UGRD	0919	Fall 1991	Fall 91
9	UGRD	0921	Spring 1992	Spring 92
10	UGRD	0929	Fall 1992	Fall 92
11	UGRD	0931	Spring 1993	Spring 93
12	UGRD	0941	Spring 1994	Spring 94
13	UGRD	0949	Fall 1994	Fall 94
14	UGRD	0951	Spring 1995	Spring 95
15	UGRD	0961	Spring 1996	Spring 96
16	UGRD	0969	Fall 1996	Fall 96
17	UGRD	0971	Spring 1997	Spring 97
18	UGRD	0981	Spring 1998	Spring 98
19	UGRD	0999	Fall 1999	Fall 99
20	UGRD	1009	Fall 2000	Fall 00

Commonly Used Condition Types/Operators

Like

- The value in the selected field matches a specified string pattern.
- The comparison value may be a string that contains wildcard characters. The wildcard characters that PeopleSoft Query recognizes are % and _.
- The user chooses the field of A.ACAD_CAREER for Expression 1.
- The Condition Type is changed to "like."
- Notice that the Choose Expression 2
 Type now only lists Constant and
 Prompt.
- The user wishes to see all Careers that contain the letter "G," (UGRD, GLSP, GRAD) so uses % on either side of G to find all, regardless of where the letter appears in the word.
- The user Runs the query.
- The output displays all rows where the value contains "G." This is a partial display.
- **Note:** There is also a "**not like**" option.



	Career	Term	Descr	Short Desc
1	UGRD	0909	Fall 1990	Fall 90
2	GLSP	0989	Fall 1998	Fall 98
3	GLSP	0986	Summer 1998	Summer 98
4	GRAD	0989	Fall 1998	Fall 98
5	UGRD	0989	Fall 1998	Fall 98
6	UGRD	0911	Spring 1991	Spring 91
7	UGRD	0991	Spring 1999	Spring 99
8	UGRD	0919	Fall 1991	Fall 91
9	UGRD	0921	Spring 1992	Spring 92
10	UGRD	0929	Fall 1992	Fall 92
11	UGRD	0931	Spring 1993	Spring 93
12	UGRD	0941	Spring 1994	Spring 94
13	UGRD	0949	Fall 1994	Fall 94
14	UGRD	0951	Spring 1995	Spring 95
15	UGRD	0961	Spring 1996	Spring 96
16	UGRD	0969	Fall 1996	Fall 96
17	UGRD	0971	Spring 1997	Spring 97
18	UGRD	0981	Spring 1998	Spring 98
19	UGRD	0999	Fall 1999	Fall 99



Condition	
Types	Return Values
<u>between</u>	The value in the selected record field falls between two comparison values. The range is inclusive.
equal to	The value in the selected record field exactly matches the comparison value.
exists	This operator is different from the others, in that it does not compare a record field to the comparison value. The comparison value is a subquery. If the subquery returns any data, PeopleSoft Query returns the corresponding row.
greater than	The value in the record field is greater than the comparison value.
<u>in list</u>	The value in the selected record field matches one of the comparison values in a list.
in tree	The value in the selected record field appears as a node in a tree created with PeopleSoft Tree Manager. The comparison value for this operator is a tree or branch of a tree that you want PeopleSoft Query to search.
is null	The selected record field does not have a value in it. You do not specify a comparison value for this operator. Key fields, required fields, character fields, and numeric fields do not allow null values.
less than	The value in the record field is less than the comparison value.
<u>like</u>	The value in the selected field matches a specified string pattern. The comparison value may be a string that contains wildcard characters. The wildcard characters that PeopleSoft Query recognizes are % and % matches any string of zero or more characters. For example, C% matches any string starting with C, including C alone. _ matches any single character. For example, _ones matches any five-character string ending with ones, such as Jones or Cones. To use one of the wild-card characters as a literal character (for example, to include a % in your string), precede the character with a \ (for example, percent\%).

Note: If you have selected the EFFDT field on an effective-dated table, PeopleSoft Query also offers special effective date operators.

Lesson 8: Adding Expressions and Using Functions

In this lesson, you will refine your query by using expressions in the selection criteria and as a column in the query output

Expressions

- Expressions are calculations that PeopleSoft Query performs as part of a query.
 - Use them when you must calculate a value that PeopleSoft Query does not provide by default (for example, to add the values from two fields together or to multiply a field value by a constant). Calculations are rarely stored in a database.
- You can work with an expression as if it were a field in the query: select it for output, change its column heading, or choose it as an "order by" column.
 - If you use an expression as a field, the expression is like any other field in a query. When you preview the query, the expression name appears as a column heading in the query. When selected for output, you can change its column heading or sort it. Normally, data that is the result of a calculation is produced when the query is run in real time.



In Query, you can use expressions in two ways:

- As a column in the query output.
 - As a column, expressions are used to display a field value differently from the way you store the value, for example, to display the values from several fields as one value.
- In selection criteria to narrow results.
 - On the Edit Criteria Properties page.
- The two pages used to define Expressions are:
 - Expressions Page
 - Editing Expressions Properties Page
- In the query **WES_TRAINING_STATE_**xxx which uses the records **PERS_DATA_SA_VW** and **ADDRESSES**, in order to change the appearance of the output, it is necessary to introduce one or more additional fields, either by adding a new record (or view) or by adding an expression on the **Expressions page**.
 - In general, it is better to create an Expression than try to determine which would be the correct record (or view) to add to the query.



This first example of using an expression will combine three fields into one – the City (CITY), State (STATE) and Zip Code (POSTAL) so the output will be *City*, *State Zip*

Remember to Test and Save your query frequently as you are building it!

- But before starting the expression, let's reduce the output a bit so that it's easier to work with. To do so, change the STATE criteria to equal AK (Alaska) as follows.
- Navigate to the Criteria page, and on the line containing STATE, click the yellow edit button.
 - On the Edit Criteria Properties page, replace the Constant of FL with AK either by simply typing it in or
 - by clicking the magnifier, then selecting
 USA and AK. Click OK twice.
- Click Run to verify the output. It should run more quickly and have considerably smaller results, fewer than 300 rows.

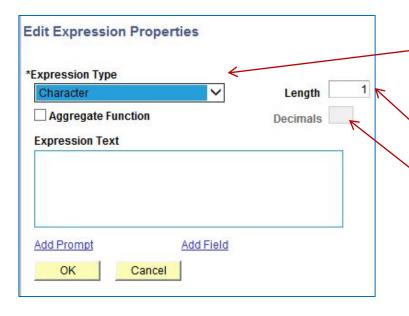
- Now let's add two fields to the query output – CITY and POSTAL.
- Even though you wouldn't necessarily want to have these separate fields in your final output, it's a good idea to see what they look like while you're working on building the query.
- Navigate to the Query page and put checkmarks next to the CITY and POSTAL fields under B.ADDRESSES. Click Run to see the output.
- There should now be two additional columns labeled City and Postal.
- You may want to save your query at this time.

Creating an Expression

Begin the expression by clicking on the Expressions page tab



- Click on the Add Expression button.
- The Edit Expression Properties page opens.



Overview of Expression Type and Length

- The user must choose the type of expression.
 Will the result be a string (character), a number, a date, or something else?
 - The size of the result must also be set.
 - If the result is a string, the length would be the maximum number of characters in the string.
 - If the result is a number, the length is set in digits, including both before and after the decimal point. Then the number of digits after the decimal is set.
- The expression itself is typed in Expression Text

Creating an Expression

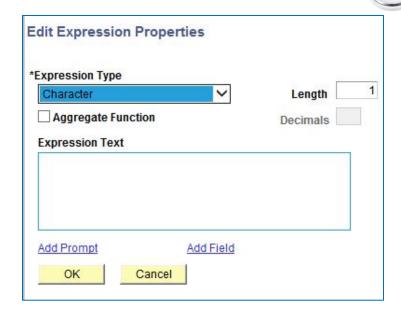
View Edit Expression Properties Page

Expression Type - used to identify the data type of the value this expression will return. Options are as follows:

- Character
- Long Character
- Number
- Signed Number
- Date
- Time
- DateTime

Length - should contain the maximum length of the string.

For Number and Signed Number
 Expression Types the Length field defines the total length of the number (integer portion + decimals portion). For example, if Length = 10 and Decimals = 3, then this means that the integer portion = 7 (Length - Decimals = Integer).



Decimals – is grayed out unless the **Expression Type** is Number or Signed Number

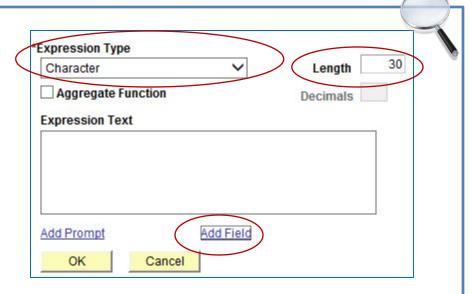
Aggregate Function - should be toggled on if an expression includes an aggregate function, such as COUNT, SUM, or AVG.

Add Prompt – click to add prompt properties for this expressionAdd Field – click to add a field to this expression.

Creating an Expression

Create the new expression to combine CITY, STATE and POSTAL into one field so the output appears as - City, State Zip

- Expression Type leave the default of Character.
- Length You need to estimate how long the new field should be. This can always be adjusted. For now, set it at 30.
- Begin the Expression Text by selecting the first field as it will appear in the result.
 Click on the Add Field link.
- The Select a field page opens displaying the two records in the query.
 - Beneath are the fields associated with the record with the Alias of A, that is, PERS_DATA_SA_VW.
 - To see the fields associated with the ADDRESSES (Alias B), click on the Show Fields button next to ADDRESSES.





Creating an Expression



- All of the fields in ADDRESSES are displayed. Notice that each field name begins with the alias identifier, such as B.EMPLID.
 - If the same field name is in another record, having the alias as part of the field name enables you to ascertain its source.
- Select the first field for the expression by clicking on **B.CITY**.
- B.CITY is added to the Expression Text box on the Edit Expression Properties page.
- Before adding the next two fields, you need to consider – in detail - how the final result will look, including punctuation and spaces.



Creating an Expression

- The final output for each row should appear as follows: City, State Zip
 - For example:
 - Fairbanks, AK 99709
 - Anchorage, AK 99501
- In the output, there is a comma after the City, one space between the comma and AK, and one space between AK and the Zip Code.
- To combine two or more text (character) fields, also called strings, you concatenate them by using a double pipe, i.e., two pipes | | between each field name and between every element in the string, i.e., the comma and space after B.CITY and the space after B.STATE (note that there is one space between each set of pipes).
- In addition, any elements that are not fields (the comma and the spaces), need to be surrounded by SINGLE quotes.
- The following instructions demonstrate how to add the three fields and all of the elements into the Expression Text box.

Expression Text Box Components

1. After having added **B.CITY** in the **Expression Type** box

Enter one space Type | | ', ' | |

- Click the Add Field link and select B.STATE
- 3. After having added **B.STATE**

Enter one space Type | | ' ' | |

- Click the Add Field link and select B.POSTAL
- 5. The line in the **Expression Text** box should now appear as follows:

B.CITY | | ', ' | | B.STATE | | ' ' | | B.POSTAL

6. Click OK.

Notes:

- There is a space between each set of pipes, i.e. | |
- There is a space after B.CITY and B.STATE
- Between the first two quote marks are a comma and one space.
- Between the second two quote marks is one space.
- Between each pipe and quote is a space.

Creating an Expression (continued)

- Once you click OK to accept the Expression Text, you are returned to the Expressions page.
- It has five main elements. The last three are used in a manner similar to any field.
 - Expression Text displays the text. This is not editable here.
 - Use as Field clicked to add the expression as a field to the output
 - Add Criteria
 - Edit
 - Delete
- Click on the Use as Field link.
- The Fields page opens and the new field is displayed.
- You'll notice that the Heading
 Text is comprised of the first few characters of the Expression

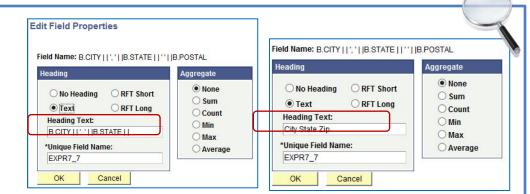
 Text.

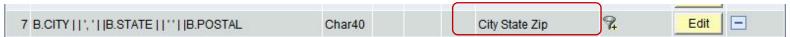




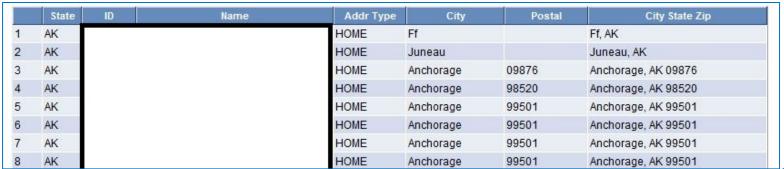
Creating an Expression (continued)

- On the Fields page you change the Heading Text as you would the Header for any field by clicking on the Edit button and replacing the Heading Text on the Edit Field Properties page. Click OK.
- On the Fields page, your new
 Heading Text appears in the row:





- Before running the query, click the Reorder / Sort button and reorder by B.POSTAL (New Order By column).
- Now Run the query.
- As you can see, it has been reordered.
- The first two rows have no Postal Code and the third has an incorrect code. And there are other anomalies as well.
- This is one valuable use for query a method to see your data all at once and to detect any variances.



Creating an Expression (continued)

 You'll see that the new last column contains the City, State and Postal fields combined as laid out in the Expression Text.

City State Zip		
Ff, AK		
Juneau, AK		
Anchorage, AK 09876		
Anchorage, AK 98520		
Anchorage, AK 99501		
Anchorage, AK 99501-0000		

- You could continue to refine this query by
 - Reordering and/or resorting
 - Removing the City and Postal fields, but leaving the State field since it is the main criteria and you may want it displayed
 - Adding a prompt for the State to make the query more flexible. (Prompts will be covered later)
 - Changing the Address Type
 - Adding Records that would limit the scope of the individuals contained, e.g. just current students.
- Be sure to save your query by clicking on any
 of the tabs (i.e. not Run) and clicking on the
 yellow Save button at the bottom.

Some Notes on Expressions



- A few general points about how to refer to fields in expressions
 - You should reference fields in expressions by using their actual name, not their description.
 - You should precede the name with the alias and a period.
 - An exception is with dates wherein you do NOT use the alias.
- One type of calculation that can be performed is mathematical. You can add, subtract, multiply and divide numeric values. The mathematical operators are:
 - + (addition)
 - (subtraction)
 - * (multiplication)
 - / (division)
 - Standard mathematical order of operations (multiplication and division are done before addition and subtraction; computation goes from left to right) is used. Parentheses can be used to group calculations together and force them to be done out of this order

- There are not operators that perform calculations on two dates. But you can add to or subtract from a date.
- Expressions can also use functions
 - Functions are special types of command words (in the SQL command set), usually one-word commands, which manipulate data items and return a single value which can be determined by various input parameters.
 - Among the types of functions are:
 - String
 - Numeric
 - Date
 - Conversion
 - Condition
 - CASE
 - In addition to numerous standard functions that can be utilized with Query Expressions, there are specialized Wesleyan Functions developed by ITS programmers for query users.
 - There will be one example of a function in this lesson. Functions will be discussed in more detail in the advanced course.



Applying a Wesleyan Function in an Expression



What is a Wesleyan Function?

- The term "function" as used with PeoplesSoft Query can have a number of descriptions. Among them is the definition of the standard function that can be applied in Expressions.
- To differentiate the use of the term, we refer to those functions designed by the Wesleyan ITS staff as Wesleyan Functions. These were created to enable the PeopleSoft user to exploit the benefit that Expressions can lend to a query. It is pre-written text created specifically for inclusion in Query Expressions for Wesleyan users.
- The Wesleyan Functions commonly have the word "GET" as part of the name (as in WES_GET). However, note that there are some that do not have that designation.

You can reference a listing of the Wesleyan Functions in two ways:

1. <u>In the SFIS Blog as a PDF File in a chart</u> format

 This list contains the description, sample output, text, source fields, field type, length and notes for each function.

2. A menu within PeopleSoft

- With PeopleSoft Version 9.0, you can search a list of all functions that contain the word "GET" from within PeopleSoft.
- Navigate to Main Menu > Wesleyan Menu
 > Campus Community > Database Function
 List
- This is a searchable list that is sorted alphabetically and contains a brief description of each from a technical viewpoint. (If this item does not appear on your PS menu, please send an email to cpike01@wesleyan.edu requesting access.)

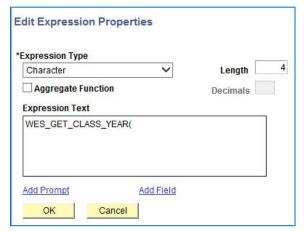


Applying a Wesleyan Function in an Expression

Building an Expression with a Wesleyan Function

- In this activity the Wesleyan Function named "WES_GET_CLASS_YEAR" is used as an Expression to
 - Determine a student's Wesleyan Class Year
 - Add a new field consisting of the Class
 Year and format the header
 - Use the new Class Year field as criteria.
- The WES_GET_CLASS_YEAR function is associated with each student's EMPLID.
- This activity will use both of the two ways to incorporate Expressions into a query:
 - As a field
 - As part of the Where clause, which is created in the **Criteria** tab.
- The query is **WES_TRAINING_STATE_**xxx

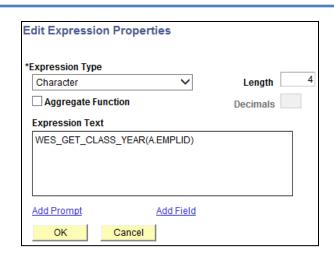
- Reopen the query if necessary.
- Open the Expressions page.
- Click on the Add Expression button to open the Edit Expression Properties page.
- Leave the **Expression Type** as Character.
- Change the **Length** to **4**, i.e., a Wesleyan Class Year is four characters long and is a string.
- In the Expression Text box type the following, including the opening parenthesis. This is not case sensitive. WES_GET_CLASS_YEAR(
- The Edit Expression Properties page should now look like this:



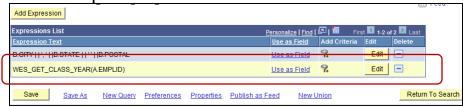
Applying a Wesleyan Function in an Expression

Building an Expression with a Wesleyan Function (continued)

- Next, you will need to associate the Expression with a field in one of the Records; the field will be EmplID in Record A (PERS_DATA_SA_VW). Click on the Add Field link to the lower right. This will open the Select a field page which displays all the fields contained in any record in the query. Displayed in the screen shot are the first few fields in the "A" Record, PERS_DATA_SA_VW.
- Click on A.EMPLID EmplID. You will be brought back to the Edit Expression Properties page where the text in the Expression Text box will now appear as: WES_GET_CLASS_YEAR(A.EMPLID
- Add a closing parenthesis to the expression so that it now reads WES_GET_CLASS_YEAR(A.EMPLID). The page should now appear as follows:



- Click OK.
- The Expressions page will open displaying the Expression Text as the name of the Expression.



 Click on Use as Field. This will add the Expression as a field to the Query. The Fields page opens.

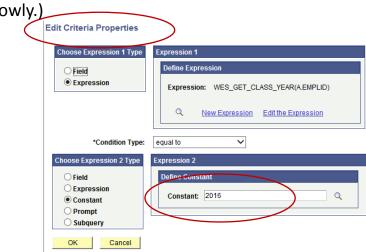


Applying a Wesleyan Function in an Expression

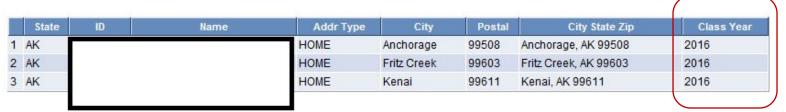
Building an Expression with a Wesleyan Function (continued)

- The Expression WES_GET_CLASS_YEAR
 (A.EMPLID) is now the last field in the Query, and it appears on the Fields page.
- Next you will be changing the heading of the new field and use it as criteria.
 - Change the heading text of the new field by clicking on the Edit button to the right.
 On the Edit Field Properties page, replace the text in the Heading Text box -(WES_GET_CLASS_YEAR(A.EMPLID) - with Class Year. Click OK.
 - Now set criteria for Class Year. On the Fields page, select the criteria funnel icon on the Class Year row.
- Note on the Edit Criteria Properties page that the first element (Expression 1/Define Expression) is the new expression.

- In the Constant box under Expression 2/Define Constant type in 2016 for the Class Year
- Click OK. Save and run the query. (It will run very slowly.)



- The resulting output shows all members of the Class of 2016 with a Home address in Alaska.
- This would be a good time to save your query.





Lesson 9: Adding Runtime Prompts to a Query



- In this lesson, you will see how to add runtime prompts to a query so you can reuse the same query for different results or time periods.
- Instead of hard coding the State and the Class Year in the criteria, for example, you can prompt the user to enter each of those items.
- Among the advantages of using runtime prompts is that the query becomes more flexible, and you do not have to create multiple queries with hard coded constant values.
- One method of working with prompts that increases your flexibility even more is to incorporate a wild card into your prompt. A wildcard enables the user to return some or all data for a specified criterion. This will be covered in the Advanced Class.
- The query uses the value that you enter as the comparison value for the criterion that included the prompt.
- If the field for which you are prompting has an associated prompt table (even if it is the Translate table), the **Edit Table** drop-down list box shows its name.

Prompts may be started on the **Prompt** page, but the easiest method is to use the **Criteria** page (since the Expression 1 is derived from the **Criteria** page).

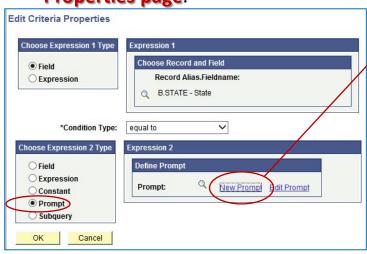
Adding a Runtime Prompt

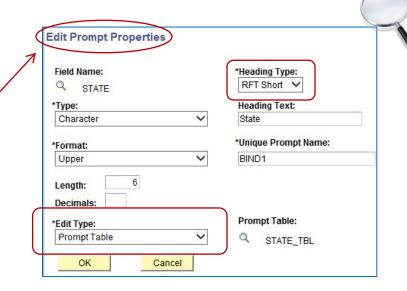
- In this activity, using the query
 WES_TRAINING_STATE_xxx, you will add a
 prompt for the State, replacing the current
 criterion of "AK" for Alaska.
- Navigate to the **Criteria** page.
- Click the Edit button for the STATE row.
- On the Edit Criteria Properties page,
 Expression 2/Define Constant currently reads "AK."
- Under **Choose Expression 2 Type** (over to the left at the bottom), select **Prompt**.
- Once you have done so, under Expression 2, the Define Constant changes to Define
 Prompt, and there are two choices, New
 Prompt and Edit Prompt.



Adding a Runtime Prompt (continued)

Click on the New Prompt link under
 Define Prompt to open the Edit Prompt
 Properties page.





This table explains the Heading Type and Edit Type fields

Field	Options
Heading Type	RFT Long: The long name from the field definition
	RFT Short: The short name from the field definition.
	Text: Any label that you enter.
Edit Type	Prompt Table: You search and select only values that exist in a prompt table.
	Translate Table: You select from a list of values specific to this field that exist in the Translate table.
	Yes/No Table: You select or clear checkboxes.
	No Table Edit: You enter any value. No validation exists on this edit type.



Adding a Runtime Prompt (continued)

Prompt Table Edit Type

- If you select a **Prompt Table Edit Type**, the correct record **should** appear by default.
- However, you should verify that the **Prompt Table** field displays the record that stores the values that you want users to see.
- In this example, it happens that the table listed under **Prompt Table** (to the right) which is **STATE_TBL** does not render a list that the user can utilize.
- This example points out one problem with the prompt system. It tries to guess at what you are doing and occasionally gets it wrong.
- If you try to run a prompt based on the STATE_TBL table, you receive the message "No matching values were found."
- The optimal way to handle this will be discussed in the Advanced Class.
- For now, make the changes as shown here.

Edit Prompt Properties Page – Prompt Table Edit Type



- Change the **Edit Type** to **No Table Edit**.
- Click on the magnifier next to STATE_TBL under Prompt Table.
 - The Select a Prompt Table page opens.



- Click the No Value button.
- The Edit Type and Prompt Table fields now appear as follows:



- Since there is no longer a Prompt Table, when the prompt is activated, the user will be required to type in the two-character State code.
- Click OK twice.

- Adding a Runtime Prompt (continued)
 - View the elements of the Prompt page.
 - Navigate to the **Prompt page**. PeopleSoft lists all prompts in numerical order with a preface of ":# =" followed by the field name. In this case, it is:1 = STATE State

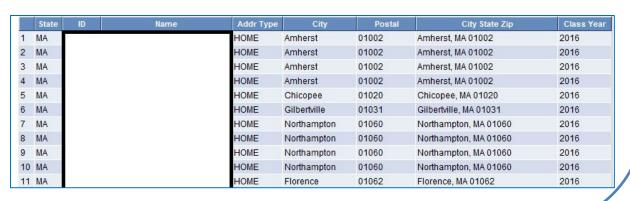
Notice you can create, edit or delete a prompt on this page. (Note: If you do find it
necessary to delete a prompt, be sure it's deleted both on the Criteria page and the

Prompt page.)



 Run the query. When prompted, type any two-character State abbreviation and observe the results. This partial example is for Massachusetts (MA). (It will run slowly.)





Save your query.

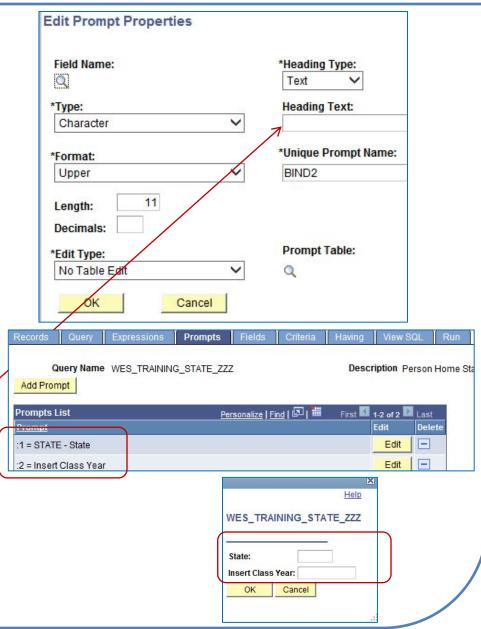


Using Prompts with Expressions

- As mentioned earlier, you can work with an expression as if it were a field in the query. That includes using it as a prompt.
- This next exercise will use the existing Expression for Class Year as a prompt WES GET CLASS YEAR(A.EMPLID)
- The process for creating a prompt for an expression which is being used as a field is similar to that for any field.
- Navigate to the Criteria page.
- Click the Edit button for the WES_GET_CLASS_YEAR(A.EMPLID) row.
- On the Edit Criteria Properties page, for Choose Expression 2 Type, select Prompt. The Define Prompt dialog box displays under Expression 2.
- Select New Prompt.
- The Edit Prompt Properties page opens.
- Since this is not referencing an actual field, the Heading Text box is blank. Under Heading Text, type (without quotes) "Insert Class Year" (This is the text that will appear in the prompt)

Heading Text: Insert Class Year

- Click OK twice.
- View the Prompt page.
- The new prompt has been added to the Prompt page as :2 = Insert Class Year. Save your query.
- Run the query. Now both prompts appear in the prompt menu.





Brief Overview of the Having and View SQL Pages

(These pages will be looked at in more detail in the Advanced Class)

Having Page

- Instead of returning many rows of data, you may only be interested in a count of rows or a sum of a numeric field. You can produce these results using Query.
- You can use the aggregate function to group data and perform calculations on a field that is within the group. For instance, instead of viewing all rows of data, you want to view only a count of rows; or you may want to have an average or sum by a given category.
- When you associate a field with an aggregate, you cannot use that field in selection criteria. Structured Query Language (SQL) supports the use of aggregate functions in the WHERE clauses, but PeopleSoft applications don't. Because the Criteria page corresponds to a SQL statement's WHERE clause, PeopleSoft Query provides the Having page.
- This page enables you to add criteria on the aggregate instead of on the field generating the aggregate. The Having page criteria appear in a SQL statement's HAVING clause. If you experience problems with a query that is associated with aggregates, keep in mind that aggregate functions are not supported in the WHERE clause. The Criteria page creates the WHERE clause. Remember that you can use fields to join tables
- When you click the Add Criteria icon from the Fields or Query pages for an aggregate field, new criteria is added to the Having page instead of the Criteria page. Add selection criteria using the Having page in the same way that you add selection criteria using the Criteria page.
- Keep in mind that PeopleSoft Query compares the result of applying the aggregate function to the comparison value.





Brief Overview of the Having and View SQL Pages

View SQL Page

- You do not need to utilize the **View SQL Page**, but it is useful to have some familiarity with what it contains.
- SQL (Structured Query Language) is a standardized query language for requesting information from a database, i.e., it is the language used to actually pass the queries you create to the database.
- The **View SQL page** enables you to view the underlying SQL code that Query Manager generates based on your query definition.
- You cannot edit the text on this page, but you can copy and paste it to another application.
- The three main parts of the SQL statement are:
 - SELECT the fields or columns to be used
 - FROM the records containing the data
 - WHERE the criteria for filtering the data



• The last row in the SQL code indicates that the output is ordered by the sixth column (POSTAL).

Query Name WES TRAINING STATE ZZZ Description Person Home State Query SQL SELECT B.STATE, A.EMPLID, A.NAME, B.ADDRESS_TYPE, B.CITY, B.POSTAL, B.CITY | | ', ' | | B.STATE | | ' ' | | B.POSTAL, WES_GET_CLASS_YEAR(A.EMPLID) FROM PS_PERS_DATA_SA_VW A, PS_ADDRESSES B WHERE (A.EMPLID = B.EMPLID AND B.EFFDT = (SELECT MAX(B_ED.EFFDT) FROM PS_ADDRESSES B_ED WHERE B.EMPLID = B ED.EMPLID AND B.ADDRESS TYPE = B ED.ADDRESS TYPE AND B ED.EFFDT <= SYSDATE) AND B.STATE = :1 AND B.ADDRESS_TYPE = 'HOME' AND WES GET_CLASS_YEAR(A.EMPLID) = :2) ORDER BY 6



Lesson 10: Basic Query Organization



(Organizational matters related to Query that are not discussed here will be part of the advanced course.)

Folders

 Query Manager enables you to organize your queries in Folders. This aids in looking for a particular query by limiting the search. You can use an existing folder or create a new one when Saving. There are no subfolders in Query

Public Queries

- Most queries you create will be private queries which are queries only accessible by the user who created them. Sometimes, however, you will create a query for other users to execute.
- The Public option enables other users to access the query if they have access to public queries.
- A Public query is accessible when:
 - You have been granted access to the public query; and
 - You have access to all records used by the public query.

Query Names

- No two public queries can have the same name.
- No private query can have the same name as a public query.
- Two queries can only have the same name if they are in two different users' private storage.

IMPORTANT NOTES REGARDING USING PUBLIC QUERY



Do not delete a query that you have not created.

Do not modify a query that you have not created.

Do a SAVE AS with a new name.

Using Public Queries

- Depending on the operator's security level, a user may utilize an existing public query as a starting point to create a similar query for his/her needs
- If a user wishes to make changes to the query, it is imperative that the user does a "save as" under a new name immediately - before making any modifications.
- The modified query must have a different name and may be saved as either public or private, depending on the use of the query and security level.

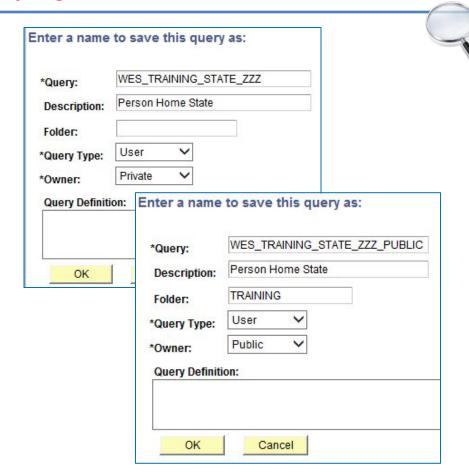
Naming Private Queries

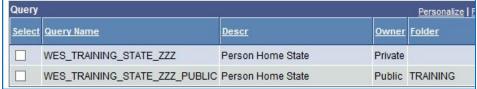
- While you can name private queries however you wish, it makes sense to adapt some of the naming conventions shown at the end of the lesson.
- You may want to add PVT or your initials to the end for ease of searching.
- Also, remember you can create your own folders to store your private queries.

Basic Query Organization

Creating a Public Query

- In this lesson, you will save the
 WES_TRAINING_STATE_xxx query which
 you had originally saved as a Private query into a Public query.
- Open the query if it is not already open.
- Click on the Save As link on the bottom of any page in the Query tool (except Run).
- Enter a name for the new query –
 WES_TRAINING_STATE_xxx_PUBLIC
- In the Folder box, type TRAINING
- For **Owner**, select **Public**
- Leave Query Type as is.
- For **Owner**, select **Public**
- Note: If you wish, you can type a longer explanation in the Query Definition box; however, it will only appear on this page.
- Click OK.
- Now, when you run a search for the query WES_TRAINING_STATE_xxx, you will
- see a list similar to the following:







Basic Query Organization

Naming a Public Query – First portion of name

- The naming convention for queries at Wesleyan is to start the name with three (or rarely four) letters and an underscore to assist users in locating queries.
- Each section of the name should have an underscore; there can be no spaces or hyphens in a query name.
- The first character of the query is always a W, which identifies it as a Wesleyan query (rather than a PeopleSoft delivered query).
- The first few letters generally represent an office or department, but there are the following exceptions.
- In addition to being used to identify an office, the first few letters may be used as follows:
 - WSI Service Indicators (maintained by SFIS for designated offices)
 - WES Used for queries common to more than one office. It may be derived from older query naming convention that had the department designation as a second element, for example, WES_WDN...

Query Office Codes

The following is a list of functional office codes. The majority of the codes listed are currently being employed. Example: WRG_ ...

- WAD Admission
- WAA Academic Affairs
- o WBO Box Office
- o WCP Center for Community Partnerships
- WCS Campus Solutions (Security, etc.)
- WCSD Continuing Studies Department
- WDN Dean's Office
- WFA Financial Aid
- WGL GLSP
- WGR Graduate Student Services
- o WHR Human Resources
- o WIR Institutional Research
- WIS International Student Services
- o WIT ITS Computer Store
- o **WLB** Library
- WOIS Office of International Studies
- o WPRES President's Office
- o **WPS** Public Safety
- o **WRG** Registrar's Office
- WRL Residential Life
- WSF Student Accounts
- WSA Wes Student Assembly
- o WSS Wes Station

Basic Query Organization

2. Naming a Public Query – Second portion

- May be used to specify an area within an office
- Or it may be used to designate the purpose of the query or the type of output. Example: WRG_RPT_ ...

CHK - Queries that are run to check data that has been entered

LBL - Queries that are run for labels

LST - Queries run for internal use

LTR - Queries that are run for letters

RPT - Queries that are run for external reporting or to other offices

If it is determined that third or fourth level categories would be beneficial, appropriate values should be implemented within the functional office area.

3. Naming a Public Query – Third portion

 The third level can help to identify the type of information or constituent you are reporting on. Following are some suggestions. Example: WRG RPT ST ...

AP - Applicants

CL - Classroom

CR - Course

FA - Faculty

OR - Organizations

PA - Parents

PR - Prospects

ST – Students

4. Naming a Public Query – Fourth portion

 The fourth level may be used to indicate the process/functionality. Example: WRG_RPT_ST_ENL_ ...

BIO – Biographical information

COM – Communication information

EVL – Evaluation

TST – Test (in-progress query)

Review of Part II - Introduction to PeopleSoft Query

Building on Part I – Introduction to, PeopleSoft Query (Basic Query Concepts and Query Viewer), these instructions presented a preliminary look at working with PS Query Manager.

- They demonstrated the basic steps and some of the more complex aspects of creating a new query.
- Additionally, expressions and Wesleyan Functions were incorporated into the instruction, as well as the essentials of working with prompts.
- There was a brief overview of two pages to be further covered in the advanced course.
- Finally, the topic of query organization, including public queries and Wesleyan naming conventions was explored.

Some things to remember:

- Before you begin a query, have a good idea of where you want to go.
- When searching for an existing query or preparing to create a new one, you will use certain records and views over and over. You should become familiar with the queries already created by others in your office which you will then be able to copy and edit.
- As you build your query, run it each time you add a new element to be sure the results are making sense. You should do so after adding new queries and fields, altering criteria, creating a prompt, or creating an expression.
- Use the suggested naming conventions for your office.
- If you file queries in a folder, they will be easier to locate.
- SAVE your query often as you are building it!

[End of Part II]

