Subqueries in Query Manager

In myHR Query Manager, subqueries can be used to implement complex selection criteria. A subquery is like a helper query within the larger report. The output of the subquery is used to filter the main query. In Query Manager, subqueries can only be used for criteria, they cannot be used to add new columns to the data.

Example: In this job aid, we will construct an example query that shows all current appointments for employees with named professorships. A subquery will identify employee IDs of people with named professorships, and then the main query will display all of their current appointments.

Procedure	
1.	Create the main query with appropriate fields and criteria. Example: From the NW_EMPLOYEES table, select fields EMPLID, EMPL_RCD, NAME, and JOBTITLE. No criteria are needed since the NW_EMPLOYEES table only includes current appointments. 
2.	Go to the **Criteria** tab**.**
3.	Click **Add Criteria.**

4. Choose the **Condition Type.**

- **in list** – the subquery returns a list of values and the main query only incudes entries that match the list. **In list** is typically used when the subquery returns a list of ID numbers.
- **not in list** – similar to the **in list** option, but the main query *excludes* the items that match the subquery results.
- **equal to** – a field in the main query exactly matches the single value returned by the subquery. **Equal to** is typically used with dates and sequence numbers.
- **not equal to** – similar to the **equal to** option, but the main query *excludes* items that match the subquery results.
- **greater than** / **less than** – similar to the **equal to** option, but can be used to include a number of items in the main query.
- **exists** – items in the main query will be included if the subquery returns any results. The subquery includes criteria that link the subquery and the main query. **Exists** is used instead of **in list** when matching on multiple fields is needed, such as A.EMPLID = B.EMPLID AND A.EMPL_RCD = B.EMPL_RCD. In some cases, **exists** runs faster than **in list**.
- **does not exist** – similar to the **exists** option, but the main query items are included if the subquery *does not return* any results. Sometimes, a **does not exist** subquery can be used instead of the combination of a left outer join and an **is null** criterion.

Example: Select the **in list** option for **Condition Type**. The main query will include any employee whose employee ID is returned by the subquery.

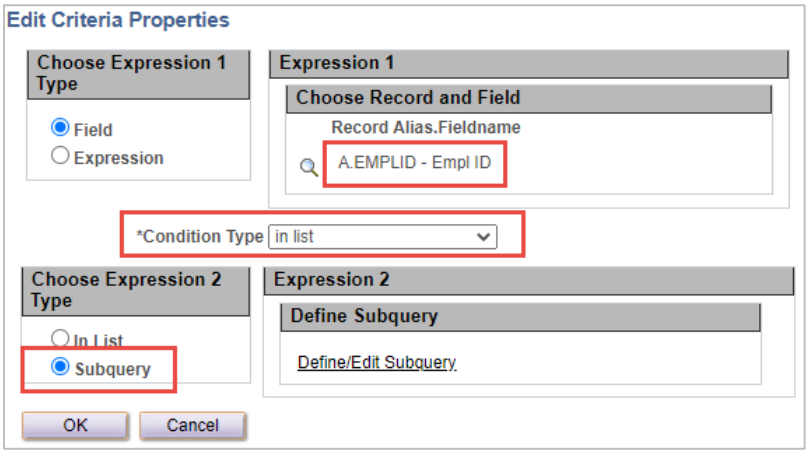
5. Choose **Expression 1.**

When using **Condition Type** of **exists** or **does not exist**, there is no **Expression 1** needed because we are not comparing the output of the subquery to any field in the main query.

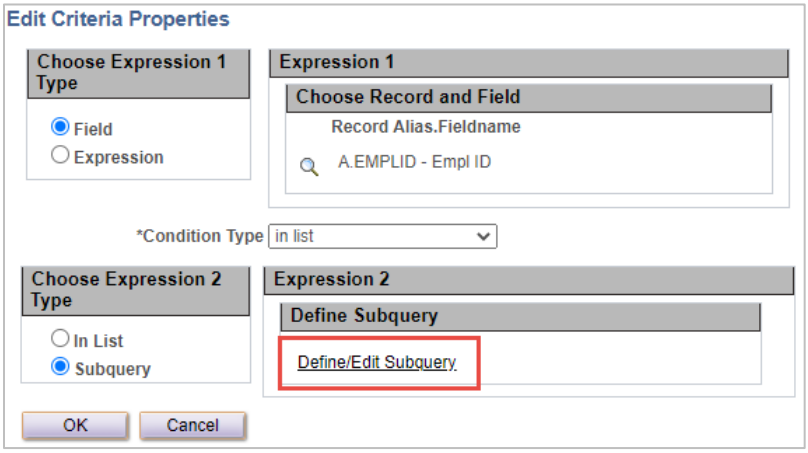
Example: Select A.EMPLID for **Expression 1**. The main query will include any employee whose employee ID is returned by the subquery.

6. In the **Choose Expression 2 Type** box, select the **Subquery** radio button option.

Example: The screen shot below shows the **Edit Criteria Properties** page for the named professorship example.



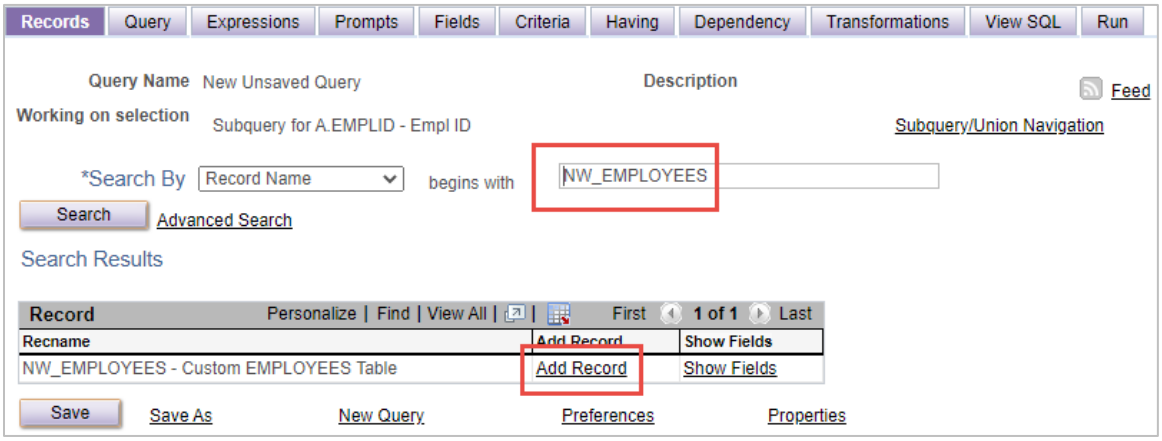
7. In the **Expression 2** box, click the **Define/Edit Subquery** link**.** Do not click **OK** at the bottom of the **Edit Criteria Properties** page.



8. Query Manager takes you to the **Records** tab of the new subquery. The **Working on section** value at the top of the query shows that you are working on the subquery.

9. On the **Record** tab for the subquery, search for the appropriate table and then click **Add Record.**

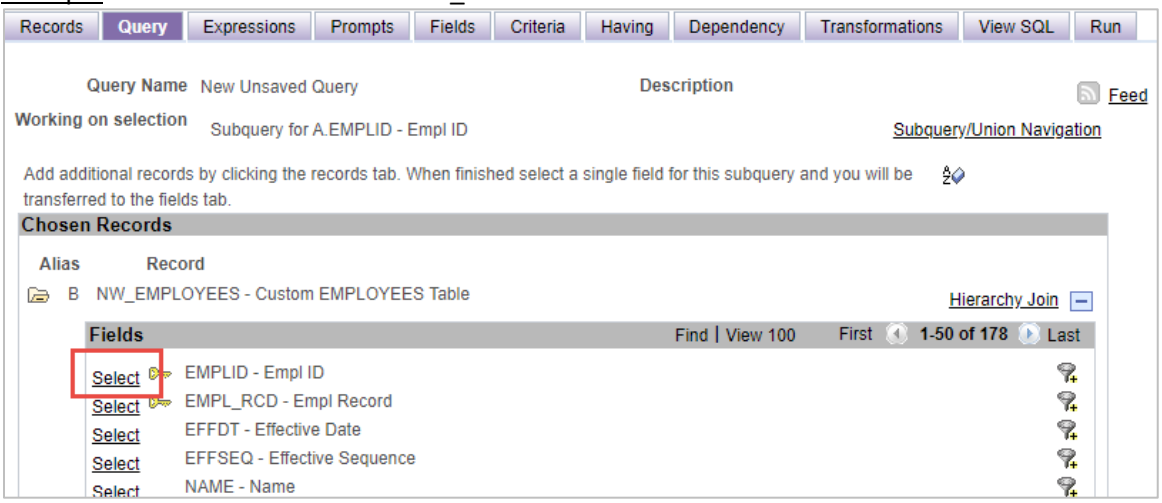
Example: Add the NW_EMPLOYEES table. The subquery will use NW_EMPLOYEES to identify employee ID numbers that have a named professorship.



10. On the **Query** tab for the subquery, click the **Select** link next to the desired output field. Note that only a single output field can be chosen in the subquery: a **Select** link is shown instead of the checkboxes. On the **Fields** tab, only a single field will be displayed.

When using the **exists** or **does not exist** option, there is no need to select any fields in the subquery.

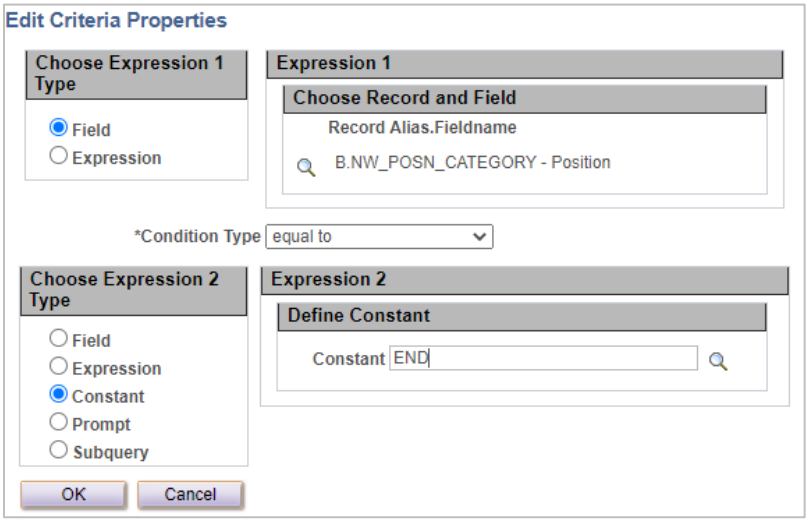
Example: Select EMPLID from the NW_EMPLOYEES table with table alias B.



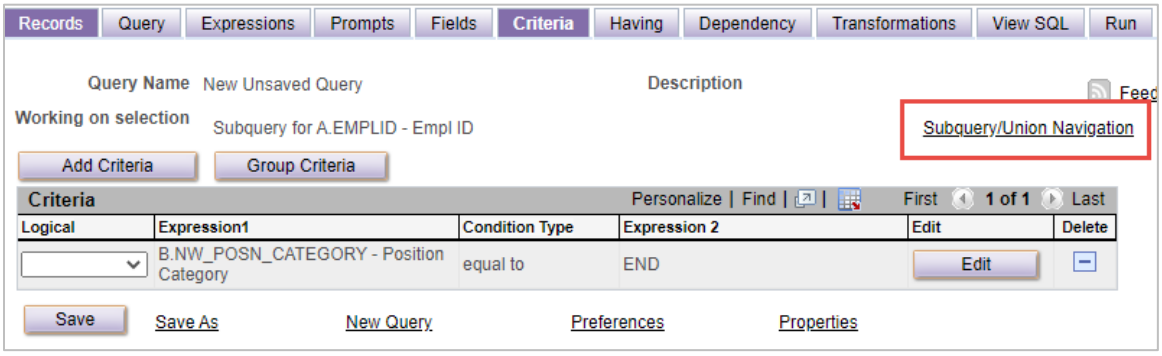
11. On the **Criteria** tab for the subquery, add the necessary restrictions. When choosing **Expression 1**, make sure to **Show Fields** for the subquery table, not the main query table.

When using the **exists** or **does not exist** option, add criteria that link the subquery to the main query. (E.g. A.EMPLID = B.EMPLID AND A.EMPL_RCD = B.EMPL_RCD.)

Example: Add criteria for B.NW_POSN_CATEGORY equal to END. END is the code for named professorships.

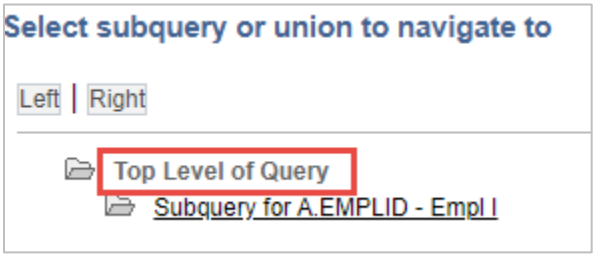


12. Click the **Subquery/Union Navigation** link on the top right.



13. On the **Select subquery or union to navigate to** page, click **Top Level of Query** to return to the main query.

The **Subquery/Union Navigation** link can be used to navigate between the main query and the subquery.



14. **Save** and **Run** your query.

Example: The query will display all current appointments for employees who have any current named professorship appointments.

Row	ID	Empl Record	Name	Job Title
1	[redacted]1	0	[redacted]	Professor
2	[redacted]1	1	[redacted]	Bd of Trustees Professorship
3	[redacted]9	0	[redacted]	Professor
4	[redacted]9	1	[redacted]	Professor
5	[redacted]9	2	[redacted]	John T Grayhack Professor

Tip If you need to delete the subquery, simply delete the criterion that uses the subquery on the **Criteria** tab of the main query.