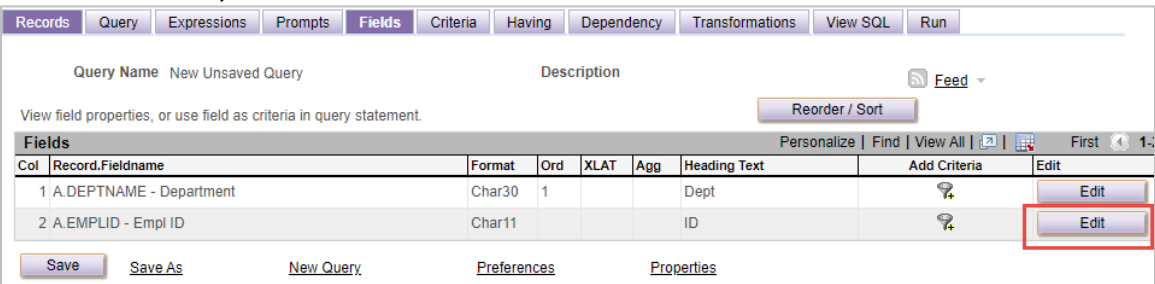
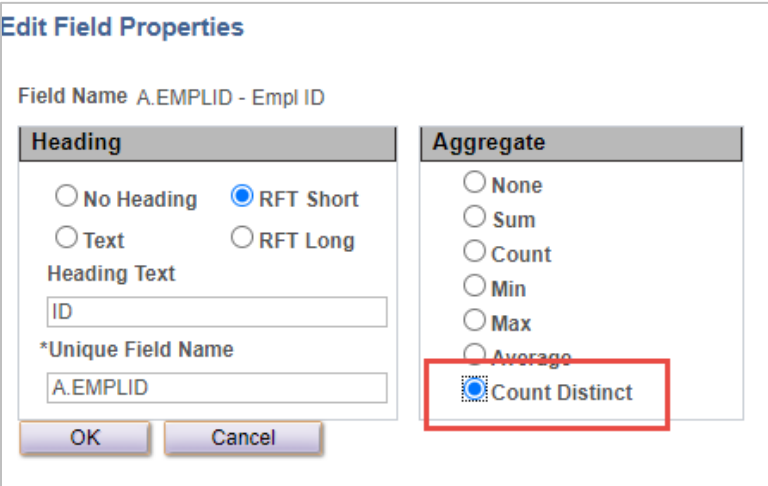


Users can count employees, sum payroll dollars, find most recent paycheck date, and calculate other aggregate values in Query Manager. Aggregates in Query Manager are similar to pivot tables in Microsoft Excel: they allow users to quickly summarize data.

The available aggregate functions are **Sum**, **Count**, **Minimum**, **Maximum**, **Average**, and **Count Distinct**.

Query results can be restricted by aggregate values using the **Having** tab. Aggregates can also be used in **Expressions**.

Procedure for Aggregating a Field

1. Create your query with desired **Records**, **Fields**, and **Criteria**. The field you want to use as an aggregate has to be a field in your query. For example, if you want to count employees, the EMPLID field needs to be included in the query.
2. Go to the **Fields** tab.
3. Find the field that you want to summarize and click the **Edit** button on that row.
 
4. On the **Edit Field Properties** page, in the **Aggregate** box, select the aggregate function you want to use. The available options are **Sum**, **Count**, **Min**, **Max**, **Average**, and **Count Distinct**.
 

- Click **OK** at the bottom of the **Edit Filed Properties** page to return to the **Fields** tab. On the **Fields** tab, the aggregate function is displayed in the column labeled **Agg**.

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

Query Name New Unsaved Query Description Feed

View field properties, or use field as criteria in query statement. Reorder / Sort

| Col | Record.FieldName | Format | Ord | XLAT | Agg | Heading Text | Add Criteria | Edit | Delete |
|-----|-------------------------|--------|-----|------|------------|-------------------|--------------|------|--------|
| 1 | A.DEPTNAME - Department | Char30 | 1 | | | Dept | | Edit | |
| 2 | A.EMPLID - Empl ID | Char11 | | | Count Dist | Count Distinct ID | | Edit | |

Save Save As New Query Preferences Properties

- Run the query. The output will be summarized.

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

View All | Rerun Query | Download to Excel | Download to XML First 1-8 of 8 Last

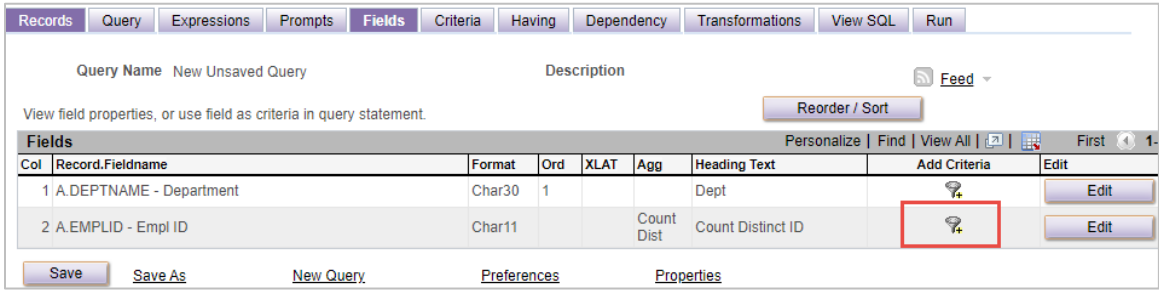
| Row | Dept | Count Distinct ID |
|-----|------|-------------------|
| 1 | | 7 |
| 2 | | 7 |
| 3 | | 109 |
| 4 | | 1 |
| 5 | | 1 |
| 6 | | 6 |
| 7 | | 16 |
| 8 | | 2 |

Tip Pay attention to the other (non-summarized) columns in the query. The report output will be one row per unique combination of the other columns. For example, if you have only department and you count employee IDs, the result will be one row per department. But if you add job title to the query, the report will now show one row per department per job title.

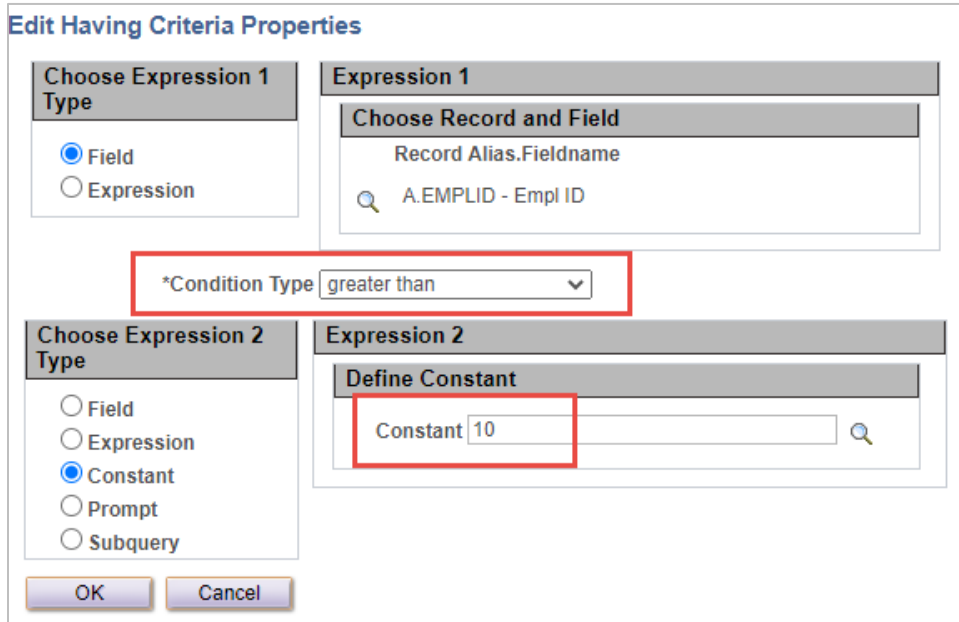
| Row | Dept | Job Title | Count Distinct ID |
|-----|------|-----------|-------------------|
| 1 | | | 3 |
| 2 | | | 6 |
| 3 | | | 7 |
| 4 | | | 1 |
| 5 | | | 109 |
| 6 | | | 1 |
| 7 | | | 1 |
| 8 | | | 5 |
| 9 | | | 1 |
| 10 | | | 1 |
| 11 | | | 15 |
| 12 | | | 1 |
| 13 | | | 1 |

Procedure for Filtering by an Aggregated Field

1. Build the query with the aggregate field column.
2. When you filter using aggregated fields, the restriction will be under the **Having** tab, not under the **Criteria** tab. Otherwise, the two filters are similar: they have the same options for **Condition Type** and **Expression 2**.
3. Go to the **Fields** tab.
4. Click the **Add Criteria** funnel icon for the aggregated field.

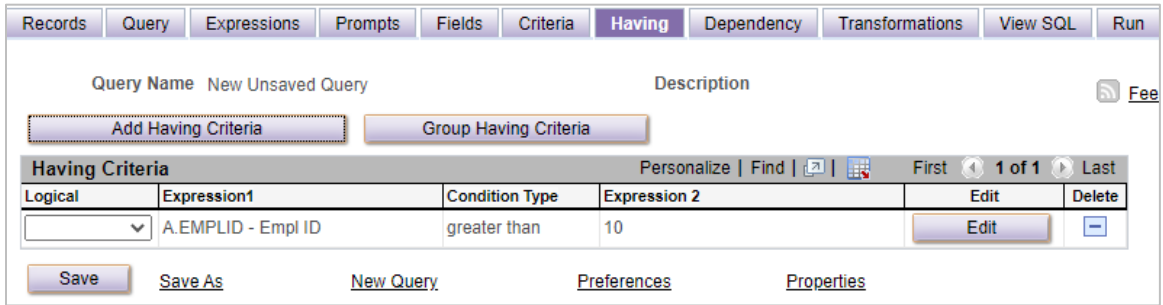


5. On the **Edit Having Criteria Properties** page, select the **Condition Type** and **Expression 2**. Even though Expression 1 has just the field name and not the aggregated expression, the restriction will apply to the aggregated value.



6. Click **OK** at the bottom of the **Edit Having Criteria Properties** page.

7. The new restriction will be in the **Having** tab, not in the Criteria tab.



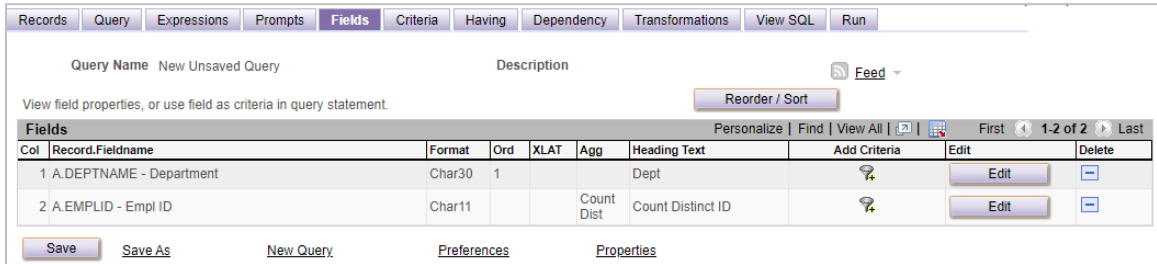
8. Run the query. The report will only display rows where the aggregated value meets the restriction.

| Row | Dept | Count Distinct ID |
|-----|------|-------------------|
| 1 | | 109 |
| 2 | | 16 |

Tip You can also create an aggregate filter directly from the **Having** tab using the **Add Having Criteria** button.

Procedure for Creating an Aggregate Expression

1. Build the query with the aggregate field column. It's best to include all fields that will be part of the expression as columns in your query.



2. Go to the **Expressions** tab.

3. Click **Add Expression**.

4. On the **Edit Expression Properties** page, choose the **Expression Type** and fill in the **Length**.

5. Click the checkbox for **Aggregate Function**.

6. Type the expression into the **Expression Text** box. When you include the aggregated field, just put in the record alias and the field name. Do not repeat the aggregate function; Query Manager will automatically add it. For example, if A.EMPLID is aggregated with Count Distinct, you would type "case when A.EMPLID > 10" and not "case when count(distinct A.EMPLID) > 10."

Edit Expression Properties

*Expression Type
 Length

Aggregate Function Decimals

Expression Text

case when A.EMPLID > 10 then 'Big Department'
 else 'Small Department' end

[Add Prompt](#) [Add Field](#)

7. Click **OK** at the bottom of the **Edit Expression Properties** page.

8. On the **Expressions** tab, select **Use as Field**.

9. On the **Fields** tab, rename the new field using the **Edit** button.

Edit Field Properties

Field Name case when A.EMPLID > 10 then 'Big Department' else 'Small Department' end

Heading

No Heading RFT Short

Text RFT Long

Heading Text

*Unique Field Name

Aggregate

None

Sum

Count

Min

Max

Average

Count Distinct

10. Run the query. The expression is now visible as a column in the output.

| Row | Dept | Count Distinct ID | Department Size |
|-----|------|-------------------|--------------------|
| 1 | | | 7 Small Department |
| 2 | | | 7 Small Department |
| 3 | | | 109 Big Department |
| 4 | | | 1 Small Department |
| 5 | | | 1 Small Department |
| 6 | | | 6 Small Department |
| 7 | | | 16 Big Department |
| 8 | | | 2 Small Department |

Tip You can filter based on an aggregate expression by clicking the **Add Criteria** funnel icon on the **Expressions** tab or the **Fields** tab. This action will create a **Having** filter.