Use the merge dimension process with multiple queries if you need to combine data from one universe or multiple universes in the same document.

✓ A merged dimension might be necessary when measures need to be calculated at a different granularity or when a field or measure is not available in the current universe but is available in another universe.

Example - Measures need to be calculated at a different granularity

You want to sum the values of all Time Taken in a month and add the Distinct Employee Count as of the end of the month.

✓ If you include Time Taken and Distinct Employee Count without using a merged dimension, it will sum all Time Taken for each day in the month and sum the Distinct Employee Count for each day in the month, resulting in an inflated Distinct Employee Count.

✓ If you use a Merged Dimension, it will allow you to sum the Time Taken for the month and get the Distinct Employee Count as of the end of the month.

Example - Field or measure is not available in the current universe but is available in another universe

Job (EE) is not available in the Staffing Assignments universe but it is available in the Headcount and Personnel Actions universe.

✓ If you use a merged dimension, it will allow you to get filled and vacant position count information from the Staffing Assignments universe and get the employee's Job information for filled positions from the Headcount and Personnel Actions universe.

Additional information to be aware of when working with merged dimensions

Object Information	Additional Information
Merged dimension data values must have the same data type.	Do not merge a number data type with a text data type.
Merged dimension data values must have the same format.	Do not merge a Calendar Month date (format MM) with a Calendar Year date (format YYYY).
Merged dimension data values are case sensitive.	Merged values containing a mix of lower-case and upper-case will be displayed as separate values. For example, Sample-data and SAMPLE-DATA will be displayed as two separate values.
Variables can be created to associate merged dimensions when using multiple universes.	Job (EE) is not available in the Staffing Assignments universe. Create a variable to associate Job (EE) from the Headcount and Personnel Actions universe with the Position Code from the Staffing Assignments universe.

Create Merged Dimension Using One Universe

Use the merge dimension process with multiple queries if you need to combine data from one universe in the same document.

✓ For this example, we will use the Time and Labor universe because it includes an employee's Planned Work Time and Time Taken measures aggregated at the monthly level and the employee's Age (Years) measure as of the last day of the month.

Example - Before Creating Merged Dimension

If we do not create a merged dimension, the query results will not meet our needs. For example, Age (Years) measure will aggregate for each day of the month, along with the Planned Work Time and Time Taken.

✓ Planned Work Time and Time Taken will not aggregate if we add Last Calendar Day of Month Values predefined filter to get the Age (Years) measure as of the last day of the month.

In this example, Age (Years) is aggregated for each day of the month and the results will not meet our reporting requirements.

Business Area Code (EE)	Business Area (EE)	Organizational Unit Code	Organizational Unit	Personnel Number	Planned Work Time	Time Taken	Age (Years)
3000	Dept of Social & Health Serv.	30003536	DDA DDD R02		176	11	2,257.6
3000	Dept of Social & Health Serv.	30003536	DDA DDD R02		176	8.5	2,622
3000	Dept of Social & Health Serv.	30003536	DDA DDD R02		176		1,824

Example - After Creating Merged Dimension

To get an accurate Age (Years) measure and an accurate Planned Work Time and Time Taken measure, create a merged dimension and include the Last Calendar Day of Month pre-defined filter for Age (Years).

In this example, Age (Years) is aggregated at the monthly level and the results meet our reporting requirements.

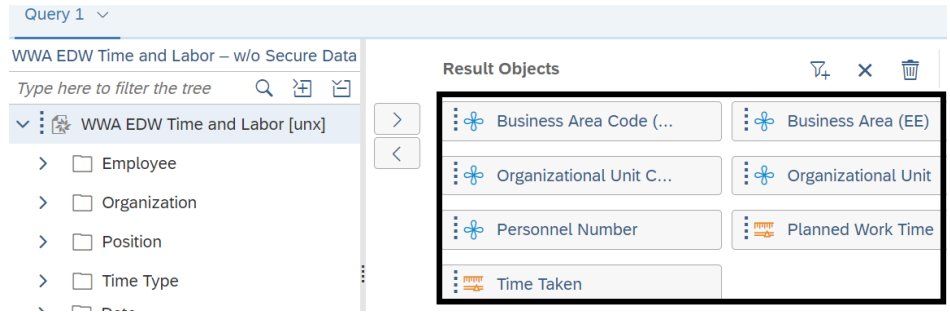| Business Area Code (EE)	Business Area (EE)	Organizational Unit Code	Organizational Unit	Personnel Number	Planned Work Time	Time Taken	Age (Years)
3000	Dept of Social & Health Serv.	30003536	DDA DDD R02		176	11	66.4
3000	Dept of Social & Health Serv.	30003536	DDA DDD R02		176	8.5	77.2
3000	Dept of Social & Health Serv.	30003536	DDA DDD R02		176		58.9

Create New Ad Hoc Query

For this example, we will create a new ad hoc query using the Time and Labor universe.

1. Add: **Objects from the Universe to the Result Objects section.** ➜ Do not include Age (Years) in this initial query. It will be added to the second (duplicate) query in a later step.	In this example, we add Business Area Code (EE), Business Area (EE), Organizational Unit Code, Organizational Unit, Personnel Number, and measures for Planned Work Time and Time Taken.

2. Add: **Objects from the Universe to the Query Filters section.** 3. Input: **Filter values.** 4. Select: **Run.** ➜ WebI will display the report table.	In this example, we add Calendar Year Month, Business Area Code, and Organizational Unit Code.
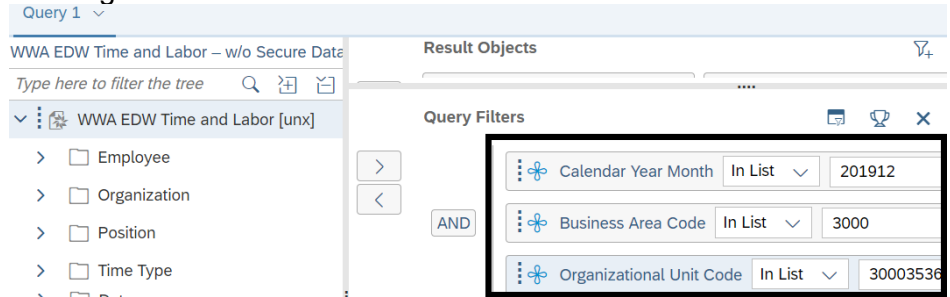
Create Duplicate Query and Modify Duplicate Query

For this example, we will create a duplicate query because the data we want to include is available in the same universe. After we create the duplicate query, we will modify it.

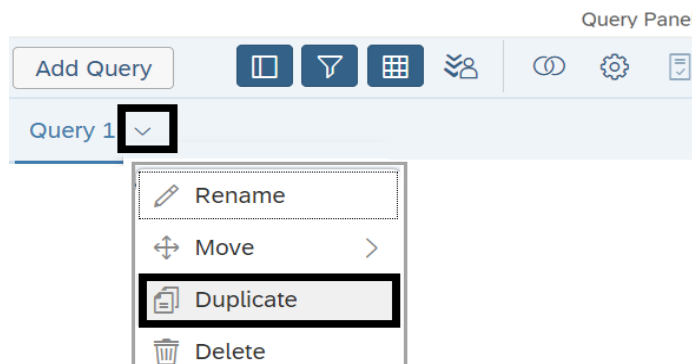|	
1. Select: **Edit.** ➜ WebI will display the query panel so that you can create a duplicate query.	
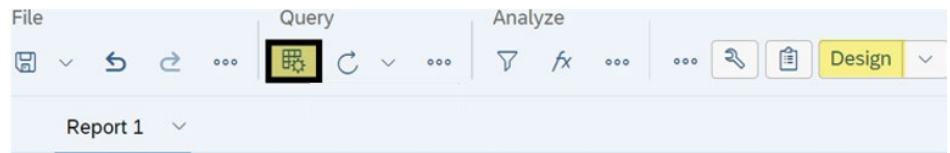
|	
2. Select: **Dropdown next to query you want to duplicate.** 3. Select: **Duplicate.** ➜ WebI will create a duplicate query so that you can modify it. ➜ Rename your queries to help avoid confusion if needed.	

4. Add/Remove: **Objects for the Result Objects section.**

➔ Ensure you are only modifying the duplicate query.

➔ For this example, we added the measure for Age (Years) from the Headcount Measures and removed measures for Planned Work Time and Time Taken.

In this example, the Result Objects section includes Business Area Code (EE), Business Area (EE), Organizational Unit Code, Organizational Unit, Personnel Number, and the measure for Age (Years).
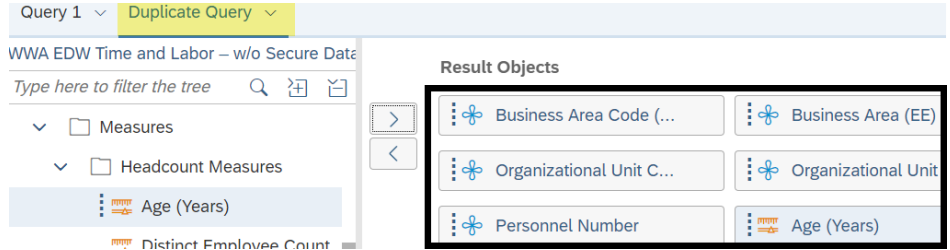
5. Add: **Objects for Query Filters section.**

➔ Ensure you are modifying the duplicate query.

➔ For this example, we added a pre-defined filter to ensure the Headcount Measure will be based on the Last Calendar Day of Month Values. We did not remove any filters.

In this example, the Query Filters section includes Calendar Year Month, Business Area Code, Organizational Unit Code, and the pre-defined filter for Last Calendar Day of Month Values.
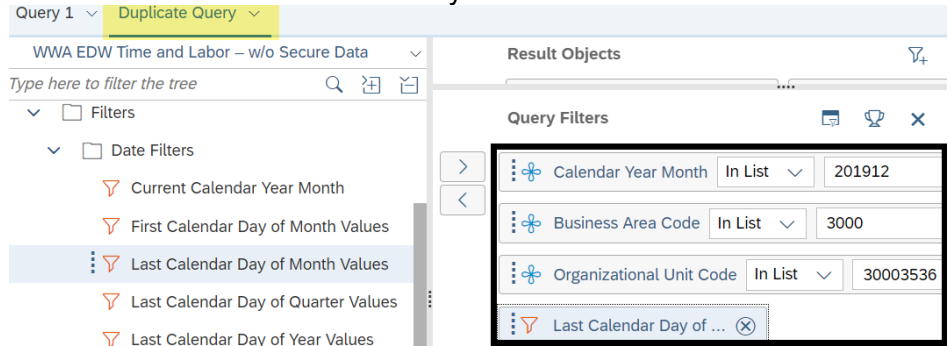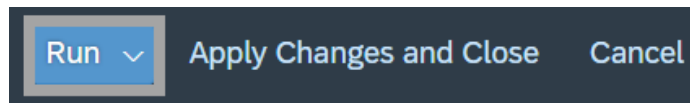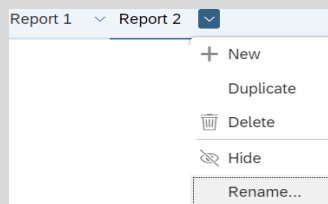
6. Select: **Run.**

➔ WebI will display options for adding the query.

7. Select: **Insert a table in a new report.** This is the default selection.

8. Select: **Ok.**

➔ WebI will display the duplicate query in a new report in the document. You can rename your reports to help avoid confusion if needed.

Merge Dimensions

For this example, we will merge dimensions that are used in the original query (report 1) and the duplicate query (report 2) so that we can combine data from the universe.

1. Select: **First set of dimensions to be merged.**
→ Use the control key (ctrl) to select a set of dimensions.
2. Select: **Ellipses (three dots).**
3. Select: **Merge.**
→ WebI will display the merged dimension in the document objects section.
→ Repeat the steps to merge additional sets of dimensions.
→ Dimensions must have the same data type. For example, you cannot merge Organizational Unit with Organizational Unit Code.
→ Dimension dates must have the same format. For example, you cannot merge Calendar Month with Calendar Year.

Show document objects

Show main panel

View modes and settings

→ If you need to unmerge dimensions, select the ellipses (three dots) next to the merged dimension then use the unmerge option.

In this example, we merged 5 sets of dimensions. We also used the settings to change the display for the document objects from alphabetical view to queries view.
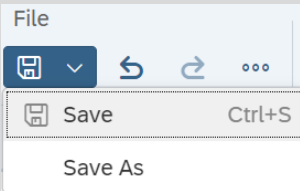
Add Objects To Report

For this example, we will add the merged dimension to the report table.

✓ It is usually faster to use the report created from the initial query because most of the objects are already included. If you create a new report, you will need to add all of the objects to the empty report workspace.

1. Add: **Objects from the list of document objects to the report table.** ➔ Remember to save your changes if needed. 	In this example, we drag-and-drop Age (Years) from the list of document objects in the duplicate query to the report table.

Create Merged Dimension Using Two Universes

Use the merge dimension process with multiple queries if you need to combine data from two universes in the same document.

✓ For this example, we will use the Staffing Assignments universe and the Headcount and Personnel Actions universe so that we can compare the job assigned to the position with the job assigned to the employee.

✓ Because we want to create a merged dimension to include fields that are not present in both universes, we will also need to establish a link between the two universes by creating a variable for the missing data element and associating that variable with a shared data element that is present in both universes. For example, we will create a variable to lookup the value of Job (EE) in the Headcount and Personnel Actions universe by using the Position Code that is also present in the Staffing Assignments universe.

Create New Ad Hoc Query

For this example, we will create a new ad hoc query using the Staffing Assignments universe.

1. Add: **Objects from the Universe to the Result Objects section.**	In this example, we add Position Code, Position, Job Class Abbr (POS), Job Code (POS), Job (POS), Personnel Number, and measures for Number of Positions and Number of Positions - Multiple Occupancy.

2. Add: **Objects from the Universe to the Query Filters section.**

3. Input: **Filter values.**

4. Select: **Run.**

➔ Webl will display the report table.

In this example, we add Calendar Year Month, Business Area Code (POS), and Organizational Unit Code.
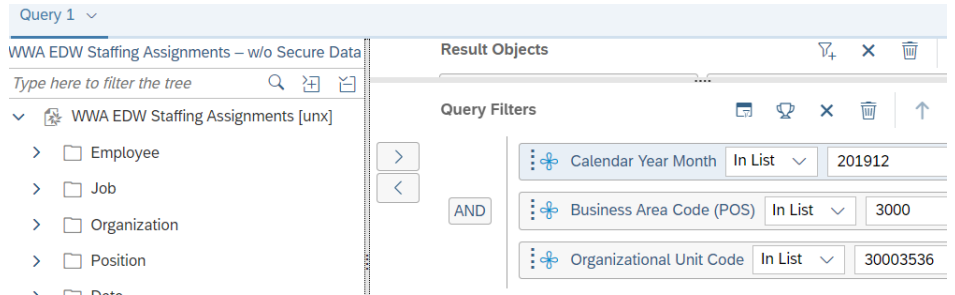
In this example, the query results are displayed in the report table.
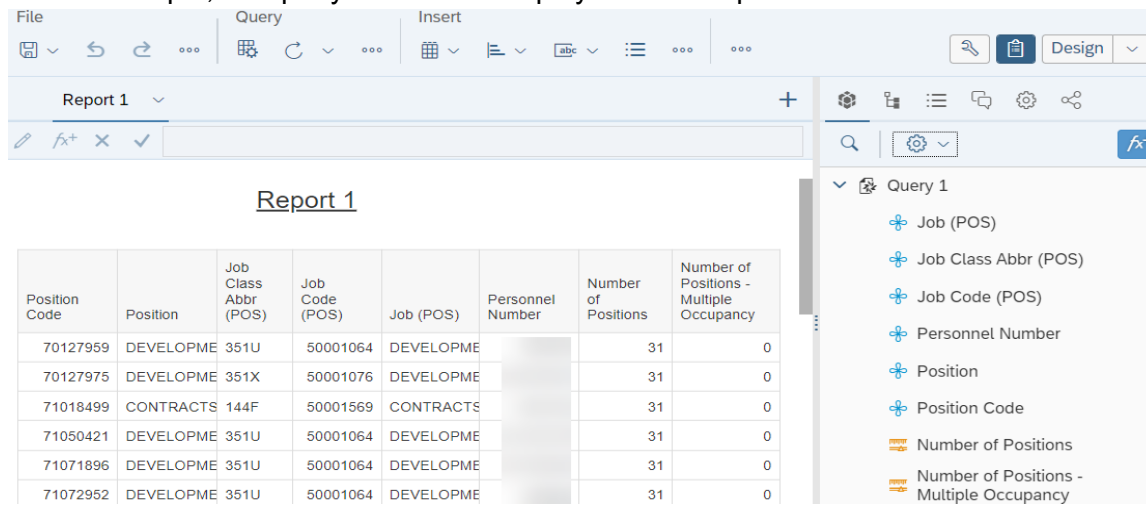
Add New Query/Create New Query

For this example, we will add a new query because the data we want to include is available in a different universe.

1. Select: **Edit.**

➔ Webl will display the query panel so that you can add a new query.
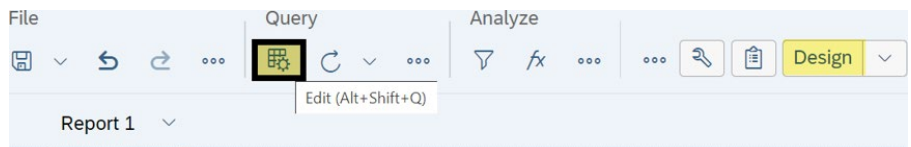
➔ If the option to edit the query is not available on the toolbar, ensure you are in design mode.

2. Select: **Add Query.**

➔ Webl will display options so that you can select a data source.
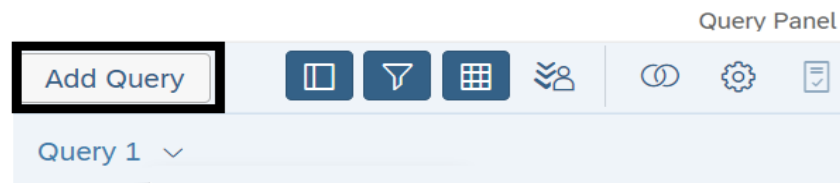
3. Select: **SAP BI Platform Repository.**
4. Select: **Universe.**
5. Select: **Ok.**

➜ WebI will display a list of available universes based on your security/permissions.

Select a Data Source

SAP BI Platform Repository
Browse resources from your enterprise repository

Universe
Select a universe as a data source

Web Intelligence Document
Use a Web Intelligence document as a data source

Google Drive
Select a data source from Google Drive

Excel
Select an Excel spreadsheet as a data source

No Data Source
Create an empty document

OK   Cancel

6. Select: **WWA universe.**
7. Select: **Ok.**

➜ WebI will display the query panel.

Select a Universe

Folders   List

Refresh   Name   Type text to search in names

Name (7)	Revision
WWA EDW AFRS.unx Universes/WWA Universes	199
WWA EDW Grievance.unx Universes/WWA Universes	168
WWA EDW Headcount and Personnel Actions.unx Universes/WWA Universes	246
WWA EDW Payroll.unx Universes/WWA Universes	197
WWA EDW Quota.unx Universes/WWA Universes	149
WWA EDW Staffing Assignments.unx Universes/WWA Universes	230
WWA EDW Time and Labor.unx Universes/WWA Universes	170

Universes (29)
> Accounting Universes (17)
> OFM Universes (4)
> WWA Universes (7)

OK   Cancel

8. Add: **Objects from the Universe to the Result Objects section.**

In this example, we add Position Code, Position, Job Class Abbr (POS), Job Code (POS), Job (POS), Personnel Number, Job Class Abbr (EE), Job Code (EE), and Job (EE).

Query 1 ˅   Query 2 ˅

WWA EDW HPA – w/o Secure Data
Type here to filter the tree
> WWA EDW Headcount and Personnel Actions [unx]
  > Action
  > Education
  > Employee

Result Objects

Position Code	Position	Job Class Abbr (POS)
Job Code (POS)	Job (POS)	Personnel Number
Job Class Abbr (EE)	Job Code (EE)	Job (EE)
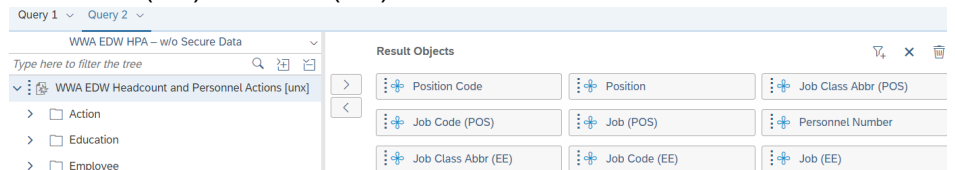
9. Add: **Objects from the Universe to the Query Filters section.**

➜ The pre-defined filter for Actions-Exclude will exclude the employee action records so that we get more accurate employee counts.

10. Input: **Filter values.**

In this example, we add Calendar Year Month, Business Area Code (POS), Organizational Unit Code, and pre-defined filters for Last Calendar Day of Month Values and Actions-Exclude.
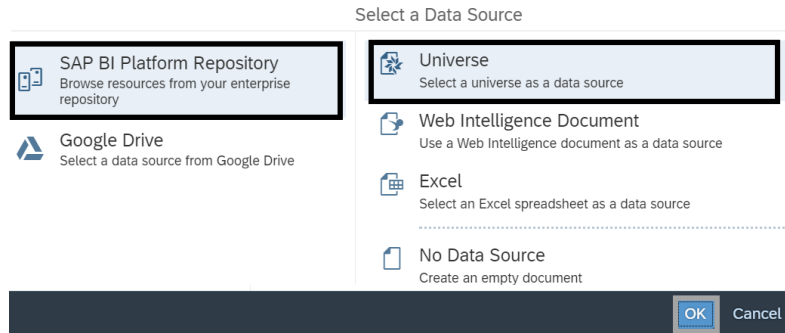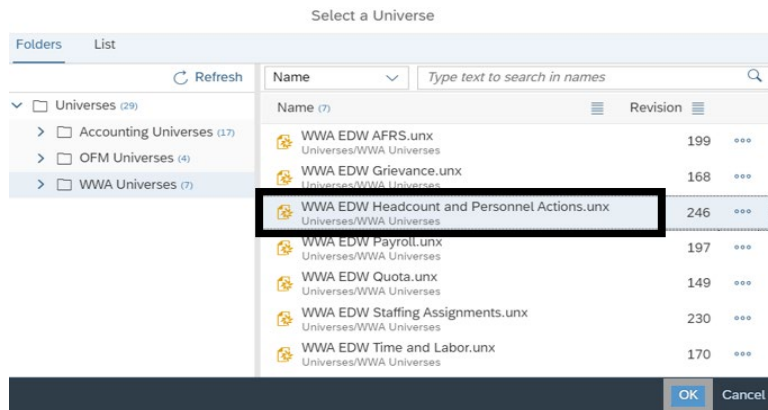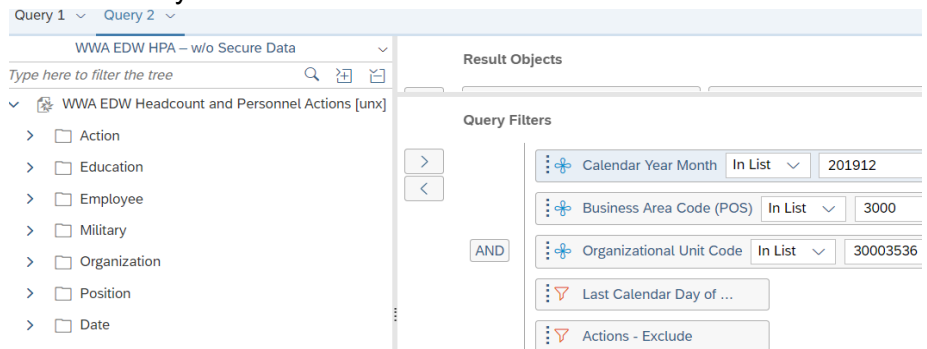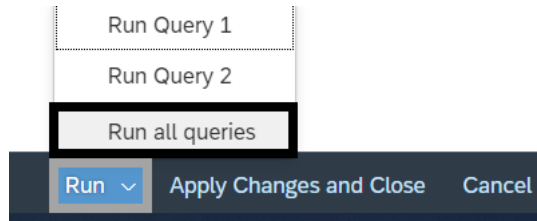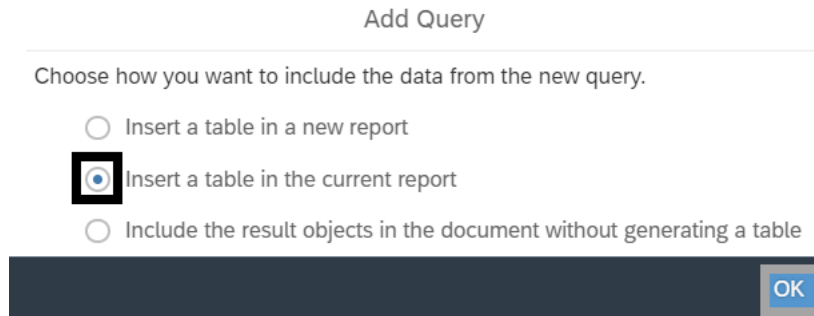
Query 1 ˅   Query 2 ˅

WWA EDW HPA – w/o Secure Data
Type here to filter the tree
> WWA EDW Headcount and Personnel Actions [unx]
  > Action
  > Education
  > Employee
  > Military
  > Organization
  > Position
  > Date

Result Objects

Query Filters

Calendar Year Month	In List ˅	201912
Business Area Code (POS)	In List ˅	3000
AND	Organizational Unit Code	In List ˅	30003536
Last Calendar Day of …		
Actions - Exclude		

11. Select: **Run all queries.**
➔ WebI will display options for adding the query.

Run Query 1	
Run Query 2	
Run all queries	

Run ∨ Apply Changes and Close Cancel

12. Select: **Insert a table in the current report.**

13. Select: **Ok.**
➔ WebI will display results for the new query with results for the existing query in the same report.

Add Query

Choose how you want to include the data from the new query.

◯ Insert a table in a new report

⦿ Insert a table in the current report

◯ Include the result objects in the document without generating a table

OK

In this example, the queries are displayed in two tables on one report.

Add New Report

For this example, we will add a new report before we merge dimensions and create the variables.
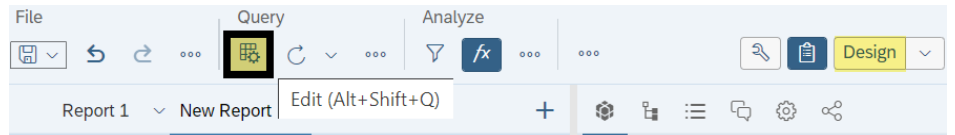
1. Select: **Dropdown next to existing report.**
2. Select: **New.**
➔ WebI will display a blank report workspace.
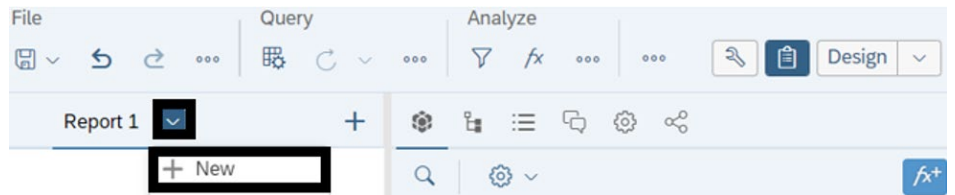
3. Select: **Dropdown next to the report you added.**
4. Select: **Rename.**
5. Input: **Name for report.**
6. Select: **Ok.**
➔ Repeat the steps for each report if needed to help avoid confusion.
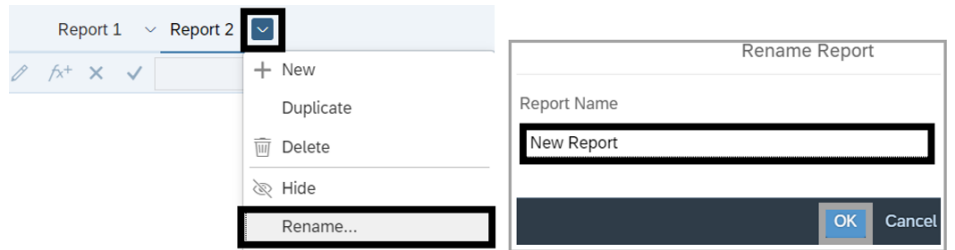
7. Select: **Edit.**
➔ WebI will display the query panel.

8. Select: **Dropdown next to the query name.**
9. Select: **Rename.**
10. Input: **Name for the query.**
11. Select: **Ok.**
➔ Repeat the steps for each query if needed to help avoid confusion.
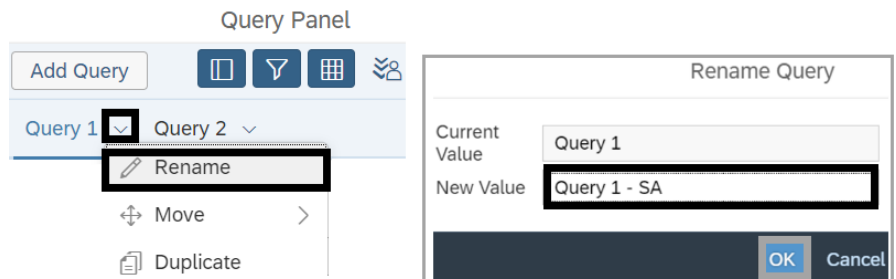
In this example, the new report includes document objects for both queries. We also renamed the queries for the new report.
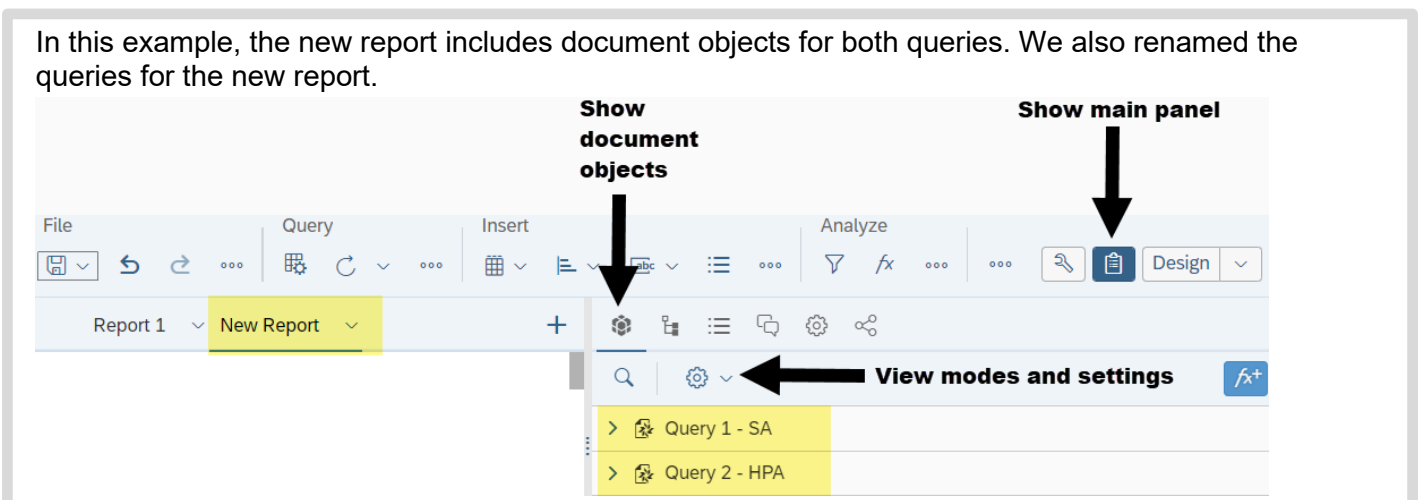
Merge Dimensions

For this example, we will merge dimensions that are used in Query 1 - SA (query from Staffing Assignments) and Query 2 - HPA (query from Headcount and Personnel Actions) so that we can combine data from the two universes.

1. Select: **First set of dimensions to be merged.**

➜ Use the control key (ctrl) to select a set of dimensions.
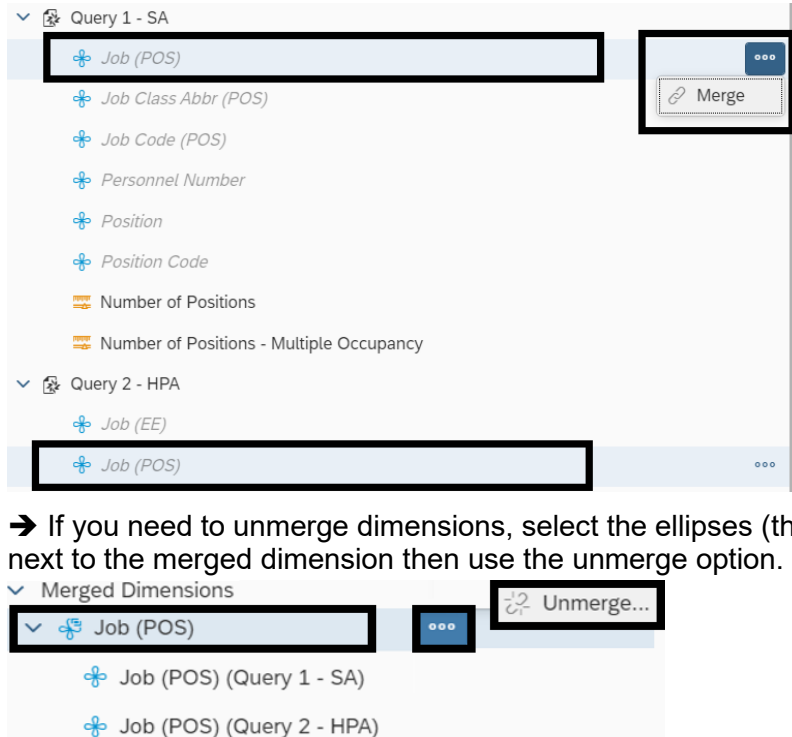
2. Select: **Ellipses (three dots).**

3. Select: **Merge.**

➜ WebI will display the merged dimension in the document objects section.

➜ Repeat the steps to merge additional sets of dimensions.

➜ Dimensions must have the same data type. For example, you cannot merge Position Code with Position.

➜ Dimension dates must have the same format. For example, you cannot merge Calendar Month with Calendar Year.

➜ If you need to unmerge dimensions, select the ellipses (three dots) next to the merged dimension then use the unmerge option.

In this example, we merged several sets of dimensions. We also used the settings to change the display for the document objects from queries view to alphabetical view.

✓ Job (EE), Job Class Abbr (EE), and Job Code (EE) cannot be merged because there are no compatible fields in the Staffing Assignments universe. We will need to create a variable to merge these fields in a later step.
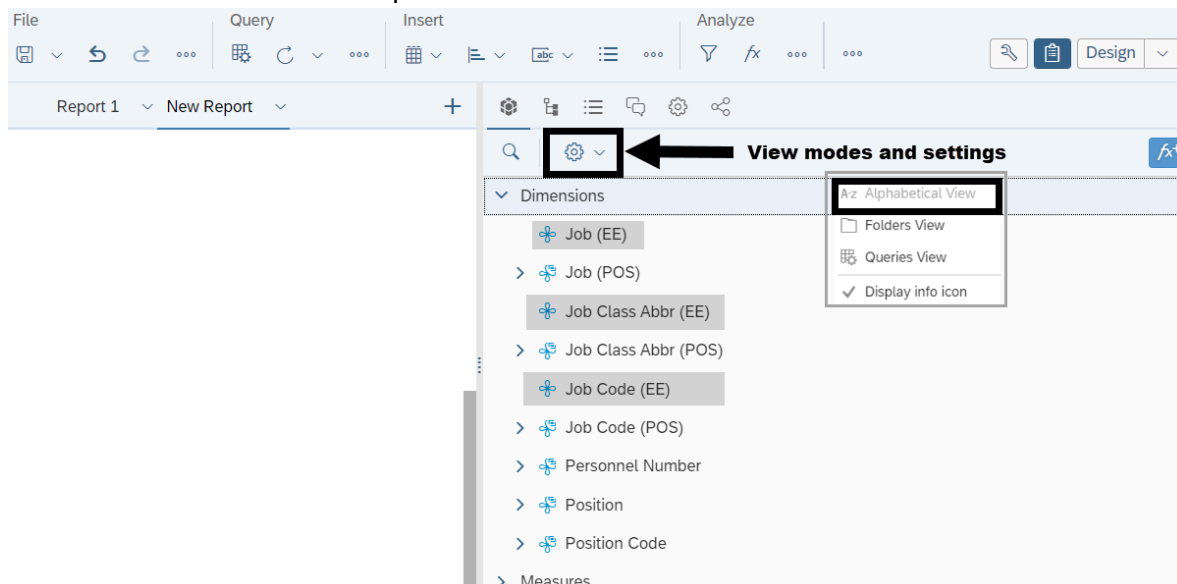
Create Variable To Associate Objects

Because we want to create a merged dimension to include fields that are not present in both universes, we will need to establish a link between the two universes by creating a variable for the missing data element and associating that variable with a shared data element that is present in both universes.

✓ For this example, we will create a variable for Job (EE) and associate it with a field that is present in both universes. If we associate Job (EE) with Position Code, we can merge the two universes based on the Position Code and the variable will return the value of Job (EE) based on the Position Code. We will also need to create a variable for Job Class Abbr (EE) and Job Code (EE). After we create the new variables, we will need to add them to the report.

Create Formula

For this example, we will create a variable to lookup the value of Job (EE) in the Headcount and Personnel Actions universe by using the Position Code that is also present in the Staffing Assignments universe.
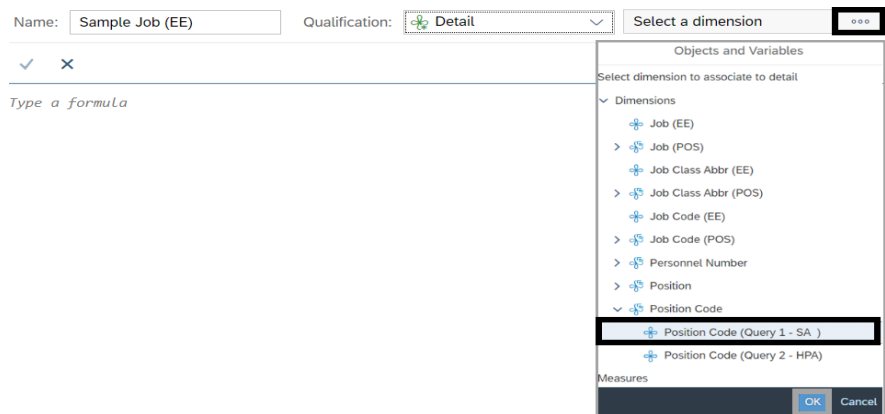
1. Select: **Add new variable.**
➔ WebI will display the create variable screen.
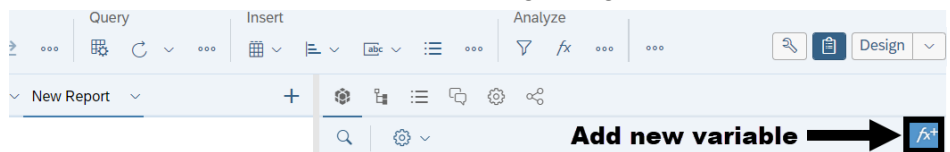
2. Input: **Variable name.**
3. Select: **Qualification.**
➔ Use the Qualification dropdown to select Detail.
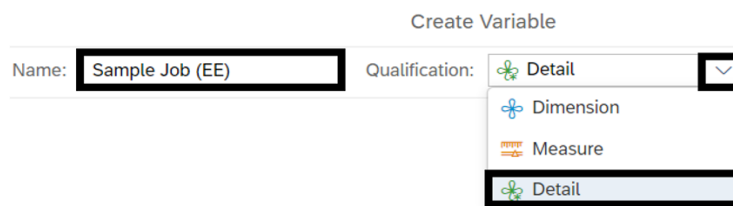
4. Select: **Dimension.**
➔ Use the ellipses (three dots) to select the dimension. For this example, select Position Code from the Staffing Assignments universe (Query 1 - SA).
5. Select: **Ok.**

6. Double-click: **Dimension in document dictionary (list of available objects).**
➔ For this example, double-click Job (EE).
➔ WebI will input the formula for you when you double-click the dimension. You can input the formula but it is usually easier to double-click the dimension.
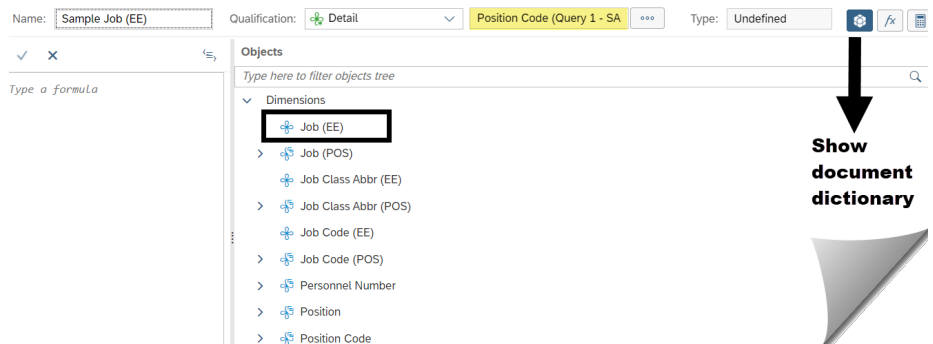
7. Select: **Checkmark ✓ to validate formula.**

8. Select: **Ok.**

➔ WebI will add the new variable to the list of available objects for the report.

➔ Repeat the steps to create a variable for each dimension that needs to be associated with another dimension. For this example, you will also need to create a variable for Job Class Abbr (EE) and Job Code (EE).
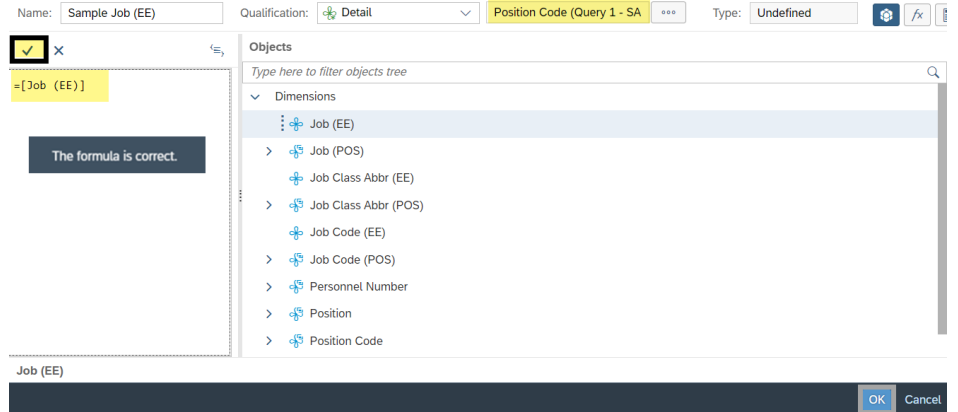
Add Objects To New Report

For this example, we will add the merged dimensions, the two measures, and the three variables to the new report workspace.

1. Add: **Objects from the list of document objects to the report table.**

➔ Use the control-key (ctrl) to select multiple objects in the order you want them to be displayed in the report then drag-and-drop the objects to the report workspace.

➔ Remember to save your changes if needed.
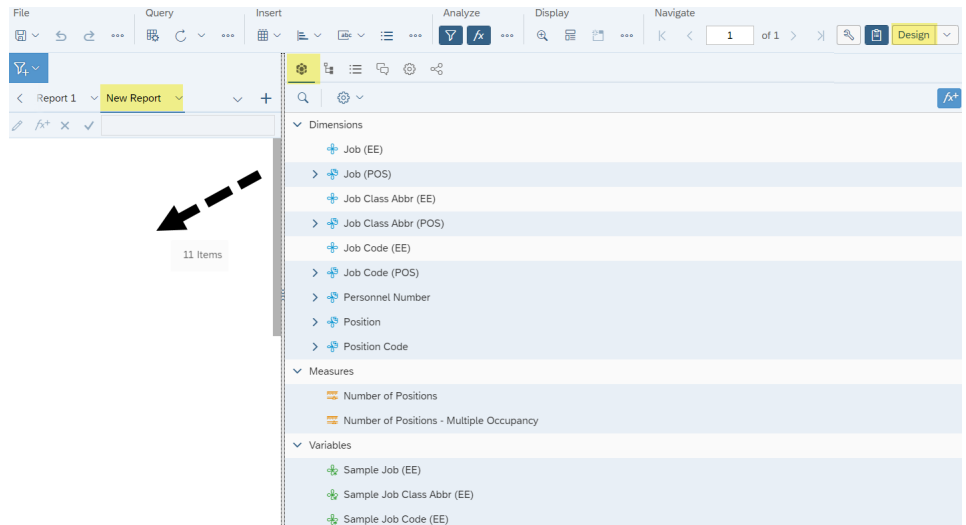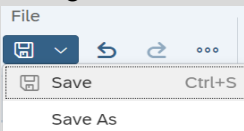
In this example, the selected objects are displayed in the report. Notice the Position Code 70120093 is an Office Assistant and the employee is working as a Customer Service Specialist.

Position Code	Position	Job Class Abbr (POS)	Job Code (POS)	Job (POS)	Number of Positions	Number of Positions - Multiple Occupancy	Personnel Number	Sample Job Class Abbr (EE)	Sample Job Code (EE)	Sample Job (EE)
70024327	DEVELOPME	351U	50001064	DEVELOPMENTAL DISAB CASE/RES MGR	31	0		351U	50001064	DEVELOPMENTAL DISAB CASE/RES MGR
70099931	CUSTOMER	102B	50000292	CUSTOMER SERVICE SPECIALIST 2	31	0		102B	50000292	CUSTOMER SERVICE SPECIALIST 2
70116967	DEVELOPME	351U	50001064	DEVELOPMENTAL DISAB CASE/RES MGR	31	0		351U	50001064	DEVELOPMENTAL DISAB CASE/RES MGR
70116968	DEVELOPME	351U	50001064	DEVELOPMENTAL DISAB CASE/RES MGR	31	0		351U	50001064	DEVELOPMENTAL DISAB CASE/RES MGR
70116969	DEVELOPME	351U	50001064	DEVELOPMENTAL DISAB CASE/RES MGR	31	0		351U	50001064	DEVELOPMENTAL DISAB CASE/RES MGR
70118043	DEVELOPME	351U	50001064	DEVELOPMENTAL DISAB CASE/RES MGR	31	0		351U		
70120093	CUSTOMER	102A	50000289	CUSTOMER SERVICE SPECIALIST 1	17	0		102A	50000289	CUSTOMER SERVICE SPECIALIST 1
70120093	OFFICE ASSI	100J	50000274	OFFICE ASSISTANT 3	14	0			50000289	CUSTOMER SERVICE SPECIALIST 1
70120488	DEVELOPME	351U	50001064	DEVELOPMENTAL DISAB CASE/RES MGR	31	0		351U	50001064	DEVELOPMENTAL DISAB CASE/RES MGR