

Receiving Parameters in Dashboards

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Creating visuals with optional dimensions

Procedure

1. Open a new dashboard.
2. Click New Visual.
3. Select the World Life Expectancy dataset in the Data menu.
4. Select the Table visual type in the Visuals menu.
5. Populate the shelves of the visual:
 - From Dimension, select and move un_region and un_subregion fields onto the Dimension shelf.
 - From Measures, select and move population field onto the Measures shelf.
 - From Dimensions, select and move year field onto the Filters shelf.
 - On the Filters shelf, select year field, choose Pick values from a list, select 2000, and click SAVE.

The screenshot displays the Cloudera Data Visualization interface. On the left, a table visual is shown with the following data:

un_region	un_subregion	sum(population)
Africa	Eastern Africa	223,801,227
Africa	Middle Africa	89,349,833
Africa	Northern Africa	169,171,230
Africa	Southern Africa	51,441,854
Africa	Western Africa	219,135,570
Americas	Caribbean	29,386,764
Americas	Central America	135,554,671
Americas	Northern America	313,282,714
Americas	South America	314,774,534

On the right, the VISUALS configuration panel is shown. The visual type is set to 'Table'. The Dimensions shelf contains 'un_region' and 'un_subregion'. The Measures shelf contains '# sum(population)'. The Filters shelf contains 'year in (2000)'. The Limit is set to 100. A 'REFRESH VISUAL' button is visible at the bottom of the panel.

6. From Dimensions, select and move the country field to the Dimension shelf.
7. On the Dimensions shelf, click country field.

8. In the FIELD PROPERTIES menu, select [] Enter/Edit Expression.

The screenshot shows the Cloudera Data Visualization interface. On the left, the 'VISUALS' panel displays a 'Table' visual. Under 'Dimensions', there are three items: 'un_region', 'un_subregion', and 'country'. Under 'Measures', there is one item: 'sum(population)'. Below the measures, there is a 'Filters' section with one item: 'year in (2000)'. At the bottom of the VISUALS panel, there is a 'Limit' field set to '100' and a 'REFRESH VISUAL' button. On the right, the 'FIELD PROPERTIES' panel is open, showing a list of options: 'Date/Time Functions', 'Text Functions', 'Change Type', 'Order and Top K', '[] Enter/Edit Expression' (highlighted with a green arrow and a hand cursor), 'Display Format', 'Alias', 'Description', 'Duplicate', 'Save Expression', and 'Remove'.

9. In the Enter/Edit Expression modal window, change the text to the following expression: [<<dim:>>]

The screenshot shows the 'Enter/Edit Expression' modal window. The text input field contains the expression '<<dim:>>'. Below the input field, there is a 'VALIDATE EXPRESSION' button and an 'Autocomplete on' checkbox. To the right of the input field, there are two dropdown menus: 'All Functions' and 'All Fields'. The 'All Functions' dropdown shows a list of functions: 'abs', 'AND', 'avg', 'BETWEEN', 'CASE', 'cast', 'char', 'coalesce', and 'count'. The 'All Fields' dropdown shows a list of fields: 'alt_names', 'cdh_id', 'code2', 'code3', 'comments', 'country', 'country_5', 'fips_code', and 'fips_country n'. At the bottom of the modal, there are three buttons: 'VALIDATE & SAVE' (highlighted with a hand cursor), 'CANCEL', and 'SAVE'.

10. Click VALIDATE & SAVE.
 11. Click REFRESH VISUAL.
 12. Change the name of the visual to Regional Populations.

13. Click SAVE.

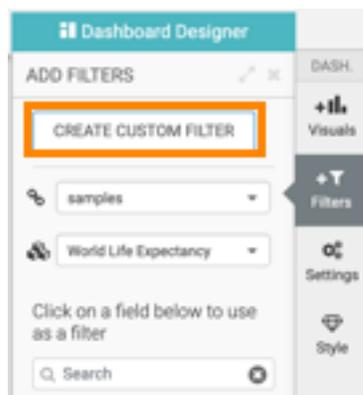
Creating filters to control optional dimensions

Before you begin

Before starting this work flow, complete the steps in [Creating visuals with optional dimensions](#) on page 4.

Procedure

1. In the dashboard, click the Filters tab.
2. Click CREATE CUSTOM FILTER.



This creates a new filter in the filter area of the application, and opens the Settings modal window for that filter.

3. Click the Values tab and enter the following:
 - Under Title, enter Display Country Details.
 - Under Output Parameter, enter dim. Note that this is the parameter from [Creating visuals with optional dimensions](#) on page 4.
 - Under Specified values, enter Value: country, and Label: Country.

Settings

Values Data Display Settings Scope Custom Style

Title

Display Country Details

Output Parameter

dim

Specified values

Value	Label	
country	Country	🗑️
Add new row		

CANCEL APPLY

4. Switch to the Display Settings tab, select Allow only one item to be selected at a time and then select Include an option for 'All'.
5. Click APPLY.
6. Name and save the dashboard.
7. Switch to dashboard View mode and select World Regional Populations.
8. In the Display Country Details filter, select Country.

Display Country Details

Country ▾

(All)

Country

Results

The table now has a new column, country.

Creating visuals with optional measures

About this task

You may choose to duplicate the dashboard that you created earlier according to the instructions in [Creating visuals with optional dimensions](#) on page 4. In this case, open the visual, and jump to [Step 6](#) in the following workflow.

Procedure

1. Open a new dashboard.
2. Click New Visual.
3. Select the World Life Expectancy dataset in the Data menu.
4. Select the Table visual type in the Visuals menu.
5. Populate the shelves of the visual:
 - From Dimension, select and move un_region and un_subregion fields to the Dimension shelf.
 - From Measures, select and move population field to the Measures shelf.
 - From Dimensions, select and move year field to the Filters shelf.
 - On the Filters shelf, select year field, choose Pick values from a list, select 2000, and click SAVE.

The screenshot displays a Cloudera Data Visualization interface. On the left, a table visual is shown with the following data:

un_region	un_subregion	sum(population)
Africa	Eastern Africa	223,801,227
Africa	Middle Africa	89,349,833
Africa	Northern Africa	169,171,230
Africa	Southern Africa	51,441,854
Africa	Western Africa	219,135,570
Americas	Caribbean	29,386,764
Americas	Central America	135,554,671
Americas	Northern America	313,282,714
Americas	South America	314,774,534

On the right, the 'VISUALS' configuration panel is visible. It shows the visual type set to 'Table'. The shelves are configured as follows:

- Dimensions:** un_region, un_subregion
- Measures:** # sum(population)
- Filters:** A year in (2000)

The 'Limit' is set to 100. A 'REFRESH VISUAL' button is located at the bottom of the panel.

6. From Measures, select and move the life_expectancy field to the Measures shelf.
7. On the Measures shelf, click the life_expectancy field.

8. In the FIELD PROPERTIES menu, select [] Enter/Edit Expression.

The screenshot shows the Cloudera Data Visualization interface. On the left, the 'VISUALS' panel displays a 'Table' visual. Under 'Dimensions', there are two items: 'un_region' and 'un_subregion'. Under 'Measures', there are two items: 'sum(population)' and 'sum(life_expectancy)'. Below the measures, there is a 'Filters' section with 'year in (2000)'. A 'Limit' field is set to '100'. A 'REFRESH VISUAL' button is at the bottom. On the right, the 'FIELD PROPERTIES' panel is open, showing a list of options: 'Aggregates', 'Date/Time Functions', 'Text Functions', 'Change Type', 'Order and Top K', '[] Enter/Edit Expression' (highlighted with a mouse cursor), 'Aggregate Display', 'Display Format', 'Alias', 'Description', 'Duplicate', 'Save Expression', and 'Remove'.

9. In the Enter/Edit Expression modal window, change the text to the following expression: [<<mes:>>].
 10. Click VALIDATE & SAVE.

The screenshot shows the 'Enter/Edit Expression' modal window. The text input field contains '<<mes:>>'. Below the input field is a 'VALIDATE EXPRESSION' button and a checked 'Autocomplete on' checkbox. To the right, there are two dropdown menus: 'All Functions' and 'All Fields'. The 'All Functions' dropdown shows a list of functions: abs, AND, avg, BETWEEN, CASE, cast, char, coalesce, and count. The 'All Fields' dropdown shows a list of fields: alt_names, # cdh_id, code2, code3, comments, country, country_5, fips_code, and fips_country_n. At the bottom, there are three buttons: 'VALIDATE & SAVE' (with a mouse cursor), 'CANCEL', and 'SAVE'.

11. Click REFRESH VISUAL.
 12. Change the name of the visual to Regional Populations.

13. Click SAVE.

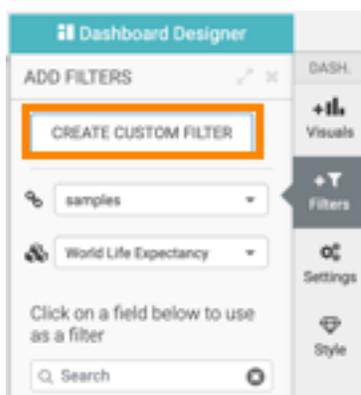
Creating filters to control optional measures

Before you begin

Before starting this work flow, complete the steps in [Creating visuals with optional measures](#) on page 8.

Procedure

1. In the dashboard, click the Filters tab.
2. Click CREATE CUSTOM FILTER to create a second dashboard filter.



This creates a new filter in the filter area of the application, and opens the Settings modal window for that filter.

3. Click the Values tab and enter the following:
 - Under Title, enter Display Measures.
 - Under Output Parameter, enter mes. Note that this is the parameter from [Creating visuals with optional measures](#) on page 8.
 - Under Specified values, enter the following two rows:
 - Value: life_expectancy, Label: Life Expectancy
 - Value: gdp_per_capita, Label: GDP per Capita

Settings ✕

Values

[Data](#)
[Display Settings](#)
[Scope](#)
[Custom Style](#)

Title

Display Measures

Output Parameter

mes

Specified values

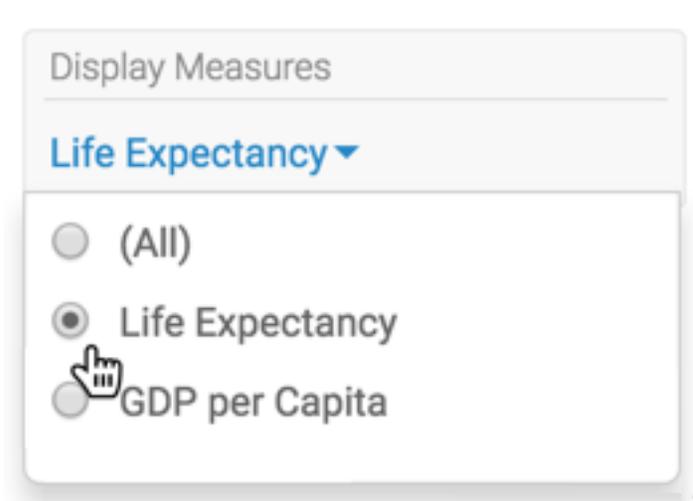
Value	Label	
life_expectancy	Life Expectancy	🗑️
gdp_per_capita	GDP per Capita	🗑️
<i>Click to add a new row</i>		

CANCEL

APPLY

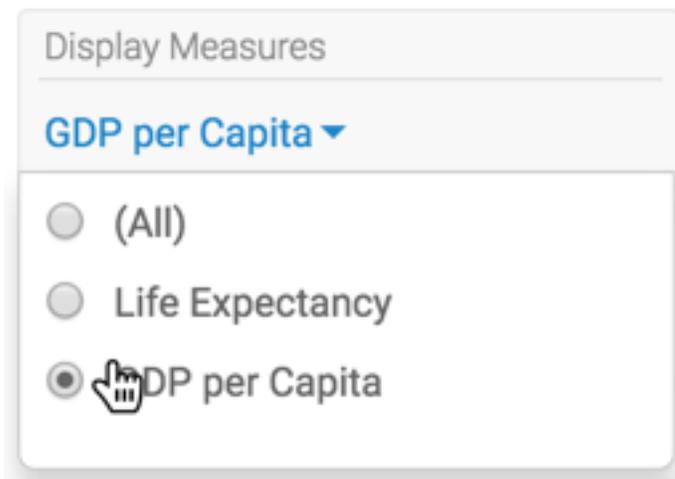
4. In the Settings modal window, switch to the Display Settings tab.
5. Select Allow only one item to be selected at a time
6. Select Include an option for 'All'.
7. Click APPLY.
8. Name and save the dashboard.
9. Switch to application View mode and select World Regional Populations.
10. In the Display Country Details filter, select Country.

11. In the Display Measures filter, select Life Expectancy.



Note that the table now has a new column, `life_expectancy`.

12. To change the measure that appears in the visual, select GDP per Capita in the Display Measures filter.



Note that the additional column is now titled `gdp_per_capita`, not `life_expectancy`.

To check the parameters of the dashboard, hover the pointer over the Filter icon at the top right corner. They are:

- `dim: country`
- `dim.alias: Country`
- `mes: gdp_per_capita`

You can scroll down to see the `mes.alias: GDP per Capita` parameter.

13. You can easily navigate between the permutations of filter outputs you create by using filter navigation controls at the top right corner.

Creating visuals with variable dimensions

Procedure

1. Open a new dashboard.

2. Click New Visual.
3. Select the US County Population dataset in the Data menu.
4. Select the Bar Chart visual type in the Visuals menu.
5. Populate the shelves of the visual:
 - From Dimension, select and move Sname field to the X Axis shelf.
 - From Measures, select and move Tot Pop field to the Y Axis shelf.
 - On the Y Axis shelf, change the aggregation of the Tot Pop field from sum(Tot Pop) to avg(Tot Pop): select Tot Pop field, chose the Aggregates menu, and change the aggregate from Sum to Average.
 - On the Y Axis shelf, click Tot Pop, and under the FIELD PROPERTIES menu select Order, and choose Ascending.

The screenshot displays the Cloudera Data Visualization interface. On the left, the 'VISUALS' panel shows a 'Bars' chart type. The X Axis shelf contains the 'Sname' field, and the Y Axis shelf contains the 'sum(Tot Pop)' field. The 'FIELD PROPERTIES' panel is open on the right, showing the 'Order and Top K' section with 'Ascending' selected. A green arrow points from the 'sum(Tot Pop)' field in the Y Axis shelf to the 'Ascending' option in the 'Order and Top K' section.

VISUALS

Bars

* X Axis

A Sname

* Y Axis

sum(Tot Pop)

Colors

Tooltips

Drill

FIELD PROPERTIES

Aggregates ●

Date/Time Functions

Text Functions

Analytic Functions

Change Type

Order and Top K ●

Descending

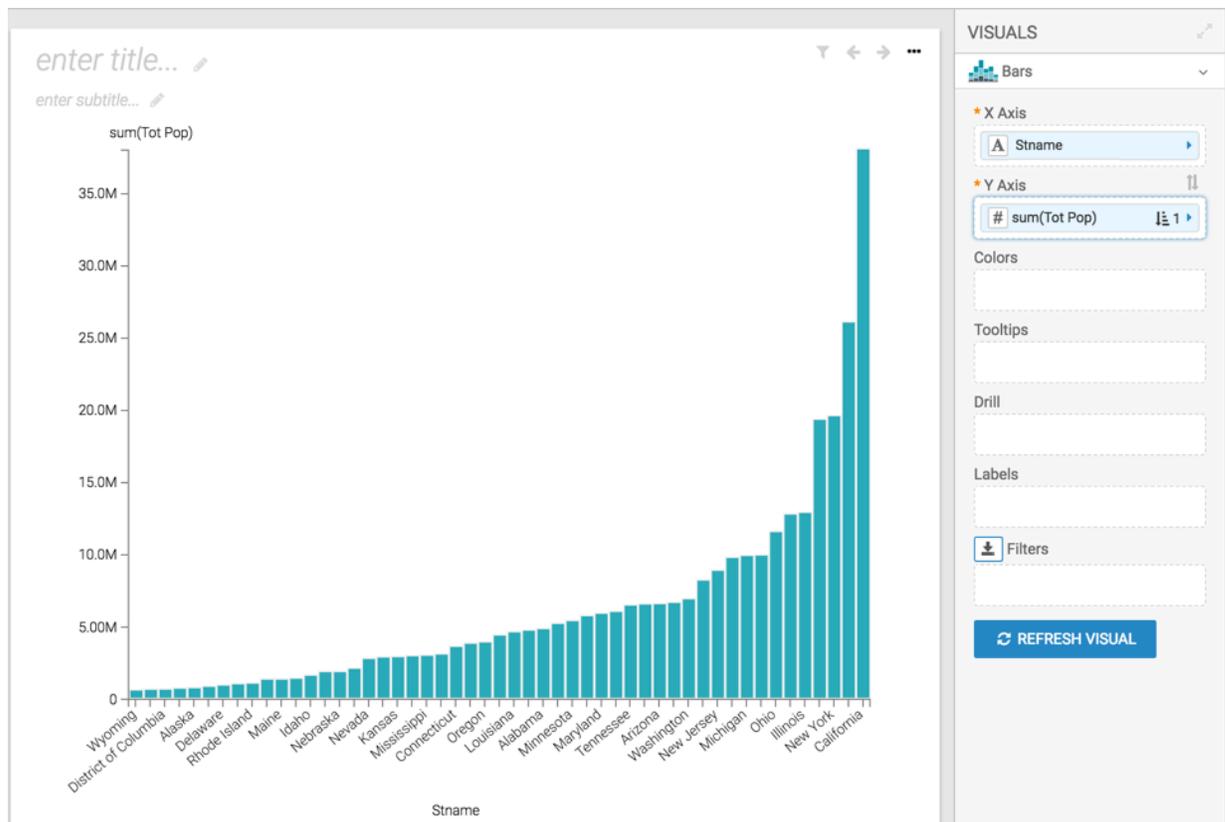
✓ Ascending

Top K: eg. 100

Bottom K: eg. 100

[] Enter/Edit Expression

- Click REFRESH VISUAL to see the basic set up of the bar chart.



- On the X Axis shelf, click Sname field.
- In the FIELD PROPERTIES menu, select [] Enter/Edit Expression.

The screenshot shows the "FIELD PROPERTIES" menu in the Cloudera Data Visualization interface. The menu is open, and the "Enter/Edit Expression" option is highlighted. A green arrow points from the "Sname" field on the X Axis shelf to the "Enter/Edit Expression" option in the menu. The "VISUALS" panel on the left shows the "Bars" visualization type with "Sname" on the X Axis and "sum(Tot Pop)" on the Y Axis.

- In the Enter/Edit Expression modal window, change the text to the following expression: `<<dim:[Sname]>>`.

10. Click VALIDATE & SAVE.

Enter/Edit Expression ✕

<<dim:[Sname]>>

VALIDATE EXPRESSION
 Autocomplete on

All Functions

- abs
- acos
- add_months
- adddate
- AND
- appx_median
- ascii
- asin
- atan

All Fields

- # aa_female
- # aa_male
- # aac_female
- # aac_male
- # agegrp
- # ba_female
- # ba_male
- # bac_female
- # bac_male

VALIDATE & SAVE
CANCEL
SAVE

11. Change the name of the visual to Population by <<dim>>.

To have an informative title for the visual, you may add the parameter placeholders to it. The filter configured in [Creating filters to control variable dimensions](#) on page 15 supplies the required value.

12. Click SAVE.

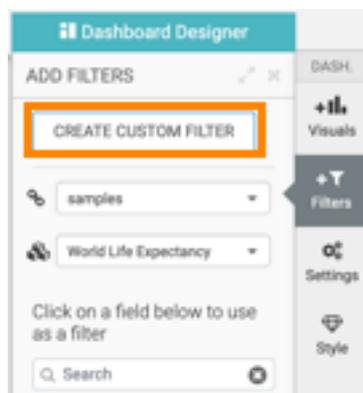
Creating filters to control variable dimensions

Before you begin

Before starting this work flow, complete the steps in [Creating visuals with variable dimensions](#) on page 12.

Procedure

1. In the dashboard, click the Filters tab.
2. Click CREATE CUSTOM FILTER.



This creates a new filter in the filter area of the application, and opens the Settings modal window for that filter.

3. Switch to the Values tab and enter the following:

- Under Title, enter Dimension Level.
- Under Output Parameter, enter dim. Note that this is the parameter from [Creating visuals with variable dimensions](#) on page 12.
- Under Specified values, enter the following two rows:
 - Value: stname, Label: State
 - Value: ctyname, Label: County

Settings ×

Values

[Data](#)
[Display Settings](#)
[Scope](#)
[Custom Style](#)

Title

Dimension Level

Output Parameter

dim

Specified values

Value	Label	
Sname	State	🗑️
Ctyname	County	🗑️
<i>Click to add a new row</i>		

CANCEL

APPLY

- Switch to the Display Settings tab and select the Allow only one item to be selected option.

Settings
✕

Values
Data
Display Settings
Scope
Custom Style

Display a textbox parameter ⓘ
 Width of this filter (in px)

 Allow the user to add values to the filter ⓘ
 Allow only one item to be selected at a time
 Select values from a dropdown menu ⓘ
 Include an option for 'All'
 Emit distinct parameters for each selected item
 Hide filter if no input data ⓘ
 Remember previous selections when searching ⓘ
 Apply all changes to a multi-select list at the same time ⓘ

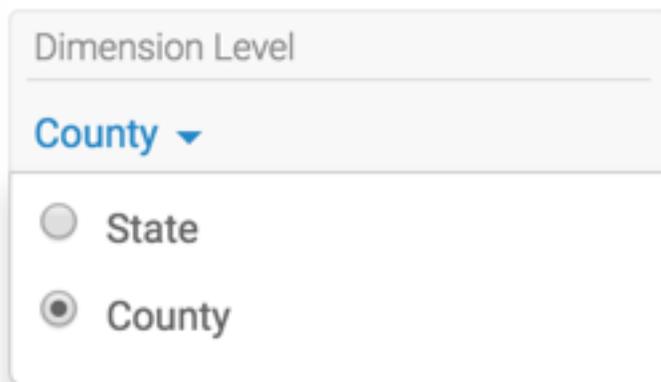
CANCEL
APPLY

- Click APPLY.
- Name and save the dashboard.
- Switch to application View mode.

Note that the default choice, Sname, displays both on the horizontal axis, and in the title of the visual.

To check the parameters of the dashboard, hover the pointer over the Filter icon at the top right corner. They are dim: Sname and dim.alias: State.

- In the Dimension Level filter, select County.



Note that now the title of the graph and the axis changed to use Ctyname.

You may also notice that your graph does not appear to have any bars. In this particular dataset, there are large differences among populations of various counties; a great majority has populations under one million, and a select few represent urban areas with extremely dense population.

In the application, scroll to the extreme right of the visual to see the graph.

If you want to check the status of parameters on this dashboard, hover the pointer over the Filter icon at the top right corner, and notice that they changed to dim: Ctyname and dim.alias: County.

Creating visuals with variable measures

About this task

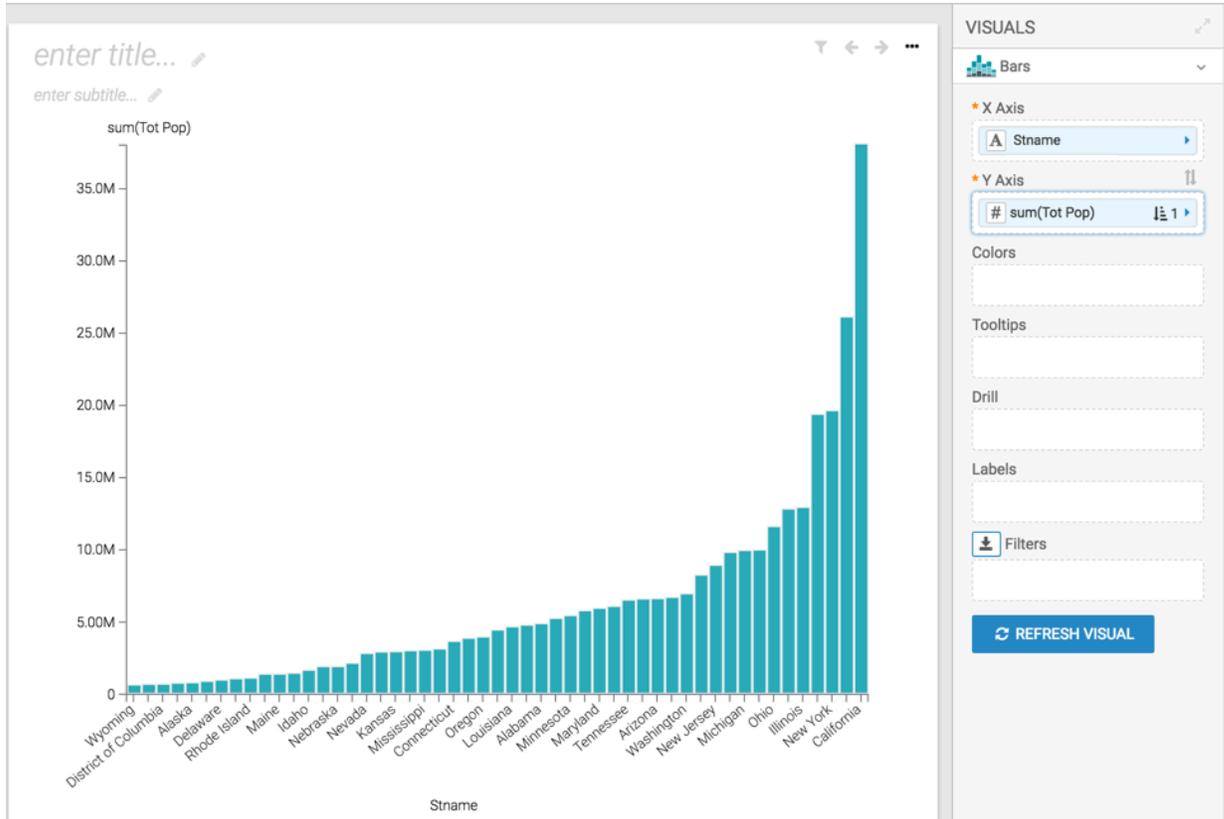
You may choose to duplicate the dashboard that you created earlier according to the instructions in [Creating visuals with variable dimensions](#) on page 12. In this case, open the visual, and jump to [Step 7](#) in this workflow.

Procedure

1. In the dashboard, click New Visual.
2. Select the US County Population dataset in the Data menu.
3. Select the Bar Chart visual type in the Visuals menu
4. Populate the shelves of the visual:
 - From Dimension, select and move Sname field to the X Axis shelf.
 - From Measures, select and move Tot Pop field to the Y Axis shelf.
 - On the Y Axis shelf, change the aggregation of the Tot Pop field from sum(Tot Pop) to avg(Tot Pop): select Tot Pop field, chose the Aggregates menu, and change the aggregate from Sum to Average.
 - On the Y Axis shelf, click Tot Pop, and under the FIELD PROPERTIES menu select Order, and choose Ascending.

The screenshot displays the Cloudera Data Visualization interface. On the left, the 'VISUALS' panel shows a Bar Chart visual. The X Axis is labeled 'Sname' and the Y Axis is labeled 'sum(Tot Pop)'. The 'FIELD PROPERTIES' panel is open on the right, showing the 'Order and Top K' section. The 'Ascending' option is selected, indicated by a checkmark and a mouse cursor. The 'Descending' option is also visible. Below the 'Order and Top K' section, there are input fields for 'Top K' and 'Bottom K', both set to 'eg. 100'. At the bottom of the 'FIELD PROPERTIES' panel, there is a button labeled '[] Enter/Edit Expression'.

- Click REFRESH VISUAL to see the basic set up of the bar chart.



- On the Y Axis shelf, click the sum(Tot Pop) field.
- In the FIELD PROPERTIES menu, select [] Enter/Edit Expression.

The image shows the 'FIELD PROPERTIES' menu for the 'sum(Tot Pop)' field. The menu is open, showing various options: Aggregates, Date/Time Functions, Text Functions, Analytic Functions, Change Type, Order and Top K, and '[] Enter/Edit Expression'. A green arrow points from the 'sum(Tot Pop)' field in the 'VISUALS' panel to the '[] Enter/Edit Expression' option in the 'FIELD PROPERTIES' menu.

- In the Enter/Edit Expression modal window, change the text to the following expression: `<<agg:sum([Tot Pop])>>`.

- Click VALIDATE & SAVE.

- Change the name of the visual to Population by `<<dim>>` and `<<agg>>`.

To have an informative title for the visual, you may add the parameter placeholders to it. The filters configured in [Creating filters to control variable dimensions](#) on page 15 and [Creating filters to control variable measures](#) on page 20 supply the required values for `<<dim>>` and `<<agg>>`.

- Click SAVE.

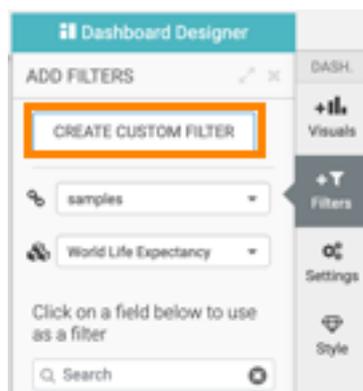
Creating filters to control variable measures

Before you begin

Before starting this work flow, complete the steps in [Creating visuals with variable measures](#) on page 18.

Procedure

- In the dashboard, click the Filters tab.
- Click CREATE CUSTOM FILTER.



- This creates a new filter in the filter area of the application, and opens the Settings modal window for that filter.

4. Switch to Values tab and enter the following:

- Under Title, enter Population Type.
- Under Output Parameter, enter agg. Note that this is the parameter from [Creating visuals with variable measures](#) on page 18.
- Under Specified values, enter the following two rows:
 - Value: sum(tot_pop), Label: Total Population
 - Value: sum(tot_male), Label: Total Male Population
 - Value: sum(tot_female), Label: Total Female Population

Note that these are the original field names in the source table.

Settings
✕

Values

Data

Display Settings

Scope

Custom Style

Title

Population Type

Output Parameter

agg

Specified values

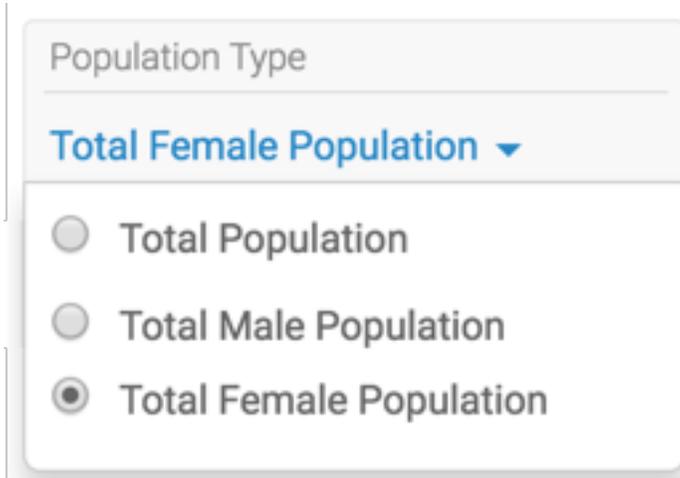
Value	Label	
sum(tot_pop)	Total Population	✕
sum(tot_male)	Total Male Population	✕
sum(tot_female)	Total Female Population	✕
<i>Click to add a new row</i>		

CANCEL

APPLY

5. Switch to the Display Settings tab and select the options Allow only one item to be selected at a time.
6. Click APPLY.
7. Save the dashboard.
8. Switch to dashboard View mode.

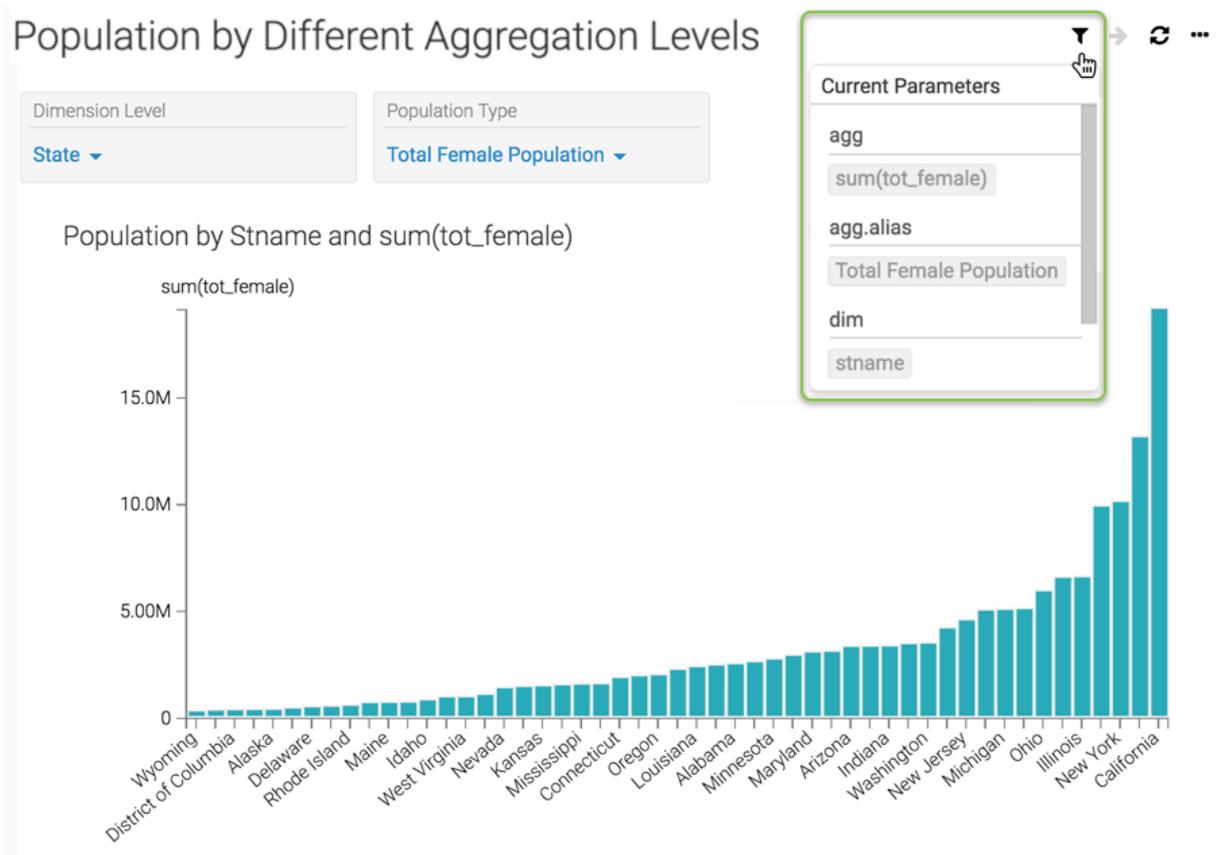
9. In the Population Type filter, select Total Female Population.



Note that the title of the graph and the vertical axis changed to include sum(tot_female).

10. To check the parameters of the dashboard, hover the pointer over the Filter icon at the top right corner.

They are agg: sum(tot_female), agg.alias: Total Female Population and dim: Sname. You can scroll down to see the dim.alias: State parameter.



Results

You can now operate the two filters, Dimension Level and Population Type, independently.

You can also navigate between the permutations of filter outputs you create by using filter navigation controls at the top right corner.