

## Customizing Field Properties

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## Adding and removing aggregates

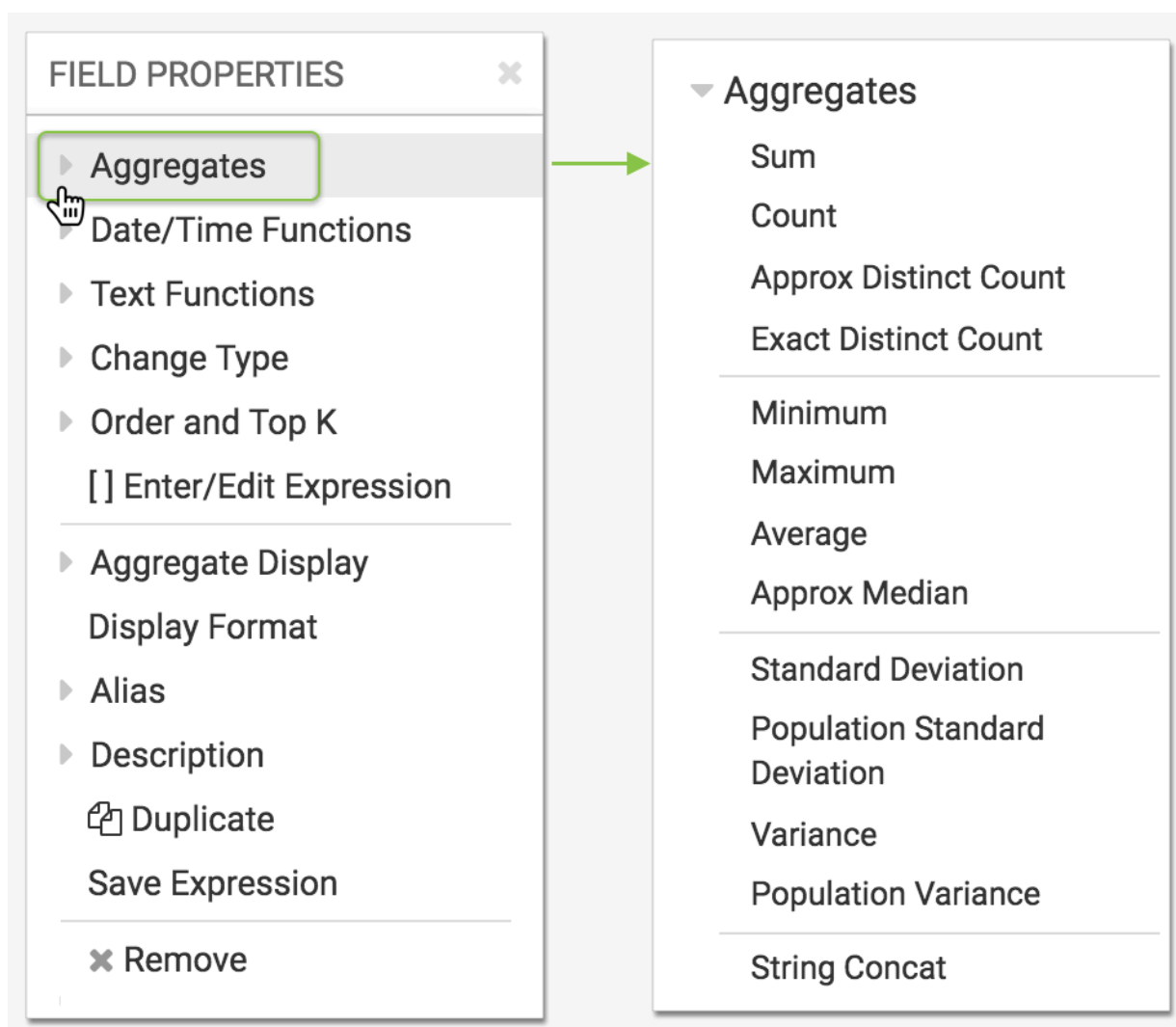
In visuals, when you add a field to one of the shelves in Edit mode, you can also configure the properties for that field. Aggregate functions calculate a return value across all the items in a result set. Cloudera Data Visualization provides optional aggregation operations on data values, such as summation, string concatenation, and common statistical measurements of data.

### About this task

To add an aggregate function or change the selection for aggregates, follow these steps:

### Procedure

1. Click the field you plan to modify, to open the Field Properties menu.
2. Under Field Properties, click to expand the Aggregates menu.



3. From the Aggregates menu, select one of the options.

The available aggregation functions depend on the connection type and data type. A check mark precedes the selected aggregate function.

4. Click Refresh Visual to see the changes.

Fields that use an aggregation function have a green dot on the Aggregates menu.

To remove an aggregate from a field, click the selected aggregate function. It removes the check mark.

## Customizing date/time functions

Cloudera Data Visualization has several built-in transformations for date and time that can be applied before rendering visual charts.

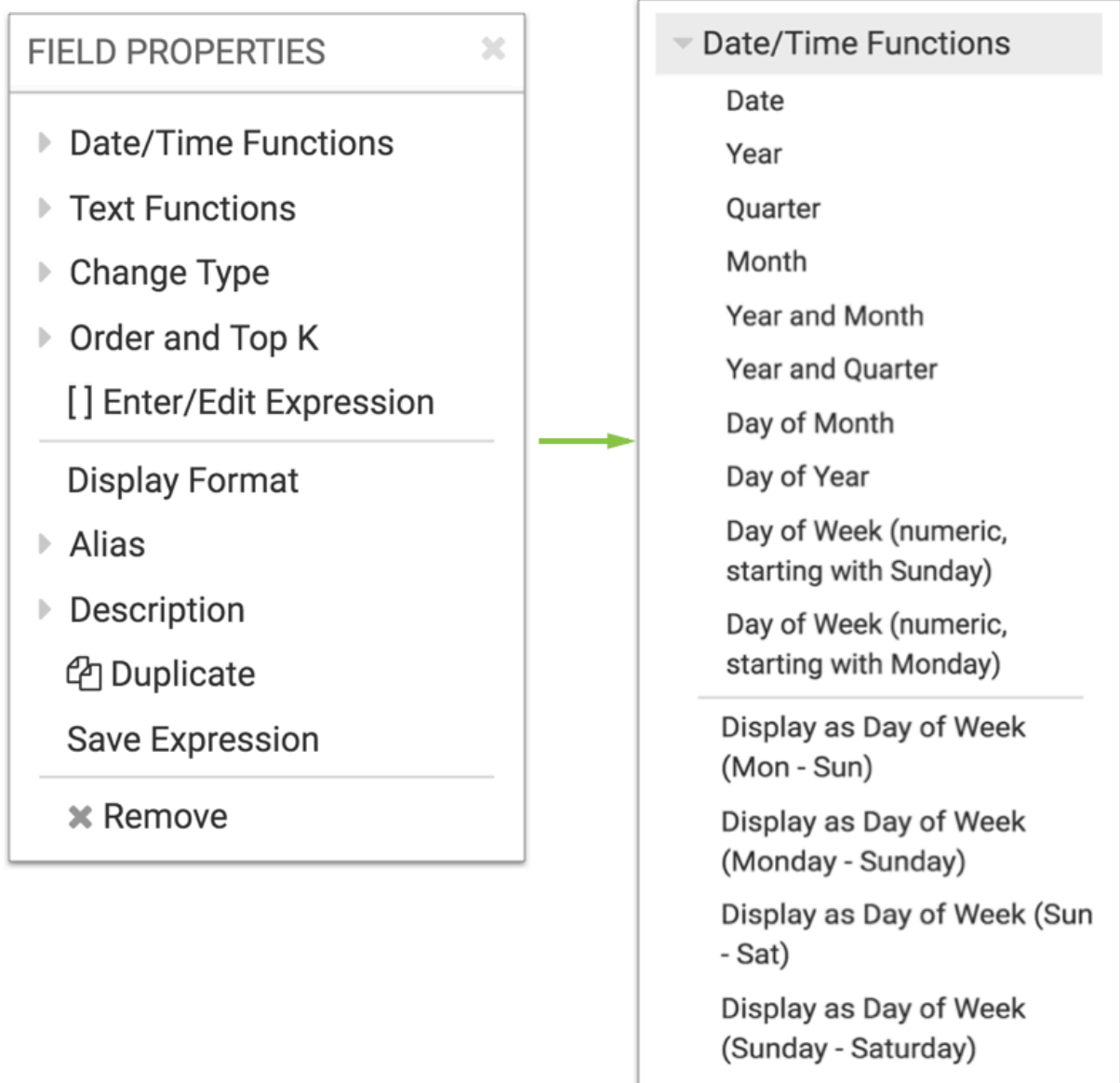
### About this task

To use a date and time functions, follow these steps:

### Procedure

1. Click the field you plan to modify, to open the Field Properties menu.

2. Under Field Properties, click to expand the Date/Time Functions menu.



3. From the Date/Time Functions menu, select one of the options.

- Date
- Year
- Month
- Year and Month
- Year and Quarter
- Day of Month
- Day of Year
- Day of Week (numeric, starting with Sunday)
- Day of Week (numeric, starting with Monday)
- Display as Day of Week (Mon - Sun)
- Display as Day of Week (Monday - Sunday)
- Display as Day of Week (Sun - Sat)
- Display as Day of Week (Sunday - Saturday)

A check mark precedes the selected aggregate function.

4. Click Refresh Visual to see the changes.

## Adjusting text display options

Cloudera Data Visualization enables you to adjust the text display options for field values before rendering visuals.

### About this task

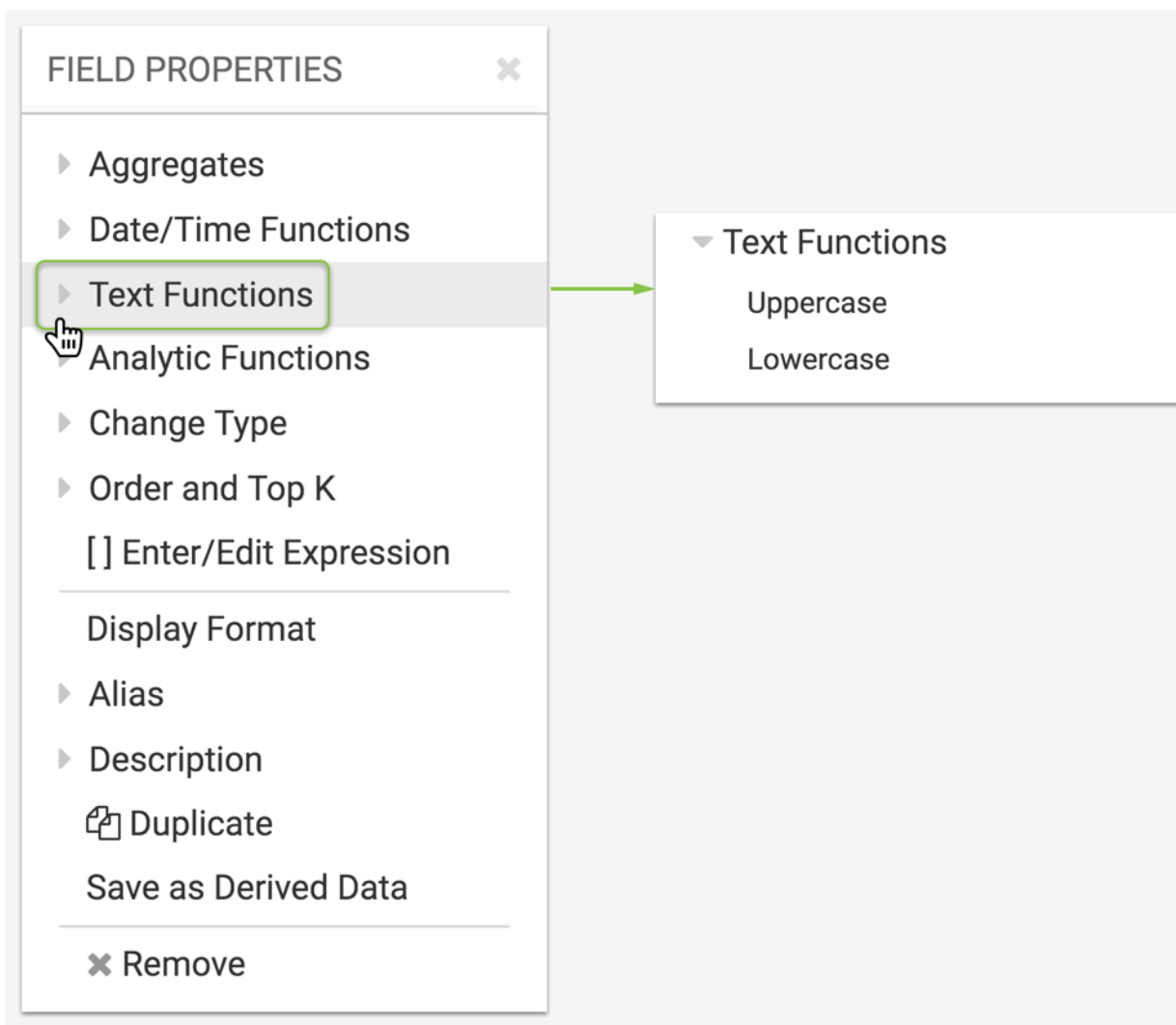
To use text functions, follow these steps:

### Procedure

1. Click the field you plan to modify, to open the Field Properties menu.



2. Under Field Properties, click to expand the Text Functions menu.



3. From the Text Functions menu, select one of the options.
  - Uppercase converts text to upper case; returns the value of upper([field])
  - Lowercase converts text to lower case; returns the value of lower([field]).

A check mark precedes the selected aggregate function.

4. Click Refresh Visual to see the changes.

To the text mask from a field, click on the selected mask. It removes the check mark.

## Customizing analytic functions

Cloudera Data Visualization uses analytic functions in advanced analysis. You can move the app menu from the top to the left of the App Designer interface.

See the full description of analytic functions in the *Advanced Analysis* section.

## Changing field type

Cloudera Data Visualization visuals enable you to change the type of the field as a cast operation of the form `cast(expr as type)`, directly on the fields of the visual. Similarly, you can ensure that a field on a Geo shelf can be used even if it does not automatically satisfy Geo naming conventions.

### About this task

To change the field type, follow these steps:

### Procedure

1. Click the field you plan to modify, to open the FIELD PROPERTIES menu.

2. Under FIELD PROPERTIES, click to expand the Change Type menu.

Dashboard Designer

FIELD PROPERTIES

► Date/Time Functions

► Text Functions

▼ Change Type

Timestamp

String

Integer

Real

Boolean

Geo Types:

Latitude

Longitude

Country

State

County

DMA

ZIP Code/Postal Code

Shape ID

► Order and Top K

[ ] Enter/Edit Expression

Display Format

► Alias ●

► Description

📄 Duplicate

Save Expression

✕ Remove

DASH.

+ Visuals

+ Filters

⚙ Settings

💎 Style

VISUAL

🏗 Build

⚙ Settings

💎 Style

VISUALS

Map

1234 LABEL

WORD CLOUD

ACTION

SQL

\* Geo

Country

UN Region

Color

Years [limit 15]

Size

drag fields to add here

Drill

drag fields to add here

Tooltips

drag fields to add here

X Trellis

drag fields to add here

Y Trellis

drag fields to add here

Filters

un\_region

12

- From the Change Type menu, select one of the options.

#### Timestamp

Timestamp casts data to `TIMESTAMP`, `cast([field] as TIMESTAMP)` of the form year-month-Date hour:minute:second.

For example: 2015-06-09 14:15:45.

#### String

String casts data as `STRING`, `cast([field]as STRING)`.

#### Integer

Integer casts data to `BIGINT`, `cast([field]as BIGINT)`.

#### Real

Real casts data to `REAL`, `cast([field]as REAL)`.



**Note:** `REAL` is an alias for `DOUBLE`.

#### Boolean

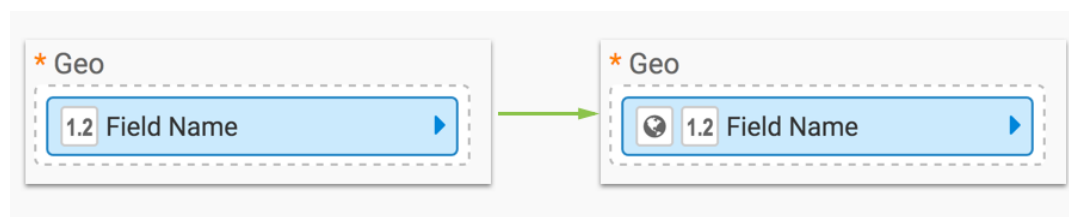
Boolean casts data to `BOOLEAN`, `cast([field]as BOOLEAN)`.

#### Geo Types

Geo Types is a grouping of types that make the field usable on the Geo shelf of Map and Interactive Map visuals.

- Latitude makes the field useable as a latitude measurement
- Longitude makes the field useable as a longitude measurement
- Country makes the field useable as a country region
- State makes the field useable as a state region, for United States of America
- County makes the field useable as a county region, for United States of America
- DMA makes the field useable as a Nielsen Designated Market Area Region, for United States of America
- ZIP Code/Postal Code makes the field useable as a defined zipcode region, for United States of America or postal code for other countries
- Shape ID makes the field useable as a shape ID

Note that after a field becomes useable for geo visuals, it is marked on the shelf by the (globe) icon.



Alternatively, a user with sufficient privileges should declare the field a Geo Type at the level of the dataset. See *Specifying Geographic Fields*.

- Click **REFRESH VISUAL** to see the changes.

Fields that carry a type change have a green dot on the Change Type menu.

To remove a type cast from a field, click on the selected type cast. It removes the check mark.

#### Related Information

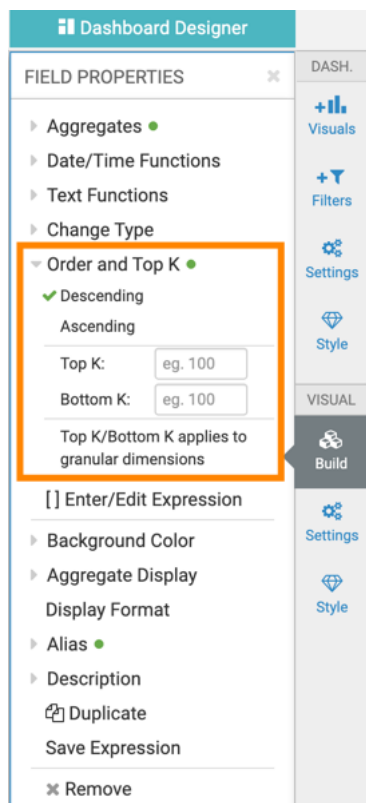
[Specifying geographic fields](#)

## Customizing order and top K

Sorting is one of the most common tools for data management. In Cloudera Data Visualization, you can sort your data in ascending or descending order by implementing the 'ORDER BY' clause on the query. You can also choose to limit the number of records displayed to examine the most significant entries. This can be implemented through the 'LIMIT' clause.

### Procedure

1. Click the field you want to modify to open the Field Properties menu.
2. Click Order and Top K to expand the menu.



3. Review the following options and configure the sorting and limiting according to your needs:

- Sorting

**Descending**

This option sorts [field] in descending order.

**Ascending**

This option sorts [field] in ascending order.

You can turn on sorting if you click Ascending or Descending. A checkmark precedes the selected option. If you want to clear the sort, click the selected option again.

- Limiting

**Top K**

You can specify the number of records that you want to display, starting from the top of the specified sort.



**Note:** This setting overrides the Limit shelf setting. So, if the value of Limit is 100 and Top K is set to 50, the query returns 50 rows.

**Bottom K**

You can specify the number of values that you want to display, starting from the bottom of the specified sort.



**Note:** This setting overrides the Limit shelf setting. If the value of Limit is 100 and Bottom K is set to 50, the query returns 50 rows.

Additionally, you can also apply Top K/Bottom K to granular dimensions.

4. Click REFRESH VISUAL to update your visual.

## Customizing enter/edit expressions

Cloudera Data Visualization provides you with an option to manually adjust expressions that modify the field values of the visual, the Enter /Edit Expression interface.

### About this task

**developer:**

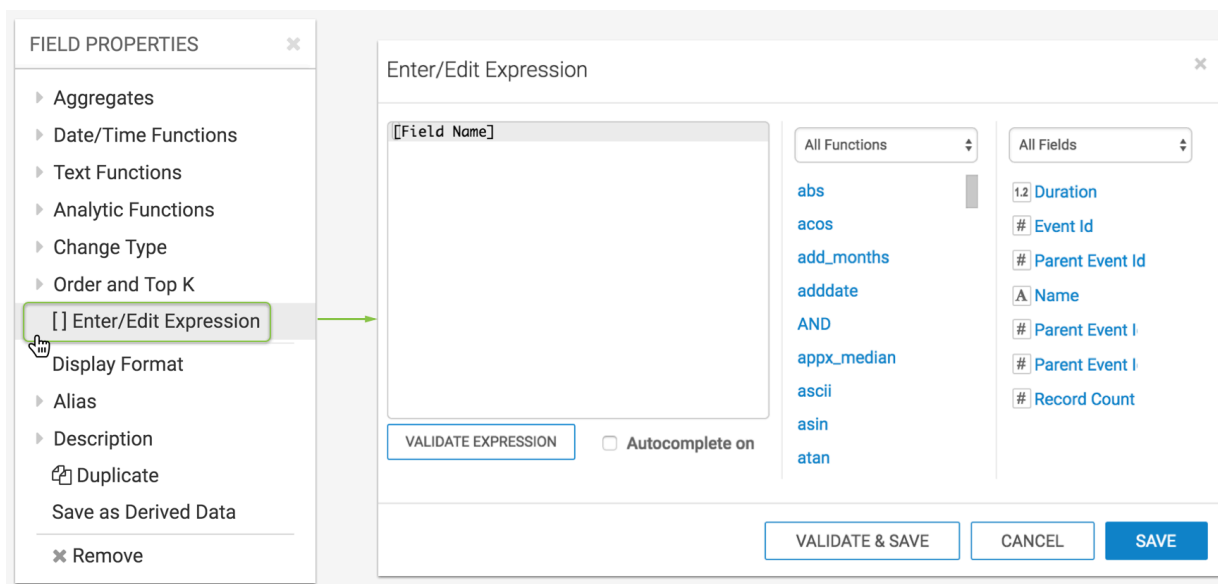
- Ensure that column names in the expressions are bracketed, like this: [field].
- When manually editing expressions, you can apply changes that are equivalent to all Field Properties transformations except Order and Top K and Display Format. Entering these changes causes an error.

To set the customize expressions, follow these steps.

### Procedure

1. Click the field you plan to modify, to open the Field Properties menu.

- Under Field Properties, click to expand the [ ] Enter/Edit Expression menu to open the Expression Editor.



- In the Enter/Edit Expression editor, change the expression.

See *Simple Alias expression* and *CASE expression* examples for demonstration of some of the varied expressions you can build using the expression editor.

- a.** Expression Text: Enter/modify the expression directly in the text field.
- b.** Autocomplete: Click this field to turn expression autocomplete on or off.
- c.** Functions: By default, all available functions show. Scroll down to find a specific function, and click it to add it to the Expression Text field. Note the location of the cursor.

Alternatively, click the All Functions menu to see the function groupings and select the functions from these. Available expression groupings include Aggregate, Conditional, Mathematical, Miscellaneous, String, Filter, and Date and Time.

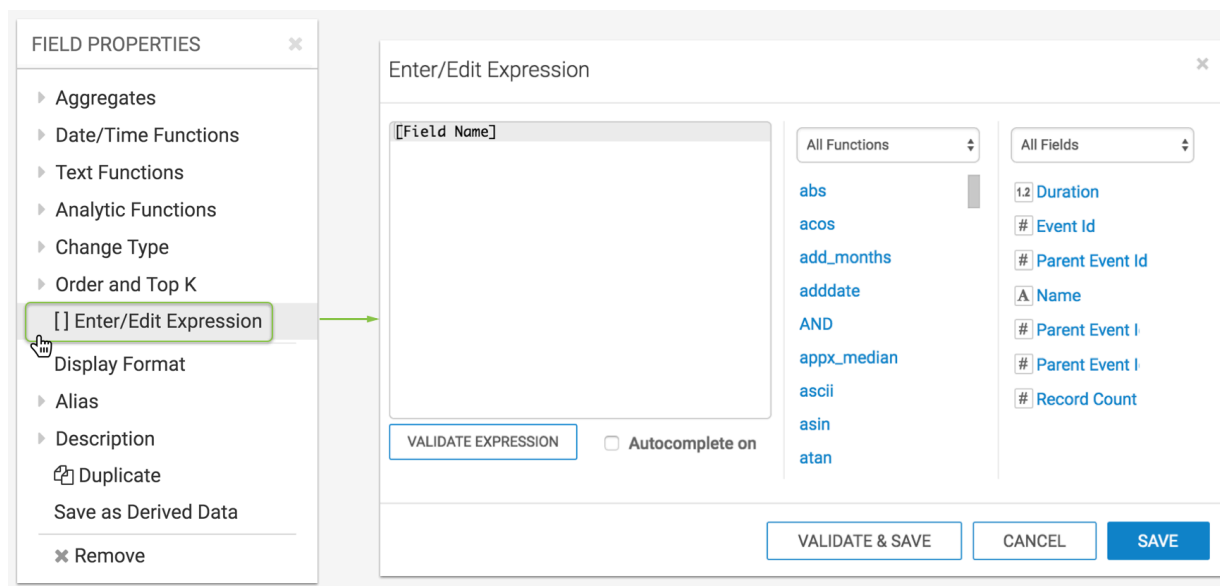
Note that different connections have their own SQL syntax, and therefore a different catalog of functions.

- d.** All Fields: By default, all available fields show. Scroll down to find a specific field, and click it to add it to the Expression Text field. Note the location of the cursor.

Alternatively, click the All Fields menu to see the Measures and Dimensions groupings, and select the fields from these.



#### 4. Validate Expression: Validate the expression that you build.



#### 5. Click Save.

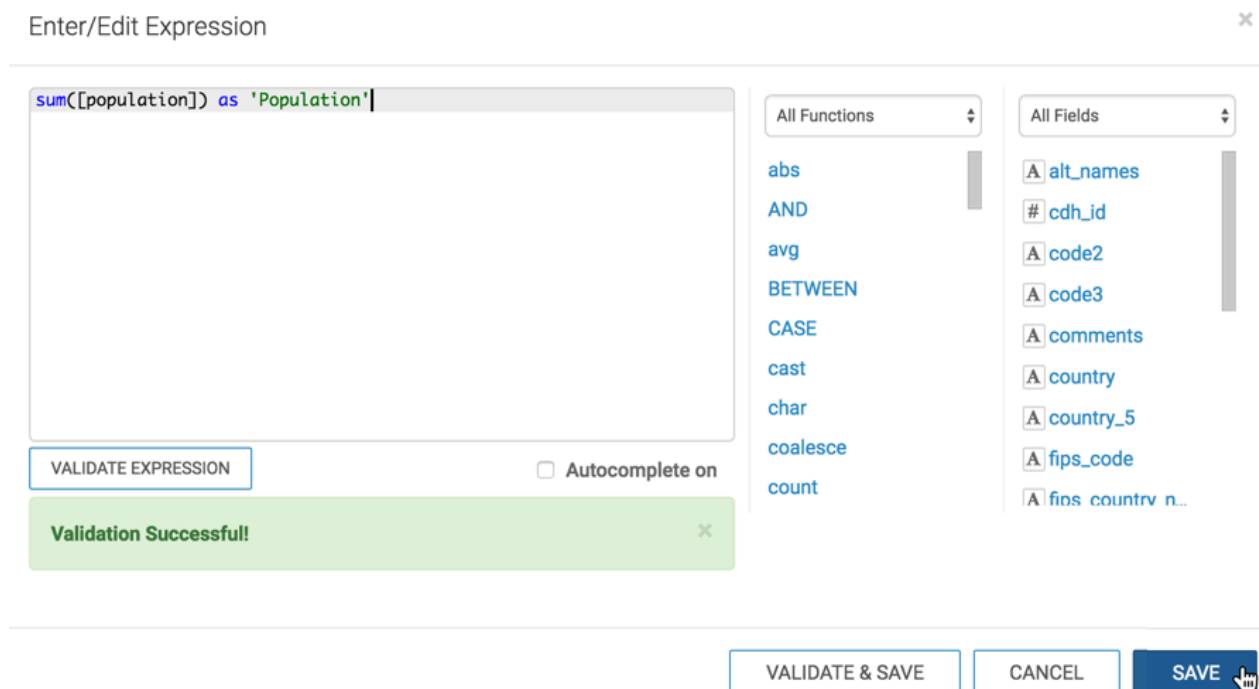
#### 6. Click Refresh Visual.

### Simple Alias expression

You can add an alias to the expression simply by typing it in the text field:

```
sum([population]) as 'Population'
```

Remember to Validate Expression and click Save.



After clicking Refresh Visual, you will see a change similar to the one in the following image:

un_subregion	country	sum(population)		un_subregion	country	Population
Northern Africa	Algeria	35,468,208		Northern Africa	Algeria	35,468,208
Northern Africa	Egypt	81,121,080		Northern Africa	Egypt	81,121,080
Northern Africa	Libya	6,355,112	→	Northern Africa	Libya	6,355,112
Northern Africa	Morocco	31,951,412		Northern Africa	Morocco	31,951,412
Northern Africa	Sudan	34,136,520		Northern Africa	Sudan	34,136,520
Northern Africa	Tunisia	10,480,934		Northern Africa	Tunisia	10,480,934
Northern Africa	Western Sahara	530,500		Northern Africa	Western Sahara	530,500

### CASE expression

You can add a CASE expression to categorize the values, by selecting CASE in the functions area, and using autocomplete. The expression in this example follows; if you paste it into the editor, remove hard line returns:

```
CASE WHEN sum([population])<1000000 THEN 'very low'
      WHEN (sum([population])<1000000 and sum([population])>=1000000) THEN 'low'
      WHEN (sum([population])<2000000 and sum([population])>=3000000) THEN 'medium'
      WHEN (sum([population])<4000000 and sum([population])>=3000000) THEN 'high'
      ELSE 'very high'
END
as 'Population'
```

Remember to validate the expression and click Save.

Enter/Edit Expression ×

```
CASE WHEN sum([population])<1000000 THEN 'very low' WHEN (sum
([population])<1000000 and sum([population])>=1000000) THEN
'low' WHEN (sum([population])<2000000 and sum([population]
)>=3000000) THEN 'medium' WHEN (sum([population])<4000000 and
sum([population])>=3000000) THEN 'high' ELSE 'very high' END as
'Population'
```

VALIDATE EXPRESSION

Autocomplete on

Validation Successful! ×

All Functions

abs  
AND  
avg  
BETWEEN  
CASE  
cast  
char  
coalesce  
count

All Fields


alt\_names  
# cdh\_id  
code2  
code3  
comments  
country  
country\_5  
fips\_code  
fips\_country\_n...

VALIDATE & SAVE

CANCEL

SAVE

After clicking Refresh Visual, you will see a change similar to the one in the following image:



un_subregion	country	Population
Northern Africa	Algeria	35,468,208
Northern Africa	Egypt	81,121,080
Northern Africa	Libya	6,355,112
Northern Africa	Morocco	31,951,412
Northern Africa	Sudan	34,136,520
Northern Africa	Tunisia	10,480,934
Northern Africa	Western Sahara	530,500

un_subregion	country	Population
Northern Africa	Algeria	medium
Northern Africa	Egypt	very high
Northern Africa	Libya	low
Northern Africa	Morocco	medium
Northern Africa	Sudan	medium
Northern Africa	Tunisia	low
Northern Africa	Western Sahara	low

## Customizing calculated display

Cloudera Data Visualizationn allows you to display calculated functions in several ways: as is, cumulative (ascending or descending), and as difference (ascending and descending).

### About this task

To add the calculated display option for fields on measurement shelves, follow these steps:

### Procedure

1. Click the field you plan to modify to open the FIELD PROPERTIES menu.

2. Click Calculated Display to expand its menu.

Dashboard Designer

FIELD PROPERTIES

Aggregates

Date/Time Functions

Text Functions

Change Type

Order and Top K

[ ] Enter/Edit Expression

Background Color

Calculated Display

- Cumulative Sum(Ascending)
- Cumulative Sum(Descending)
- Cumulative Diff(Ascending)
- Cumulative Diff(Descending)
- Difference (Ascending)
- Difference (Descending)

Display Format

Alias

Description

Duplicate

Save Expression

Remove

VISUALS

Cross Tabulation

Column

- protein\_grams
- calories
- calories
- calories

Row

- manufacturer

Measures

- Calories
- Fat
- Fiber
- Potassium
- Protein
- Sodium
- Sugar
- Vitamins/Minerals

Tooltips

- Fat
- Fiber
- Potassium
- Protein
- Sodium
- Sugar
- Vitamins/Minerals

Filters

DASH.

Visuals

Filters

Settings

Style

VISUAL

Build

Settings

Style

21

3. From the Calculated Display menu, select one of the following options:

- Cumulative Sum (Ascending)
- Cumulative Sum (Descending)
- Cumulative Diff (Ascending)
- Cumulative Diff (Descending)
- Difference (Ascending)
- Difference (Descending)

A check mark precedes the selected calculated display option.

4. Click REFRESH VISUAL to see the changes.

## Enabling expansion

In cross tabulation visuals, you can enable expansion to display subtotal and combined total of the dimensions entered in the Row shelf.

### About this task

To enable expansion, follow these steps:

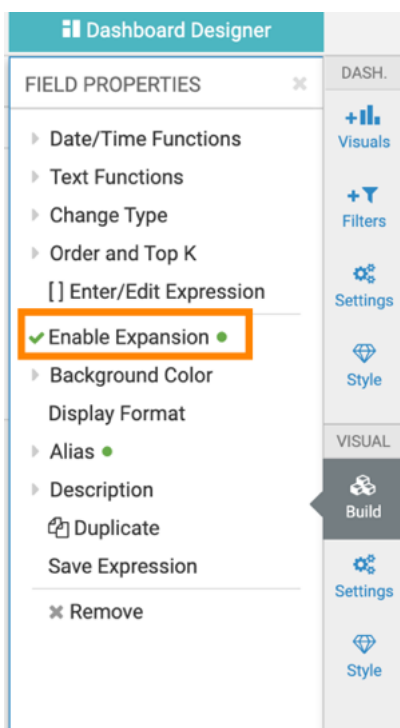
### Procedure

1. Click the field you plan to modify to open the Field Properties menu.
2. Under Field Properties, click Enable Expansion.

A green dot appears to the right of the option.



**Note:** The Enable Expansion option only appears on the Row shelf of cross tabulation visuals, to make the field usable in that context.



3. Click Refresh Visual to see the changes.

To disable expansion from a field, click the Enable Expansion option again; that removes the green dot.

To demonstrate how expansion works, see *Displaying totals with data expansion*.

### Related Information

[Displaying totals with data expansion](#)

## Customizing display format

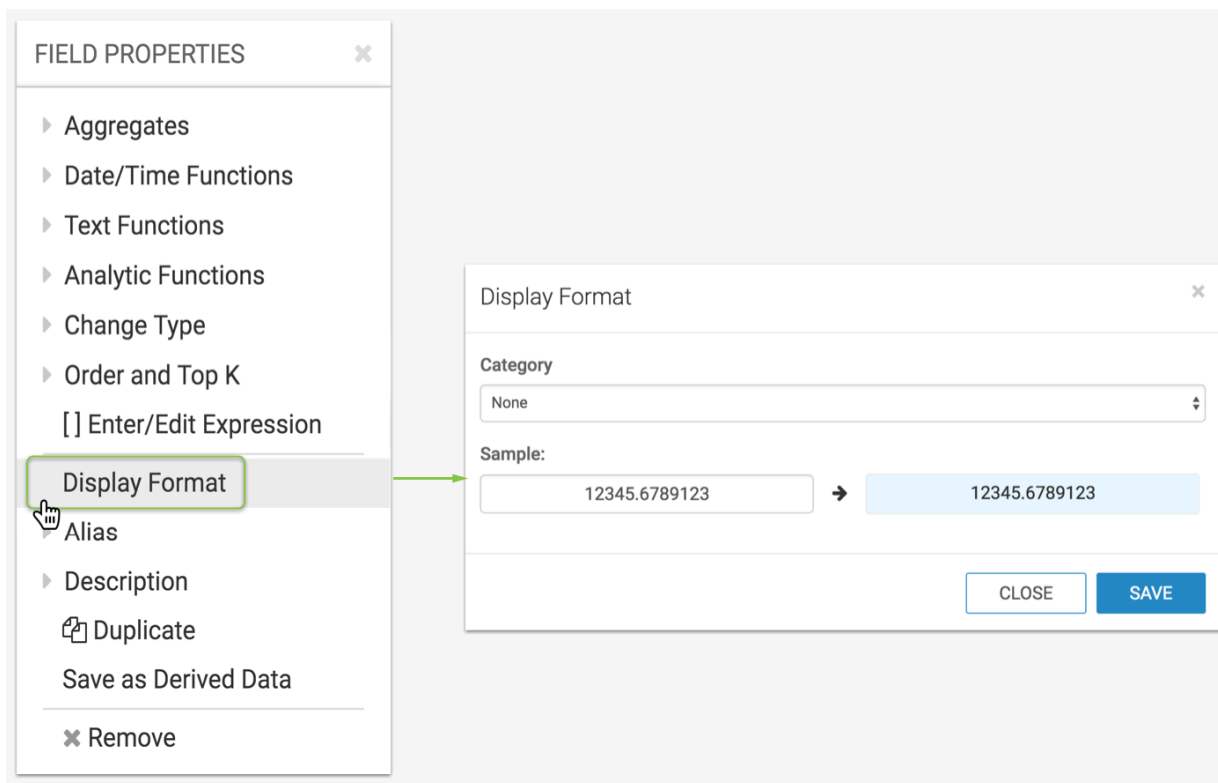
Cloudera Data Visualization has robust support for formatting the display of individual values.

### About this task

To change the display format of a field, follow these steps:

### Procedure

1. Click the field you plan to modify, to open the Field Properties menu.
2. Under Field Properties, click Display Format.



3. Change the display format to another category with specialized options:

By default, the Category for display format is None.

For a complete list of supported formats, see *Display Format Reference*.

## Real number display format

### About this task

Cloudera Data Visualization enables you to specify real number format for a numerical field.

The following steps demonstrate how to adjust the display format for a real number inside a visual: by setting a comma thousands separator and specifying the number of decimals.

### Procedure

1. Click the field you plan to modify, to open the Field Properties menu.
2. Under Field Properties, click Display Format.
3. In the Display Format interface, select Real Number from the Category menu.
4. Make adjustments as needed:
  - Under Decimal Places, change the number of decimals.
  - To show no decimals, clear the Decimal Places text box.
  - To show all decimals, select the All option.
  - Select or de-select the Use 1000 separator option.
5. Click Save.

Display Format

Category

Real Number

Example:

12345.6789123

→

12,345.6789123

Decimal Places

2

☒ All

☒ Use 1000 separator

CLOSE

SAVE

6. Click Refresh Visual.

## Integer display format

### About this task

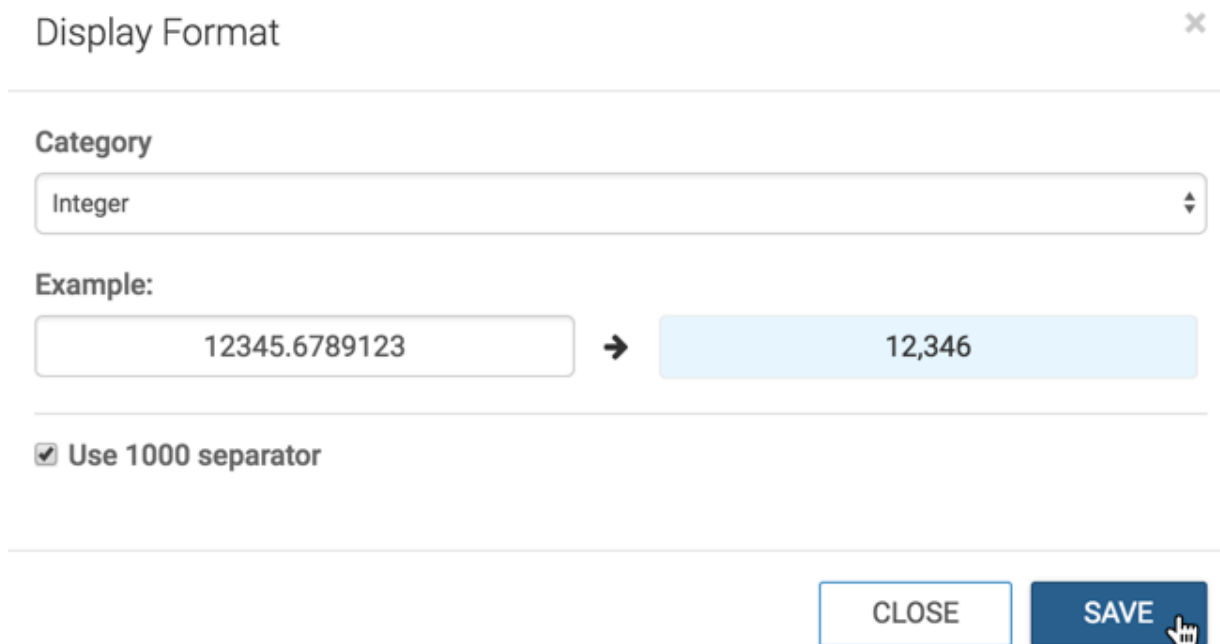
Cloudera Data Visualization enables you to specify integer format for a numerical field.



The following steps demonstrate how to adjust the display format for an integer inside a visual, by setting a comma thousands separator.

### Procedure

1. Click the field you plan to modify, to open the Field Properties menu.
2. Under Field Properties, click Display Format.
3. In the Display Format interface, select Integer from the Category menu.
4. Make adjustments as needed: Select or de-select the Use 1000 separator option.
5. Click Save.



6. Click Refresh Visual.

## Percentage display format

### About this task

Cloudera Data Visualization enables you to specify percentage format for a numerical field.



**Tip:** The % operation automatically multiplies the number by 100. If your data source reports percentages as whole numbers ('2%' is stored as '2' instead of '0.02'), you must divide by 100 first. Cloudera recommends that you make this adjustment globally, in the Dataset Attribute Definition interface, as described in *Changing Column Calculation*.

The following steps demonstrate how to properly use percentages, the % format option, with display format.

### Procedure

1. Click the field you plan to modify, to open the Field Properties menu.
2. Under Field Properties, click Display Format.
3. In the Display Format interface, select Percentage from the Category menu.

4. Make adjustments as needed:
  - Under Decimal Places, change the number of decimals.
  - To show no decimals, clear the Decimal Places text box.
  - To show all decimals, select the All option.
  - Select the Use 1000 separator option.
5. Click SAVE.

## Display Format

×

---

**Category**  

Percentage
⌵

**Example:**  

12345.6789123

→

1,234,567.89123%

---

**Decimal Places**  

2

☒ All

☒ Use 1000 separator

CLOSE

SAVE

6. Click REFRESH VISUAL.

### Percentage Display with Cereals Dataset

Here, we are using a basic table visual built in the Cereals dataset.

1. Start a Table visual on the Cereals dataset.
2. Populate the shelves from the available fields (Dimensions, Measures, and so on) in the Data menu.
  - Place cereal\_name on the Dimensions shelf.
  - Place calories, protein\_grams, fat\_grams, dietary\_fiber\_grams, complex carbohydrates\_grams, sugars\_grams, and sodium\_mg on the Measures shelf.
3. [Optional] Use Alias to rename the fields on the shelf to % Daily Calories, % Daily Protein, and so on.
4. Ensure that the aggregation function used by the measure is Average, for calculations in the next step. See *Aggregates*.
5. To calculate the percentage of daily recommended intake that a portion of each cereal represents, edit the expression of each field to divide by daily values.

**Table 1: Daily Intake Recommendations**

Calories	Protein	Fats	Fiber	Carbohydrates	Sugar	Sodium
2000 cal	50 grams	70 grams	30 grams	310 grams	90 grams	2300 milligrams

6. Set the display format for the re-calculated fields.

For all the fields on the Measures shelf, change the Display Format to Percentage, select a 2- decimal display, and click SAVE.

7. Click REFRESH VISUAL.

Note that the visual's display has the specified format, the % sign, and 2 decimal places.

cereal_name	% Daily Calories	% Daily Protein	% Daily Fats	% Daily Sodium	% Daily Fiber	% Daily Carbohydrates	% Daily Sugar
100%_Bran	3.50%	8.00%	1.43%	5.65%	33.33%	1.61%	6.67%
100%_Natural_Bran	6.00%	6.00%	7.14%	0.65%	6.67%	2.58%	8.89%
All-Bran	3.50%	8.00%	1.43%	11.30%	30.00%	2.26%	5.56%
All-Bran_with_Extra_Fiber	2.50%	8.00%	0.00%	6.09%	46.67%	2.58%	0.00%
Almond_Delight	5.50%	4.00%	2.86%	8.70%	3.33%	4.52%	8.89%
Apple_Cinnamon_Cheerios	5.50%	4.00%	2.86%	7.83%	0.00%	0.00%	11.11%
Apple_Jacks	5.50%	4.00%	0.00%	5.43%	3.33%	3.55%	15.56%
Basic_4	6.50%	6.00%	2.86%	9.13%	6.67%	5.81%	8.89%
Bran_Cheerios	4.50%	4.00%	1.43%	8.70%	13.33%	4.84%	6.67%
Bran_Flakes	4.50%	6.00%	0.00%	9.13%	16.67%	4.19%	5.56%

### Related Information

[Creating calculated fields](#)

## Scientific display format

### About this task

Cloudera Data Visualization enables you to specify scientific display format for a numerical field, both in exponential form, and using unit abbreviation.

Scientific number notation is fully supported by the Scientific category. The following steps demonstrate how to use this display format.

Cloudera Data Visualization offers two built-in options for Scientific formatting: Exponential, and Unit Abbreviation.

### Procedure

1. Click the field you plan to modify, to open the Field Properties menu.
2. Under Field Properties, click Display Format.
3. In the Display Format interface, select Scientific from the Category menu.
4. Make adjustments as needed:
  - Under Unit Notation, select either Exponential or Unit abbreviation.
  - Under Decimal Places, change the number of decimals.
  - To show no decimals, clear the Decimal Places text box.
  - To show all decimals, select the All option.

5. Click Save.

Display Format

Category

Scientific

Example:

12345.6789123

→

1.23456789123e+4

Unit Notation

☒ Exponential (e.g. 1.2e+3) ☐ Unit abbreviation (e.g. 1.2k)

Decimal Places

2

☒ All

CLOSE

SAVE


6. Click Refresh Visual.

### Scientific format with exponential notation

We are using the Encyclopedia of Starsdataset, based on a datafile.

1. Create a new table visual on the dataset.
2. Place the field proper\_name on the Dimensions shelf, and the field lightyears on the Measures shelf.
3. Change the Format Display for lightyears to Scientific.
4. Under Unit Notation, select Exponential, and click Save.
5. Click Refresh Visual.

6. Notice the change to the number format in column lightyears.



proper_name	lightyears
268 G. Cet	23.41897927
3C 273	326156
82 G. Eri	19.7109117
96 G. Psc	24.31460364
Acamar	161.2238031
Achernar	139.4424531
Acrux	321.9704401
Adhara	405.1627248
Albaldah	509.61875

proper_name	lightyears
268 G. Cet	2.34e+1
3C 273	3.26e+5
82 G. Eri	1.97e+1
96 G. Psc	2.43e+1
Acamar	1.61e+2
Achernar	1.39e+2
Acrux	3.22e+2
Adhara	4.05e+2
Albaldah	5.10e+2

### Scientific format with unit abbreviation

We are using the Encyclopedia of Starsdataset, based on a datafile.

1. Create a new table visual on the dataset.
2. Place the field proper\_name on the Dimensions shelf, and the following fields on the Measures shelf: lightyears, cartesian\_x, cartesian\_y, cartesian\_z, cartesian\_velocity\_x, cartesian\_velocity\_y, and cartesian\_velocity\_z.
3. Change the Format Display for all fields on the Measures shelf to Scientific, with the Unit Abbreviation option, and click Save.
4. Click Refresh Visual.

5. Notice the change to the number format between the tables:

proper_name	lightyears	cartesian_x	cartesian_y	cartesian_z	cartesian_velocity_x	cartesian_velocity_y	cartesian_velocity_z
268 G. Cet	23.41897927	5.538462	4.488223	0.861013	-0.00002374	0.00006168	0.00005304
3C 273	326156	-99130.70606	-12660.05862	3581.344963	-0.00060072	0.00530397	0.00212194
82 G. Eri	19.7109117	2.839238	3.381499	-4.127499	-0.00001715	0.00011797	-0.00004501
96 G. Psc	24.31460364	7.258368	1.555495	0.686093	-0.00001198	0.00002545	-0.00004201
Acamar	161.2238031	26.85749	26.453029	-31.974932	0.00001851	2.3e-7	-0.00000324
Achernar	139.4424531	21.065573	9.568417	-35.951967	-0.00000584	0.00001738	-0.00001826
Acrux	321.9704401	-44.363755	-5.171957	-88.034513	0.00000934	0.00001813	0.00000684
Adhara	405.1627248	-27.497987	105.141608	-60.171969	-0.00000781	0.00002362	-0.00001217
Albaldah	509.61875	43.714239	-139.143552	-56.055078	-0.00000671	0.00001839	-0.00002237
Albireo	434.295631	45.350466	-108.51838	62.430012	-0.00001193	0.00001667	-0.00001472
Alcor	81.72295198	-13.393436	-5.223608	20.521915	0.00000861	-0.00001233	-0.00000864
Alcyone	403.1594747	61.664507	94.489136	50.483636	0.00000116	0.00002299	-0.0000194
Aldebaran	66.64410779	7.02722	18.287604	5.806661	0.00001528	0.00005709	-0.00000214



proper_name	lightyears	cartesian_x	cartesian_y	cartesian_z	cartesian_velocity_x	cartesian_velocity_y	cartesian_velocity_z
268 G. Cet	23	5.5	4.5	860m	-24μ	62μ	53μ
3C 273	330k	-99k	-13k	3.6k	-600μ	5.3m	2.1m
82 G. Eri	20	2.8	3.4	-4.1	-17μ	120μ	-45μ
96 G. Psc	24	7.3	1.6	690m	-12μ	25μ	-42μ
Acamar	160	27	26	-32	19μ	230n	-3.2μ
Achernar	140	21	9.6	-36	-5.8μ	17μ	-18μ
Acrux	320	-44	-5.2	-88	9.3μ	18μ	6.8μ
Adhara	410	-27	110	-60	-7.8μ	24μ	-12μ
Albaldah	510	44	-140	-56	-6.7μ	18μ	-22μ
Albireo	430	45	-110	62	-12μ	17μ	-15μ
Alcor	82	-13	-5.2	21	8.6μ	-12μ	-8.6μ
Alcyone	400	62	94	50	1.2μ	23μ	-19μ
Aldebaran	67	7.0	18	5.8	15μ	57μ	-2.1μ

## Currency display format

### About this task

Cloudera Data Visualization enables you to specify currency display format for a numerical field by selecting a common currency symbol.

You can customize the display of measures that represent currency. Direct support is available for the following currencies: \$ (Dollar), £ (Pound), ¥ (Yen/Yuan), # (Rupee), € (Euro), and ₵ (Cedi).

The following steps demonstrate how to adjust the display format for currency, using the Currency category.

### Procedure

1. Click the field you plan to modify, to open the FIELD PROPERTIES menu.
2. Under FIELD PROPERTIES, click Display Format.

3. In the Display Format modal window, select Currency from the Category menu.
4. Select the appropriate currency symbol: \$ (Dollar), £ (Pound), ¥ (Yen/Yuan), # (Rupee), € (Euro), or # (Cedi).
5. Select the Basic Format for your records.

You can also define and apply a custom format. Enter a valid format mask in the Customize Currency text box. For a full list of options, see *Display Format Reference*.

Display Format
×

Category

Currency

Example:

12345.6789123
→
¢12,345.68

Currency Symbols

¢ (Cedi)

Basic Formats

¢12,345.68

Customize Currency

¢,.2f

For more documentation, go [here](#)

None
Real Number
Integer
Percentage
Scientific
✓ Currency
Date/Time
Custom Format
Custom Javascript

CLOSE
SAVE

6. Click SAVE.

#### Related Information

[Display format reference](#)

## Date/time display format

### About this task

Cloudera Data Visualization enables you to specify date/time display formats for a numerical field by selecting from a number of common formats, or by specifying a custom format.

You have common notation options for formatting Date/Time fields. Cloudera Data Visualization also offers a simple customization component that transforms date/time information.

By default, data/time records appear in the form [YYYY]-[MM]-[DD] [hh]:[mm]:[ss].[sss], in most-to-least significant order. This is consistent with the *ISO 8601 Date and Time Specification*.

The following steps demonstrate how to adjust the display format for date/time fields:

**Procedure**

1. Click the field you plan to modify, to open the Field Properties menu.
2. Under Field Properties, click Display Format.
3. In the Display Format interface, select Date/Time from the Category menu.
4. Make a selection from one of the Basic Formats. These include most common forms, such as 2010-01-05, 01/05/2010, 1/5/10, Jan 05, 2010, Friday, January 5th, 2010, 10-Jan-05, Q1 2010, 1:05 pm, 01:05:53 PM, 13:05:53.010, 1/5/10 1:05:53 PM, and 01/05/2010 13:05:53.

Alternatively, specify select the Custom Date Format option in the Basic Formats menu, and then use the Customize Date/Time text field to enter the custom format.

Display Format
×

---

**Category**

Date/Time

**Example:**

2010-01-05T13:05:53.010

→

2010-01-05

---


**Basic Formats**

2010-01-05

**Customize Date/Time**

YYYY-MM-DD

CLOSE

SAVE 

5. Click Save.
6. Click Refresh Visual.


The following examples demonstrate the use of date/time display formatting interface for *Basic Formats for Date/Time* and *Custom Formats for Date/Time*. We are using the NYC Taxicab Rides Detail dataset, based on the table main.trips-detail.

**Basic Formats for Date/Time**

1. Create a new Table visual on the NYC Taxicab Rides Detail dataset.
2. Place the field pickup\_neighborhood on the Dimensions shelf, and the field pickup\_datetime on the Measures shelf.
3. Change the format display for pickup\_datetime field by selecting the mask 2010-01-05 from the Basic Formats menu of the Display Format: Date/Time interface.
4. Click Refresh Visual.



5. Notice the change to the number format in column pickup\_datetime.




pickup_neighborhood	pickup_datetime
Airport	2013-10-07 10:01:15
Astoria	2013-10-07 03:46:00
Baisley Park	2013-10-07 13:01:00
Bath Beach	2013-10-07 02:55:00
Battery Park City-Lower Manhattan	2013-10-07 19:48:01
Bay Ridge	2013-10-07 22:35:00
Bayside-Bayside Hills	2013-10-07 05:13:00
Bedford	2013-10-07 20:08:44
Bedford Park-Fordham North	2013-10-07 19:28:33
Bellerose	2013-10-07 17:14:00
Belmont	2013-10-07 15:02:12

pickup_neighborhood	pickup_datetime
Airport	2013-10-07
Astoria	2013-10-07
Baisley Park	2013-10-07
Bath Beach	2013-10-07
Battery Park City-Lower Manhattan	2013-10-07
Bay Ridge	2013-10-07
Bayside-Bayside Hills	2013-10-07
Bedford	2013-10-07
Bedford Park-Fordham North	2013-10-07
Bellerose	2013-10-07
Belmont	2013-10-07

### Custom Formats for Date/Time

1. Create a new Table visual on the NYC Taxicab Rides Detail dataset.
2. Place the field pickup\_neighborhood on the Dimensions shelf, and the field pickup\_datetime on the Measures shelf.
3. Change the format display for pickup\_datetime field by entering the mask hh:mm a selecting the mask 2010-01-05 under the Customize Date/Time option of the Display Format: Date/Time interface.
4. In the Basic Formats menu, select Custom Date Format.
5. Click Refresh Visual.
6. Notice the change to the number format in column pickup\_datetime.



pickup_neighborhood	pickup_datetime
Airport	2013-10-07 10:01:15
Astoria	2013-10-07 03:46:00
Baisley Park	2013-10-07 13:01:00
Bath Beach	2013-10-07 02:55:00
Battery Park City-Lower Manhattan	2013-10-07 19:48:01
Bay Ridge	2013-10-07 22:35:00
Bayside-Bayside Hills	2013-10-07 05:13:00
Bedford	2013-10-07 20:08:44
Bedford Park-Fordham North	2013-10-07 19:28:33
Bellerose	2013-10-07 17:14:00
Belmont	2013-10-07 15:02:12

pickup_neighborhood	pickup_datetime
Airport	10:01 am
Astoria	03:46 am
Baisley Park	01:01 pm
Bath Beach	02:55 am
Battery Park City-Lower Manhattan	07:48 pm
Bay Ridge	10:35 pm
Bayside-Bayside Hills	05:13 am
Bedford	08:08 pm
Bedford Park-Fordham North	07:28 pm
Bellerose	05:14 pm
Belmont	03:02 pm

## Using custom display configurations

### About this task

Cloudera Data Visualization has a free-format option that enables you to specify numerical data formats. This Custom Format option provides a wide range of custom display configurations.

The following steps outline how to use the Display Format: Custom Format interface.

### Procedure

1. Click the field you want to modify to open the FIELD PROPERTIES menu.
2. Under FIELD PROPERTIES, click Display Format.
3. In the Display Format modal window, select Custom Format from the Category menu.

4. In the Customize Format text box, enter a valid format mask based on the examples provided in the modal window.
- For a full list of options, see *Display Format Reference*.

Display Format

Category

Custom Format

Example:

12345.6789123

→

12345.6789123

Customize Format

Display Format Examples:

Enter	For Display	Enter	For Currencies	Mac Shortcut
	12345	\$	\$12345	Shift+4
s	12.345k (for SI notation)	£	£12345	Alt+3
S	12.345k (for currencies)	¥	¥12345	Alt+Y
,	12,345	₹	₹12345	
.1s	10k	€	€12345	Alt+Shift+2
.2s	12k			
,.1f	12,345.0			
\$,	\$12,345			
\$.2S	\$12k			
%	1234500%			

CLOSE

SAVE



5. Click SAVE.

Common number formatting

Some examples of common display formats follow:



- Entering 1s produces decimal format with Roman numerals for unit abbreviation.

For example, 37,253,956 renders as 37.253956M.



	state 				
year 	CA	CO	NV	OR	WA
2010	37.253956M	5.029196M	2.700551M	3.831074M	6.72454M
2000	33.871648M	4.301261M	1.998257M	3.421399M	5.894121M
1990	29.760021M	3.294394M	1.201833M	2.842321M	4.866692M
1980	23.667764M	2.889735M	800.508k	2.633156M	4.132353M
1970	19.971069M	2.209596M	488.738k	2.091533M	3.413244M
1960	15.717204M	1.753947M	285.278k	1.768687M	2.853214M
1950	10.586223M	1.325089M	160.083k	1.521341M	2.378963M
1940	6.907387M	1.123296M	110.247k	1.089684M	1.736191M

- Entering `.,1f` produces a format with 1 digit after the decimal, and comma for the thousands separator.

So, 37,253,956 renders as 37,253,956.0.

	state 				
year 	CA	CO	NV	OR	WA
2010	37,253,956.0	5,029,196.0	2,700,551.0	3,831,074.0	6,724,540.0
2000	33,871,648.0	4,301,261.0	1,998,257.0	3,421,399.0	5,894,121.0
1990	29,760,021.0	3,294,394.0	1,201,833.0	2,842,321.0	4,866,692.0
1980	23,667,764.0	2,889,735.0	800,508.0	2,633,156.0	4,132,353.0
1970	19,971,069.0	2,209,596.0	488,738.0	2,091,533.0	3,413,244.0
1960	15,717,204.0	1,753,947.0	285,278.0	1,768,687.0	2,853,214.0
1950	10,586,223.0	1,325,089.0	160,083.0	1,521,341.0	2,378,963.0
1940	6,907,387.0	1,123,296.0	110,247.0	1,089,684.0	1,736,191.0

- Entering `.,2f` produces a format with 2 digits after the decimal, and comma for the thousands separator. So, 37,253,956 renders as 37,253,956.0.

	state 				
year 	CA	CO	NV	OR	WA
2010	37,253,956.00	5,029,196.00	2,700,551.00	3,831,074.00	6,724,540.00
2000	33,871,648.00	4,301,261.00	1,998,257.00	3,421,399.00	5,894,121.00
1990	29,760,021.00	3,294,394.00	1,201,833.00	2,842,321.00	4,866,692.00
1980	23,667,764.00	2,889,735.00	800,508.00	2,633,156.00	4,132,353.00
1970	19,971,069.00	2,209,596.00	488,738.00	2,091,533.00	3,413,244.00
1960	15,717,204.00	1,753,947.00	285,278.00	1,768,687.00	2,853,214.00
1950	10,586,223.00	1,325,089.00	160,083.00	1,521,341.00	2,378,963.00
1940	6,907,387.00	1,123,296.00	110,247.00	1,089,684.00	1,736,191.00

To configure unit abbreviation for large numbers, see *Using custom display formats for large numbers*.

## Using custom display formats for large numbers

Currency magnitudes use expressions such as thousands (103), millions (106), billions (109), and trillions (1012). In contrast, scientific notation uses prefixes: k: kilo- (103), M: Mega- (106), G: Giga- (109), and T: Tera- (1012). `viz-display-format-custom.png` has an option that helps you to distinguish between scientific and currency unit abbreviations.

### About this task

The following steps demonstrate how to adjust the display format for currency, using the S format option.

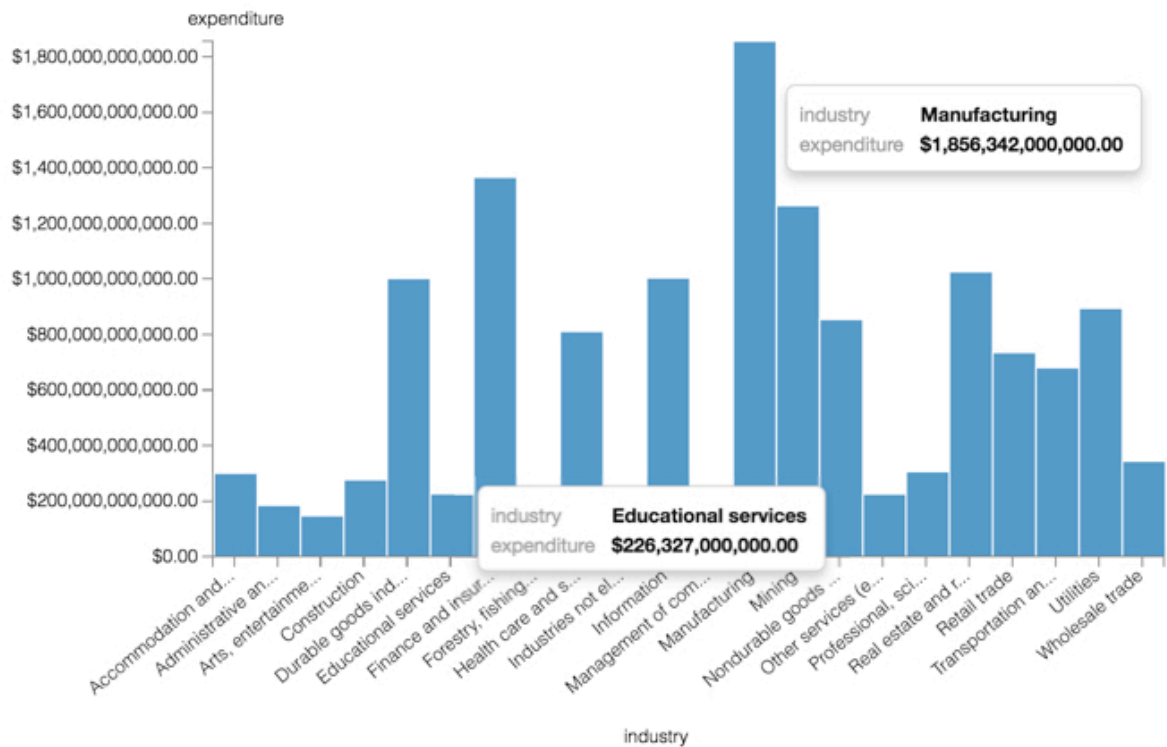
### Procedure

1. Create a new Bars visual on the Capital Expenditure by Industry dataset.
2. Add the industry field on the X Axis shelf and the expenditure field on the Y Axis shelf.
3. Click the expenditure field to open the FIELD PROPERTIES menu.
4. Under FIELD PROPERTIES, click Display Format.
5. In the Display Format modal window, select Currency from the Category menu and change the format to display the \$ (dollar) currency symbol.
6. Click SAVE.

## 7. Click REFRESH VISUAL.

You can see the display of numbers on the axis scale and in the tooltips.

Obviously, the standard currency form is inadequate for representing very large numbers and quickly reviewing the difference in their magnitude.

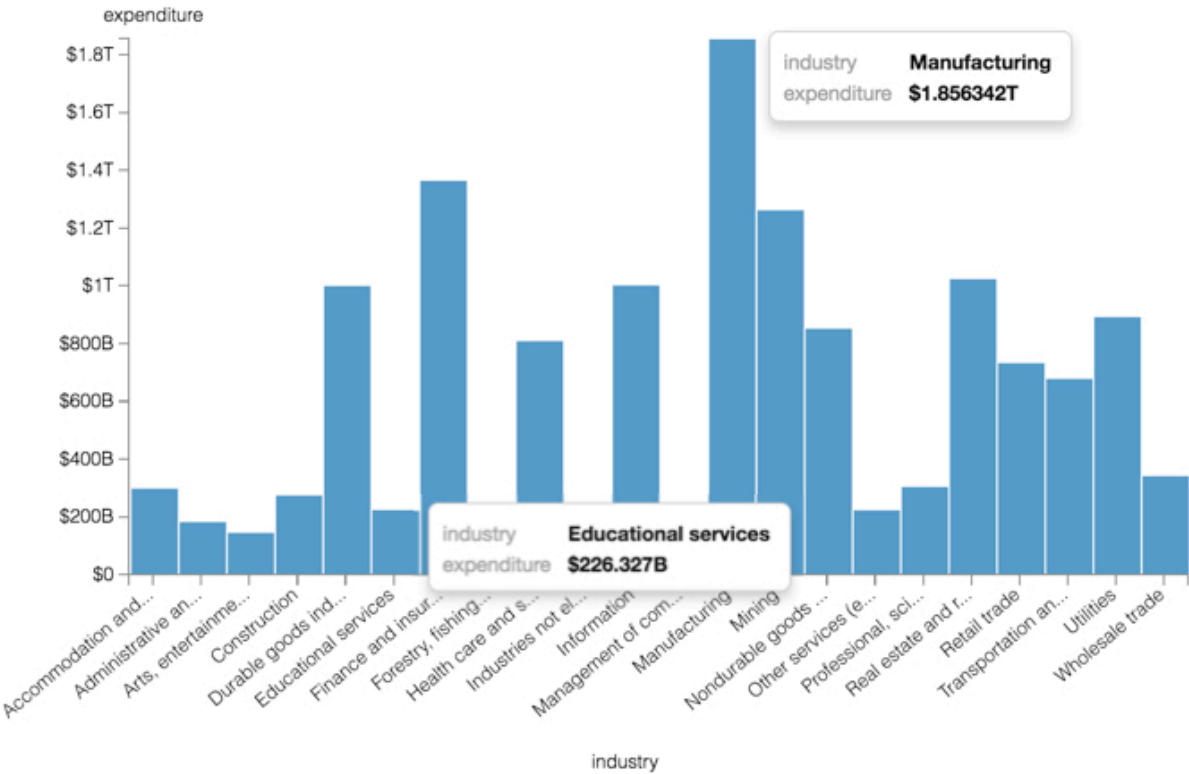


## 8. Change the display format of the expenditure field to a custom format by setting the value of Customize Date/Time to \$,S (currency, ',' thousands separator, and 'S' for currencies).

## 9. Click SAVE.

10. Click REFRESH VISUAL.

The new display format categorizes the magnitude of the currency more clearly , with Educational Services expenditure valued at approximately \$226 Billion, contrasting with Manufacturing at nearly \$2 Trillion, for the years covered by the data.





11. You can see how the data format appears across the data set by creating a dashboard that contains both this bar chart and a table visual.

- Clone the visual and change the chart type to table.
- Name and save that visual.
- Click NEW DASHBOARD, and add both visuals to it.
- Name and save the dashboard.

Some column values have the suffix B (billions), while larger columns have the suffix T (trillions).

### Expenditure by Industry



## Customizing display format using Javascript

### About this task

In Cloudera Data Visualization, you can customize the display format of fields in visuals using Javascript. The Javascript editor includes auto-complete functionality, and checks for valid code.

This feature is available with the following conditions:

- Site-wide setting for customization are turned on; see *Enabling Custom Styling*.
- The user is either an Admin, or has *Manage custom styles* permissions.

In addition to other categories, Cloudera Data Visualization has a Custom Javascript option that enables a wide range of custom display configurations.

The following steps outline how to use the Display Format: Custom Javascript interface.

### Procedure

1. Click the field you plan to modify, to open the Field Properties menu.
2. Under Field Properties, click Display Format.
3. In the Display Format interface, select Custom Javascript from the Category menu.

4. In the Customize JS Format Function code entry box, enter valid JavaScript code.

Display Format
×

Category

Custom Javascript

Example:

12345.6789123

→

12345.6789123

Custom JS Format Function

Enter a custom function that takes a single value and returns the value with the desired modifications.


```

1 function myFunc(value) {
2   // Your custom JS code goes here
3   // Make sure to return an updated version of value
4   return value;
5 }

```

UPDATE EXAMPLE

CLOSE

SAVE 

5. Click Save.

### Specifying text color based on a scalar threshold

In the following example, we adapted the custom JS format to more clearly identify which US States have a Hispanic population over or under the national average of 16%.

```

function myFunc(value) {
  // change display color based on value
  // being under or over national average of 16%
  // expressed as percentage, with two decimal places
  if (value < .16) {
    // less than 16% is blue
    return `<div style="color: blue">${Number(value * 100).toFixed(2)}%<
/div>`;
  }
  else {
    // 16% or greater is green

```

```
return `<div style="color: green">${Number(value * 100).toFixed(2)}
%</div>`;
}
```

Compare the results in the % Hispanic column (uses percentage display and the Rel. to 16 National Average column, that uses custom Javascript code in this example.

State	Population	Hispanic Population	% Hispanic	Rel. to 16% National Average
Alabama	4,822,023	196,032	4.07%	4.07%
Alaska	731,449	44,869	6.13%	6.13%
Arizona	6,553,255	1,976,106	30.15%	30.15%
Arkansas	2,949,131	199,693	6.77%	6.77%
California	38,041,430	14,537,666	38.22%	38.22%
Colorado	5,187,582	1,088,744	20.99%	20.99%
Connecticut	3,590,347	510,645	14.22%	14.22%
Delaware	917,092	78,813	8.59%	8.59%
District of Columbia	632,323	62,726	9.92%	9.92%
Florida	19,317,568	4,484,199	23.21%	23.21%

## Using alias

Cloudera Data Visualization provides you with an option to alias fields to remove uninformative field names (or overly informative expressions) from the visual.

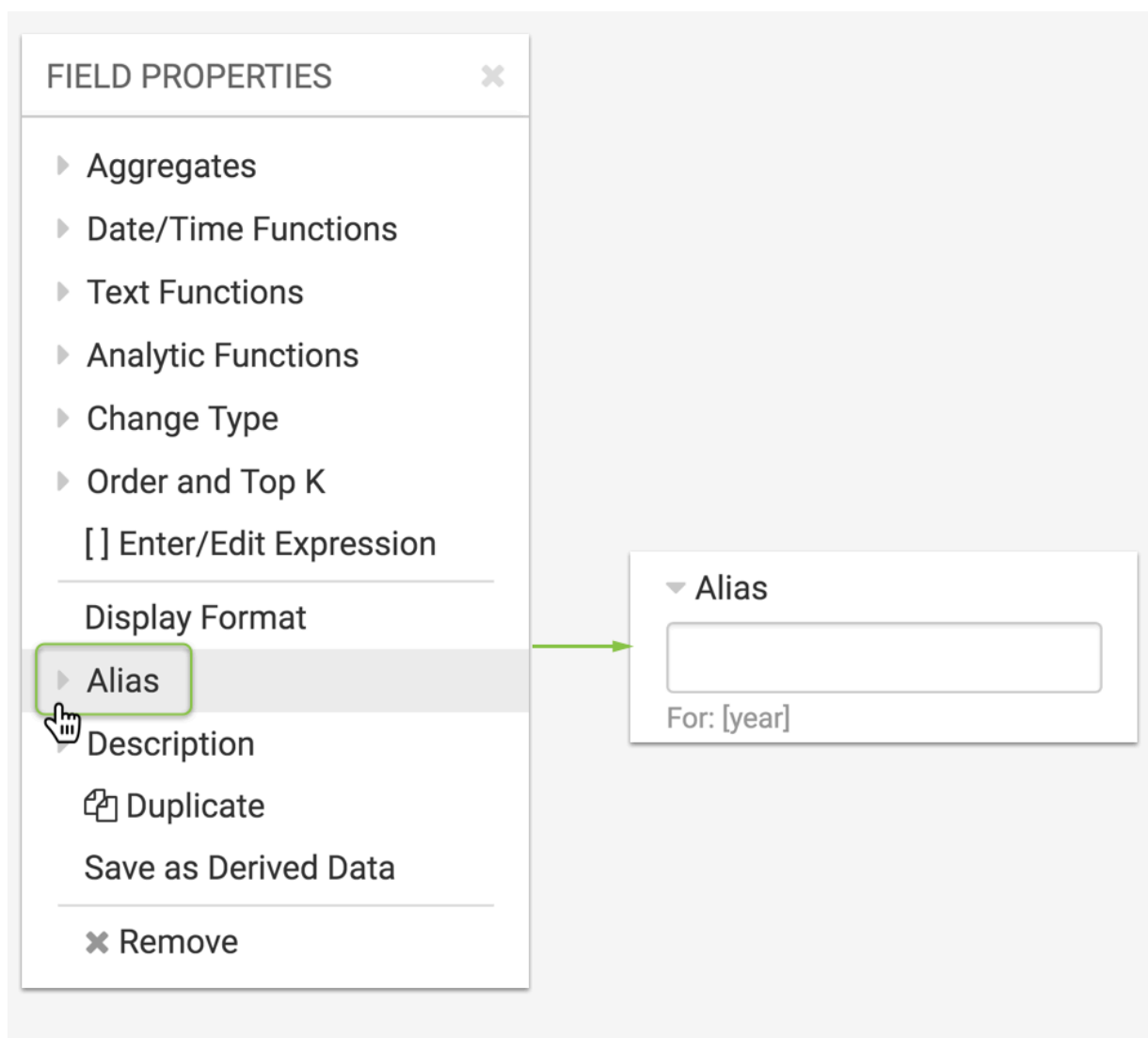
### About this task

To set the alias, follow these steps:

### Procedure

1. Click the field you plan to modify to open the FIELD PROPERTIES menu.

- Under FIELD PROPERTIES, click Alias.



- Enter the alias in the text field.



**Note:** To improve behavior of dataset fields as filters, parenthesis are not allowed in the display name. You can add parenthetical information as a field comment.

- Click REFRESH VISUAL to see the changes.

Fields that use an alias have a green dot on the Alias menu.

To remove an alias from a field, repeat the previous steps and clear the text field under Alias.

## Changing column position

In a table visual, you can change the position of a column for better visualization of data in Cloudera Data Visualization.

### About this task

By default, measure columns appear after all the dimension columns. In a table with large number of dimensions, it may be difficult to analyse the data if measure columns appear towards the end of the table.

Let's take an example of the cereal data and demonstrate how changing the position of the column improves the analysis of data.

To change the position of a column in a table, follow these steps:

### Procedure

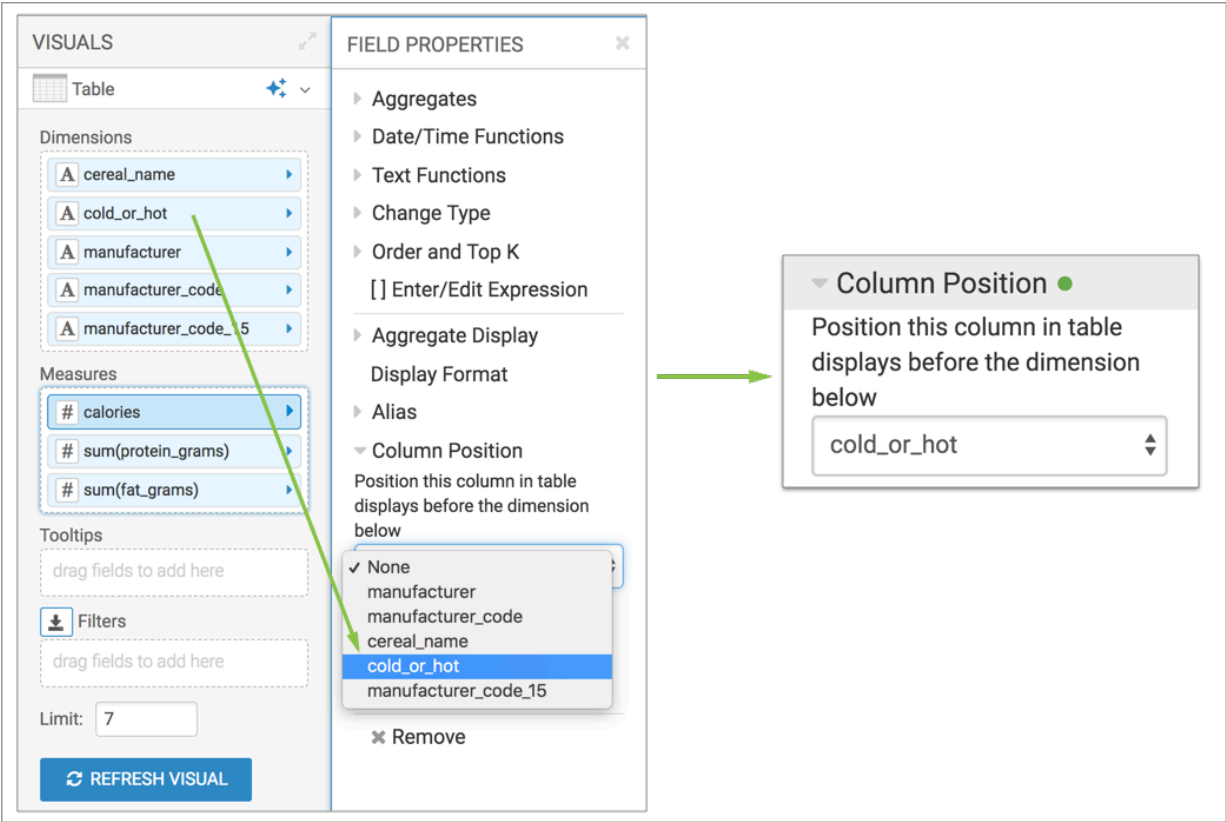
1. Click the measure that you plan to move to open the Field Properties menu.

In this example, we are moving calories.

2. Under Field Properties, click to expand the Column Position menu.

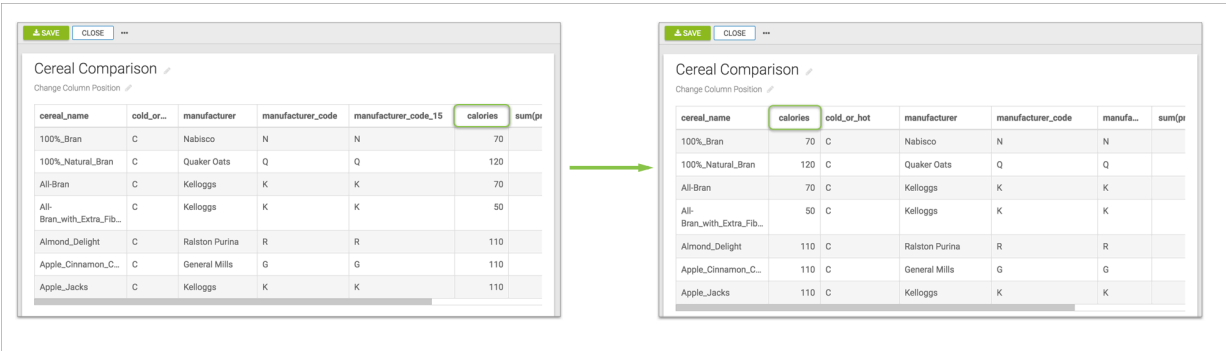
The screenshot displays the Cloudera Data Visualization interface. On the left, the 'VISUALS' panel shows a table visualization. Under 'Dimensions', there are five fields: cereal\_name, cold\_or\_hot, manufacturer, manufacturer\_code, and manufacturer\_code\_15. Under 'Measures', there are three fields: calories, sum(protein\_grams), and sum(fat\_grams). The 'calories' measure is highlighted with a green box. Below the measures, there are sections for 'Tooltips' and 'Filters', both with a 'drag fields to add here' prompt. At the bottom, there is a 'Limit' field set to 7 and a 'REFRESH VISUAL' button. On the right, the 'FIELD PROPERTIES' panel is open for the 'calories' measure. It lists various property categories: Aggregates, Date/Time Functions, Text Functions, Change Type, Order and Top K, Enter/Edit Expression, Aggregate Display, Display Format, Alias, and Column Position. The 'Column Position' category is expanded, showing a dropdown menu with 'None' selected. Other options in this category include Description, Duplicate, Save Expression, and Remove.

3. From the list of dimensions in the dropdown menu, select cold\_or\_hot.
- A green dot appears beside the field indicating a change in the value.



4. Click Refresh Visual to see the changes.

Notice in the first image, calories column appears after all the dimension columns. However, if you want to compare the calories in each cereal, by moving the calories column before the cold\_or\_hot. column (second image), it becomes easier to view that data.



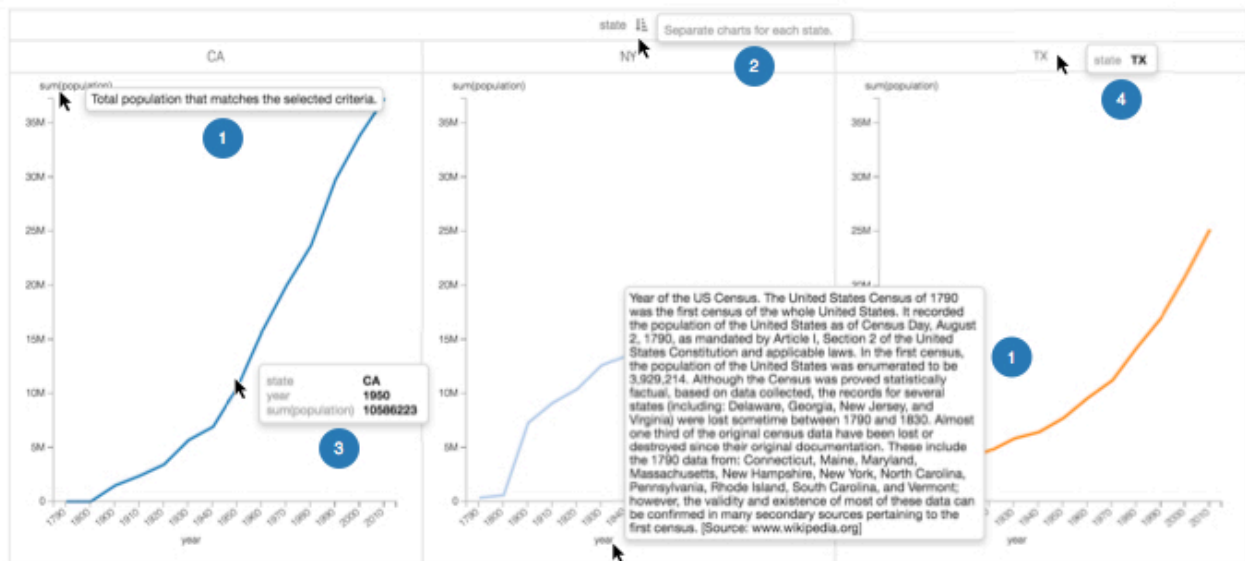
# Customizing description

Cloudera Data Visualization provides you with an option to add a meaningful description to chart elements; this description can be viewed when hovering the pointer over the table or chart.

## About this task

The following image demonstrates how you can (or cannot) customize descriptions on fields that define the following elements:

1. axes
2. trellis dimensions
3. data points (suppressed by tooltip functionality)
4. segment elements (suppressed by tooltip functionality)



By default, a field's description is identical to how it is represented on a shelf of the visual.

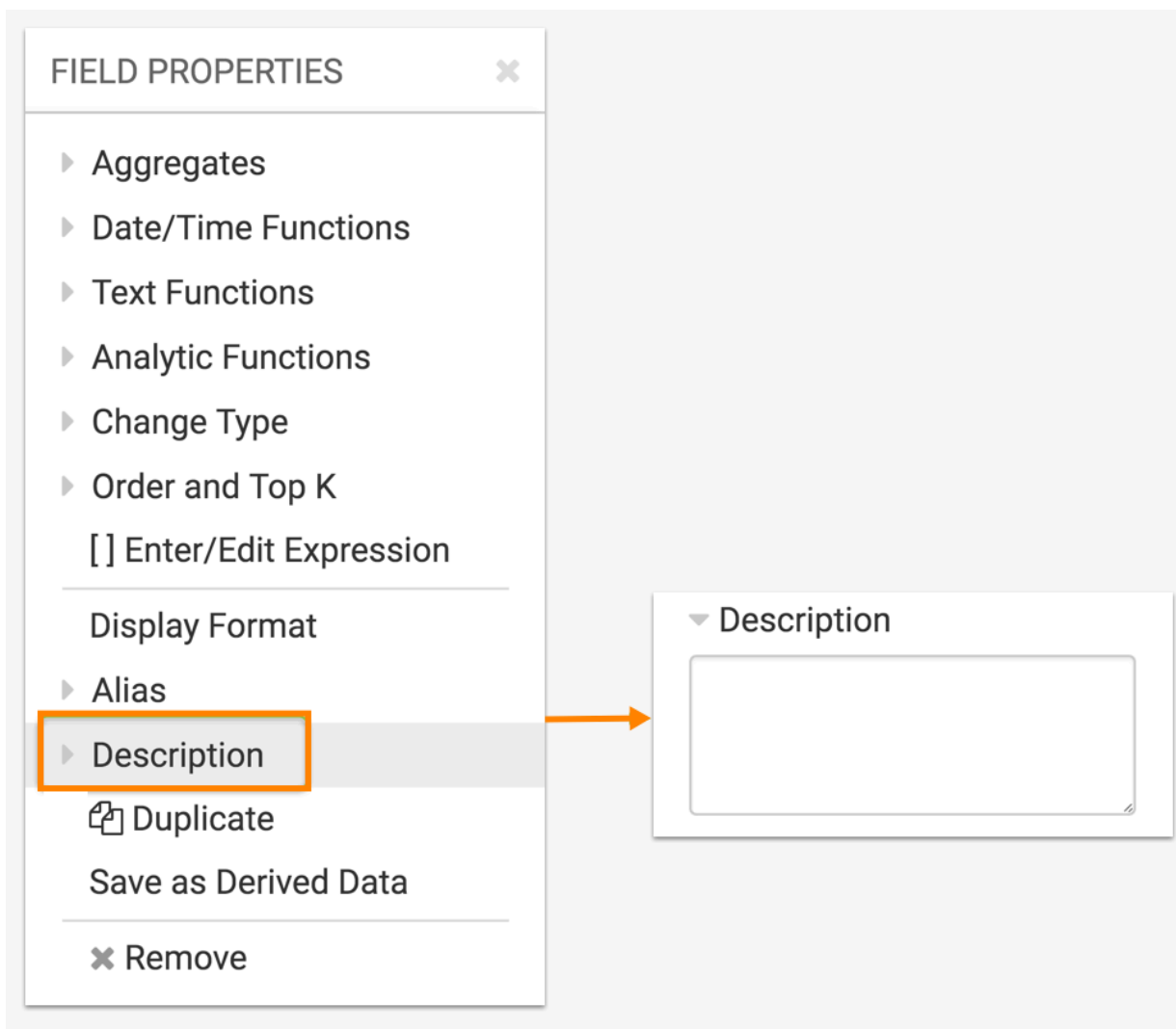
To set a custom description, follow these steps:

### Procedure

1. Click the measure that you plan to move to open the Field Properties menu.

In this example, we are moving calories.

2. Under Field Properties, click to expand the Description menu.



3. Enter the description in the large text field.
4. Click Refresh Visual to see the changes.

Fields that use a description have a green dot on the Description menu.

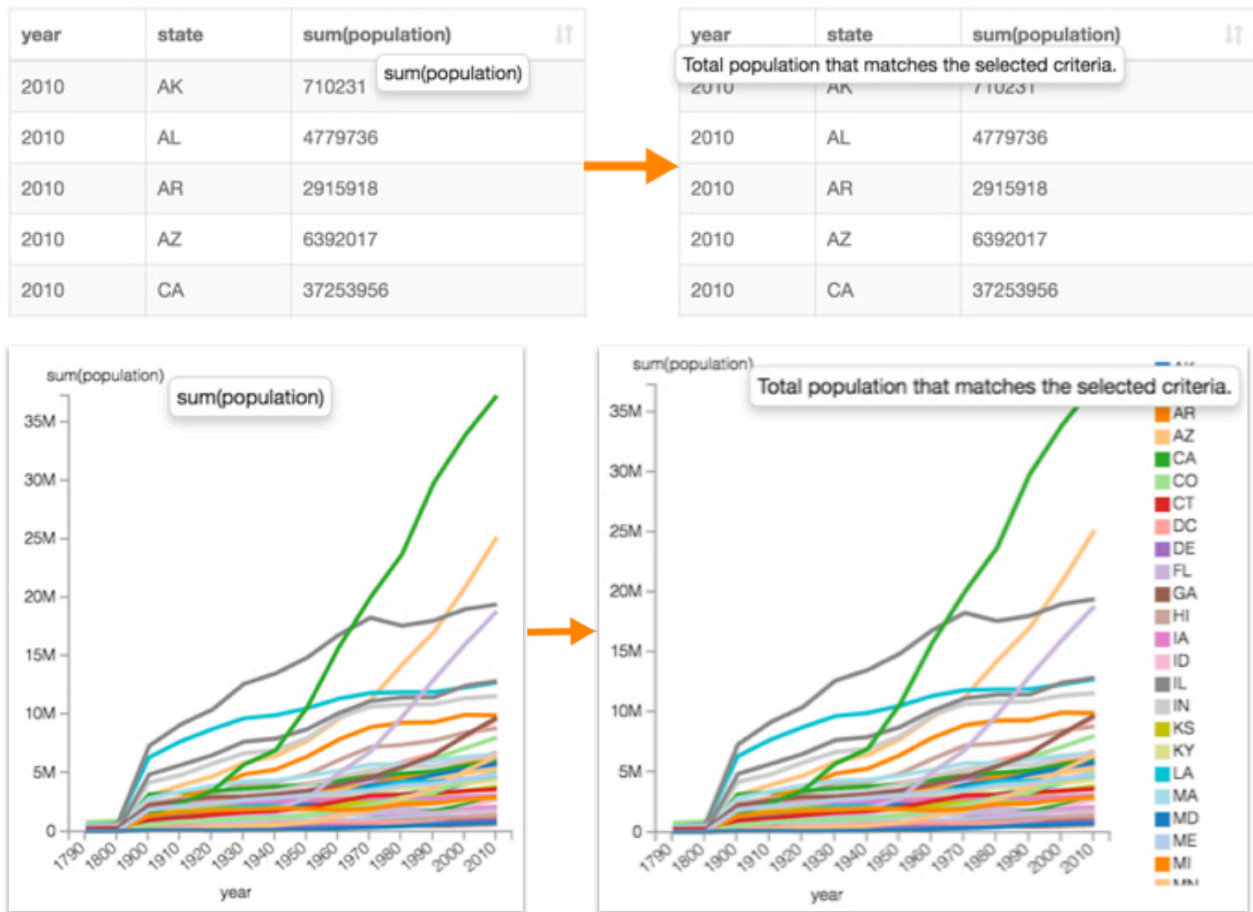
### Adding a description for a Field

We entered the description as follows:

```
Total population that matches the selected criteria.
```

Note the change in the description of the field, between the default and the one we just added.





## Duplicating an item

In Cloudera Data Visualization you can duplicate an item on the shelf, and then re-use it for another calculation or for placement on another shelf of the visual.

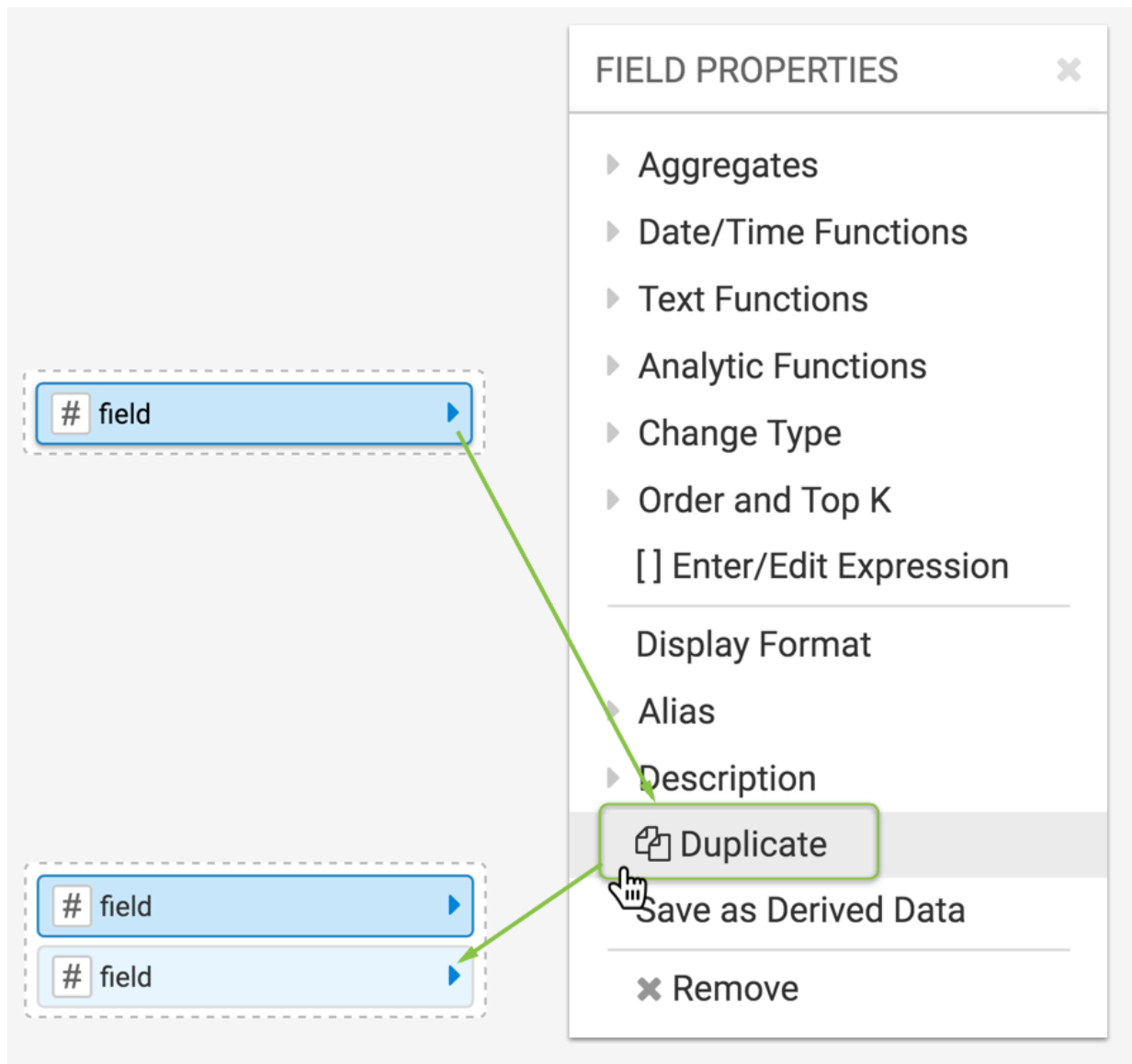
### About this task

To duplicate a field, follow these steps.

### Procedure

1. Click the field you plan to modify, to open the Field Properties menu.

2. Under Field Properties, click Duplicate.



3. Depending on the requirements of your work, edit the field, and/or move it to another shelf.