

# How to Create, Sort, and Reformat a Percent of Total Graphic

Open Labs Walkthrough 4-21-17

This demonstration shows how to start from this simple 1 x 1 crosstab and create...

...this final graphic.

First, add a table calculation to your crosstab.

Then choose the table calculation "type" and "computation."

Next, click on "Show Me" to create a stacked bar chart.

Voila -- percent of total stacked bars! But the graphic is low impact -- let's reformat it.

First, let's flip the axes so the full college names are visible.

Tableau - Percent of Total

File Data Worksheet Dashboard Story Analysis Map Format Server Window Help

Columns: Gender  
Rows: College

Simple Crosstab - Faculty Gender by College, Percent

College	Gender		Grand Total
	Female	Male	
Agriculture, Food and Env..	94	198	292
Arts and Sciences	197	299	496
Business and Economics	26	83	109
Communication and Infor..	49	59	108
Dentistry	35	70	105
Design	15	24	39
Education	95	58	153
Engineering	29	126	155
Fine Arts	64	81	145
Graduate School	5	13	18
Health Sciences	32	31	63
Honors College	2	3	5
Law	21	29	50
Libraries	43	14	57
Medicine	367	668	1,035
Nursing	100	8	108
Pharmacy	22	39	61
Public Health	33	25	58
Social Work	35	13	48

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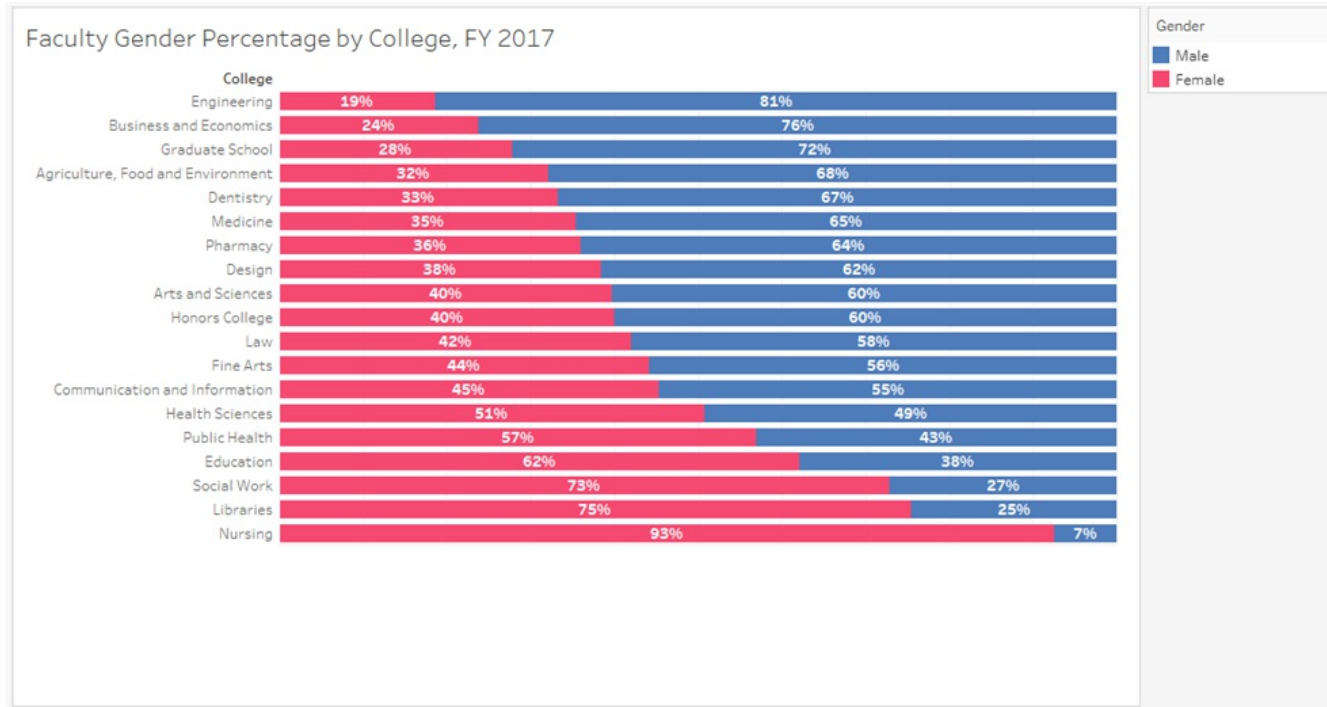
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Filters

- Fiscal Year: 2017
- Is All Faculty: Y
- Exclusions (Co..)
- College

Marks

- Automatic
- Color
- Size
- Text
- Detail
- Tooltip
- CNTD(Facul..)

Simple Crosstab - Faculty Gender by College, Per

College	Gender		Grand T..
	Female	Male	
Agriculture, Food an..	94	198	292
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Context Menu:

- Filter...
- Show Filter
- Format...
- Include in Tooltip
- Dimension
- Attribute
- Measure (Count (Distinct))
- Discrete
- Continuous
- Edit in Shelf**
- Add Table Calculation...
- Quick Table Calculation

Left click on the numbers you want to change to percentages -- in this case CNTD(Faculty), but generally whatever measure you are using in your crosstab.

Select "Add Table Calculation"

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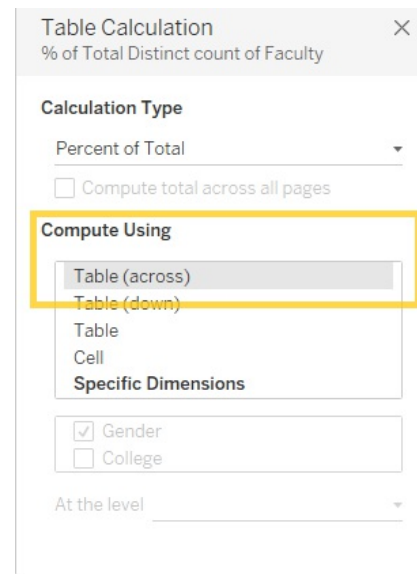
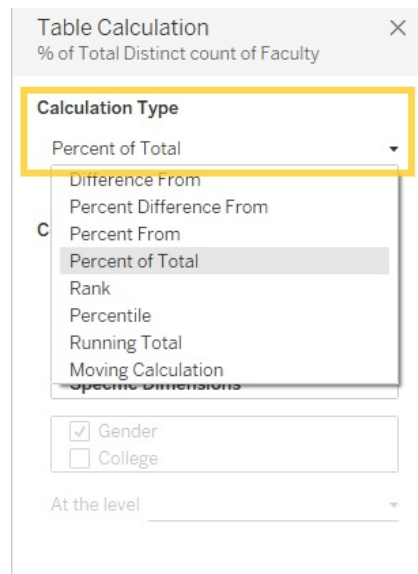
Voila -- percent of total stacked bars! But the graphic is low impact -- let's reformat it.

First, let's flip the axes so the full college names are visible.

Click on the **Calculation Type** carrot (downward pointing triangle) for the drop-down menu. Select "Percent of Total"

Next, select the area of the table and the direction in which you would like Tableau to sum the percentages to 100%. On the **Compute Using** menu, select "Table (across)" to match the crosstab -- you want the percent of total along the row (across) and, across the entire table (table).

Changes take effect immediately, so "X" out of the Table Calculation window.



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- ...this final graphic.
- First, add a table calculation to your crosstab.
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- Next, click on "Show Me" to create a stacked bar chart.**
- Voila -- percent of total stacked bars! But the graphic is low impact -- let's reformat it.
- First, let's flip the axes so the full college names are visible.
- Almost there -- widen the vertical axis next.

The screenshot shows the Tableau interface. The main view is a crosstab table titled "Simple Crosstab - Faculty Gender by College, Percent of Total". The columns are "Gender" (Female, Male) and "Grand Total". The rows list various colleges. The "Show Me" panel on the right is open, and a yellow box highlights a stacked bar chart option. Below the chart options, there are buttons for "Dimensions" and "Measures".

College	Gender		Grand T..
	Female	Male	
Agriculture, Food and Env..	32.19%	67.81%	100.00%
Arts and Sciences	39.72%	60.28%	100.00%
Business and Economics	23.85%	76.15%	100.00%
Communication and Infor..	45.37%	54.63%	100.00%
Dentistry	33.33%	66.67%	100.00%
Design	38.46%	61.54%	100.00%
Education	62.09%	37.91%	100.00%
Engineering	18.71%	81.29%	100.00%
Fine Arts	44.14%	55.86%	100.00%
Graduate School	27.78%	72.22%	100.00%
Health Sciences	50.79%	49.21%	100.00%
Honors College	40.00%	60.00%	100.00%
Law	42.00%	58.00%	100.00%
Libraries	75.44%	24.56%	100.00%
Medicine	35.46%	64.54%	100.00%
Nursing	92.59%	7.41%	100.00%
Pharmacy	36.07%	63.93%	100.00%
Public Health	56.90%	43.10%	100.00%
Social Work	72.92%	27.08%	100.00%

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First, add a table calculation to your crosstab.

Then choose the table calculation "type" and "computation."

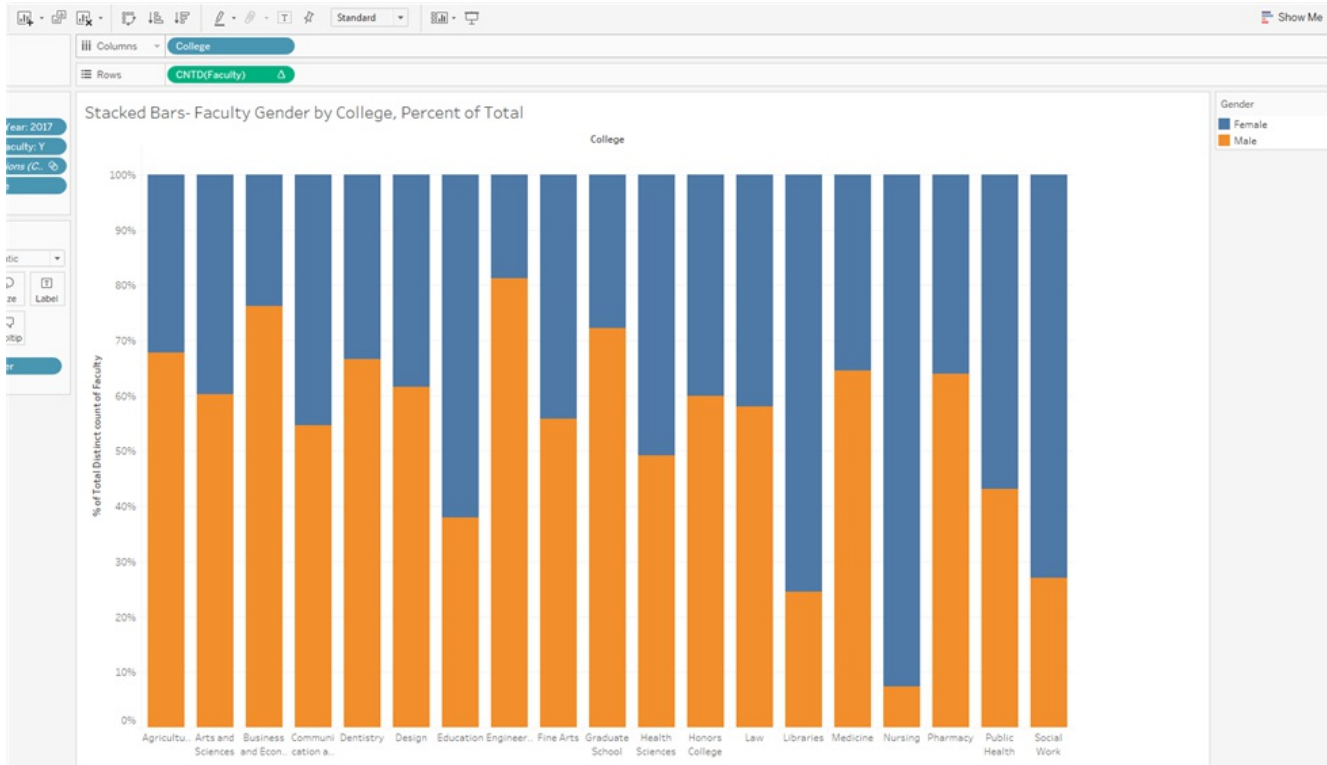
Next, click on "Show Me" to create a stacked bar chart.

Voila -- percent of total stacked bars! But the graphic is low impact -- let's reformat it.

First, let's flip the axes so the full college names are visible.

Almost there -- widen the vertical axis next.

Now let's sort the colleges by % of faculty who are female

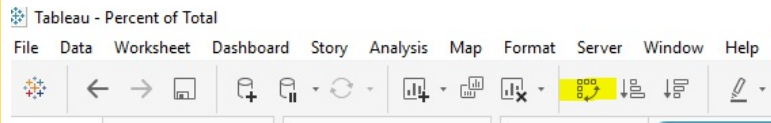


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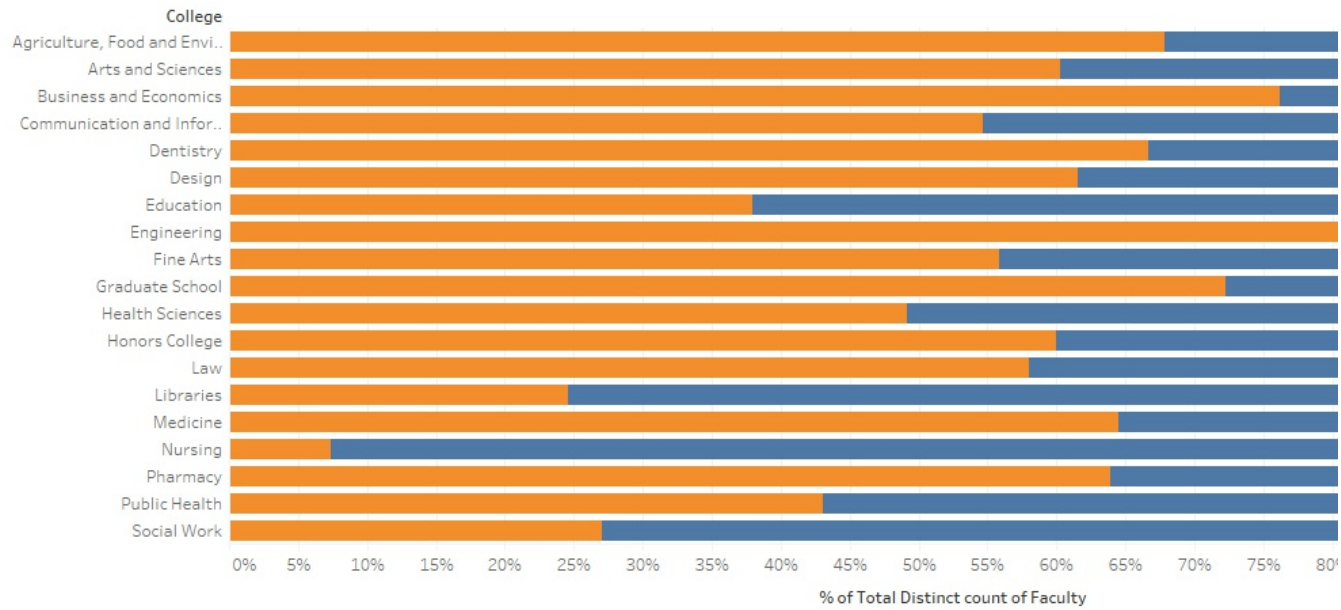
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- Then choose the table calculation "type" and "computation."
- Next, click on "Show Me" to create a stacked bar chart.
- Voila -- percent of total stacked bars! But the graphic is low impact -- let's reformat it it.
- First, let's flip the axes so the full college names are visible.**
- Almost there -- widen the vertical axis next.
- Now let's sort the colleges by % of faculty who are female
- Let's try using the Sort feature.

Clicking on the "Swap" icon on the menu bar, highlighted to the right, will flip the axes of any visualization.



Stacked Bars- Faculty Gender by College, Percent of Total



# How to Create, Sort, and Reformat a Percent of Total Graphic

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Next, click on "Show Me" to create a stacked bar chart.

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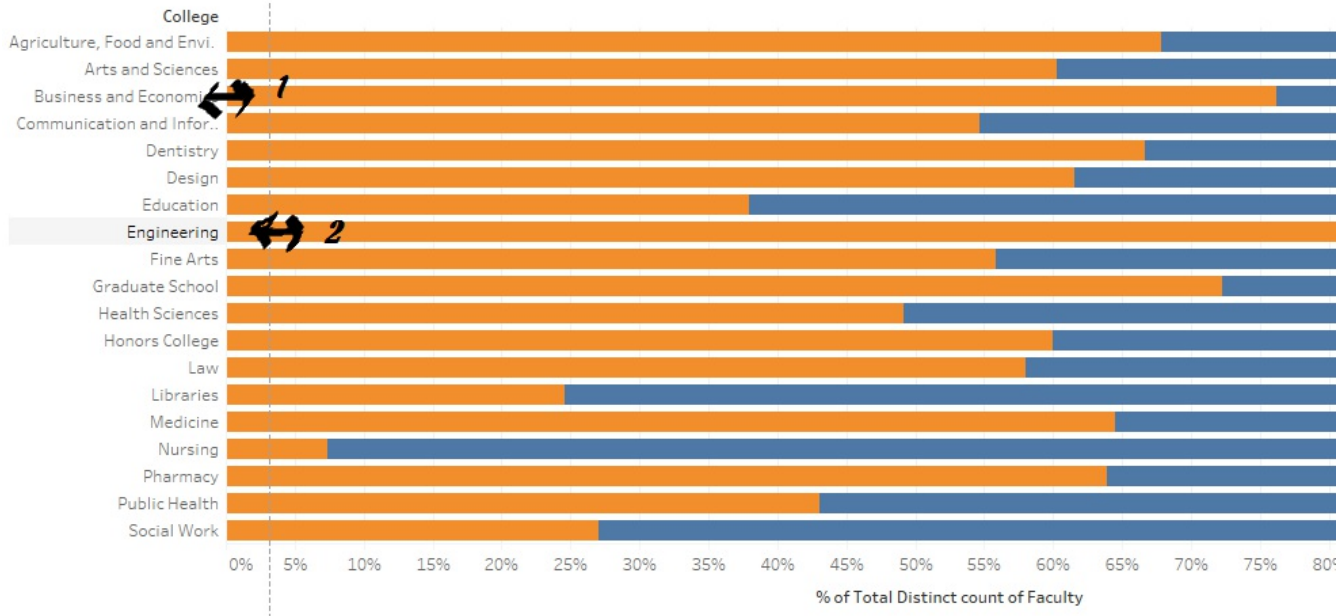
Let's try using the Sort feature.

How do we sort college using values in a different field?

Hover over the left edge of the bars until the double arrow appears (1)

When double arrow appears, click and drag the edge of the axis to the right. A dotted line, like the one shown here, will show you where the axis will be when you release. (2)

Stacked Bars- Faculty Gender by College, Percent of Total





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Voila -- percent of total stacked bars! But the graphic is low impact -- let's reformat it it.

First, let's flip the axes so the full college names are visible.

Almost there -- widen the vertical axis next.

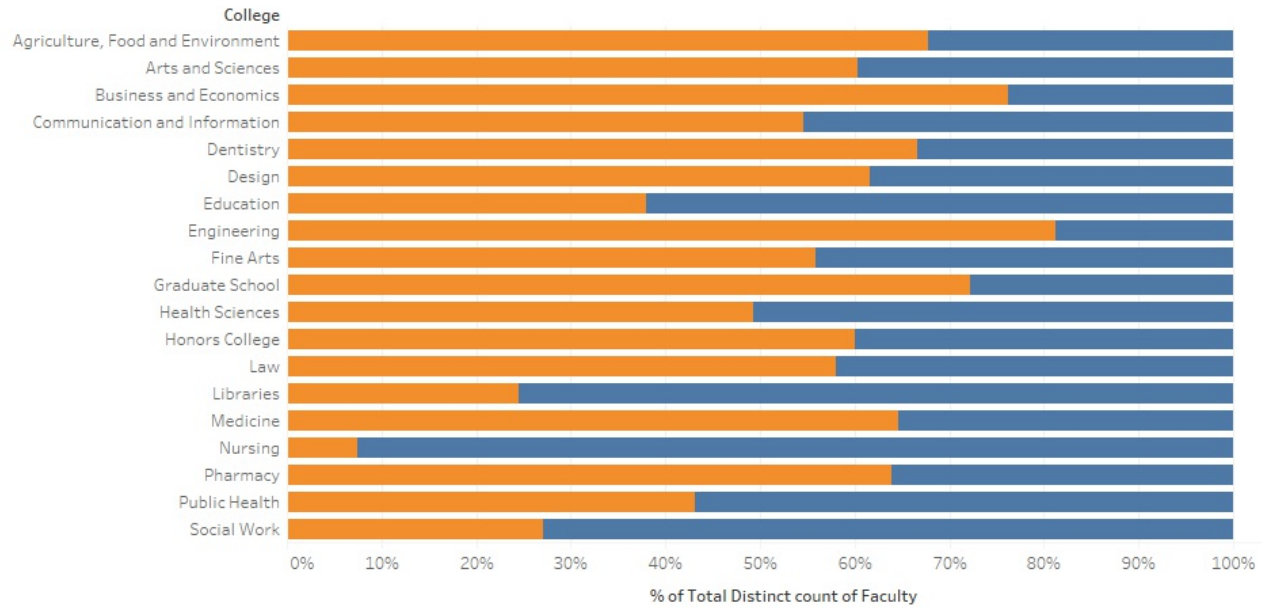
**Now let's sort the colleges by % of faculty who are female**

Let's try using the Sort feature.

How do we sort college using values in a different field?

We will need to calculate a new field to sort with -- "Female Faculty"

Stacked Bars- Faculty Gender by College, Percent of Total



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First, let's flip the axes so the full college names are visible.

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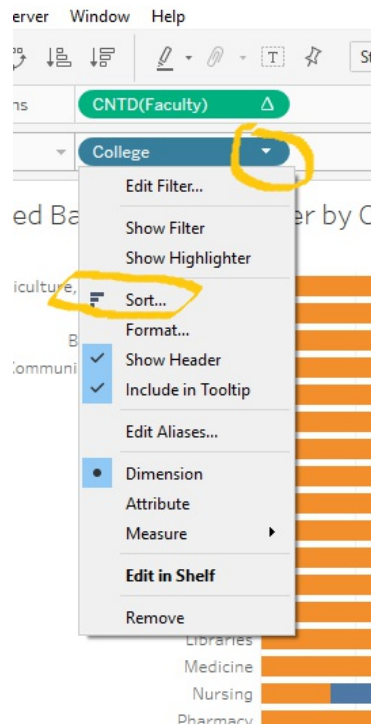
Now let's sort the colleges by % of faculty who are female

Let's try using the Sort feature.

How do we sort college using values in a different field?

We will need to calculate a new field to sort with -- "Female Faculty"

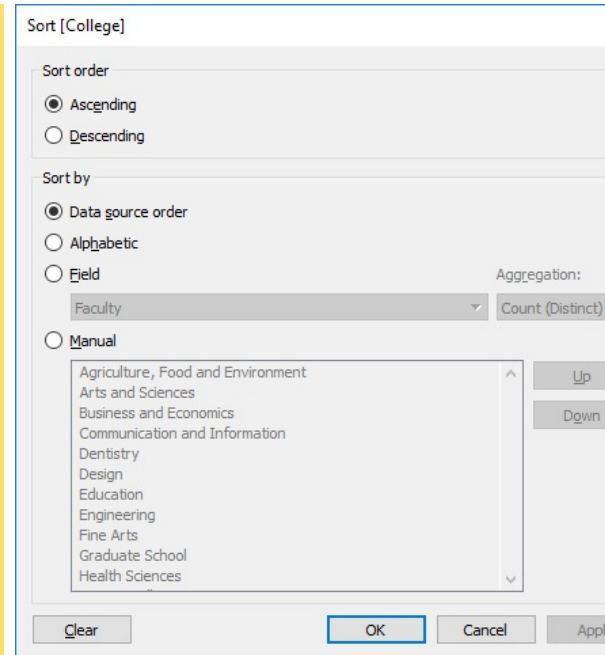
Then we need to tell Tableau how we want this field to be calculated in a visualization.



To change how the colleges are sorted, click on the carrot on the college "pill" on the rows shelf to get the edit menu for this field, and select sort (left).

When the Sort window opens, you will see the current sort selections, in this case the default settings: \* "Sort order" is set to ascending \* "Sort by" is set to data source order, which just means that it is reading the text in the field, resulting in an alphabetic sort.

When "Sort by" is set to "Manual" you can highlight values and move them up and down the list.



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Almost there -- widen the vertical axis next.

Now let's sort the colleges by % of faculty who are female

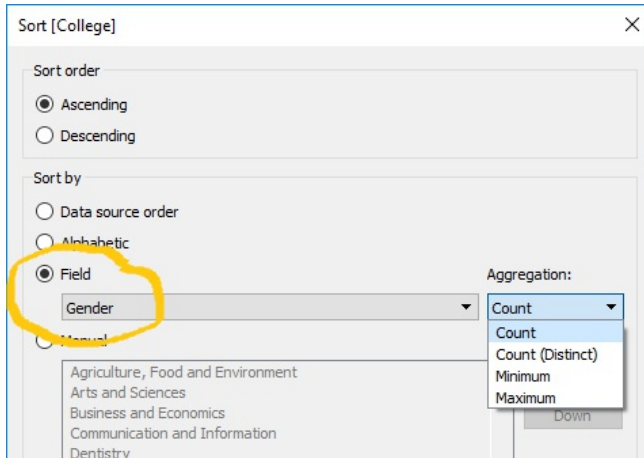
Let's try using the Sort feature.

How do we sort college using values in a different field?

We will need to calculate a new field to sort with -- "Female Faculty"

Then we need to tell Tableau how we want this field to be calculated in a visualization.

Lets sort!

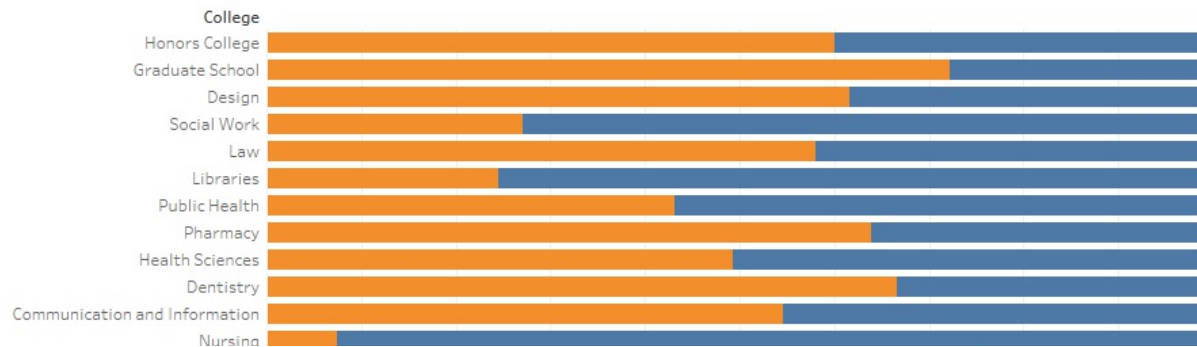


To sort one field by the values of another field, use the "Sort by Field" option. This selection will allow you to choose from a list of fields in the datasource and give you aggregation options that match the selected field's data type.

Sorting college by gender, we get the result below. What happened? As a dimension field, gender's aggregations are limited. Counting gender will add up all records with a valid value for gender, not one of the values of gender (female). So, sorting by gender as a field has resulted in a sort by faculty size. The Honors College has 5 faculty with non-null gender, while the College of Medicine has 1,035.

Playing with the options on the sort menu will demonstrate that nothing here will get the result we want.

Stacked Bars- Faculty Gender by College, Percent of Total



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Now let's sort the colleges by % of faculty who are female

Let's try using the Sort feature.

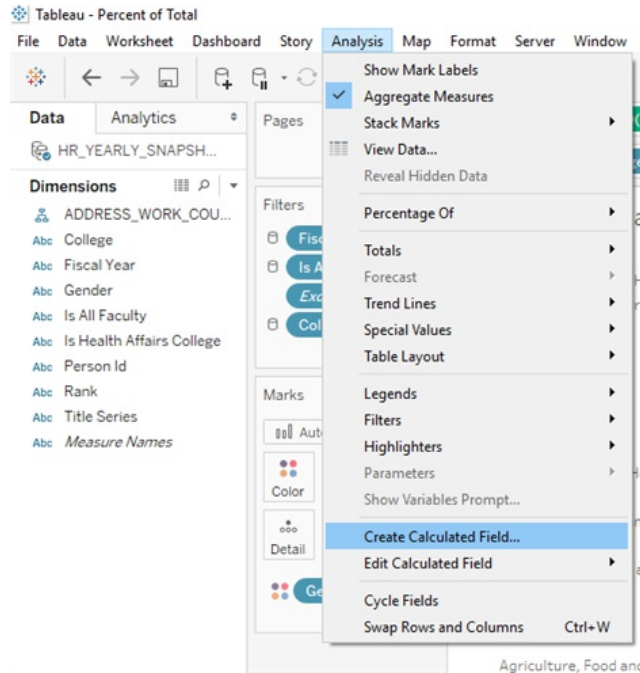
How do we sort college using values in a different field?

We will need to calculate a new field to sort with -- "Female Faculty"

Then we need to tell Tableau how we want this field to be calculated in a visualization.

Lets sort!

Now that we've sorted the colleges, let's sort the gender field so female is closest to the axis

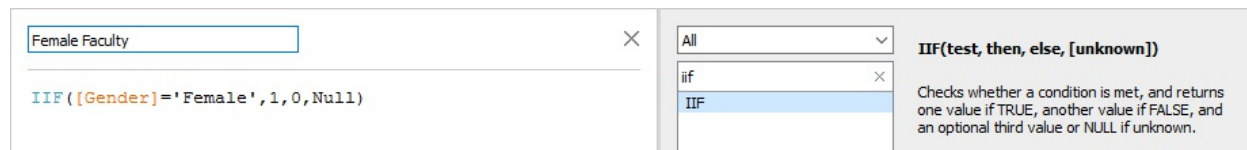


To create a new field to sort with called "Female Faculty" select "Create Calculated Field" on then "Analysis" menu to open the calculated field window below.

We are going to transform the Gender field into a 1/0 binary numerical field, with the value of 1 assigned to all females and 0 assigned to all males. This will allow us to take an average of the values between 0 and 1 and display this number as a percent. For instance, for a group of three female and one male faculty members, the mean of 1+1+1+0 will be 0.75 or 75% female. If you wanted to sort by the percent male, you would do the same but assign 0 to females and 1 to males. This technique is very handy in visulazing percentages for binary fields.

There are many calculation functions in Tableau. The "IIF" function used below creates binary fields, so is the most efficient choice for our needs. The same result can be found by using the "IF" function:

```
IF [Gender] = 'Female' THEN 1
ELSEIF [Gender]='Male' THEN 0
ELSE Null
END
```



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Let's try using the Sort feature.

How do we sort college using values in a different field?

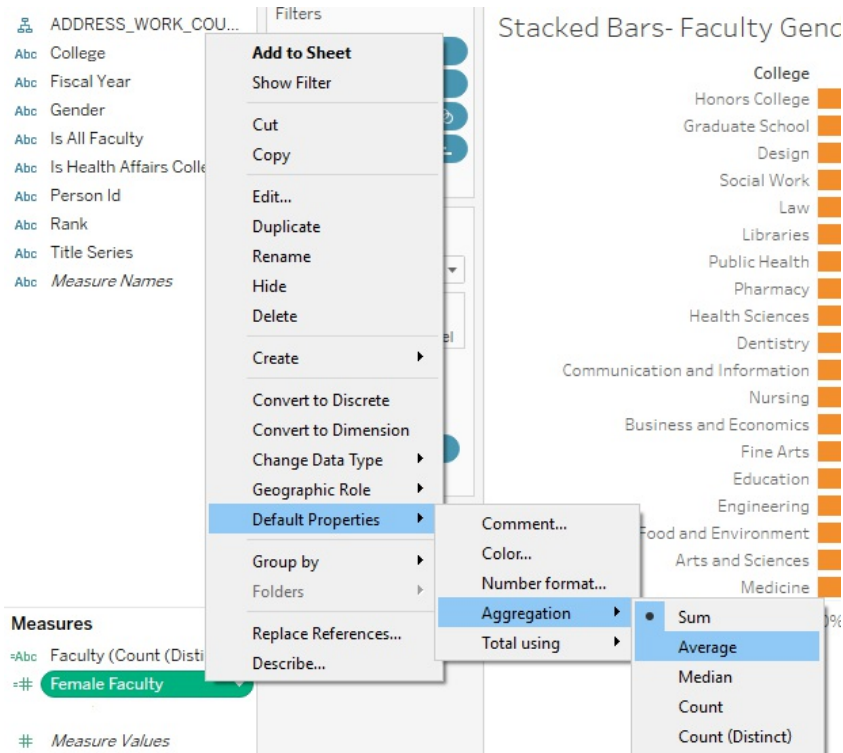
We will need to calculate a new field to sort with -- "Female Faculty"

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Lets sort!

Now that we've sorted the colleges, let's sort the gender field so female is closest to the axis

What if you want to change the colors of the bars?



The default aggregation of this new field is a sum, but we want an average.

Right click on our new field for the pop-up menu (or click on the carrot on the field pill) . Select "Default Properties," "Aggregation," and then change "Sum" to "Average" and enter. Now the average will be used when we pull this field over, instead of the sum.

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- How do we sort college using values in a different field?
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- Then we need to tell Tableau how we want this field to be calculated in a visualization.
- Lets sort!**
- Now that we've sorted the colleges, let's sort the gender field so female is closest to the axis
- What if you want to change the colors of the bars?
- Choose new colors from a color palette.

Sort [College]

Sort order

Ascending

Descending

Sort by

Data source order

Alphabetic

Field

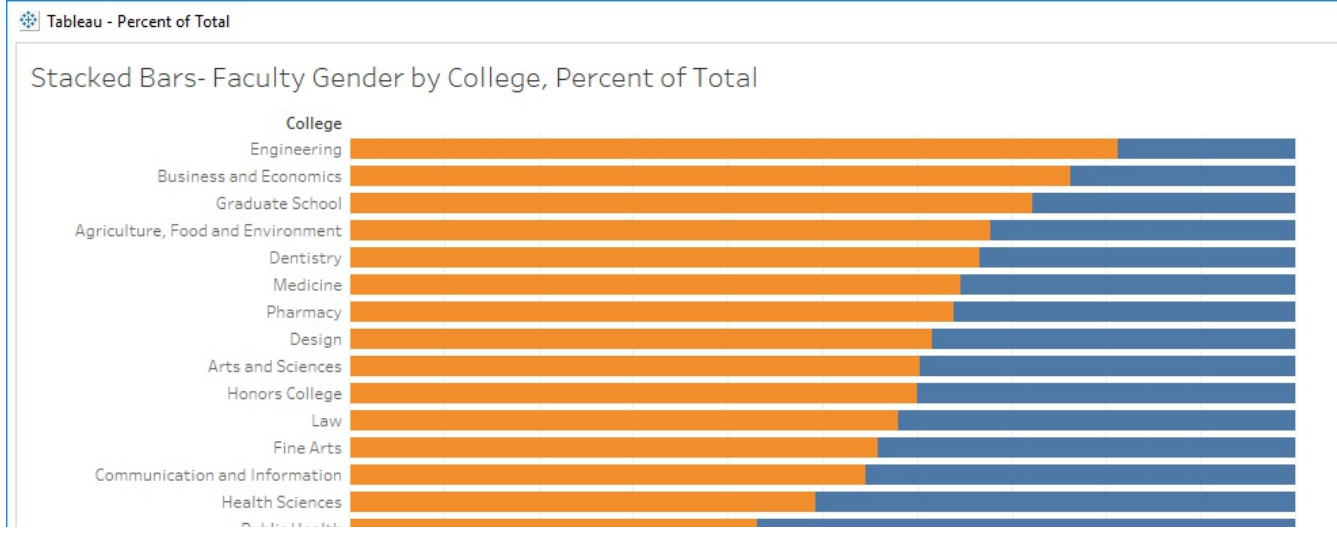
Female Faculty

Aggregation:

Average

Reopen the Sort window for College by clicking on its carrot or right clicking on the pill. Select "Field," use the drop-down to select "Female Faculty," and then open the "Aggregation" dropdown to select "Average." Enter or select "OK."

The graphic will sort as below.

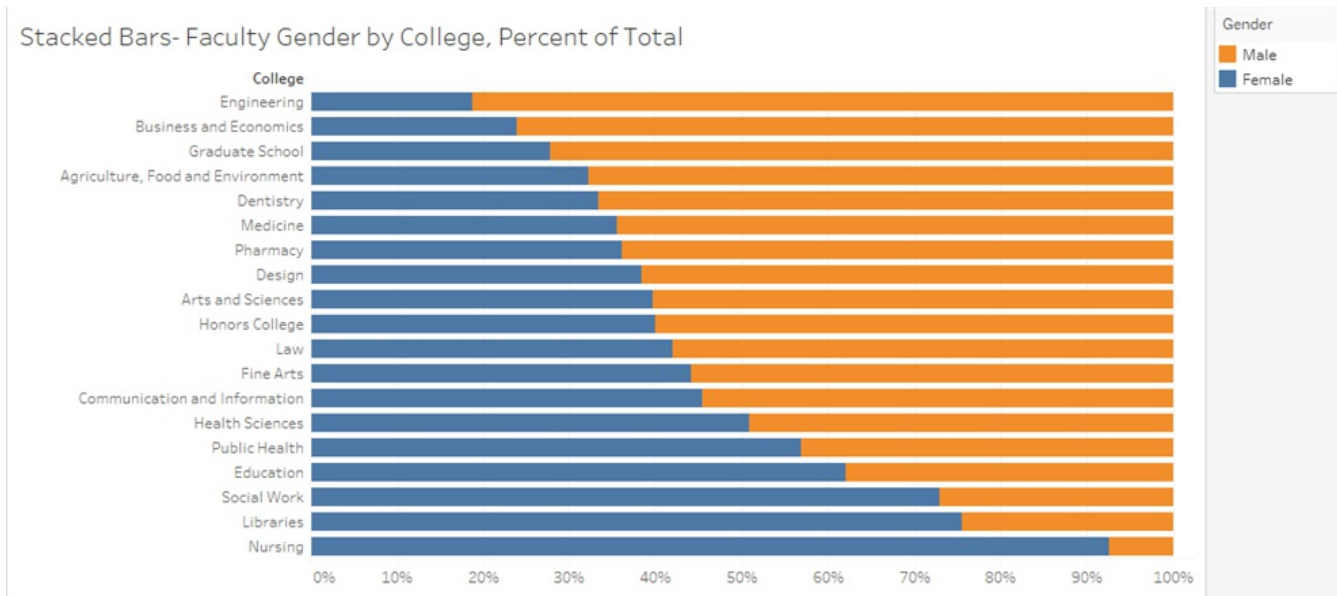
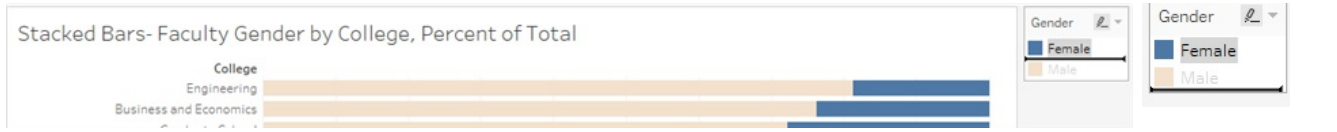


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- We will need to calculate a new field to sort with -- "Female Faculty"
- Then we need to tell Tableau how we want this field to be calculated in a visualization.
- Lets sort!
- Now that we've sorted the colleges, let's sort the gender field so female is closest to the axis**
- What if you want to change the colors of the bars?
- Choose new colors from a color palette.
- Now, let's add data labels.

In the legend, left click on "Female" and hold until a black bar appears below it. Without releasing, drag the black bar below "Male" and release. The male and female bars will reverse.



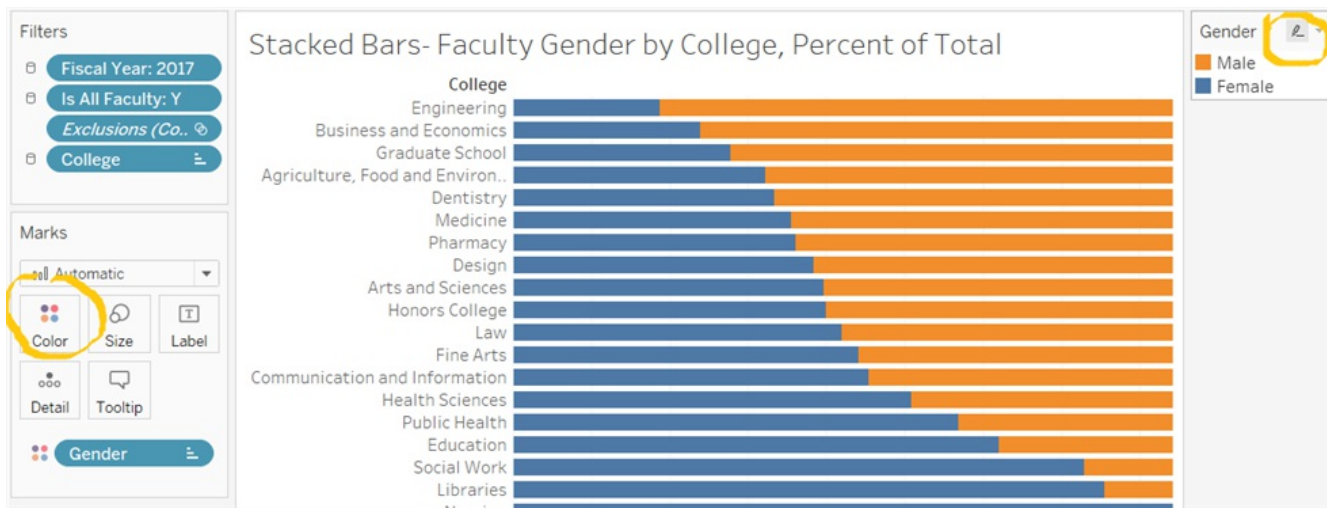
# How to Create, Sort, and Reformat a Percent of Total Graphic

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- Then we need to tell Tableau how we want this field to be calculated in a visualization.
- Lets sort!
- Now that we've sorted the colleges, let's sort the gender field so female is closest to the axis
- What if you want to change the colors of the bars?**
- Choose new colors from a color palette.
- Now, let's add data labels.
- And change label format to percents without decimal places to clean up the graphic.

There are two ways to access the color window:

1. Click on the "Color" icon on the Marks card (below left)
2. Click on the legend to see the "edit" icon -- a writing pencil -- and select it.





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Lets sort!

Now that we've sorted the colleges, let's sort the gender field so female is closest to the axis

What if you want to change the colors of the bars?

**Choose new colors from a color palette.**

Now, let's add data labels.

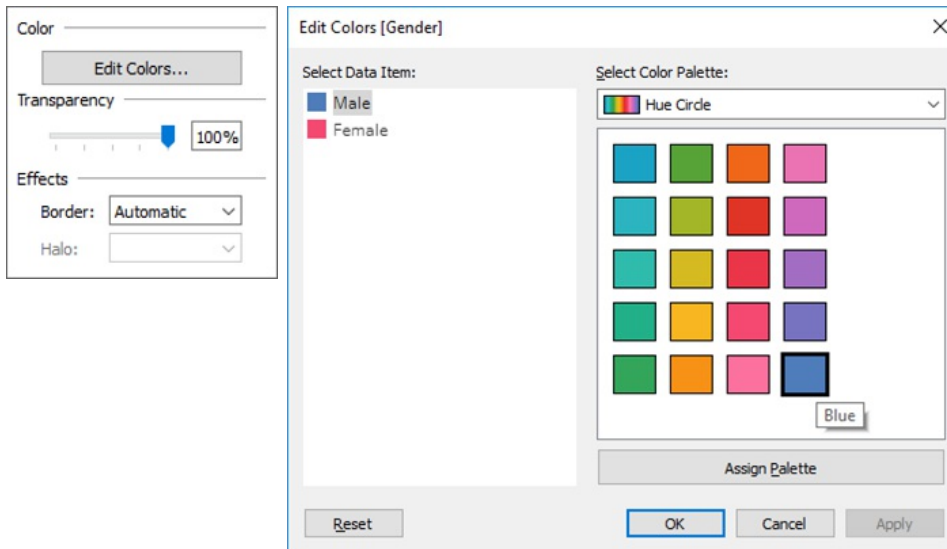
And change label format to percents without decimal places to clean up the graphic.

Done!

On the Color menu, select "Edit Colors..."

On the Edit Colors window, you will see the current color palette. Colors here are changed using color palettes; you can select individual colors from the palette, but must first select a palette. If the color you want is not on the current palette, use the "Select Color Palette" drop-down menu to chose a different palette.

To change the entire palette of colors used in your graphic, click on "Assign Palette." The colors in the palette will be applied to the field's values in their order on the palette. To chose particular colors for the values, click on one of the values to highlight it, and then click on a color to change it.

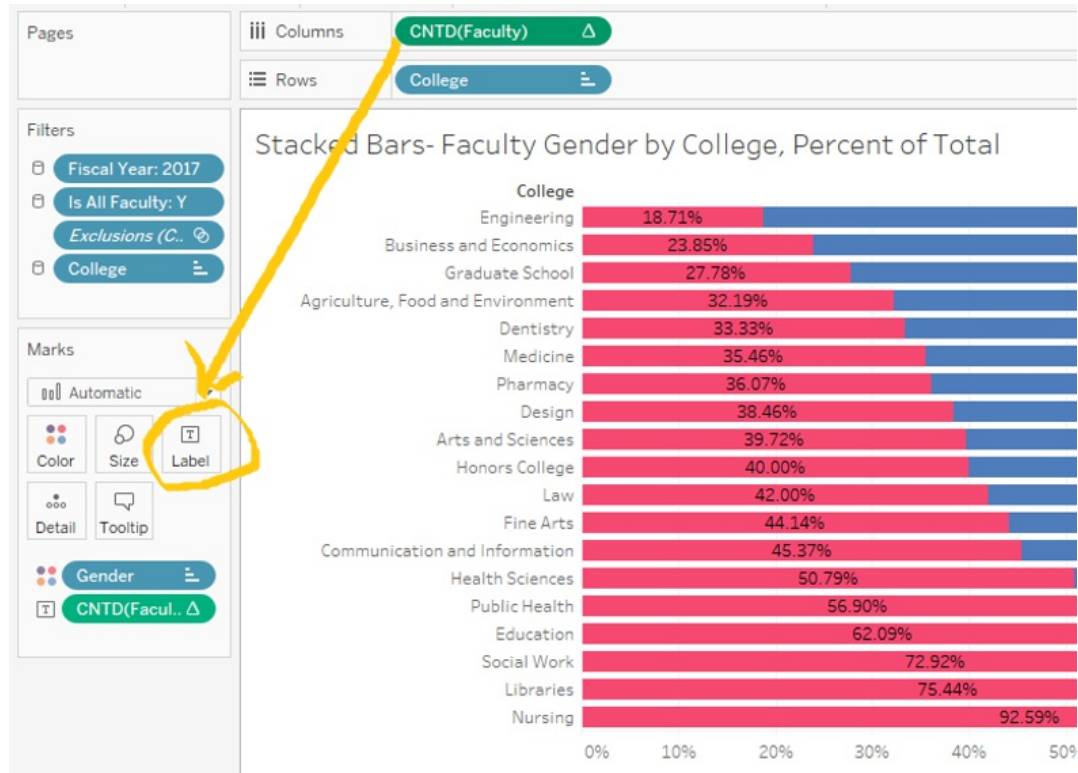


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- What if you want to change the colors of the bars?
- Choose new colors from a color palette.
- Now, let's add data labels.**
- And change label format to percents without decimal places to clean up the graphic.
- Done!

While holding down the "Ctrl" key, click and hold the percent of faculty by gender pill (CNTD of faculty) and drag it down to "Label" on the Marks card and drop it there.



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Lets sort!

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What if you want to change the colors of the bars?

Choose new colors from a color palette.

Now, let's add data labels.

And change label format to percents without decimal places to clean up the graphic.

Done!

Back on the CNTD(Faculty) pill, (1) click on the carrot and (2) select "Format..." The Format window will open in the left pane. (3) Under "Default," then "Numbers," use the dropdown menu (at right) to select "Percentage," and change the decimal places to "0."

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