

## Create a Box and Whisker Plot

### Excel Step-by-Step How-to for Windows

Excel for Mac Instructions on [page 8](#)

**Instructions:** Use this guide to create a box and whisker plot.

**Data requirement:** five number summary, quantitative data

**Sample Data:** multiple insurance policies

Step

Windows Instructions + Screen Shot

1. Create chart base for box and whisker plot.

Highlight all of the data in Q1, Q1 median, and Q3 median and insert stacked column chart. You will edit the layout of this chart to make box and whisker charts.

The screenshot shows an Excel spreadsheet with the following data:

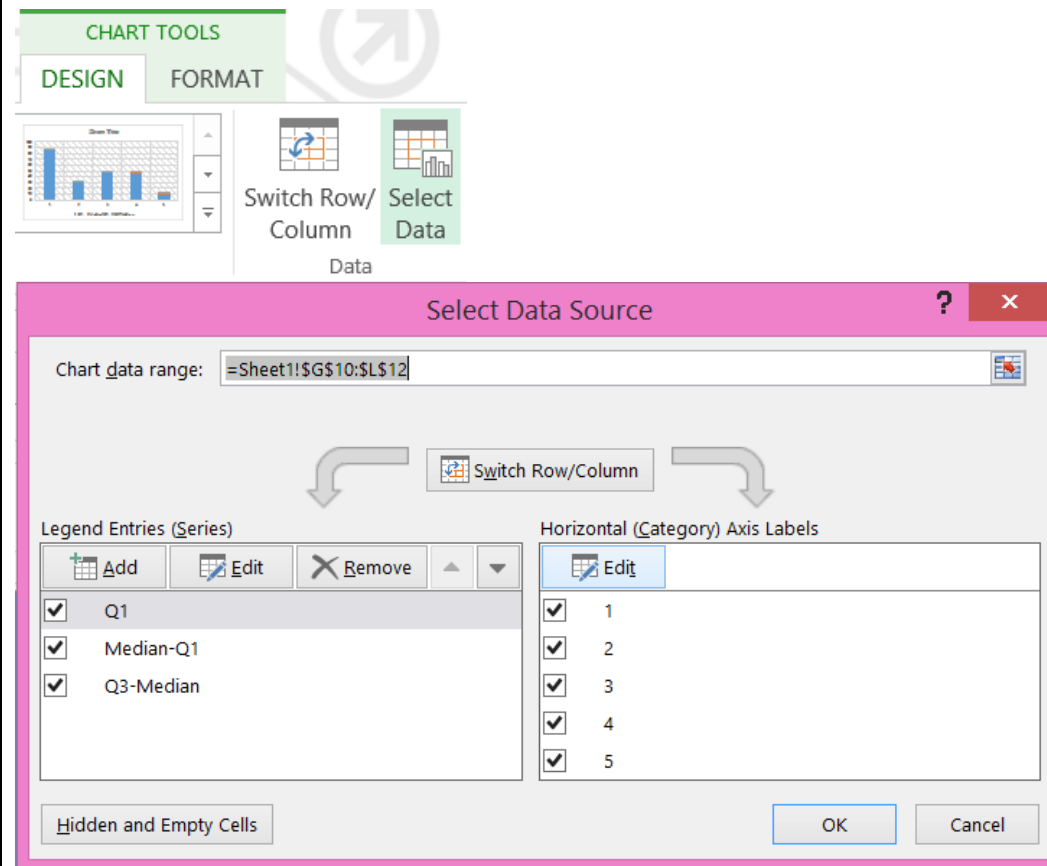
	POLICY A	POLICY B	POLICY C	POLICY D	SELF Insurance
Max	116.2	120.2	78.6	81.1	
3rd Quartile	88.3	34.7	50.6	49.6	
Median	87.9	33.1	50.4	47.9	
1st Quartile	87.5	31.5	50.3	46.1	
Min	87.1	30.1	50.1	44.5	
Q1-min	0.4	1.5	0.2	1.6	1.6
Q1	87.453106	31.520202	50.272972	46.125309	9.9274378
Median-Q1	0.5	1.6	0.2	1.8	1.8
Q3-Median	0.4	1.6	0.2	1.8	1.8
Max-Q3	27.9	85.5	28.0	31.5	132.5

The 'Insert' tab is active, and the '2-D Column' chart type is selected in the 'Charts' group.

## 2. Change the chart labels.

Under the Design tab, press Select Data. Under the Horizontal Axis Label category, select edit. When prompted for a range of cells, select the cells with your category labels.

The range of cells are taken as A:B where A is the first column and row of the data and B is the last column and row of the data.



POLICY A	POLICY B	POLICY C	POLICY D	SELF Insurance			
116.2	120.2	78.6	81.1	145.9			
88.3	34.7	50.6	49.6	13.4			
87.9	33.1	50.4	47.9	11.7			
87.5	31.5	50.3	46.1	9.9			
87.1	30.1	50.1	44.5	8.3			
POLICY A	POLICY B	POLICY C	POLICY D	SELF Insurance			

Axis Labels ?

Axis label range:

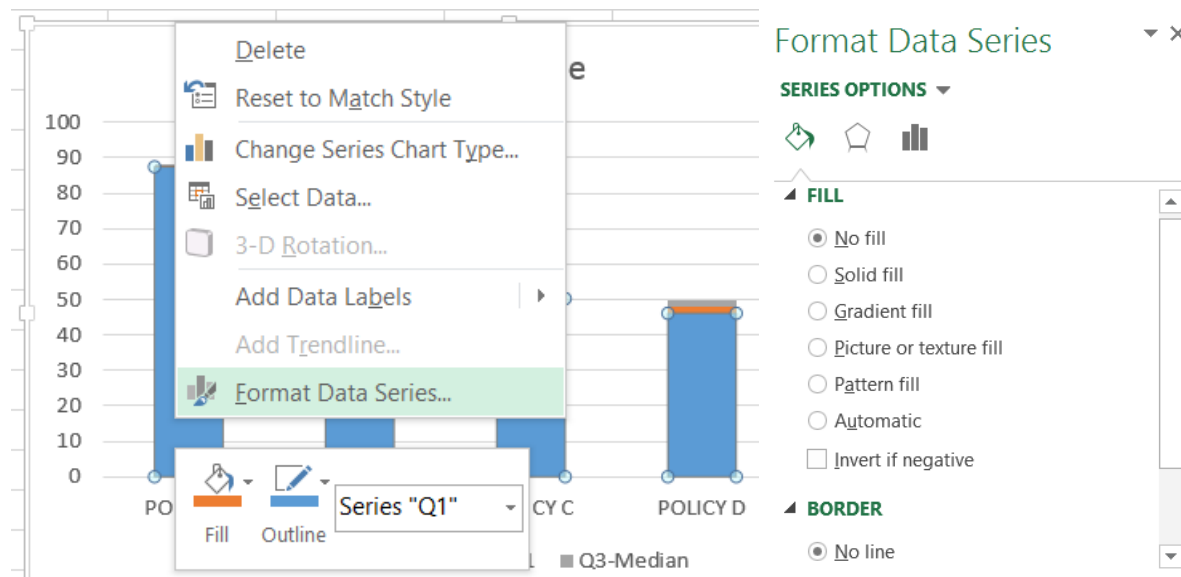
=Sheet1!\$H\$8:\$L\$8

Select Range

OK Cancel

3. Format stacked columns.

Right click on any of the Q1 boxes in the chart and select Format Data Series. Set the fill to be No fill. Set the border to be No line.



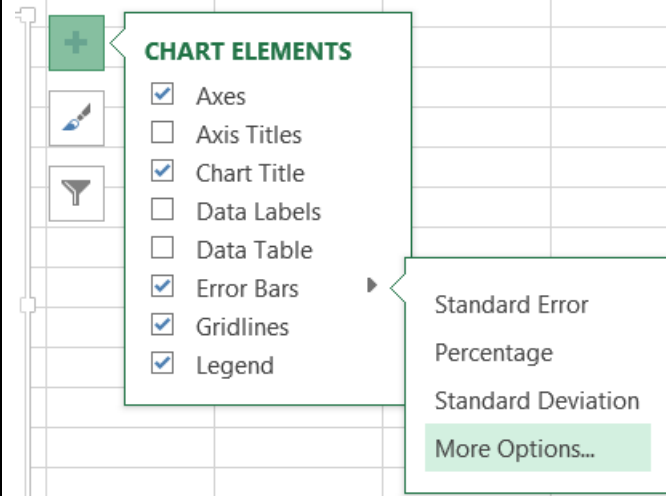
**TIP:** To quickly move between the stacks:



Use the up and down arrows on keyboard to navigate between the stacks of the column.

4. Add error bars to the stacked columns to look like bottom whiskers.

Click on the Q1 space on the chart and select the plus button. Click on add error bars. Navigate to the expansion arrow and click More Options.



5. Customize the error bars.

Make the direction minus. Make the error amount a custom, specified value. Make the negative error the values of Q1-min by selecting all of the cells in that row of your five number summary.

▼ **VERTICAL ERROR BAR**

Direction

☐ Both

☒ Minus

☐ Plus

	POLICY A	POLICY B	POLICY C	POLICY D	SELF Insurance
Q1-min	0.4	1.5	0.2	1.6	1.6
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Max-Q3	27.9	85.5	28.0	31.5	132.5

Custom Error Bars ? x

Positive Error Value  
= (1)

Negative Error Value  
= (\$13:\$L\$13)

OK Cancel

Cap

Error Amount

☐ Fixed value 0.1

☐ Percentage 5.0 %

☐ Standard deviation(s) 1.0

☐ Standard error

☒ Custom Specify Value

6. Add error bars to look like top whiskers.

Click on the Q3 space on the chart and select the plus button. Click on add error bars. Navigate to the expansion arrow and click More Options. Make the direction plus. Make the error amount a custom, specified value. Make the positive error the values of max-Q3 by selecting all of the cells in that row of your five number summary.

	POLICY A	POLICY B	POLICY C	POLICY D	SELF Insurance
Q1-min	0.4	1.5	0.2	1.6	1.6
Q1	87.453106	31.520202	50.272972	46.125309	9.9274378
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Max-Q3	27.9	85.5	28.0	31.5	132.5

Custom Error Bars ? x

Positive Error Value  
= (\$13:\$L\$13)

Negative Error Value  
= (1)

OK Cancel

Cap

Error Amount

☐ Fixed value 0.1

☐ Percentage 5.0 %

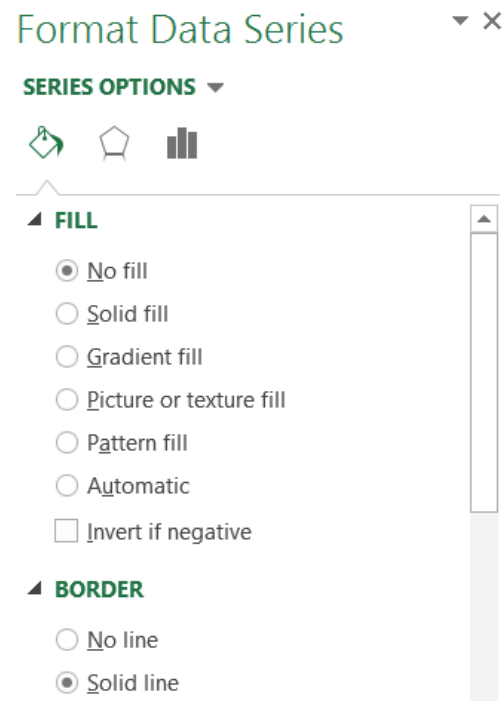
☐ Standard deviation(s) 1.0

☐ Standard error

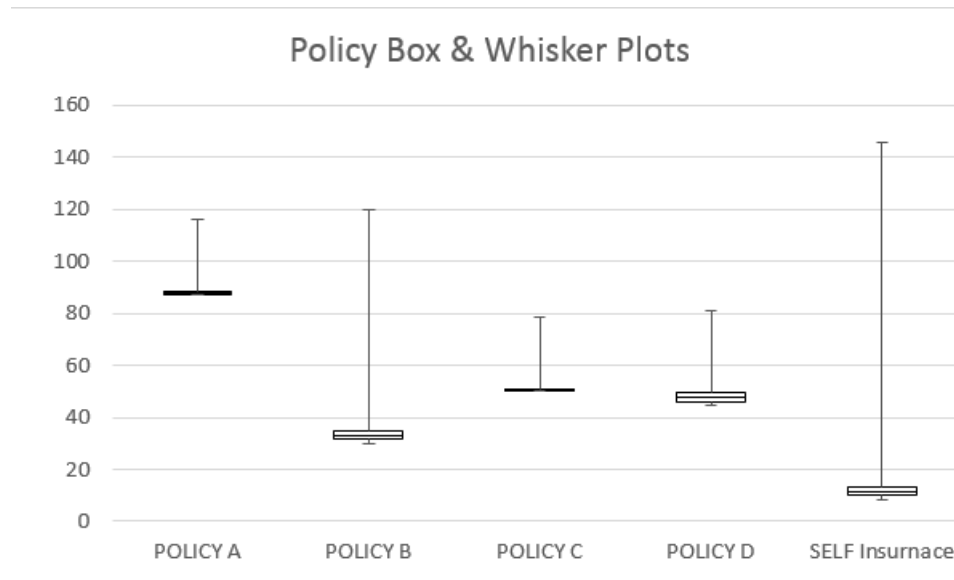
☒ Custom Specify Value

7. Format the remaining stacks into boxes.

Right click the data series and select Format Data Series. Change the fill to no fill and the border to solid line.



8. Format and label the chart.



## Create a Box and Whisker Plot

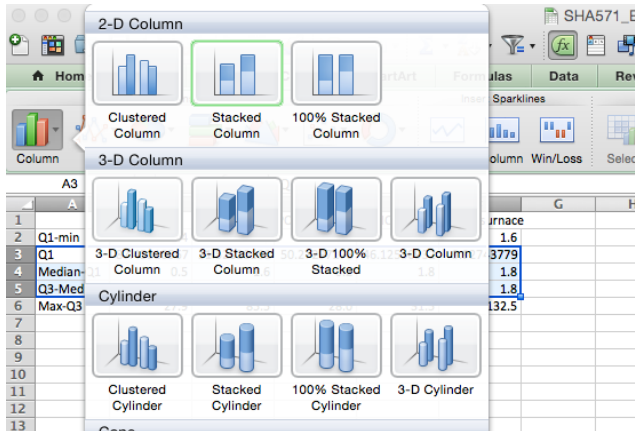
### Excel Step-by-Step How-to for Mac

Excel for Windows Instructions on [page 1](#)

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**Sample Data:** multiple insurance policies

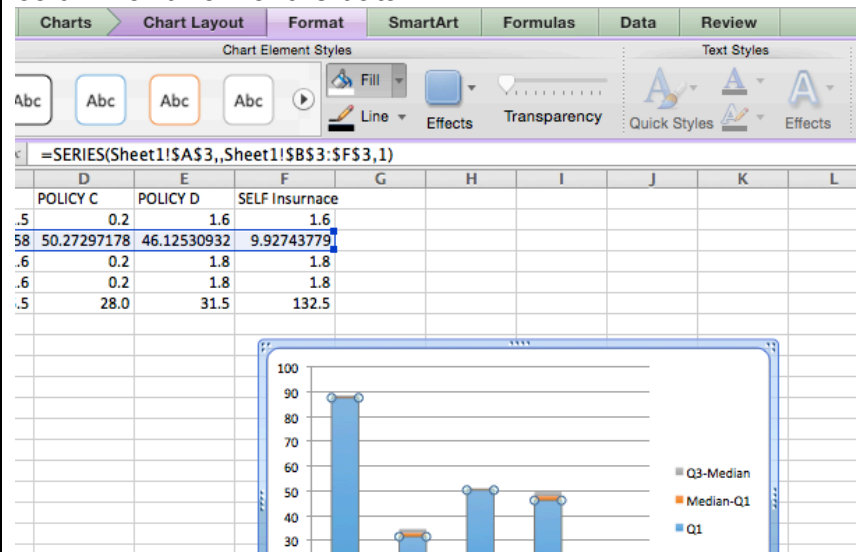
Step	Mac Instructions + Screen Shot
1. Create chart base for box and whisker plot.	<p>Highlight all of the data in Q1, Q1 median, and Q3 median and insert stacked column chart.</p> 



## 2. Change the chart labels.

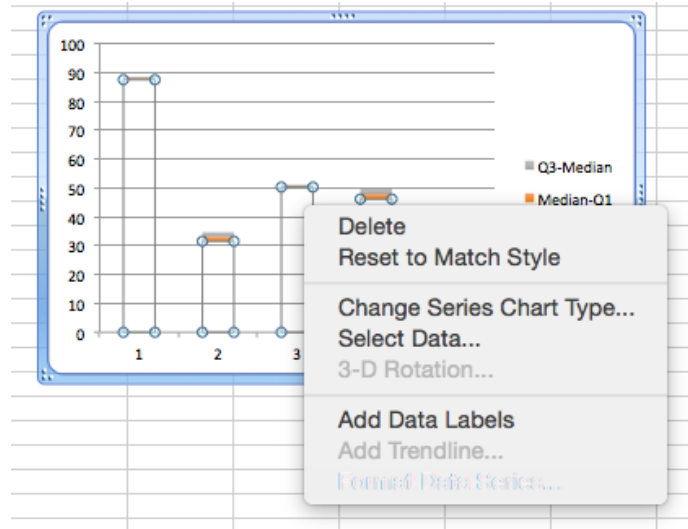
Under the Charts tab, press Select Data. Under the Horizontal Axis Label category, select edit. When prompted for a range of cells, select the cells with your category labels.

The range of cells are taken as A:B where A is the first column and row of the data and B is the last column and row of the data.



3. Format stacked columns.

Control-click on any of the Q1 boxes in the chart and select Format Data Series. Set the fill to be No fill. Set the border to be No line.



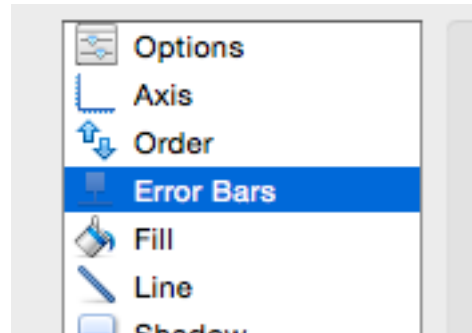
**TIP:** To quickly move between the stacks:



Use the up and down arrows on keyboard to navigate between the stacks of the column.

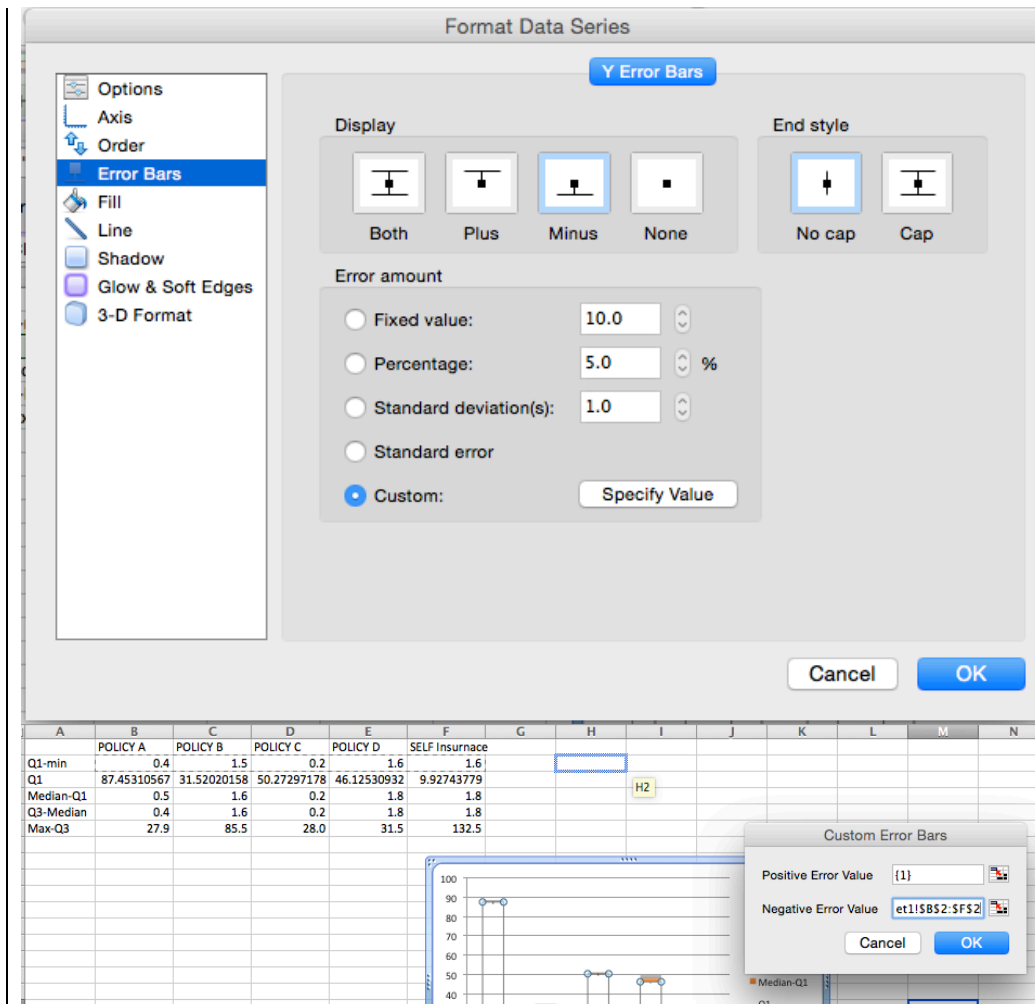
4. Add error bars to the stacked columns to look like bottom whiskers.

Under Format Data Series, select error bars.



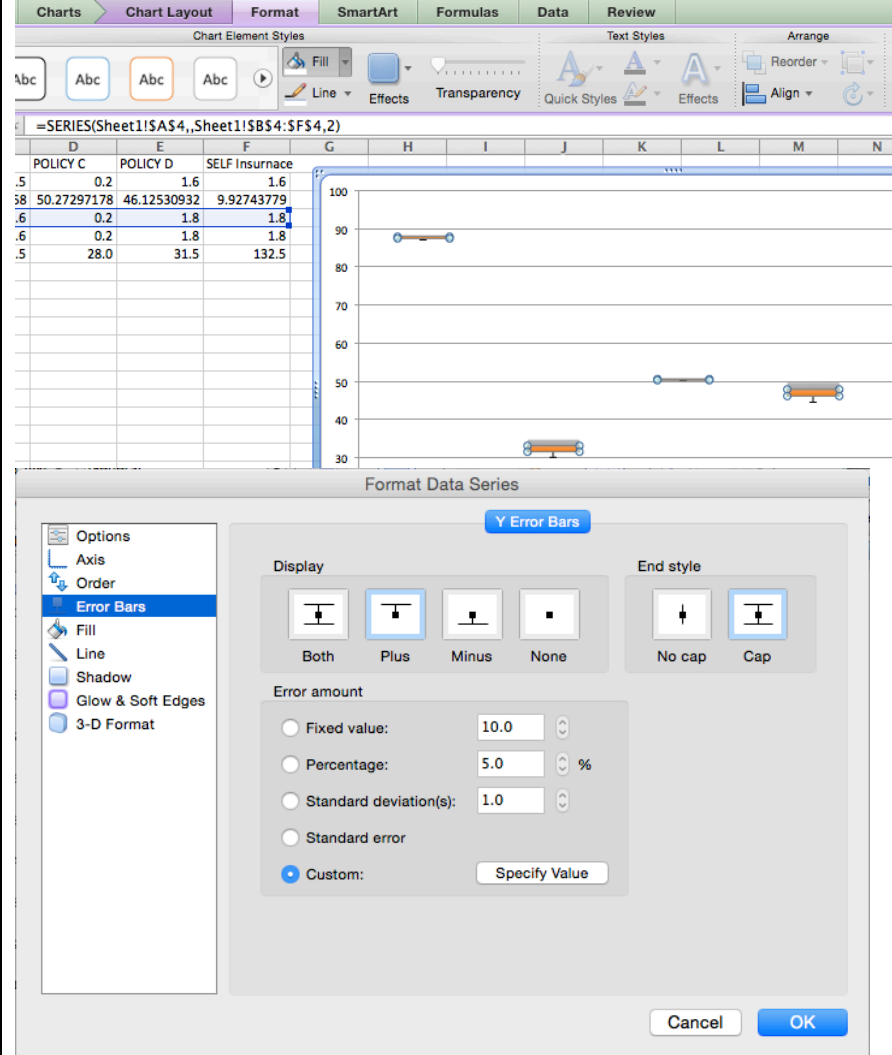
5. Customize the error bars.

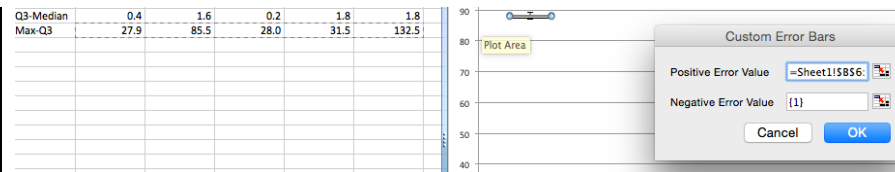
Make the direction minus. Make the error amount a custom, specified value. Make the negative error the values of Q1-min by selecting all of the cells in that row of your five number summary.



6. Add error bars to the stacked columns to look like top whiskers.

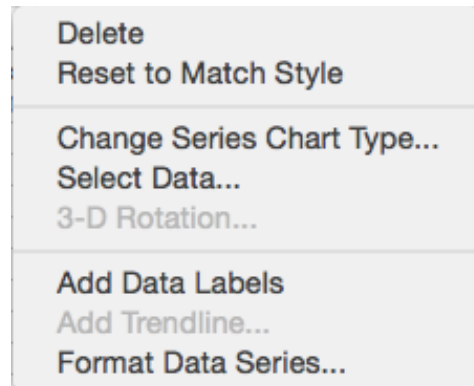
Control-click on the Q3 space on the chart and navigate to error bars. Make the direction plus. Make the error amount a custom, specified value. Make the positive error the values of max-Q3 by selecting all of the cells in that row of your five number summary.





7. Format the remaining stacks into boxes.

Control-click the data series and select Format Data Series. Change the fill to no fill and the border to solid line.



8. Format and label the chart.

