

Making Side-by-Side Boxplots Using Minitab

1. Put your data values in two of the columns of the Minitab worksheet.
2. Add variable names in the gray boxes just above the data values.
3. Click on “Graph” and then click on “Boxplot”.
4. Under “Multiple Y’s” make sure “Simple” is highlighted and then click on “OK”.
5. For each variable you want to graph, choose the variable and click on “Select”.
6. Click on the “Scale” box and check the box next to “Transpose value and category scales”. This step will make the boxplots horizontal.
7. Click on the “Gridlines” tab, check the box next to “Y-major ticks”, and click on “OK”. This step adds vertical gridlines to the graph.
8. Click on the “Labels” box.
9. Type in a description of your data under “Title:”.
10. Next to “Subtitle 1:”, state that you created the graph.
11. Click on “OK” in that window and click on “OK” in the next window.
12. Change the default horizontal axis label “Data” to something more informative, adding units when they are given.
13. Double click on one of the boxes. Under “Fill Pattern” click on the circle next to “Custom”. Click on the triangle next to “Background Color” and choose a very light color. If the color is too dark, you might not see the median lines in the boxes, especially if you print in black and white.
14. If you have a Microsoft Word document open, you can right click on the graph and choose “Send Graph to Microsoft Word” and the boxplots will appear in your Word document. If you are working in another program, click in the gray area outside the graph. Choose the “Edit” tab at the very top of the window and then choose “Copy Graph”. You now will be able to copy the double boxplots into the document you are creating.

Example (Navidi & Monk, *Elementary Statistics*, 2nd edition, #35 p.144, 1st two rows from each team): This data represents the salaries in millions of dollars from a sample of 16 players on the San Francisco Giants and 16 players on the Detroit Tigers baseball teams in 2012.

| | | | | | | | | |
|---------------|-------|-------|-------|-------|------|------|------|------|
| Giants | 19.00 | 18.25 | 16.17 | 10.00 | 8.50 | 6.00 | 6.00 | 5.00 |
| | 4.85 | 4.25 | 3.20 | 3.00 | 2.20 | 1.58 | 1.30 | 1.25 |
| Tigers | 23.00 | 21.00 | 20.10 | 13.00 | 9.00 | 6.73 | 5.50 | 5.50 |
| | 5.50 | 3.75 | 3.10 | 3.00 | 2.10 | 2.10 | 1.10 | 1.00 |

Open Minitab and enter the Giants data under C1 and the Tigers data under C2. A portion of the data entered into Minitab is show at left below.

Click on “Graph” and choose “Boxplot ...”. Under “Multiple Y’s” choose “Simple” and click on the “OK” button. Click in the box under “Graph variables:” and select both C1 and C2 from the box on the left.

Click on the “Scale ...” button. In the window that appears, click in the box near the bottom next to “Transpose value and category scales”.

Click on the “Gridlines” tab, check the box next to “Y-major ticks”, and click on “OK”.

| ↓ | C1 | C2 | C3 |
|-----------|---------------|---------------|----|
| | Giants | Tigers | |
| 1 | 19.00 | 23.00 | |
| 2 | 18.25 | 21.00 | |
| 3 | 16.17 | 20.10 | |
| 4 | 10.00 | 13.00 | |
| 5 | 8.50 | 9.00 | |
| 6 | 6.00 | 6.73 | |
| 7 | 6.00 | 5.50 | |
| 8 | 5.00 | 5.50 | |
| 9 | 4.85 | 5.50 | |
| 10 | 4.25 | 3.75 | |

Click on the “Labels ...” button. Put a description of the data like “2012 Salaries for a Sample of San Francisco Giants and Detroit Tigers” under “Title:”. Under “Subtitle 1:” write “created by *your name*”. Click on the “OK” in that window and click on “OK” in the window below.

You can change the horizontal axis title by clicking on it. In the window that appears, the title will be in a box near the bottom next to the word “text”. I changed the title from “Data” to “Salary (\$ millions)”. Clicking on the “OK” button will make the change on the graph.

Double click on one of the boxes. Under “Fill Pattern” click on the circle next to “Custom”. Click on the triangle next to “Background Color” and choose a very light color. I chose light cyan.

If you are working in Word, you can right click on the graph of the side-by-side boxplots and choose “Send Graph to Microsoft Word”, and the boxplots graph will appear in your Word document. If you are working in another program, you can right click on gray area outside the side-by-side boxplots, chose “Copy Graph” and then paste it into your document.

