DSO 545: Statistical Computing and Data Visualization

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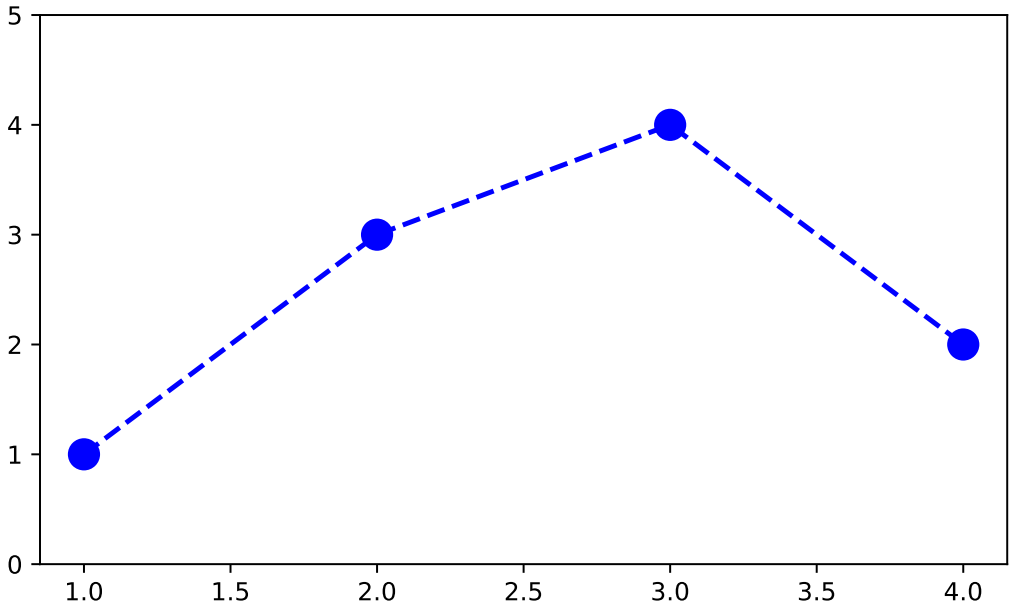
Lab 4: Data Visualization Using Matplotlib

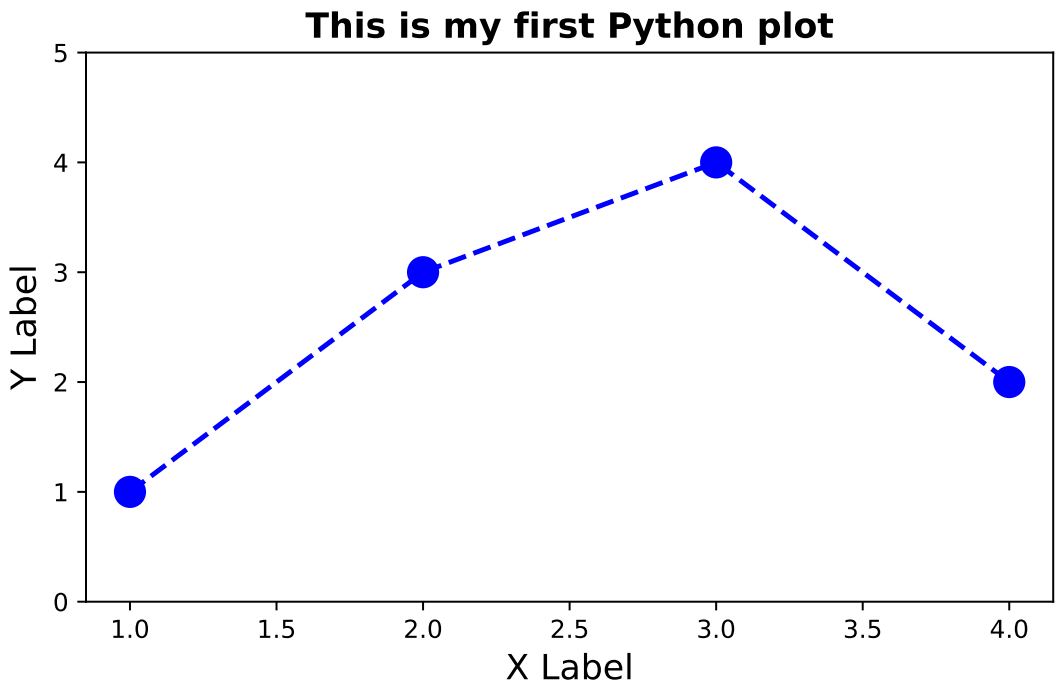
1. Create two lists (A = [1, 2, 3, 4], B = [1,3,4,2]).
2. Create the following graph where the data on the x-axis comes from `A` and the data on the y-axis comes from `B`.

```
## (0, 5)
```



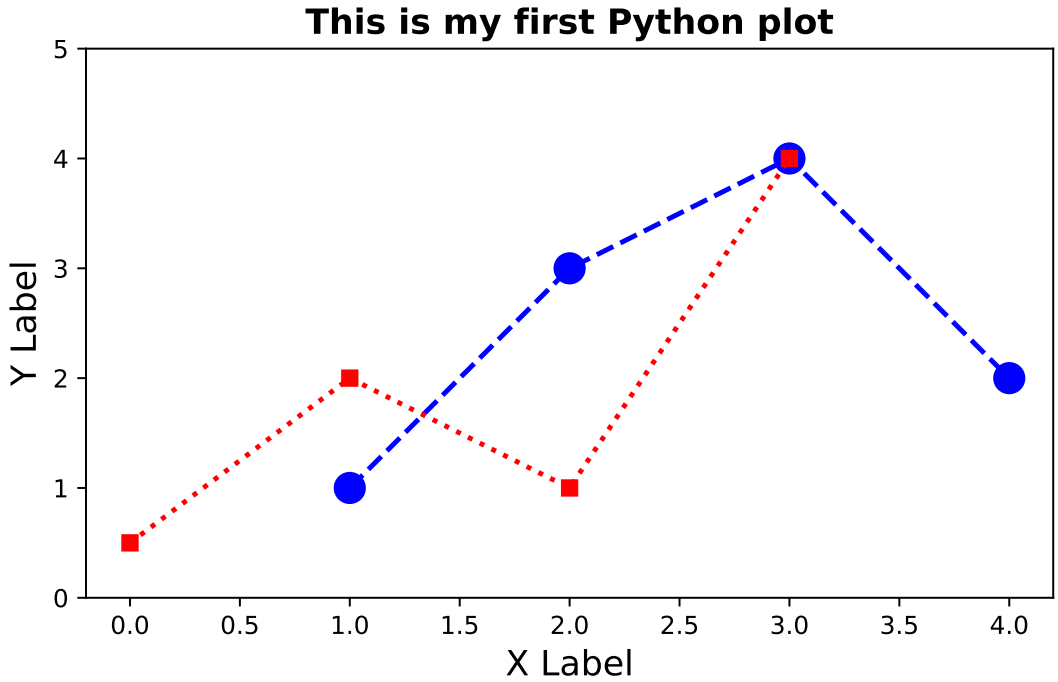
3. Update the previous plot to add a title, and axis labels as follows.

```
## (0, 5)
```



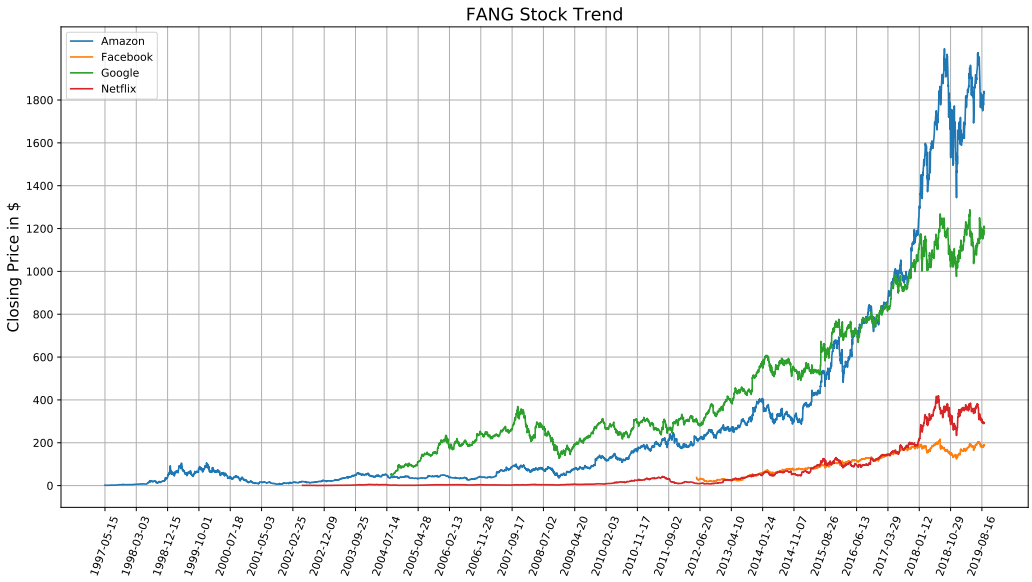
4. Add to the previous plot a line as follows:

```
## (0, 5)
```



5. Create the following plot to visualize the stocks of FANG.

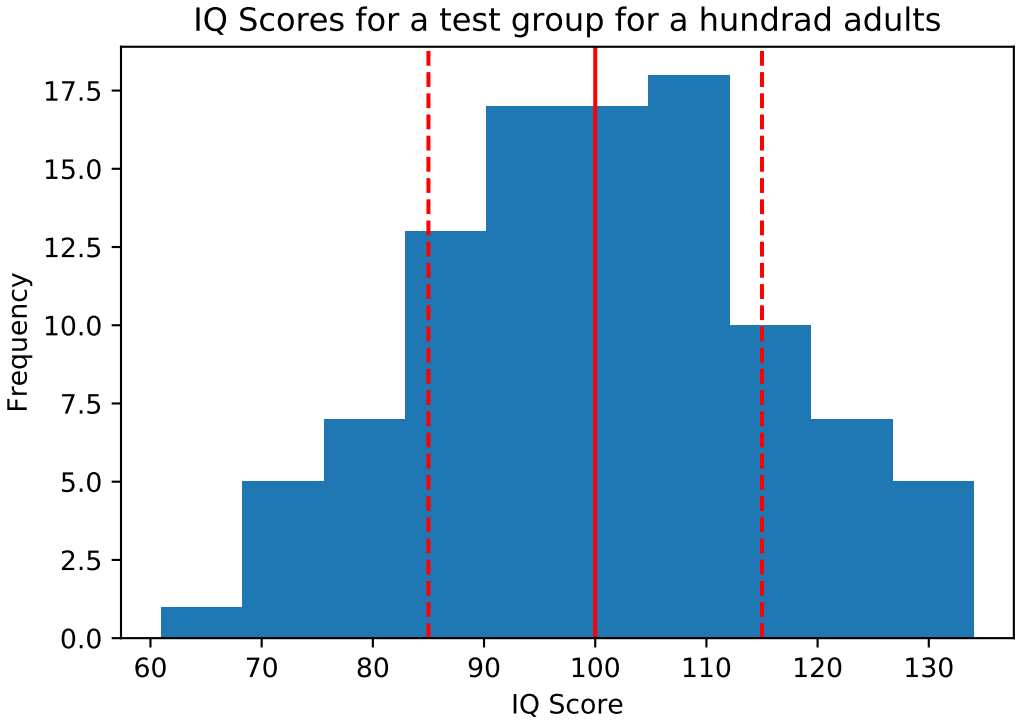
```
## ([<matplotlib.axis.XTick object at 0x10de01ad0>, <matplotlib.axis.XTick object at 0x10de01150>, <matp
## ([<matplotlib.axis.YTick object at 0x10de04bd0>, <matplotlib.axis.YTick object at 0x10de04310>, <matp
```



6. Create a list of 100 random IQ scores (normally distributed) with mean 100 and standard deviation 15. Save this list in `iq_scores`.

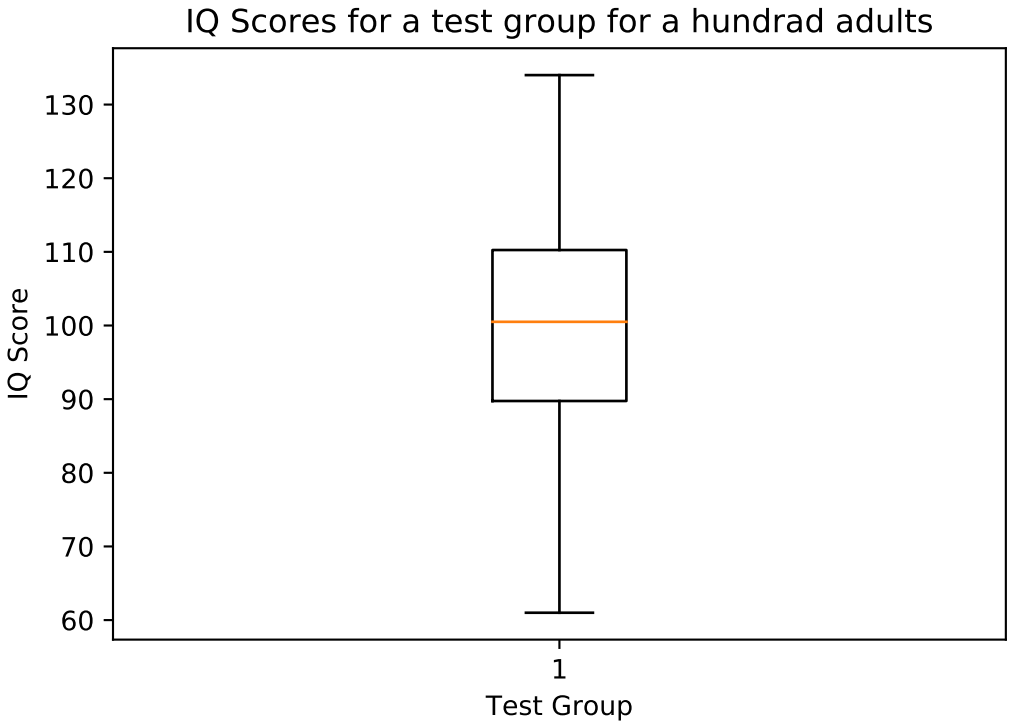
7. Using the `iq_scores` list, create the following histogtam. The dashed vertical lines represent 1 standard deviation above and below the mean (solid vertical line).

```
## (array([ 1.,  5.,  7., 13., 17., 17., 18., 10.,  7.,  5.]), array([ 61. ,  68.3,  75.6,  82.9,  90.2
##         126.7, 134. ]), <a list of 10 Patch objects>)
```



8. Create a boxplot that shows the distribution of all IQ scores:

```
## {'whiskers': [<matplotlib.lines.Line2D object at 0x11a4a8f90>, <matplotlib.lines.Line2D object at 0x
```

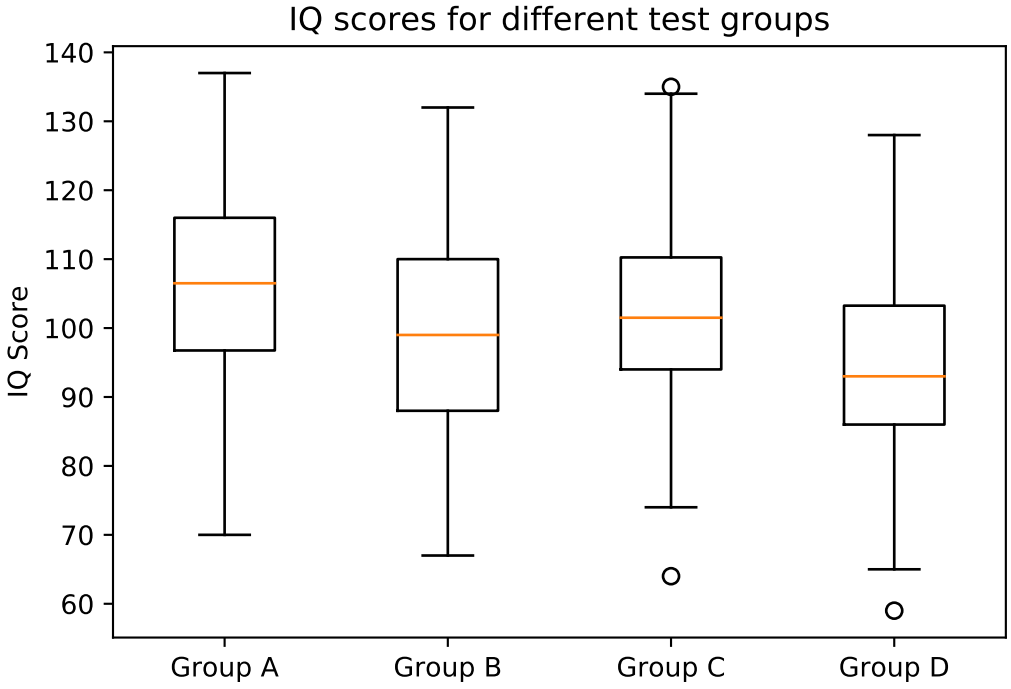


9. Create 4 groups of radom IQ scores as follows:

Groups	Size	Mean	SD
Group A	100	106	14
Group B	100	99	14
Group C	100	103	14
Group D	100	97	14

10. For all 4 groups created in the previous question, create a side-by-side box plot to visualize the distribution of IQ scores for all groups.

```
## {'whiskers': [<matplotlib.lines.Line2D object at 0x120b158d0>, <matplotlib.lines.Line2D object at 0x
```


IQ scores for different test groups
IQ Score
140
130
120
110
100
90
80
70
60
Group A
Group B
Group C
Group D