

CS 3753 & 5163 Data Science Spring 2020

Homework 2 (100 points)

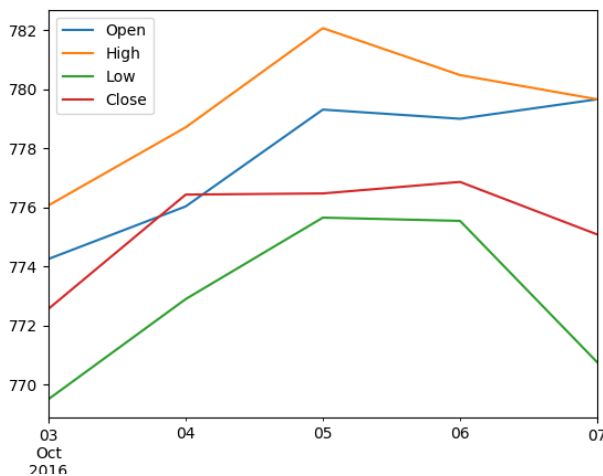
Submission:

1. submit a single python script (`abc123_hw2.ipynb`) through blackboard.
2. You should submit a `readMe.txt` file with the instruction of running your code. It should run successfully in **Jupyter Notebook**.
3. A figure should be generated and displayed after running your code.
4. Do not compress your files
5. The late submission will lose **15%** points. Your code should run successfully. There is a limit of **half points** max if the code cannot run.
6. You can submit your homework **3 times** before the deadline.

Questions

1. Write a Python program to draw line charts of the financial data of Alphabet Inc. between October 3, 2016 to October 7, 2016.

The sample financial data is in the file (`fdata.csv`). If you installed Pandas module, you can use the function `read_csv()` to read the data from the file directly. Otherwise, you can write a function to read the data from the file. The code snippet gives the output shown in the following screenshot (**the date can be in mm/dd/yy format**): (20 pts)



2. Write a Python program to display the grid and draw line charts of the closing value of Alphabet Inc. between October 3, 2016 to October 7, 2016. You can type the data into your code directly. Customized the grid lines with rendering with a larger grid (major grid) and a smaller grid (minor grid). You can refer to the `grid()` function to plot grids (20 pts).

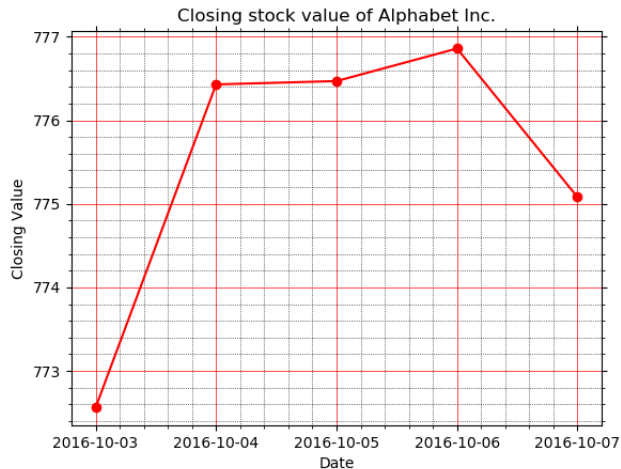
Date, Close
03-10-16, 772.559998
04-10-16, 776.429993

05-10-16, 776.469971

06-10-16, 776.859985

07-10-16, 775.080017

The code snippet gives the output shown in the following screenshot:



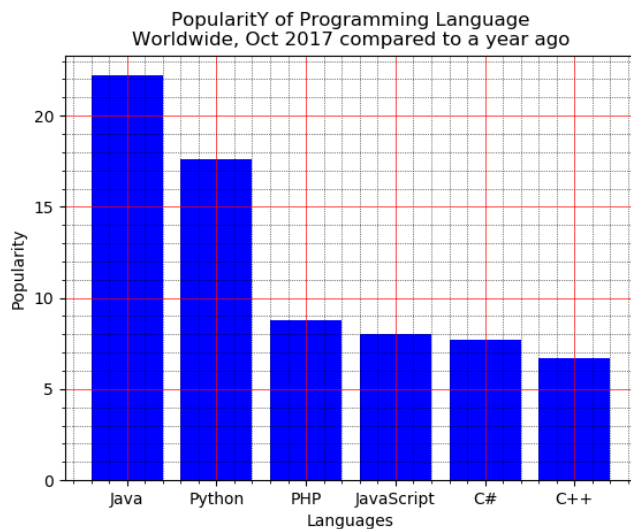
3. Write a Python programming to display a bar chart of the popularity of programming Languages (20 pts).

Sample data:

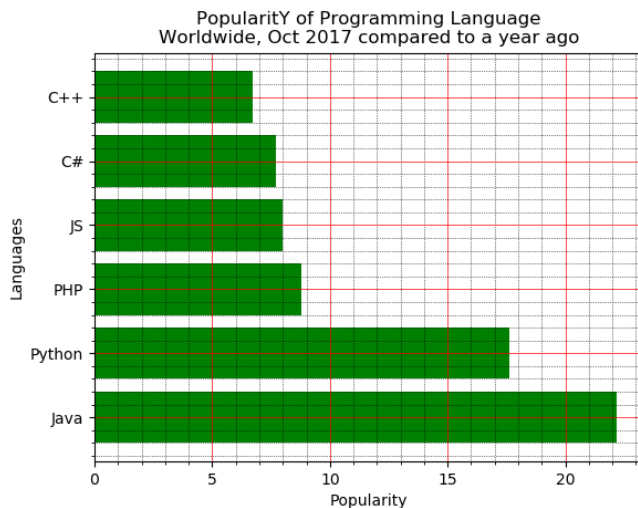
Programming languages: Java, Python, PHP, JavaScript, C#, C++

Popularity: 22.2, 17.6, 8.8, 8, 7.7, 6.7

You can type the data into your code directly. The code snippet gives the output shown in the following screenshot:



4. Write a Python programming to display a horizontal bar chart of the popularity of programming Languages using the data in Question 3 (20 pts). The code snippet gives the output shown in the following screenshot:



5. Write a Python program to draw a scatter plot for three different groups comparing weights and heights (20 pts).

weight1: 67,57.2,59.6,59.64,55.8,61.2,60.45,61,56.23,56

height1: 101.7,197.6,98.3,125.1,113.7,157.7,136,148.9,125.3,114.9

weight2: 61.9,64,62.1,64.2,62.3,65.4,62.4,61.4,62.5,63.6

height2: 152.8,155.3,135.1,125.2,151.3,135,182.2,195.9,165.1,125.1

weight3: 68.2,67.2,68.4,68.7,71,71.3,70.8,70,71.1,71.7

height3: 165.8,170.9,192.8,135.4,161.4,136.1,167.1,235.1,181.1,177.3

The code snippet gives the output shown in the following screenshot:

