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**Programming Language: Python**

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**Description:** This script works for several programs:-

1.It takes in string from user input and prints if the string is a palindrome or not.

2.It takes in a number from user input and prints if the number is a prime number or not.

3.It create a 3X3 matrix of random numbers using NumPy ,prints the max value from the above matrix and Normalizes the matrix.

4.It reads the '[file1.txt](https://iu.instructure.com/courses/2047978/files/136057301?wrap=1)' and ‘file2.txt’ in two pandas dataframes, and merges both the file and also calculates mean for each gene row and sample column.

5. Using created data frame, it generates figure with two box plot(showing distribution of each sample.)

Required files: file1.txt, file2.txt, main.py and all this files should be in same folder.

Required modules: ‘pandas’and ‘Matplotlib’.

Required software or platform: Python version 3.9 and Pycharm 2021.3.2(Community Edition) .

Execution (Here I am showing how to execute script on pycharm)

1. Open pycharm.
2. Make sure to set the proper script file path ‘main.py’ and working directory path in configuration.
3. Then Pycharm recognize the working folder as a Source folder for the project.
4. All the files will open on left side windows in Pycharm.
5. Click on main.py.
6. main.py will open and now just click on run button (upper right corner).

8) Script file will run and executed with desired output.

\*\* This script will only run if you have required modules installed which are mentioned above.

Output files -

1. Sample\_file.csv