

Machine Learning Assignment 3 (Part 1)

Assignment Using Pandas and Matplotlib (Part 1) to visualize the data given below.

Exercise 1 : Create a dataframe as shown below:

```
df = pd.DataFrame(data={'a':np.random.randint(0, 100, 30),  
                        'b':np.random.randint(0, 100, 30),  
                        'c':np.random.randint(0, 100, 30)})
```

a) Create a figure of size 15x8 with two subplots, top and bottom.

Draw two lines in the top axes, one green and one orange.

Add a legend for the top plot, Green and Orange. Put this legend in the top-middle of graph.

Extra Challenge: In the bottom axes, create a graph of only the data points, marked by circles, but with no line connecting the points.

b) Draw Bar graph for the above data.

Exercise 2 : According to the dataframe in Exercise 1:

a) Create a figure with three subplots, aligned vertically.

b) Create a bar graph for a and b on the first two,

c) Create a stacked bar graph by putting b on top of a

d) Design a piechart for a and b

Exercise3:

```
Language = ['Java', 'Python', 'PHP', 'JavaScript', 'C#', 'C++']
```

```
popularity = [22.2, 17.6, 8.8, 8, 7.7, 6.7]
```

Write a Python programming to display a

a) Bar chart of the popularity of programming Languages. Use different color for each bar.

b) Create a group barchart by taking two consecutive elements from the language list to form a group.

c) Create a stacked barchart for the groups.

(Visualization styles : Provide suitable label in the x axis, y axis and a title , legends , and border line)