

Use NumPy library to complete the following tasks:

1. Create two linear arrays a and b with 20 random elements each ranging from 1 to 100.
2. Now change those linear arrays to two 5x4 matrices.
3. Perform scalar multiplication with matrix a and b.
4. Now try to modify the matrix b and perform matrix multiplication with a and b to store it in c.
5. Print only the column 2, 3 of matrix c. Print the whole matrix using slicing technique.
6. Find the largest element in the array, and also the index of that element.
7. Convert the matrix c into an one dimensional array keeping the original array unchanged.

Use Pandas library to complete the following tasks:

CSV file:

https://drive.google.com/file/d/1zo5y462G1FaGUIAEUayACHSV2zSliR-5/view?usp=drive_link

1. Read the CSV file as DataFrames.
2. Show the first few rows of the DataFrame to get an idea of the whole dataset.
3. Show the summarized details of the dataset.
4. Show how many null values we have in each column.
5. Replace any column's null values with the mean value of that particular column.
6. Show only the Math scores of all the students.

Use Matplotlib library to complete the following tasks:

```
temperature_dhaka = [25,34,21,45,28,6,43,18,7,2]
```

```
humidity_dhaka = [28, 25,29,20, 26, 50, 19, 29, 52, 55]
```

1. Generate a scatter plot graph for temperature_dhaka vs humidity_dhaka using (*) as the marker in color red.

```
study_hours = [2,3,4,4, 5, 6, 7, 7, 8, 9, 9, 10, 11, 11, 12]
```

```
marks = [6, 10, 15, 20, 34, 44, 55, 60, 55, 67, 70, 80, 90, 99, 100]
```

2. Now do a line plot for study_hours vs marks with figure size (12,8)

```
subjects = ['Maths', 'English', 'Science', 'Physics', 'Computer']
```

```
marks = [89, 90, 45, 78, 99]
```

3. Now draw a horizontal bar graph showing the scores in each of the subjects.
4. Draw a vertical bar graph where each subject score is visualized in different colors.
5. Show all these graphs in one graph using subplot() function.