Explorin Academy

# MatPlotLib

Practice Questions

## 1. Plot line

Given two integer arrays, X and Y. Plot the graph between X and Y.

From the help of a graph, determine the range of Y when the value of X is 8.

Plot and print the range of Y.

**Note:** Here lower limit and upper limit of range must be multiple of 10 and difference between upper limit and lower limit must be equal to 10.

**Output Format:**

```
lower_limit to upper_limit
```



## 2. Matplotlib increase

Create two arrays, x and y.

x should hold the first 20 even points starting from 0 and y should be an exponentiation array where y[i] = 2^x[i].

Plot a line graph, the line should be of color blue and it should be a dashed line (like -----).

Find the value of x from where there is a slight increase in value of y as shown in your plot.

Plot and print the value of x.

**Note:** Here x must be multiple of 5.

**Output Format:**

```
x
```

## 3. Plot Graphs

Plot the two graphs on the same plot.
The graph between the two given integer arrays X and Y and the graph between two integer arrays X and Y where X should hold 20 even points starting from 0 and y should be equal to X where y[i] = x[i].

Plot should have x label and y label and the legend to differentiate between the two graphs.

## 4. Microsoft Bubble Graph

We are given data from Microsoft Corporations, it contains the gross annual revenue in billion U.S dollars and the number of employees in thousands and year. Plot a bubble graph to visualise how revenue and number of employees changed with year.

Find years where there is a drastic increase in gross revenue of Microsoft Corporations (from previous and next year both). Plot the bubble graph between year and revenue and keep employees inside the bubble.

Print the year, revenue and number of the employee where there is a drastic increase in revenue (Top 2).

**Note:** For finding the year where there is a drastic increase in gross revenue check whether the revenue of that year is greater than in previous years and greater than next year. Here years should be printed in ascending order.

**Output Format:**

```
year1 revenue1 employee1

year2 revenue2 employee2

. . .

. . .
```

## 5. Laptop Sales

Given data of distribution of sales of different laptops in 2018 in India (Company name and number of laptops sold). Plot a pie graph and show the %age distribution. Print the value of %age distribution also.

**Note:** Print the %age upto 1 decimal place and in the same order as given in data. Don't print the % sign, just print the number upto 1 decimal place.

**Output Format:**

```
company_name1 percentage1

company_name2 percentage2

. . .

. . .
```



## 6. Students data

Given height (in centimetre) and weight (in kilograms) of 20 students, Plot two different histograms of height and weight with a bin size of 5.

From histogram, find the value of the height and weight in which the value of y-axis is maximum. Print starting value of bin where y is maximum. For eg. if for height with range 50 to 55 is maximum, then print 50. Print the value as integer (after rounding off).

Plot the histogram and print the value.

**Output Format:**

```
height_value weight_value
```