# Python: Assignment 8 – Matplotlib

1) Write a Python Program to plot a line chart using following information.

| Date | 17/10 | 18/10 | 19/10 | 20/10 | 21/10 | 22/10 | 23/10 | 24/10 | 25/10 |
|---|---|---|---|---|---|---|---|---|---|
| Temperature | 25 | 26 | 25.5 | 24 | 23.7 | 26.8 | 28 | 30.2 | 31 |

   a) Plot a line chart of date versus temperature
   b) Line color should be blue
   c) Line width should be 0.5
   d) Line style should be dotted
   e) Add labels on X and Y axis
   f) Add title to the chart
   g) Add Grid to the chart

2) Consider the average heights and weights of persons aged 7 to 15 stored in the following two lists:

   height = [121.9,124.5,129.5,134.6,139.7,147.3, 152.4, 157.5,162.6]

   weight= [19.7,21.3,23.5,25.9,28.5,32.1,35.7,39.6, 43.2]

   Let us plot a line chart where:

   a) x axis will represent weight
   b) y axis will represent height
   c) x axis label should be “Weight in kg”
   d) y axis label should be “Height in cm”
   e) colour of the line should be green
   f) use * as marker
   g) Marker size as10
   h) The title of the chart should be “Average weight with respect to average height”.
   i) Line style should be dashed
   j) Linewidth should be 2.

3) Consider the following data. Plot a bar graph. It should have the following:
   a) Graph title should be “Mela Sales Report”.
   b) X axis label as Days.
   c) Y axis label as “Sales in Rs”.
   d) Bar colours are red for week 1, blue for week 2 and brown for week 3.

e) Edge color should be black

| Week 1 | Week 2 | Week 3 | Day |
|---|---|---|---|
| 7500 | 6800 | 7100 | Sunday |
| 5500 | 4700 | 4500 | Monday |
| 6100 | 5700 | 4000 | Tuesday |
| 4500 | 4800 | 3700 | Wednesday |
| 5700 | 5400 | 4000 | Thursday |
| 4000 | 2700 | 2200 | Friday |
| 6500 | 5900 | 6100 | Saturday |

**Day-wise sales data along with Day's names**

4) Consider the following data. Draw a pie chart.

| State | Geographical Area | Forest Cover |
|---|---|---|
| Arunachal Pradesh | 83,743 | 66,964 |
| Assam | 78438 | 28105 |
| Manipur | 22327 | 17346 |
| Meghalaya | 22439 | 17146 |
| Mizoram | 21081 | 18186 |
| Nagaland | 16579 | 12489 |
| Tripura | 10486 | 7726 |

**Forest cover of north eastern states**

It should have the following:

a) Graph title should be "Forest cover of north eastern states".
b) Explode the 'Mizoram'
c) Show legend
d) Show percentage
e) Edge color should be black

5) Consider the following dataset.

https://drive.google.com/file/d/1lYmfUNkldNdxPcKKSEOZBYgtejk-CdBM/view?usp=sharing

(Uploaded on Google Drive. Access it using spcollegelibrary account only)

Display a histogram plots.

a) Only for 'ANNUAL – MAX'
b) For both 'JAN-FEB - MIN' and ' JAN-FEB - MAX'

It should have the following:

a) Display proper title
b) Display x-label and y- label
c) Display legend
d) Specify colors

6) ABC sells designer watches and bags. During the sales season, he gave discounts ranging from 10% to 50% over a period of 5 weeks. He recorded his sales for each type of discount in an array. Draw a scatter plot to show a relationship between the discount offered and sales made

discount = [10, 20, 30, 40, 50]

salesInRs = [55000, 65000, 75000, 85000, 125000]

It should have the following:

a) Display proper title
b) Display x-label and y- label
c) Display legend
d) User colormap

7) Consider the following dataset.

https://drive.google.com/file/d/1C6H463PopcPKzpzCafUu9J6_vw1hCzoM/view?usp=sharing

(Uploaded on Google Drive. Access it using spcollegelibrary account only)

Display a scatterplot.

a) Display scatter plot of BMI vs Charges
b) Display pie plot for ‘region’
c) Display histogram of
    - Children
    - Bmi
    - Expenses
    - age

It should have the following:

a) Display proper title

b) Display x-label and y- label

c) Display legend

d) Specify color