Practical No. 04

Aim: Write a python program to study and implement following graphs using matplotlib library:

i. Line Graph
ii. Scatter Plot
iii. Histogram

S/W Required: Python 3.9, Jupyter Notebook

Theory:

Matplotlib is a multiplatform data visualization library built on NumPy arrays, and designed to work with the broader SciPy stack. One of Matplotlib's most important features is its ability to play well with many operating systems and graphics backends. Matplotlib supports dozens of backends and output types, which means you can count on it to work regardless of which operating system you are using or which output format you wish.

Line Graph:

A line graph, also known as a line chart or a line plot, is commonly drawn to show information that changes over time. You can plot it by using several points linked by straight lines. It comprises two axes called the "x-axis and the "y-axis".

Scatter Plot:

Another commonly used plot type is the simple scatter plot, a close cousin of the line plot. Instead of points being joined by line segments, here the points are represented individually with a dot, circle, or other shape.

Histogram:

A histogram is the graphical representation of data where data is grouped into continuous number ranges and each range corresponds to a vertical bar.

- The horizontal axis displays the number range.
- The vertical axis (frequency) represents the amount of data that is present in each range.

The number ranges depend upon the data that is being used.

Code/Program:

Conclusion:

Thus, we have studied various graphs and how to implement them using python's matplotlib library.