Experiment 1

Aim: Perform different functions of Matplotlib Library

Theory: Matplotlib is a python library that provides a variety of tools for creating high-quality data visualizations. It is one of the most popular library due to its ease of use and versatility. The library is built on NumPy and provides a range of options for creating different types of plots and graphs. including line plots, scatter plots, barcharts histogram and & more. Some of the types are as follows

1) Bar Chart:
Bar charts are used to represent data using rectangular bars. Each bar represents a category and its value, making it ideal for comparing values across categories

2) Scatter Plot:
Scatter plots are used to show the relationship between two continuous variables. Each point on the plot represents an observation

3) Pie Chart
Pie chart represents proportion of different categories as slice of a circle. Each slice shows the percentage of that category relative to the total

4) Line Plot
Line plot are useful for showing trends or changes

4) line plot: over a continuous index such as time or dataset rows

5) Histogram
Histograms shows the frequency distribution of a single numerical variable. The data is grouped into intervals (bins), and the number of observation in each bin is represented by the height of the bar.

6) Heatmap
A heatmap displays data in a matrix format where individual values are represented with colours. It's useful for visualizing correlation between multiple variables

7) Box Plot:
Box plot summarizes the distribution of a dataset and show its spread, central value (median) and outliers.

8) Stack Plot:
Stack Plots are used to visualize the cumulative contribution of multiple groups over a continuous variable.

Conclusion
This experiment demonstrated various types of plots using Matplotlib and Seaborn to explore and analyze the FIFA dataset. Each plot served a unique purpose in visualizing different aspects of data, helping in better interpretation and data driven decision making

LO's achieved : LO1

PO's achieved : PO1, PO2, PO4, PO5, PO10, PO12

PSO' achieved : PSO1, PSO2