Practical 10

Python programs to visualise the line graph, bar graph, histogram, scatter graph and pie chart using matplotlib

pip install matplotlib

Line Graph

```
import matplotlib.pyplot as plt
# Sample data
x = [1, 2, 3, 4, 5]
y = [10, 20, 25, 30, 35]
# Create line graph
plt.plot(x, y, marker='o')
# Add title and labels
plt.title('Line Graph')
plt.xlabel('X-axis')
plt.ylabel('Y-axis')
# Show plot
plt.show()
```

Bar Graph

```
import matplotlib.pyplot as plt
# Sample data
categories = ['A', 'B', 'C', 'D', 'E']
values = [10, 20, 25, 30, 35]
# Create bar graph
plt.bar(categories, values)
# Add title and labels
```

```
plt.title('Bar Graph')
plt.xlabel('Categories')
plt.ylabel('Values')
# Show plot
plt.show()
```

Histogram

```
import matplotlib.pyplot as plt
# Sample data
data = [1, 2, 2, 3, 3, 3, 4, 4, 4, 4, 5, 5, 5, 5, 5]
# Create histogram
plt.hist(data, bins=5, edgecolor='black')
# Add title and labels
plt.title('Histogram')
plt.xlabel('Bins')
plt.ylabel('Frequency')
# Show plot
plt.show()
```

Scatter Graph

```
import matplotlib.pyplot as plt
# Sample data
x = [1, 2, 3, 4, 5]
y = [10, 20, 25, 30, 35]
# Create scatter graph
plt.scatter(x, y)
# Add title and labels
```

```
plt.title('Scatter Graph')
plt.xlabel('X-axis')
plt.ylabel('Y-axis')
# Show plot
plt.show()
```

Pie Chart

```
import matplotlib.pyplot as plt
# Sample data
labels = ['A', 'B', 'C', 'D', 'E']
sizes = [10, 20, 25, 30, 35]
# Create pie chart
plt.pie(sizes, labels=labels, autopct='%1.1f%%')
# Add title
plt.title('Pie Chart')
# Show plot
plt.show()
```