

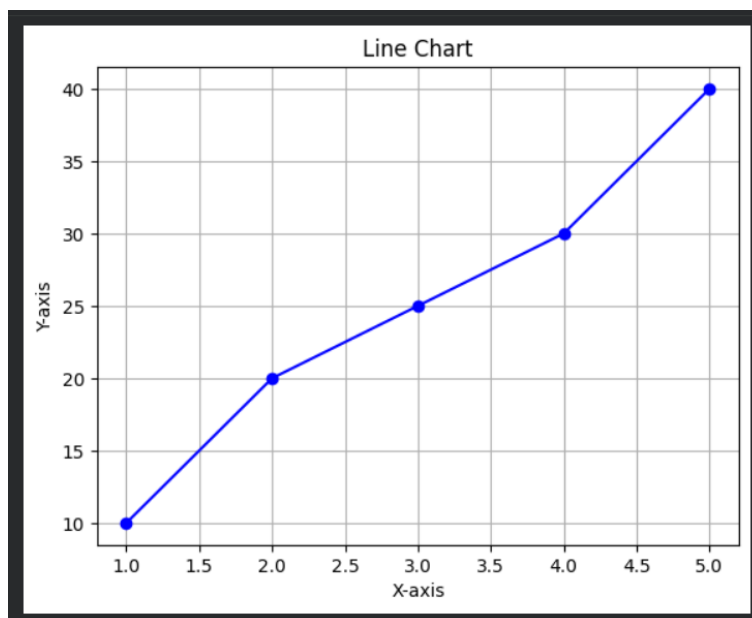


Experiment : 01

Objective: Program to implement various types of charts (Line , Bar , Hist , Pie , Scatter) using matplotlib

1. Line Chart

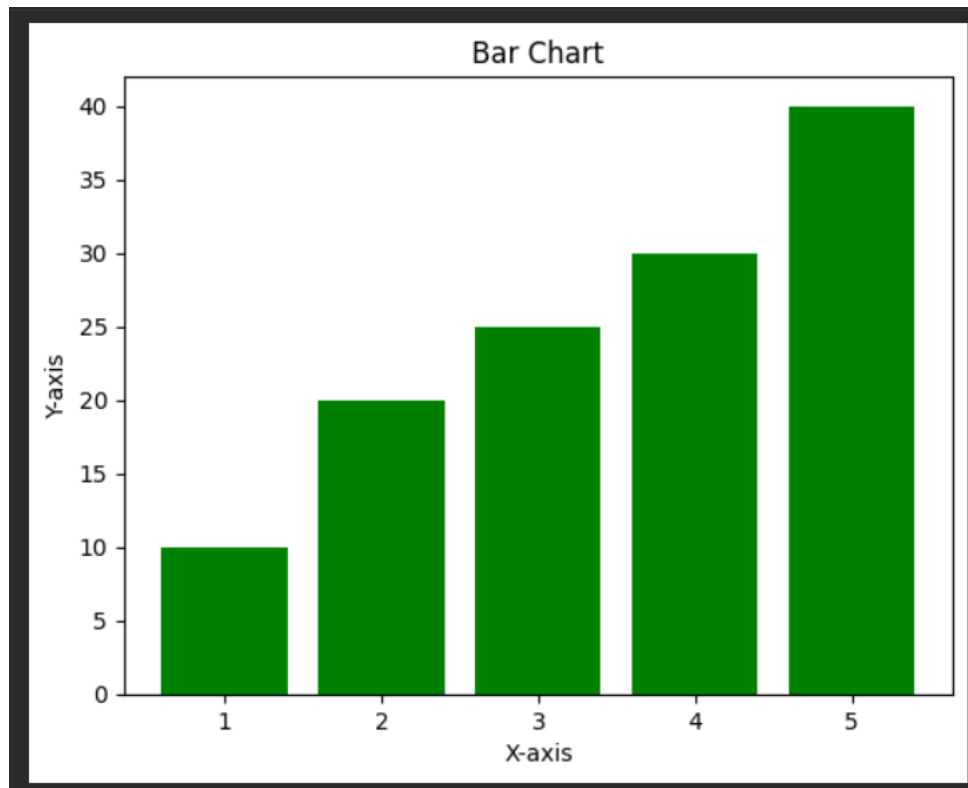
```
import matplotlib.pyplot as plt  
  
import numpy as np  
  
x = np.array([1, 2, 3, 4, 5])  
y = np.array([10, 20, 25, 30, 40])  
plt.plot(x, y, marker='o', color='blue')  
plt.title("Line Chart")  
plt.xlabel("X-axis")  
plt.ylabel("Y-axis")  
plt.grid(True)  
plt.show()
```





2. Bar Chart

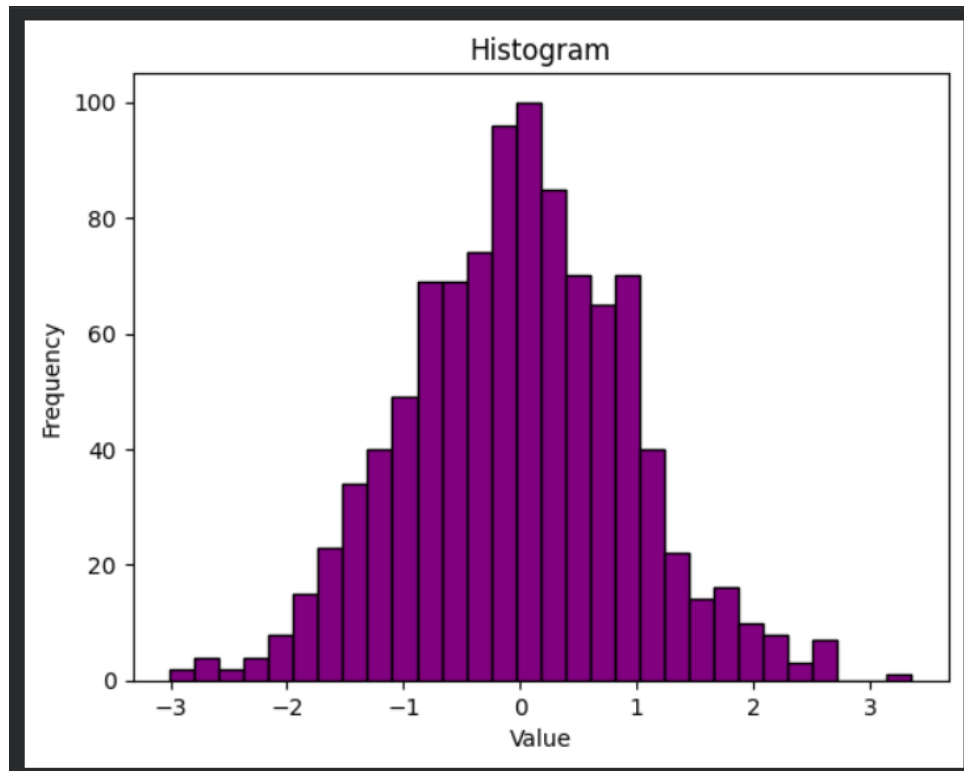
```
import matplotlib.pyplot as plt  
  
import numpy as np  
  
x = np.array([1, 2, 3, 4, 5])  
y = np.array([10, 20, 25, 30, 40])  
  
plt.bar(x, y, color='green')  
  
plt.title("Bar Chart")  
  
plt.xlabel("X-axis")  
  
plt.ylabel("Y-axis")  
  
plt.show()
```





3.Histogram

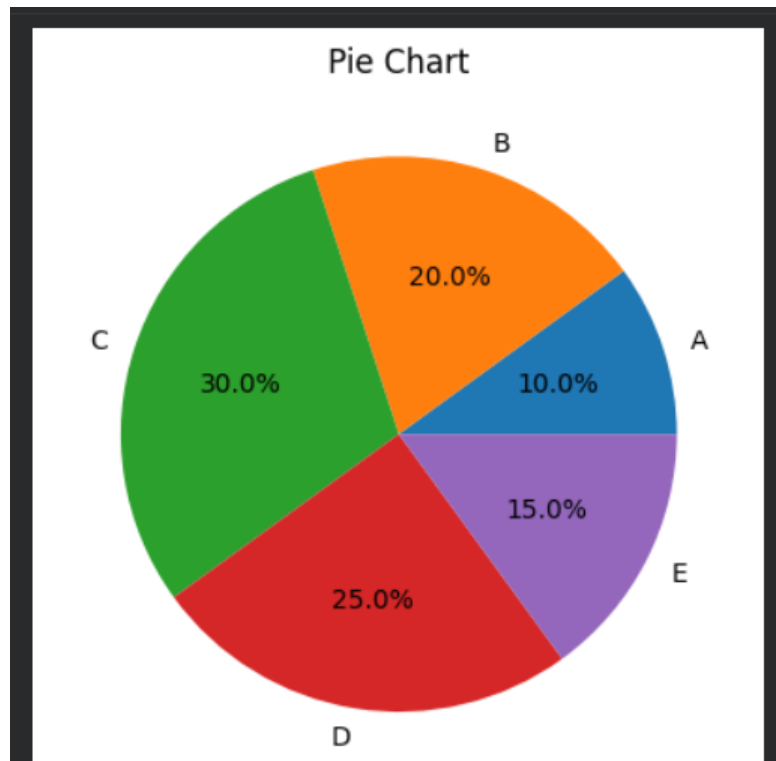
```
import matplotlib.pyplot as plt  
import numpy as np  
data = np.random.randn(1000)  
plt.hist(data, bins=30, color='purple', edgecolor='black')  
plt.title("Histogram")  
plt.xlabel("Value")  
plt.ylabel("Frequency")  
plt.show()
```





4. Pie Chart

```
import matplotlib.pyplot as plt  
data = [10, 20, 30, 25, 15]  
labels = ['A', 'B', 'C', 'D', 'E']  
plt.pie(data, labels=labels, autopct='%1.1f%%')  
plt.title("Pie Chart")  
plt.show()
```





5. Scatter Plot

```
import matplotlib.pyplot as plt  
import numpy as np  
x = np.array([1, 2, 3, 4, 5])  
y = np.array([10, 20, 25, 30, 40])  
plt.scatter(x, y, color='red')  
plt.title("Scatter Plot")  
plt.xlabel("X-axis")  
plt.ylabel("Y-axis")  
plt.show()
```

