

Experiment–2

Aim:

To understand basic matplotlib for plotting bar, line, pie, histogram etc.

Code:

```
1 import matplotlib.pyplot as plt
2 import numpy as np
3
4 plt.style.use('seaborn-v0_8')
5
6 months = ['Jan', 'Feb', 'Mar', 'Apr', 'May', 'Jun']
7 sales = [120, 135, 180, 165, 200, 220]
8 profit = [30, 40, 55, 50, 70, 80]
9 categories = ['Rent', 'Food', 'Transport', 'Entertainment', 'Savings']
10 expenses = [5000, 3000, 1500, 2000, 4000]
11 ages = np.random.normal(35, 10, 1000)
12
13 # Line Plot plt.figure(figsize=(10,6))
14 plt.plot(months, sales, 'o-b', label='Sales')
15 plt.plot(months, profit, 's-g', label='Profit')
16 plt.title('Monthly Sales vs Profit')
17 plt.xlabel('Month')
18 plt.ylabel('Amount ()')
19 plt.legend()
20 plt.grid(True)
21 plt.show()
22
23 # Bar Plot plt.figure(figsize=(10,6))
24 x = np.arange(len(months))
25 plt.bar(x-0.2, sales, 0.4, label='Sales', color='skyblue')
26 plt.bar(x+0.2, profit, 0.4, label='Profit', color='lightgreen')
27 plt.title('Sales & Profit by Month')
28 plt.xlabel('Month')
29 plt.ylabel('Amount ()')
30 plt.xticks(x, months)
31 plt.legend()
32 plt.show()
33
34 # Horizontal Bar plt.figure(figsize=(10,6))
35 plt.barh(categories, expenses, color='coral')
36 plt.title('Monthly Expenses')
37 plt.xlabel('Amount ()')
38 plt.show()
39
40 # Pie Chart plt.figure(figsize=(8,8))
41 plt.pie(expenses, labels=categories, autopct='%1.1f%%', startangle=90)
```