**Task10- Use the Matplotlib module for plotting in python.**

**Task 10.1**: Student Marks Visualization

A teacher wants to compare the marks of students in three subjects: Math, Science, and English. Plot a bar chart to display the marks of 5 students.

**Program:**

import matplotlib.pyplot as plt

students = ["Alice", "Bob", "Charlie", "David", "Eve"]

math = [85, 70, 90, 60, 75]

science = [78, 88, 95, 67, 80]

english = [82, 76, 88, 72, 84]

x = range(len(students))

plt.bar(x, math, width=0.25, label="Math")

plt.bar([i+0.25 for i in x], science, width=0.25, label="Science")

plt.bar([i+0.50 for i in x], english, width=0.25, label="English")

plt.xticks([i+0.25 for i in x], students)

plt.xlabel("Students")

plt.ylabel("Marks")

plt.title("Student Marks Comparison")

plt.legend()

plt.show()

**Task 10.2**: Website Traffic Over a Week

A website records daily visitors for 7 days. Plot a line chart to show the traffic trend.

**Program:**

import matplotlib.pyplot as plt

days = ["Mon", "Tue", "Wed", "Thu", "Fri", "Sat", "Sun"]

visitors = [120, 150, 180, 90, 200, 300, 250]

plt.plot(days, visitors, marker="o", linestyle="-", color="blue")

plt.xlabel("Days of the Week")

plt.ylabel("Number of Visitors")

plt.title("Website Traffic Over a Week")

plt.grid(True)

plt.show()

**Task 10.3**: Sales Distribution

A company’s sales are divided into 4 categories: Electronics, Fashion, Groceries, and Books. Plot a pie chart to represent the percentage share of each category.

**Program:**

import matplotlib.pyplot as plt

categories = ["Electronics", "Fashion", "Groceries", "Books"]

sales = [350, 200, 150, 100]

plt.pie(sales, labels=categories, autopct="%1.1f%%", startangle=90, shadow=True)

plt.title("Sales Distribution by Category")

plt.show()