**Python programming**

**FA 5**

**Program**

import numpy as np

import matplotlib.pyplot as plt

x = np.array([11, 23, 13, 25, 16, 29, 32, 38, 46, 49])

y = np.array([14, 20, 17, 22, 94, 26, 29, 32, 88, 89])

correlation = np.corrcoef(x, y)[0, 1]

print(f"Correlation value: {correlation}")

outliers=([16,94],[46,88],[49,88])

print(f'Number of outliers: {len(outliers)}')

plt.figure(figsize=(10, 6))

plt.scatter(x, y, color='blue', label='Data points')

plt.title('Scatter Plot with Correlation', fontsize=14)

plt.xlabel('X values', fontsize=12)

plt.ylabel('Y values', fontsize=12)

plt.axhline(np.mean(y), color='red', linestyle='--', label='Y Mean')

plt.axvline(np.mean(x), color='green', linestyle='--', label='X Mean')

plt.legend()

plt.grid(True)

plt.show()

**output**

Correlation value: 0.5190163651127832

Number of outliers: 3

Graph

