12. Scenario: You are working on a data analysis project that involves analyzing the monthly

temperature and rainfall data for a city. You have a dataset containing the monthly temperature and

rainfall values for each month of a year. Your task is to develop a Python program that generates

line plots and scatter plots to visualize the temperature and rainfall data.

Question:

1. Develop a Python program to create a line plot of the monthly temperature data.

2: Develop a Python program to create a scatter plot of the monthly rainfall data.

Code:

import pandas as pd

import matplotlib.pyplot as plt

data = pd.read\_csv(r"C:\Users\jampa\Downloads\monthly\_temp\_rainfall.csv")

# Line Plot: Monthly Temperature

plt.figure(figsize=(8,4))

plt.plot(data['Month'], data['Temperature\_C'], marker='o', color='red', linestyle='-')

plt.title('Monthly Temperature')

plt.xlabel('Month')

plt.ylabel('Temperature (°C)')

plt.grid(True)

plt.xticks(rotation=45)

plt.tight\_layout()

plt.show()

# Scatter Plot: Monthly Rainfall

plt.figure(figsize=(8, 4))

plt.scatter(data['Month'], data['Rainfall\_mm'], color='blue')

plt.title('Monthly Rainfall')

plt.xlabel('Month')

plt.ylabel('Rainfall (mm)')

plt.grid(True)

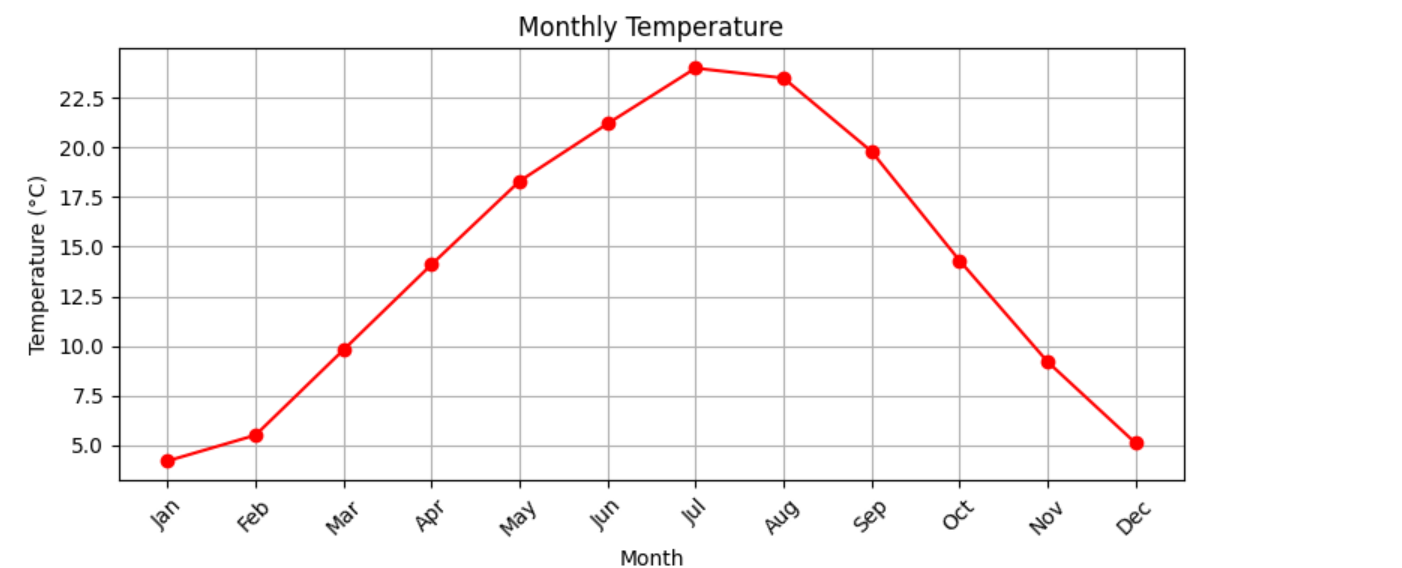
plt.xticks(rotation=45)

plt.tight\_layout()

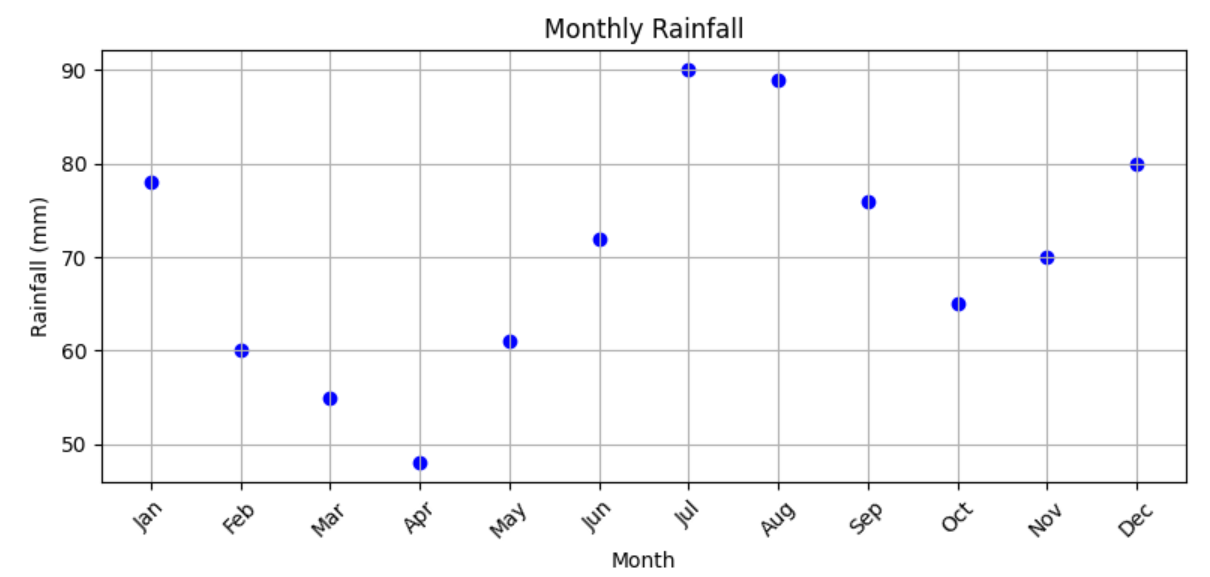
plt.show()

output:

1.line plot



2.scatter plot



Dataset:

|  |  |  |
| --- | --- | --- |
| Month | Temperature\_C | Rainfall\_mm |
| Jan | 4.2 | 78 |
| Feb | 5.5 | 60 |
| Mar | 9.8 | 55 |
| Apr | 14.1 | 48 |
| May | 18.3 | 61 |
| Jun | 21.2 | 72 |
| Jul | 24 | 90 |
| Aug | 23.5 | 89 |
| Sep | 19.8 | 76 |
| Oct | 14.3 | 65 |
| Nov | 9.2 | 70 |
| Dec | 5.1 | 80 |
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