Question12

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.

Answer:

import pandas as pd

import matplotlib.pyplot as plt

# Creating dataset based on your provided data

data = pd.DataFrame({

'Month@': ['January', 'February', 'March', 'April', 'May', 'June', 'July', 'August', 'September', 'October', 'November', 'December'],

'Temperature\_°C': [25, 28, 30, 32, 35, 37, 35, 33, 30, 28, 26, 24],

'Rainfall\_mm': [45, 30, 50, 60, 80, 90, 85, 70, 55, 50, 40, 35]

})

# 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

