Question11

Scenario : You are a data scientist working for a company that sells products online. You have

been tasked with creating a simple plot to show the sales of a product over time.

Question:

1. Write code to create a simple line plot in Python using Matplotlib to predict sales happened in a

month?

2. Write code to create a scatter plot in Python using Matplotlib to predict sales happened in a

month?

3. Develop a Python program to create a bar plot of the monthly sales data.

Answer:

import pandas as pd

import matplotlib.pyplot as plt

# Load the CSV

df = pd.read\_csv(r"D:\datasets\question3\_.csv")

# Check the columns to verify the existing names

print(df.columns)

# Rename the columns if needed

df.rename(columns={'Month': 'Monthly\_', 'Sales': 'Sales\_'}, inplace=True)

# Ensure 'Monthly\_' is treated as a categorical variable (string)

df['Monthly\_'] = df['Monthly\_'].astype(str)

# Ensure 'Sales\_' is numeric (just in case it's not)

df['Sales\_'] = pd.to\_numeric(df['Sales\_'], errors='coerce')

# Create the plot

plt.figure(figsize=(15, 12))

# 1. Line Plot

plt.subplot(3, 1, 1)

plt.plot(df['Monthly\_'], df['Sales\_'], marker='o', linestyle='-', color='blue')

plt.title('Monthly Sales Trend (Line Plot)')

plt.xlabel('Monthly\_')

plt.ylabel('Sales\_')

plt.xticks(rotation=45)

plt.grid(True)

# 2. Scatter Plot

plt.subplot(3, 1, 2)

plt.scatter(df['Monthly\_'], df['Sales\_'], color='red')

plt.title('Monthly Sales (Scatter Plot)')

plt.xlabel('Monthly\_')

plt.ylabel('Sales\_')

plt.xticks(rotation=45)

plt.grid(True)

# 3. Bar Plot

plt.subplot(3, 1, 3)

plt.bar(df['Monthly\_'], df['Sales\_'], color='green')

plt.title('Monthly Sales (Bar Plot)')

plt.xlabel('Monthly\_')

plt.ylabel('Sales\_')

plt.xticks(rotation=45)

plt.tight\_layout()

# Show the plots

plt.show()

Output:

