

FDS LAB EXPERIMENTS 11-15

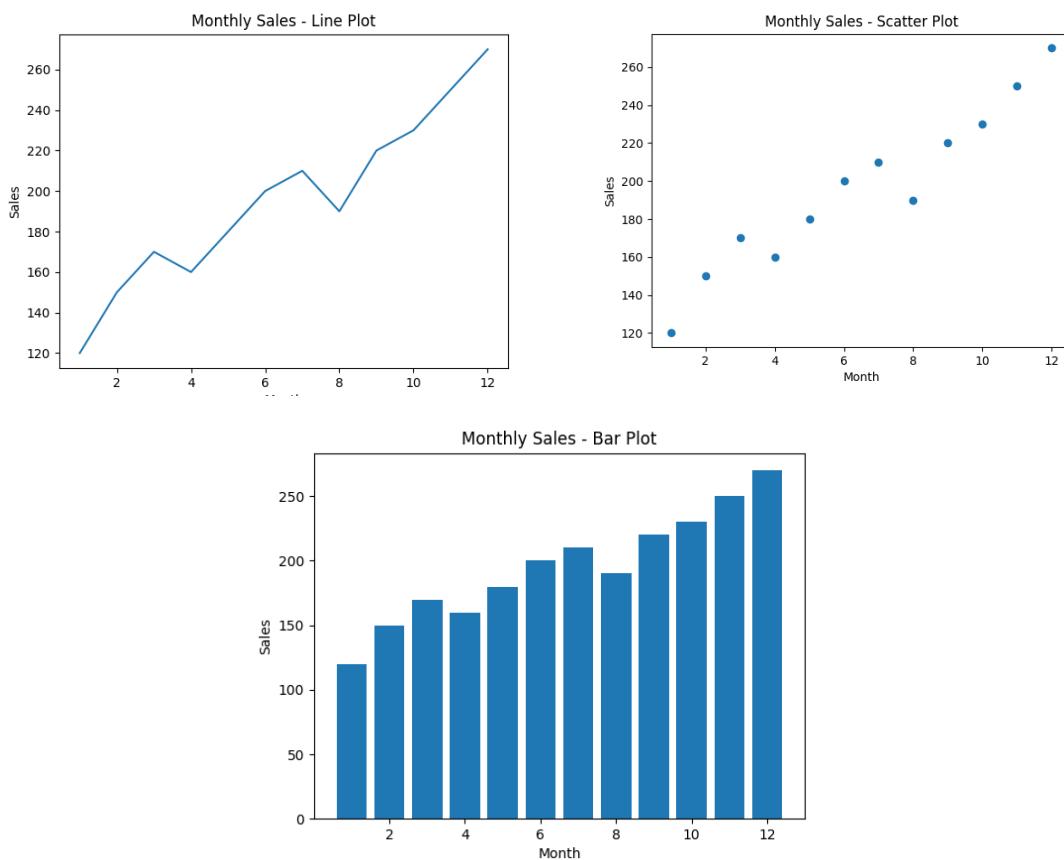
Question 11:

Aim: To develop a Python program that visualizes monthly product sales using line, scatter, and bar plots.

Code:

```
Q11.py > ...
1  import matplotlib.pyplot as plt
2
3  months = [1,2,3,4,5,6,7,8,9,10,11,12]
4  sales = [120,150,170,160,180,200,210,190,220,230,250,270]
5
6  plt.plot(months, sales)
7  plt.title("Monthly Sales - Line Plot")
8  plt.xlabel("Month")
9  plt.ylabel("Sales")
10 plt.show()
11
12
13 plt.scatter(months, sales)
14 plt.title("Monthly Sales - Scatter Plot")
15 plt.xlabel("Month")
16 plt.ylabel("Sales")
17 plt.show()
18
19
20 plt.bar(months, sales)
21 plt.title("Monthly Sales - Bar Plot")
22 plt.xlabel("Month")
23 plt.ylabel("Sales")
24 plt.show()
25
```

Output:



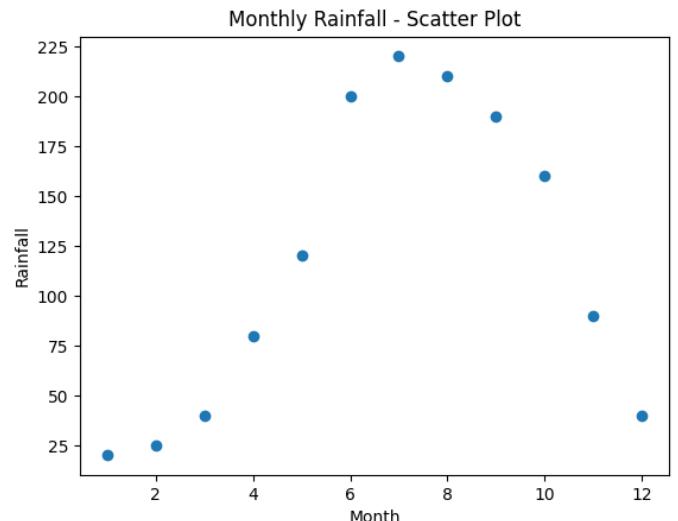
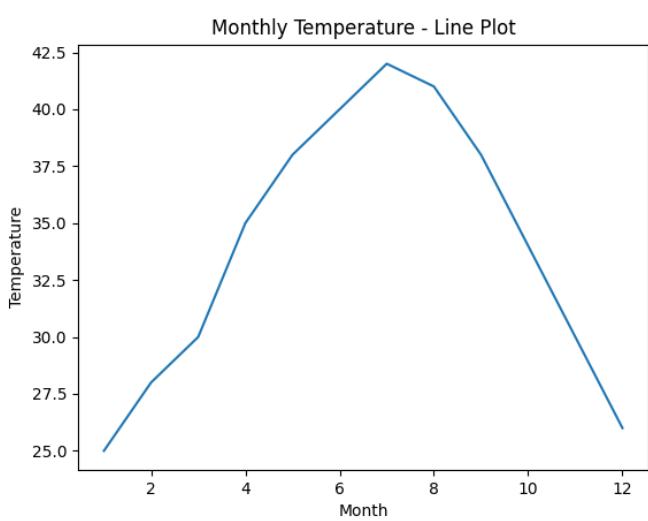
Question 12:

Aim: To visualize monthly temperature and rainfall data using a combined line and scatter plot in Python.

Code:

```
Q12.py > ...
1  import matplotlib.pyplot as plt
2
3  months = [1,2,3,4,5,6,7,8,9,10,11,12]
4  temperature = [25,28,30,35,38,40,42,41,38,34,30,26]
5
6  plt.plot(months, temperature)
7  plt.title("Monthly Temperature - Line Plot")
8  plt.xlabel("Month")
9  plt.ylabel("Temperature")
10 plt.show()
11
12
13 rainfall = [20,25,40,80,120,200,220,210,190,160,90,40]
14
15 plt.scatter(months, rainfall)
16 plt.title("Monthly Rainfall - Scatter Plot")
17 plt.xlabel("Month")
18 plt.ylabel("Rainfall")
19 plt.show()
```

Output:



Question 13:

Aim: To write a Python program that calculates and displays the frequency distribution of words in a given text.

Code:

```
Q13.py > ...
1   from collections import Counter
2
3
4   text = "This is a sample text and this text is simple"
5   text = text.lower()
6
7   for ch in ",.!?:;":
8       text = text.replace(ch, "")
9
10  words = text.split()
11  freq_words = Counter(words)
12
13  print("\n Word Frequency Table")
14  print("-----")
15  print("Word\tFrequency")
16  print("-----")
17  for word, count in freq_words.items():
18      print(f"{word}\t{count}")
```

Output:

```
PS C:\Users\volap\Desktop\FDS\LAB> & C:/Users/volap/
Word Frequency Table
-----
Word    Frequency
-----
this    2
is      2
a       1
sample  1
text    2
and    1
simple  1
```

Question 14:

Aim: To develop a Python program that finds the frequency distribution of customer ages using Python.

Code:

```
Q14.py > ...
1   from collections import Counter
2
3   ages = [22,25,25,30,45,22,30,35,35,35,45,50]
4   freq_ages = Counter(ages)
5
6   print("\n Age Frequency Table")
7   print("-----")
8   print("Age\tFrequency")
9   print("-----")
10  for age, count in freq_ages.items():
11      print(f"{age}\t{count}")
```

Output:

```
PS C:\Users\volan\Desktop\EDS\LAB> & C:/users
Age Frequency Table
-----
Age      Frequency
-----
22      2
25      2
30      2
45      2
35      3
50      1
PS C:\Users\volan\Desktop\EDS\LAB>
```

Question 15:

Aim: To create a Python program that computes the frequency distribution of likes among social media posts.

Code:

```
Q15.py > ...
1  from collections import Counter
2
3  likes = [10,20,20,15,50,50,50,5,10]
4  freq_likes = Counter(likes)
5
6  print("\n Likes Frequency Table")
7  print("-----")
8  print("Likes\tFrequency")
9  print("-----")
10 for like, count in freq_likes.items():
11     print(f"{like}\t{count}")
```

Output:

```
PS C:\Users\volan\Desktop\EDS\LAB>
Likes Frequency Table
-----
Likes   Frequency
-----
10      2
20      2
15      1
50      3
5       1
PS C:\Users\volan\Desktop\EDS\LAB>
```