Lab 13

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Date :- 04-09-2023

Enrollment No :- 92200133030

CO1: To write, test, and debug simple Python programs

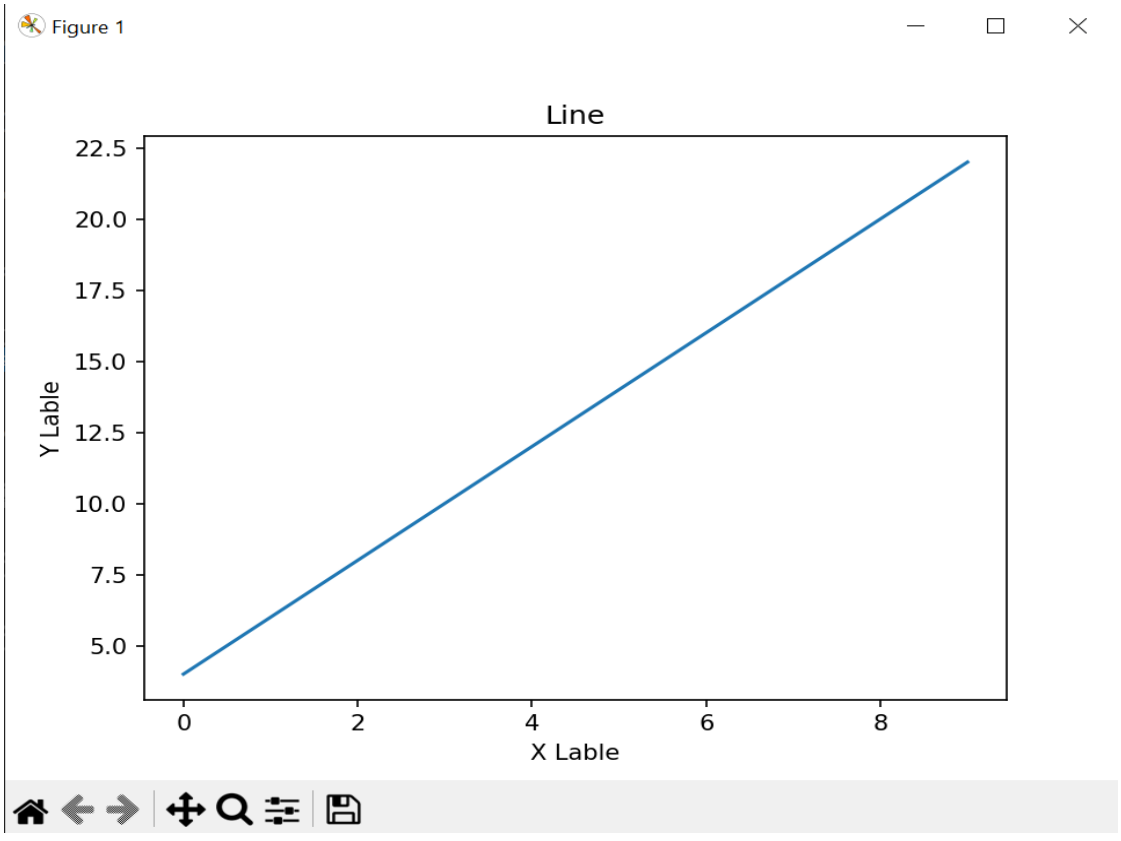
CO2: To implement Python programs with conditional, loops and functions

Task 1:- Plot a Line Grap Using Matplotlib

Python Code:

```
x = np.arange(10)
y = 2*x + 4
plt.title("Line")
plt.xlabel("X Lable")
plt.ylabel("Y Lable")
plt.plot(x,y)
plt.show()
```

Output:

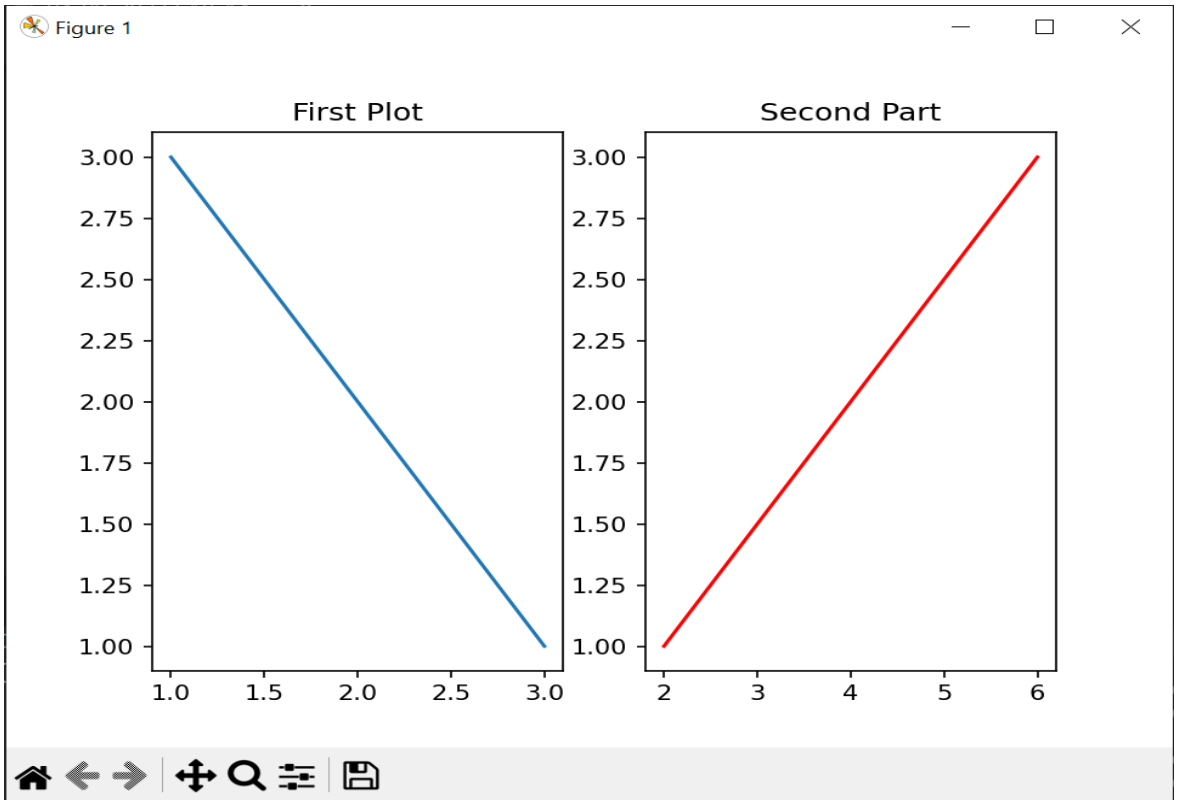


Task 2:- Using Subplot in Matplotlib

Python Code:

```
plt.subplot(1,2,1)
plt.plot([1,2,3], [3,2,1])
plt.title("First Plot")
plt.subplot(1,2,2)
plt.plot([2,4,6], [1,2,3],"r")
plt.title("Second Part")
plt.show()
```

Output:

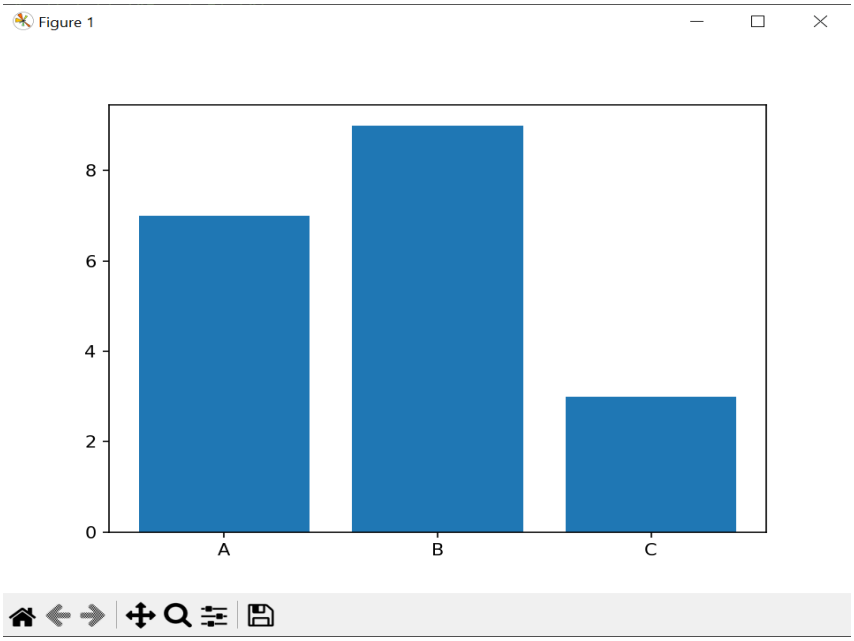


Task 3:- Plot Bar Plot Using Matplotlib

Python Code:

```
plot = plt.figure()
chars = ['A' , 'B' , 'C']
values = [7,9,3]
plt.bar(chars,values)
plt.show()
```

Output:

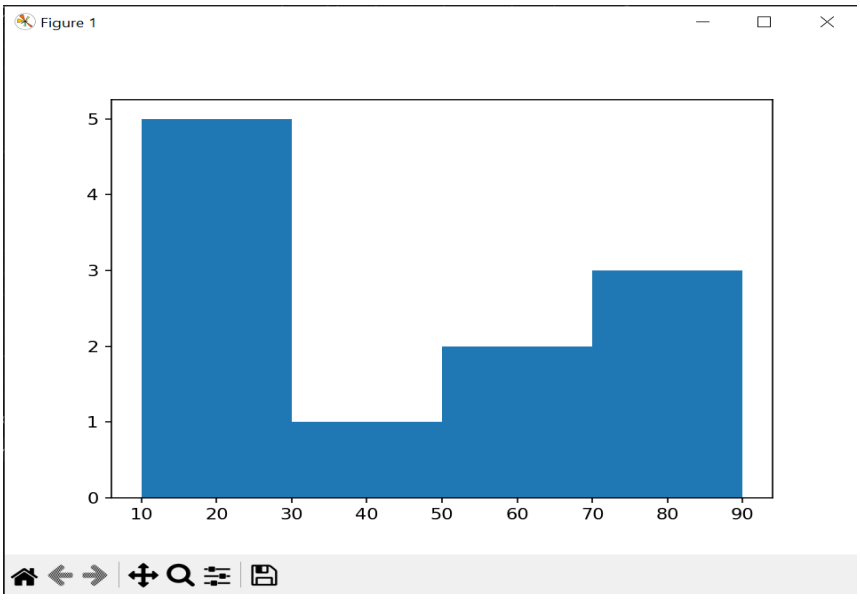


Task 4:- Plot Histogram Using Matplotlib

Python Code:

```
x = [20,40,60,90,50,20,70,20,20,10,90]
nums = 4
plt.hist(x, nums)
plt.show()
```

Output:

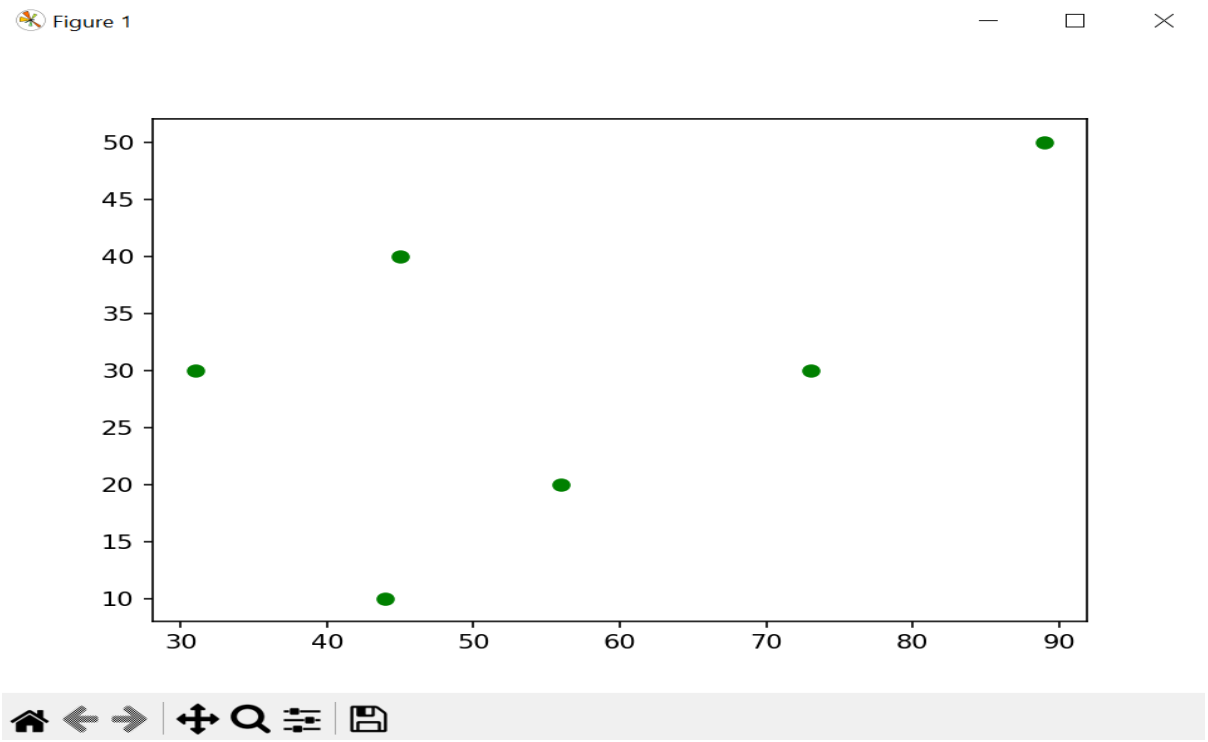


Task 4:- Plot Histogram Using Matplotlib

Python Code:

```
list1 = [44,56,73,89,45,31]
list2 = [10,20,30,50,40,30]
fig = plt.figure()
plt.scatter(list1,list2, color = "g")
plt.show()
```

Output:



Task 5:- Plot Histogram Using Matplotlib

Python Code:

```
wave = np.arange(0,2*np.pi,0.2)
g_sin = np.sin(wave)
g_cos = np.cos(wave)
plt.subplot(2,1,1)
plt.title("Sine Wave")
plt.plot(wave,g_sin, color = "Green")
plt.subplot(2,1,2)
plt.title("Cos Wave")
plt.plot(wave,g_cos,color = "red",linestyle = ":")
plt.show()
```

Output:

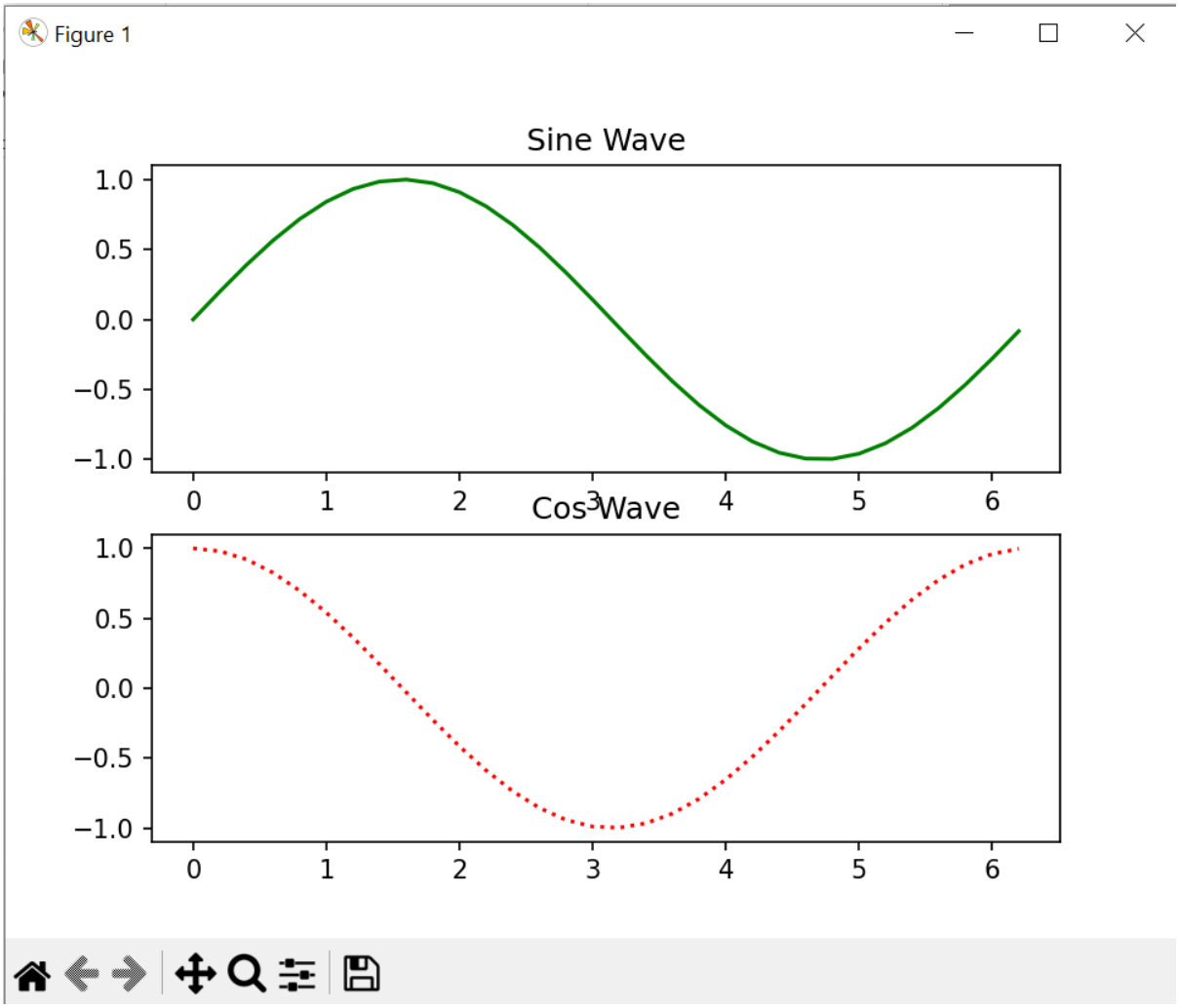


Figure 1
Sine Wave
1.0
0.5
0.0
−0.5
−1.0
0
1
2
3
4
5
6
Cos Wave
1.0
0.5
0.0
−0.5
−1.0
0
1
2
3
4
5
6