

python-programming-lab-12

March 13, 2025

Python Programming - 2301CS404

Gohel Neel

Enrollment No. : 23010101089

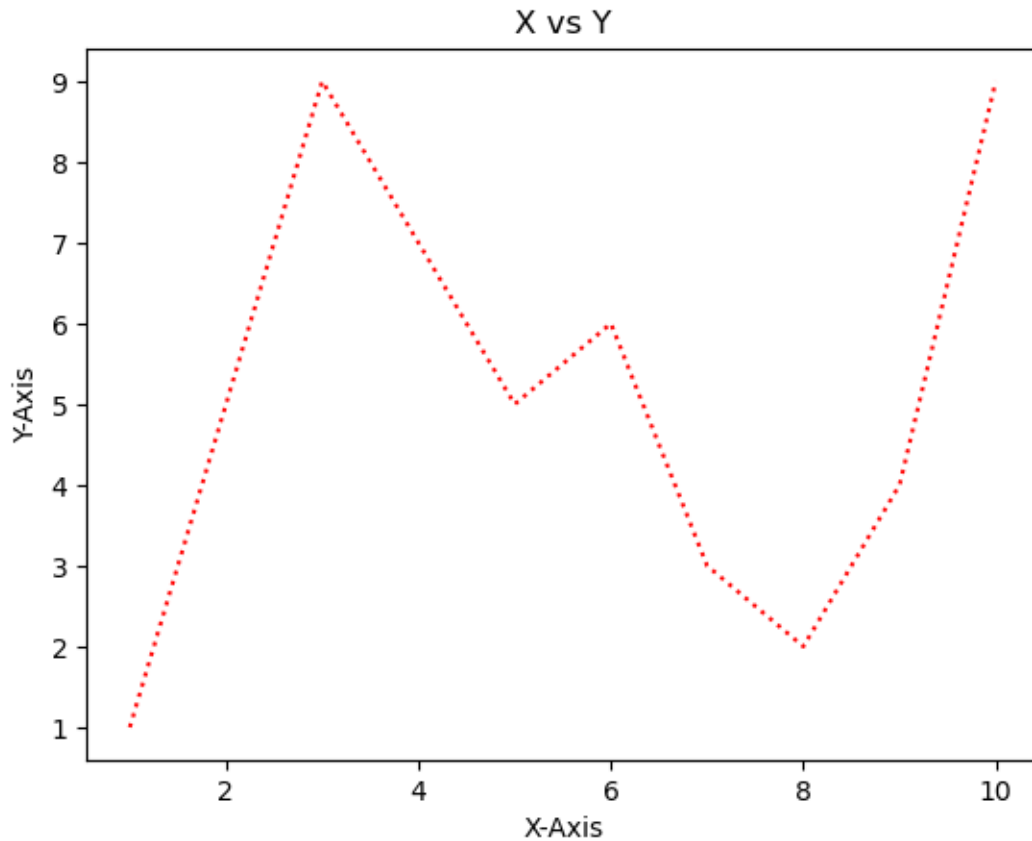
Roll No. 340

Date: 24-02-2025

Lab - 12

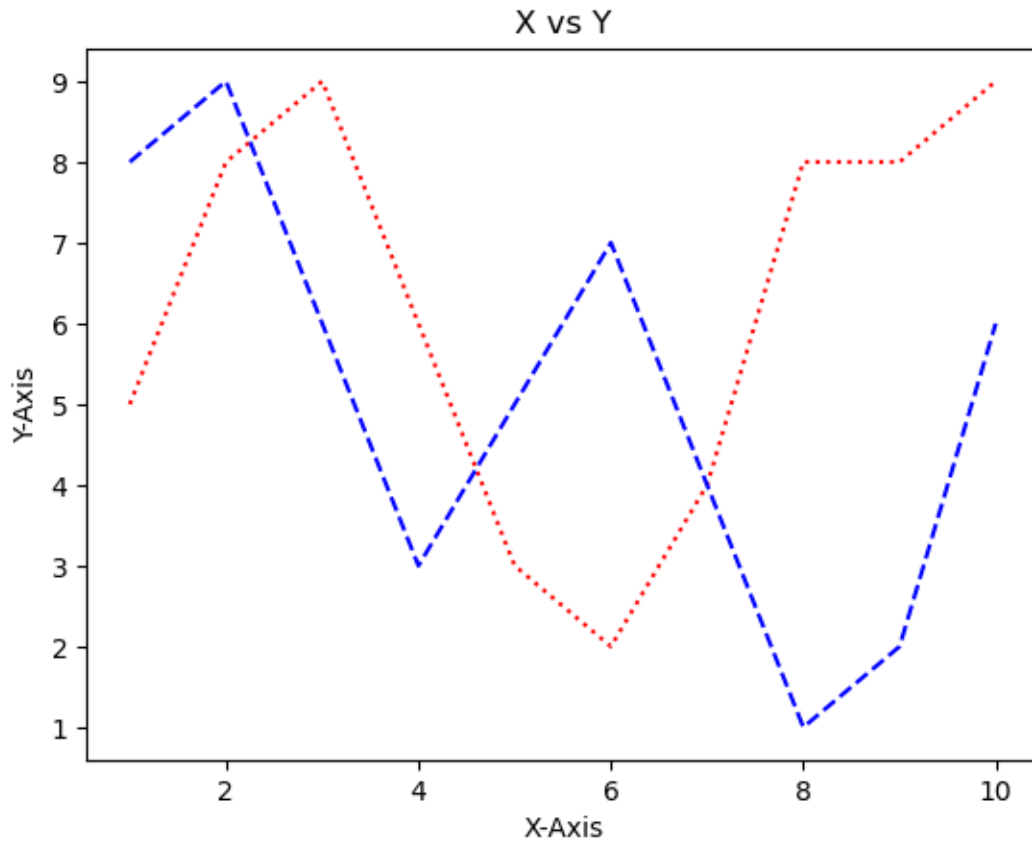
```
[2]: #import matplotlib below  
import matplotlib.pyplot as plt
```

```
[13]: x = range(1,11)  
y = [1,5,9,7,5,6,3,2,4,9]  
  
plt.plot(x,y , ls = ":" , c = "r")  
plt.xlabel("X-Axis")  
plt.ylabel("Y-Axis")  
plt.title("X vs Y")  
plt.show()  
# write a code to display the line chart of above x & y
```



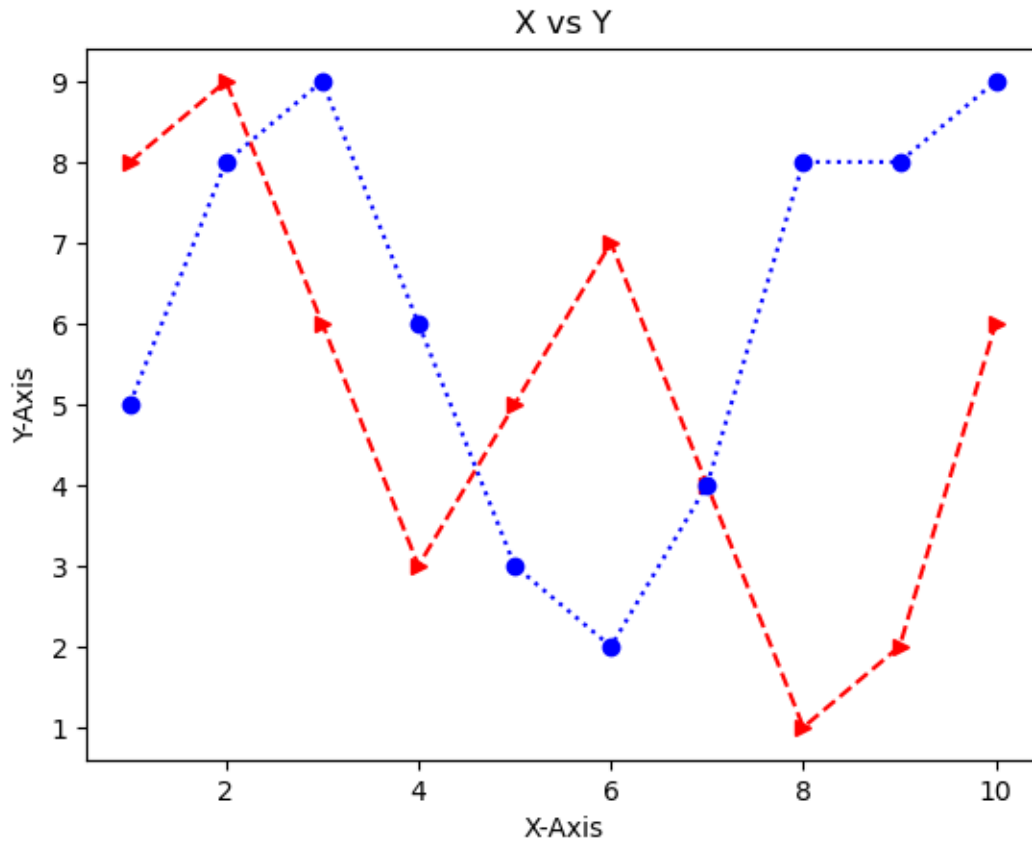
```
[14]: x = [1,2,3,4,5,6,7,8,9,10]
      cxMarks = [5,8,9,6,3,2,4,8,8,9]
      cyMarks = [8,9,6,3,5,7,4,1,2,6]

      plt.plot(x,cxMarks , ls = ":" , c = "r")
      plt.plot(x,cyMarks , ls = "--" , c = "b")
      plt.xlabel("X-Axis")
      plt.ylabel("Y-Axis")
      plt.title("X vs Y")
      plt.show()
      # write a code to display two lines in a line chart (data given above)
```



```
[19]: x = range(1,11,1)
cxMarks= [8,9,6,3,5,7,4,1,2,6]
cyMarks= [5,8,9,6,3,2,4,8,8,9]

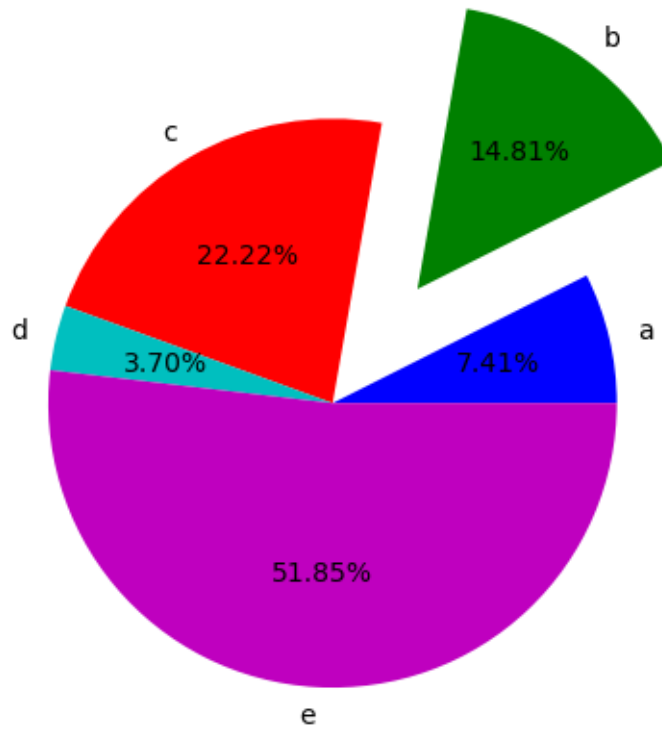
plt.plot(x,cxMarks , ls = "--" , c = "r" , marker=">")
plt.plot(x,cyMarks , ls = ":" , c = "b" , marker="o")
plt.xlabel("X-Axis")
plt.ylabel("Y-Axis")
plt.title("X vs Y")
plt.show()
# write a code to generate below graph
```



[]:

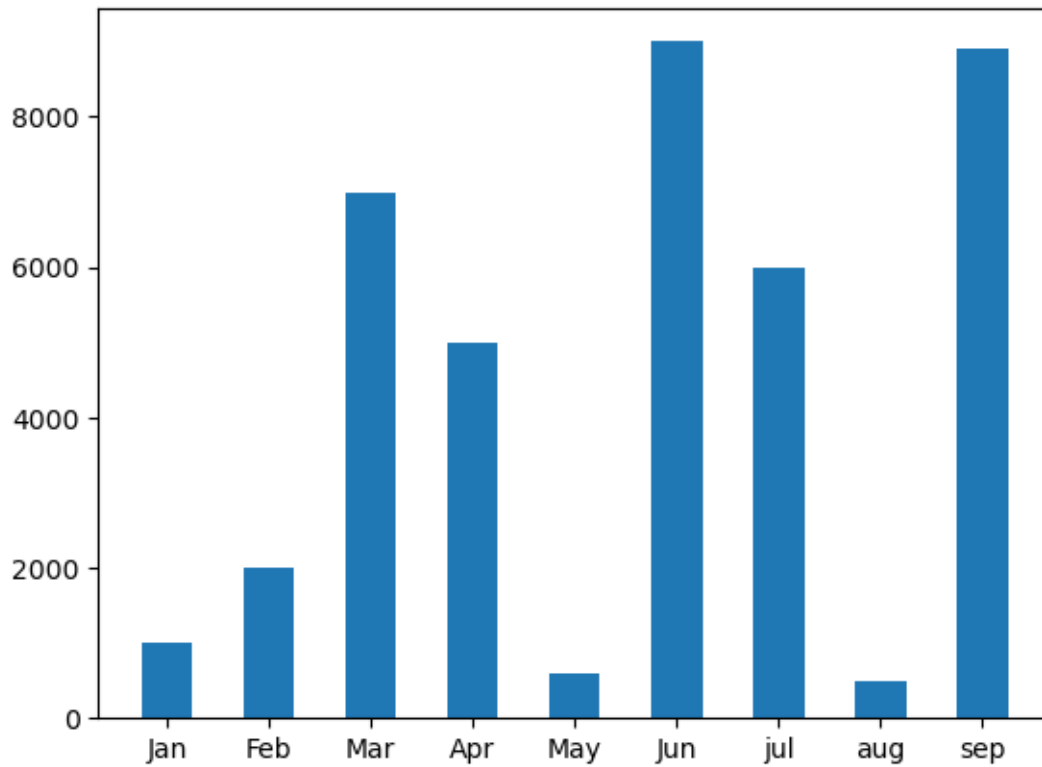
0.0.1 04) WAP to demonstrate the use of Pie chart.

```
[38]: dept = ["a", "b", "c", "d", "e"]
stud = [100, 200, 300, 50, 700]
x = ["b", "g", "r", "c", "m"]
e = [0, 0.5, 0, 0, 0]
plt.pie(stud, labels = dept, colors=x, autopct="%1.2f%%" , explode = e)
plt.show()
```



0.0.2 05) WAP to demonstrate the use of Bar chart.

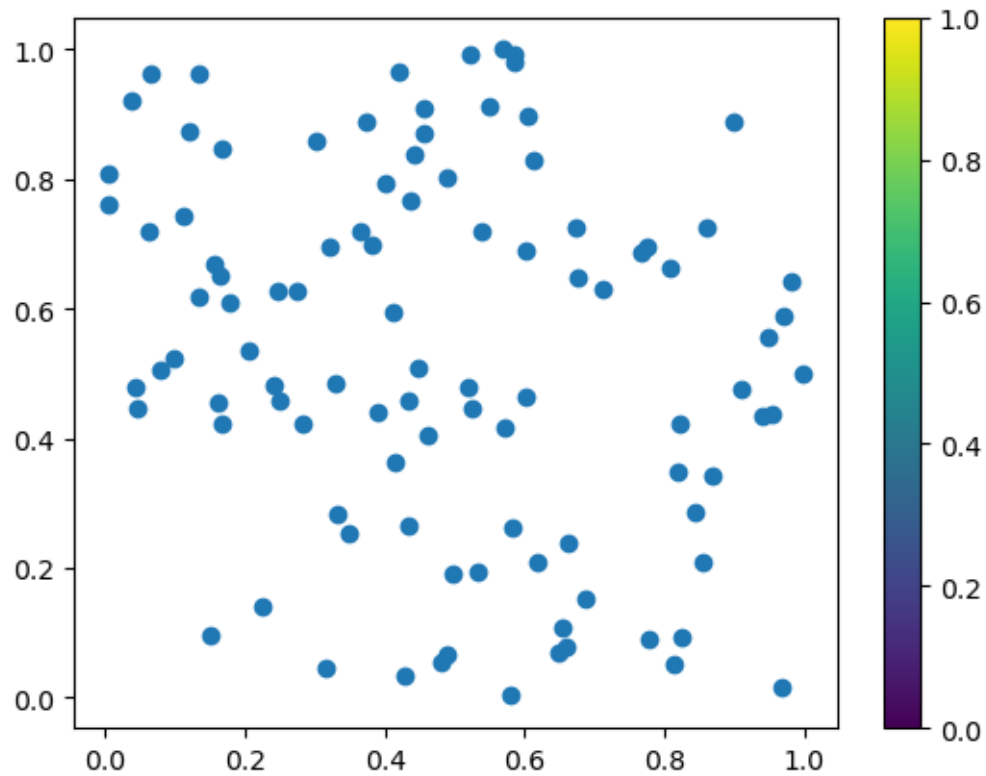
```
[42]: a = ["Jan", "Feb", "Mar", "Apr", "May", "Jun", "jul", "aug", "sep"]  
      b = [1000, 2000, 7000, 5000, 600, 9000, 6000, 500, 8900]  
      plt.bar(a, b, width=0.5)  
      plt.show()
```



0.0.3 06) WAP to demonstrate the use of Scatter Plot.

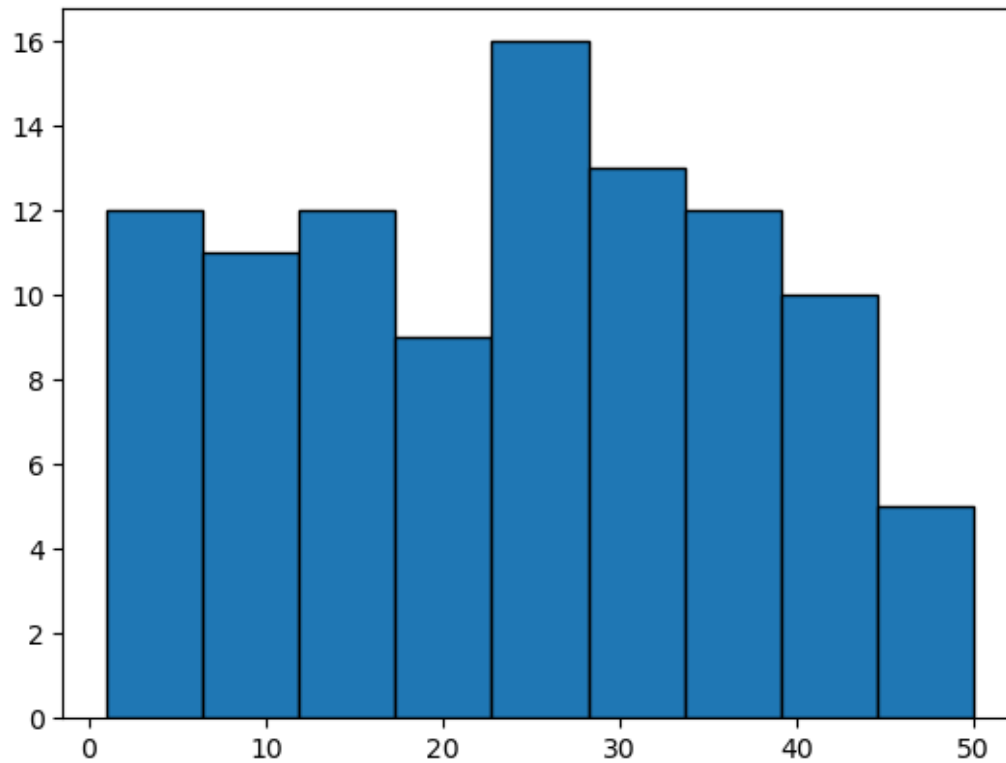
```
[26]: import random

random.seed(10)
x = [random.random() for i in range(100)]
y = [random.random() for i in range(100)]
plt.scatter(x,y)
plt.colorbar()
plt.show()
```



0.0.4 07) WAP to demonstrate the use of Histogram.

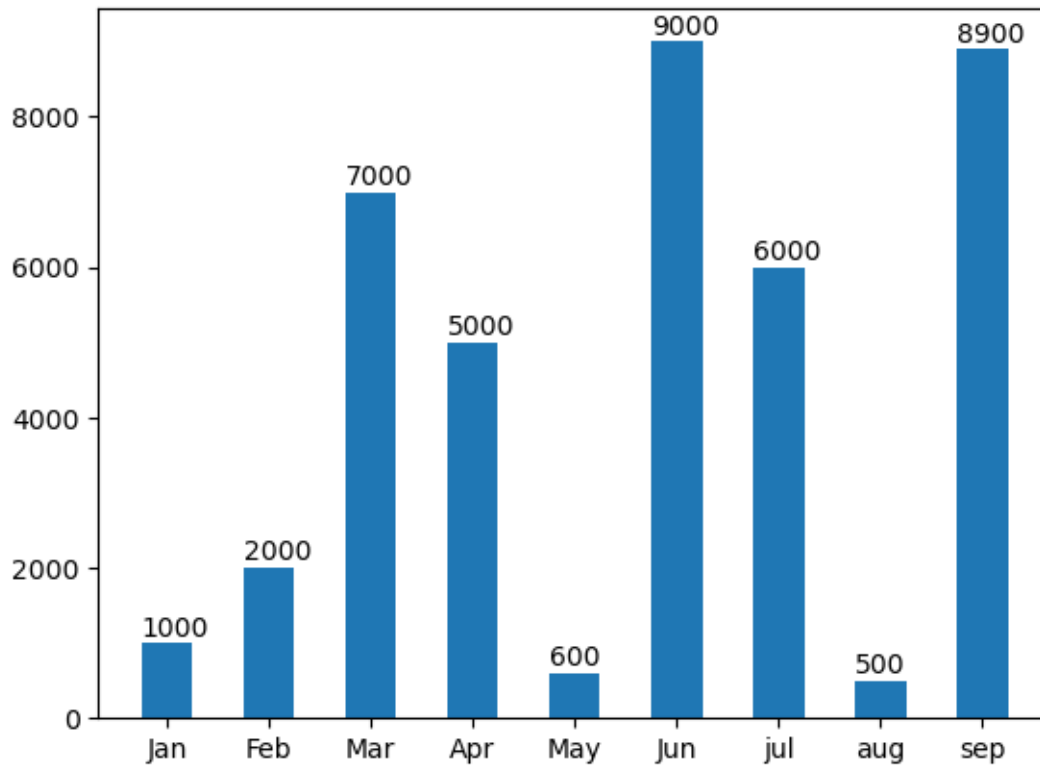
```
[48]: random.seed(10)
age = [random.randint(1,50) for i in range(100)]
plt.hist(age, edgecolor="k", bins=9,histtype="bar")
plt.show()
```



0.0.5 08) WAP to display the value of each bar in a bar chart using Matplotlib.

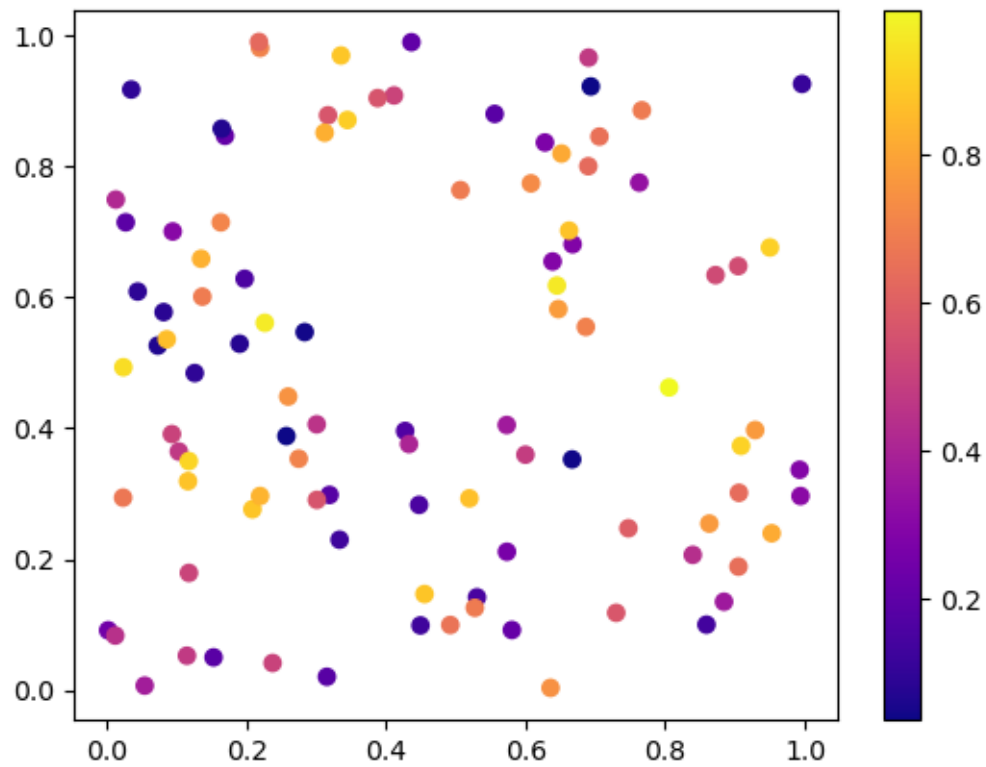
```
[43]: a = ["Jan", "Feb", "Mar", "Apr", "May", "Jun" , "jul" , "aug" , "sep"]
      b = [1000, 2000, 7000, 5000, 600, 9000 , 6000 , 500 , 8900]

      bars = plt.bar(a, b, width=0.5)
      for i in bars:
          yc = i.get_height()
          plt.text(i.get_x(), yc+100, f"{yc}")
      plt.show()
```

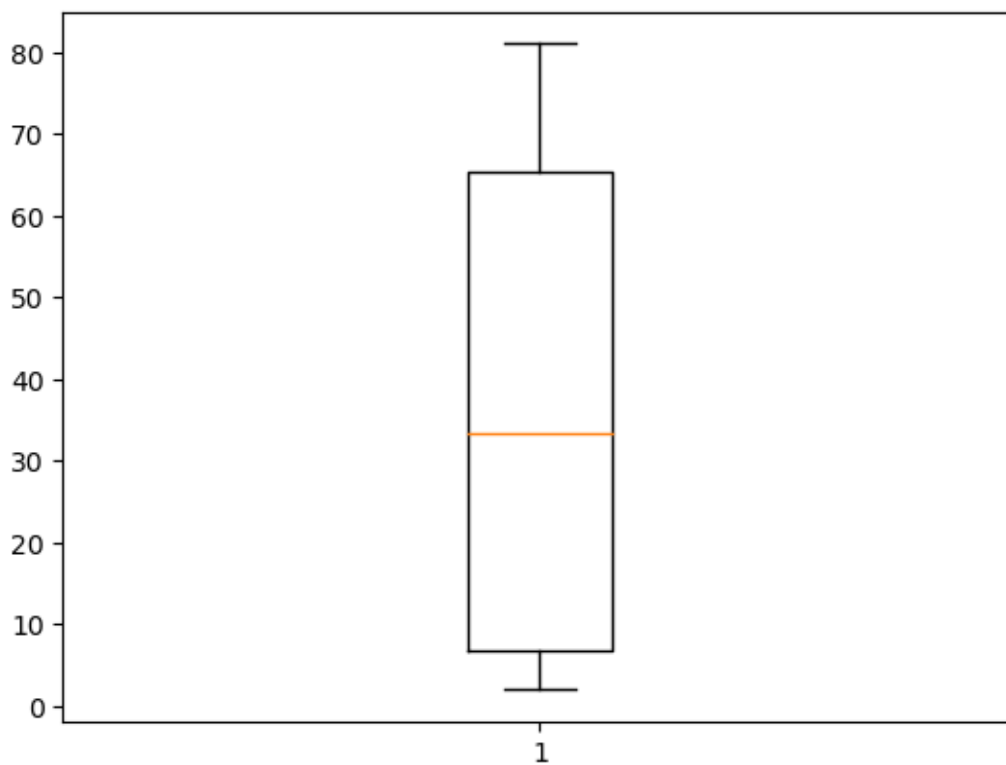
0.0.6 09) WAP create a Scatter Plot with several colors in Matplotlib?

```
[44]: random.seed(20)
x = [random.random() for i in range(100)]
y = [random.random() for i in range(100)]
z = [random.random() for i in range(100)]
plt.scatter(x,y, c=z,cmap="plasma")
plt.colorbar()
plt.show()
```



0.0.7 10) WAP to create a Box Plot.

```
[50]: plt.boxplot([81,72,63,24,43,8,2,3])  
plt.show()
```



[]: