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March 12, 2025

Python Programming - 2301CS404

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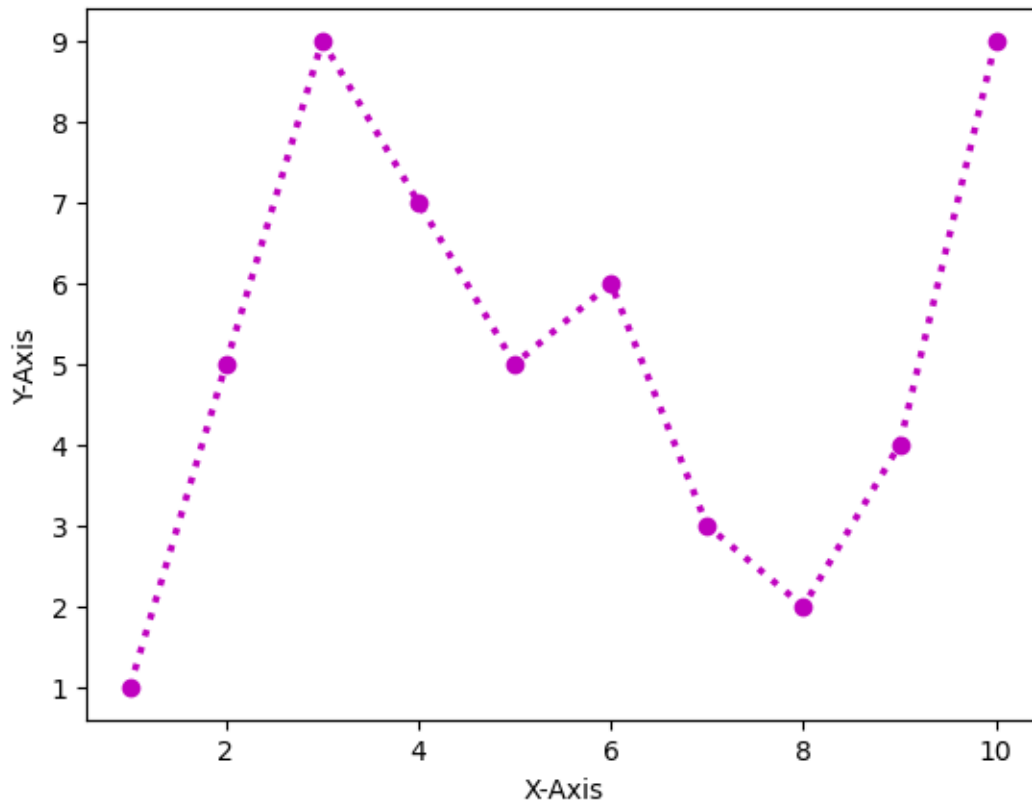
Lab - 12

```
[ ]: #import matplotlib below
```

```
[20]: import matplotlib.pyplot as plt  
x = range(1,11)  
y = [1,5,9,7,5,6,3,2,4,9]
```

```
[44]: x = [1,2,3,4,5,6,7,8,9,10]  
y = [1,5,9,7,5,6,3,2,4,9]  
  
plt.plot(x,y,ls=":",c="m",marker="o",lw=2.5)  
plt.xlabel('X-Axis')  
plt.ylabel('Y-Axis')  
plt.show
```

```
[44]: <function matplotlib.pyplot.show(close=None, block=None)>
```

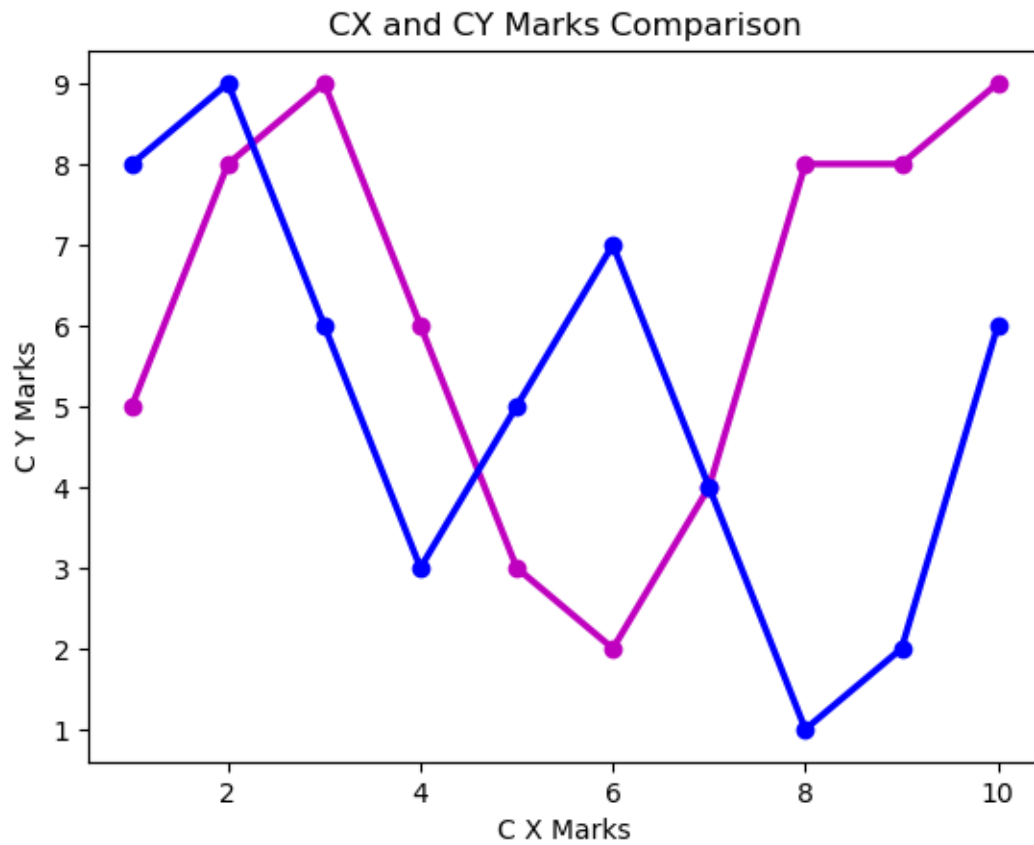


```
[ ]: x = [1,2,3,4,5,6,7,8,9,10]
      cxMarks = [5,8,9,6,3,2,4,8,8,9]
      cyMarks = [8,9,6,3,5,7,4,1,2,6]

      # write a code to display two lines in a line chart (data given above)
```

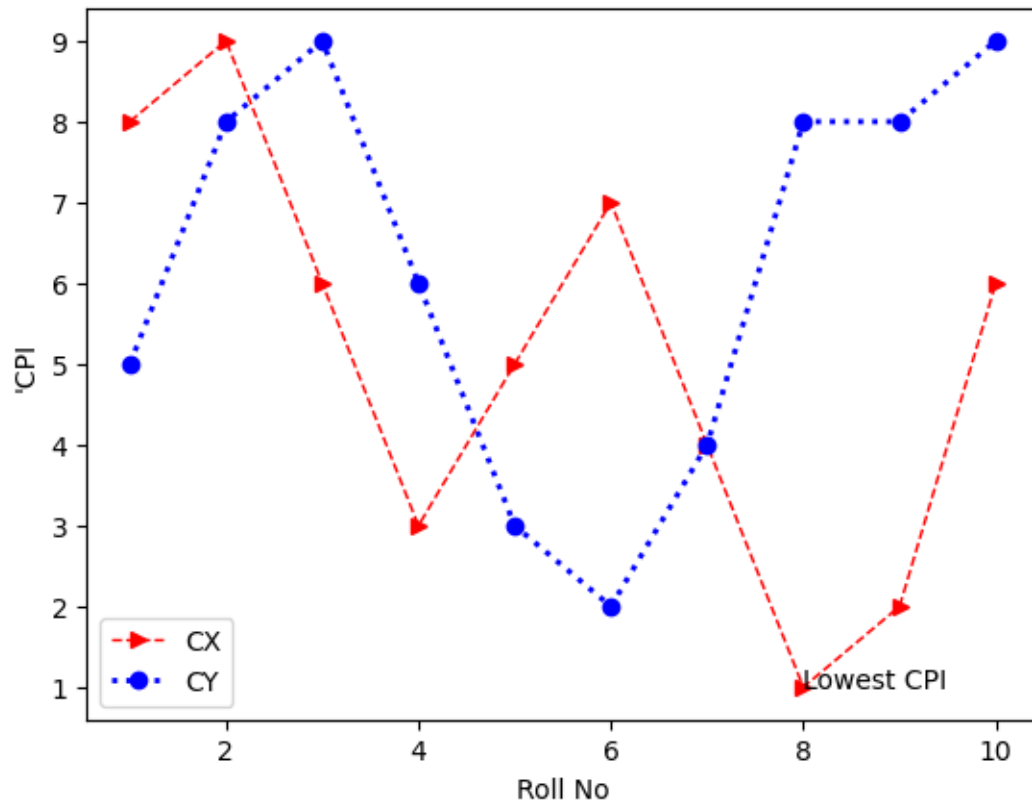
```
[24]: x = [1,2,3,4,5,6,7,8,9,10]
      cxMarks = [5,8,9,6,3,2,4,8,8,9]
      cyMarks = [8,9,6,3,5,7,4,1,2,6]

      plt.plot(x,cxMarks,ls="--",c="m",marker="o",lw=2.5)
      plt.plot(x,cyMarks,ls="--",c="b",marker="o",lw=2.5)
      plt.xlabel("C X Marks")
      plt.ylabel("C Y Marks")
      plt.title("CX and CY Marks Comparison")
      plt.show()
```



```
[13]: 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]

# write a code to generate below graph
```

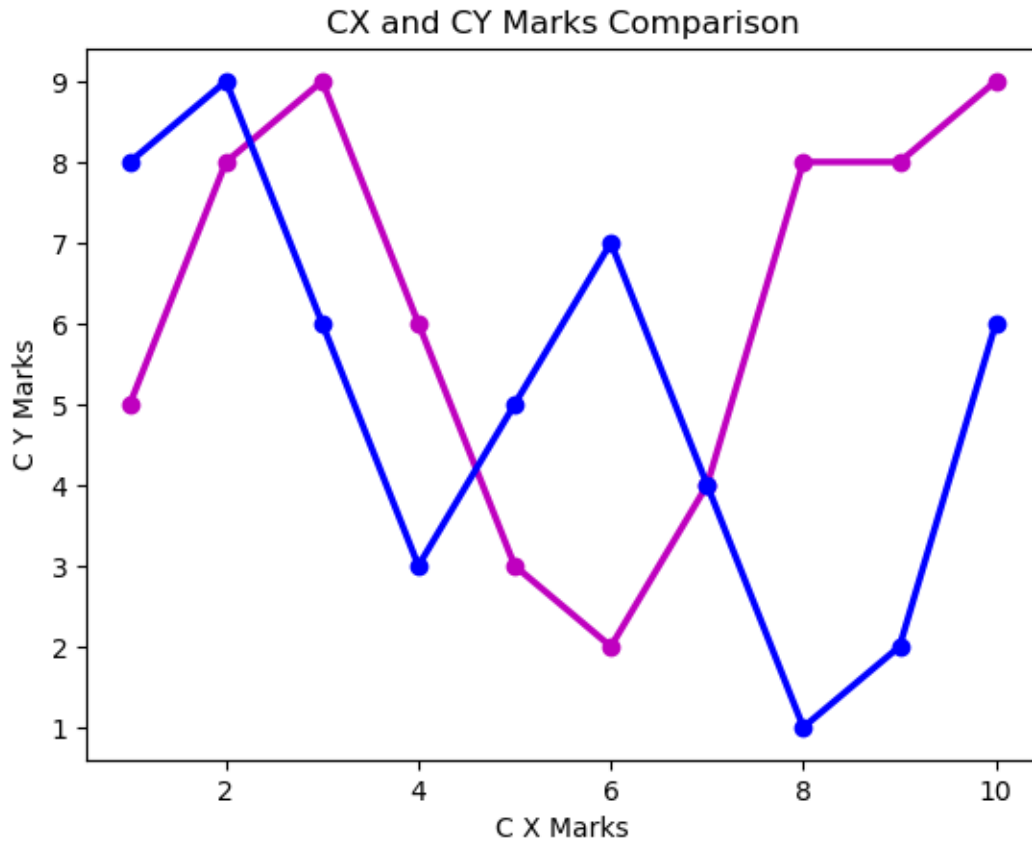


```
[ ]: x = range(1,11,1)
cxMarks= [8,9,6,3,5,7,4,1,2,6]
cyMarks= [5,8,9,6,3,2,4,8,8,9]

# write a code to generate below graph
```

```
[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]

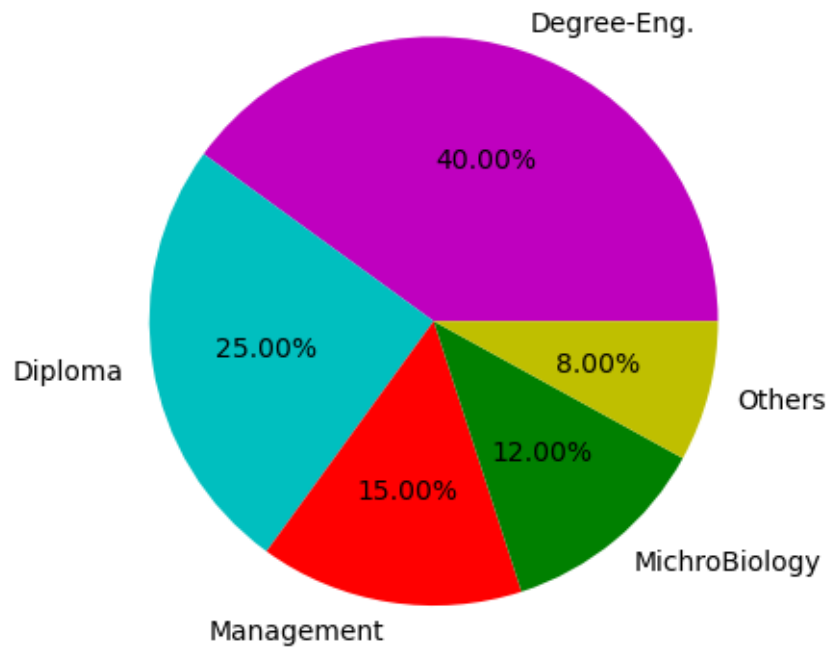
plt.plot(x,cxMarks,ls="--",c="m",marker="o",lw=2.5)
plt.plot(x,cyMarks,ls="--",c="b",marker="o",lw=2.5)
plt.xlabel("C X Marks")
plt.ylabel("C Y Marks")
plt.title("CX and CY Marks Comparison")
plt.show()
```



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

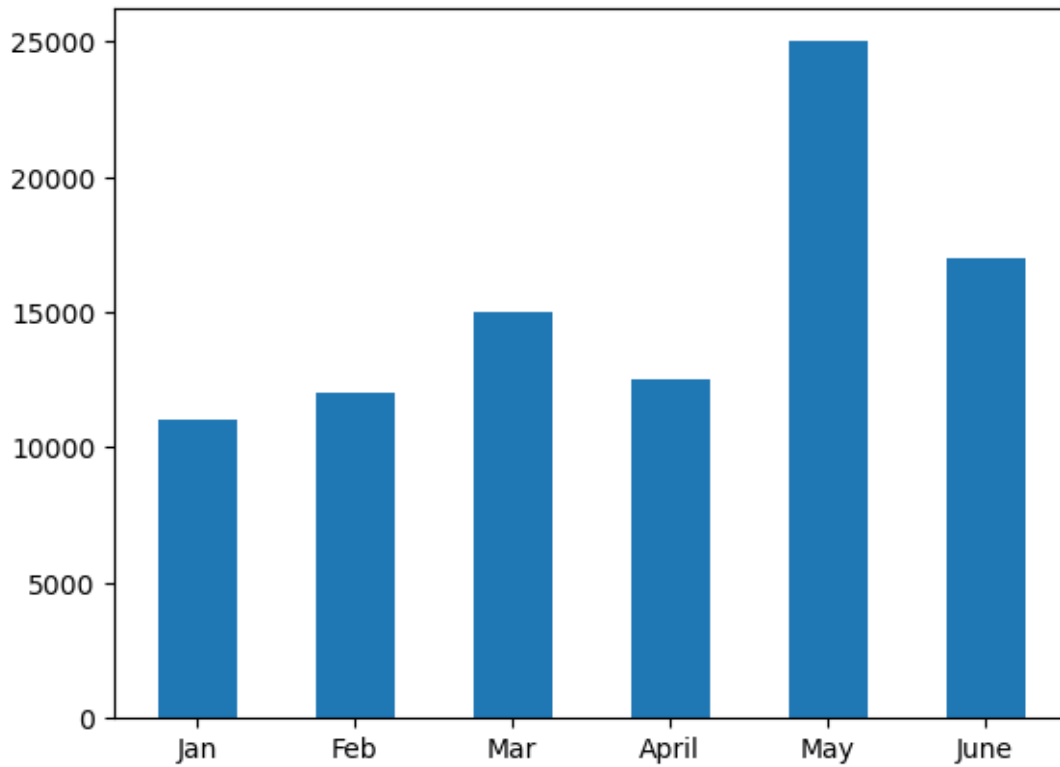
```
[26]: dept = ["Degree-Eng.", "Diploma", "Management", "MichroBiology", "Others"]
students = [4000, 2500, 1500, 1200, 800]
col = ["m", "c", "r", "g", "y"]
plt.pie(students, labels=dept, autopct="%1.2f%", colors = col)
plt.title("Department Wise Contribution")
plt.show()
```

Department Wise Contribution



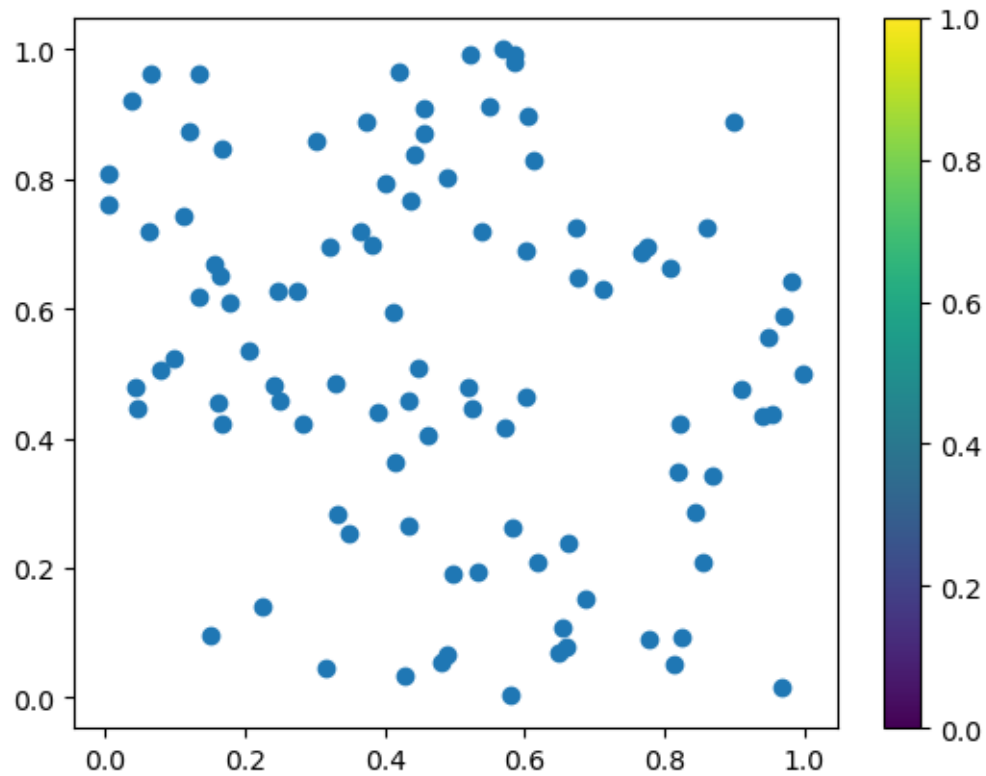
0.0.2 05) WAP to demonstrate the use of Bar chart.

```
[28]: month = ["Jan", "Feb", "Mar", "April", "May", "June"]  
visitors = [11000, 12000, 15000, 12500, 25000, 17000]  
bars = plt.bar(month, visitors, width=0.5)  
plt.show()
```



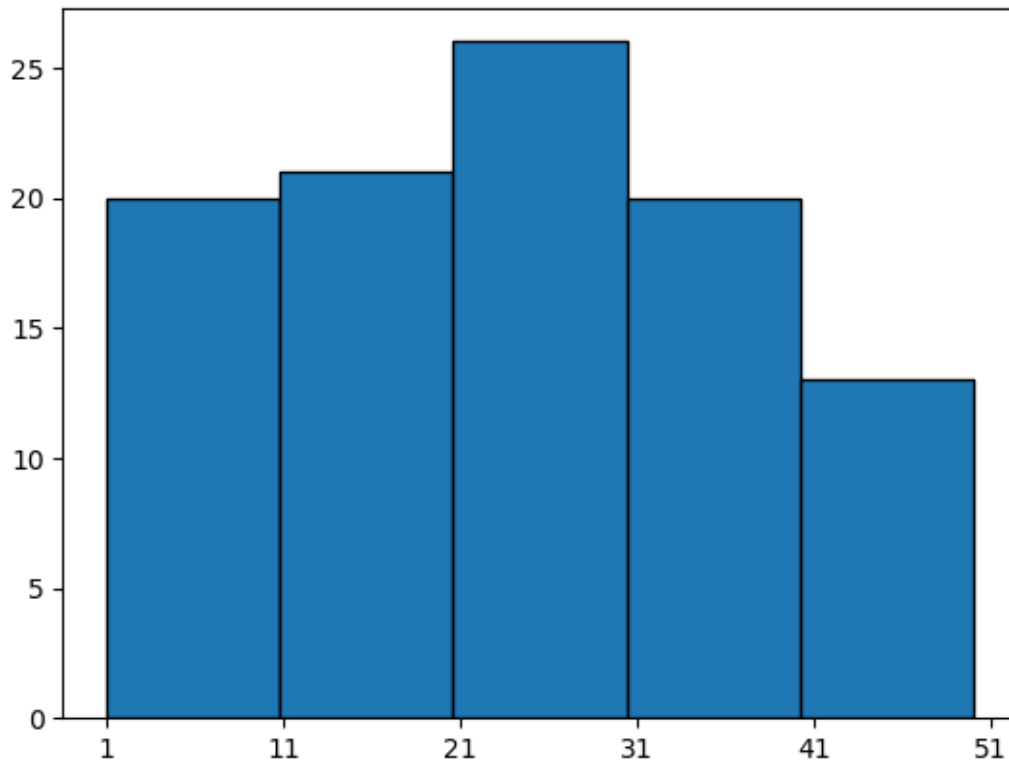
0.0.3 06) WAP to demonstrate the use of Scatter Plot.

```
[30]: 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()
```



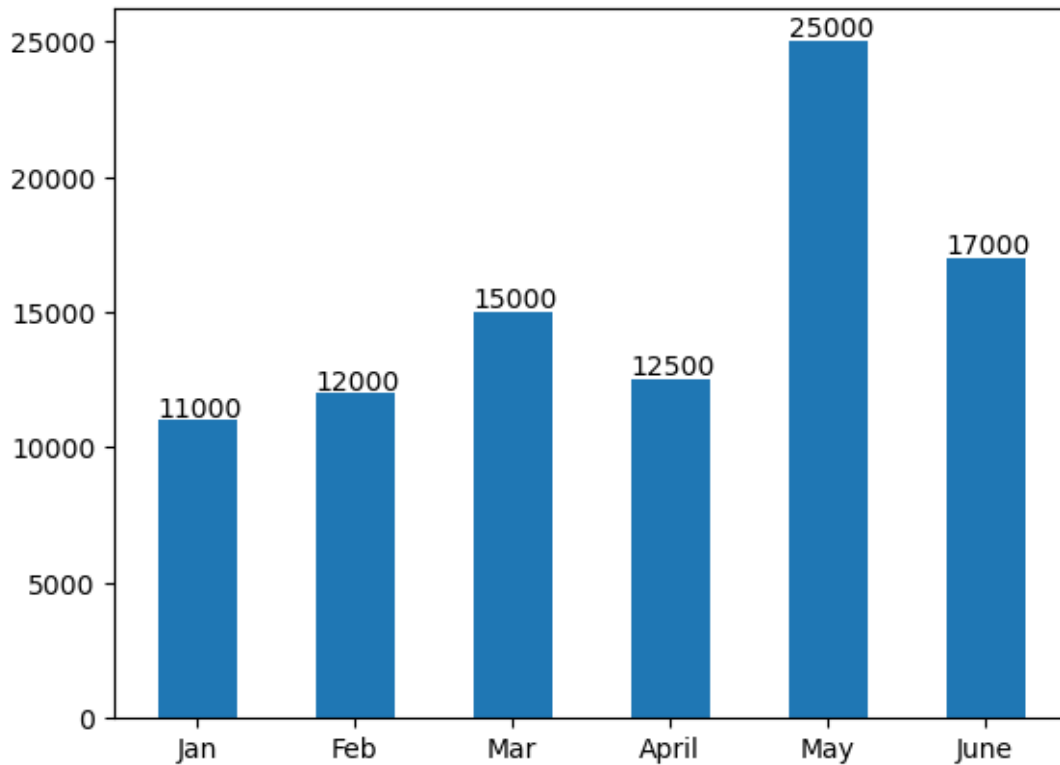
0.0.4 07) WAP to demonstrate the use of Histogram.

```
[34]: random.seed(10)
age = [random.randint(1,50) for i in range(100)]
plt.hist(age,edgecolor="k",bins = 5)
plt.xticks([1,11,21,31,41,51])
plt.show()
```

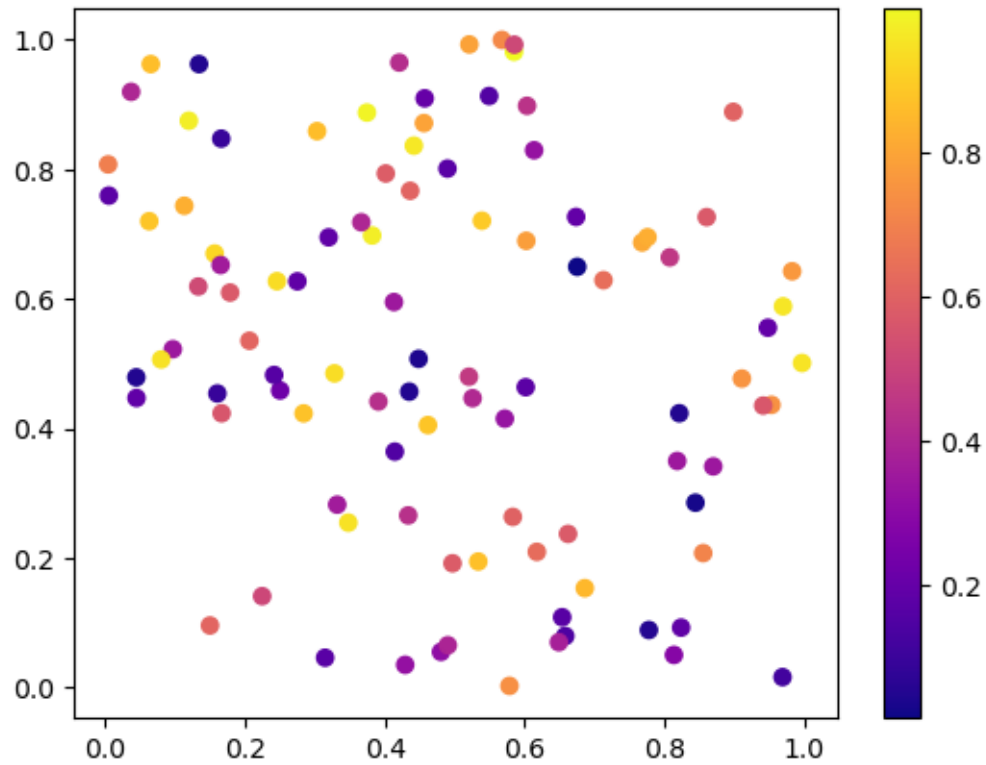
0.0.5 08) WAP to display the value of each bar in a bar chart using Matplotlib.

```
[36]: month = ["Jan", "Feb", "Mar", "April", "May", "June"]
      visitors = [11000, 12000, 15000, 12500, 25000, 17000]
      bars = plt.bar(month, visitors, width=0.5)
      for i in bars:
          yc = i.get_height()
          plt.text(i.get_x(), yc+150, f"{yc}")
      plt.show()
```



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

```
[38]: import random
random.seed(10)
x = [random.random() for i in range(100)]
y = [random.random() for i in range(100)]
# For Color in z
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.

```
[46]: random.seed(5)
time = [random.randint(20,120) for i in range(100)]
# plt.boxplot(time,vert=False)
plt.boxplot(time)
plt.show()
```

