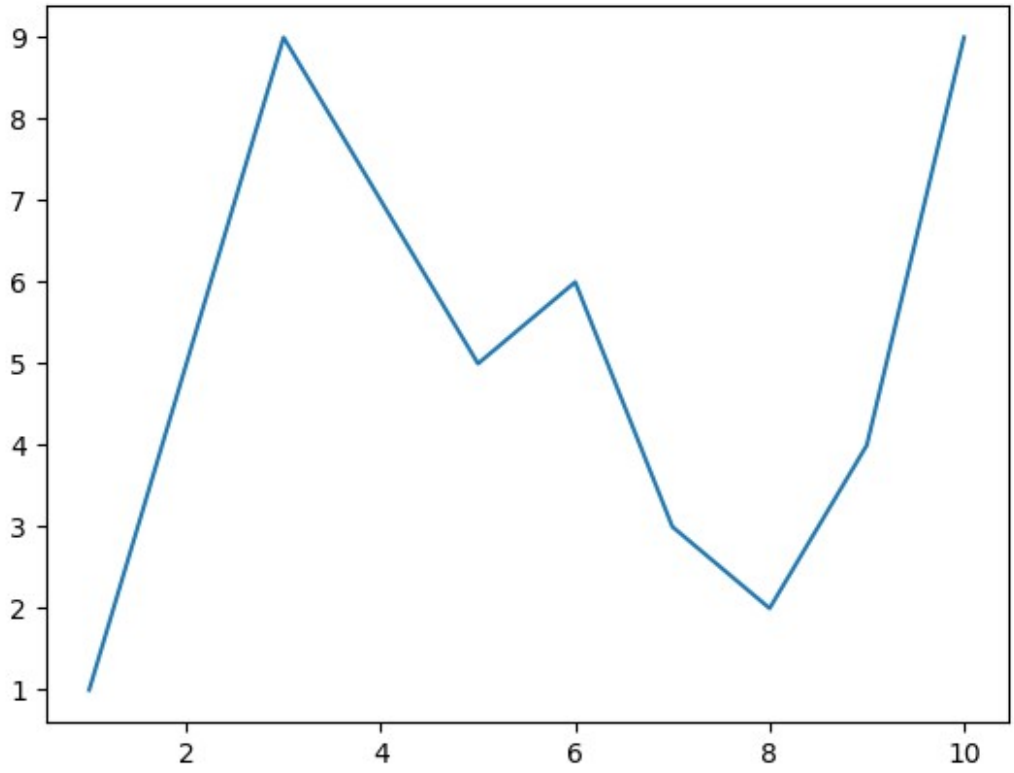
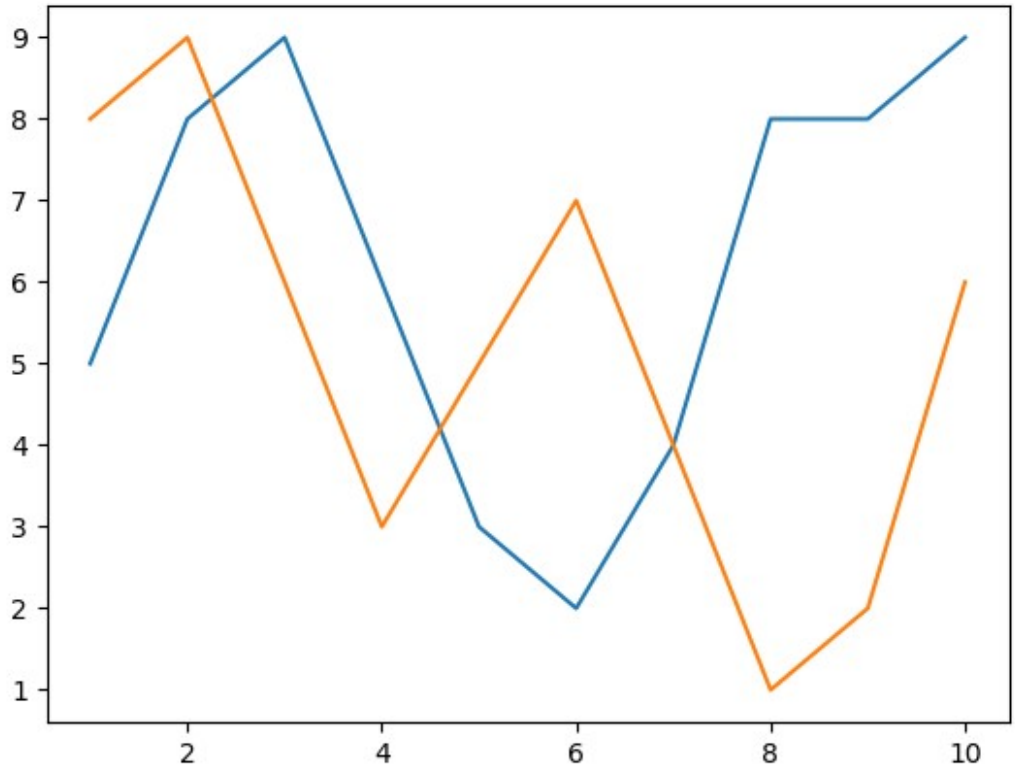
```
#import matplotlib below

import matplotlib.pyplot


x = range(1,11)
y = [1,5,9,7,5,6,3,2,4,9]

plt.plot(x,y)
plt.show

# write a code to display the line chart of above x & y
```

```
<function matplotlib.pyplot.show(close=None, block=None)>
```

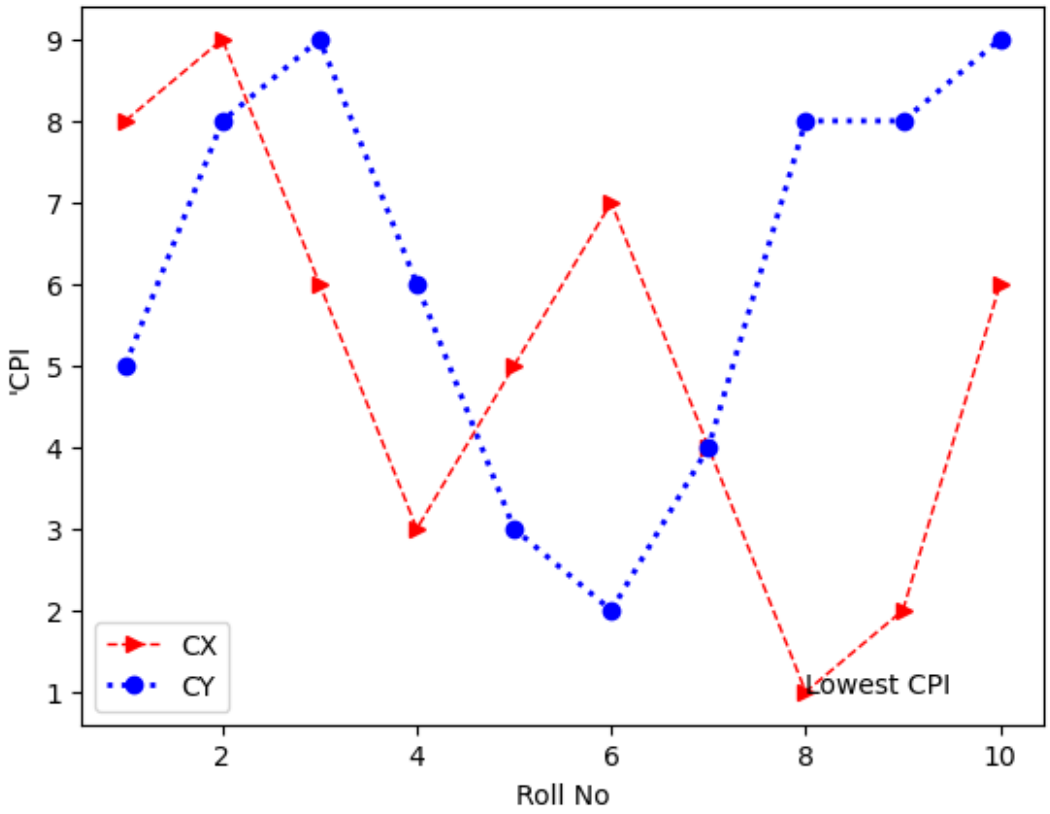



```
import matplotlib.pyplot as plt

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)
plt.plot(x,cyMarks)
```

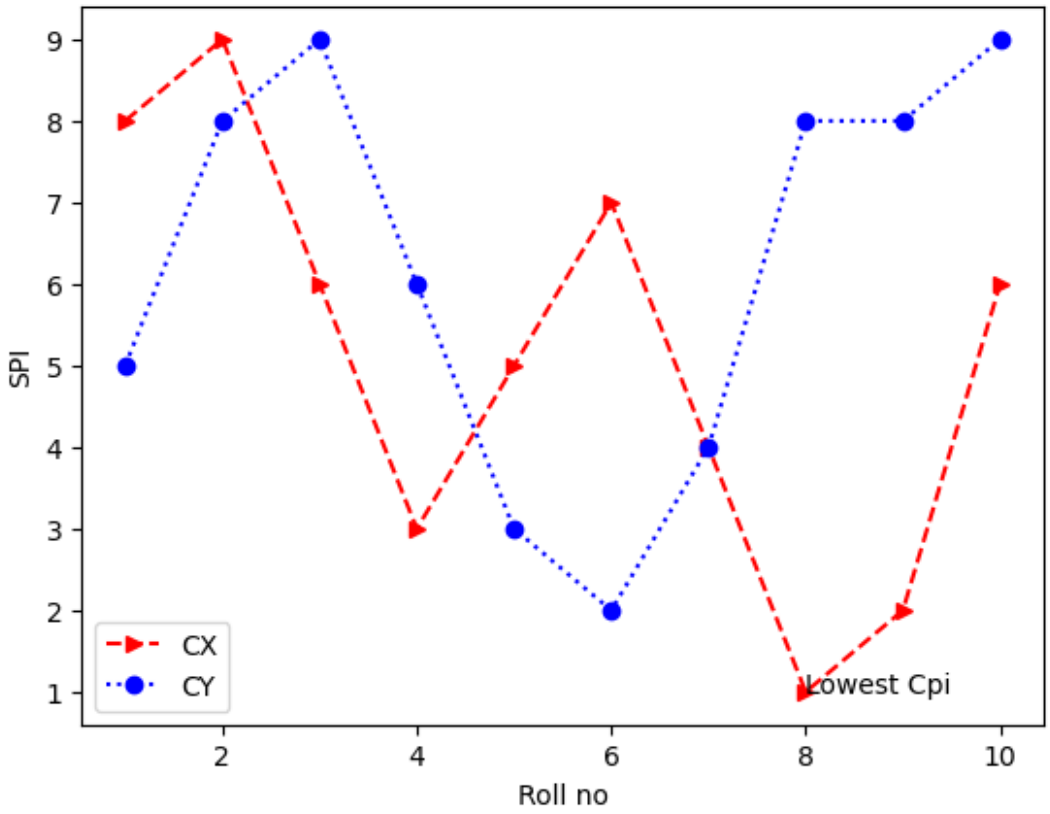
```
plt.show()

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




```
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
```

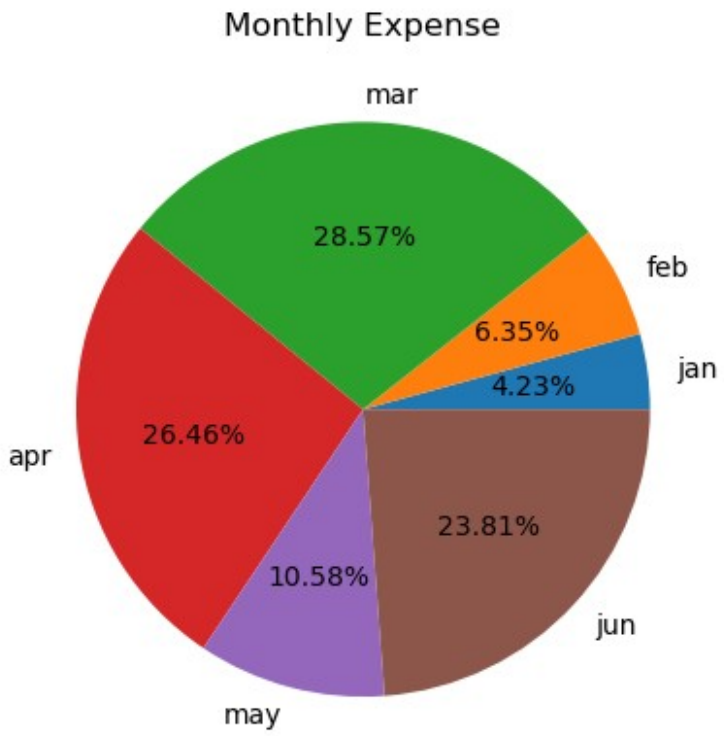



```
import matplotlib.pyplot as plt

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,c='r',marker='>',ls='--',label="CX")
plt.plot(x,cyMarks,c='b',marker='o',ls=':',label='CY')
plt.annotate("Lowest Cpi",(8,1))
plt.xlabel('Roll no')
plt.ylabel("SPI")
plt.legend()
plt.show()
```



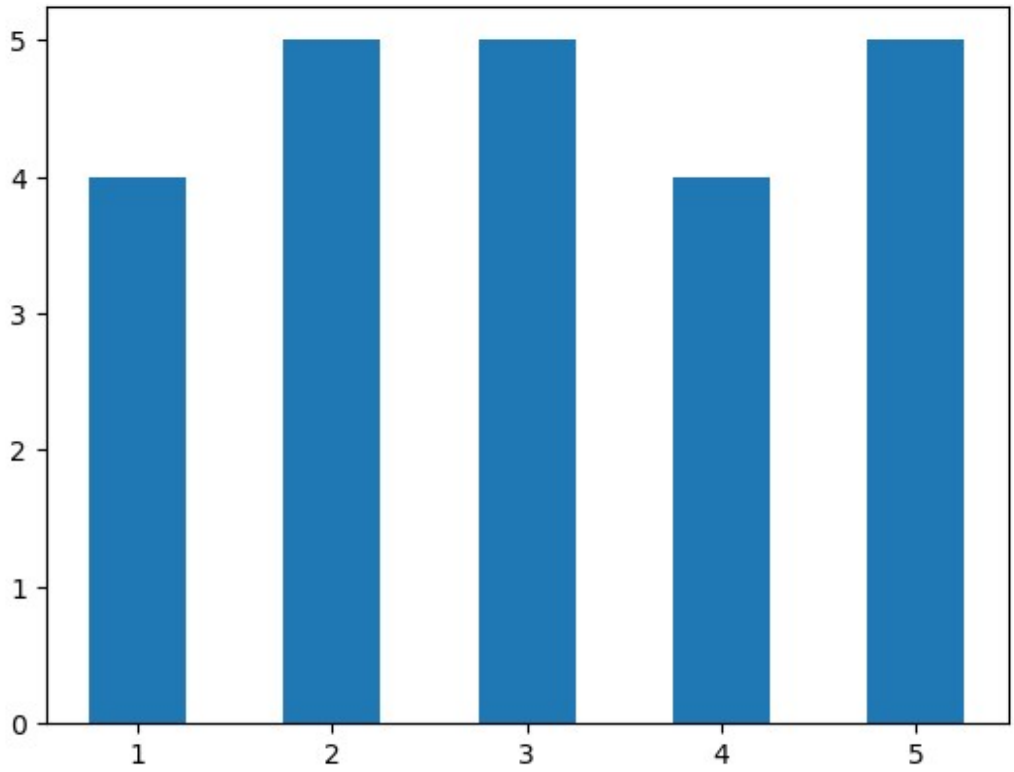
04) WAP to demonstrate the use of Pie chart.

```
import matplotlib.pyplot as plt

value = [800,1200,5400,5000,2000,4500]
lable = ['jan','feb','mar','apr','may','jun']

plt.pie(value,labels=lable,autopct='%1.2f%%')
plt.title("Monthly Expense")

Text(0.5, 1.0, 'Monthly Expense')
```



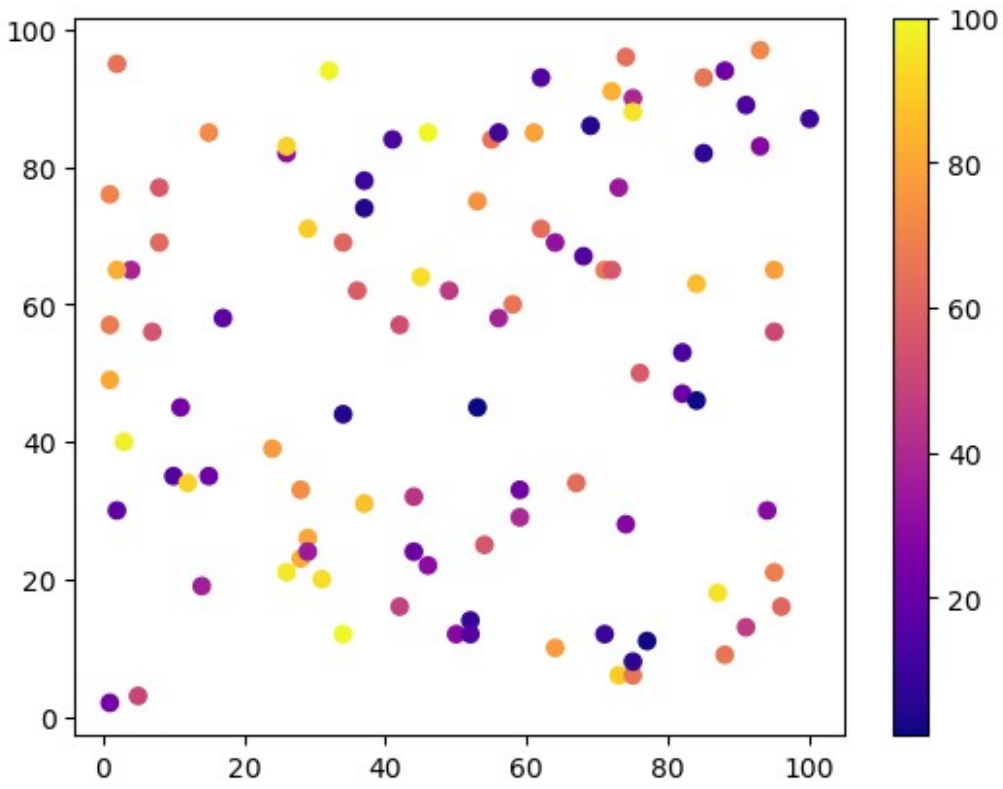
05) WAP to demonstrate the use of Bar chart.

```
import matplotlib.pyplot as plt
import random
x = [random.randint(1,5) for i in range(15)]
y = [random.randint(1,5) for i in range(15)]

bars = plt.bar(x, y, width=0.5)
plt.show()
```



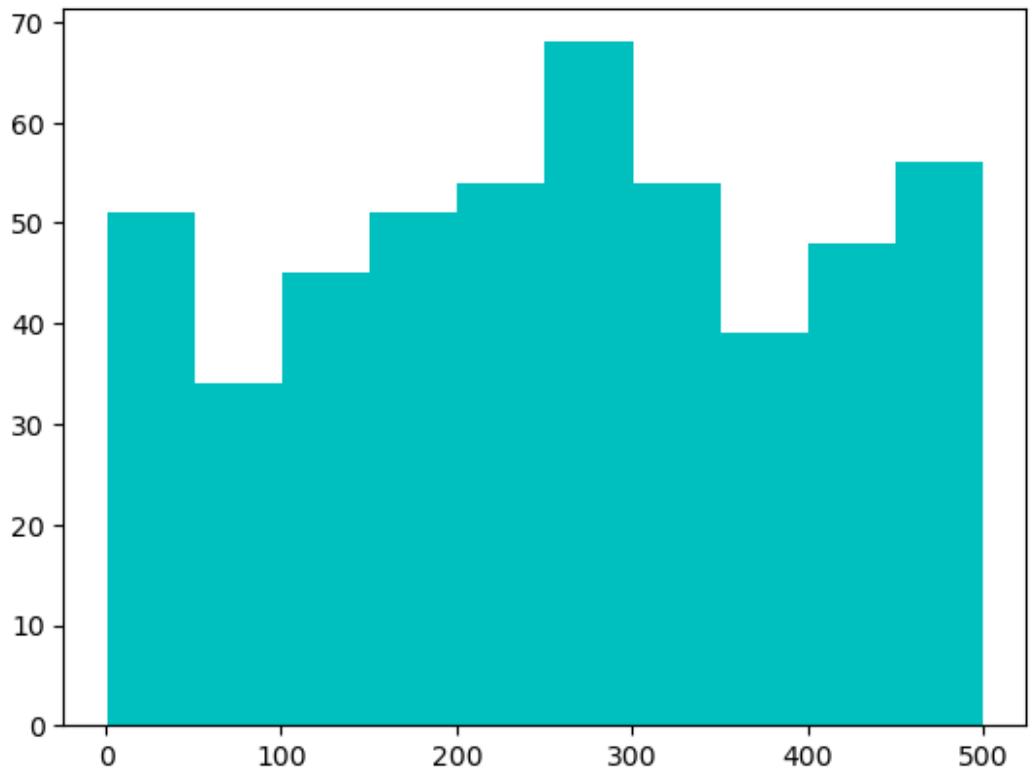
06) WAP to demonstrate the use of Scatter Plot.

```
import matplotlib.pyplot as plt
import random

x = [random.randint(1,100) for i in range(100)]
y = [random.randint(1,100) for i in range(100)]
a = [random.randint(1,100) for i in range(100)]

plt.scatter(x,y,c=a,cmap='plasma')
plt.colorbar()
plt.show()
```



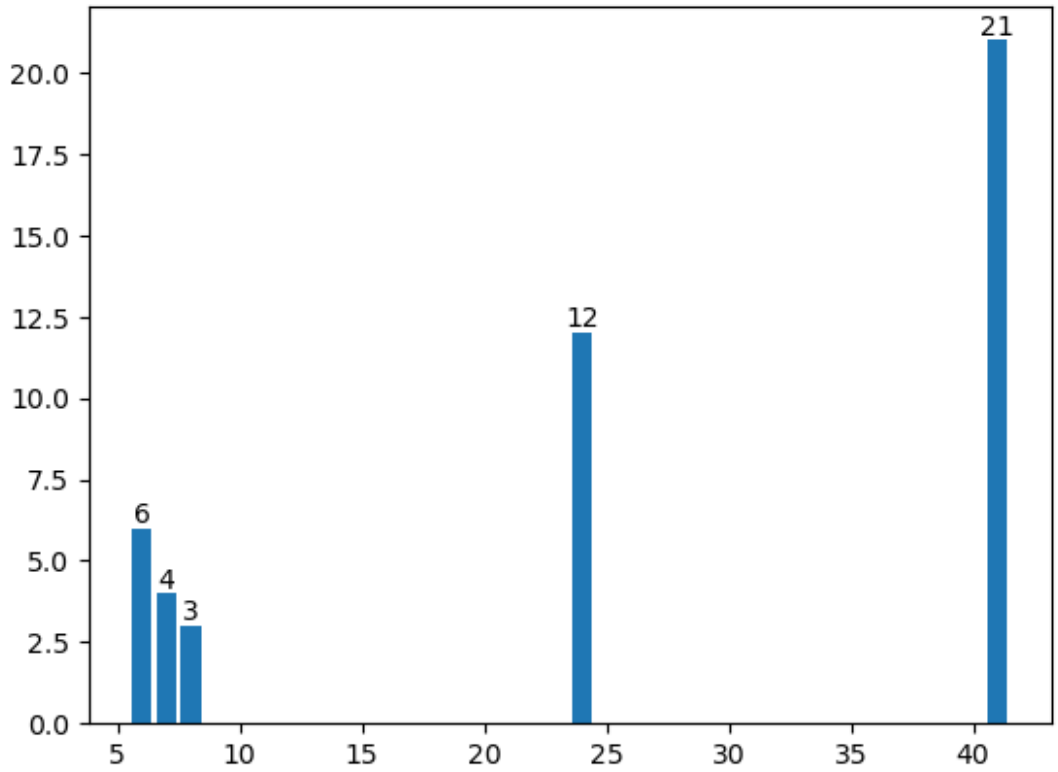
07) WAP to demonstrate the use of Histogram.

```
import matplotlib.pyplot as plt
import random

x = [random.randint(1,500) for i in range(500)]
# y = [random.randint(1,1000) for i in range(1000)]


plt.hist(x,color='c',histtype='bar')

plt.show()
```



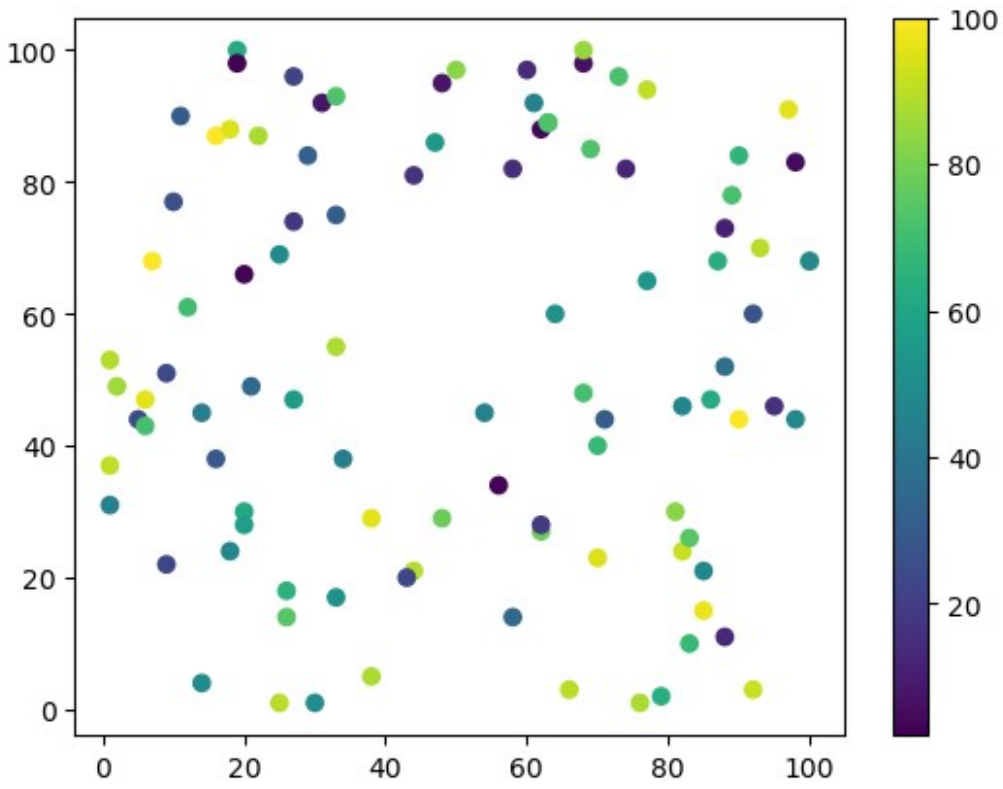
08) WAP to display the value of each bar in a bar chart using Matplotlib.

```
import matplotlib.pyplot as plt
import random

x = [random.randint(1, 50) for _ in range(5)]
y = [random.randint(1, 50) for _ in range(5)]

bars = plt.bar(x, y)

for i in bars:
    cy = i.get_height()
    plt.text(i.get_x() + i.get_width()/2, cy, f'{cy}', ha='center',
va='bottom')

plt.show()
```



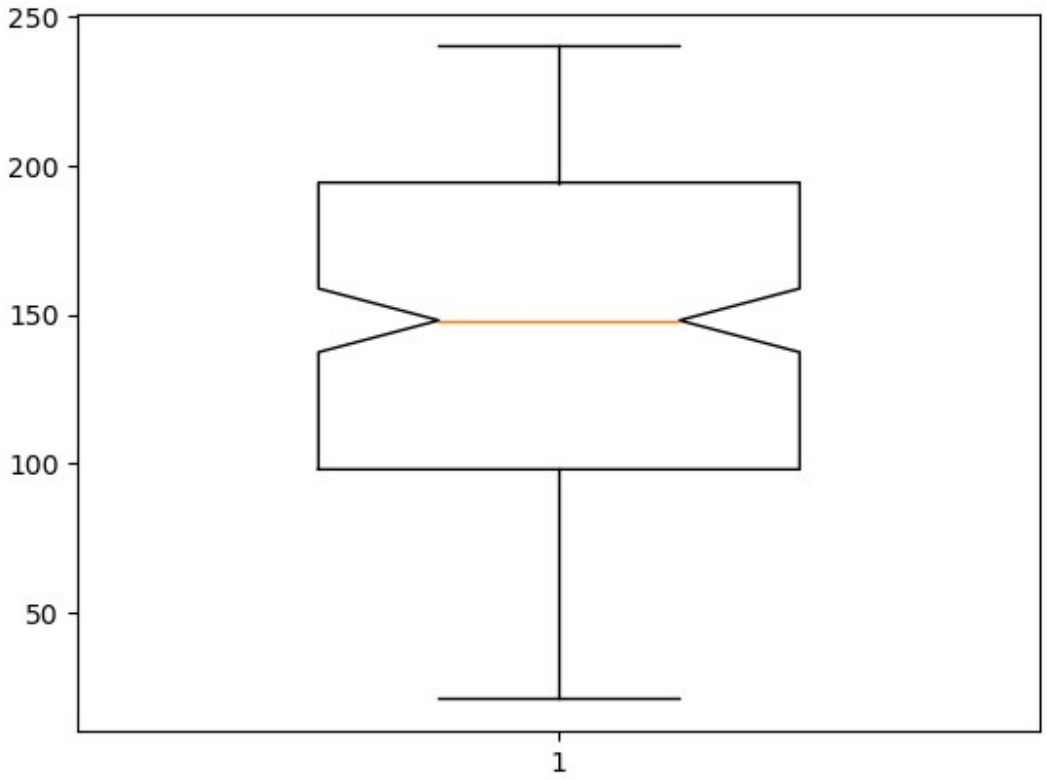
09) WAP create a Scatter Plot with several colors in Matplotlib?

```
import matplotlib.pyplot as plt
import random

x = [random.randint(1,100) for i in range(100)]
y = [random.randint(1,100) for i in range(100)]
a = [random.randint(1,100) for i in range(100)]

plt.scatter(x,y,c=a)
plt.colorbar()
plt.show()
```



10) WAP to create a Box Plot.

```
import matplotlib.pyplot as plt

random.seed(51)
test = [ random.randint(20,240) for i in range(200)]
plt.boxplot(test, notch=True,vert=True, widths=0.5)
plt.show()
```


250
200
150
100
50
1