Darshan UNIVERSITY

योग: कर्मसु कौशलम्

Python Programming - 2301CS404

Lab - 12

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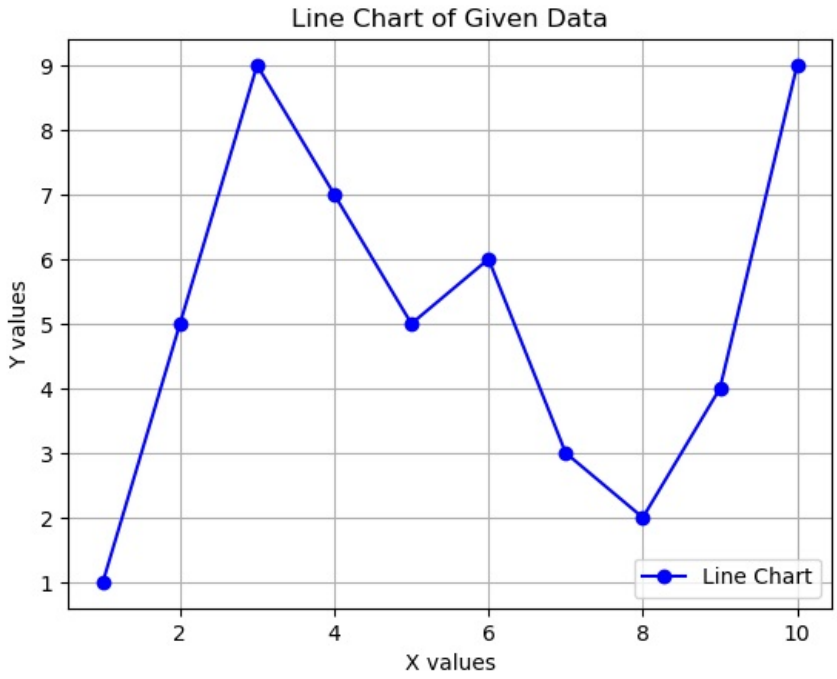
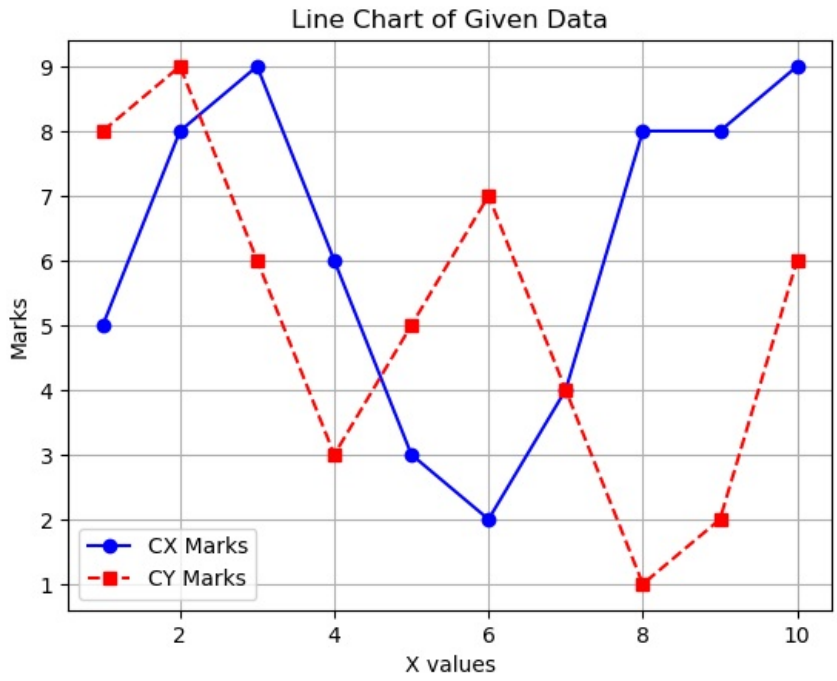
4B 448 8th batch

In [1]:
```
#import matplotlib below
```

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



import matplotlib.pyplot as plt


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


plt.plot(x, y, marker='o', linestyle='-', color='b', label='Line Chart')


plt.xlabel('X values')
plt.ylabel('Y values')
plt.title('Line Chart of Given Data')
plt.legend()
plt.grid(True)

# Show the chart
plt.show()
```

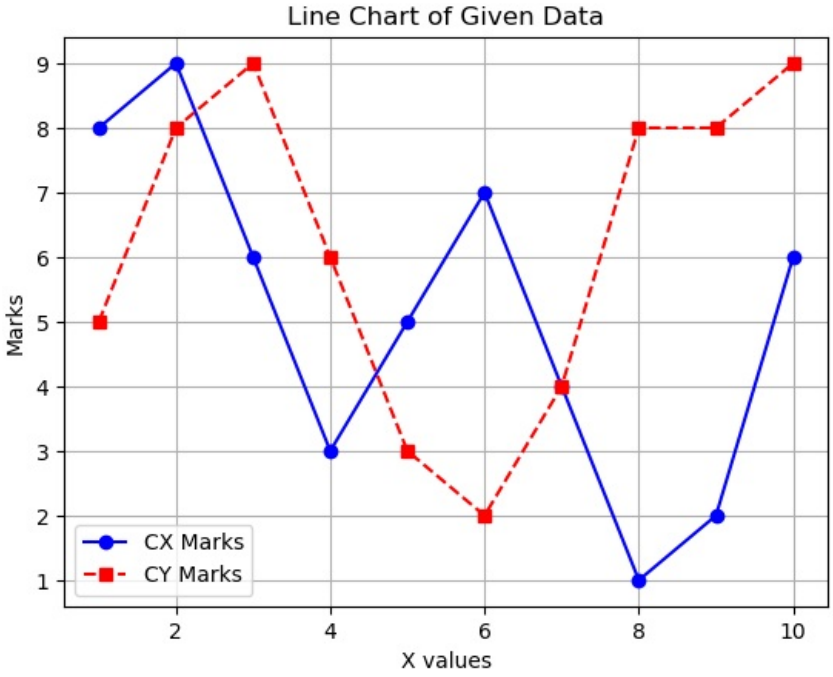


In [5]:
```
import matplotlib.pyplot as plt


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, marker='o', linestyle='-', color='b', label='CX Marks')
plt.plot(x, cyMarks, marker='s', linestyle='--', color='r', label='CY Marks')


plt.xlabel('X values')
plt.ylabel('Marks')
plt.title('Line Chart of Given Data')
plt.legend()
plt.grid(True)


plt.show()
```



In [21]:
```
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, marker='o', linestyle='-', color='b', label='CX Marks')
```

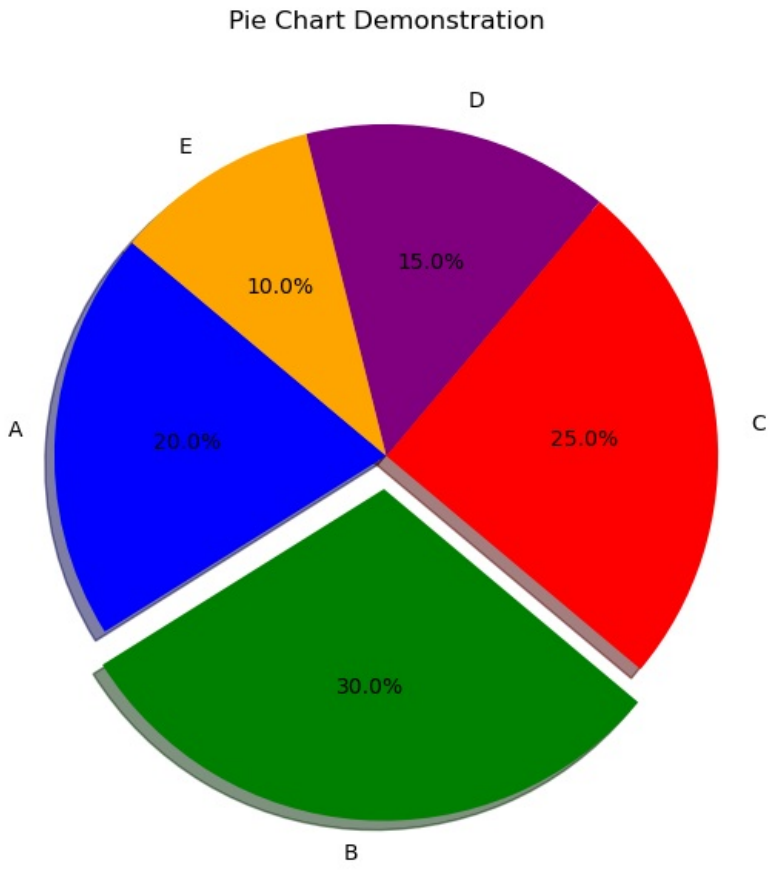
```
plt.plot(x, cyMarks, marker='s', linestyle='--', color='r', label='CY Marks')


plt.xlabel('X values')
plt.ylabel('Marks')
plt.title('Line Chart of Given Data')
plt.legend()
plt.grid(True)
plt.show()
```



In [ ]:

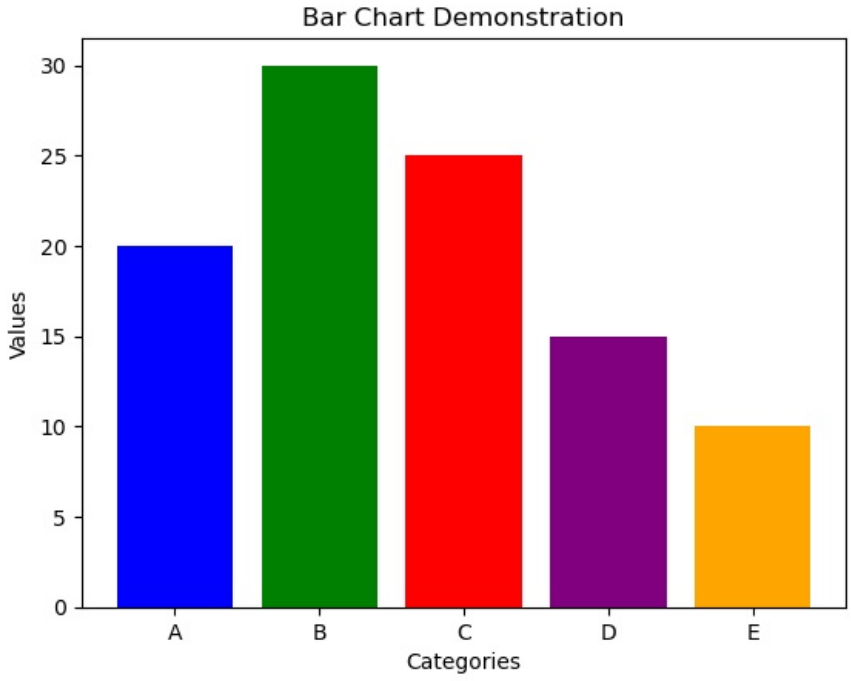
04) WAP to demonstrate the use of Pie chart.

In [7]:
```
import matplotlib.pyplot as plt


labels = ['A', 'B', 'C', 'D', 'E']
sizes = [20, 30, 25, 15, 10]
colors = ['blue', 'green', 'red', 'purple', 'orange']
explode = (0, 0.1, 0, 0, 0)


plt.figure(figsize=(7,7))
plt.pie(sizes, labels=labels, colors=colors, autopct='%1.1f%%', startangle=140, explode=explode, shadow=True)

plt.title('Pie Chart Demonstration')

plt.show()
```



05) WAP to demonstrate the use of Bar chart.

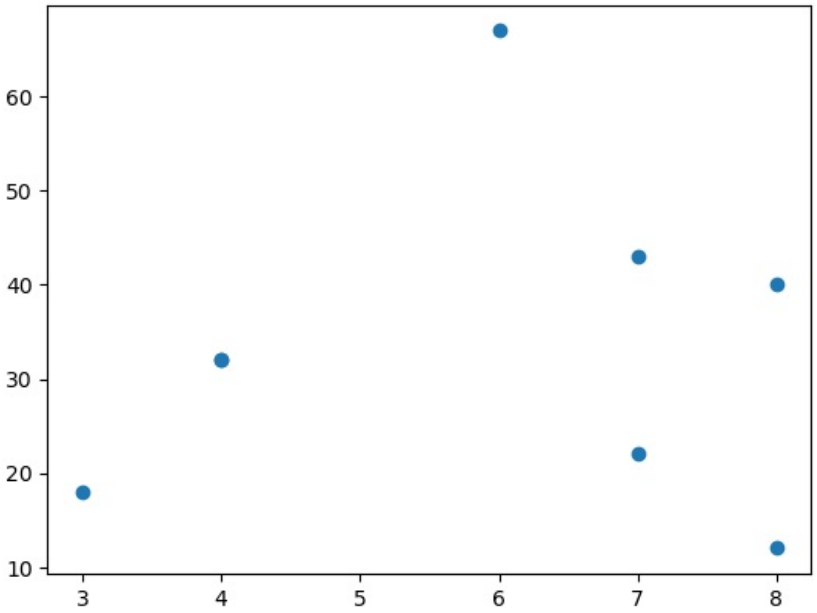
In [12]:
```
import matplotlib.pyplot as plt

labels = ['A', 'B', 'C', 'D', 'E']
values = [20, 30, 25, 15, 10]
colors = ['blue', 'green', 'red', 'purple', 'orange']

plt.bar(labels, values, color=colors)

plt.xlabel('Categories')
plt.ylabel('Values')
plt.title('Bar Chart Demonstration')

plt.show()
```



06) WAP to demonstrate the use of Scatter Plot.

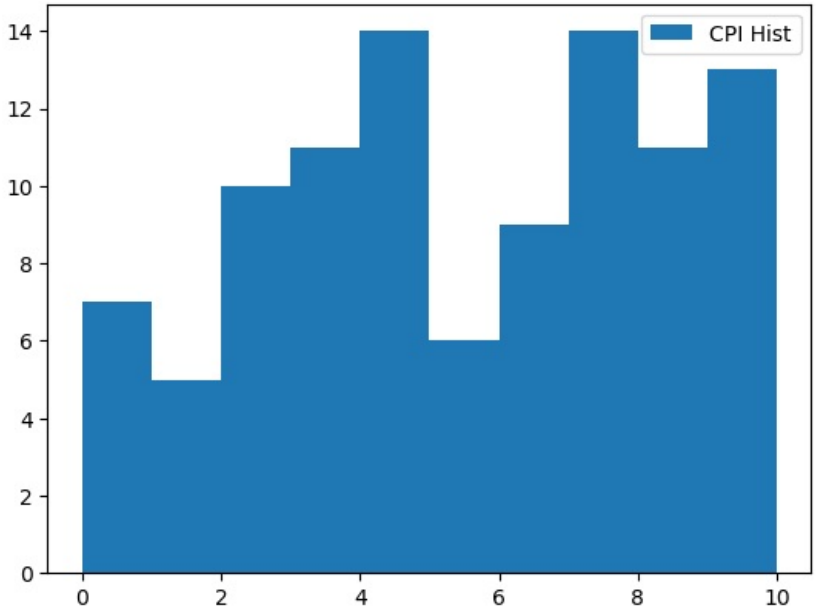
In [18]:
```
import matplotlib.pyplot as plt
```

```
studentAge=[4,7,8,3,4,6,7,8]
studentWeight=[32,43,12,18,32,67,22,40]
plt.scatter(studentAge,studentWeight)
plt.show()
```



07) WAP to demonstrate the use of Histogram.

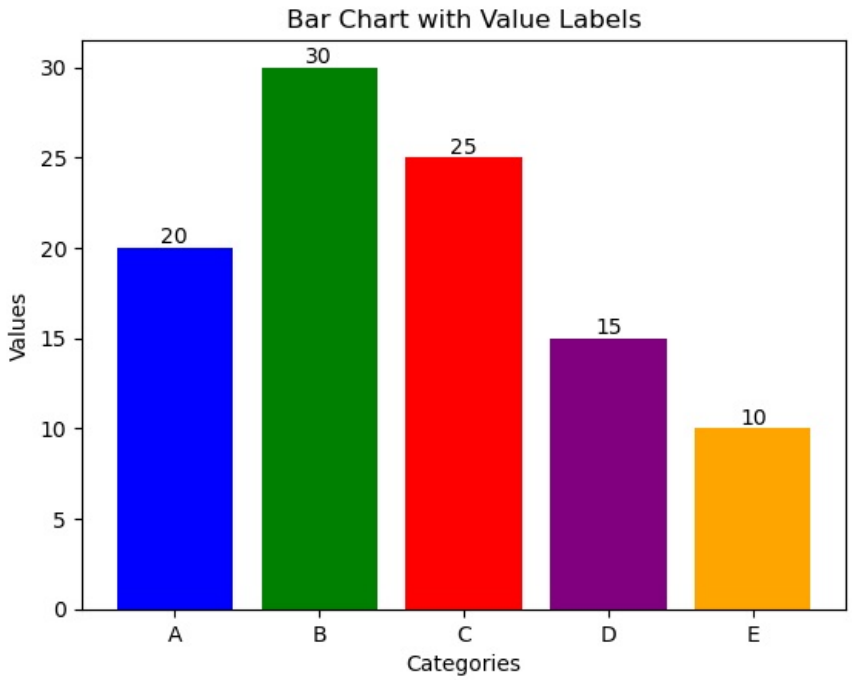
In [14]:
```
import matplotlib.pyplot as plt
import random

cpis = [random.randint(0,10) for _ in range(100)]
plt.hist(cpis,bins=10, histtype='stepfilled', align='mid', label='CPI Hist')
plt.legend()
plt.show()
```



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

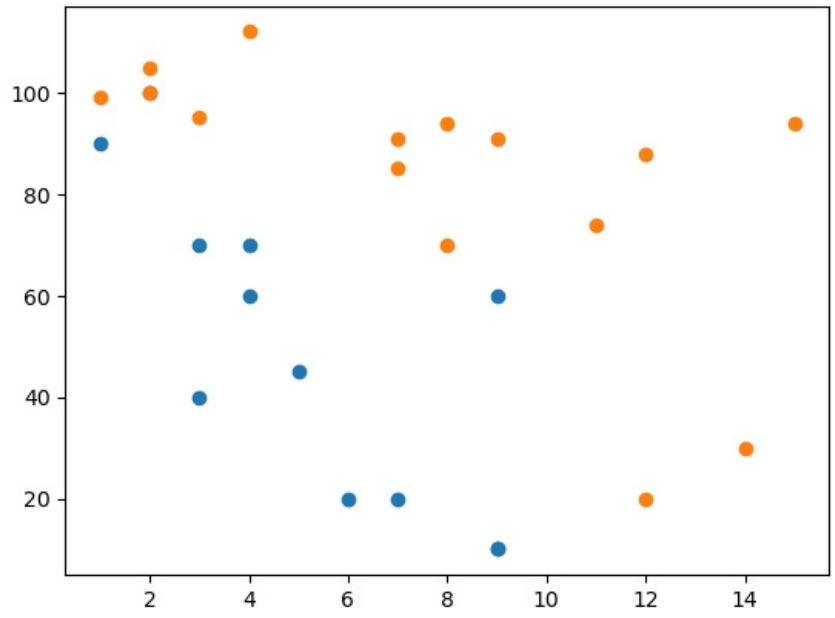
In [15]:
```
import matplotlib.pyplot as plt

labels = ['A', 'B', 'C', 'D', 'E']
values = [20, 30, 25, 15, 10]
colors = ['blue', 'green', 'red', 'purple', 'orange']

bars = plt.bar(labels, values, color=colors)

for bar in bars:
    plt.text(bar.get_x() + bar.get_width()/2, bar.get_height(), str(bar.get_height()), ha='center', va='bottom'

plt.xlabel('Categories')
plt.ylabel('Values')
plt.title('Bar Chart with Value Labels')
```

```
plt.show()
```



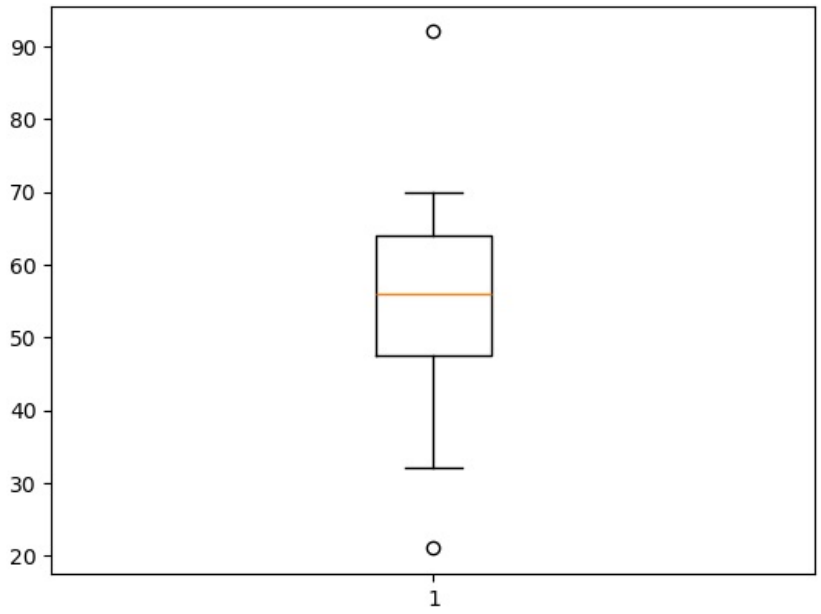
09) WAP create a Scatter Plot with several colors in Matplotlib?

In [17]:
```
import matplotlib.pyplot as plt

carAge = [2, 5, 7, 9, 4, 3, 1, 9, 4, 3, 6, 9]
carspeed = [100, 45, 20, 10, 60, 70, 90, 60, 70, 40, 20, 10]

carAge1 = [2, 2, 8, 1, 15, 8, 12, 9, 7, 3, 11, 4, 7, 14, 12]
carspeed1 = [100, 105, 70, 99, 94, 94, 88, 91, 91, 95, 74, 112, 85, 30, 20]

plt.scatter(carAge, carspeed)
plt.scatter(carAge1, carspeed1)
plt.show()
```



10) WAP to create a Box Plot.

In [16]:
```
import matplotlib.pyplot as plt
plt.boxplot([50,45,52,63,70,21,56,68,54,57,35,62,65,92,32])
plt.show()
```



In [ ]: