Darshan UNIVERSITY

योगः कर्मसु कौशलम्

Python Programming - 2101CS405

Lab - 11

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Graphs

A

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

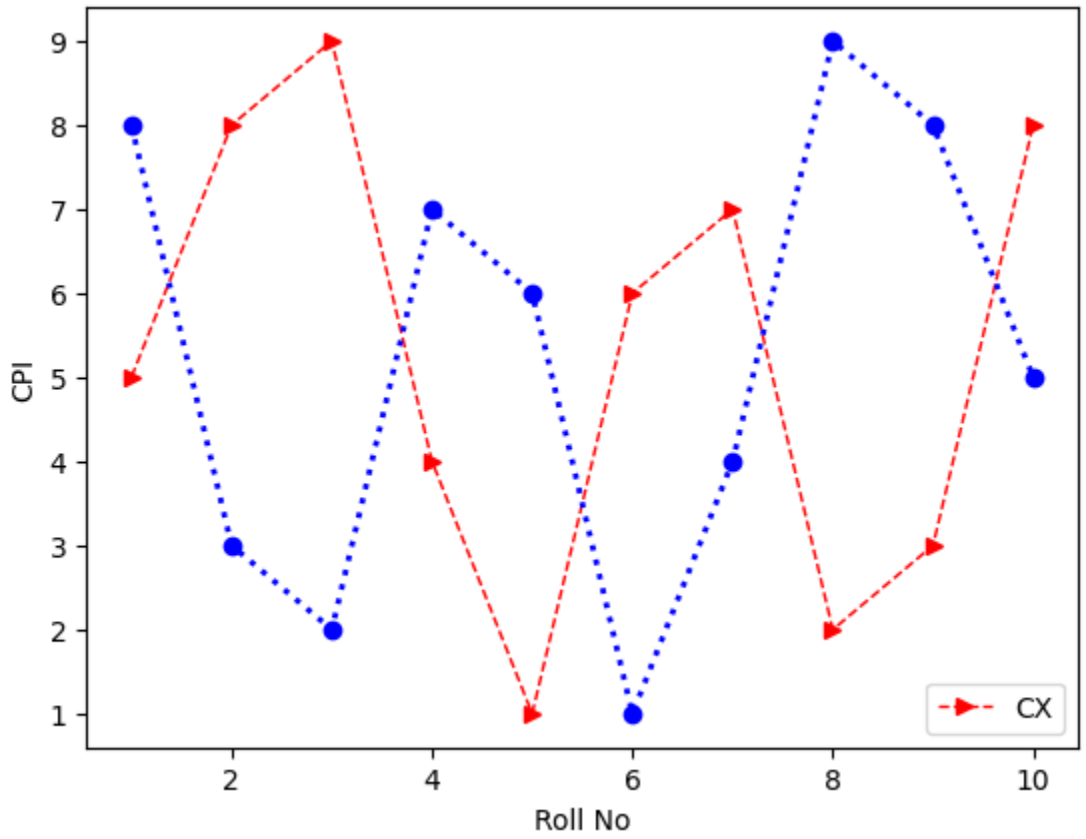
In [ ]:
```
#set matplotlib inline below
```

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

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

In [ ]:
```
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)
```

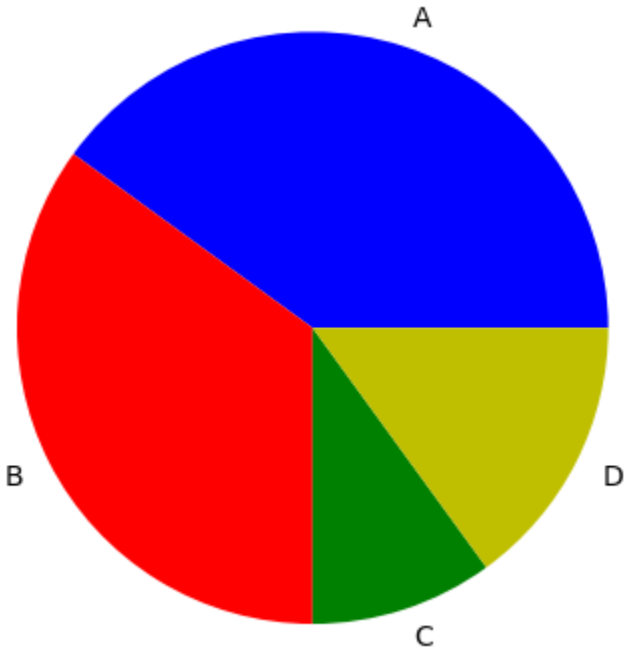
In [7]:
```
import matplotlib.pyplot as plt
%matplotlib inline
values1 = [5,8,9,4,1,6,7,2,3,8]
values2 = [8,3,2,7,6,1,4,9,8,5]
plt.plot(range(1,11),values1,c='r',lw=1,ls='--',marker='>')
plt.xlabel('Roll No')
plt.ylabel('CPI')
plt.legend(['CX','CY'],loc=4)
```

```
plt.plot(range(1,11),values2,c='b',lw=2,ls=':',marker='o')
plt.show()
```



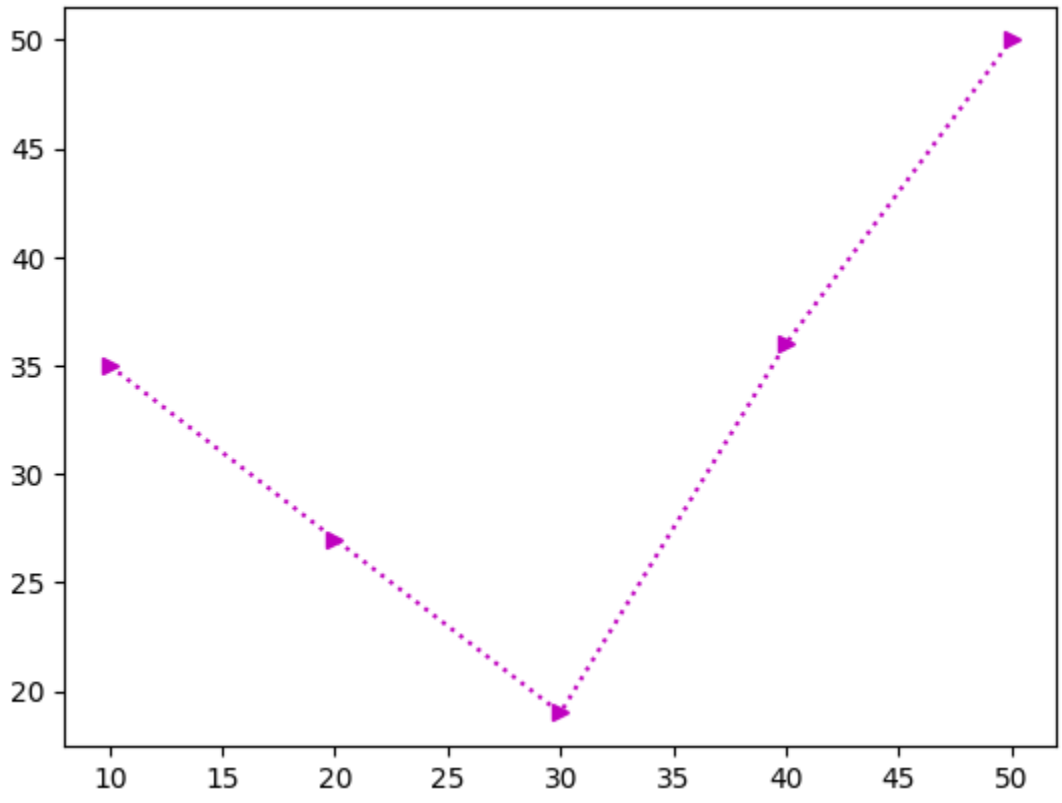
01) WAP to demonstrate the use of Pie chart.

In [15]:
```
import matplotlib.pyplot as plt
%matplotlib inline
values=[40,35,10,15]
l=['A','B','C','D']
c=['b','r','g','y']
plt.pie(values,labels=l,colors=c)
plt.show()
```



02) WAP to to Plot List random of X, Y Coordinates in Matplotlib.

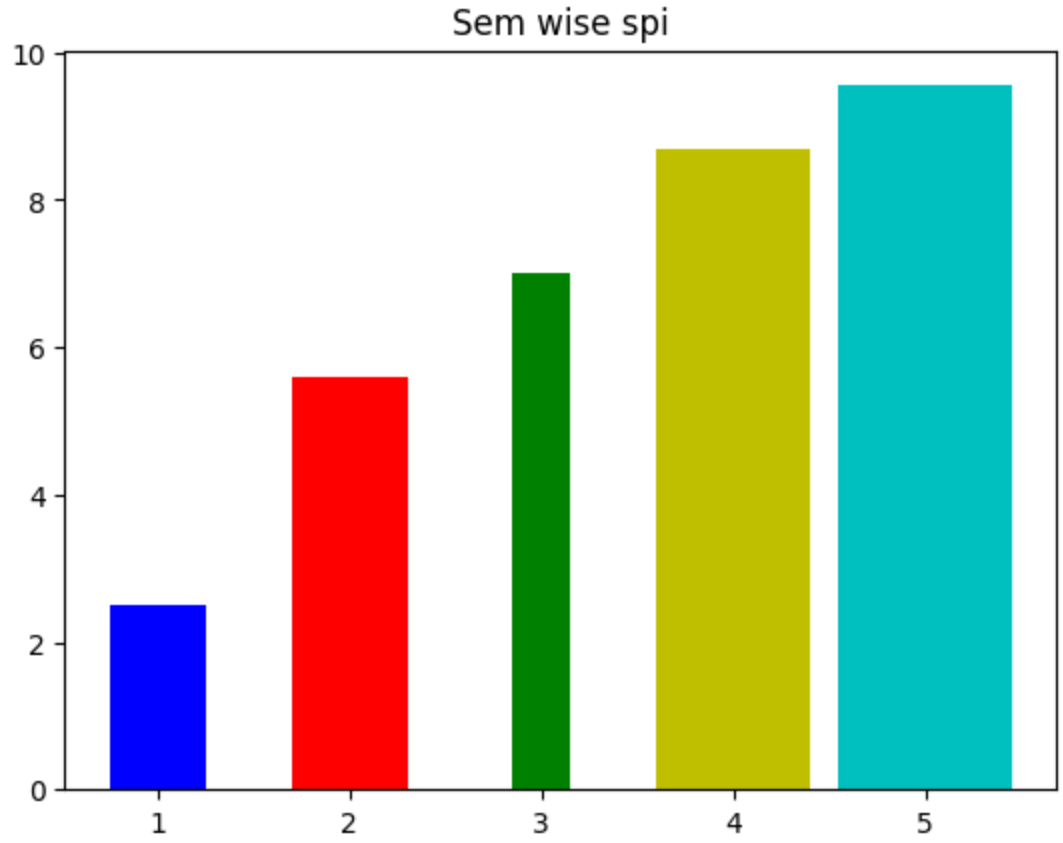
In [37]:
```
import random
x=[10,20,30,40,50]
y=[random.randint(1,50) for i in range(5)]
plt.plot(x,y,c="m",ls=':',marker='>')
plt.show()
```



03) WAP to demonstrate the use of Bar chart.

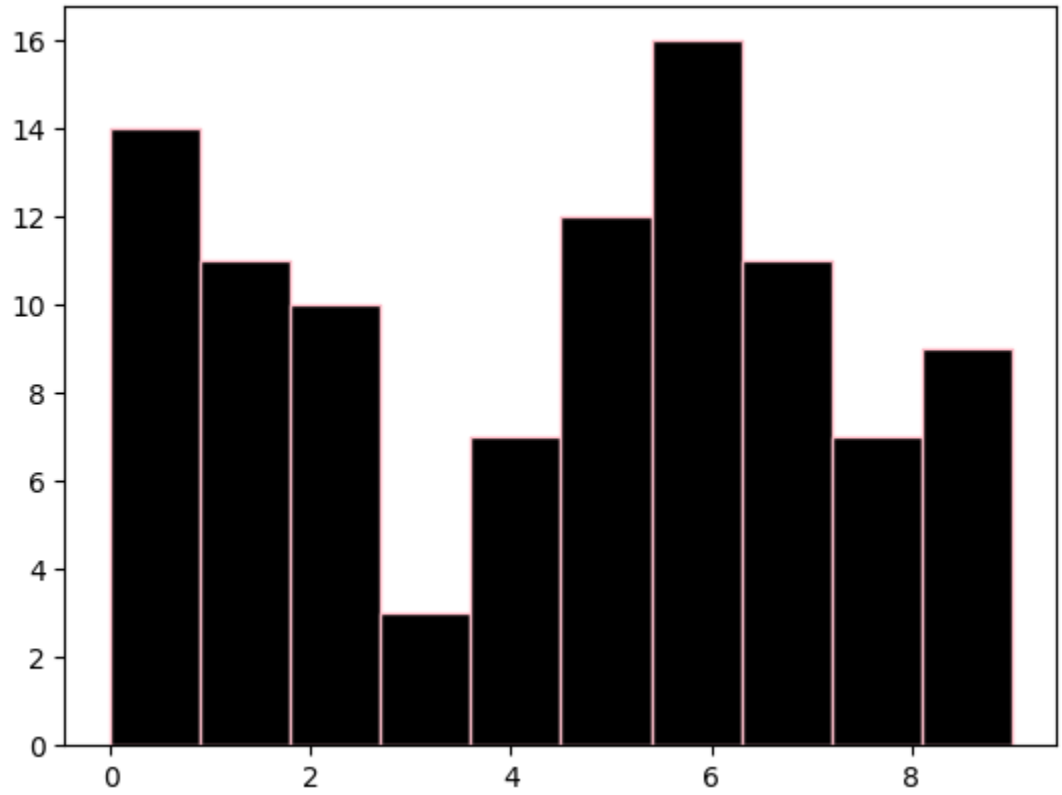
In [27]:
```
%matplotlib inline
```

```
x=[1,2,3,4,5]
y=[2.5,5.6,7,8.7,9.55]
l=['1st','2nd','3rd','4th','5th']
c=['b','r','g','y','c']
w = [0.5,0.6,0.3,0.8,0.9]
plt.title('Sem wise spi')
plt.bar(x,y,color=c,label=l,width=w)
plt.show()
```



04) WAP to demonstrate the use of Histogram.

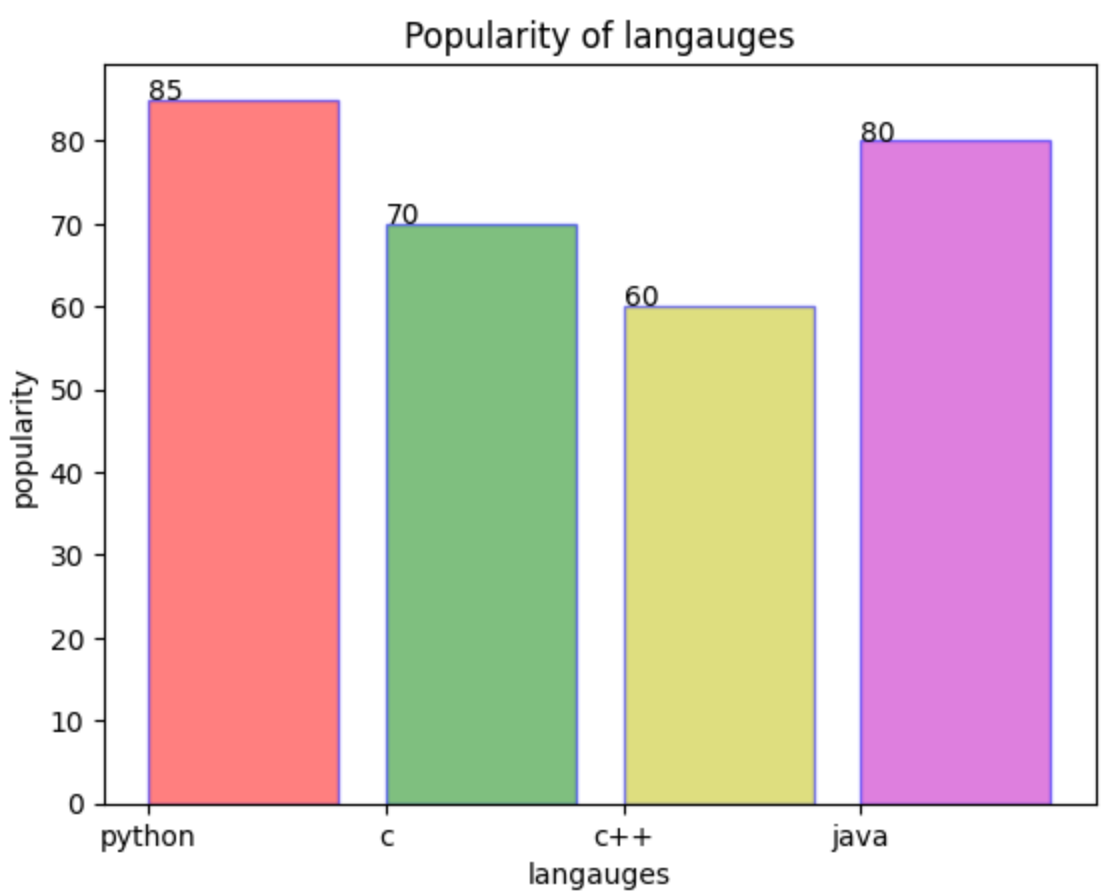
In [38]:
```
import numpy as np
cpi = np.random.randint(0,10,100)
plt.hist(cpi,color="black",edgecolor='pink')
plt.show()
```



B

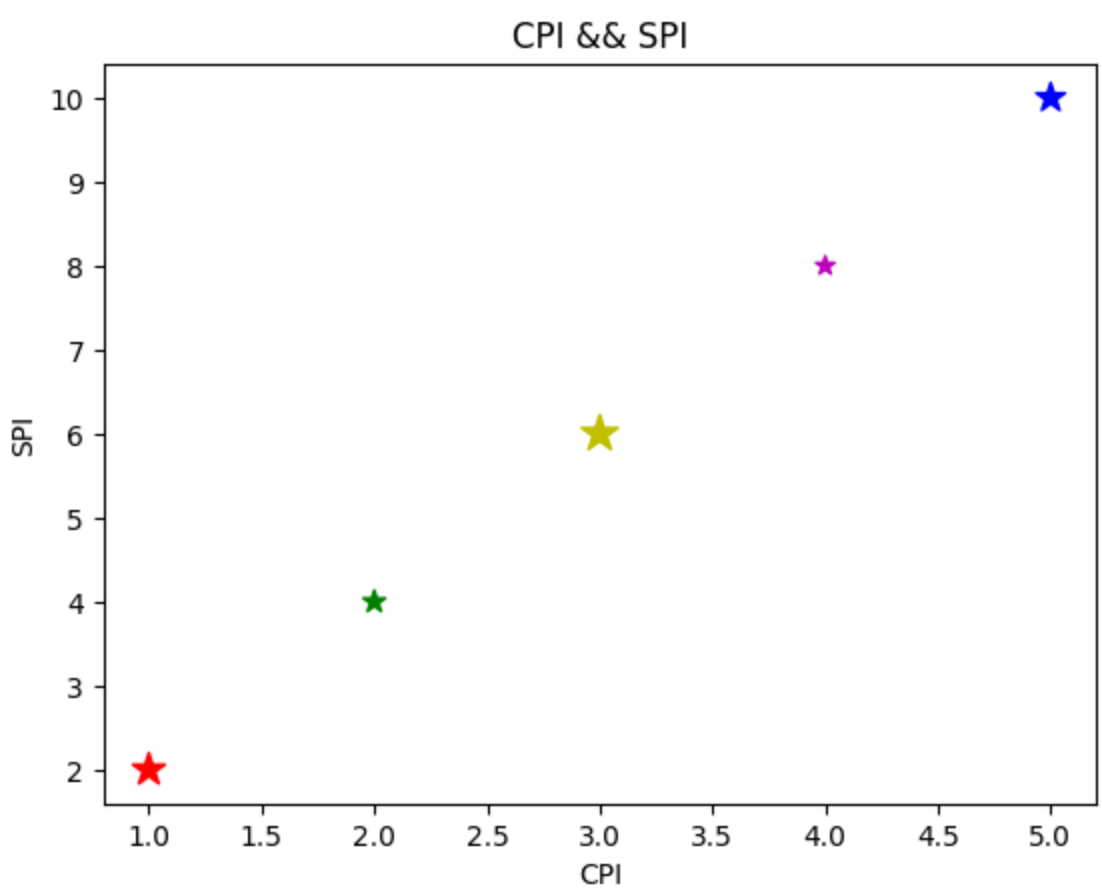
01) WAP to display the value of each bar in a bar chart using Matplotlib.

In [5]:
```
import matplotlib.pyplot as plt
%matplotlib inline
x=["python","c","c++","java"]
y=[85,70,60,80]
c=["r","g","y","m"]
plt.bar(x,y,color=c,align='edge',edgecolor='b',alpha=0.5,)
plt.title("Popularity of langauges")
plt.xlabel("langauges")
plt.ylabel("popularity")
def addlabels(x,y):
    for i in range(len(x)):
        plt.text(i,y[i],y[i])
addlabels(x,y)
plt.show()
```



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

In [11]:
```
x=[1,2,3,4,5]
y=[2,4,6,8,10]
c=["r","g","y","m","b"]
s=[150,70,190,50,120]
plt.scatter(x,y,color=c,marker='*',s=s)
plt.title("CPI && SPI")
plt.xlabel("CPI")
plt.ylabel("SPI")
plt.show()
```



03) WAP to Display an Image in Grayscale in Matplotlib.

In [45]:
```
import PIL
img=PIL.Image.open('doctor6.jpg')
grayImage = img.convert("L")
plt.imshow(grayImage,cmap="gray")
plt.show()
```