

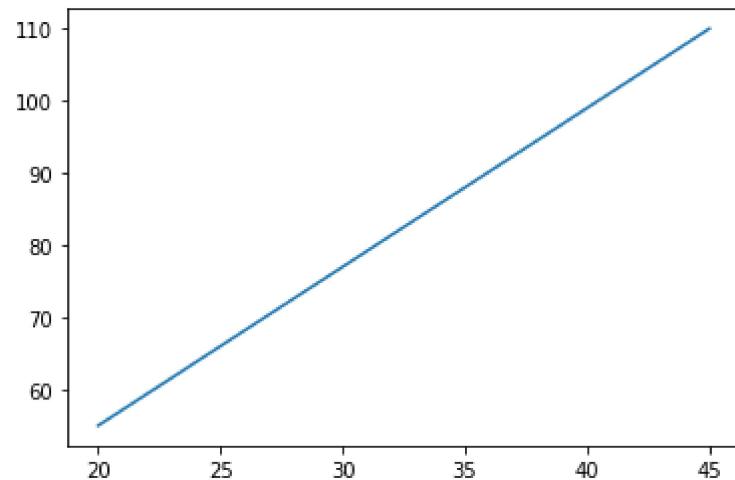
```
In [1]: import matplotlib.pyplot as plt
```

```
In [2]: import numpy as np
```

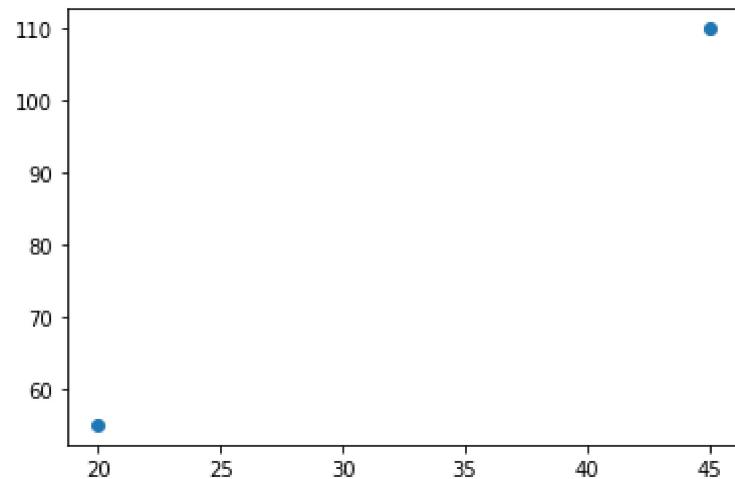
```
In [3]: x_axis=np.array([20,45])
```

```
In [4]: y_axis=np.array([55,110])
```

```
In [5]: plt.plot(x_axis,y_axis)  
plt.show()
```



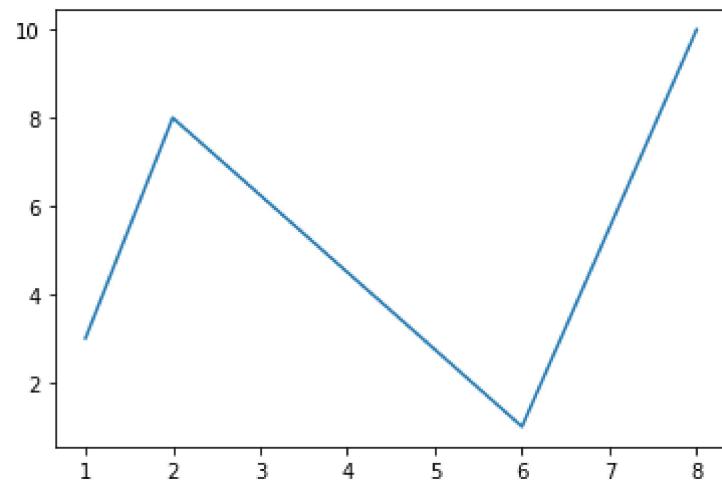
```
In [6]: plt.plot(x_axis,y_axis,'o')  
plt.show()
```



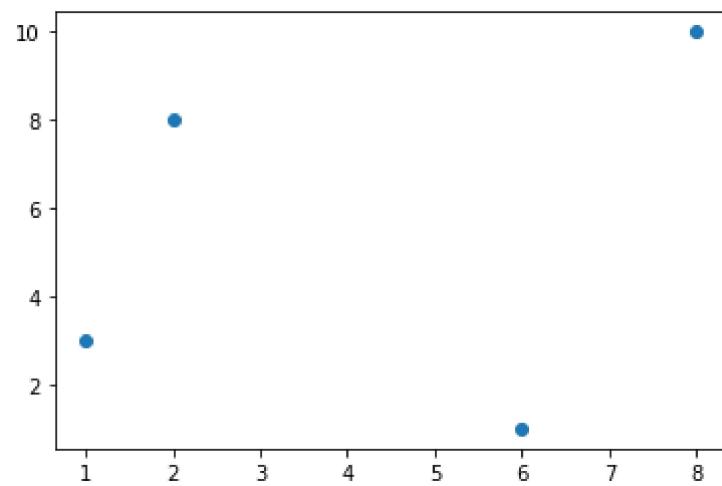
```
In [7]: x_axis=np.array([1,2,6,8])
```

```
In [8]: y_axis=np.array([3,8,1,10])
```

```
In [9]: plt.plot(x_axis,y_axis)  
plt.show()
```



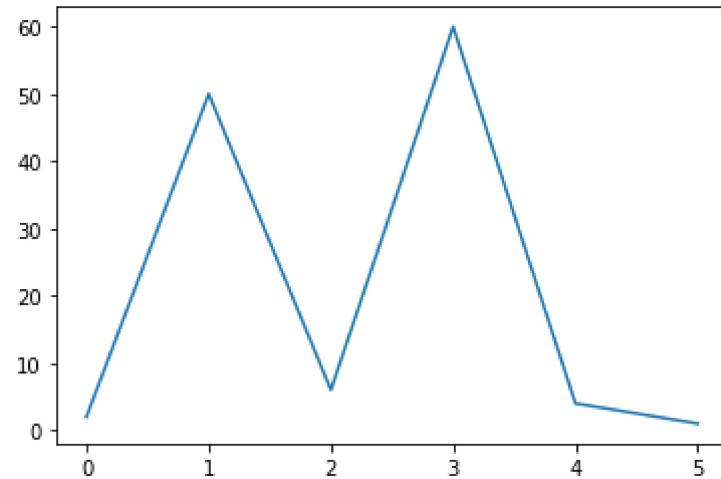
```
In [10]: plt.plot(x_axis,y_axis,'o')  
plt.show()
```



```
In [11]: yaxis=np.array([2,50,6,60,4,1])
```

In [12]:

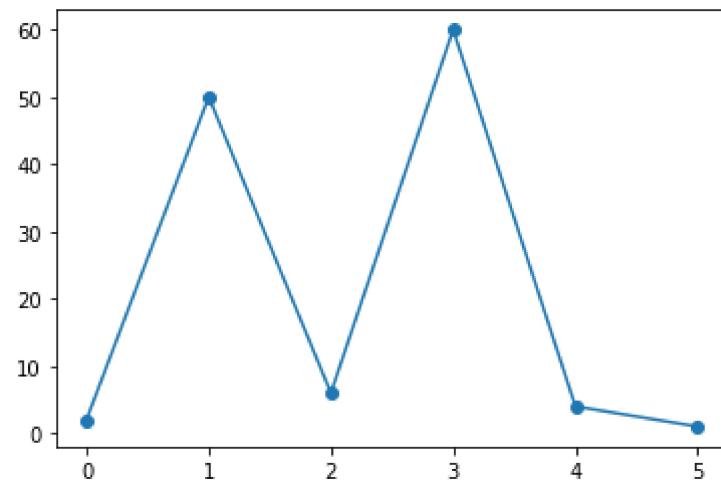
```
plt.plot(yaxis)
plt.show()
```



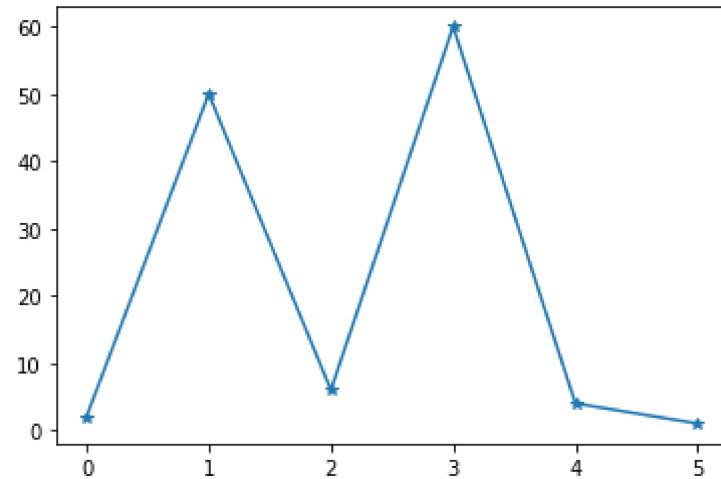
In [13]:

```
plt.plot(yaxis,marker='o')
plt.show()
```

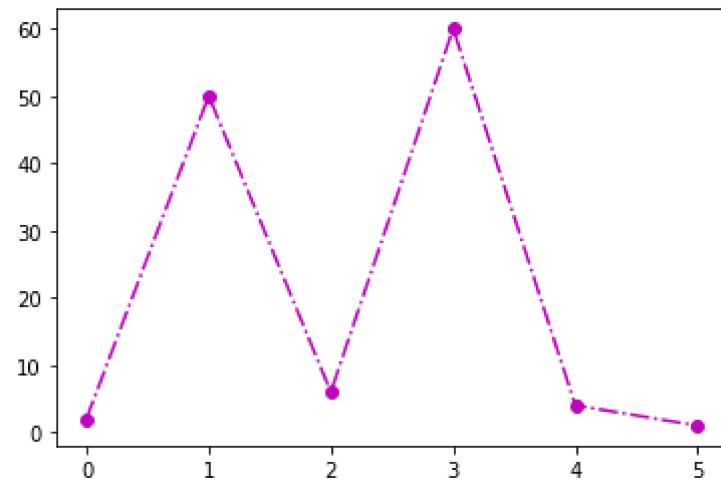
#markers



```
In [14]: plt.plot(yaxis,marker='*')
plt.show()
```

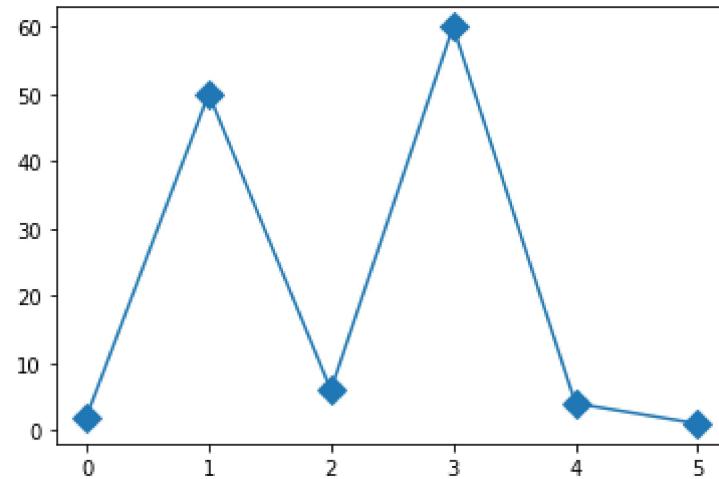


```
In [15]: plt.plot(yaxis,'o-.m')
plt.show()
```



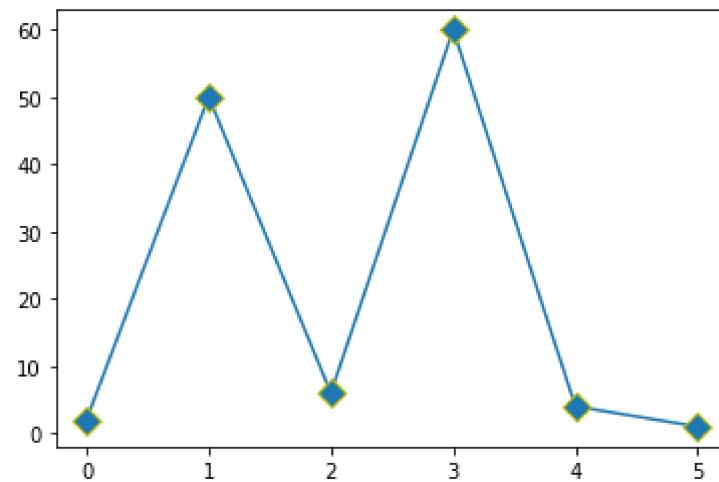
```
In [16]: plt.plot(yaxis,marker='D',ms=10)  
plt.show()
```

#marker size

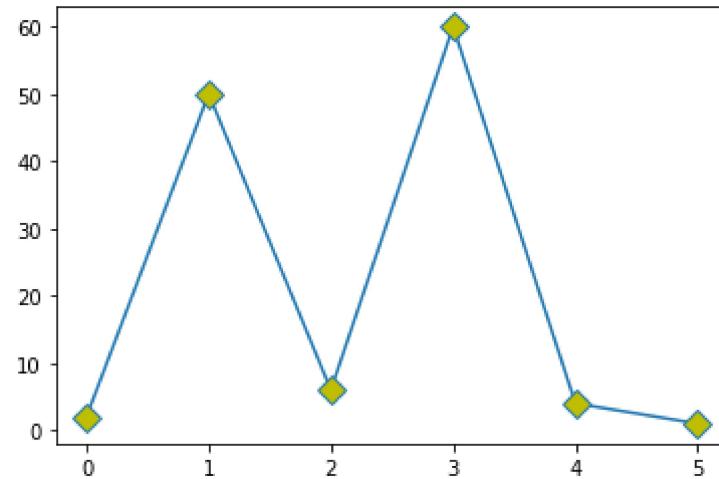


```
In [17]: plt.plot(yaxis,marker='D',ms=10,mec='y')  
plt.show()
```

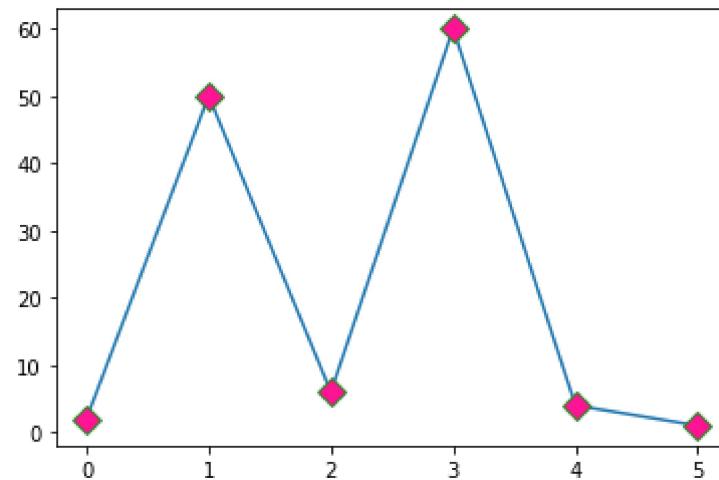
#marker edge color



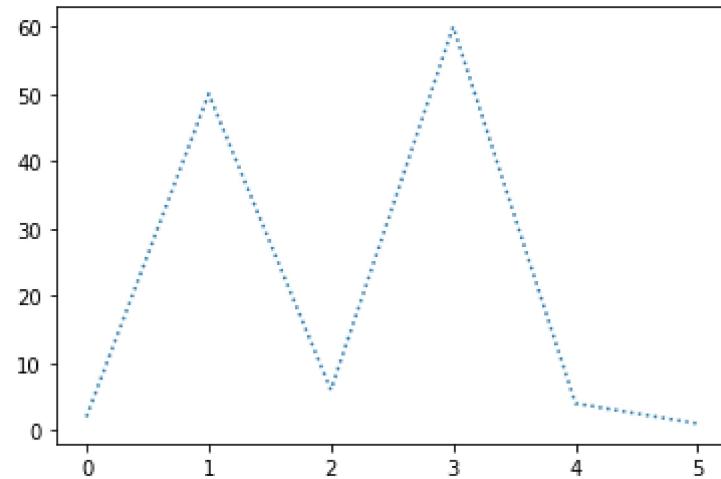
```
In [18]: plt.plot(yaxis,marker='D',ms=10,mfc='y')
plt.show()
```



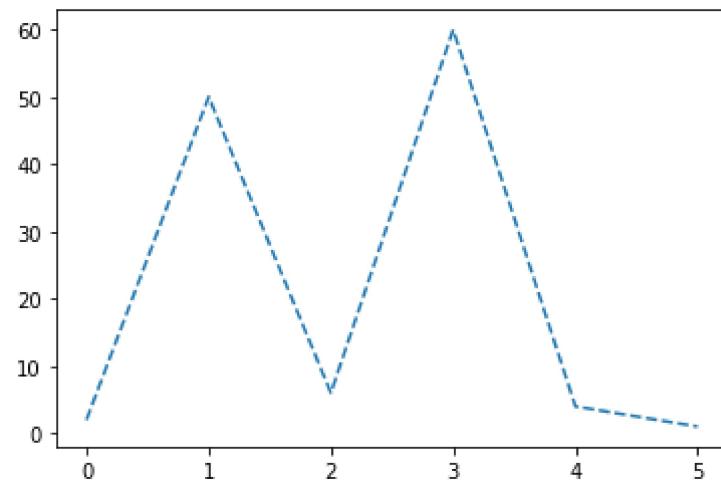
```
In [19]: plt.plot(yaxis,marker='D',ms=10,mec='forestgreen',mfc='deeppink')
plt.show()
```



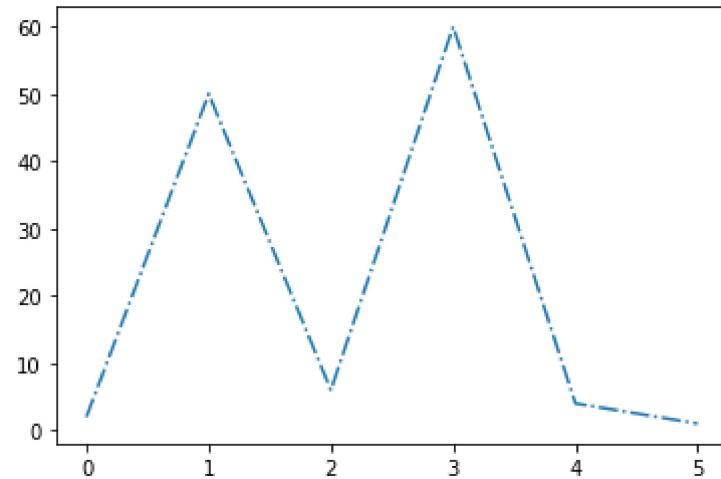
In [20]: `plt.plot(yaxis,ls=':')` *#linestyle*



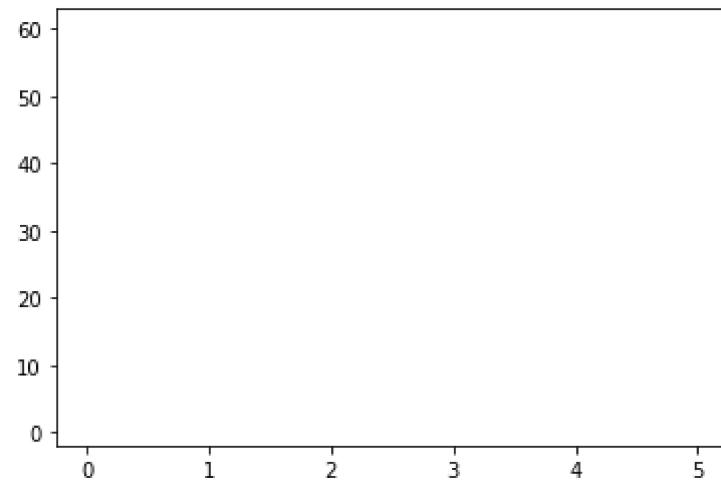
In [21]: `plt.plot(yaxis,ls='--')` *#dashed*



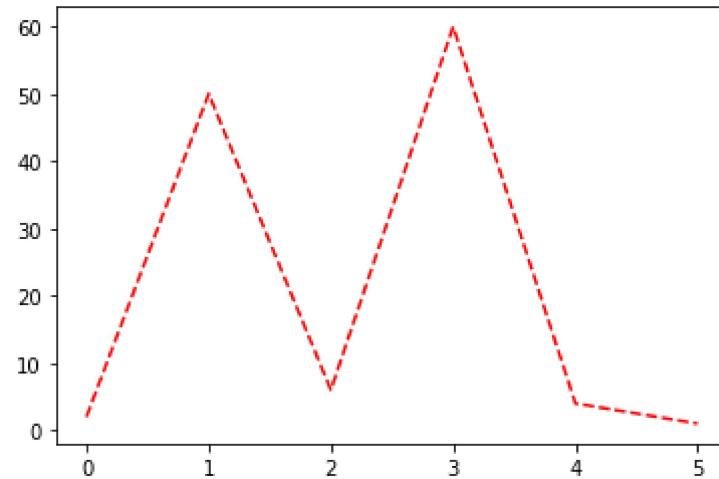
```
In [22]: plt.plot(yaxis,ls='-.') #dashdot  
plt.show()
```



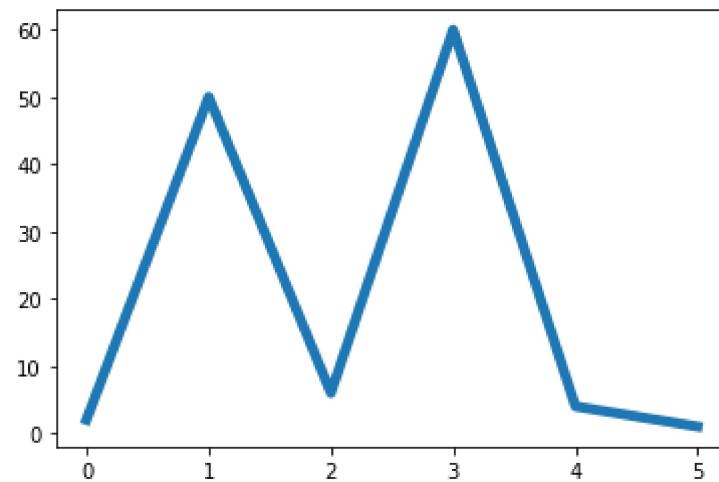
```
In [23]: plt.plot(yaxis,ls='-' or '') #None  
plt.show()
```



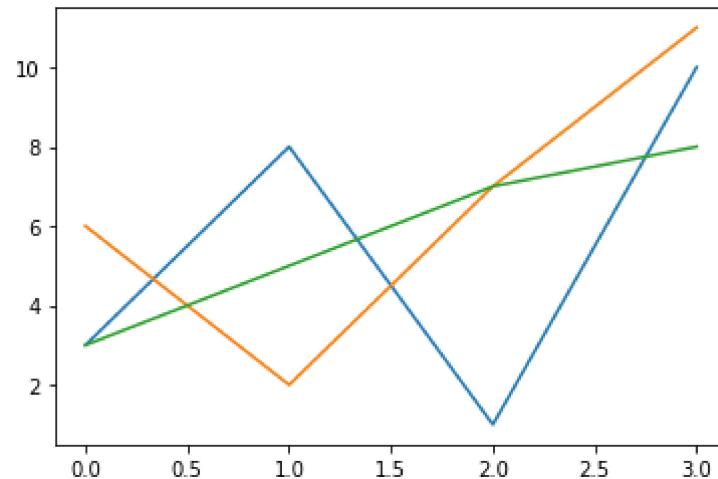
```
In [24]: plt.plot(yaxis,ls='--',c='r')  
plt.show() #dashed
```



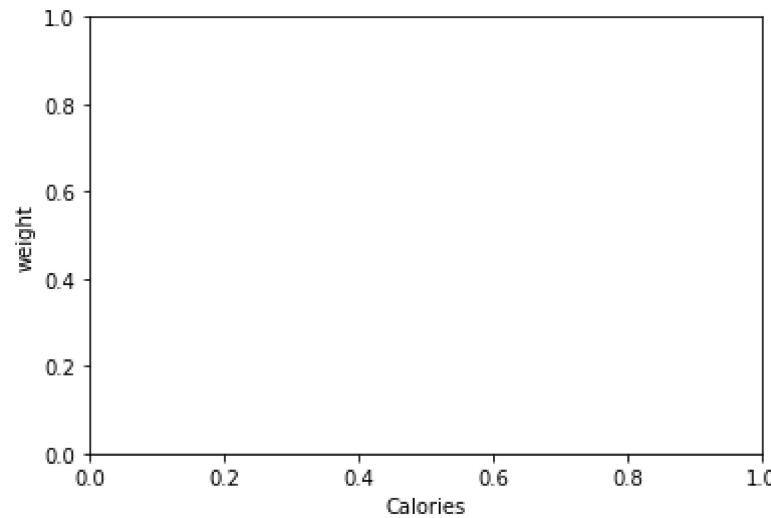
```
In [25]: plt.plot(yaxis,lw=5)  
plt.show()
```



```
In [26]: y1 = np.array([3, 8, 1, 10])
y2 = np.array([6, 2, 7, 11])
y3 = np.array([3,5,7,8])
plt.plot(y1)
plt.plot(y2)
plt.plot(y3)
plt.show()
```

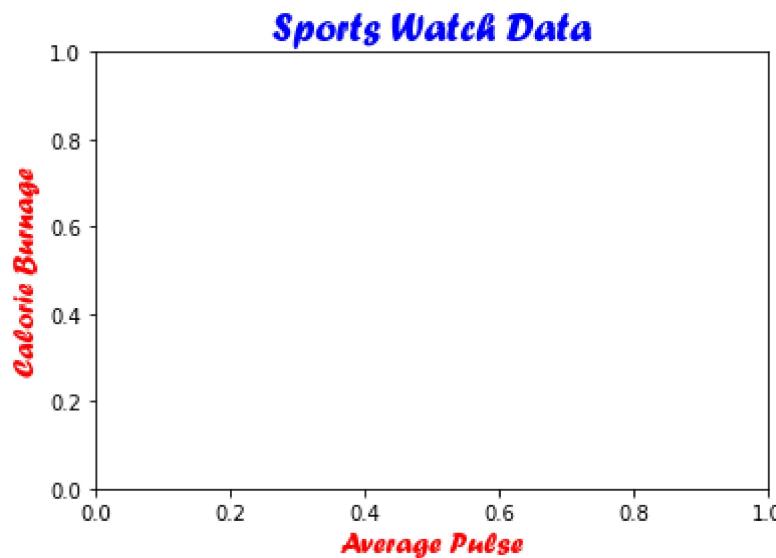


```
In [27]: plt.xlabel('Calories')
plt.ylabel('weight')
plt.show()
```

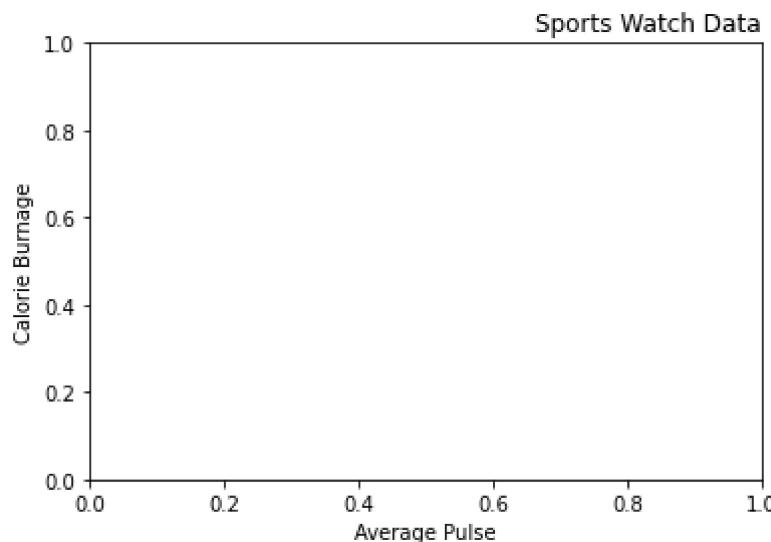


```
In [28]: font1 = {'family':'Forte','color':'blue','size':20}
font2 = {'family':'Forte','color':'red','size':15}
```

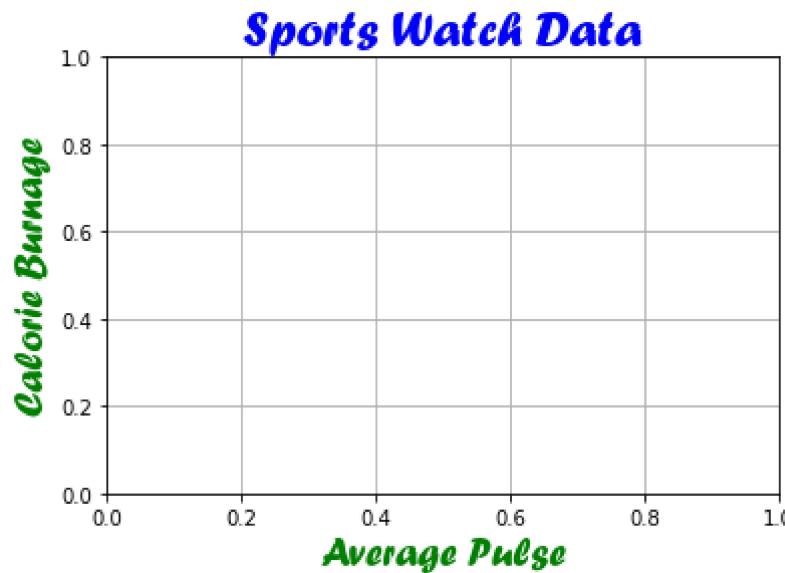
```
In [29]: plt.title("Sports Watch Data", fontdict = font1)
plt.xlabel("Average Pulse", fontdict = font2)
plt.ylabel("Calorie Burnage", fontdict = font2)
plt.show()
```



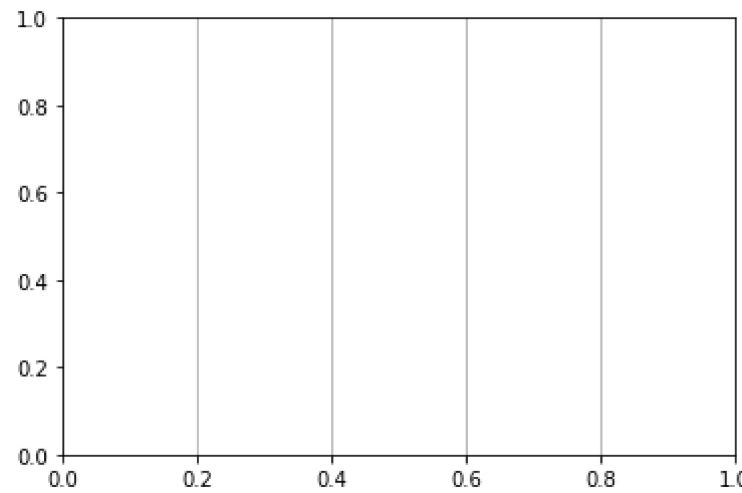
```
In [30]: plt.title("Sports Watch Data", loc = 'right')
plt.xlabel("Average Pulse")
plt.ylabel("Calorie Burnage")
plt.show()
```



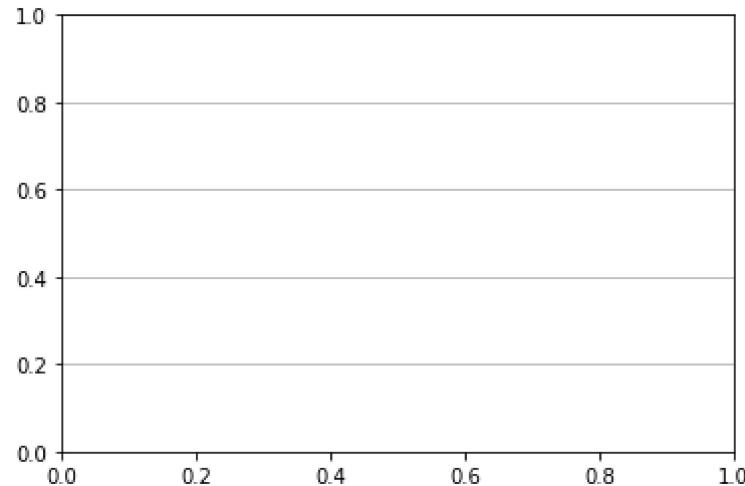
```
In [31]: font1={'family':'Forte','color':'blue','size':25}
font2={'family':'Forte','color':'green','size':20}
plt.title("Sports Watch Data",fontdict=font1)
plt.xlabel("Average Pulse",fontdict=font2)
plt.ylabel("Calorie Burnage",fontdict=font2)
plt.grid()
plt.show()
```



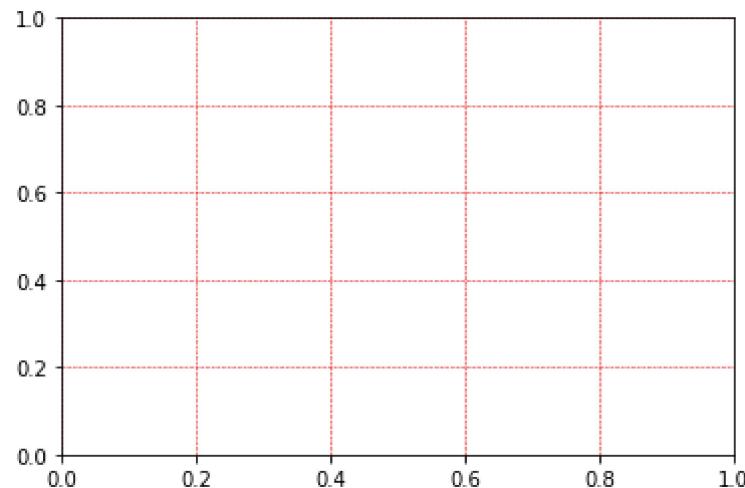
```
In [32]: plt.grid(axis='x')
```



```
In [33]: plt.grid(axis='y')
```



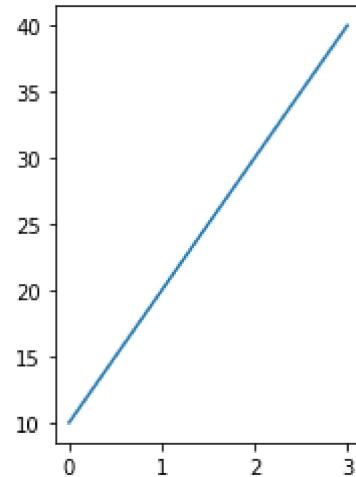
```
In [64]: plt.grid(color='red',linestyle='--',linewidth='0.5')
```



```
In [69]: x = np.array([0, 1, 2, 3])
y = np.array([10, 20, 30, 40])

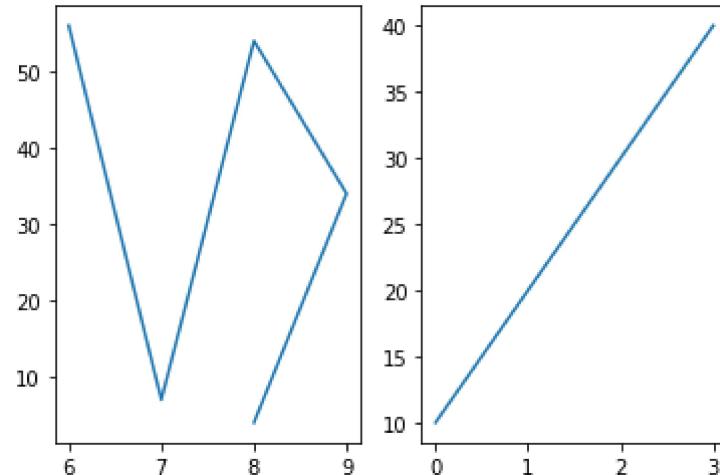
plt.subplot(1,2,2)
plt.plot(x,y)

plt.show()
```



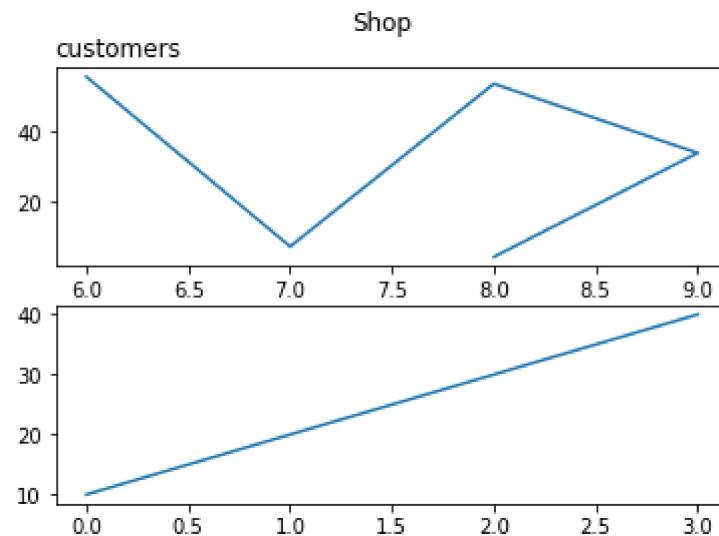
```
In [36]: import matplotlib.pyplot as plt
import numpy as np
x=np.array([6,7,8,9,8])
y=np.array([56,7,54,34,4])
plt.subplot(1,2,1)
plt.plot(x,y)
x = np.array([0, 1, 2, 3])
y = np.array([10, 20, 30, 40])

plt.subplot(1,2,2)
plt.plot(x,y)
plt.show()
```

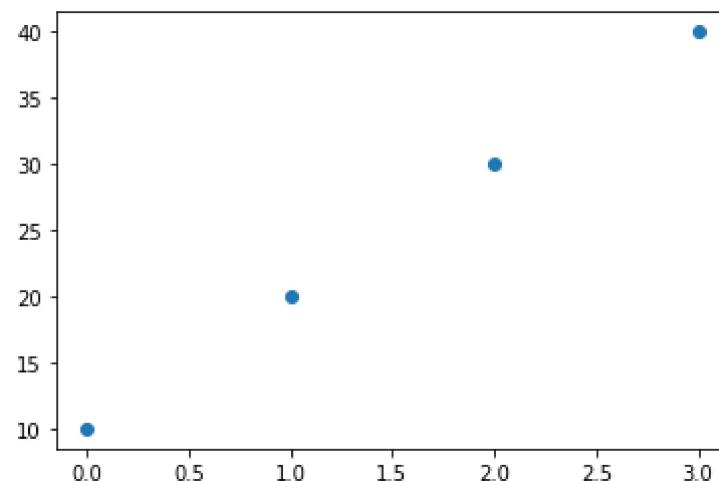


```
In [37]: import matplotlib.pyplot as plt
import numpy as np
x=np.array([6,7,8,9,8])
y=np.array([56,7,54,34,4])
plt.subplot(2,1,1)
plt.plot(x,y)
plt.title('customers',loc='left')
x = np.array([0, 1, 2, 3])
y = np.array([10, 20, 30, 40])

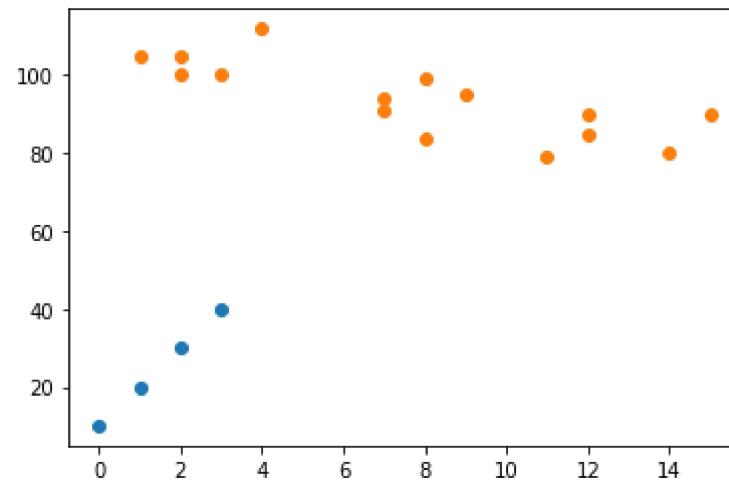
plt.subplot(2,1,2)
plt.plot(x,y)
plt.suptitle('Shop')
plt.show()
```



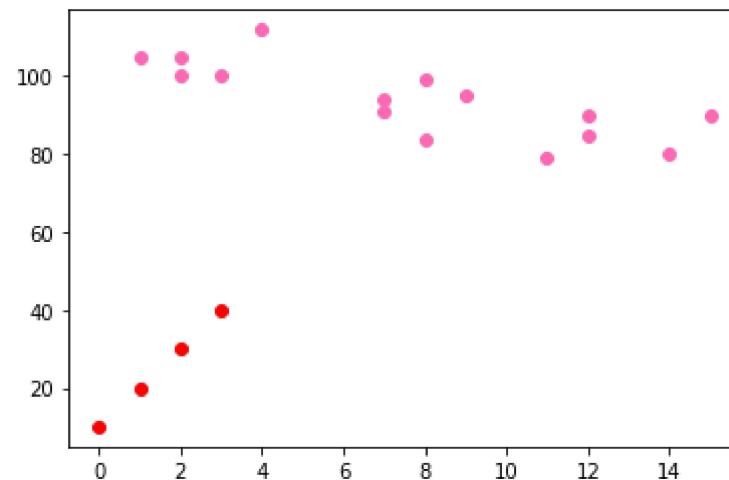
```
In [38]: x = np.array([0, 1, 2, 3])
y = np.array([10, 20, 30, 40])
plt.scatter(x,y)
plt.show()
```



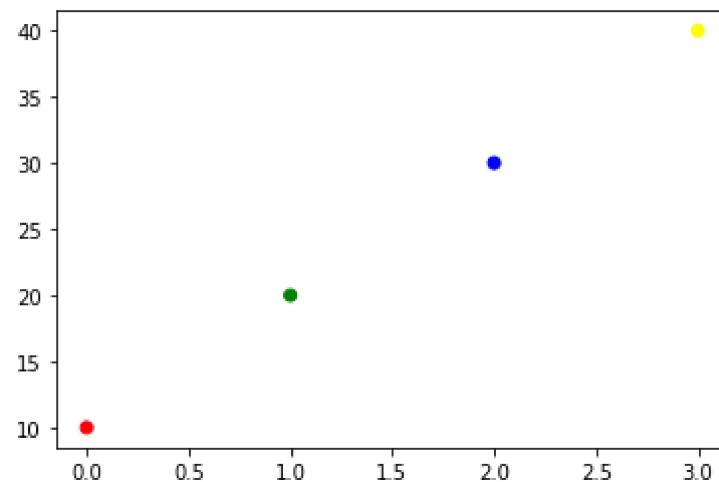
```
In [39]: x = np.array([0, 1, 2, 3])
y = np.array([10, 20, 30, 40])
plt.scatter(x,y)
x = np.array([2,2,8,1,15,8,12,9,7,3,11,4,7,14,12])
y = np.array([100,105,84,105,90,99,90,95,94,100,79,112,91,80,85])
plt.scatter(x,y)
plt.show()
```



```
In [40]: x = np.array([0, 1, 2, 3])
y = np.array([10, 20, 30, 40])
plt.scatter(x,y,color='red')
x = np.array([2,2,8,1,15,8,12,9,7,3,11,4,7,14,12])
y = np.array([100,105,84,105,90,99,90,95,94,100,79,112,91,80,85])
plt.scatter(x,y,color='hotpink')
plt.show()
```



```
In [2]: import matplotlib.pyplot as plt
import numpy as np
x = np.array([0, 1, 2, 3])
y = np.array([10, 20, 30, 40])
colors = np.array(["red","green","blue","yellow"])
plt.scatter(x, y,c=colors)
plt.show()
```

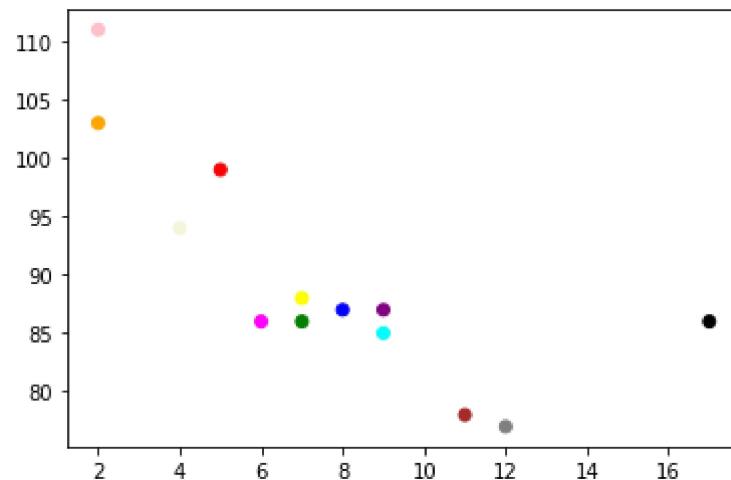


```
In [42]: import matplotlib.pyplot as plt
import numpy as np

x = np.array([5,7,8,7,2,17,2,9,4,11,12,9,6])
y = np.array([99,86,87,88,111,86,103,87,94,78,77,85,86])
colors = np.array(["red","green","blue","yellow","pink","black","orange","purple"])

plt.scatter(x, y, c=colors)

plt.show()
```

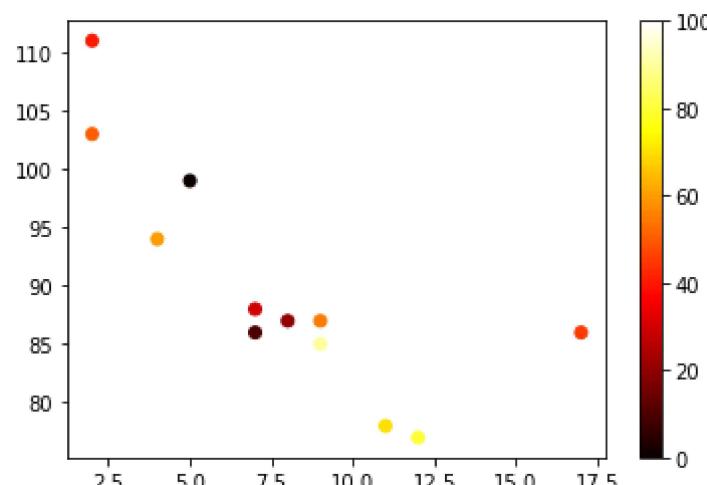


```
In [43]: import matplotlib.pyplot as plt
import numpy as np

x = np.array([5,7,8,7,2,17,2,9,4,11,12,9,6])
y = np.array([99,86,87,88,111,86,103,87,94,78,77,85,86])
colors = np.array([0, 10, 20, 30, 40, 45, 50, 55, 60, 70, 80, 90, 100])

plt.scatter(x, y, c=colors, cmap='hot')
plt.colorbar()

plt.show()
```

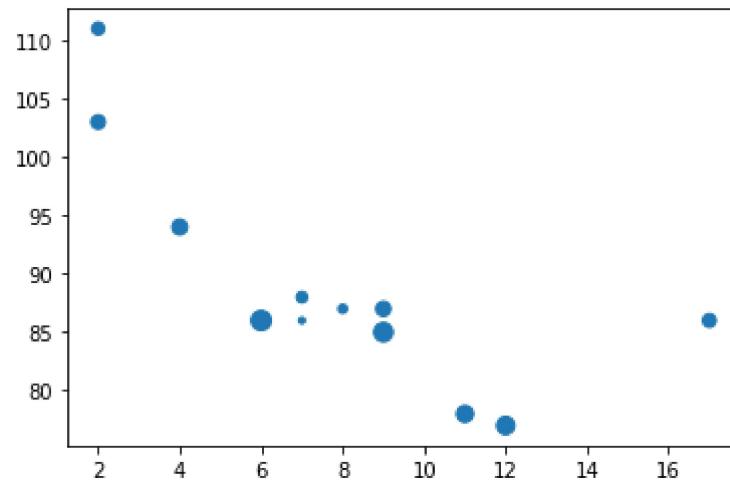


```
In [44]: import matplotlib.pyplot as plt
import numpy as np

x = np.array([5,7,8,7,2,17,2,9,4,11,12,9,6])
y = np.array([99,86,87,88,111,86,103,87,94,78,77,85,86])
sizes = np.array([0, 10, 20, 30, 40, 45, 50, 55, 60, 70, 80, 90, 100])

plt.scatter(x, y,s=sizes)

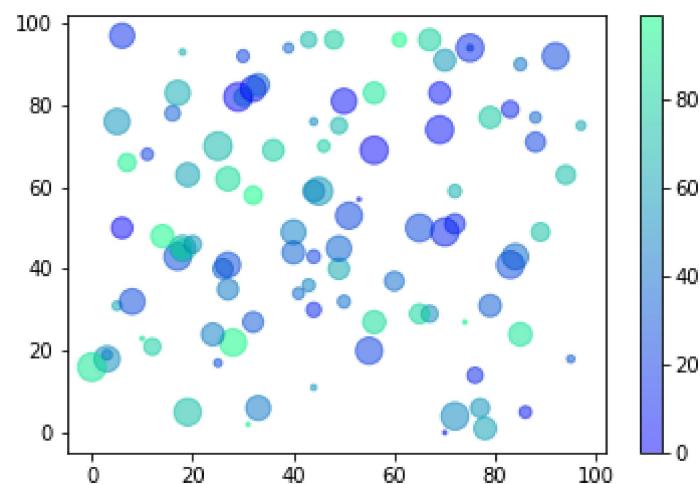
plt.show()
```



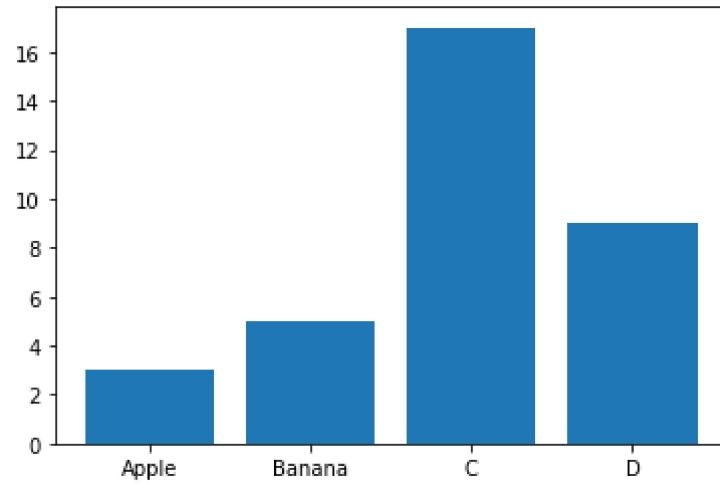
```
In [45]: x = np.random.randint(100,size=100)
y = np.random.randint(100,size=100)
colors = np.random.randint(100,size=100)
sizes=2* np.random.randint(100,size=100)

plt.scatter(x, y, s=sizes,c=colors, cmap='winter',alpha=0.5)
plt.colorbar()

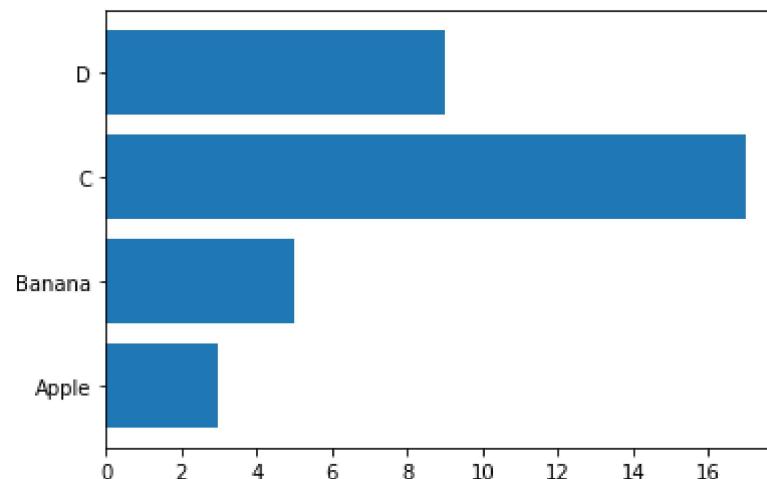
plt.show()
```



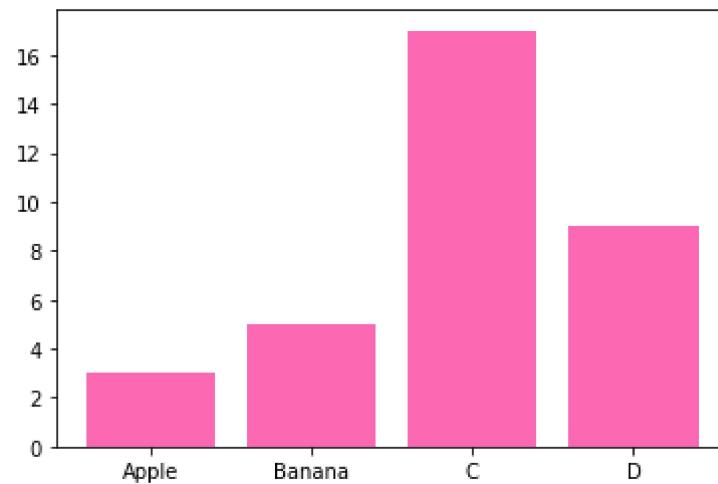
```
In [46]: x=np.array(['Apple','Banana','C','D'])
y=np.array([3,5,17,9])
plt.bar(x,y)
plt.show()
```



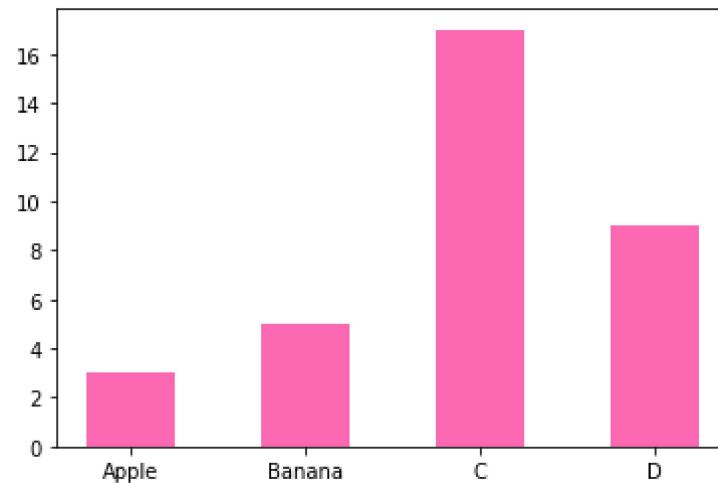
```
In [47]: x=np.array(['Apple','Banana','C','D'])
y=np.array([3,5,17,9])
plt.barh(x,y)
plt.show()
```



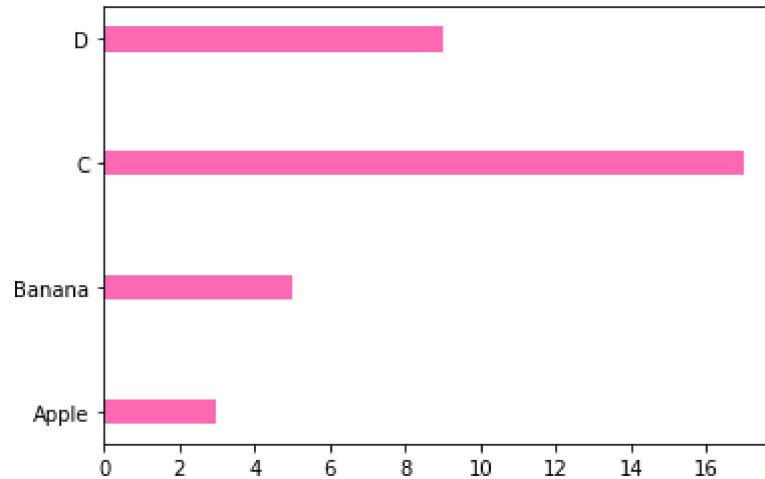
```
In [48]: x=np.array(['Apple','Banana','C','D'])
y=np.array([3,5,17,9])
plt.bar(x,y,color='hotpink')
plt.show()
```



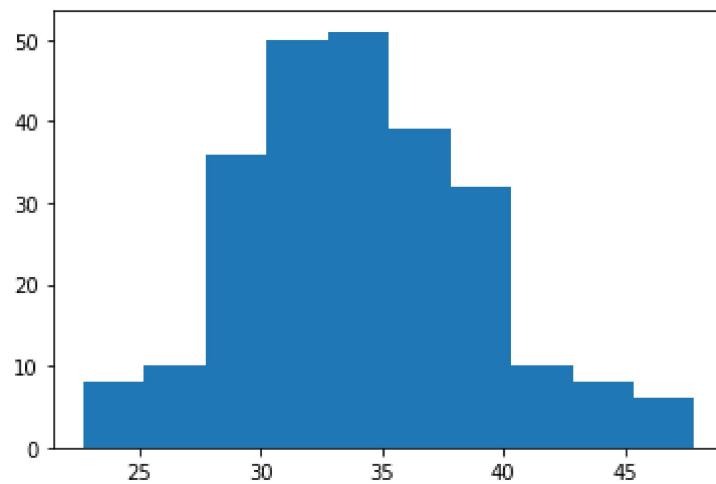
```
In [49]: x=np.array(['Apple','Banana','C','D'])
y=np.array([3,5,17,9])
plt.bar(x,y,color='hotpink',width=0.5)
plt.show()
```



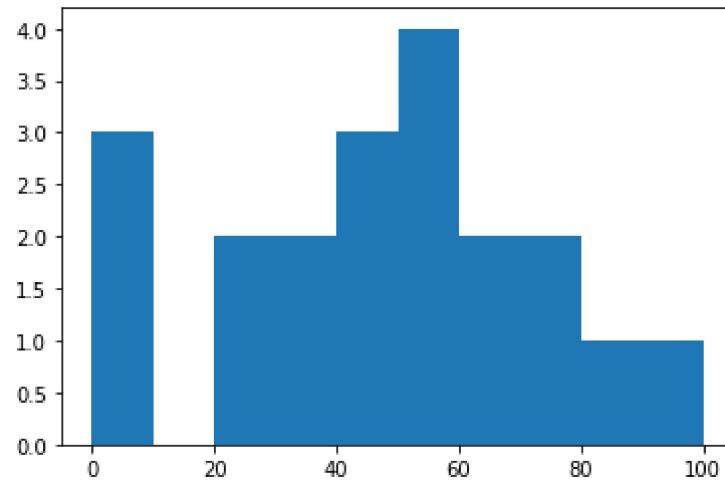
```
In [50]: x=np.array(['Apple','Banana','C','D'])
y=np.array([3,5,17,9])
plt.barh(x,y,color='hotpink',height=0.2)
plt.show()
```



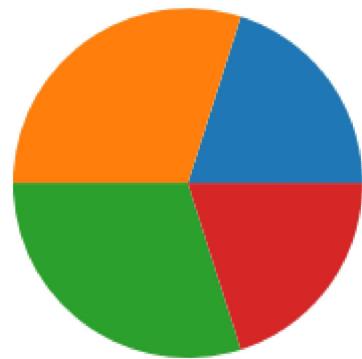
```
In [51]: a=np.random.normal(34,5,250)
plt.hist(a)
plt.show()
```



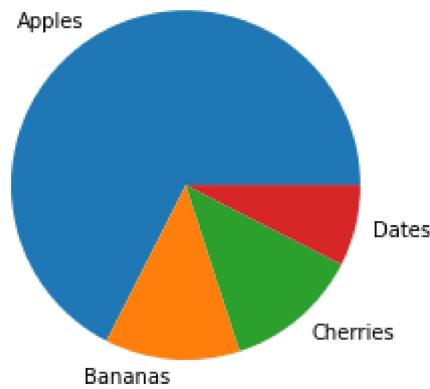
```
In [52]: a=[1,30,43,65,23,56,78,98,78,23,67,56,56,55,42,34,1,2,45,89]
b=[0,10,20,30,40,50,60,70,80,90,100]
plt.hist(a,b)
plt.show()
```



```
In [53]: import matplotlib.pyplot as plt
import numpy as np
y=np.array([45,67,67,45])
plt.pie(y)
plt.show()
```



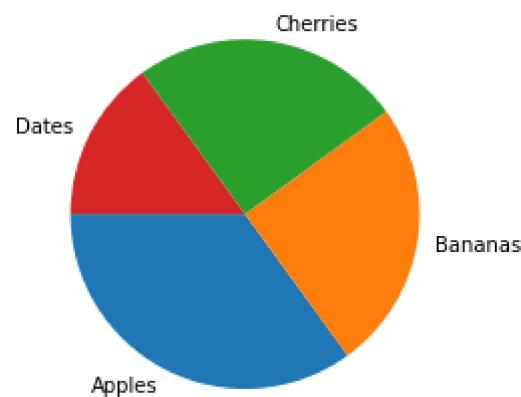
```
In [54]: y = np.array([135,25,25,15])
mylabels = ["Apples", "Bananas", "Cherries", "Dates"]
plt.pie(y, labels = mylabels)
plt.show()
```



```
In [55]: import matplotlib.pyplot as plt
import numpy as np

y = np.array([35, 25, 25, 15])
mylabels = ["Apples", "Bananas", "Cherries", "Dates"]

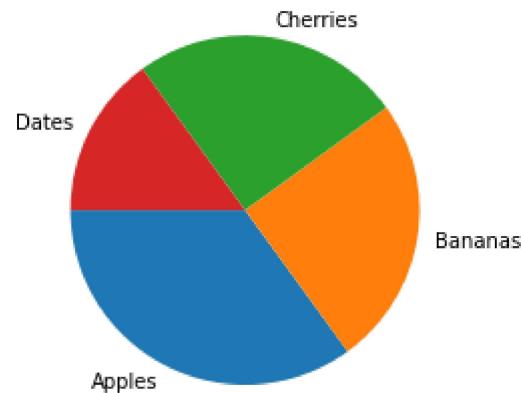
plt.pie(y, labels = mylabels,startangle=180)
plt.show()
```



```
In [56]: import matplotlib.pyplot as plt
import numpy as np

y = np.array([35, 25, 25, 15])
mylabels = ["Apples", "Bananas", "Cherries", "Dates"]
myexplode =[0.2,0,0,0]

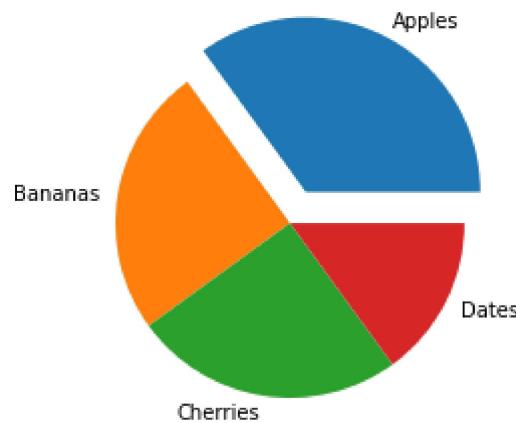
plt.pie(y, labels = mylabels,startangle=180,)
plt.show()
```



```
In [57]: import matplotlib.pyplot as plt
import numpy as np

y = np.array([35, 25, 25, 15])
mylabels = ["Apples", "Bananas", "Cherries", "Dates"]
myexplode = [0.2, 0, 0, 0]

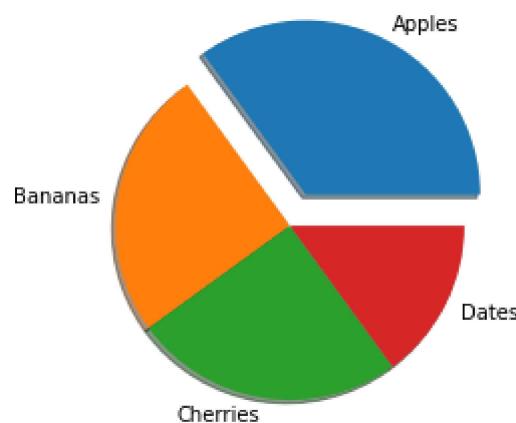
plt.pie(y, labels = mylabels, explode = myexplode)
plt.show()
```



```
In [58]: import matplotlib.pyplot as plt
import numpy as np

y = np.array([35, 25, 25, 15])
mylabels = ["Apples", "Bananas", "Cherries", "Dates"]
myexplode = [0.2, 0, 0, 0]

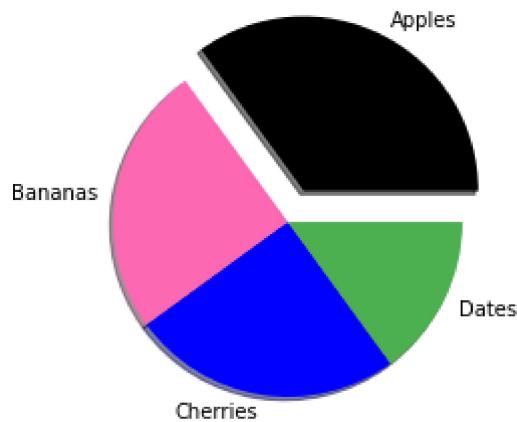
plt.pie(y, labels = mylabels, explode = myexplode, shadow=True)
plt.show()
```



```
In [59]: import matplotlib.pyplot as plt
import numpy as np

y = np.array([35, 25, 25, 15])
mylabels = ["Apples", "Bananas", "Cherries", "Dates"]
mycolors = ["black", "hotpink", "b", "#4CAF50"]
myexplode = [0.2, 0, 0, 0]

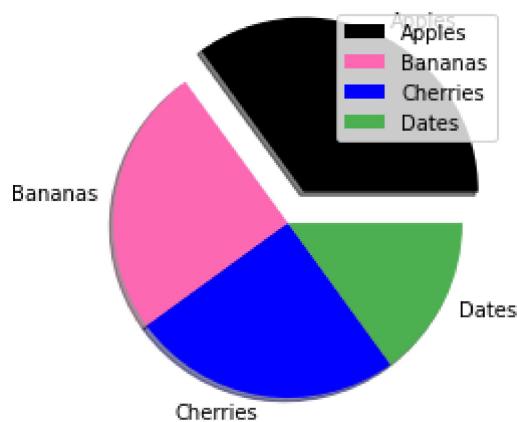
plt.pie(y, labels = mylabels, explode = myexplode, shadow=True, colors=mycolors)
plt.show()
```



```
In [60]: import matplotlib.pyplot as plt
import numpy as np

y = np.array([35, 25, 25, 15])
mylabels = ["Apples", "Bananas", "Cherries", "Dates"]
mycolors = ["black", "hotpink", "b", "#4CAF50"]
myexplode = [0.2, 0, 0, 0]

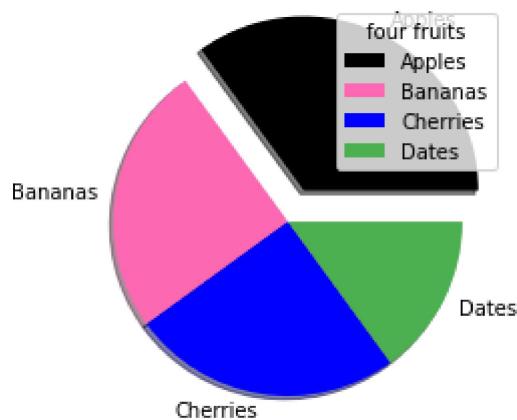
plt.pie(y, labels = mylabels, explode = myexplode, shadow=True, colors=mycolors)
plt.legend()
plt.show()
```



```
In [61]: import matplotlib.pyplot as plt
import numpy as np

y = np.array([35, 25, 25, 15])
mylabels = ["Apples", "Bananas", "Cherries", "Dates"]
mycolors = ["black", "hotpink", "b", "#4CAF50"]
myexplode = [0.2, 0, 0, 0]

plt.pie(y, labels = mylabels, explode = myexplode, shadow=True, colors=mycolors)
plt.legend(title='four fruits')
plt.show()
```



```
In [ ]:
```

In [ ]:

In [ ]:

In [ ]:

In [ ]: