

In [2]:

```
import numpy as np
from matplotlib import pyplot as plt
x=np.arange(1,11)
x
```

Out[2]:

```
array([ 1,  2,  3,  4,  5,  6,  7,  8,  9, 10])
```

In [3]:

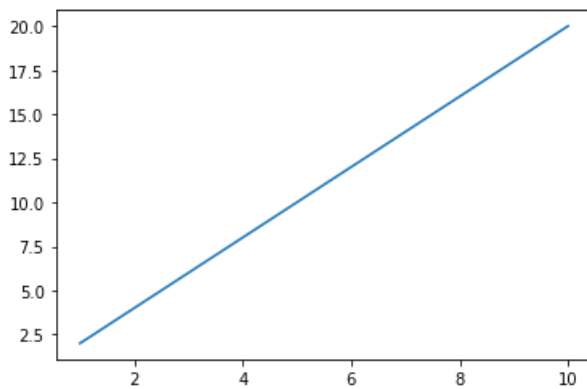
```
y=2*x
y
```

Out[3]:

```
array([ 2,  4,  6,  8, 10, 12, 14, 16, 18, 20])
```

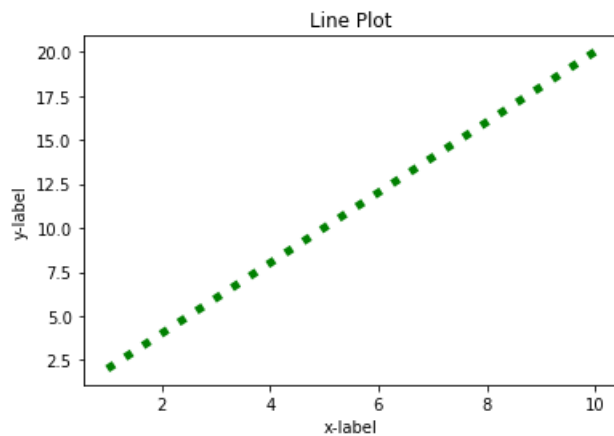
In [7]:

```
plt.plot(x,y)
plt.show()
```



In [10]:

```
plt.plot(x,y,color='g',linestyle=':',linewidth=5)
plt.title("Line Plot")
plt.xlabel("x-label")
plt.ylabel("y-label")
plt.show()
```



In [11]:

```
x
```

```
Out[11]:
```

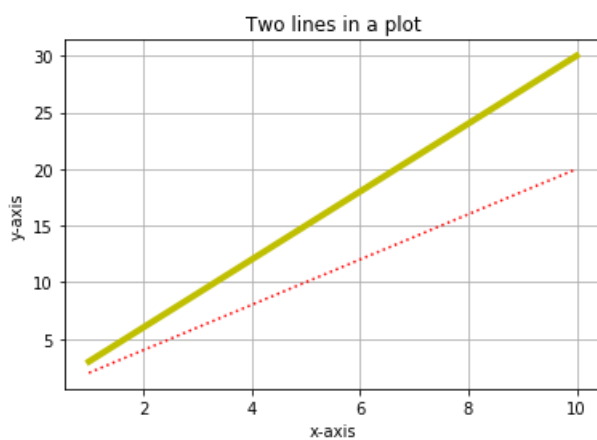
```
array([ 1,  2,  3,  4,  5,  6,  7,  8,  9, 10])
```

```
In [12]:
```

```
y1=2*x  
y2=3*x
```

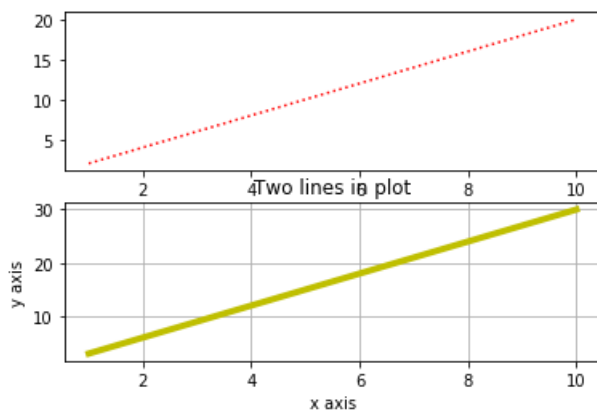
```
In [18]:
```

```
plt.plot(x,y1,color='r',linestyle=':')  
plt.plot(x,y2,color='y',linewidth=4)  
plt.title('Two lines in a plot')  
plt.xlabel('x-axis')  
plt.ylabel('y-axis')  
plt.grid(True)  
plt.show()
```



```
In [20]:
```

```
plt.subplot(2,1,1)  
plt.plot(x,y1,color='r',linestyle=':')  
  
plt.subplot(2,1,2)  
plt.plot(x,y2,color='y',linewidth=4)  
plt.title('Two lines in plot')  
plt.xlabel('x axis')  
plt.ylabel('y axis')  
plt.grid(True)  
plt.show()
```



```
In [14]:
```

```
import numpy as np
```

In [15]:

```
student={'Bob':87,'Julia':45,'annee':100,'matt':67}
names=list (student.keys())
names
```

Out[15]:

```
['Bob', 'Julia', 'annee', 'matt']
```

In [16]:

```
values=list(student.values())
values
```

Out[16]:

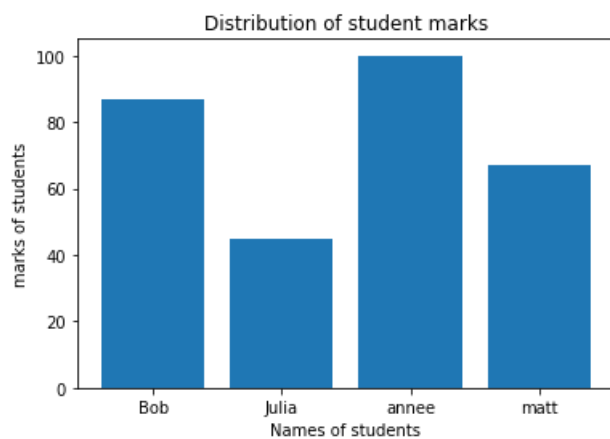
```
[87, 45, 100, 67]
```

In [21]:

```
from matplotlib import pyplot as plt
```

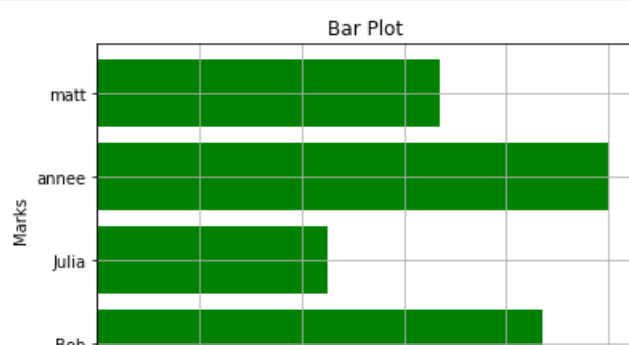
In [23]:

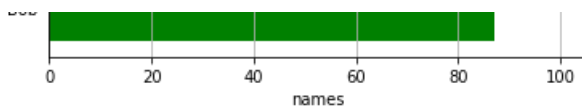
```
plt.bar(names,values)
plt.title('Distribution of student marks')
plt.xlabel('Names of students')
plt.ylabel('marks of students')
plt.show()
```



In [24]:

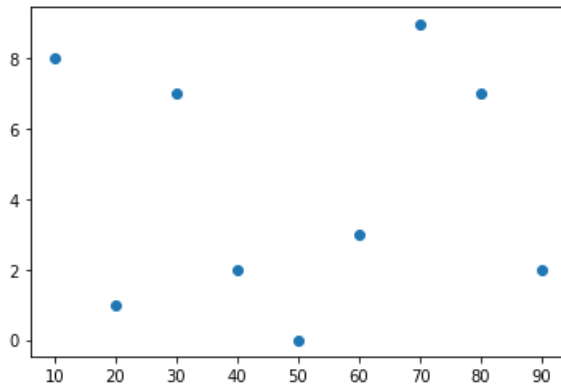
```
#For horizontal bar plot
plt.barh(names,values,color='g')
plt.title("Bar Plot")
plt.xlabel("names")
plt.ylabel("Marks")
plt.grid(True)
plt.show()
```





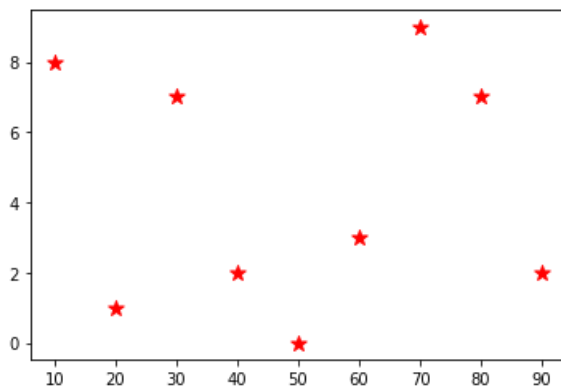
In [25]:

```
#Creating a scatter plot
x=[10,20,30,40,50,60,70,80,90]
a=[8,1,7,2,0,3,9,7,2]
plt.scatter(x,a)
plt.show()
```



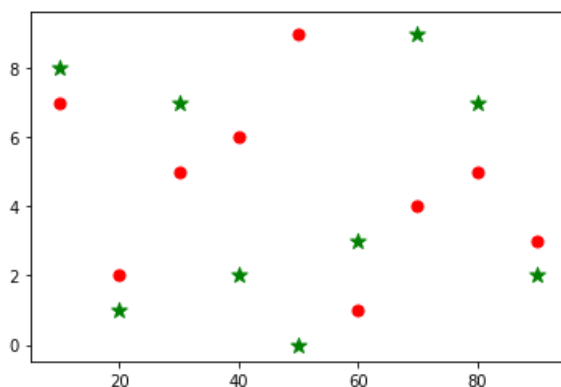
In [27]:

```
#Changing mark aesthetics
plt.scatter(x,a,marker="*",c="r",s=100)
plt.show()
```



In [28]:

```
b=[7,2,5,6,9,1,4,5,3]
plt.scatter(x,a,marker="*",c="g",s=100)
plt.scatter(x,b,marker=".",c="r",s=200)
plt.show()
```

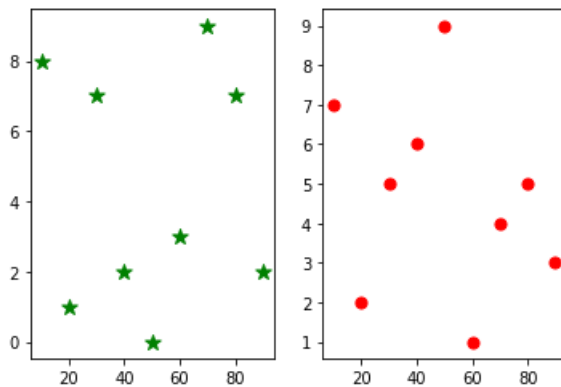


In [ ]:

In [29]:

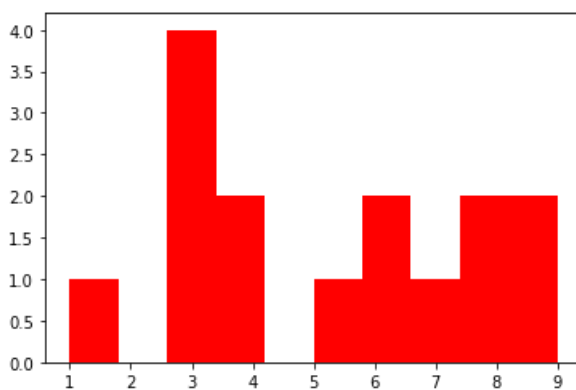
```
#Adding sub plotsplt
plt.subplot(1,2,1)
plt.scatter(x,a,marker="*",c="g",s=100)

plt.subplot(1,2,2)
plt.scatter(x,b,marker=".",c="r",s=200)
plt.show()
```



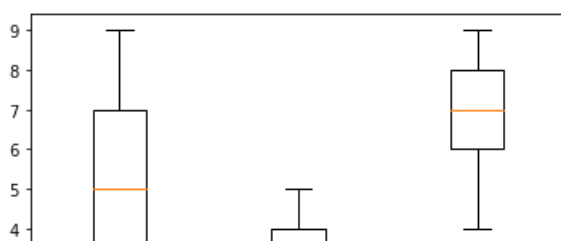
In [31]:

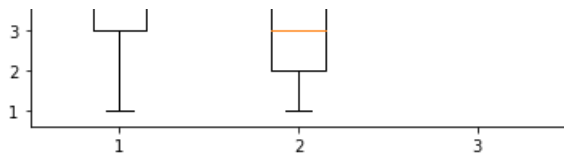
```
#Histogram(For numerical values)
data=[1,3,3,3,3,9,9,5,4,4,8,8,6,6,7]
plt.hist(data,color='r')
plt.show()
```



In [33]:

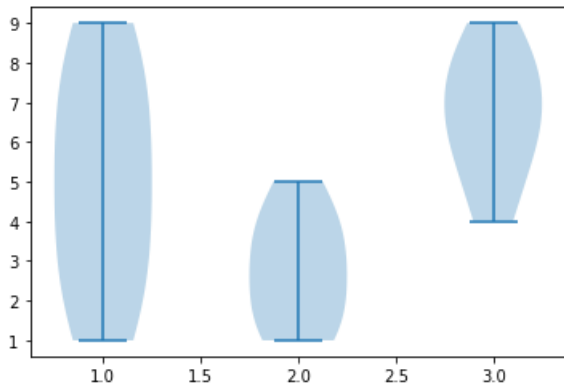
```
#Box plot
one=[1,2,3,4,5,6,7,8,9]
two=[1,2,3,4,5,4,3,2,1]
three=[6,7,8,9,8,7,6,5,4]
data=list([one,two,three])
plt.boxplot(data)
plt.show()
```





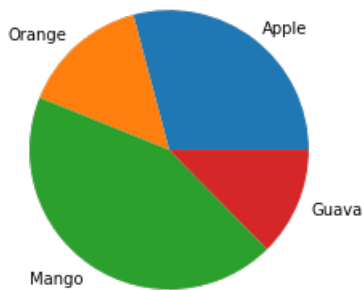
In [34]:

```
#violin plot
plt.violinplot(data)
plt.show()
```



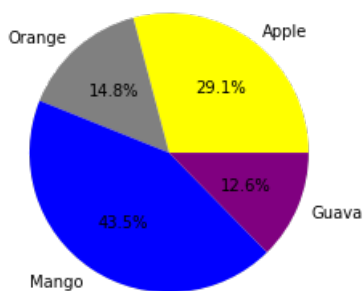
In [35]:

```
#pie ch%0'Apple','Orange','Mango','Guava']
quantity=[67,34,100,29]
plt.pie(quantity,labels=fruit)
plt.show()
```



In [37]:

```
plt.pie(quantity,labels=fruit,autopct='%0.1f%%',colors=['yellow','grey','blue','purple'])
plt.show()
```



In [43]:

```
#doughNut Chart  
plt.pie(quantity, labels=fruit, radius=2)  
plt.pie([1], colors=['w'], radius=1)  
plt.show()
```

