In [20]:
```python
import numpy as np
```

In [19]:
```python
from matplotlib import pyplot as plt
```

In [ ]:
```python
###1- Line plot
```

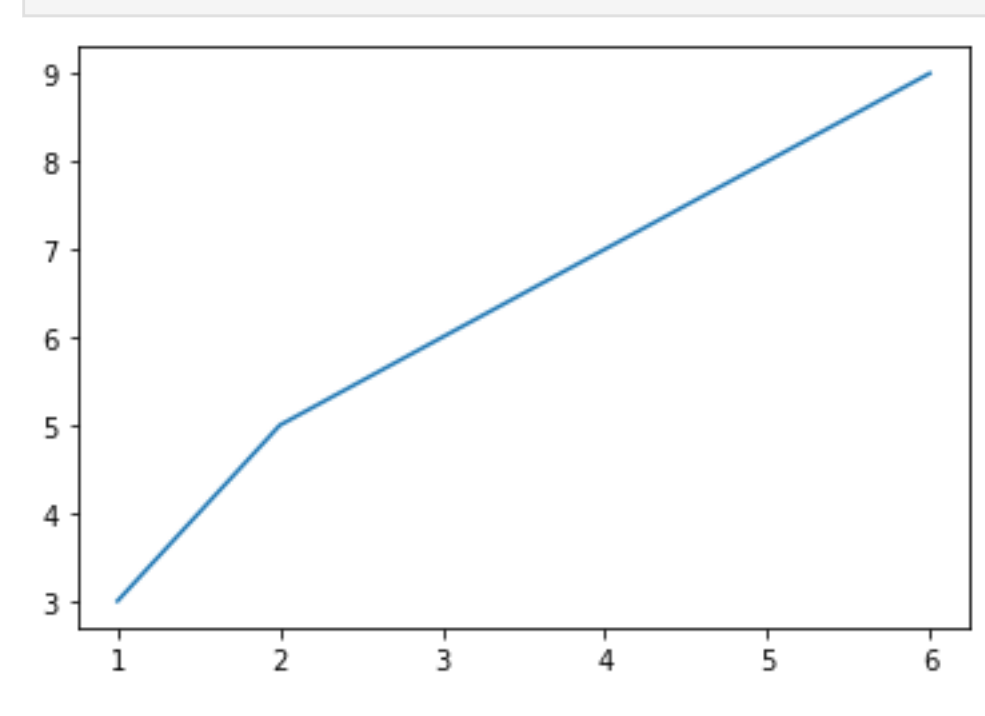
In [13]:
```python
x =np.array([1,2,3,4,5,6])
x
```

Out[13]:
```
array([1, 2, 3, 4, 5, 6])
```

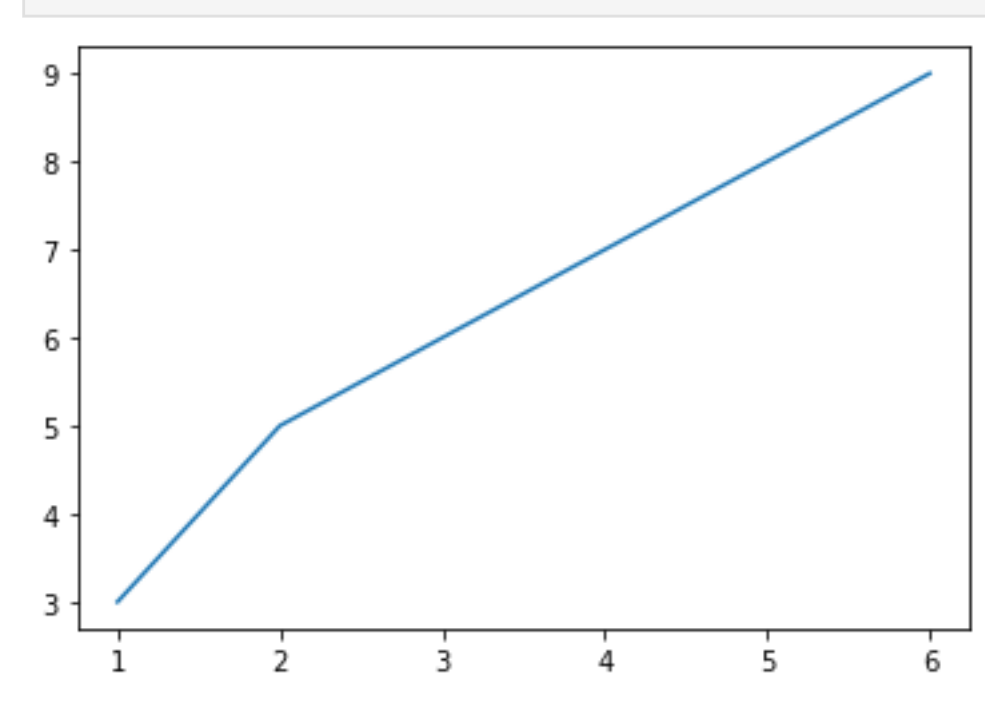
In [14]:
```python
y =np.array([3,5,6,7,8,9])
y
```

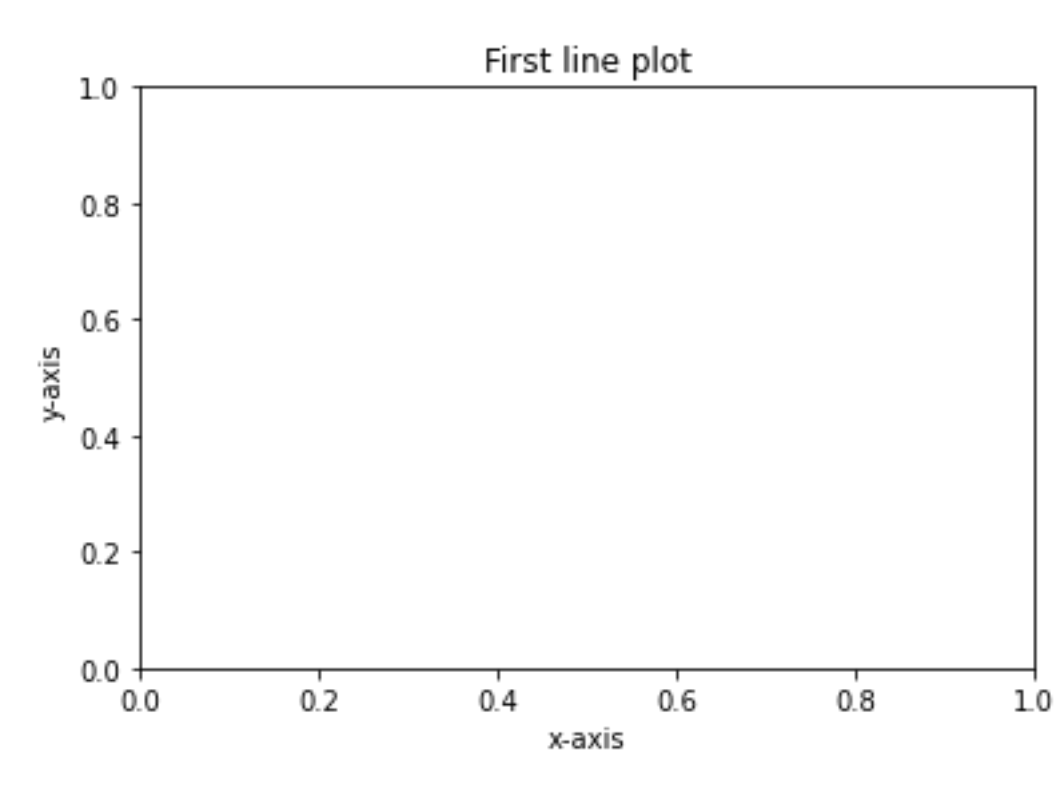
Out[14]:
```
array([3, 5, 6, 7, 8, 9])
```

In [21]:
```python
plt.plot(x,y)
plt.show()
```

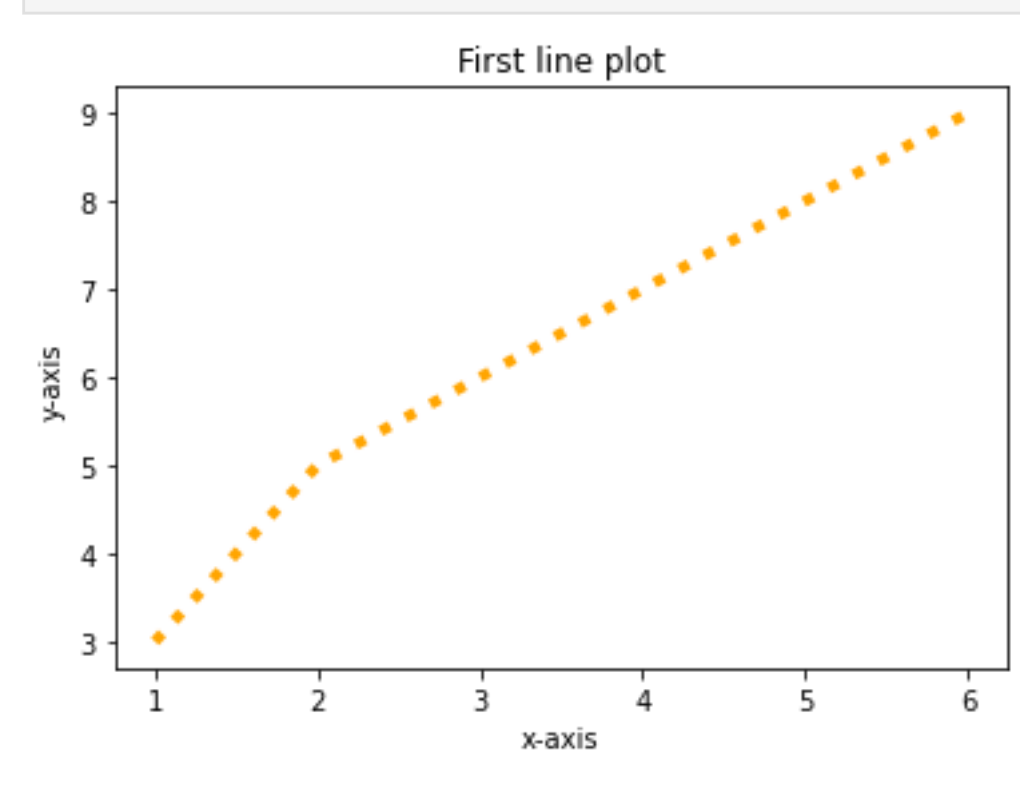


In [22]:
```python
plt.plot(x,y)
plt.show()
plt.title("First line plot")
plt.xlabel("x-axis")
plt.ylabel("y-axis")
plt.show()
```





In [24]:
```python
plt.plot(x,y,color="orange",linestyle=":",linewidth = 4)
plt.title("First line plot")
plt.xlabel("x-axis")
plt.ylabel("y-axis")
plt.show()
```



In [27]:
```python
x = np.arange(1,11)
x
```

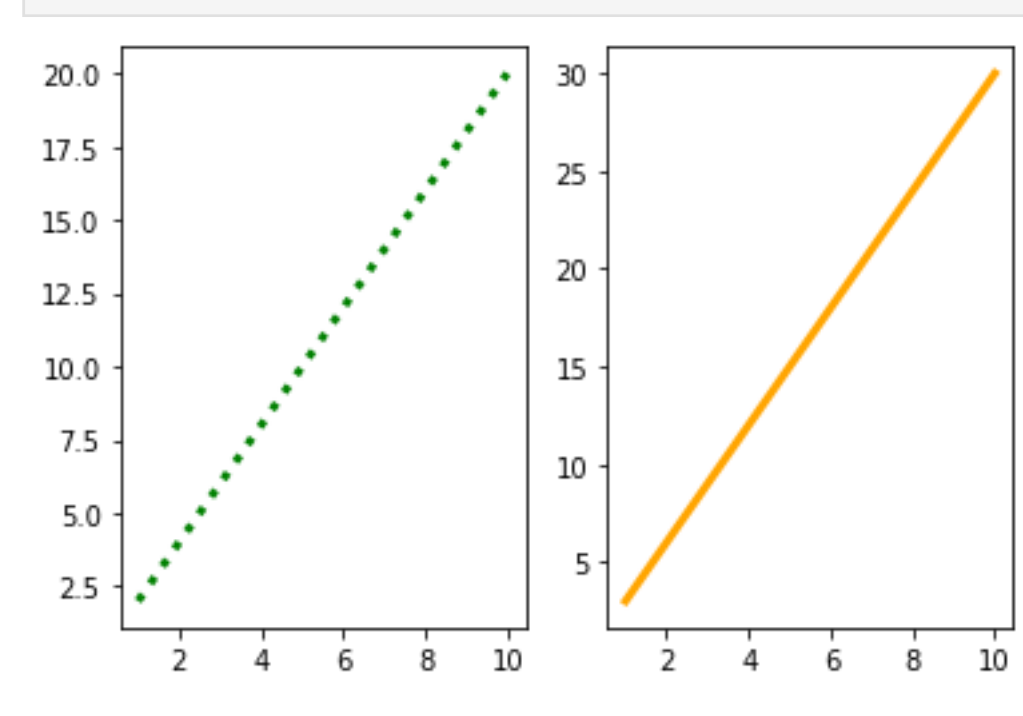
Out[27]:
```
array([ 1,  2,  3,  4,  5,  6,  7,  8,  9, 10])
```

In [28]:
```python
y1=2*x
y2=3*x
```

Out[28]:
```
array([ 3,  6,  9, 12, 15, 18, 21, 24, 27, 30])
```

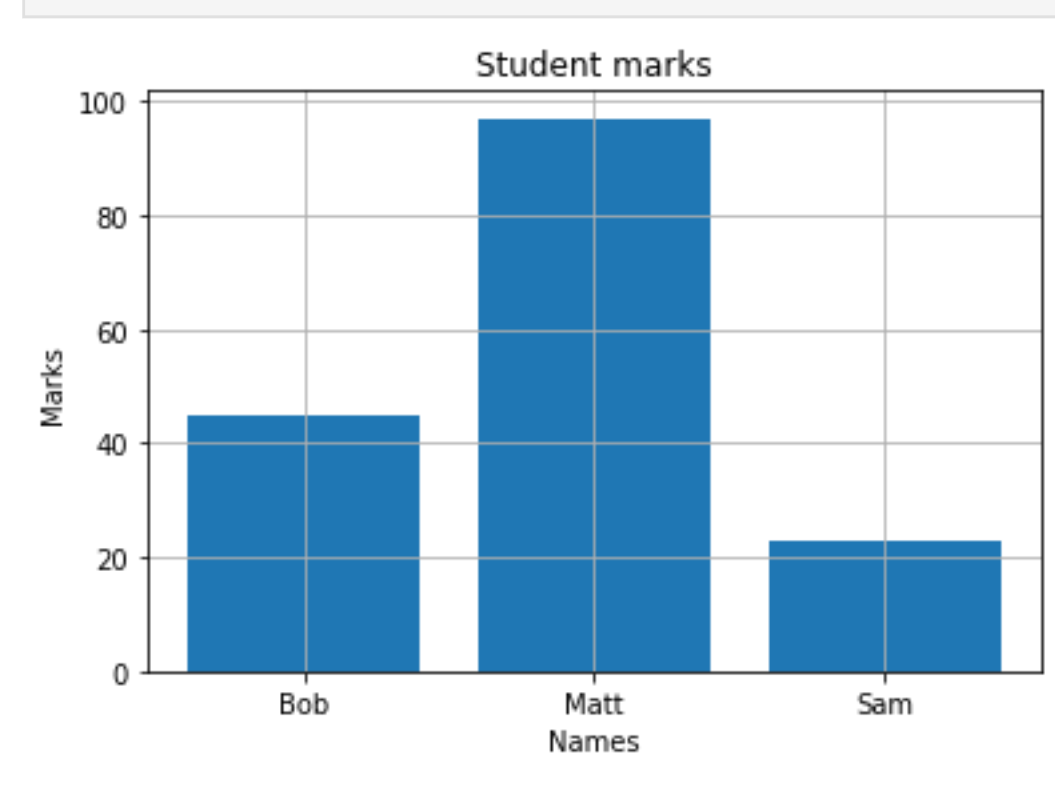
In [29]:
```python
plt.plot(x,y1,color ="green",linewidth=3)
plt.plot(x,y2,color = "r",linewidth=5)
plt.grid(True)
plt.show()
```

In [33]:
```python
x = np.arange(1,11)
y1=2*x
y2=3*x

plt.subplot(1,2,1)
plt.plot(x,y1,color ="green",linestyle= ":",linewidth=3)

plt.subplot(1,2,2)
plt.plot(x,y2,color ="orange",linestyle= "-",linewidth=3)
plt.show()
```



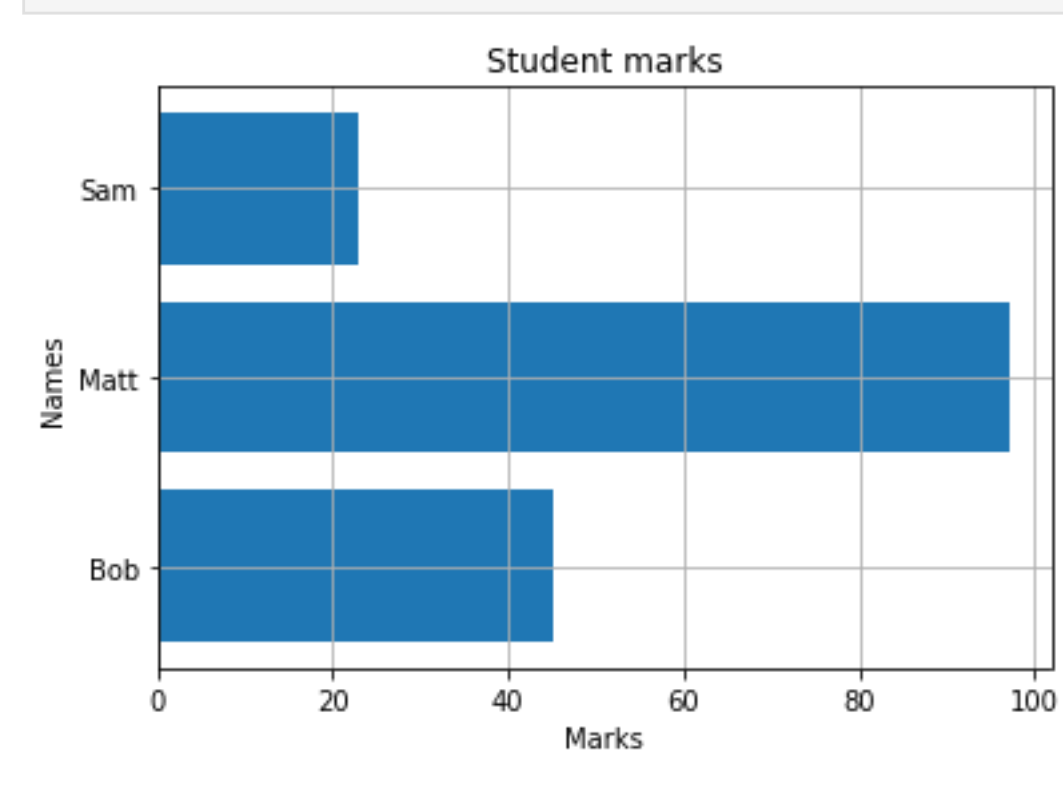
In [ ]:
```python
##2 Bar plot
```

In [35]:
```python
student = {"Bob":45,"Matt":97 ,"Sam":23}
names=list(student.keys())
values = list(student.values())
plt.bar(names,values)
plt.title("Student marks")
plt.xlabel("Names")
plt.ylabel("Marks")
plt.grid()
plt.show()
```



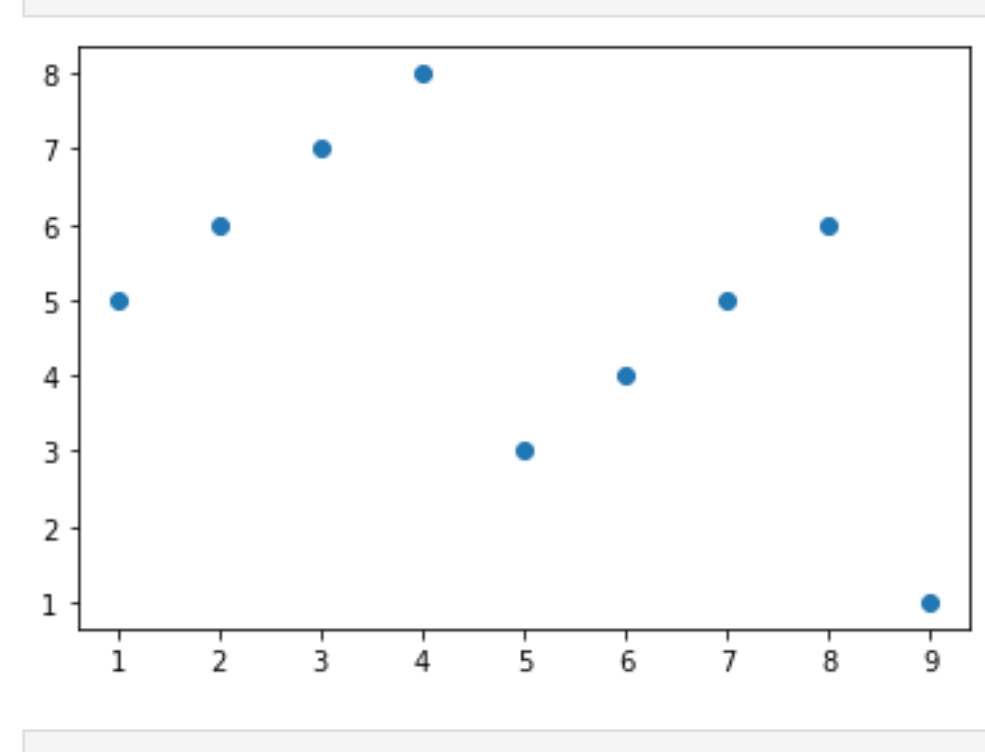
In [ ]:
```python
#horizontal bar plot xchange label x n y
```

In [36]:
```python
student = {"Bob":45,"Matt":97 ,"Sam":23}
names=list(student.keys())
values = list(student.values())
plt.barh(names,values)
plt.title("Student marks")
plt.xlabel("Marks")
plt.ylabel("Names")
plt.grid()
plt.show()
```

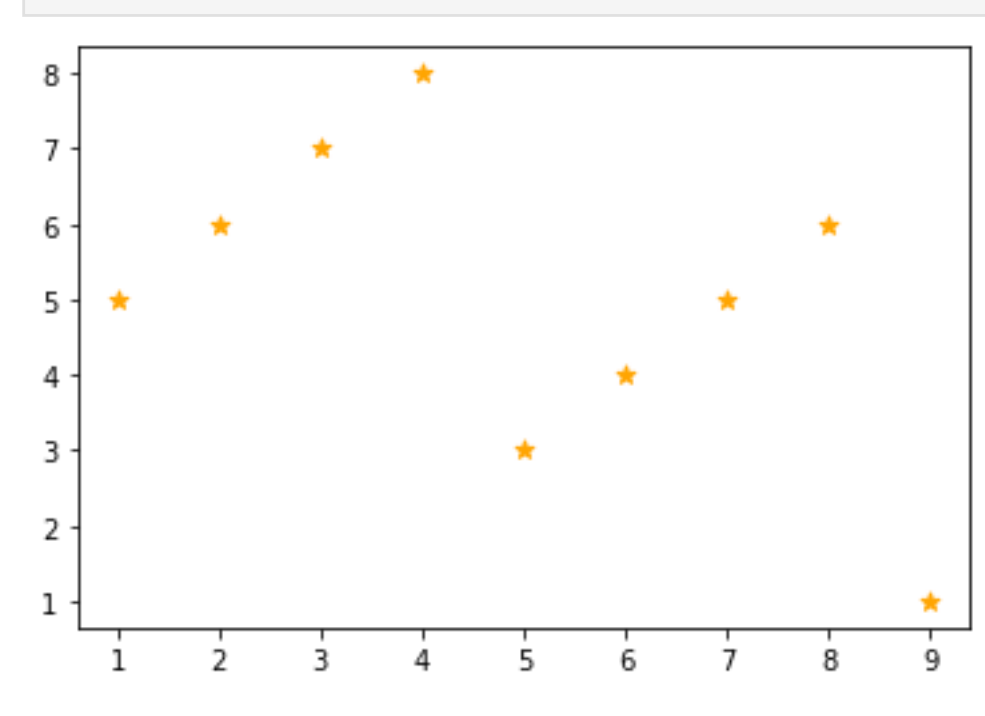


In [ ]:
```python
###3 Scatter plot
```

In [38]:
```python
x= [1,2,3,4,5,6,7,8,9]
y = [5,6,7,8,3,4,5,6,1]
plt.scatter(x,y)
plt.show()
```

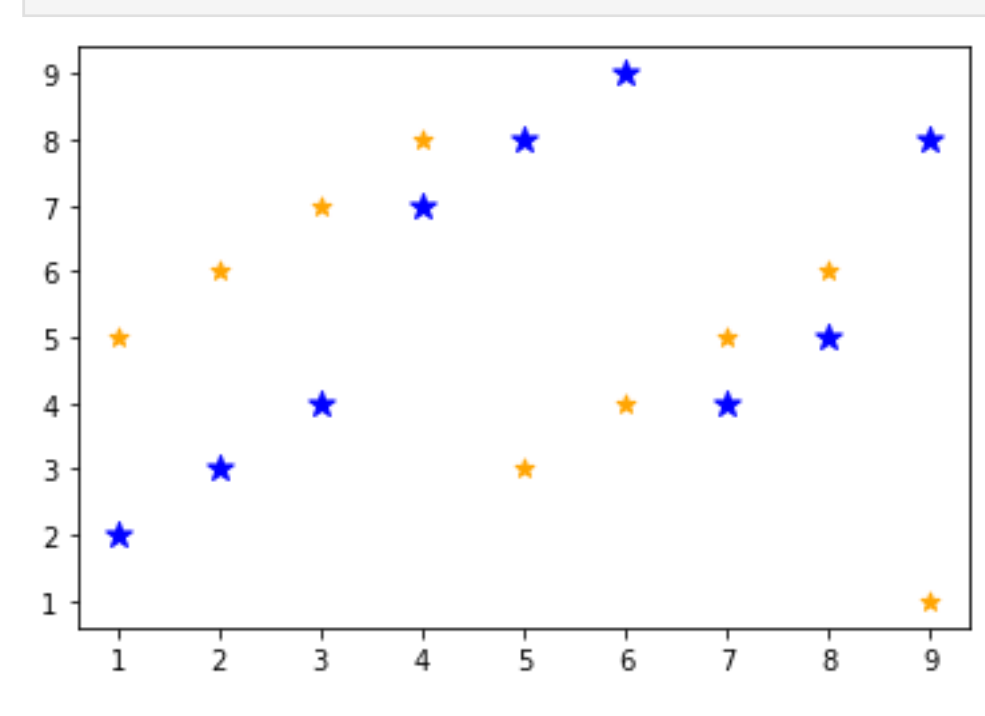


In [40]:
```python
x= [1,2,3,4,5,6,7,8,9]
y = [5,6,7,8,3,4,5,6,1]
plt.scatter(x,y,marker= "*",color ="orange",s=50)
plt.show()
```



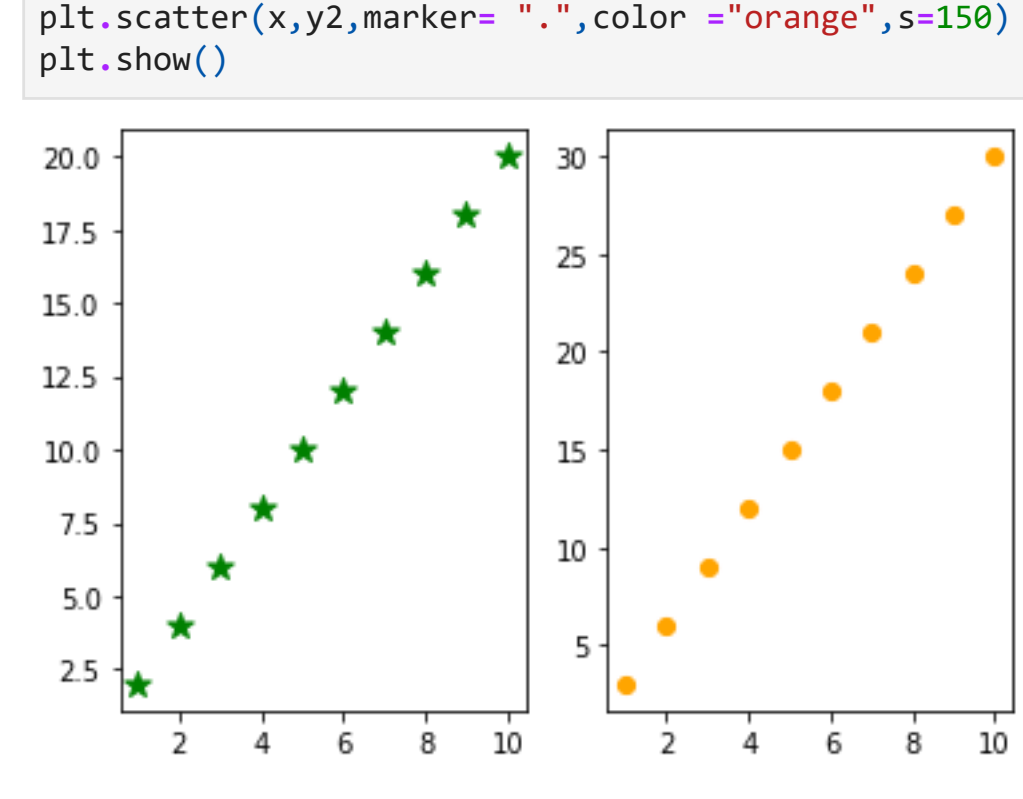
In [ ]:
```python
###adding two marker in same scatter plot
```

In [41]:
```python
x= [1,2,3,4,5,6,7,8,9]
y1 = [5,6,7,8,3,4,5,6,1]
y2 = [2,3,4,7,8,9,4,5,8]
plt.scatter(x,y1,marker= "*",color ="orange",s=50)
plt.scatter(x,y2,marker= "*",color ="blue",s=100)
plt.show()
```



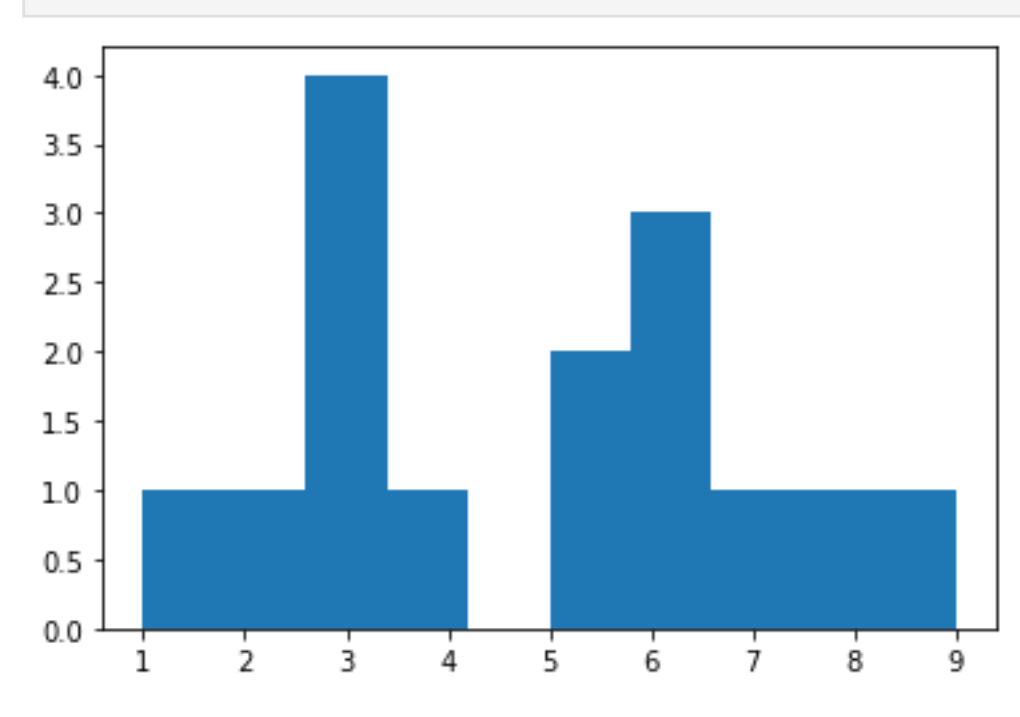
In [ ]:
```python
###two sub plot in scatter plot
```

In [43]:
```python
x = np.arange(1,11)
y1=2*x
y2=3*x

plt.subplot(1,2,1)
plt.scatter(x,y1,marker="*",color ="green",s=100)

plt.subplot(1,2,2)
plt.scatter(x,y2,marker= ".",color ="orange",s=150)
plt.show()
```

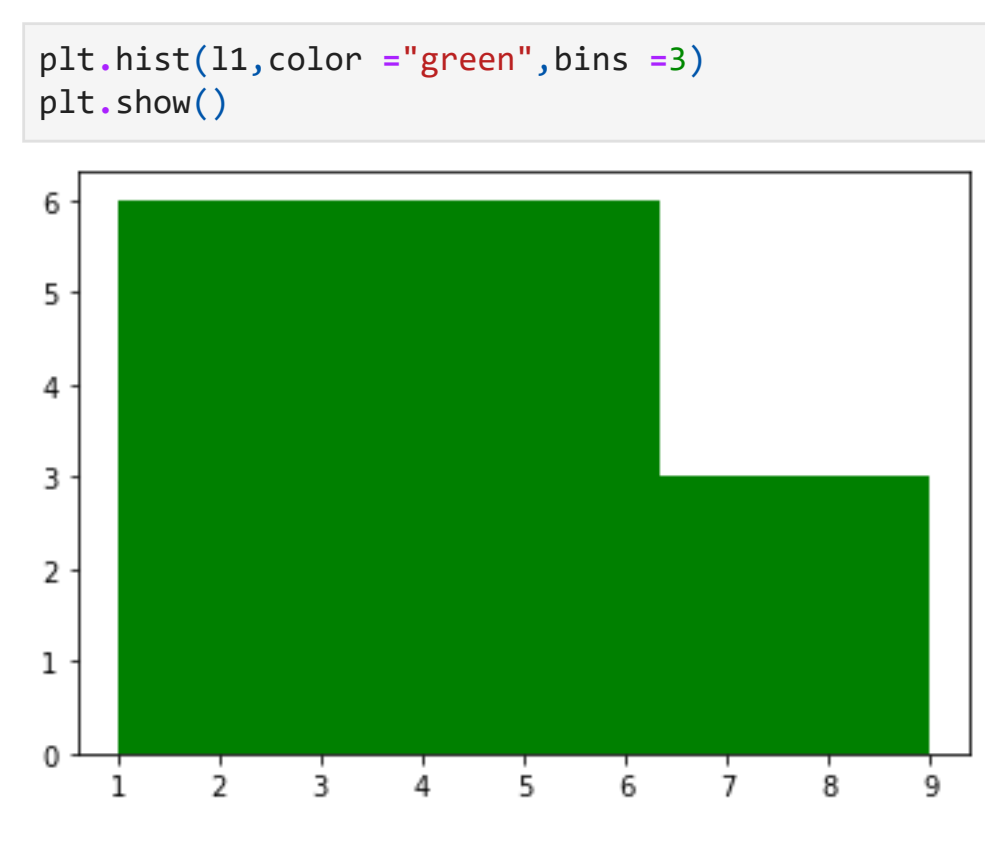


In [ ]:
```python
##4 Histogram
```

In [45]:
```python
l1 = [1,2,3,3,3,3,4,5,5,6,6,6,7,8,9]
plt.hist(l1)
plt.show()
```



In [46]:
```python
plt.hist(l1,color ="green",bins =3)
plt.show()
```

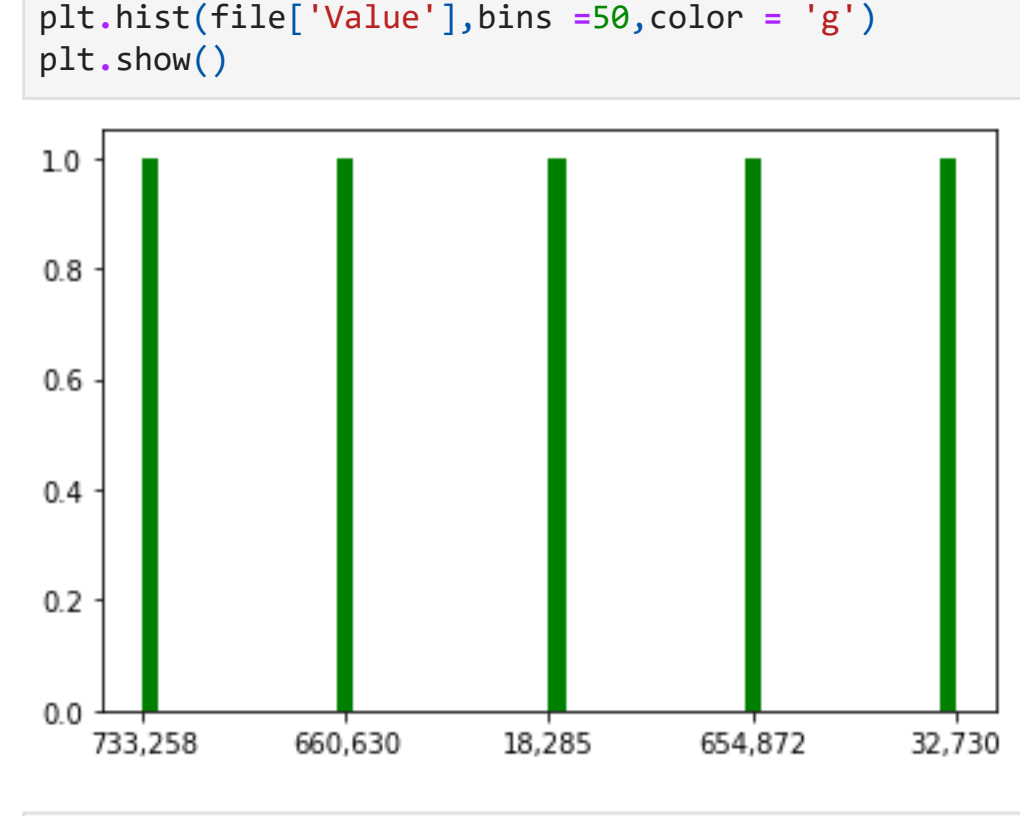


In [47]:
```python
import pandas as pd
file=pd.read_csv("myfile.csv")
file.head()
```

Out[47]:

	Year	Industry_aggregation_NZSIOC	Industry_code_NZSIOC	Industry_name_NZSIOC	Units	Variable_code	Variable_name	Variable_category	Value	Industry_code_ANZSIC06
0	2020	Level 1	99999	All industries	Dollars (millions)	H01	Total income	Financial performance	733,258	ANZSIC06 divisions A-S (excluding classes K633...
1	2020	Level 1	99999	All industries	Dollars (millions)	H04	Sales, government funding, grants and subsidies	Financial performance	660,630	ANZSIC06 divisions A-S (excluding classes K633...
3	2020	Level 1	99999	All industries	Dollars (millions)	H07	Non-operating income	Financial performance	18,285	ANZSIC06 divisions A-S (excluding classes K633...
4	2020	Level 1	99999	All industries	Dollars (millions)	H08	Total expenditure	Financial performance	654,872	ANZSIC06 divisions A-S (excluding classes K633...
5	2020	Level 1	99999	All industries	Dollars (millions)	H09	Interest and donations	Financial performance	32,730	ANZSIC06 divisions A-S (excluding classes K633...

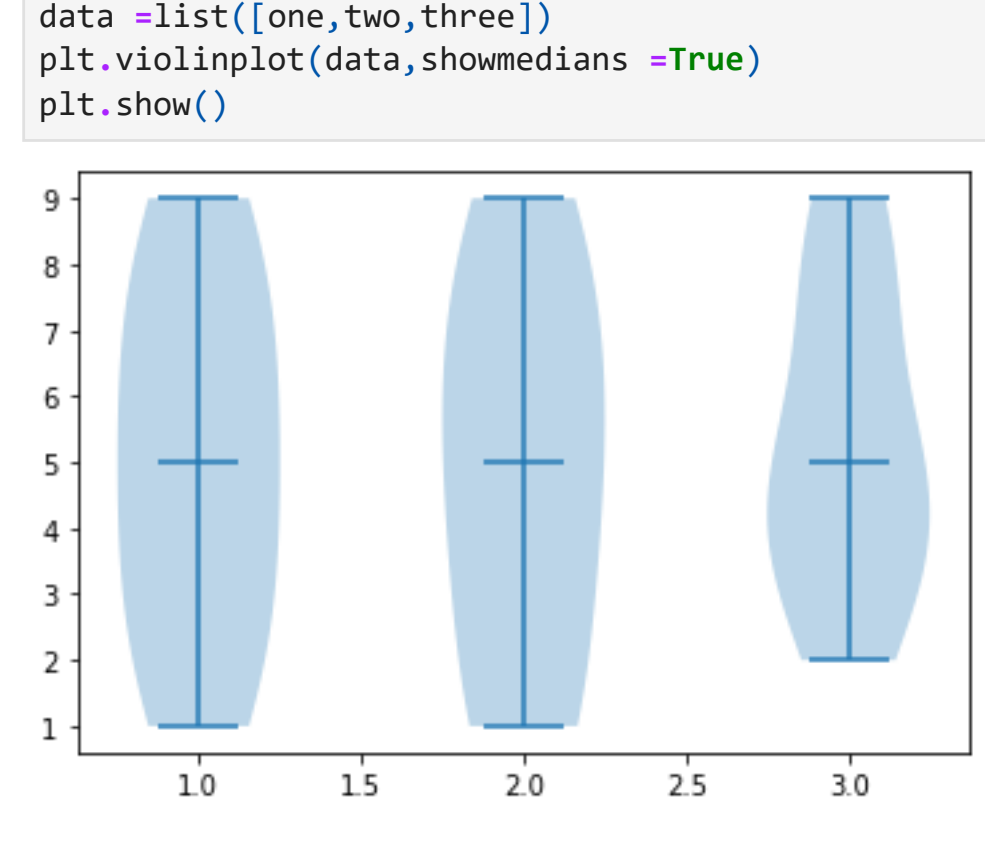
In [50]:
```python
plt.hist(file['Value'],bins =50,color = 'g')
plt.show()
```



In [ ]:
```python
###5 Box plot
```

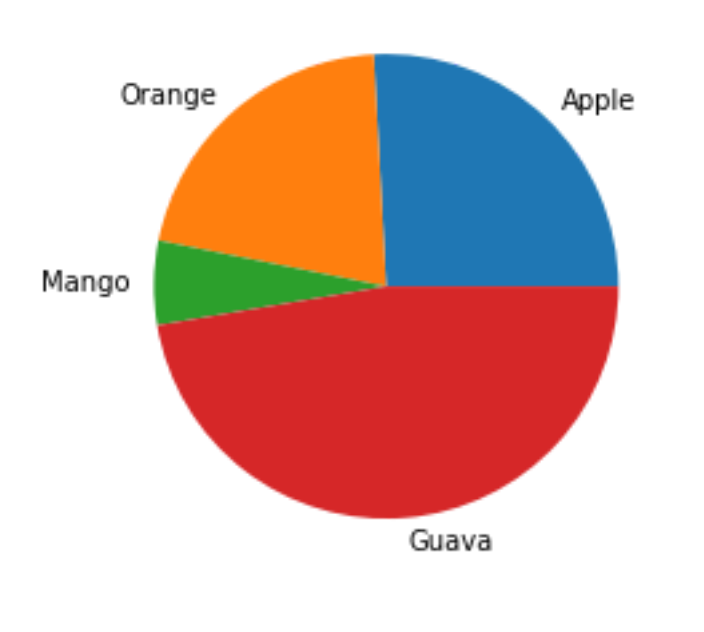
In [ ]:
```python
###6 vioin plot - it is same as box plot
```

In [53]:
```python
one=[1,2,3,4,5,6,7,8,9]
two=[3,5,1,8,9,1,4,7,6]
three=[7,8,9,3,4,4,5,5,2]

data =list([one,two,three])
plt.violinplot(data,showmedians =True)
plt.show()
```

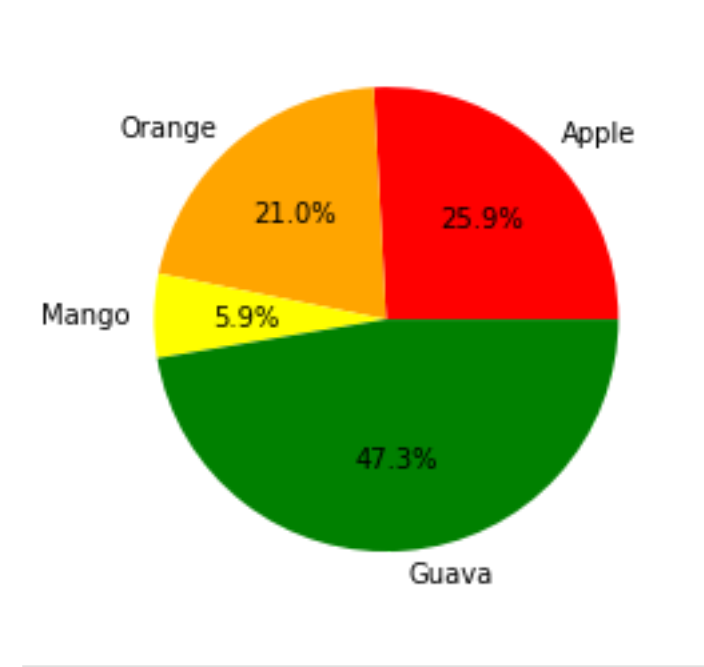


In [ ]:
```python
### 7 Pie chart frequency and categorial values
```

In [55]:
```python
fruit=['Apple','Orange','Mango','Guava']
quantity = [53,43,12,97]
plt.pie(quantity,labels =fruit)
plt.show()
```

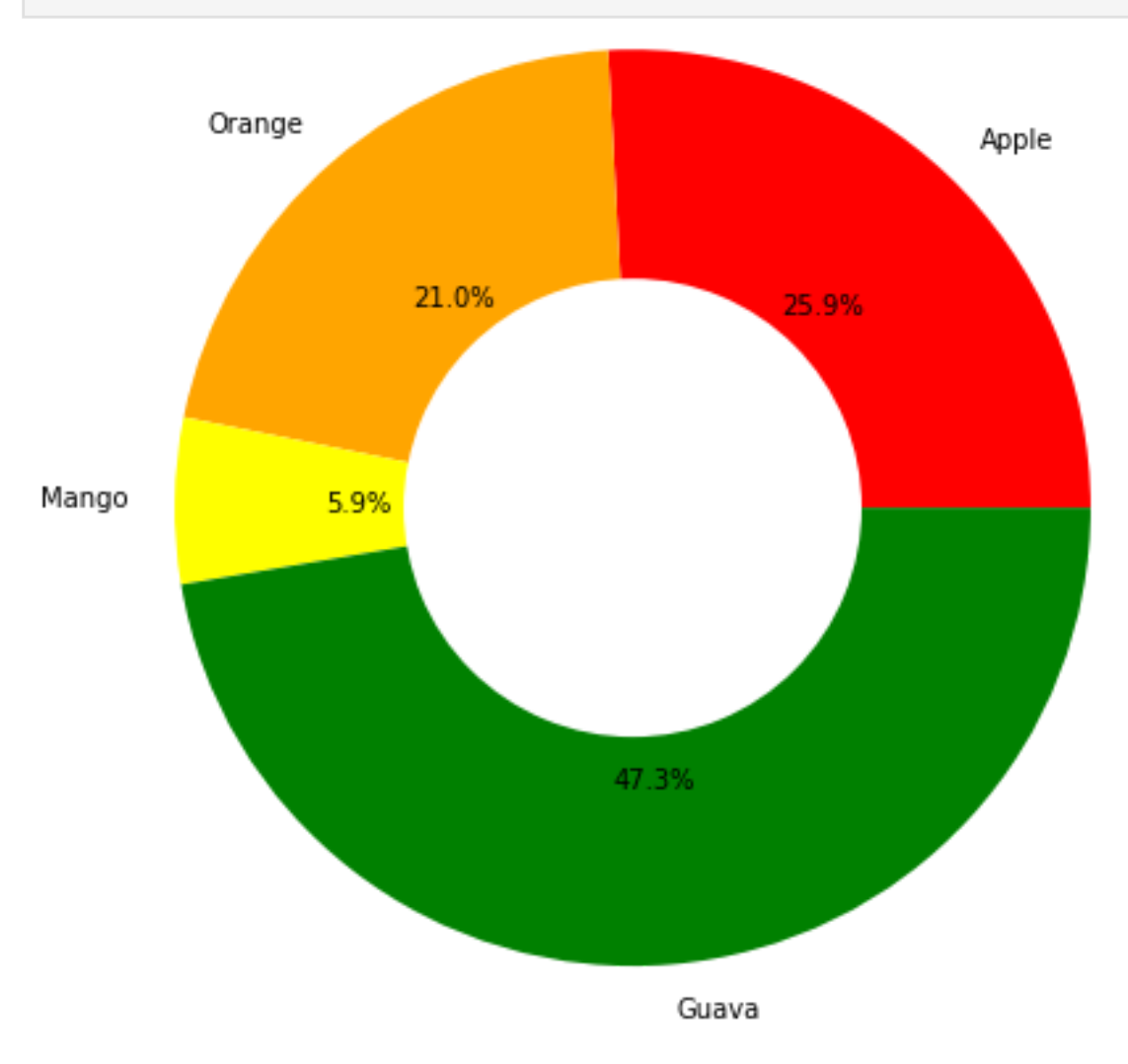


In [58]:
```python
fruit=['Apple','Orange','Mango','Guava']
quantity = [53,43,12,97]
plt.pie(quantity,labels =fruit,autopct ="%0.1f%%",colors=['red','orange','yellow','green'])
plt.show()
```



In [ ]:
```python
####8 dough nut chart
```

In [60]:
```python
fruit=['Apple','Orange','Mango','Guava']
quantity = [53,43,12,97]
plt.pie(quantity,labels =fruit,autopct ="%0.1f%%",colors=['red','orange','yellow','green'],radius =2)
plt.pie([5],colors =['w'],radius = 1)
plt.show()
```



In [ ]:

In [ ]:

In [ ]:

In [ ]: