

Name - Varzil Thakkar

Roll No - 21BCP090

Assignment 7

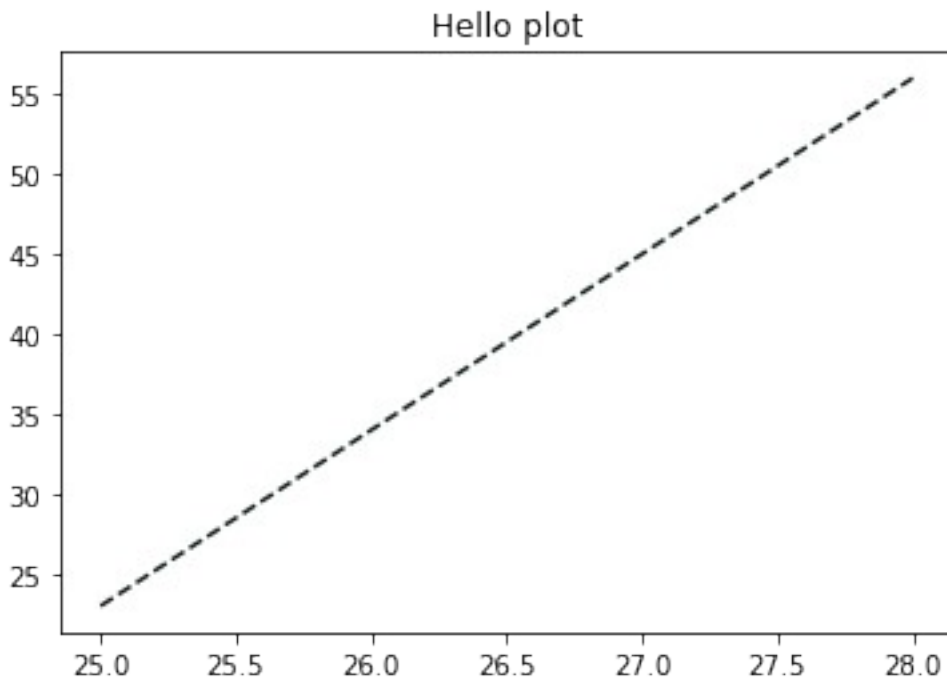
1. Practice the examples provided in the ppt.
2. Draw two different plots in the same graph (multiple plots), consisting of following:

a) Pie Chart

b) Line Graph

Part 1:-

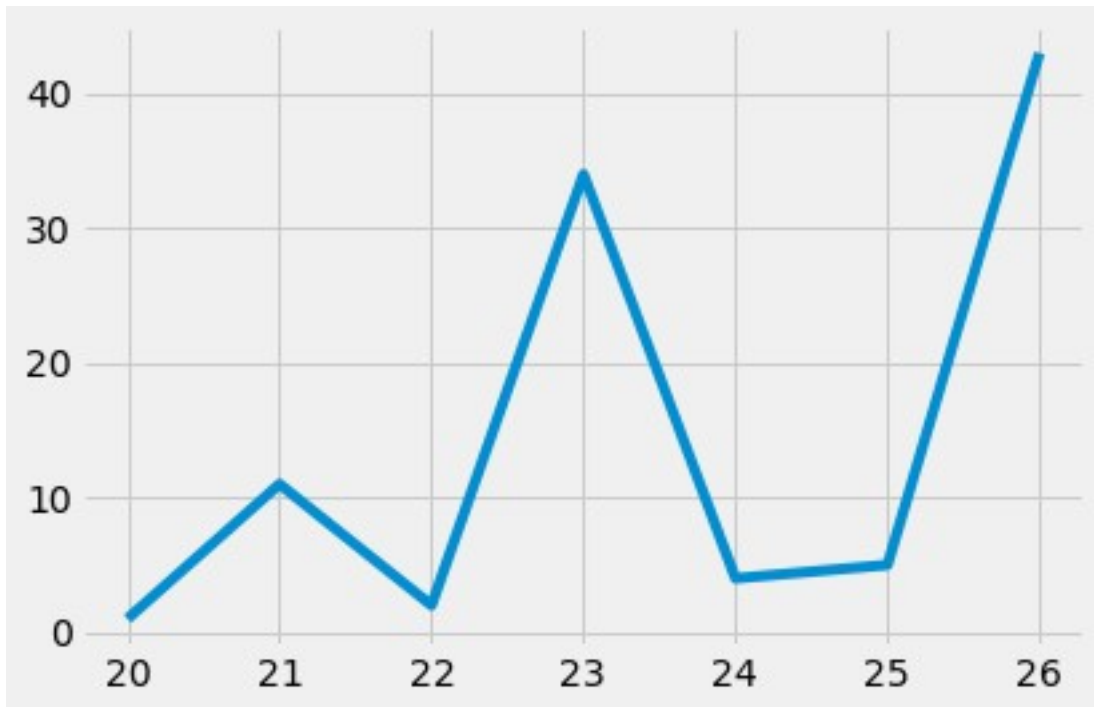
```
from matplotlib import pyplot as plt  
  
import numpy as np  
  
ax_x=np.array([25,26,27,28])  
ax_y=np.array([23,34,45,56])  
  
plt.plot(ax_x,ax_y,color='#111F1F',linestyle='--')  
  
plt.title("Hello plot" )  
plt.show()
```



```

## Another plot
plt.style.use('fivethirtyeight')
age=[20,21,22,23,24,25,26]
money=[1,11,2,34,4,5,43]
plt.plot(age,money)
plt.show()

```

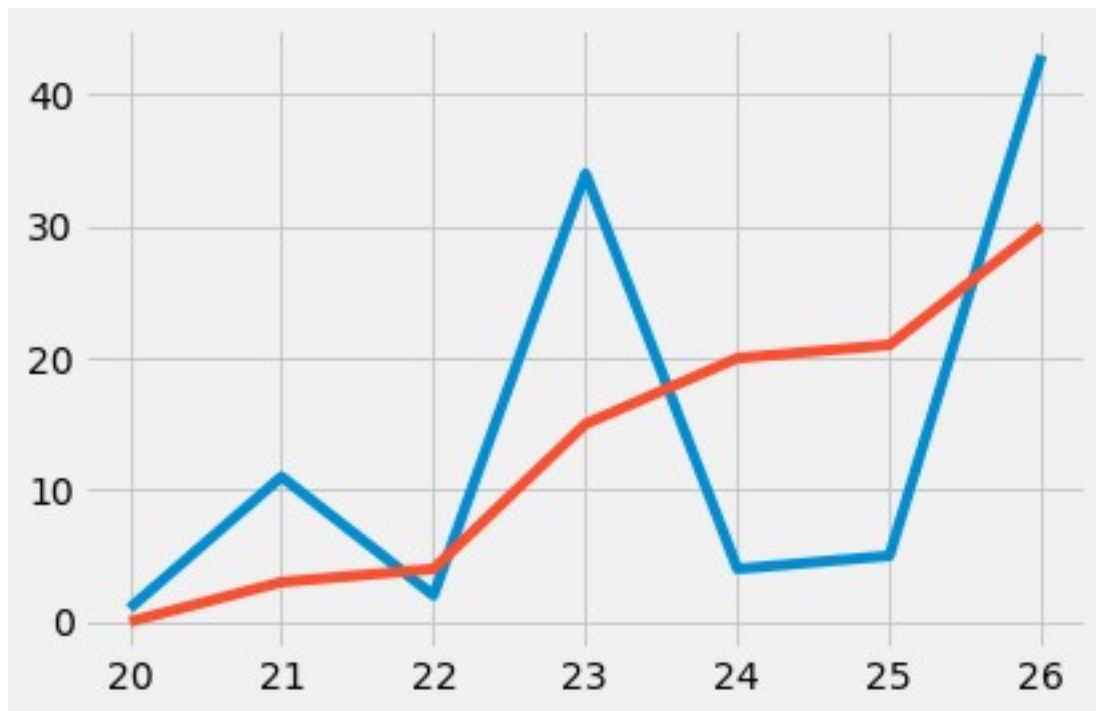


2 line graph

```

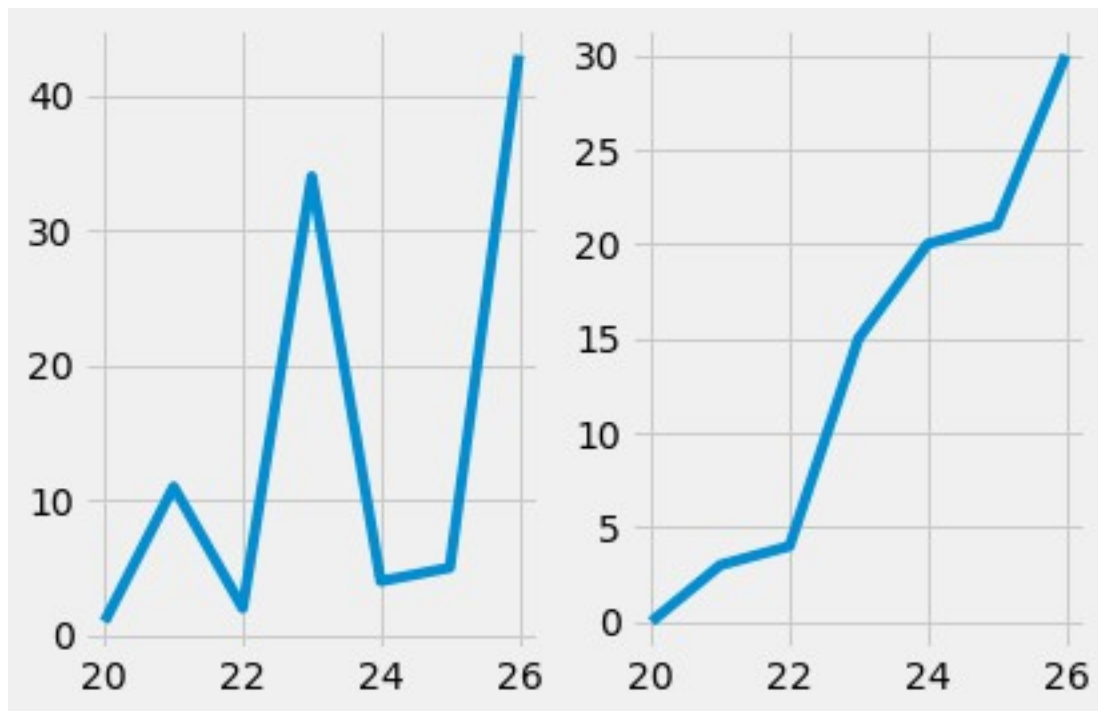
age=[20,21,22,23,24,25,26]
money=[1,11,2,34,4,5,43]
marriage=[0,3,4,15,20,21,30]
plt.plot(age,money,label="money")
plt.plot(age,marriage,label="marriage")
plt.show()

```



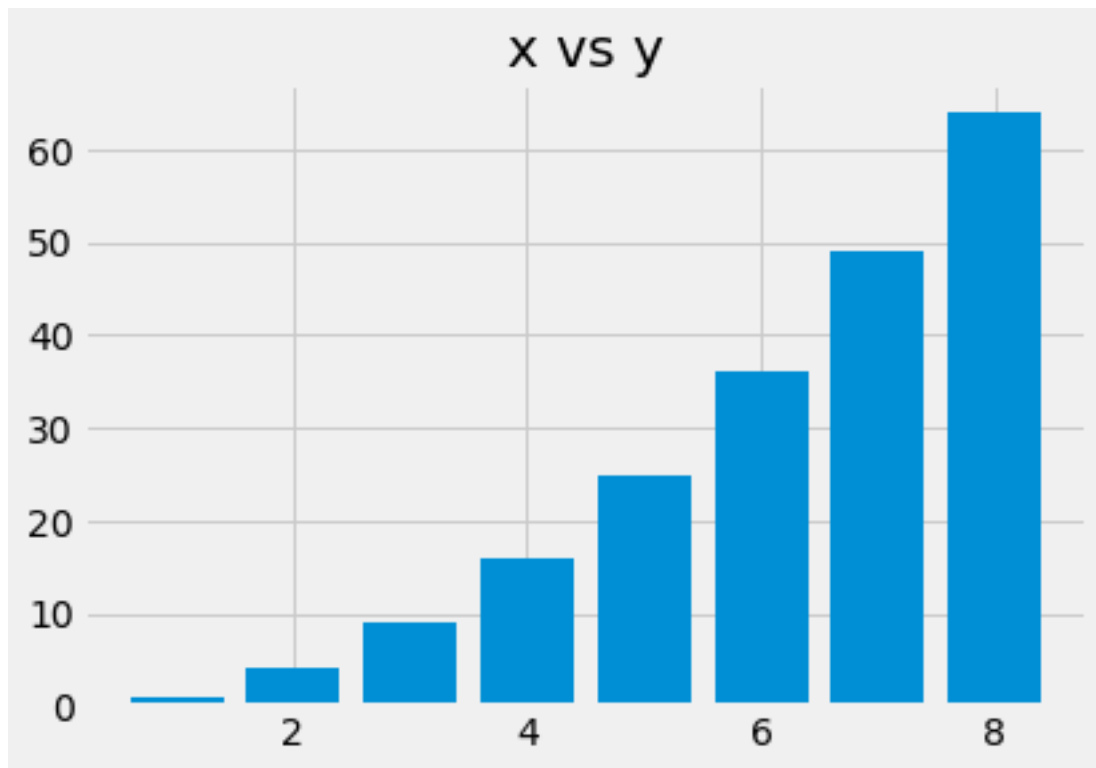
Using the subplot function to make 2 plots

```
age=[20,21,22,23,24,25,26]
money=[1,11,2,34,4,5,43]
marriage=[0,3,4,15,20,21,30]
plt.subplot(1,2,1)
plt.plot(age,money,label="money")
plt.subplot(1,2,2)
plt.plot(age,marriage,label="marriage")
plt.show()
```

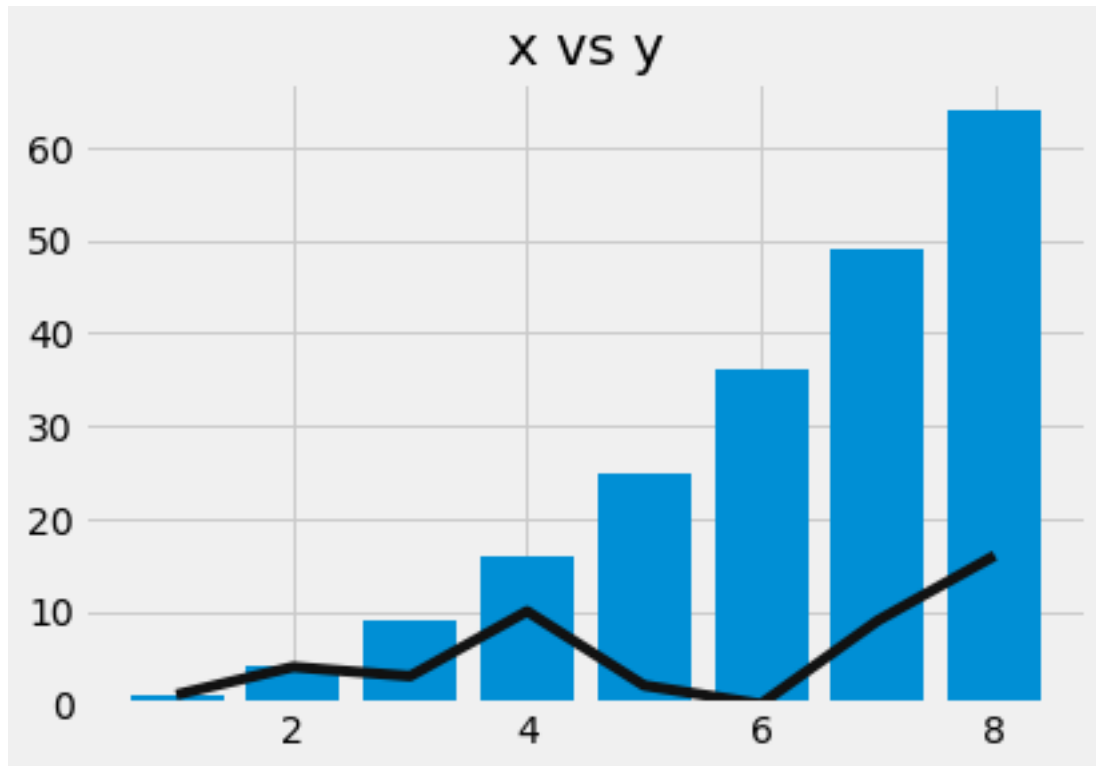


Bar Graph in matplotlib

```
x=[1,2,3,4,5,6,7,8]
y=[1,4,9,16,25,36,49,64]
plt.bar(x,y)
plt.title("x vs y")
plt.show()
```

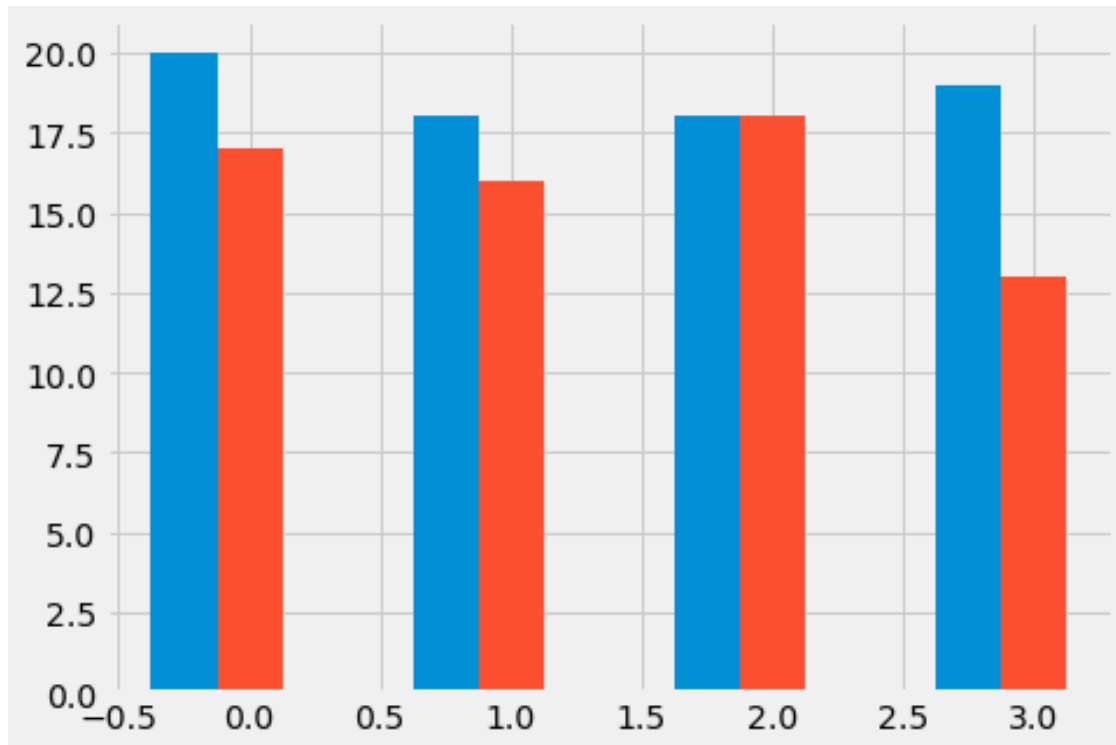


```
x=[1,2,3,4,5,6,7,8]
y=[1,4,9,16,25,36,49,64]
z=[1,4,3,10,2,0,9,16]
plt.bar(x,y)
plt.plot(x,z,color='#111111')
plt.title("x vs y")
plt.show()
```



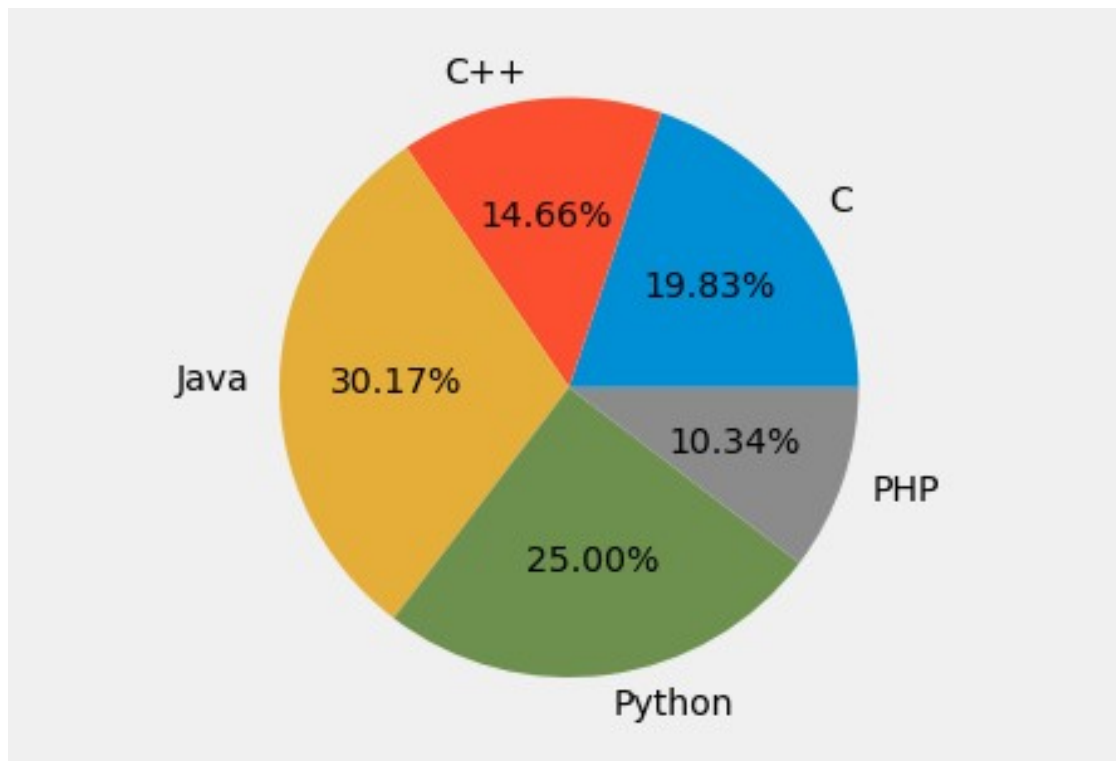
Now what is we want to use 2 bar graphs and compare them side by side
making the data for the plot

```
x=['maths',"physics",'chem','bio']
y_my=[20,18,18,19]
y_avg=[17,16,18,13]
index = np.arange(4)
fig = plt.figure()
ax = fig.add_axes([0,0,1,1])
bar_width = 0.25
plt.bar(index-bar_width,width=bar_width,height=y_my)
plt.bar(index-bar_width+0.25,width=bar_width,height=y_avg)
plt.show()
```



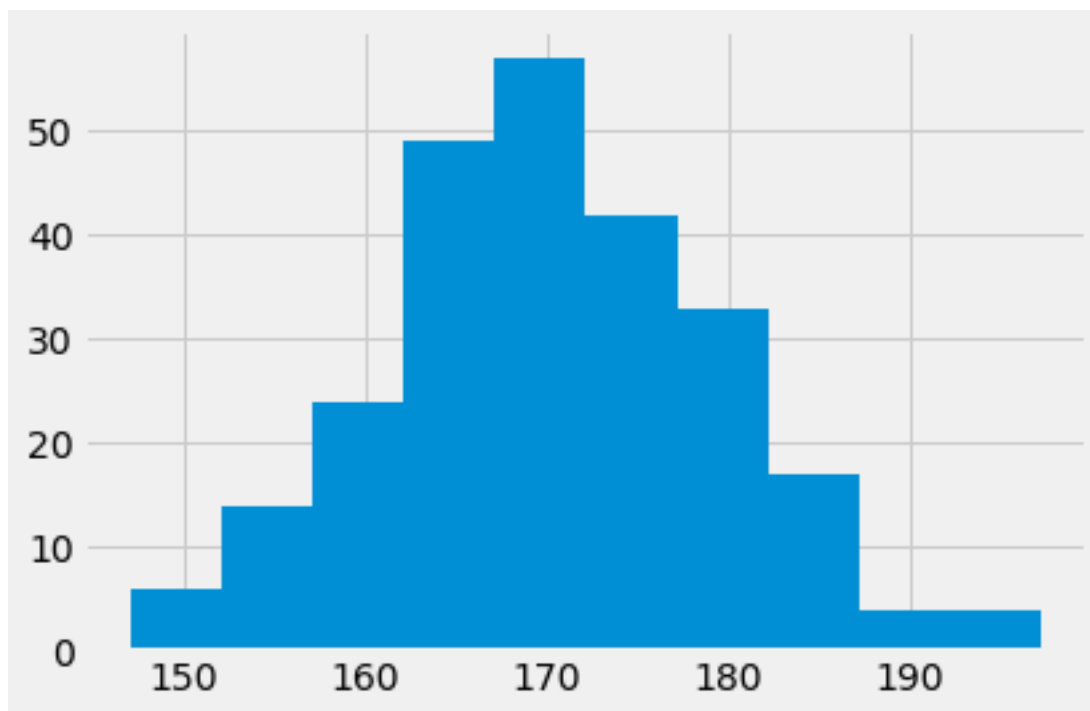
Pie chart

```
fig = plt.figure()
ax = fig.add_axes([0,0,1,1])
ax.axis('equal')
langs = ['C', 'C++', 'Java', 'Python', 'PHP']
students = [23,17,35,29,12]
ax.pie(students, labels = langs, autopct='%1.2f%%')
plt.show()
```



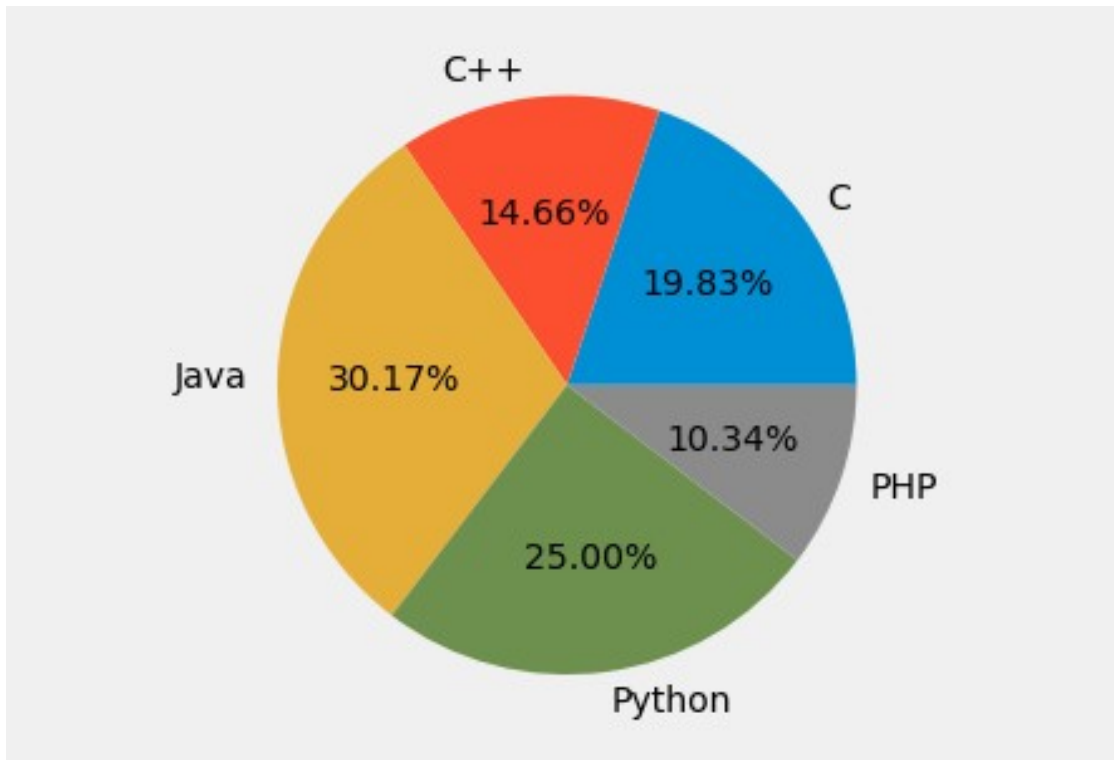
Histogram

```
x = np.random.normal(170, 10, 250)
plt.hist(x)
plt.show()
```



Part 2

```
fig = plt.figure()
ax = fig.add_axes([0, 0, 1, 1])
ax.axis('equal')
langs = ['C', 'C++', 'Java', 'Python', 'PHP']
students = [23, 17, 35, 29, 12]
ax.pie(students, labels=langs, autopct='%1.2f%%')
plt.show()
```



```
students = [23, 17, 35, 29, 12]
plt.plot(students)
plt.show()
```

