```
import numpy as np
lst1=[1,2,3]
array1 = np.array(list)
print("list = ",lst1)
print("array =",array1)
type(lst1)
type(array1)
```

```
list =  [1, 2, 3]
array = <class 'list'>
numpy.ndarray
```

```
type(lst1)
```

```
list
```

```
import numpy as np
array1=np.array([10,20,30])
array2=np.array([2,2,2])

print("array2 multiplied by array1: ",array1*array2)
print("array2 divided by array1: ",array2/array1)
print("array2 raised to the power of array1: ",array2**array1)
print("Adding two numpy arrays {array1} and {array2} together: ",array1+array2)
```

```
array2 multiplied by array1:  [20 40 60]
array2 divided by array1:  [0.2        0.1        0.06666667]
array2 raised to the power of array1:  [      1024    1048576 1073741824]
Adding two numpy arrays {array1} and {array2} together:  [12 22 32]
```

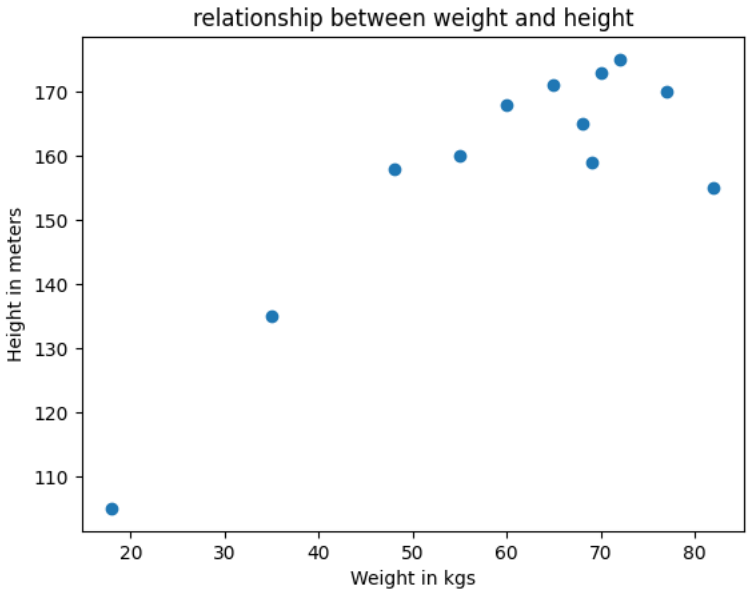
```
import numpy as np
array1=np.array([10,20,30])

print("Sine: ",np.sin(array1))

print("Natural logarithm: ",np.log(array1))
print("Base-10 logarithm: ",np.log10(array1))
print("Base-2 logarithm: ",np.log2(array1))

print("Exponential: ",np.exp(array1))
```

```
Sine:  [-0.54402111  0.91294525 -0.98803162]
Natural logarithm:  [2.30258509 2.99573227 3.40119738]
Base-10 logarithm:  [1.         1.30103    1.47712125]
Base-2 logarithm:  [3.32192809 4.32192809 4.9068906 ]
Exponential:  [2.20264658e+04 4.85165195e+08 1.06864746e+13]
```

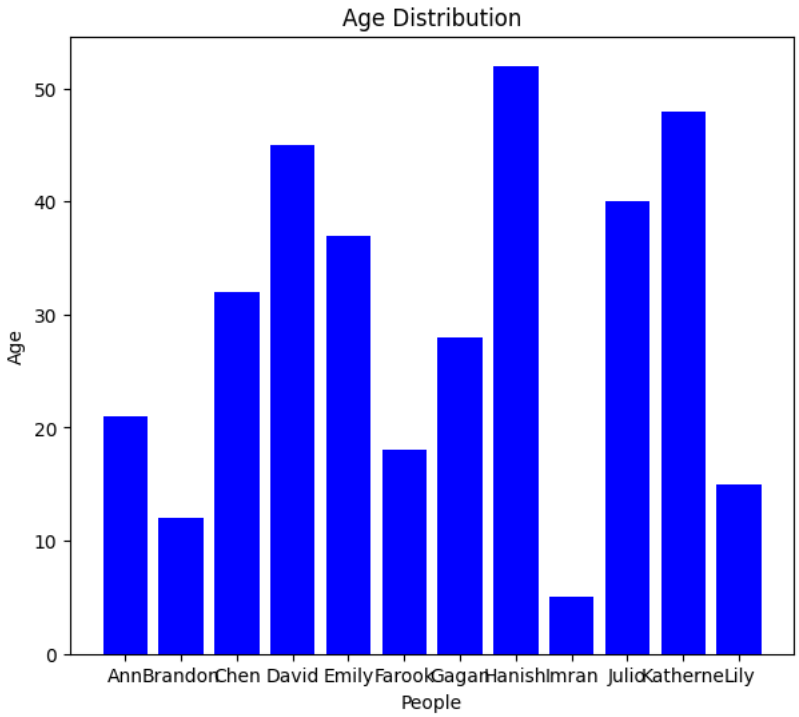
```
people = ['Ann','Brandon','Chen','David','Emily','Farook','Gagan','Hanish','Imran','Julio','Katherne','Lily']

age = [21,12,32,45,37,18,28,52,5,40,48,15]
weight = [55,35,77,68,70,60,72,69,18,65,82,48,]
height = [160,135,170,165,173,168,175,159,105,171,155,158]
```

```
import matplotlib.pyplot as plt
```

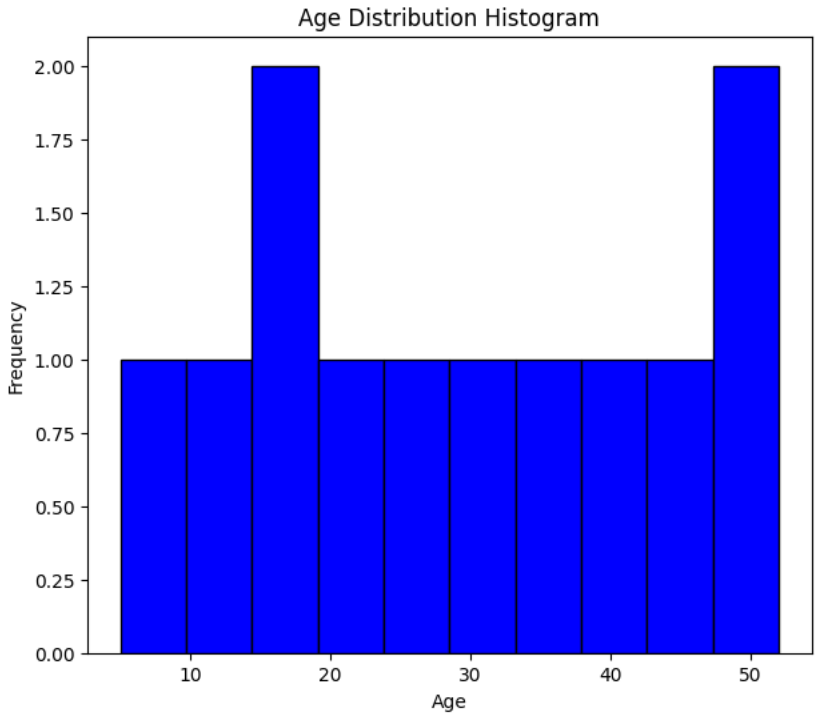
```
# scatter plot
plt.scatter(weight,height)
plt.title("relationship between weight and height")
plt.ylabel("Height in meters")
plt.xlabel("Weight in kgs")
plt.show()
```




```
# bar chart
plt.figure(figsize=(7, 6))
plt.bar(people, age, color='blue')
plt.xlabel('People')
plt.ylabel('Age')
plt.title('Age Distribution')
plt.show()
```




```
#Histogram
plt.figure(figsize=(7, 6))
plt.hist(age, bins=10, color='blue', edgecolor='black')
plt.xlabel('Age')
plt.ylabel('Frequency')
plt.title('Age Distribution Histogram')
plt.show()
```




```
import pandas as pd
data1=pd.read_excel("data.xlsx")
data1
```

	No	Name	Age	Weight	Height
0	1	Harish	21	65	172
1	2	Ram	19	55	168
2	3	Rajesh	25	63	155
3	4	Krishna	38	69	169
4	5	Hemanth	19	55	160

```
import pandas as pd
data2=pd.read_csv("data.csv")
data2
```

	No	Name	Age	Weight	Height
0	1	Harish	21	65	172
1	2	Ram	19	55	168
2	3	Rajesh	25	63	155
3	4	Krishna	38	69	169
4	5	Hemanth	19	55	160

```
import pandas as pd
data3=pd.read_table("data.txt")
data3
```

	No	Name	Age	Weight	Height
0	1	Harish	21	65	172
1	2	Ram	19	55	168
2	3	Rajesh	25	63	155
3	4	Krishna	38	69	169
4	5	Hemanth	19	55	160

```
import pandas as pd
url = 'https://drive.google.com/file/d/13ijmcf_uPQRwS5XyfJ0pn5DpAczRhWY_/view?usp=drive_link'
df_url = pd.read_csv("data.csv")
df_url
```

	No	Name	Age	Weight	Height
0	1	Harish	21	65	172
1	2	Ram	19	55	168
2	3	Rajesh	25	63	155