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

```
list =  [1, 2, 3]
array = [1 2 3]
numpy.ndarray
```

```
type(lst1)
```

```
list
```

```
import numpy as np
array1=np.array([10,20,30])
array2=np.array([2,2,21])
print("array2 multiplied by array1:",array1*array2)
print("array2 divided by array :",array2/array1)
print("array2 raise to the power of array1:",array2**array1)
print("Adding two numpy array {array1}and{array2}together:",array1+array2)
```

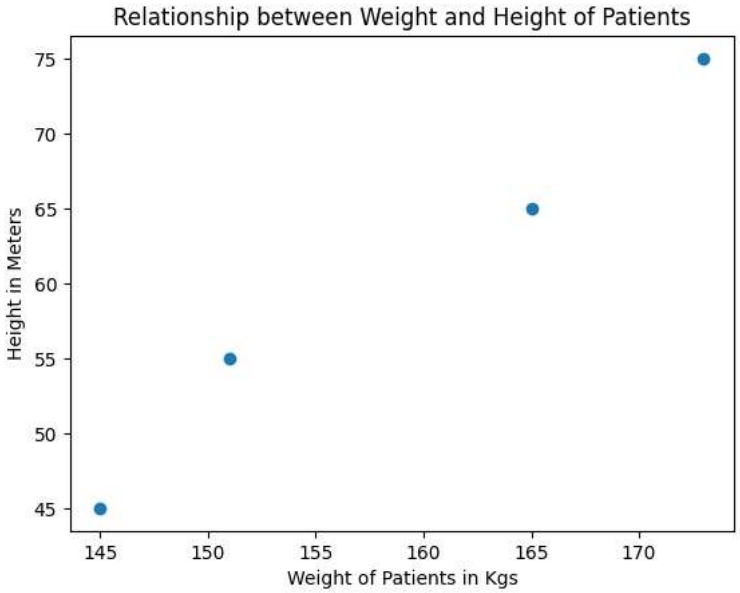
```
array2 multiplied by array1: [ 20  40 630]
array2 divided by array : [0.2 0.1 0.7]
array2 raise to the power of array1: [               1024             1048576 7947728239626762761]
Adding two numpy array {array1}and{array2}together: [12 22 51]
```

```
import numpy as np

array1=np.array([10,20,30])

# sine function

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

# logarithm

print("Natural logarithm: ", np.log(array1))

print("Base-10 logarithm: ",np.log10(array1))

print("Base-2 logarithm: ",np.log2(array1))

# Exponential

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

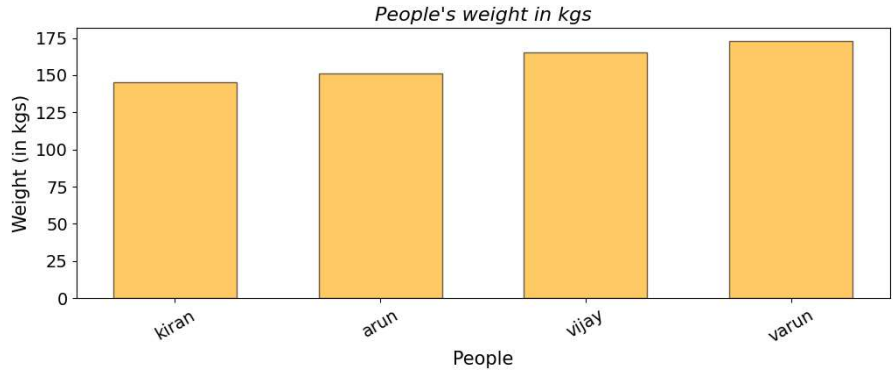
```
Sine:  [-0.54402111  0.91294525 -0.98803162]
Natural logarithm:  [2.30258509 2.99573227 3.40119738]
Base-10 logarithm:  [1.         1.30103    1.47712125]
Base-2 logarithm:  [3.32192809 4.32192809 4.9068906 ]
Exponential:  [2.20264658e+04 4.85165195e+08 1.06864746e+13]
```

```
people = ['kiran', 'arun', 'vijay', 'varun' ]
age=[25, 30, 35, 40]
weight = [145, 151, 165, 173]
height = [45, 55, 65, 75]
```

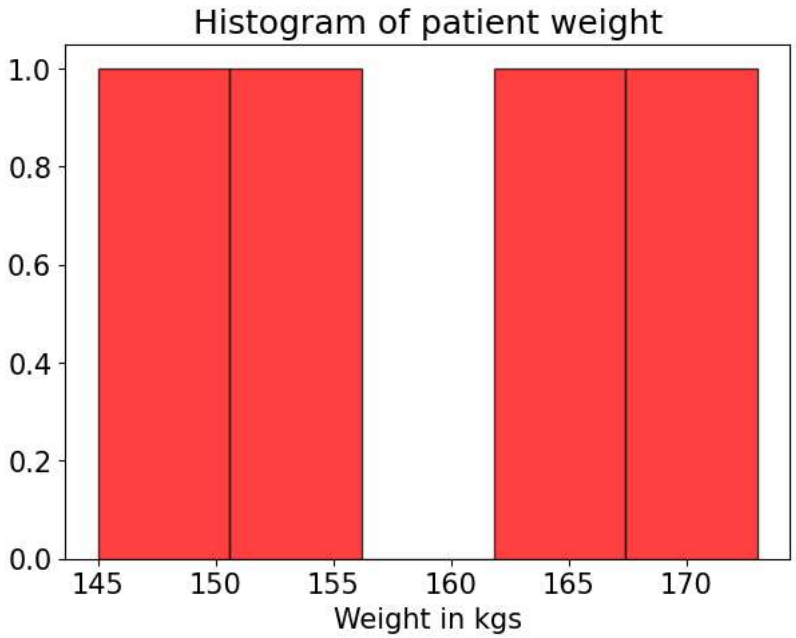
```
import matplotlib.pyplot as plt

plt.scatter (weight, height)

plt.title("Relationship between Weight and Height of Patients")
plt.ylabel("Height in Meters")

plt.xlabel("Weight of Patients in Kgs")

plt.show()
```




```
plt.figure(figsize=(12,4))

plt.title("People's weight in kgs", fontsize=16, fontstyle='italic')

# Main plot function 'bar'

plt.bar(x=people,height=weight, width=0.6, color='orange', edgecolor='k', alpha=0.6)

plt.xlabel("People", fontsize=15)

plt.xticks(fontsize=14, rotation=30)

plt.yticks(fontsize=14)

plt.ylabel("Weight (in kgs)", fontsize=15)
plt.show()
```



```
import numpy as np
plt.figure(figsize=(7,5))

# Main plot function 'hist'
plt.hist(weight,color='red', edgecolor='k', alpha=0.75,bins=5)

plt.title("Histogram of patient weight", fontsize=18)

plt.xlabel("Weight in kgs", fontsize=15)

plt.xticks(fontsize=15)

plt.yticks(fontsize=15)

plt.show()
```




```
import pandas as pd
data2=pd.read_excel("excel1.xlsx")
data2
```

	EMP ID	EMP NAME	Unnamed: 2	DEPT	SALARY
0	101	Jhon	NaN	Marketing	40000
1	102	Athidi	NaN	Sales	50000
2	103	Suresh	NaN	HR	60000
3	104	Daniel	NaN	Finance	40000
4	105	Suhas	NaN	HR	30000
5	106	Jyothi	NaN	Marketing	40000
6	107	Sanvi	NaN	Sales	20000
7	108	Kiran	NaN	Finance	10000
8	109	Ananya	NaN	HR	30000
9	110	Ashok	NaN	Operations	20000
10	111	Keerthi	NaN	Sales	90000
11	112	James	NaN	HR	50000
12	113	Chaitra	NaN	Marketing	70000
13	114	Rohan	NaN	Finance	40000
14	115	Bhargav	NaN	HR	10000
15	116	Surya	NaN	Marketing	30000
16	117	Priya	NaN	Finance	60000
17	118	Jhosna	NaN	Operations	40000
18	119	Lisa	NaN	Finance	70000
19	120	Veenala	NaN	HR	90000

```
import pandas as pd
data3=pd.read_csv("/excel1.csv")
data3
```

	EMP ID	EMP NAME	Unnamed: 2	DEPT	SALARY
0	101	Jhon	NaN	Marketing	40000
1	102	Athidi	NaN	Sales	50000
2	103	Suresh	NaN	HR	60000
3	104	Daniel	NaN	Finance	40000
4	105	Suhas	NaN	HR	30000
5	106	Jyothi	NaN	Marketing	40000
6	107	Sanvi	NaN	Sales	20000
7	108	Kiran	NaN	Finance	10000
8	109	Ananya	NaN	HR	30000
9	110	Ashok	NaN	Operations	20000
10	111	Keerthi	NaN	Sales	90000
11	112	James	NaN	HR	50000
12	113	Chaitra	NaN	Marketing	70000
13	114	Rohan	NaN	Finance	40000
14	115	Bhargav	NaN	HR	10000
15	116	Surya	NaN	Marketing	30000
16	117	Priya	NaN	Finance	60000
17	118	Jhosna	NaN	Operations	40000
18	119	Lisa	NaN	Finance	70000
19	120	Veenala	NaN	HR	90000

```
import pandas as pd
data4=pd.read_table("/excel1.txt")
data4
```

	EMP ID	EMP NAME	Unnamed: 2	DEPT	SALARY	Unnamed: 5
0	101	Jhon	NaN	Marketing	40000	NaN
1	102	Athidi	NaN	Sales	50000	NaN
2	103	Suresh	NaN	HR	60000	NaN
3	104	Daniel	NaN	Finance	40000	NaN
4	105	Suhas	NaN	HR	30000	NaN
5	106	Jyothi	NaN	Marketing	40000	NaN
6	107	Sanvi	NaN	Sales	20000	NaN
7	108	Kiran	NaN	Finance	10000	NaN
8	109	Ananya	NaN	HR	30000	NaN
9	110	Ashok	NaN	Operations	20000	NaN
10	111	Keerthi	NaN	Sales	90000	NaN
11	112	James	NaN	HR	50000	NaN
12	113	Chaitra	NaN	Marketing	70000	NaN
13	114	Rohan	NaN	Finance	40000	NaN
14	115	Bhargav	NaN	HR	10000	NaN
15	116	Surya	NaN	Marketing	30000	NaN
16	117	Priya	NaN	Finance	60000	NaN
17	118	Jhosna	NaN	Operations	40000	NaN
18	119	Lisa	NaN	Finance	70000	NaN
19	120	Veenala	NaN	HR	90000	NaN

```
import pandas as pd
url = "https://drive.google.com/file/d/1XgFwSeaywc2TELmb_bUQDVqCHJTnIiXo/view?usp=drive_link"
def_url=pd.read_csv("/excel1.csv")
def_url
```

	EMP ID	EMP NAME	Unnamed: 2	DEPT	SALARY
0	101	Jhon	NaN	Marketing	40000
1	102	Athidi	NaN	Sales	50000
2	103	Suresh	NaN	HR	60000
3	104	Daniel	NaN	Finance	40000
4	105	Suhas	NaN	HR	30000
5	106	Jyothi	NaN	Marketing	40000
6	107	Sanvi	NaN	Sales	20000
7	108	Kiran	NaN	Finance	10000