Practical

(a)Demonstrate Numpy Package.

In [4]:
```
from numpy import *
```

In [5]:
```
arr = array([11,22,33,44.5,55],int)

print(arr)
print(type(arr))
```

```
[11 22 33 44 55]
<class 'numpy.ndarray'>
```

In [19]:
```
arr = array([[11,22,33],[44,55,66]])
print(arr)
print(type(arr))
print('2nd element of 2nd row:', arr[1,1])
```

```
[[11 22 33]
 [44 55 66]]
<class 'numpy.ndarray'>
2nd element of 2nd row: 55
```

In [22]:
```
arr = array([[[11,22,33],[44,55,66]],[[11,22,33],[44,55,66]]])
print(arr)
print(type(arr))
print('2nd element of 2nd row:', arr[0,1,1])
```

```
[[[11 22 33]
  [44 55 66]]

 [[11 22 33]
  [44 55 66]]]
<class 'numpy.ndarray'>
2nd element of 2nd row: 55
```

In [26]:
```
arr = array([[11,22,33],[44,55,66]])

print(arr)
print(type(arr))

print('first and second element of 1st and 2nd row:', arr[0:2,0:2])
```

```
[[11 22 33]
 [44 55 66]]
<class 'numpy.ndarray'>
first and second element of 1st and 2nd row: [[11 22]
 [44 55]]
```

In [27]:
```
arr= array([11,22,33,44,11,323,11,11])
position=where(arr==11)
print("position of 11 is ", position)
```

```
position of 11 is  (array([0, 4, 6, 7], dtype=int64),)
```

In [28]:
```
arr= array([11,22,33,44,11,323,11,11])
position=where(arr%2==0)
print("position of even number is ", position)
```

```
position of even number is  (array([1, 3], dtype=int64),)
```

In [31]:
```
x=random.randint(10)
print("random number operated is ", x)
x=random.choice([11,22,33,44],p=[0.1,0.3,0.6,0.0], size=(200))
print("200 numbers generated from grp with probability", x)
```

```
random number operated is  2
200 numbers generated from grp with probability [33 33 22 22 33 33 33 33 22 11
33 22 33 33 33 22 11 33 11 11 11 33 33 22
 33 22 11 33 33 11 33 33 11 22 33 22 33 33 33 33 33 33 33 33 33 22 22
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 33 33 22 22 33 33 11 22 11 22 22 22 33 33 33 33 33 33 33 33 33 33 33 33
 33 33 11 33 33 33 33 33]
```

In [33]:
```
randomstr=""

for i in range(6):
    index=random.randint(0,10)
    randomstr += str(index)

print("6 digit pin: ", randomstr)
```

```
6 digit pin:  542515
```

(b) Demonstrate Pandas Package.

In [36]:

```
import pandas as pd

data_list = ('yami','yug','eren')

series =pd.Series(data=data_list)
print(series)
```

```
0    yami
1     yug
2    eren
dtype: object
```

```
import pandas as pd

data_list = {1:'yami',2:'yug',3:'eren'}

series =pd.Series(data=data_list)
print(series)
```

```
1    yami
2     yug
3    eren
dtype: object
```

```
import pandas as pd
import numpy as np

data_list =  np.array(['yami','yug','eren'])
print("array form", data_list)

series =pd.Series(data=data_list)
print(series)
```

```
array form ['yami' 'yug' 'eren']
0    yami
1     yug
2    eren
dtype: object
```

```
import pandas as pd
import numpy as np

data_list =  np.array([11,22,33,44,55])
print("array form", data_list)

series =pd.Series(data=data_list)
print(series)
```

```
array form [11 22 33 44 55]
0    11
1    22
2    33
3    44
4    55
dtype: int32
```

```
import pandas as pd
import numpy as np

data_list =  np.array([11.5,22.55,33.75,44.1,55.0])
print("array form", data_list)

series =pd.Series(data=data_list)
print(series)
```

```
array form [11.5  22.55 33.75 44.1  55.  ]
0    11.50
1    22.55
2    33.75
3    44.10
4    55.00
dtype: float64
```

In [41]:

```
import pandas as pd
import numpy as np

datalist=11

series=pd.Series(datalist, index=[1,2,3])
print(series)
```

```
1    11
2    11
3    11
dtype: int64
```

```
import pandas as pd
import numpy as np

datalist=['yug','yami','yeager']
indices=['person','notaperson','eren']
series=pd.Series(datalist,index=indices)
print(series)
```

```
person          yug
notaperson     yami
eren         yeager
dtype: object
```