In [70]:
```
"""
Que-1
import numpy as np
list_ = [ ‘1’ , ’2’ , ‘3’ , ‘4’ , ‘5’ ]
array_list = np.array(object = list_)

Q1. Is there any difference in the data type of variables list_ and array_list
to print the data types of both the variables.
Ans 1-the main differece between data type of variable list and array_list are
the int type below are example


"""
import numpy as np
list_ = [ '1' , '2' , '3' , '4' , '5' ]
array_list = np.array(object = list_)



# list_.dtype
# array_list.dtype
```

In [77]:
```
"""
Que 2-Write a code to print the data type of each and every element of both th
arra_list.
"""

import numpy as np
list_ = [ '1' , '2' , '3' , '4' , '5' ]
array_list = np.array(object = list_)
# for the list

for i in list_:
    print(type(i))
```

```
<class 'str'>
<class 'str'>
<class 'str'>
<class 'str'>
<class 'str'>
```

In [78]:
```
# for the array_list

for i in array_list:
    print(type(array_list))
```

```
<class 'numpy.ndarray'>
<class 'numpy.ndarray'>
<class 'numpy.ndarray'>
<class 'numpy.ndarray'>
<class 'numpy.ndarray'>
```

In [81]:
```
"""
Que 3-Considering the following changes in the variable, array_list:
array_list = np.array(object = list_, dtype = int)
Will there be any difference in the data type of the elements present in both
arra_list? If so then print the data types of each and every element present i
and arra_list.
"""
list_ = [ '1' , '2' , '3' , '4' , '5' ]
array_list = np.array(object = list_,dtype=int)

# for the variable
for i in list_:
    print(type(i))
```

```
<class 'str'>
<class 'str'>
<class 'str'>
<class 'str'>
<class 'str'>
```

In [88]:
```
# for the array_list
for i in array_list:
    print(type(i))
```

```
<class 'numpy.int32'>
<class 'numpy.int32'>
<class 'numpy.int32'>
<class 'numpy.int32'>
<class 'numpy.int32'>
```

In [105]:
```
"""
Que 4-Consider the below code to answer further questions:
import numpy as np
num_list = [ [ 1 , 2 , 3 ] , [ 4 , 5 , 6 ] ]
num_array = np.array(object = num_list)
Q4. Write a code to find the following characteristics of variable, num_array:
(i) shape
(ii) size
Ans-4
"""
import pandas as pd
import numpy as np

num_list = [ [ 1 , 2 , 3 ] , [ 4 , 5 , 6 ] ]
num_list=pd.DataFrame(data=num_list)
num_array = np.array(object = num_list)

print("num_list data type:",num_list.shape)
print("num_array data type:",np.shape(num_array))
```

```
num_list data type: (2, 3)
num_array data type: (2, 3)
```

In [111]:
```
# for size
print("num_list data type:",num_list.size)
print("num_array data type:",num_array.size)
```

```
num_list data type: 6
num_array data type: 6
```

In [113]:
```
"""
Que 5-Write a code to create numpy array of 3*3 matrix containing zeros only,
using a numpy array creation function.
[Hint: The size of the array will be 9 and the shape will be (3,3).]

"""
# Ans 6-
np.zeros((3,3))
```

Out[113]:
```
array([[0., 0., 0.],
       [0., 0., 0.],
       [0., 0., 0.]])
```

In [114]:
```
"""
Que 6-Create an identity matrix of shape (5,5) using numpy functions?
[Hint: An identity matrix is a matrix containing 1 diagonally and other
elements will be 0.]

"""
import numpy as np
np.identity(5)
```

Out[114]:
```
array([[1., 0., 0., 0., 0.],
       [0., 1., 0., 0., 0.],
       [0., 0., 1., 0., 0.],
       [0., 0., 0., 1., 0.],
       [0., 0., 0., 0., 1.]])
```

In [ ]:
```

```