In [60]:
```
#Q1


import numpy as np
list_ = [ '1','2','3','4','5']

array_list = np.array(object = list_)
```

In [61]:
```
array_list
```

Out[61]:
```
array(['1', '2', '3', '4', '5'], dtype='<U1')
```

In [62]:
```
list_
#list_ contains same obj datatype
```

Out[62]:
```
['1', '2', '3', '4', '5']
```

In [64]:
```
print('Datatype:', array_list.dtype)
#uint8:Unsigned integer (0 to 255)
```

```
Datatype: <U1
```

In [65]:
```
#Q2
import numpy as np

arr = np.array([1, 2, 3, 4])

print(arr.dtype)
```

```
int64
```

In [66]:
```
import numpy as np

arr = np.array(['1','2','3','4'])

print(arr.dtype)
```

```
<U1
```

In [31]:
```
#Q3
list_ = [ '1','2','3','4','5']
array_list = np.array(object = list_, dtype = int)
```

In [34]:
```
print('Datatype:',array_list.dtype)
#in this array_list we assign type of data to integer
```

```
Datatype: int64
```

In [35]:
```
list_ = ['1','2','3','4','5']

print(type(list_))
#list dtype contains same list type of Data.
```

```
<class 'list'>
```

In [36]:
```
#Q4

import numpy as np
num_list = [ [ 1 , 2 , 3 ] , [ 4 , 5 , 6 ] ]
num_array = np.array(object = num_list)
```

In [40]:
```
num_array.shape
```

Out[40]:
```
(2, 3)
```

In [42]:
```
num_array.size
```

Out[42]:
```
6
```

In [45]:
```
num_list
```

Out[45]:
```
[[1, 2, 3], [4, 5, 6]]
```

In [55]:
```
#Q5

import numpy as np

# creating 3D array
arr = np.zeros((3, 3, 3))

print(arr)
```

```
[[[0. 0. 0.]
  [0. 0. 0.]
  [0. 0. 0.]]

 [[0. 0. 0.]
  [0. 0. 0.]
  [0. 0. 0.]]

 [[0. 0. 0.]
  [0. 0. 0.]
  [0. 0. 0.]]]
```

In [56]:
```
arr.size
```

Out[56]:
```
27
```

In [57]:
```
arr.shape
```

Out[57]:
```
(3, 3, 3)
```

In [59]:
```
#Q6


import numpy as np

dimension = int(input("Enter the dimension of identitiy matrix: "))
```

```
identity_matrix = np.identity(dimension, dtype="int")
print(identity_matrix)
```

```
[[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 [ ]: