

Assignment -2

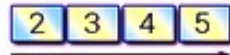
WRITE PYTHON PROGRAMS FOR THE FOLLOWING QUESTIONS

1. Show that a List in python can
 - store elements of different types (integer, float, string, etc.)
 - store duplicate elements
2. Check if an Element Exists in a List (Note make use of 'in')
3. Find the length of the list.
4. Create a list with value $n ** 2$ where n is a number from 1 to 5
5. Python program to print the elements of an array in reverse order
7. Python program to sort the elements of an array in descending order
8. Compare 2 lists in python(use The cmp() function
 - The set() function and == operator
 - The sort() function and == operator
9. Remove a specific item from a list by using the three methods remove(), pop(), and clear().
10. Write a NumPy program to convert an integer array to a floating type.
(`x = np.asfarray(a)`)
11. Write a NumPy program to convert a list and tuple into arrays.
12. Write a NumPy program to convert a list and tuple into arrays.(`np.asarray`)

1D Array

```
>>> import numpy as np
>>> x = np.arange(2, 6).reshape(4)
>>> x
array([ 2, 3, 4, 5])
```

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axis 0
shape : (4)

2D Array

```
>>> import numpy as np
>>> x = np.arange(2, 10).reshape(2, 4)
>>> x
array([[2, 3, 4, 5],
       [6, 7, 8, 9]])
```

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axis 1
shape : (2, 4)

3D Array

```
>>> import numpy as np
>>> x = np.arange(24).reshape(4, 3, 2)
>>> x
array([[[[0, 1]),    [[6, 7]),    [[12, 13]),  [[18, 19]),
       [2, 3]),    [8, 9]),    [14, 15]),  [20, 21]),
       [4, 5]),    [10, 11]),  [16, 17]),  [22, 23]])
>>>
```



```
shape : (4, 3, 2)
```