LAB Logbook

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Lab 1

For the Lab 1 in Week 1, students were asked to create a vector using np.arange method and doing some changes on that vector to be able to practice NumPy and Python.

Firstly, because my student ID is 2351343, I created a vector of 43 elements. Secondly, I changed this matrix into a 2-d array with 1 row using **reshape** method. Thirdly, I used NumPy's **empty_like** method and **slicing** to be able to create an independent array and save the values of the matrix to that independent array. I checked the **shape** attribute values of both matrixes. I printed all results at the end of the steps.

My code and results:

Week 1 Assignment

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Installation process is done in the below cell.

In [1]:
```
import numpy as np
```

1) A vector that has 43 elements is created with np.arange method.

In [22]:
```
vector = np.arange(43)
print(vector)
```

```
[ 0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42]
```

2) Matrix is changed into a to 2-d array with 1 row.

In [23]:
```
vector = vector.reshape(43,1)
print(vector)
```

```
[[ 0]
 [ 1]
 [ 2]
 [ 3]
 [ 4]
 [ 5]
 [ 6]
 [ 7]
 [ 8]
 [ 9]
 [10]
 [11]
 [12]
 [13]
 [14]
 [15]
 [16]
 [17]
 [18]
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 [29]
 [30]
 [31]
 [32]
 [33]
 [34]
 [35]
 [36]
 [37]
 [38]
 [39]
 [40]
 [41]
 [42]]
```

3) The constructed array is saved into another array.

In [24]:
```
new_array_2d = np.empty_like(vector)
new_array_2d[:,:] = vector
print(new_array_2d)
```

```
[[ 0]
 [ 1]
 [ 2]
 [ 3]
 [ 4]
 [ 5]
 [ 6]
 [ 7]
 [ 8]
 [ 9]
 [10]
 [11]
 [12]
 [13]
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 [30]
 [31]
 [32]
 [33]
 [34]
 [35]
 [36]
 [37]
 [38]
 [39]
 [40]
 [41]
 [42]]
```

4) Shape attribute value is checked for both arrays.

In [26]:
```
print(vector.shape)
print(new_array_2d.shape)
```

```
(43, 1)
(43, 1)
```

Lab 2

Lab 3

Lab 4

Lab 5

Lab 6

Lab 7

Lab 8

Lab 9

Lab 10

Lab 11

Lab 12