

# QN1)

Consider the vector [10, 11, 12, 13, 14], how to build a new vector with 5 consecutive zeros interleaved between each value?

```
PS D:\git> & "C:/Users/Sruthik Reddy/AppData/Local/Programs/Python/Python310/python.exe" d:/git/cognizance/Task-8/Problem-1.py
Beginn with number
10
End with number
14
10. 0. 0. 0. 0. 0. 11. 0. 0. 0. 0. 0. 12. 0. 0. 0. 0. 0. 13. 0. 0. 0. 0. 0. 14
PS D:\git> █
```

## QN2)

Consider two random array A and B, check if they are equal

The Array's are

```
[1, 2, 3, 4, 5]  
[1, 2, 3, 4, 5]
```

True

The Array's are

```
[1, 2, 3, 4, 5]  
[1, 2, 3, 5, 6]
```

False

## QN3)

What is the result of the following expression ?

```
print(0 * np.nan)
print(np.nan != np.nan)
print(np.inf > np.nan)
print(np.nan - np.nan)
print(0.3 == 3 * 0.1)
```

```
PS D:\git> & "C:/Users/Sruthik Reddy"
nan
True
False
nan
False
PS D:\git>
```

## QN4)

Convert the first character of each element in a series to uppercase?

Sample Input

```
ser = pd.Series(['amrita', 'school', 'of', 'engineering', 'chennai', 'campus'])
```

Output:

```
PS D:\git> & "C:/Users/Sruthik Reddy/AppData/Local/Programs/Python/Python38-64/Scripts/python" -i
Python 3.8.6 Shell
> ser = pd.Series(['amrita', 'school', 'of', 'engineering', 'chennai', 'campus'])
> ser
0    amrita
1    school
2         of
3  engineering
4    chennai
5    campus
dtype: object
> ser.str.capitalize()
0    Amrita
1    School
2         Of
3  Engineering
4    Chennai
5    Campus
dtype: object
> ser.str.capitalize().join(' ')
Amrita School Of Engineering Chennai Campus
```

# QN5)

Do any two Exercises using Numpy

- 1.addition of 2 numpy arrays
- 2.Multiplying a matrix
- 3.Identity Matrix
- 4.Array datatype conversion
- 5.Array re-dimensioning
- 6.Custom Sequence Generation
- 7.Getting the positions (indexes) where elements of 2 numpy arrays match

```
1st Input array : [ 2 -7 5]
2nd Input array : [ 5 8 -5]
output added array :
[7 1 0]
```

```
m1: [[1 3 4]
[1 5 5]]
m2: [[1 4]
[2 5]
[3 6]]
```

```
m1*m2 = [[19 43]
[26 59]]
```

```
m1: ([1, 4, 5], [1, 6, 9], [2, 11, 31])
```

```
m2: ([0, 6, 5], [5, 6, 7], [9, 5, 12])
```

```
m1*m2 = [[ 65  55  93]
[111  87 155]
[334 233 459]]
```