

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

```
D:\Users\jaiad\PycharmProjects\jai\venv\Scripts\python.exe "C:/Cognizance club/Task8/Q1.py"
First Number: 10
last number : 16
[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.  0.  0.  0.  0.  0. 15.  0.  0.  0.  0.  0.
 16.]

Process finished with exit code 0
```

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

```
D:\Users\jaiad\PycharmProjects\jai\venv\Scripts\python.exe "C:/Cognizance club/Task8/Q2.py"
enter the array elements using space : 1 2 3 4 5
enter the array elements using space : 1 2 3 4 5
True

Process finished with exit code 0
```

3. 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)
```

```
D:\Users\jaiad\PycharmProjects\jai\venv\Scripts\python.exe "C:/Cognizance club/Task8/Q3.py"
nan
True
False
nan
False
```

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

```
D:\Users\jaiad\PycharmProjects\jai\venv\Scripts\python.exe "C:/Cognizance club/Task8/Q4.py"
Enter the string : i only simp for mai sakurajima
I Only Simp For Mai Sakurajima

Process finished with exit code 0
```

5. Do any two Exercises using NumPy:

- a. addition of 2 NumPy arrays:

```
D:\Users\jaiad\PycharmProjects\jai\venv\Scripts\python.exe "C:/Cognizance club/Task8/Q5.py"
the number of elements : 5
enter the elements for list 1 : 1
enter the elements for list 1 : 2
enter the elements for list 1 : 3
enter the elements for list 1 : 4
enter the elements for list 1 : 5
enter the elements for list 2 : 6
enter the elements for list 2 : 7
enter the elements for list 2 : 8
enter the elements for list 2 : 9
enter the elements for list 2 : 0
1st Input array : [1 2 3 4 5]
2nd Input array : [6 7 8 9 0]
output added array : [ 7  9 11 13  5]

Process finished with exit code 0
```

- b. Getting the positions (indexes) where elements of 2 NumPy arrays match:

```
D:\Users\jaiad\PycharmProjects\jai\venv\Scripts\python.exe "C:/Cognizance club/Task8/Q5 Indexing.py"
the number of elements : 3
enter the elements for list 1 : 1
enter the elements for list 1 : 2
enter the elements for list 1 : 3
enter the elements for list 2 : 1
enter the elements for list 2 : 4
enter the elements for list 2 : 3
1 Maths in 0
3 Maths in 2

Process finished with exit code 0
```