

Task-8

Sample Outputs:-

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

```
q1.py > ...
1 import numpy as np
2
3 First = int(input("First Number: "))
4 second = int(input("Last Number: "))
5
6 arr = np.arange(First, (second+1))
7 print (arr)
8 res = []
9 for i in arr:
10     res.append(i)
11     for j in range(5):
12         res.append(0)
13 for k in range(5):
14     res.pop()
15 print(res)
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL Python + - [] ^ X

Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell <https://aka.ms/pscore6>

PS E:\Desktop\Task-8> & C:/Users/siddu/AppData/Local/Programs/Python/Python310/python.exe e:/Desktop/Task-8/q1.py
First Number: 10
Last Number: 14
[10 11 12 13 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 E:\Desktop\Task-8> █

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

```
1 import numpy as np
2
3 first = np.array(input("First array:\n"))
4 second = np.array(input("Second array:\n"))
5
6 print(first == second)
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL Python + - [] ^ x

```
PS E:\Desktop\Task-8> & C:/Users/siddu/AppData/Local/Programs/Python/Python310/python.exe e:/Desktop/Task-8/q2.py
First array:
1,0,0,0,1,0
Second array:
0,0,1,1,0,1
False
PS E:\Desktop\Task-8> █
```

3.) What is the result of the following expression ?

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
PS E:\Desktop\Task-8> & C:/Users/siddu/AppData/Local/Programs/Python/Python310/python.exe e:/Desktop/Task-8/q3.py
nan
True
False
nan
False
PS E:\Desktop\Task-8> █
```

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

```
q4.py > ...
1  import pandas as pd
2  import string
3
4  ser = pd.Series(['amrita', 'school', 'of', 'engineering'])
5  str = " ".join(ser)
6  print(string.capwords(str))
7  print(str.upper())
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
PS E:\Desktop\Task-8> & C:/Users/siddu/AppData/Local/Programs/Python/Python310/python.exe e:/Desktop/Task-8/q4.py
Amrita School Of Engineering
AMRITA SCHOOL OF ENGINEERING
PS E:\Desktop\Task-8> █
```

5.) 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

A.) I used the first three took 2 matrices one identity and another a random matrix then added those two and also multiplied them

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

```
PS E:\Desktop\Task-8> & C:/Users/siddu/AppData/Local/Programs/Python/Python310/python.exe e:/Desktop/Task-8/q5.py
[[ 2.  2.  3.]
 [ 4.  6.  6.]
 [ 7.  8. 10.]]
[[1. 2. 3.]
 [4. 5. 6.]
 [7. 8. 9.]]
PS E:\Desktop\Task-8> 
```