

COGNIZANCE TASKS

TASK 3: [PYTHON - EASY LVL]

Question-1

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

Q1_task3.py

```
Enter starting and ending numbers
10
14
[10 11 12 13 14]
New Vector:
[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.]
```

Question-2

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

Q2_task3.py

```
Enter the size of the array
8
First array:
[4 4 1 2 3 1 4 2]
Second array:
[0 4 0 4 1 0 4 2]
Are the arrays equal?
False
```

Question-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)
```

Q3_task3.py

```
nan
True
False
nan
False
```

Question-4

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

Sample Input

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

Sample Output

Amrita School Of Engineering Chennai Campus

q4_task3.py

```
PS C:\Users\HP\Downloads> & C:/Python/Python_310/python.exe c:/Users/HP/Downloads/q4_task3.py
amrita school of engineering chennai campus
Amrita School Of Engineering Chennai Campus
PS C:\Users\HP\Downloads> & C:/Python/Python_310/python.exe c:/Users/HP/Downloads/q4_task3.py
this is a part of cognizance task3
This Is A Part Of Cognizance Task3
```

Question-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

Q5a_task3.py (matrix multiplication)

```
PS C:\Users\HP\Downloads> & C:/Python/Python_310/python.exe c:/Users/HP/Downloads/q5a_task3.py
m1 =
[[1 3 4]
 [3 0 5]]
m2 =
[[1 1 2 4 1]
 [2 5 4 5 3]
 [4 0 3 3 0]]
m3 =
[[23 16 26 31 10]
 [23 3 21 27 3]]
```

Q5b_task3.py (datatype conversion)

```
PS C:\Users\HP\Downloads> & C:/Python/Python_310/python.exe c:/Users/HP/Downloads/q5b_task3.py
[0 1 2 3 4 5 6 7 8] uint8
[0. 1. 2. 3. 4. 5. 6. 7. 8.] float32
```