

## TASK-8 OUTPUTS

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### Question-1

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

INPUT:

```
import numpy as np
S = np.array([1, 2, 3, 4, 5])
n_of_zeros = 5
do = np.zeros(len(S) + (len(S)-1)*n_of_zeros)
do[::n_of_zeros+1] = S
print(do)
```

o/p:

```
C:\Users\laxmi\PycharmProjects\pythonProject\pythonProject1\venv\Scripts\python.exe C:/Users/laxmi/PycharmProjects/pythonProject/pyt
[1. 0. 0. 0. 0. 0. 2. 0. 0. 0. 0. 0. 3. 0. 0. 0. 0. 0. 4. 0. 0. 0. 0. 0.
 5.]

Process finished with exit code 0
```

### Question-2

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

INPUT:

```
import numpy as np
A = input("Enter the array:").split()
A = np.array(list(map(int,A)))
B = input("Enter the array:").split()
B = np.array(list(map(int,B)))
checked = np.allclose(A,B)
print(checked)
```

o/p:

```
C:\Users\laxmi\PycharmProjects\pythonProject\pythonProject1\venv\Scripts\python.exe C:/Users/laxmi/PycharmProjects/p
Enter the array:1 0 0 0 1 0
Enter the array:0 0 1 1 0 1
False

Process finished with exit code 0
```

### 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)
```

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INPUT:

```
import numpy as np
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)
```

o/p:

```
C:\Users\laxmi\PycharmProjects\pythonProject\pythonProject1\venv\Scripts\python.exe C:/Users/laxmi/PycharmProjects/p
nan
True
False
nan
False

Process finished with exit code 0
```

## 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'])
```

O/P:

```
C:\Users\laxmi\PycharmProjects\pythonProject\pythonProject1\venv\Scripts\python.exe C:/Users/laxmi/PycharmProjects/pyth
Amrita School Of Engineering Chennai Campus

Process finished with exit code 0
```

## QUESTION-5

**Do any two Exercises using NumPy**

1. addition of 2 NumPy arrays

INPUT:

```
import numpy as np
array1 = np.array([1,2,3])
array2 = np.array([4,5,6])
result=np.add(array1, array2)
print(result)
```

OUTPUT:

```
C:\Users\laxmi\PycharmProjects\pythonProject\pythonProject1\venv\Scripts\python.exe C:/Users/
[5 7 9]
```

```
Process finished with exit code 0
```

### 3. Identity Matrix

INPUT:

```
import numpy as np
a = np.identity(2)
b = np.identity(3)
c = np.identity(4)
print(a)
print(b)
print(c)
```

OUTPUT:

```
C:\Users\laxmi\PycharmProjects\pythonProject\pythonProject1\venv\Scripts\python.exe C:/Users/laxmi/Py
[[1.  0.]
 [0.  1.]]
[[1.  0.  0.]
 [0.  1.  0.]
 [0.  0.  1.]]
[[1.  0.  0.  0.]
 [0.  1.  0.  0.]
 [0.  0.  1.  0.]
 [0.  0.  0.  1.]]
```