



Task-08

Python - Medcore

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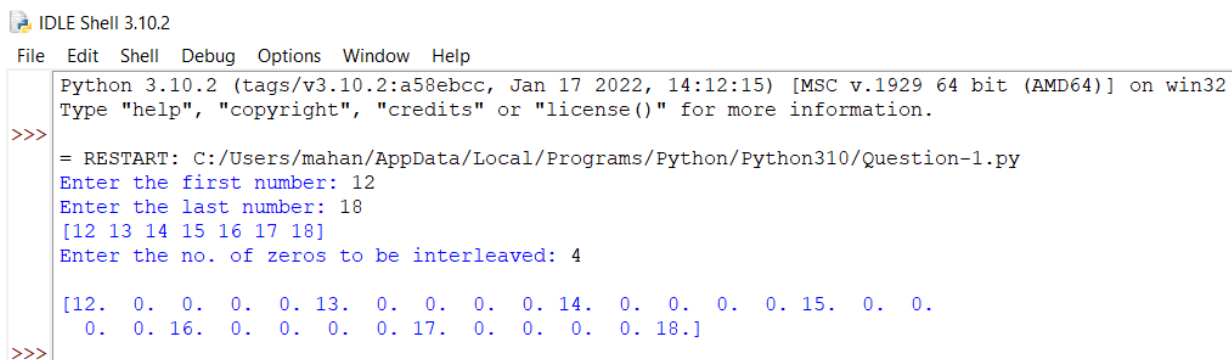
Section: CSE AIE A1

Roll No: 21026

Question-1

```
import numpy as np
v=input("Enter the first number: ")
k=input("Enter the last number: ")
v=int(v)
k=int(k)
A = np.arange(v,k+1)
print(A)
B=input("Enter the no. of zeros to be interleaved: ")
B=int(B)
C = np.zeros(len(A) + (len(A)-1)*(B))
C[::B+1]=A
print()
print(C)
```

Question-1 (Output)



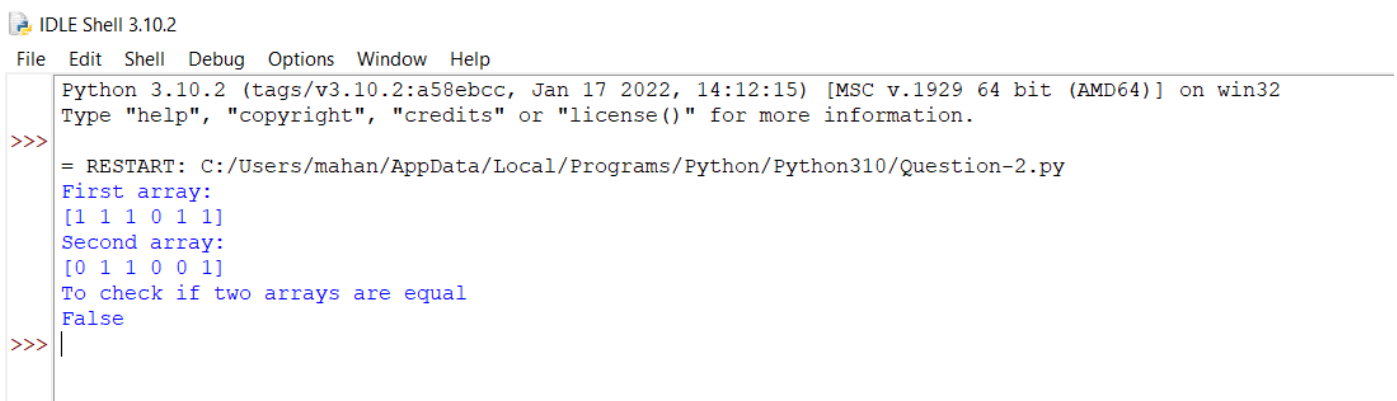
```
IDLE Shell 3.10.2
File Edit Shell Debug Options Window Help
Python 3.10.2 (tags/v3.10.2:a58ebcc, Jan 17 2022, 14:12:15) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:/Users/mahan/AppData/Local/Programs/Python/Python310/Question-1.py
Enter the first number: 12
Enter the last number: 18
[12 13 14 15 16 17 18]
Enter the no. of zeros to be interleaved: 4

[12.  0.  0.  0.  0. 13.  0.  0.  0.  0. 14.  0.  0.  0.  0. 15.  0.  0.
  0.  0. 16.  0.  0.  0.  0. 17.  0.  0.  0.  0. 18.]
>>>
```

Question-2

```
import numpy as np
v = np.random.randint(0,2,6)
print("First array:")
print(v)
k = np.random.randint(0,2,6)
print("Second array:")
print(k)
print("To check if two arrays are equal ")
array_equal = np.allclose(v, k)
print(array_equal)
```

Question-2 (Output)




```
IDLE Shell 3.10.2
File Edit Shell Debug Options Window Help
Python 3.10.2 (tags/v3.10.2:a58ebcc, Jan 17 2022, 14:12:15) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:/Users/mahan/AppData/Local/Programs/Python/Python310/Question-2.py
First array:
[1 1 1 0 1 1]
Second array:
[0 1 1 0 0 1]
To check if two arrays are equal
False
>>> |
```

Question-3

```
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)
```

Question-3 (Output)

 IDLE Shell 3.10.2

File Edit Shell Debug Options Window Help

Python 3.10.2 (tags/v3.10.2:a58ebcc, Jan 17 2022, 14:12:15) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.

>>>

= RESTART: C:/Users/mahan/AppData/Local/Programs/Python/Python310/Question-3.py

nan

True

False

nan

False

>>>

Question-4

```
import pandas as pd

ser = pd.Series(['Data', 'science', 'Machine', 'learning', 'Artificial',
'intelligence'])

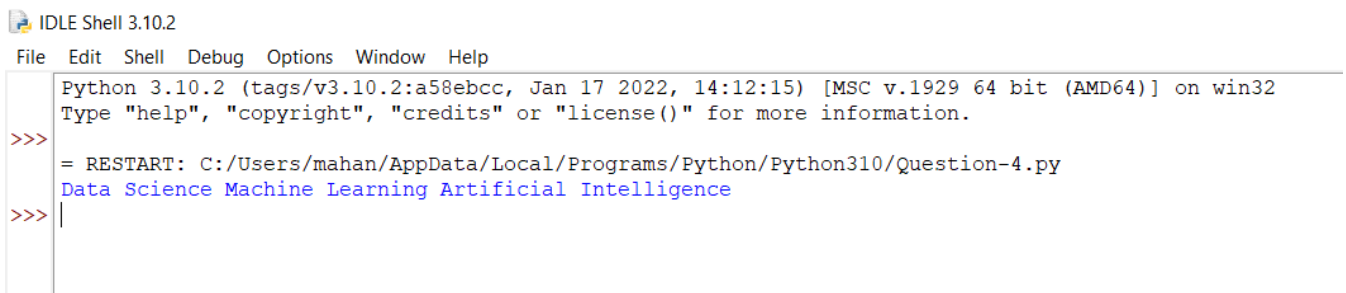
for i in ser:

    v = i

    k = v.capitalize()

    print(k , end = " ")
```

Question-4 (Output)



The screenshot shows the IDLE Shell 3.10.2 interface. The menu bar includes File, Edit, Shell, Debug, Options, Window, and Help. The shell window displays the following text:

```
Python 3.10.2 (tags/v3.10.2:a58ebcc, Jan 17 2022, 14:12:15) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:/Users/mahan/AppData/Local/Programs/Python/Python310/Question-4.py
Data Science Machine Learning Artificial Intelligence
>>> |
```

Question-5

```
import numpy as np
```

```
# Q5 (ii)
```

```
# Multiplying a matrix
```

```
A = np.random.randint(0,4,(3,3))
```

```
B = np.random.randint(0,4,(3,4))
```

```
print('A =\n',A)
```

```
print('B =\n',B)
```

```
M = np.dot(A,B)
```

```
print("")
```

```
print('Matrix Multiplication =')
```

```
print("")
```

```
print(M)
```

```
print("")
```

```
# Q5 (iii)
```

```
# Identity matrix
```

```
I = np.eye(5)
```

```
print("Identity Matrix :")
```

```
print("")
```

```
print(I)
```

Question-5 (Output)

IDLE Shell 3.10.2

File Edit Shell Debug Options Window Help

Python 3.10.2 (tags/v3.10.2:a58ebcc, Jan 17 2022, 14:12:15) [MSC v.1929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.

>>>

= RESTART: C:/Users/mahan/AppData/Local/Programs/Python/Python310/Question-5.py

A =

[[0 3 3]

[0 2 0]

[0 1 2]]

B =

[[0 3 2 2]

[2 3 1 2]

[0 3 2 3]]

Matrix Multiplication =

[[6 18 9 15]

[4 6 2 4]

[2 9 5 8]]

Identity Matrix :

[[1. 0. 0. 0. 0.]

[0. 1. 0. 0. 0.]

[0. 0. 1. 0. 0.]

[0. 0. 0. 1. 0.]

[0. 0. 0. 0. 1.]]

>>> |