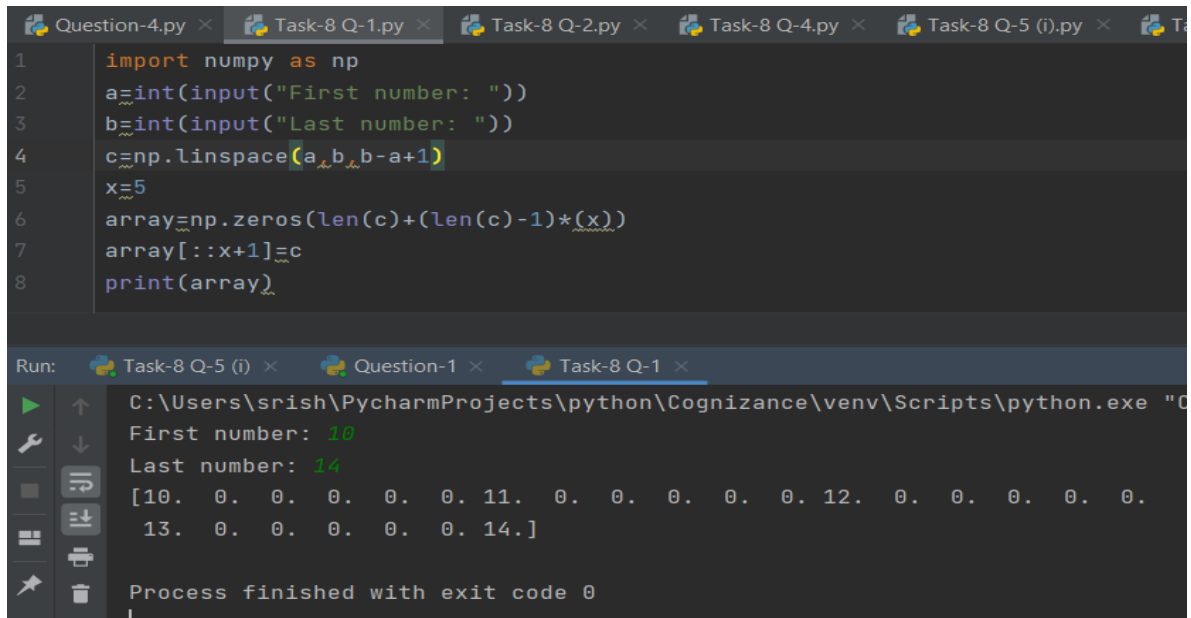


# Cognizance

## Task-8

Q1:



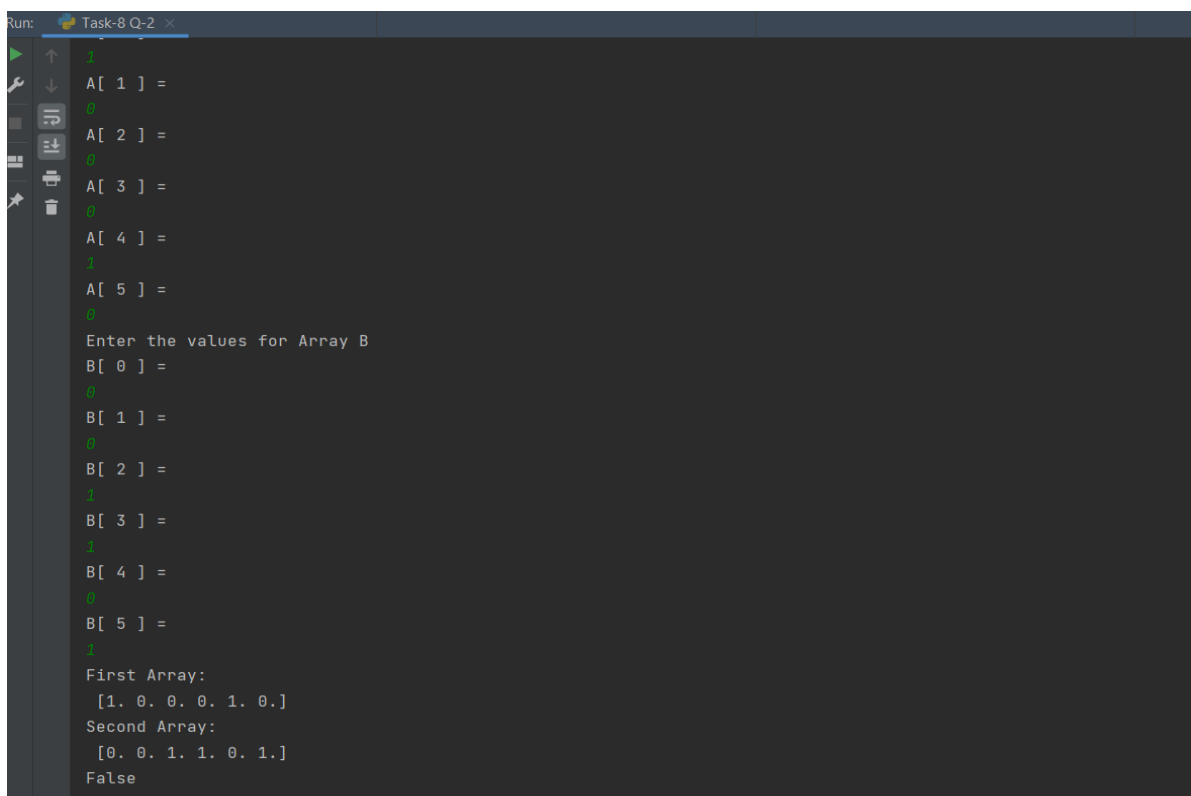
The screenshot shows a PyCharm IDE with a Python script in the editor and its execution output in the Run console. The script defines a function to create a 2D array of zeros and fill it with a sequence of numbers from 'a' to 'b'.

```
1 import numpy as np
2 a=int(input("First number: "))
3 b=int(input("Last number: "))
4 c=np.linspace(a,b,b-a+1)
5 x=5
6 array=np.zeros(len(c)+(len(c)-1)*(x))
7 array[:,x+1]=c
8 print(array)
```

The Run console shows the execution of the script with the following output:

```
C:\Users\srish\PycharmProjects\python\Cognizance\venv\Scripts\python.exe "C:\Users\srish\PycharmProjects\python\Cognizance\venv\Scripts\python.exe"
First number: 10
Last number: 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.]
Process finished with exit code 0
```

Q2:



The screenshot shows a PyCharm IDE with a Python script in the editor and its execution output in the Run console. The script defines two arrays, A and B, and prints their values.

```
1 A[ 1 ] =
2 0
3 A[ 2 ] =
4 0
5 A[ 3 ] =
6 0
7 A[ 4 ] =
8 1
9 A[ 5 ] =
10 0
11 Enter the values for Array B
12 B[ 0 ] =
13 0
14 B[ 1 ] =
15 0
16 B[ 2 ] =
17 1
18 B[ 3 ] =
19 1
20 B[ 4 ] =
21 0
22 B[ 5 ] =
23 1
24 First Array:
25 [1.  0.  0.  0.  1.  0.]
26 Second Array:
27 [0.  0.  1.  1.  0.  1.]
28 False
```

Q3:

```
Question-4.py x Task-8 Q-1.py x Task-8 Q-2.py x Task-8 Q-3.py x
1 import numpy as np
2 print(0 * np.nan)
3 print(np.nan != np.nan)
4 print(np.inf > np.nan)
5 print(np.nan - np.nan)
6 print(0.3 == 3 * 0.1)
7 |

Run: Task-8 Q-5 (i) x Question-1 x Task-8 Q-3 x
C:\Users\srish\PycharmProjects\python\Cognizance\venv\Scripts\python.exe "C:/Users/srish/PycharmProjects/python/Cognizance/venv/Scripts/python.exe"
nan
True
False
nan
False

Process finished with exit code 0
```

Q4:

```
Question-4.py x Task-8 Q-1.py x Task-8 Q-2.py x Task-8 Q-4.py x Task-8 Q-5 (i).py x Task-8 Q-3.py x
import pandas as pd
ser = pd.Series(['amrita', 'school', 'of', 'engineering', 'chennai', 'campus'])
Ser=""
for i in range(len(ser)):
    ser[i]=ser[i].capitalize()
    Ser=Ser+ser[i]+" "
print(Ser)

Run: Task-8 Q-5 (i) x Question-1 x Task-8 Q-4 x
C:\Users\srish\PycharmProjects\python\Cognizance\venv\Scripts\python.exe "C:/Users/srish/PycharmProjects/python/Cognizance/venv/Scripts/python.exe"
Amrita School Of Engineering Chennai Campus
```

Q5) i) Addition of two numpy arrays.

```
Question-4.py x Task-8 Q-1.py x Task-8 Q-2.py x Task-8 Q-4.py x Task-8 Q-5 (i).py x
1
2 import numpy as np
3 arr_1=np.array([[1,12,34],[20,10,21]])
4 print("First array: \n",arr_1)
5 arr_2=np.array([[9,8,5],[15,18,3]])
6 print("Second array: \n",arr_2)
7 Sum=np.add(arr_1,arr_2)
8 print("Sum of the two arrays: \n",Sum)
```

Run: Task-8 Q-5 (i) x

C:\Users\srish\PycharmProjects\python\Cognizance\venv\Scripts\python.  
First array:  
[[ 1 12 34]  
[20 10 21]]  
Second array:  
[[ 9 8 5]  
[15 18 3]]  
Sum of the two arrays:  
[[10 20 39]  
[35 28 24]]

Q5)ii)Array Re-dimensioning

```
Question-4.py x Task-8 Q-1.py x Task-8 Q-2.py x Task-8 Q-4.py x Task-8 Q-5 (i).py x
9 print("Array Redimensioning")
10 Array=np.vstack((arr_1,Sum))
11 print("Array: \n",Array)
12 x=int(input("Enter the no of rows: "))
13 y=int(input("Enter the number of columns: "))
14 Array=Array.reshape(x,y)
15 print(Array)
16 #Identity matrix
17 I=np.eye(3)#(Array with dimensions nxn)
18 print("Identity Matrix: \n",I)
```

Run: Task-8 Q-5 (i) x

Sum of the two arrays:  
[[10 20 39]  
[35 28 24]]  
Array Redimensioning  
Array:  
[[ 1 12 34]  
[20 10 21]  
[10 20 39]  
[35 28 24]]  
Enter the no of rows: 2  
Enter the number of columns: 4  
[[ 1 12 34 20 10 21]  
[10 20 39 35 28 24]]  
Identity Matrix:  
[[1. 0. 0.]  
[0. 1. 0.]  
[0. 0. 1.]]