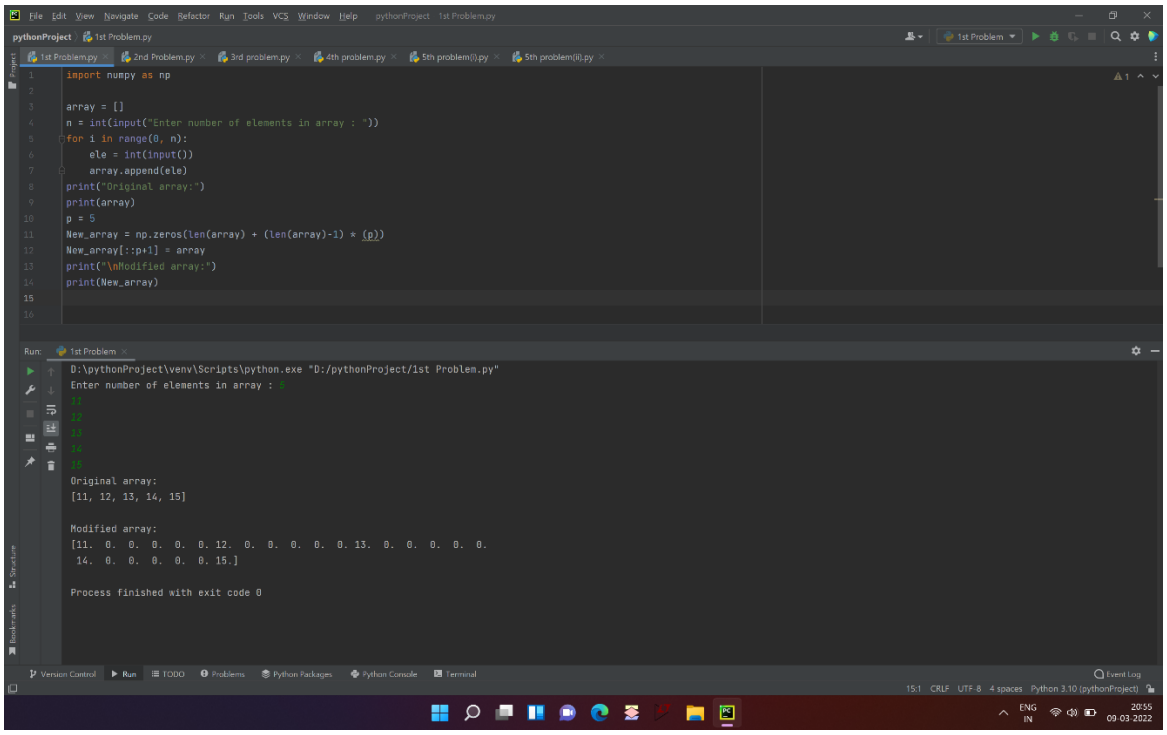
TASK-8

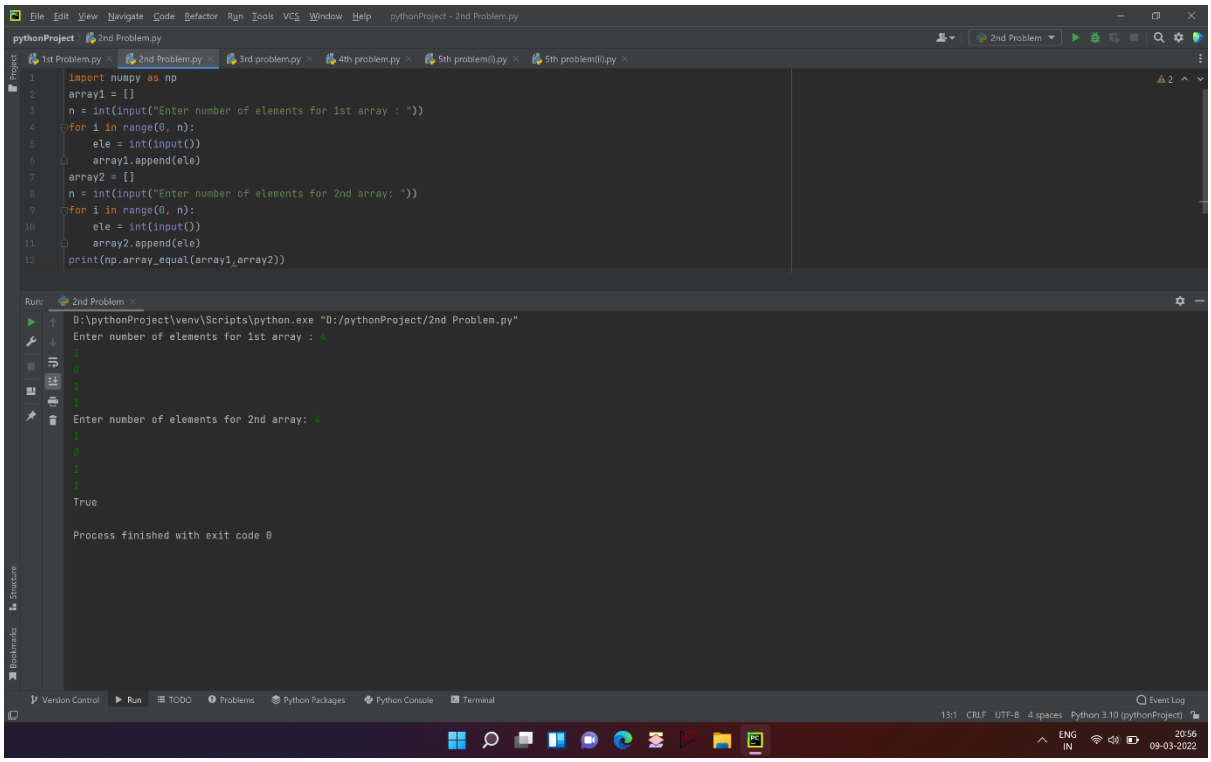
1) A program for building a new vector with 5 consecutive zeros interleaved between each value of the given vector:



```
import numpy as np

array = []
n = int(input("Enter number of elements in array : "))
for i in range(0, n):
    ele = int(input())
    array.append(ele)
print("Original array:")
print(array)
p = 5
New_array = np.zeros(len(array) + (len(array)-1) * (p))
New_array[::p+1] = array
print("\nModified array:")
print(New_array)
```

```
D:\pythonProject\venv\Scripts\python.exe "D:/pythonProject/1st Problem.py"
Enter number of elements in array : 5
11
12
13
14
15
Original array:
[11, 12, 13, 14, 15]

Modified array:
[11.  0.  0.  0.  0. 12.  0.  0.  0.  0. 13.  0.  0.  0.  0. 14.  0.  0.
  0.  0. 15.]

Process finished with exit code 0
```

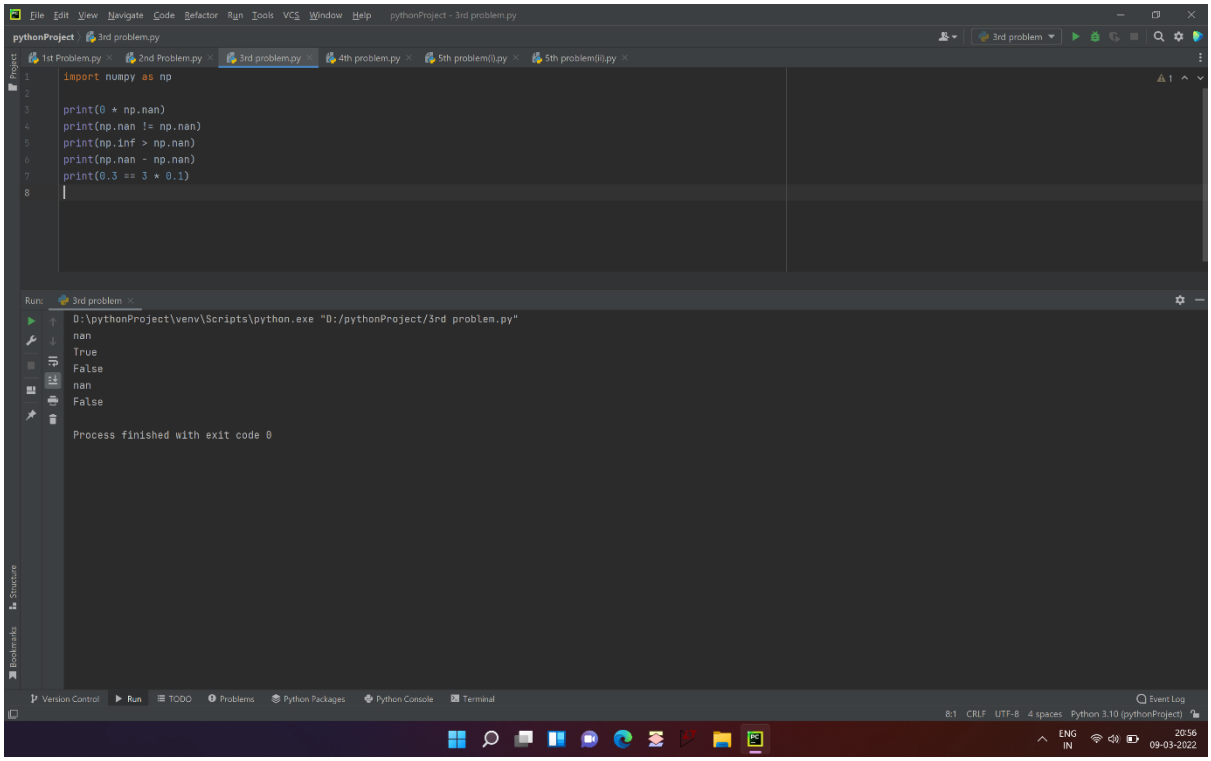
2) A program for checking two arrays are equal or not:



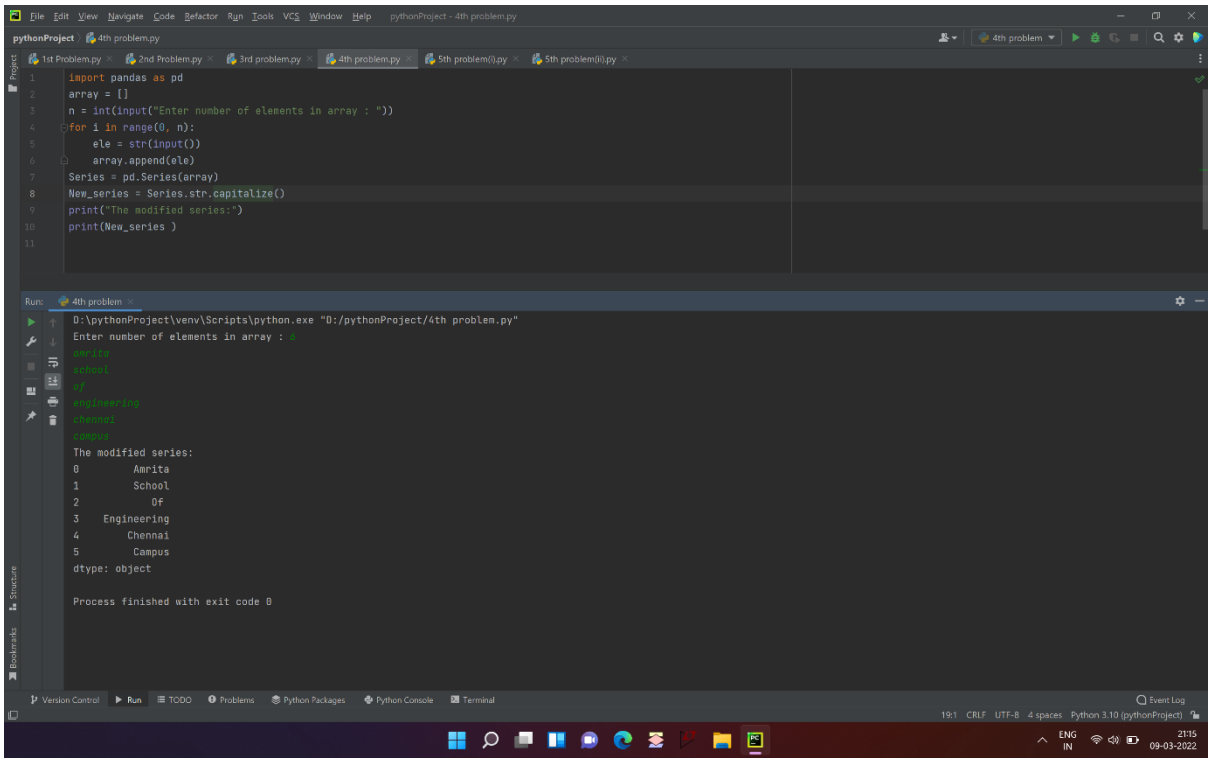
```
import numpy as np
array1 = []
n = int(input("Enter number of elements for 1st array : "))
for i in range(0, n):
    ele = int(input())
    array1.append(ele)
array2 = []
n = int(input("Enter number of elements for 2nd array: "))
for i in range(0, n):
    ele = int(input())
    array2.append(ele)
print(np.array_equal(array1,array2))
```

```
D:\pythonProject\venv\Scripts\python.exe "D:/pythonProject/2nd Problem.py"
Enter number of elements for 1st array : 4
2
0
1
2
Enter number of elements for 2nd array: 4
2
0
1
2
True

Process finished with exit code 0
```

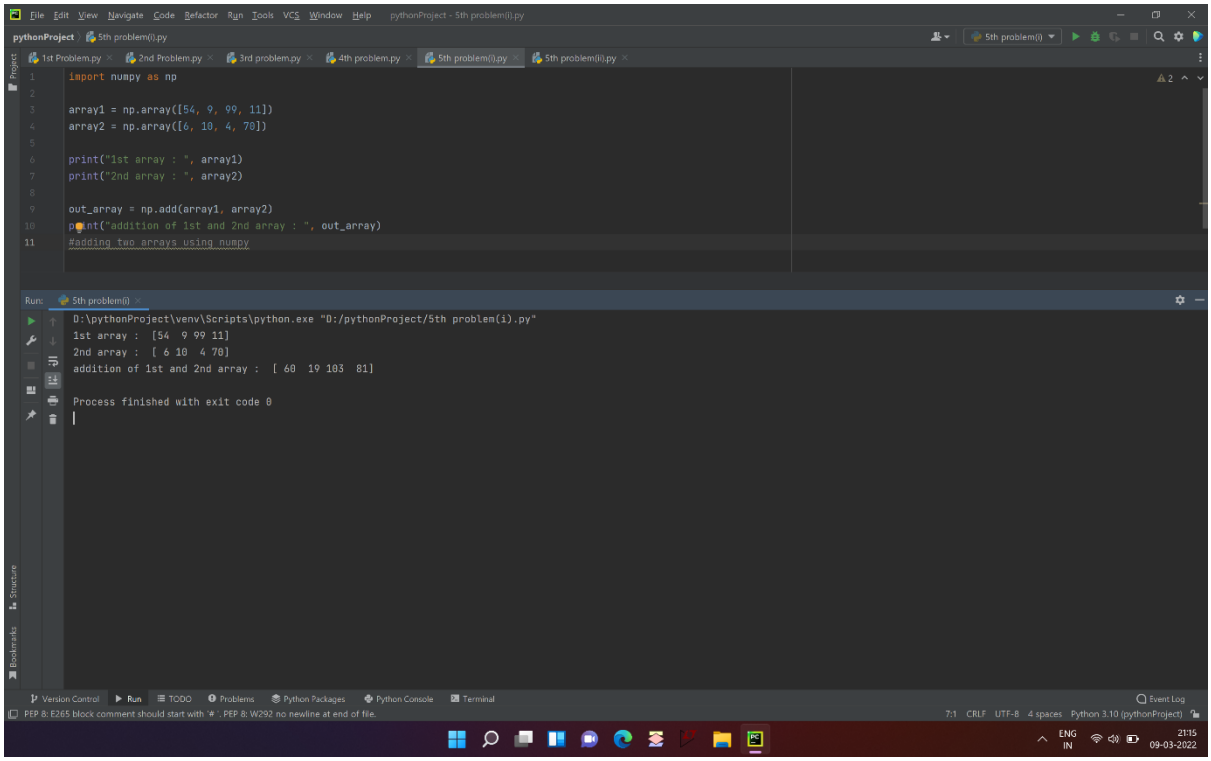
3) Output for the given expression:



4) A program for converting the first character of each element in a series to uppercase.



5) 1. Adding two NumPy arrays by Numpy:



5) 3. Identity Matrix