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ROLL NUMBER: 546

COURSE: MSc CS

SUBJECT: ALGORITHM

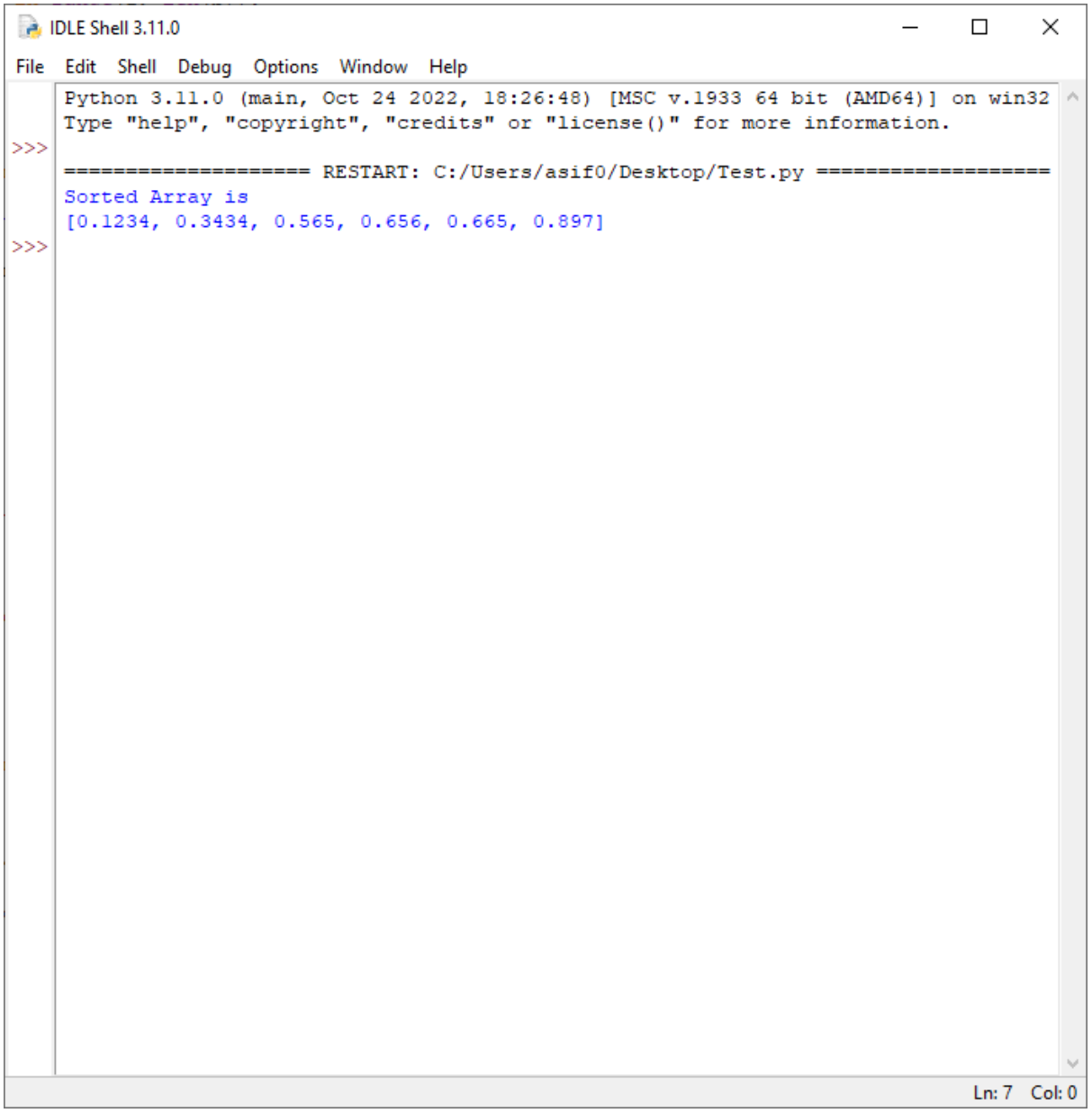
TOPIC: BUCKET SORT ALGORITHM

PRACTICAL 4

```
# Python3 program to sort an array
# using bucket sort
def insertionSort(b):
    for i in range(1, len(b)):
        up = b[i]
        j = i - 1
        while j >= 0 and b[j] > up:
            b[j + 1] = b[j]
            j -= 1
        b[j + 1] = up
    return b

def bucketSort(x):
    arr = []
    slot_num = 10 # 10 means 10 slots, each
                  # slot's size is 0.1
    for i in range(slot_num):
        arr.append([])

    # Put array elements in different buckets
    for j in x:
        index_b = int(slot_num * j)
        arr[index_b].append(j)

    # Sort individual buckets
    for i in range(slot_num):
        arr[i] = insertionSort(arr[i])

    # concatenate the result
    k = 0
```

```
        for i in range(slot_num):
                for j in range(len(arr[i])):
                        x[k] = arr[i][j]
                        k += 1
        return x


# Driver Code
x = [0.897, 0.565, 0.656,
        0.1234, 0.665, 0.3434]
print("Sorted Array is")
print(bucketSort(x))
```

OUTPUT:


IDLE Shell 3.11.0
File Edit Shell Debug Options Window Help
Python 3.11.0 (main, Oct 24 2022, 18:26:48) [MSC v.1933 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: C:/Users/asif0/Desktop/Test.py ==========
Sorted Array is
[0.1234, 0.3434, 0.565, 0.656, 0.665, 0.897]
>>>
Ln: 7 Col: 0