

Home Assignment-1  
OOP LAB (CS13201)

Q1) Write a program in Java to print an nxm matrix in spiral form

**sample input:**

```
1  2  3  4
5  6  7  8
9  10 11 12
```

**output:**

```
1  2  3  4  8  12  11  10  9  5  6  7
```

Q2) Write a program in Java to print a input string in a word wise reverse order

**sample input:**

My name is Naveen

**output:**

Naveen is name My

Q3) Given an array **arr[]** of integers and an integer **K**, the task is to find the greatest contiguous sub-array of size **K**. Sub-array **X** is said to be greater than sub-array **Y** if the first non-matching element in both the sub-arrays has a greater value in **X** than in **Y**.

**sample input:**

arr[] = {1, 4, 3, 2, 5}, K = 4

**output:**

4 3 2 5

Two subarrays are {1, 4, 3, 2} and {4, 3, 2, 5}.

Hence, the greater one is {4, 3, 2, 5}

Q4) There is a given binary matrix, we need to find if there exists any rectangle or square in the given matrix whose all four corners are equal to 1.

**sample input:**

```
mat[][] = { 1 0 0 1 0
             0 0 1 0 1
             0 0 0 1 0
             1 0 1 0 1}
```

**output:** Yes

as there exists-

```
1 0 1
```

```
0 1 0
```

```
1 0 1
```

Q5) Given two sequences A, B, find out number of unique ways in sequence A, to form a subsequence of A that is identical to the sequence B. Transformation is meant by converting string A (by removing 0 or more characters) to string B.

**sample input:**

A = "aabba", B = "ab"

**output:**4

Expalnation : Four ways will be -> "a.b..",

"a..b.", ".ab.." & ".a.b." .  
"." is where characters are removed.

Q6) Given an array of distinct integers. The task is to count all the triplets such that sum of two elements equals the third element.

**sample input:**

1 5 3 2

**output:**

2

Q7) Given an array **arr[]** and a number **K** where K is smaller than size of array, the task is to find the **K<sup>th</sup> smallest** element in the given array. It is given that all array elements are distinct.

Q7) Given two strings **a** and **b** consisting of lowercase characters. The task is to check whether two given strings are anagram of each other or not. An anagram of a string is another string that contains same characters, only the order of characters can be different. For example, "act" and "tac" are anagram of each other.

Q8) Given a array of **N** strings, find the longest common prefix among all strings present in the array.