

Count number of free cell

Suppose you have a Matrix size $n*n$, and given an integer k and a set of coordinates **arr** of size $k*2$. Initially, the matrix contains only 0. You are given k tasks and for each task, you are given two coordinates ($r = \text{arr}[i][0], c = \text{arr}[i][1]$) [1 based index r and c]. Where coordinates (r,c) denotes r^{th} row and c^{th} column of the given matrix.

You have to perform each task sequentially in the given order. For each task, You have to put 1 in all r^{th} row cells and all c^{th} columns cells.

After each task, You have to calculate the number of 0 present in the matrix and return it.

Example 1:

Input:

`n = 3, k= 3`

`arr =`

`{{2, 2},`

`{2, 3},`

`{3, 2}}`

Output: 4 2 1

Explanation:

After 1st Operation, all the 2nd row and all the 2nd column will be filled by 1. So remaning cell with value 0 will be 4

After 2nd Operation, all the 2nd row and all the 3rd column will be filled by 1. So remaning cell with value 0 will be 2.

After 3rd Operation cells having value 0 will be 1.

Example 2:

Input:

```
n = 2, k = 2
arr =
{{1, 2},
 {1, 1}}
```

Output: 1 0**Explanation:**

After 1st Operation, all the 1st row and all the 2nd column will be filled by 1. So remaining cell with value 0 will be 1. After 2nd Operation, all the 1st row and all the 1st column will be filled by 1. So remaining cell with value 0 will be 0.

Your Task:

The task is to complete the function **countZero()**, which takes parameter **n**, size of the matrix, k no of operation and array **arr[][]**, which denotes the position of the cells. You have to return an array that contains all the results.

Expected Time Complexity: $O(k)$.**Expected Auxiliary Space:** $O(n+n+k)$.**Constraints:** $1 \leq n, k \leq 10^5$ $1 \leq r, c \leq n$