

## Row Operations in a Matrix

Four row operations are defined in matrix as follows:

1. Add a row (i, c) – where i is the index where insertion should happen and c is the collection of elements that has to be inserted (Index of row of matrix starts from 1).
2. Remove (i) - where i is the index where removal should happen
3. AddUp(i) – Returns sum of elements in the ith row
4. Even(i) – Returns the count of number of even elements in the ith row

This problem can be quickly solved with vector in STL. STL is Standard Template Library that has got generic functions, classes and algorithms.

- Matrix can be viewed as vector of vectors
- To use vector, add `#include<vector>`
- We can create object and array of objects for vector
- `size()` - Number of elements in a vector can be found
- `end()` - will give reference to one position next to last element in the vector which can be stored in an iterator
- iterator for a integer vector can be declared as `vector<int>::iterator` it
- `insert(pos, e)` – Inserts the element ‘e’ at the given iterator position pos
- `erase(pos)` – erases the element at vector position pos

Algorithms of STL that can be used are:

- `#include<algorithm>` for STL algorithms
- `counif(i, j, fn)` – Function that counts the number of elements from iterator position i to iterator position j when function fn returns true

### Input Format

First line contains the number of rows and columns in matrix, m

Next ‘r’ lines contain the elements of the ith row

Next line contains the value of ‘c’, choice of operation

Next line contains the value of ‘i’ for the operation

For choice 1, next row contains the elements of the new row that is to be inserted

### Output Format

## Problem Statistics

**Author:** M Janaki Meena

**Solved By:** 0

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Print the matrix for choice 1 and 2 and print the value returned by functions for choice 3 and 4

While printing matrix, print one row in a line with a space between elements of a row

**Note:** There is a space at the end of each row

Theme: Terminal Language Python Font size: 18

```
1
2 m,n = map(int,input().split())
3 matrix = []
4 for i in range(m):
5     matrix.append(list(map(int,input().split())))
6
7 c = int(input())
8 i = int(input())
9 def add_row(i,matrix):
10     row = list(map(int,input().split()))
11     matrix.insert(i-1,row)
12
13 def remove(i,matrix):
14     matrix.pop(i-1)
15
16 def add_up(i,matrix):
17     return sum(matrix[i-1])
18
45
```

Use custom I/O

Run Code

Save Code

Pause Test

Status:

Success your code has passed all test cases!!