

Department of Computer Science and Engineering
CSE-318: Data Communication Sessional
Evaluation - 1

We have a matrix of size $N \times N$. Each value of the matrix occupies an integer from $[0-9]$. A few operations are going to be performed on this matrix. We would like to know how the matrix looks like after these operations are performed sequentially. There could be five different types of operations.

row a b	In this operation, row a is interchanged with row b
col a b	In this operation, column a is interchanged with column b
inc	In this operation, every cell value is increased by 1 (modulo 10). That is if after adding 1, a cell value becomes 10 we change it to 0
dec	In this operation, every cell value is decreased by 1 (modulo 10). That is if after subtracting 1, a cell value becomes -1 we change it to 9
transpose	In this operation, we simply transpose the matrix. Transposing a matrix, denoted by A^T , means turning all the rows of the given matrix into columns and vice-versa.

Input

You need to take a positive integer N ($N < 10$) as input that represents the size of the matrix. Then create an $N \times N$ random matrix as specified earlier. Then take as many commands as input from the specified list and carry out the corresponding operation.

Output

Next to each command, print the corresponding matrix.

Sample Input

```
3
row 1 2
inc
```

Sample Output

```
0 0 0
1 1 1
0 0 0
```

```
1 1 1
0 0 0
0 0 0
```

```
2 2 2
1 1 1
1 1 1
```