✏ Practice Arena

Practice problems aimed to improve your coding skills.

📂 PRACTICE-02_SCAN-PRINT

📂 PRACTICE-03_TYPES

📂 LAB-PRAC-02_SCAN-PRINT

📂 LAB-PRAC-01

📂 PRACTICE-04_COND

📂 BONUS-PRAC-02

📂 LAB-PRAC-03_TYPES

📂 PRACTICE-05_COND-LOOPS

📂 LAB-PRAC-04_COND

📂 LAB-PRAC-05_CONDLOOPS

📂 PRACTICE-07_LOOPS-ARR

📂 LAB-PRAC-06_LOOPS

📂 LAB-PRAC-07_LOOPS-ARR

📂 LABEXAM-PRAC-01_MIDSEM

📂 PRACTICE-09_PTR-MAT

📂 LAB-PRAC-08_ARR-STR

📂 PRACTICE-10_MAT-FUN

📂 LAB-PRAC-09_PTR-MAT

  ❓ Mr C writes a Story

  ❓ Matrix Arithmetic

  ❓ Spin the Matrix

  ❓ Crony Capitalization

  ❓ Matrix Mirroring

  ❓ Sodoku

  ❓ The Last Line

  ❓ Singular Value Decomposition

  ❓ Matrix Flip

  ❓ Now we are in Rome

  ❓ Search for the Submatrix

  ❓ Convoluted Convolutions

📂 LAB-PRAC-10_MAT-FUN

📂 PRACTICE-11_FUN-PTR

📂 LAB-PRAC-11_FUN-PTR

📂 LAB-PRAC-12_FUN-STRUC

📂 LABEXAM-PRAC-02_ENDSEM

📂 LAB-PRAC-13_STRUC-NUM

📂 LAB-PRAC-14_SORT-MISC

Matrix Flip

LAB-PRAC-09_PTR-MAT

Matrix Flip [20 marks]

Problem Statement

In the first line of the input, you will be given two strictly positive integers n and m, separated by a space. In the next n lines, you will be given an n x m matrix A of digits (non-negative single digit integers) with each line containing a single row of the matrix. Two entries of the matrix will be separated by a single space. In the last line of the input, you will be given a list of characters which will all be capital (upper case) English alphabet letters. The list will be terminated by the character 'X' which will appear only once in the entire list, at the end. The list will be non-empty i.e. the first character in the list will not be X.

You have to interpret the characters as instructions. If the character is 'H' you have to flip the matrix A horizontally, print "HORIZONTAL" on the output followed by a newline followed by the matrix A after the flip. If the character is 'V' you have to flip the matrix A vertically, print "VERTICAL" on the output followed by a newline followed by the matrix A after the flip. If the character is neither H nor V nor X, print "ILLEGAL" on the output followed by a newline followed by the matrix as is it is at that point.

Caution

1. Note that the instructions given to you have to be followed in sequence. This means that if the sequence is HVUH then flip the matrix horizontally, (print the word HORIZONTAL followed by the matrix) then vertically (print the word VERTICAL followed by the matrix) then print the word ILLEGAL followed by the matrix (do nothing to the matrix), then flip horizontally (print the word HORIZONTAL followed by the matrix).
2. While printing the matrix A, print each row of the matrix on a separate line with a single space between two elements of a row.
3. If you are using getchar to read in characters in the last line, make sure that you do not read in by mistake a trailing newline character left behind from the previous line.
4. Make sure there are no trailing spaces at the end of each line and no trailing newlines.
5. Be careful about extra/missing lines and extra/missing spaces in your output.

Code to manipulate matrices
```
int m, n;
scanf("%d %d", &m, &n);
int num[m][n], i, j;
for(i = 0; i < m; i++)
     for(j = 0; j < n; j++)
          scanf("%d", &num[i][j]);
          printf("%d", num[i][j]);
```

EXAMPLE:
INPUT
2 3
1 2 3
4 5 6

HVX

OUTPUT:
HORIZONTAL
3 2 1
6 5 4
VERTICAL
6 5 4
3 2 1

Grading Scheme:
Total marks: **[20 Points]**

There will be partial grading in this question. There are a certain number of lines in your output. Printing each line correctly, in the correct order, carries equal weightage. Each visible test case is worth 2 points and each hidden test case is worth 4 points. There are 2 visible and 4 hidden test cases.

Please remember, however, that when you press Submit/Evaluate, you will get a green bar only if all parts of your answer are correct. Thus, if your answer is only partly correct, Prutor will say that you have not passed that test case completely, but when we do autograding afterwards, you will get partial marks.

🍴 Start Solving! (/editor/practice/6190)