


Sideways Sorting

Problem ID: sidewayssorting**CPU Time limit:** 1 second**Memory limit:** 1024 MB**Difficulty:** 2.0**Author:** David Sturgill**Source:** Baylor Competitive Learning course**License:** 

We are so accustomed to reading strings from left to right, it can be a little difficult to think of strings that go right to left or even vertically. Here's your chance to get some practice.

Input

Input consists of up to 100 test cases. Each test case starts with a line containing a pair of integers, $1 \leq r, c \leq 15$. This is followed by r lines each containing c characters chosen from A–Z (lowercase and uppercase). The last test case is followed by values of 0 for both r and c .

Output

For each test case, print out a block of text containing the same columns as the input block but in sorted order. Think of each column as a string reading from top to bottom. Your output block should have the columns sorted lexicographically from left to right. Your sort should be a stable sort and it should ignore case. Print a blank line between each pair of adjacent output blocks.

Sample Input 1

```
3 3
oTs
nwi
eox
3 4
xAxa
yByb
zCyc
0 0
```

Sample Output 1

```
osT
niw
exo

Aaxx
Bbyy
Ccyz
```