



# Grid Challenge

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Problem

Submissions

Leaderboard

Discussions

Editorial

Given a squared sized grid  $G$  of size  $N$  in which each cell has a lowercase letter. Denote the character in the  $i$ th row and in the  $j$ th column as  $G[i][j]$ .

You can perform one operation as many times as you like: Swap two column adjacent characters in the same row  $G[i][j]$  and  $G[i][j + 1]$  for all valid  $i, j$ .

Is it possible to rearrange the grid such that the following condition is true?

$G[i][1] \leq G[i][2] \leq \dots \leq G[i][N]$  for  $1 \leq i \leq N$  and  
 $G[1][j] \leq G[2][j] \leq \dots \leq G[N][j]$  for  $1 \leq j \leq N$

In other words, is it possible to rearrange the grid such that every row and every column is lexicographically sorted?

**Note:**  $c_1 \leq c_2$ , if letter  $c_1$  is equal to  $c_2$  or is before  $c_2$  in the alphabet.

## Input Format

The first line begins with  $T$ , the number of testcases. In each testcase you will be given  $N$ . The following  $N$  lines contain  $N$  lowercase english alphabet each, describing the grid.

## Constraints

$$1 \leq T \leq 100$$

$$1 \leq N \leq 100$$

$G_{ij}$  will be a lower case letter

## Output Format

Print  $T$  lines. On the  $i$ th line print YES if it is possible to rearrange the grid in the  $i$ th testcase or NO otherwise.

## Sample Input

```
1
5
ebacd
fghij
olmkn
trpqs
xywuv
```

## Sample Output

```
YES
```

## Explanation

The grid in the first and only testcase can be reordered to

abcde  
fghij  
klmno  
pqrst  
vwxyz

This fulfills the condition since the rows 1, 2, ..., 5 and the columns 1, 2, ..., 5 are all lexicographically sorted.

[f](#) [t](#) [in](#)

Submissions: [18549](#)


Max Score: 20




Difficulty: Easy

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Current Buffer (saved locally, editable)  

Java 7   

```
1 import java.io.*;
2 import java.util.*;
3 import java.text.*;
4 import java.math.*;
5 import java.util.regex.*;
6
7 public class Solution {
8
9     public static void main(String[] args) {
10         /* Enter your code here. Read input from STDIN. Print output to STDOUT. Your class should be named Solution. */
11     }
12 }
```

Line: 1 Col: 1

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☐ Test against custom input

Run Code

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