Given a square grid of characters in the range ascii[a-z], rearrange elements of each row alphabetically, ascending. Determine if the columns are also in ascending alphabetical order, top to bottom. Return `YES` if they are or `NO` if they are not.

Example

$grid = [\text{'abc'},\text{'ade'},\text{'efg'}]$

The grid is illustrated below.

```
a b c
a d e
e f g
```

The rows are already in alphabetical order. The columns `a a e`, `b d f` and `c e g` are also in alphabetical order, so the answer would be `YES`. Only elements within the same row can be rearranged. They cannot be moved to a different row.

Function Description

Complete the gridChallenge function in the editor below.

gridChallenge has the following parameter(s):

- string grid[n]: an array of strings

Returns

- string: either `YES` or `NO`

Input Format

The first line contains t, the number of testcases.

Each of the next t sets of lines are described as follows:

- The first line contains n, the number of rows and columns in the grid.

- The next n lines contains a string of length n

Constraints

$1 \leq t \leq 100$

$1 \leq n \leq 100$

Each string consists of lowercase letters in the range ascii[a-z]

Output Format

For each test case, on a separate line print `YES` if it is possible to rearrange the grid alphabetically ascending in both its rows and columns, or `NO` otherwise.

Sample Input

```
STDIN   Function
-----   --------
1       t = 1
5       n = 5
ebacd   grid = ['ebacd', 'fghij', 'olmkn', 'trpqs', 'xywuv']
fghij
olmkn
trpqs
xywuv
```

Sample Output

```
YES
```

Explanation

The 5x5 grid in the 1 test case can be reordered to

```
abcde
fghij
klmno
pqrst
uvwxy
```

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