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.

```
abc
ade
efg
```

The rows are already in alphabetical order. The columns aae, bdf and ceg 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.