

# Grid Challenge



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.

For example, given:

```
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.

## 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

```
1
5
ebacd
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 lexicographically sorted.

