

3673 Black-White Grid

Let M be a grid of n rows and n columns. The rows are numbered from 1 to n and the columns are numbered from 1 to n . A cell (i, j) denotes the cell in row i and column j in the grid. Each cell is colored in black or white. Let C_{ij} denote the color of the cell (i, j) . All cells of the form (i, i) for $1 \leq i \leq n$ are called diagonal cells.

Swapping rows i and j of the grid M denotes the following action: we swap the values of C_{ik} and C_{jk} for $k = 1, 2, \dots, n$. Swapping two columns is defined analogously.

We say that M is *white-colorable* if it is possible to swap some of the pairs of rows and some of the pairs of columns (in any sequence) so that, after all the swappings, all the diagonal cells of M are white. For example, Fig 1 shows a white-colorable grid.

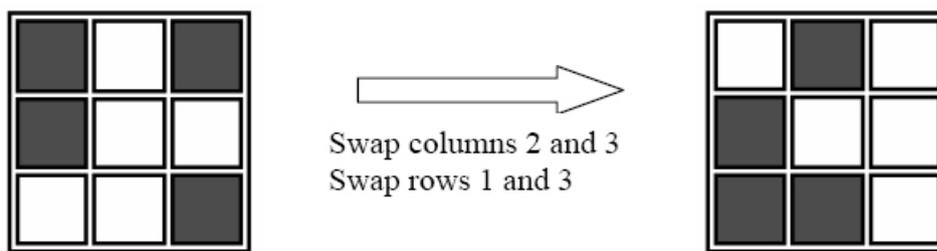


Fig. 1. M is white-colorable

Your task is to write a program that determines whether given grid M is white-colorable.

Input

The input consists of several data sets. The first line of the input file contains the number of data sets which is a positive integer and is not bigger than 20. The following lines describe the data sets.

For each data set, the first line contains a single positive integer n ($n \leq 1000$) — the size of the grid. The i -th line of the following n lines contains n character C_{ij} ($i = 1, 2, \dots, n; j = 1, 2, \dots, n$) specifying color pattern of the grid. Character C_{ij} is B or W indicating that the color of cell (i, j) is black or white respectively.

Output

For each data set, write in one line 'YES' if given grid is white-colorable or 'NO' otherwise.

Sample Input

```

2
3
WWW
WBB
WBB
3
BWB
BWW
WWB
  
```

Sample Output

NO
YES