F – Fix the Coloring

Memory limit: 1024 MB
Time limit: 6 s

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You are given an undirected graph of n vertices and m edges. Each vertex is colored either black or white. You would like the coloring to be proper. That is, no two vertices connected by an edge should have the same color.

It is possible that some pairs of vertices do not satisfy this property. You want to fix this by repainting some vertices. However, you have only red paint, so you will repaint some vertices red.

But even with three colors at hand fixing the coloring could be impossible. For example, when the graph contains a big clique (that is, a set of vertices in which all pairs are connected with edges). You decided to allow at most one nontrivial clique in this graph to have all its vertices painted red.

So, your task is to check whether it is possible to paint some vertices red in such a way that:

- All edges that connect red vertices form a clique.
- All remaining edges connect vertices of different colors.

Input

The first line of the input contains one integer t ($1 \le t \le 1000$) denoting the number of test cases.

Each test case starts with a line containing two integers n and m ($1 \le n, m \le 3000$), denoting the numbers of vertices and edges in the graph. Vertices are numbered from 1 to n.

The second line contains a string of n characters `B`, `W`; the i-th character denotes the color of the i-th vertex (`B` for black and `W` for white).

The next m lines contain the edges of the graph, each described by a pair of vertex numbers a_i, b_i ($1 \le a_i, b_i \le n$, $a_i \ne b_i$). Each unordered pair u, v will appear in the text case at most once.

The sum of values n and the sum of values m over all test cases do not exceed 3000.

Output

Output the answers to all t test cases.

If fixing the coloring is not possible, the answer is one line consisting of the word `NO`. Otherwise, the answer should consist of two lines: The first line should contain one word `YES`, and the second line a string of n characters `B`, `W`, `R` denoting the new colors of vertices (where `R` denotes red). If there are multiple valid solutions, you may output any one of them.

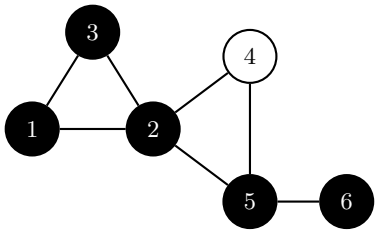
Example

For the input data:

```
2
6 7
BBBWBB
1 2
2 3
3 1
2 4
2 5
4 5
5 6
6 7
BBBBBB
1 2
2 3
3 1
2 4
2 5
4 5
5 6
```

a possible correct result is:

```
YES
RRRWBR
NO
```



Explanation: In the first test case, one solution is to repaint the clique 1, 2, 3 and vertex 6. Another solution is to repaint the clique 1, 3 and vertex 5.