951   The Pieces of the Puzzle

The children on the playground are now playing with funny puzzles. They have a number of pieces and they have to make a pre-determined image. Imagine for example that you have to form the image depicted in figure 1, only with the available pieces.
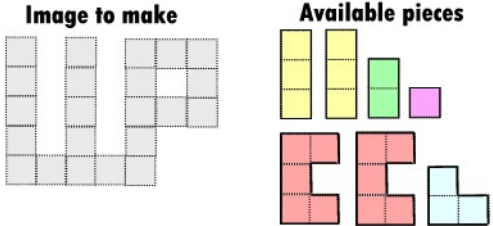

Figure 1 - The image and the pieces of the puzzle

The idea is to use all the pieces to form the image. The pieces can be rotated (by 0, 90, 180 or 260 degrees). Since the pieces are equal from both sides, they can also be flipped, and also they can be at the same time flipped and rotated. With this rules, one way to form the image with the pieces would be the one illustrated in figure 2.
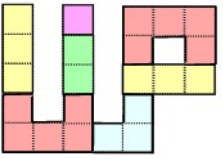

Figure 2 - Combining the pieces to form the puzzle

Can you help the children in how to solve every puzzle they have in hands?

Given a set of pieces and an image, you have to discover if it is possible to combine the pieces in order to form the image. An image is always a connected set of squares (meaning that there are no disconnected parts of the image). At the end, there can be no pieces left.

Input

The input will contain several test cases, each of them as described below. Consecutive test cases are separated by a single blank line.

The first line of the input will contain two integers H and W, which respectively indicate the height and the width of the minimal square than can enclose the image to form ($1 \leq H, W \leq 20$). Than come exactly H lines describing the image itself, each of these lines exactly with W chars. A '#' means a square that belongs to the image and a '.' means one that does not belong.

After that comes a single line with an integer P indicating the number of pieces available ($1 \leq P \leq 400$), followed by P sets of lines describing the pieces, in a similar way of how the image is described. Each piece starts by having a single line indicating PH_i and PW_i, the height and width of the minimal square enclosing the piece ($1 \leq PH_i, PW_i \leq 20$), followed by PH_i lines with PW_i chars with the piece, where '#' means a square that belongs to the piece and a '.' means one that does not belong. Note that the pieces can come in any order.

Output

For each test case, you must output a single line with the word 'Yes' if the image can be made with the pieces or 'No' if that is not possible. Remember that all the pieces must be used and that the pieces can be rotated, flipped or suffer both of these transformations.

Sample Input

```
5 7
X.X.XXX
X.X.X.X
X.X.XXX
X.X.X..
XXXXX..
7
3 1
X
X
X
3 1
X
X
X
2 1
X
X
1 1
X
3 2
XX
X.
XX
3 2
XX
X.
XX
2 2
X.
XX

3 3
.X.
XXX
.X.
2
2 2
.X
XX
2 1
X
X
```

```
3 2
.X
.X
XX
1
3 2
X.
X.
XX
```

Sample Output

```
Yes
No
Yes
```