J Chessboard
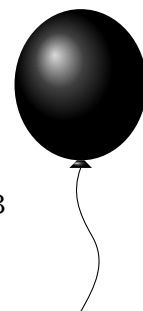
Magnus likes playing unusual chess. His friend Leonardo likes painting. One day Magnus has noticed that his chessboard was repainted, but he didn't get angry with Leonardo because it's a good way to get to know what the painting is. Leonardo likes black-and-white style, so all the chessboard cells are painted in one of these two colors.

Magnus is a genius, and may be that's why he makes interesting decisions. He wanted to paint the chessboard in several turns. Each turn he wants to choose a diagonal of the chessboard and one of two colors, and paint this diagonal into chosen color.

Magnus wants to optimize the painting process, so he wants to do it in the minimum number of turns. There are two types of diagonals. Formally speaking, if the chessboard is of size $n \times m$, and all cells have coordinates $(r, c) \in [1, n] \times [1, m]$, then the first type diagonal is $r + c = \text{const}$ and the second type is $r - c = \text{const}$.

You are here to help Magnus. Given a chessboard after Leonard made some painting on it. You are required to find minimum length sequence of turns to repaint it back to a regular chessboard.

A regular chessboard is a coloring of chessboard, where the colors of adjacent cells are different. Note that there are always two possible regular chessboards of size $n \times m$.

INPUT

The first line contains two integers n and m — the size of the chessboard ($1 \le n, m \le 100$).

The r-th of the following n lines contains m characters, the c-th of which describes the cell with coordinates (r, c), and contains 'B' or 'W', denoting black and white color, respectively.

OUTPUT

In the first line print a single integer p — the minimum number of turns.

In each of the following p lines print four integers: the diagonal type t ($1 \le t \le 2$), the coordinates of any cell (r, c) on this diagonal ($1 \le r \le n$; $1 \le c \le m$), and the color c to use $c \in \{B, W\}$.

SAMPLES

Sample input 1	Sample output 1
3 3 WBB BWB BBW	1 1 3 1 W

Sample input 2	Sample output 2
3 3 WBW WWB WWW	1 2 2 1 B

Sample input 3	Sample output 3
1 3 WWW	1 1 1 2 B

Sample input 4	Sample output 4
1 3 BBB	1 1 1 2 W