

About

Given a $n \times m$ grid maze which consists of walls (#), floors (.), start (A), and end(B). You can walk in four directions: up, down, left and right, but you cannot pass the walls. Please output a path to walk from the start to the end with minimum steps, or it is impossible to go from the start to the end.

Input

The first line contains two integers n and m , being the number of rows and columns of the grid maze.

The following n lines describes the maze. Each line has m characters which is one of # , . , A , or B .

There is exactly one A and B in the input.

Restrictions

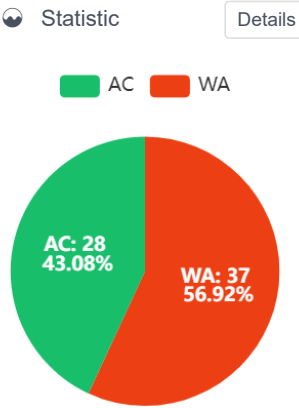
- $1 \leq n, m \leq 10^3$

Output

If it is possible to go from the start to the end, print "YES" in the first line, the number of minimum steps in the second line, and the path in the third line. Describe the path as a string consisting of characters L (left), R (right), U (up), and D (down). You can print any valid solution.

If it is impossible, please print "NO" in the first line.

| | |
|--------------|-------------|
| ID | gridmaze |
| Time Limit | 1000MS |
| Memory Limit | 256MB |
| IO Mode | Standard IO |
| Created By | ta_redleaf |
| Level | Hidden |
| Score | 100 |
| Tags | Show |



Sample Input 1

```
5 8
#####
#.A#...#
#.#.#B#
#.....#
#####
```

Sample Output 1

```
YES
9
LDDRRRRRU
```

Sample Input 2

```
10 10
##.A#####
#.#.#.##
#####.###
.#####
.#####.
###.###.##
#####.
#####.#.#
###.###.#
###.B#####
```

Sample Output 2

```
NO
```



1

Submit for Sample Test

Submit

Sample Test Input

Sample Test Output

```
5 8
#####
#.A#...#
#.#.#B#
#.....#
#####
```