Problem L
Lawn Stripes

Lawn stripes are drawn using a roller to flatten grass blades in a particular direction and impart a sheen that, at a distance, is distinguishable from blades flattened in another direction. This is typically for aesthetic appeal.

We are going to draw lawn stripes in our square garden using a roller in any of the 4 cardinal directions. The roller must stay on the lawn throughout. The final direction of a piece of lawn is determined by the last time the roller ran over it, including starting from or finishing there.

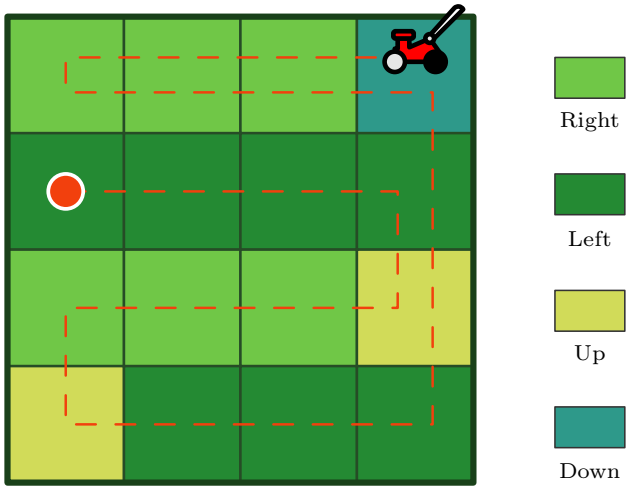


Figure L.1: Illustration of Sample Input 1.

Given a description of the lawn and the starting point of the roller, determine how to draw the pattern.

Input

- The first line of input contains the width and depth in metres of the lawn, n ($1 \leq n \leq 100$)
- The second line of input contains the row and column of the roller, r and c ($1 \leq r, c \leq n$).
- Each of the next n lines contains n characters from `(l|r|u|d)` giving the desired direction of a square metre of lawn.

Output

If it is not possible to draw the pattern, output `impossible`. Otherwise, demonstrate a solution in under $10n^2$ moves by outputting the number of moves to use on one line, followed by the moves on the remaining lines.

Each move consists of a distance in metres d and a direction from `(l|r|u|d)`. A roller following the instructions must roll over every square metre without leaving the lawn.

Sample Input 1

```
4
1 4
rrrd
llll
rrru
ulll
```

Sample Output 1

```
8
3 l
3 r
3 d
3 l
1 u
3 r
1 u
3 l
```

Sample Input 2

```
2
1 1
rd
ul
```

Sample Output 2

```
impossible
```