Week 6: Assignment 6 - Question 2

Simple Path Finding

Given an $n \times n$ binary Matrix A , where each entry is 0 or 1.
A has a unique path of 1's from $A[0][0]$ to $A[n-1][n-1]$.
The path always goes Right (R) or Down (D).

Write a C Program.to print the directions of this path.

Note: You can assume that there is exactly one correct path.
All 1's in A are in this unique path, there are no dead ends.

Input
The first line contains the dimension of the matrix n. Assume n < 100.
The second line contains the contents of the matrix A, each row per line.

Output
The path of 1's in the Matrix.

Example

Input

```
4
1 1 1 0
0 0 1 1
0 0 0 1
0 0 0 1
```

Output

RRDRDD

Explanation

The path of 1's from $A[0][0]$ to $A[3][3]$ is

$A[0][0]$ **Right** --> $A[0][1]$ **Right** --> $A[0][2]$ **Down** --> $A[1][2]$ **Right** --> $A[1][3]$ **Down** --> $A[2][3]$ **Down** --> $A[3][3]$.

Note: The code for reading inputs etc is given to you, complete the code of the function

*void **findPath**(int matrix[100][100], int n, int x, int y, char* path, int pathIndex);*