Castle on the Grid ★

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Problem Submissions Leaderboard Editorial

You are given a square grid with some cells open (**.**) and some blocked (**X**). Your playing piece can move along any row or column until it reaches the edge of the grid or a blocked cell. Given a grid, a start and a goal, determine the minmum number of moves to get to the goal.

Example.

$grid = ['...','.X.','...']$
$startX = 0$
$startY = 0$
$goalX = 1$
$goalY = 2$

The grid is shown below:

```
...
.X.
...
```

The starting position $(startX, startY) = (0, 0)$ so start in the top left corner. The goal is $(goalX, goalY) = (1, 2)$. The path is $(0, 0) \rightarrow (0, 2) \rightarrow (1, 2)$. It takes 2 moves to reach the goal.

Function Description

Complete the minimumMoves function in the editor.

minimumMoves has the following parameter(s):

- string grid[n]: an array of strings that represent the rows of the grid
- int startX: starting X coordinate
- int startY: starting Y coordinate
- int goalX: ending X coordinate
- int goalY: ending Y coordinate

Returns

- int: the minimum moves to reach the goal

Input Format

The first line contains an integer n, the size of the array grid.
Each of the next n lines contains a string of length n.
The last line contains four space-separated integers, $\mathbf{startX}$, $\mathbf{startY}$, $\mathbf{goalX}$, $\mathbf{goalY}$

Constraints

- $1 \leq n \leq 100$
- $0 \leq startX,\ startY,\ goalX,\ goalY < n$

Sample Input

```
STDIN       FUNCTION
-----       --------
3           grid[] size n = 3
.X.         grid = ['.X.','.X.', '...']
.X.
...
0 0 0 2     startX = 0, startY = 0, goalX = 0, goalY = 2
```

Sample Output

```
3
```

Explanation

Here is a path that one could follow in order to reach the destination in 3 steps:

$(0,0) \rightarrow (2,0) \rightarrow (2,2) \rightarrow (0,2)$.

Change Theme Language C#

```
165          //create a stack and put the values of predecessors in stack
166          var stack = new Stack<(int, int)>();
167          (int Item1, int Item2) val = (goalX, goalY);
168          while(val.Item2 != -1 && val.Item1 != -1)
169          {
170              stack.Push((val.Item1, val.Item2));
171              val = preDesMatrix[val.Item1, val.Item2];
172          }
173          return stack.Count - 1;
174      }
175
176  }
177
178  class Solution
179  {
180      public static void Main(string[] args)
181      {
182          TextWriter textWriter = new StreamWriter
     (@System.Environment.GetEnvironmentVariable("OUTPUT_PATH"), true);
183
184          int n = Convert.ToInt32(Console.ReadLine().Trim());
185
186          List<string> grid = new List<string>();
187
188          for (int i = 0; i < n; i++)
189          {
190              string gridItem = Console.ReadLine();
191              grid.Add(gridItem);
192          }
```

Line: 174 Col: 6

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13% 1020/2200

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You solved this challenge. Would you like to challenge your friends?

Next Challenge

- **Test case 0**
- **Test case 1**
- **Test case 2**
- **Test case 3**
- **Test case 4**
- **Test case 5**
- **Test case 6**

Compiler Message

```
Success
```

Hidden Test Case

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