

Algorithm Class Mini-Contest 4

# Problem: PLATES

Time Limit: 1.0 seconds

Memory Limit: 64 MB

**Problem Description** Jacob is designing a robot to navigate a maze. This maze is made up of a grid with height  $H$  and width  $W$ . Each grid square is either empty or contains a spinning plate. Jacob's robot can only change direction on the spinning plates, and changing direction costs Jacob 1 dollar.

Jacob's robot starts off heading to the right on the top-left corner of the maze, and needs to finish the maze by heading right on the bottom-right corner of the maze. Help Jacob find out what is the minimum amount of money he would spend navigating the maze.

**Input Format** The first line of input will contain two integers,  $H$  and  $W$ . The next  $H$  lines of input will contain  $W$  characters each, with each character being either '.' or '#', representing either an empty space or a spinning plate.

**Output Format** The output should contain exactly one line with one integer, the minimum cost of the robot's navigation, or -1 if it is not possible.

**Limits** These are the bounds on the input.

Subtask	Score	Additional Bounds
1	17	$1 \leq H, W \leq 10$
2	33	$1 \leq H, W \leq 300$
3	50	$1 \leq H, W \leq 1,000$

## Sample Input

```
4 3
##.
...
.#.
.#.
```

## Sample Output

```
2
```

**Explanation** LOLOL, LOLOL, LOLOL, LOLOL.