Matrix Jump   Problem Code: MTRXJMP

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Katrina is a super geek. She likes to optimize things. Suppose she is at position (0,0) of a two dimensional grid containing 'm' rows and 'n' columns. She wants to reach the bottom right point of this grid traveling through as minimum number of cells as possible.

Each cell of the grid contains a positive integer, the positive integer defines the number of cells katrina can jump either in the right or the downward direction when she reaches that cell. She cannot move left or up.

You need to find the optimal path for katrina so that starting from top left position in the grid she reaches bottom right position in minimum number of hops.

Input

You are provided a template in which you have to implement one function minHops. The declaration of minHops looks like

```
C / C++
int minHops(int matrix[64][64], int m, int n)

Java
statuc int minHops(int[][] matrix, int m, int n)
```

Output

The function should return the minimum number of cells that should be touched to reach from top left corner of the grid to the bottom right corner (including touching both top left and the bottom right cells). Return 0 in case no path exists.

Example

```
Suppose the grid looks like this

2 4 2
5 3 8
1 1 1


Starting at A(0,0) contains '2' so you can either go to (0,2) or (2,0).
So following two paths exist to reach (2,2) from (0,0)
(0,0) => (0,2) => (2,2)
(0,0) => (2,0) => (2,1) => (2,2)

Hence the output for this test case should be 3

Example 2

5 3 8 2
6 4 2 1

There is no path from (0,0) to (1,3) , so the output for this case
should be 0

Example 3

2 3 2 1 4
3 2 5 8 2
1 1 2 2 1

Various paths in this case are
(0,0) => (0,2) => (2,2) => (2,4)
(0,0) => (2,0) => (2,1) => (2,2) => (2,4)

So output in this case should be 4
```

Constraints:

Value in each cell of the grid is between 1 and 100.

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