Ashritha and her Garden

Problem code: BYCO17I

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Problem description.

Ashritha loves to plant roses with her mom Anu in her ever growing and ever blooming garden.

The garden is rectangular shaped and it has in total P * Q square units. Only a few of these square units are viable for planting.

Growing roses at a given co-ordinate square would incur some cost. Let the location of this square in a 2-dimensional plane be denoted as (X,Y).

Ashritha's dad Raj, has an excellent skill set when it comes to Financial Analysis. He devised a technique of evaluating this cost. The efficiency of his evaluation function was proven by his regression analysis on historic data.

The estimation technique is as follows:

- The cost for planting the first rose is 0.
- For every additional rose the cost of planting it at location (A,B) would be the Maximum Fenwick distance between (A,B) and already planted roses.

Fenwick distance between points (x1,y1) & (x2,y2) is given by : max(|x1-x2| , |y1-y2|)

Assume that 2 adjacent squares are 1 unit apart. Help Ashritha and her family to estimate the cost for covering their lovely garden with roses. They would like to plant roses at every viable spot marked on the map.

Input

Input description.

- First line comprises of two space separated integers P,Q.
  Following is a P x Q matrix Z.
  Z[i,j] : 1 => viable for rose planting
  Z[i,j] : 0 => not viable for rose planting

Output

Output description.

- Output a single line with minimum possible cost.

Constraints

- **1 ≤ P ≤ 70**
- **1 ≤ Q ≤ 70**

Example

Input:
4 4
1 0 0 0
0 1 0 0
0 0 1 0
0 0 0 1

Output:
6

Explanation

Plant the first rose at (1,1) for free.
Then (0,0) : incurs cost 1 unit
Then (2,2) : incurs cost 2 units
Then (33) : incurs cost 3 units
Total : 6

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Time Limit:	0.5 - 1 sec
Source Limit:	50000 Bytes
Languages:	ADA, ASM, BASH, BF, C, C99 strict, CAML, CLOJ, CLPS, CPP 4.3.2, CPP 4.9.2, CPP14, CS2, D, ERL, FORT, FS, GO, HASK, ICK, ICON, JAVA, JS, LISP clisp, LISP sbcl, LUA, NEM, NICE, NODEJS, PAS fpc, PAS gpc, PERL, PERL6, PHP, PIKE, PRLG, PYPY, PYTH, PYTH 3.4, RUBY, SCALA, SCM chicken, SCM guile, SCM qobi, ST, TCL, TEXT, WSPC

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