

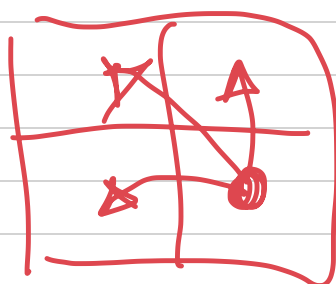
1222

eg

0	1	1	1	1
1	1	1	1	1
0	1	1	1	1

The diagram shows a 3x5 grid. Red circles are drawn around the cells (1,1), (1,2), (1,3), (1,4), (2,1), (2,2), (2,3), (2,4), (3,1), (3,2), (3,3), and (3,4). Red arrows indicate dependencies: from (1,1) to (1,2), (1,3), (1,4), (2,1), (2,2), (2,3), (2,4), (3,1), (3,2), (3,3), and (3,4); from (1,2) to (1,3), (1,4), (2,2), (2,3), (2,4), (3,2), (3,3), and (3,4); from (1,3) to (1,4), (2,3), (2,4), (3,3), and (3,4); from (1,4) to (2,4) and (3,4); from (2,1) to (2,2), (2,3), (2,4), (3,1), (3,2), (3,3), and (3,4); from (2,2) to (2,3), (2,4), (3,2), (3,3), and (3,4); from (2,3) to (2,4) and (3,3); from (2,4) to (3,4); from (3,1) to (3,2), (3,3), and (3,4); from (3,2) to (3,3) and (3,4); from (3,3) to (3,4).

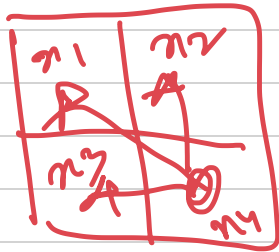
$$3 + (\# \text{ 1's}) = 3 + 10 = 13$$



any element in matrix

(n, y) depends on

$$\left[\begin{array}{l} (n-1)(y-1), (n-1)y, \\ (n)y \end{array} \right]$$



considering $n4 \neq 0$

if all $n_1, n_2, n_3 \neq 0$

then it will form a square

size of square = $1 + \min(n_1, n_2, n_3)$

\therefore Rec Formula (1)

$$dp(x, y) = \min \begin{pmatrix} dp(x-1, y), \\ dp(x, y-1), \\ dp(x-1, y-1) \end{pmatrix}$$

For x in range $(1, \text{len}(dp))$:

for y in range $(1, \text{len}(dp[0]))$:

if $dp(x, y) \neq 0$

\rightarrow Rec formula (1)

g:

0	1	1	1
1	1	1	1
0	1	1	1

0	1	1	1
1	1	1+1 2	1+1 2
0	1	1+1 2	1+2 3

return sum(dp) for all squares

(15)