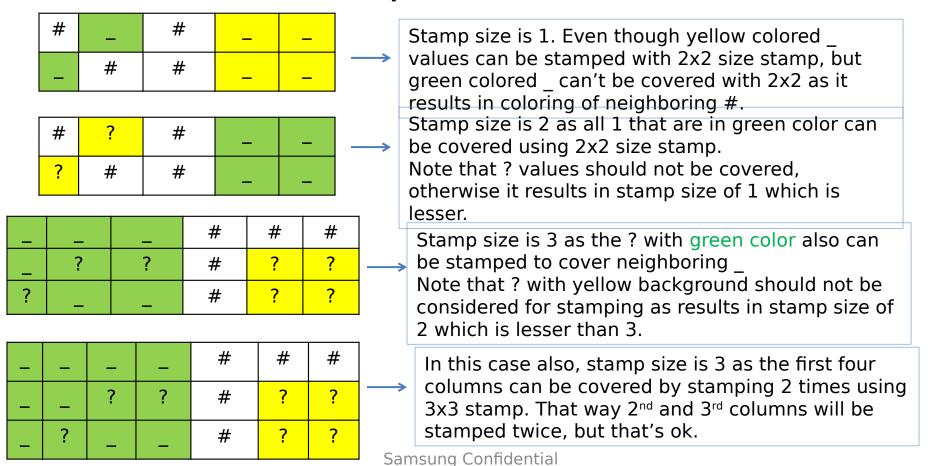## Problem statement

Input is of MxN size matrix. Possible values in each cell are: _ , # or ?. For such matrix, find maximum possible square shape stamp size that can color all the cells having value _ . If ? can help in stamping of neighboring _ values, it can also be stamped. Otherwise, there is no need to stamp ?. Cells having # values should not be stamped. It is ok to stamp a value that is already stamped. Input will have at least one _ value.

Examples

Stamp size is 1. Even though yellow colored _ values can be stamped with 2x2 size stamp, but green colored _ can't be covered with 2x2 as it results in coloring of neighboring #.

Stamp size is 2 as all 1 that are in green color can be covered using 2x2 size stamp.
Note that ? values should not be covered, otherwise it results in stamp size of 1 which is lesser.

Stamp size is 3 as the ? with green color also can be stamped to cover neighboring _
Note that ? with yellow background should not be considered for stamping as results in stamp size of 2 which is lesser than 3.

In this case also, stamp size is 3 as the first four columns can be covered by stamping 2 times using 3x3 stamp. That way 2nd and 3rd columns will be stamped twice, but that's ok.

Solution

- Simplify first:
  - Create numeric matrix based on given char matrix (consider '?', '_' as 1 and '#' as 0)

- Determine size of square matrix ending at each location (Dynamic Programming):
  - Create a square matrix and update it based on the above created numeric matrix:
    - each cells of row "i" and column "j" will be updated as:
    - if(numericMatrix[i][j] == 1) then
      - Square[i][j] = min(Square[i-1][j],Square[i-1][j-1],Square[i][j-1]) +1;
    - otherwise
      - Square[i][j] = 0;
  - Reflect square size in all participating cells:
    - Create tempMatrix. Each cell in tempMatrix will be updated to a value which will be equal to the value of the max square for which this cell is one part

- Generalize to find out answer:
  - Iterate over this tempMatrix and find the minimum value of cell
  - This step should only take care of the cell whose character matrix cell has value '_'