Island

Count islands (int $a[r][c]$):

    d = Disjoint Set (n*m)

    for $i \leftarrow 0$ to $i \leftarrow R$

      for $j \leftarrow 0$ to $j \leftarrow c$

      if $(a[i][j] == 1)$

        {

          if $(a[i+1][j] == 1)$

            $d.$ union$(i, j, i, j+1)$

          if $(a[i+1][j+1] == 1)$

            $d.$ union $(i, j, i+1, j+1)$

            Similarly 8 possible neighbours

      }

    count $\leftarrow 0$, $c[R*c] \leftarrow \{0\}$

    for $i \leftarrow 0$ to R

      for $j \leftarrow 0$ to c

      if $(a[i][j] == 1)$

        $x == d.$ find (i, j)

        if $(c[x] == 0)$

          count $\leftarrow +1$

          $c[x] \leftarrow +1$

        else

          $c[x] \leftarrow +1$

    return Count

          ④

Chf.