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Counting Islands

```
int countIslands(vector<vector<int>>a)
{
    int n = a.size();
    int m = a[0].size();
    DisjointSets *dus = new DisjointUnionSets(n*m);
    for(int j=0; j<n; j++)
    {
        for(int k=0; k<m; k++)
        {
            if(a[j][k]==0)
                continue;
            if(j+1<n && a[j+1][k]==1)
                dus->union(j*(m)+k,
                    (j+1)*(m)+k);
            if(j-1>=0 && a[j-1][k]==1)
                dus->union(j*(m)+k,(j-1)*
                    (m)+k)
            if(k+1<m && a[j][k+1]==1)
                dus->Union(j*(m)+k,(j)*(m)
                    +k+1);
```

```
if ( k-1 >=0 && a[j][k-1]==1)
  dus->union( j*(m)+k , (j)*(m)+k-1);

if (k-1
if ( j+1<n && k+1 > m && a[j+1][k-1]
                          ==1)
    dus->union(j*(m)+k , (j+1)*(m)+k+1);

if( j+1<n && k-1 >= 0 && a[j+1][k-1]==1)
   dus-> union(j*m+k, (j+1)*(m)+k-1);
if( j-1>=0 && k+1<m && a[j-1][k+1]
                          ==1)
   dus -> union(j*m+k , (j-1)*m+k+1);
if( j-1>=0 && k-1>=0 && a[j-1][k-1]
                          ==1)
   dus -> union ( j*m+k , (j-1)*m+k-1);
  }
}
```