LAB-3 P.SAI DEEKSHITH

~~int n.~~ Number of Islands Program

```
Count_Islands ( int a[ ][10] )
                              //n - rows
{  #                          //m- columns
   for(int i=0; i<n; j++)
   {    for(int k=0; k<m; k++)
        {
            if(a[i][k]==1)
            { //8 neighbours
              if(i+1<n && a[i+1][k]==1)
                Union(j*m +k, (j+1)*m +k);
              if(j-1>=0 && a[j-1][k]==1)
                Union(j*m +k, (j-1)*(m)+k);
              if(k+1<m && a[i][k+1]=-1)
                Union(i* m+k, i*m+k+1);
              if(k-1>0 && a[i][k-1]==1)
                Union(i*m + k, i*m+k-1);
              if(i+1<n && k+1<m &&
                    a[i+1][k+1]==1)
                Union(i*m+k,(i+1)*m+k+1)
              if(i+1<n && k-1>=0 &&
                    a[i+1][k-1]==1)
                Union(i*m+k,(i+1)*m+k-1)
```

an.

```
if (i-1 >= 0 && k+1 < m &&
        a[i-1][k+1] == 1)
    Union (i*m+k, (i-1)*m+k+1);
if (i-1 >= 0 && k-1 >= 0 &&
        a[i-1][k-1] == 1)
    Union (i*m+k, (i-1)*m+k-1);


}

}
 // we need to consider another array
//to check the frequency of each set
   int c [m][m];
   int Count=0;
   for(int i=0; i<n; i++)
   { for(int j=0; j<m; j++)
       {      if(a[i][j]==1)
              {    int x = find(i*m+j);
                   if (c[x]==0)
                   {   Count++;
                       c[x]++;
                   }
                   else c[x]++;
       }     }
   }
Cout<<"Count of Islands = "<< Count << endl; }
```