S.R.PUNEETH
1BM18CS087
7/10/20

Program 3

```
class DisjointUnionSets
{
 vector <int> rank , parent ;
 int n ;
 public :
 DisjointUnionSets (int n)
 {
  rank.resize (n) ;
  parent.resize (n) ;
  this -> n = n ;
  makeSet ( ) ;
 }
 void makeSet ( )
 {
  for (int i = 0 ; i < n ; i++)
    parent [ i ] = i ;
  }
 int& find (int x)
 {
  if (parent[x] != x )
  {
   return find (parent [x] ) ;
  }
  return x ;
 }
 void Union (int x , int y )
 int xRoot = find (x) ;
 int yRoot = find (y) ;
 if (xRoot = = yRoot )
   return ;
```

```
if (rank[xRoot] < rank[yRoot])
    parent[xRoot] = yRoot;
else if (rank[yRoot] < rank[xRoot])
    parent[yRoot] = xRoot;
else
{
    parent[yRoot] = xRoot;
    rank[xRoot] = rank x[Root] + 1;
}
}
};
```