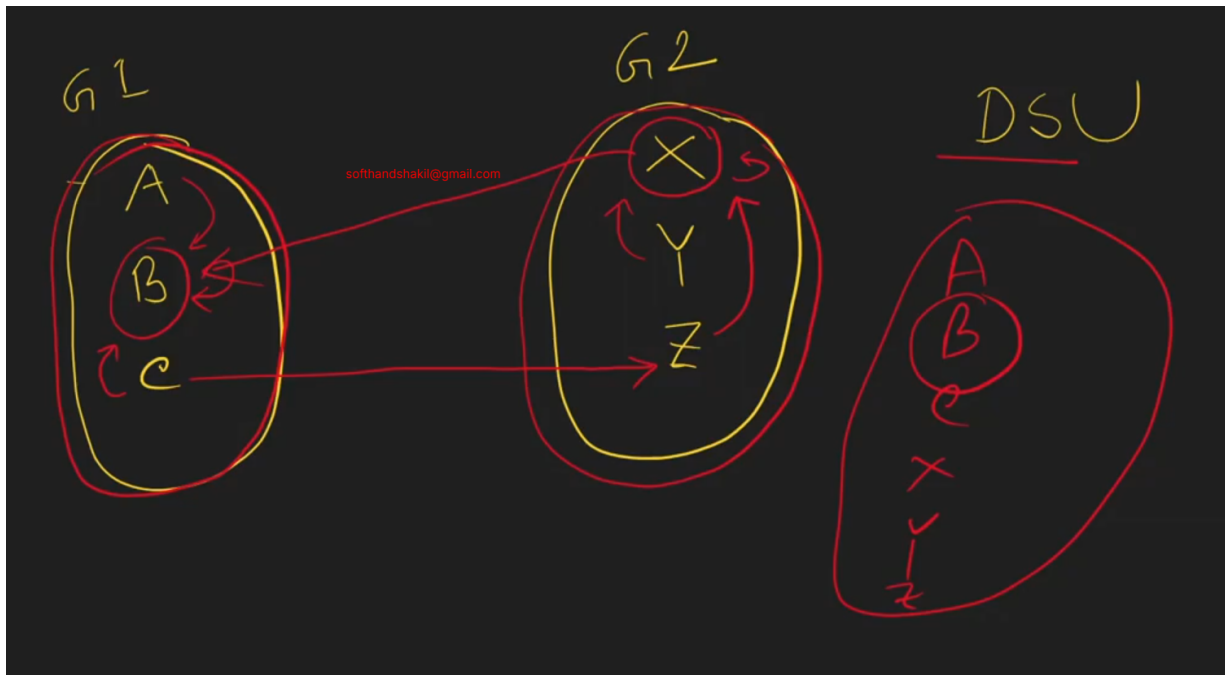
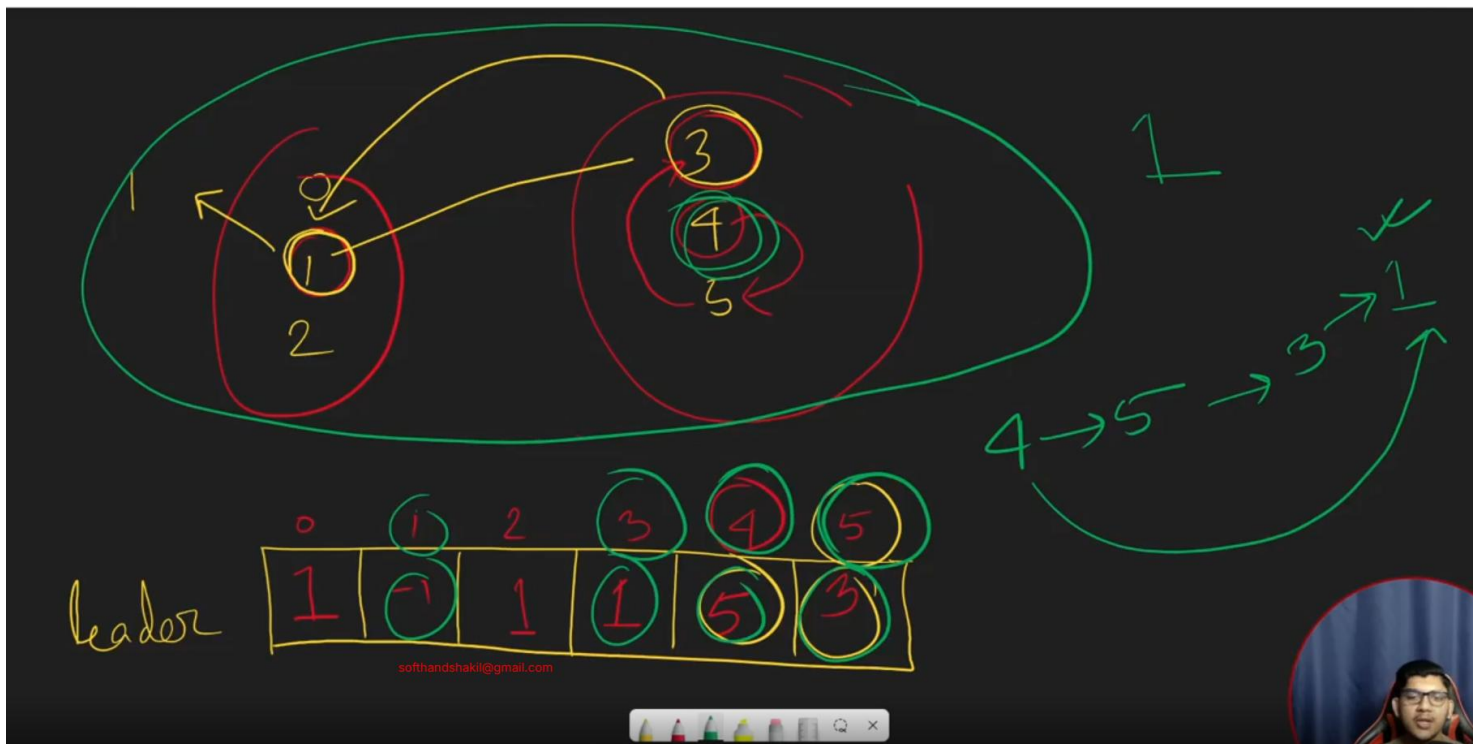


# Disjoint Set Union (DSU)



# doita group thakbe, tader majhe kono comon element thakbena. arpor doita group kai union kore akta group korte hbe, and tader group leader o change hoyo jabe -- atai Disjoint Set Union (DSU)

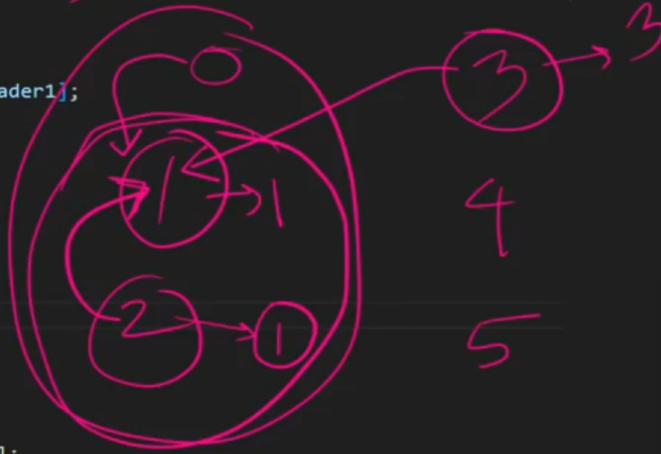


# Union

```
void dsu_union(int node1, int node2)
{
    if(group_size[leader1] >= group_size[leader2])
    {
        par[leader1] = leader2;
        group_size[leader2] += group_size[leader1];
    }
    else
    {
        par[leader2] = leader1;
        group_size[leader1] += group_size[leader2];
    }
}

int main()
{
    memset(par,-1,sizeof(par));
    memset(group_size,1,sizeof(group_size));
    dsu_union(1,2);
    dsu_union(2,0);
    dsu_union(3,1);

    for(int i=0;i<6;i++)
        cout << i << " -> " << par[i] << endl;
    return 0;
}
```



output.txt

```
output.txt
1 0 -> 1
2 1 -> -1
3 2 -> 1
4 3 -> 1
5 4 -> 1
6 5 -> -1
7
```