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Name

2022-09-2438

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## Assignment No. 3

Qno. 1

:- Weighted Quick-union:-

Data Structure:-

Some as Quick-union  
but maintain extra array  $sz[1]$   
to count number of object  
in the tree rooted at  
i-

Find / Connected:-

Identical to Quick-union.

Union:-

Modify Quick union to  
link root of smaller tree  
to root of larger

Hafiz  
hafiz

Hafiz

Tree-

→ update the  $Sz[]$  array.

## ∴ Java Implementation:-

```
int i = find(P);  
int j = find(Q);  
initializing declaration
```

```
if (i == j) return;
```

Return Connected Component

```
if ( $Sz[i] < Sz[j]$ )
```

```
{  
    id[i] = j ;  $Sz[j] += Sz[i]$ ;  
    else
```

```
{ id[j] = i ;  $Sz[i] += Sz[j]$  ; }
```