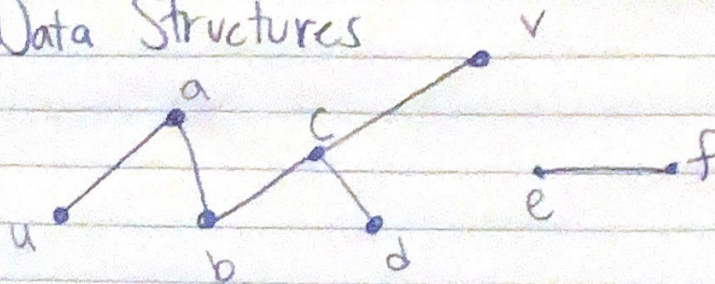


# Data Structures



isConnected(u, v)

$\{u\}$   $\{a\}$   $\{b\}$   $\{c\}$   $\{v\}$

union(u, a)

union(a, b)

union(b, c)

union(c, v)

union(c, d)

$\{u, a, b, c, d, v\}$  ← connected component  
 $\{e, f\}$

are Connected(u, v):  
 return find(u) == find(v)

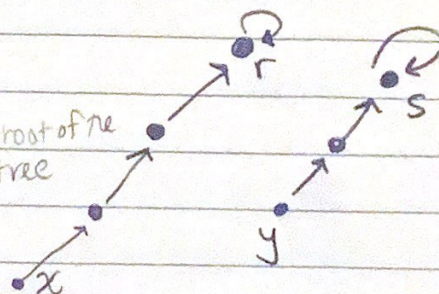
find(x)

↳ r

// find the root of the tree

find(y)

↳ s



union(x, y)

r = find(x)

s = find(y)

