ILLINOIS

Union by Size

Learning Objectives

1. Know the runtime of find after unioning by size

Union by Size

To show that every tree in a disjoint set data structure using union by size has a height of at most O(log n) we will show that the inverse.

Base Case

Inductive Hypothesis

Case 1: r is taller than s

r - root tree
s - smaller tree
r' - resulting tree

Case 2: r is shorter than s

r - root tree
s - smaller tree
r' - resulting tree