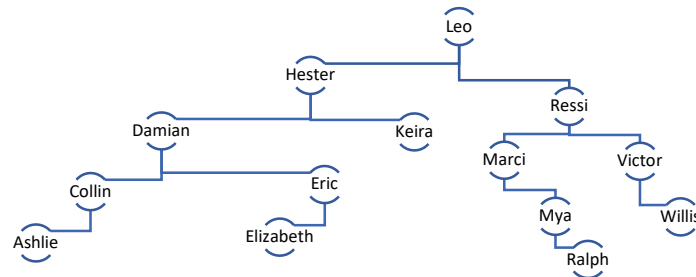# Module 6.6 Exercise: Create a BST

H. Diana McSpadden (hdm5s)

List 1: **Create List:** Leo, Hester, Ressie, Keira, Damian, Victor, Collin, Marci, Ashlie, Willis, Eric, Mya,

Elizabeth, Ralph

1. **List in Post-Order Traversal:**
   a. **Answer:** Ashlie, Collin, Elizabeth, Eric, Damian, Keira, Hester, Ralph, Mya, Marci, Willis, Victor, Ressi, Leo
2. **Remove Node Containing Damian**, what two values could we replace it with?
   a. **Answer:** we could replace Damian with "Elizabeth", leftmost of the right subtree.
   b. **Answer:** we could replace Damian with "Collin", the next "smallest" value.
3. **Remove Ressie,** what values could replace the Ressie node?
   a. **Answer:** Ralph could replace Ressi
   b. **Answer:** Mya could replace Ressi
   c. **Answer:** Victor could replace Ressi

List 2 Create List: Victor, Ralph, Leo, Mya, Eric, Elizabeth, Hester, Damian, Willis, Collin, Keira, Marci, Ashlie, Ressie
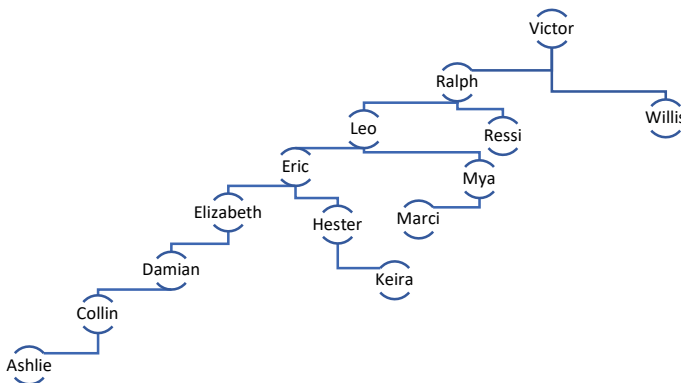
4. **List in Post-Order Traversal:**
    a. **Answer:** Ashlie, Collin, Damian, Elizabeth, Keira, Hester, Eric, Marci, Mya, Leo, Ressi, Ralph, Willis, Victor
5. **Which list is preferrable for add and remove methods?**
    a. **Answer:** The height of the tree determines the time required to add and remove elements: due to either traversing to the correct available leaf location, or swapping to replace a deleted node with the correct replacement. I recommend **List 1** because its height is smaller (List 1 height == 5), compared to the height of List 2 (List 2 height == 8).