

Homework 3

Due: 5:00pm, February 27, 2009 (Late deadline: 5:00pm, March 2, 2009)

Total Points: 40

You may submit your solution via email to holder@wsu.edu (preferred), or you may submit hardcopy in class or to my office (EME 227) by the above deadline. If you submit via email, please use PDF or other common electronic format.

1. (4 points) Show the final binary search tree after inserting the keys 2, 1, 4, 5, 9, 3, 6, 7, 8, in this order, into an initially empty binary search tree.
2. (4 points) Show the final AVL tree after inserting the keys 2, 1, 4, 5, 9, 3, 6, 7, 8, in this order, into an initially empty AVL tree.
3. (4 points) Show the final splay tree after inserting the keys 2, 1, 4, 5, 9, 3, 6, 7, 8, in this order, into an initially empty splay tree.
4. (4 points) Show the binary search tree that would generate a post-order traversal of 1, 2, 4, 3, 6, 7, 9, 8, 5.
5. (4 points) Show the Splay tree resulting from removing key 5 from the Splay tree in Figure 4.75.
6. (5 points) Show the final B-tree after inserting 43 and then 45 into the B-tree in Figure 4.65.
7. (5 points) Show the final B-tree after removing 87 from the B-tree in Figure 4.62.
8. (10 points) Exercise 4.40.