

Lab Exercise-4

Lab exercise (C/C++):	60
1. Implement Skip lists using Linked list and search a key in it and report the number of comparisons made to find the key	10
2. Implement a Binary Tree and perform Insertion, Deletion, Search operations: 2.1. Arrays 2.2. Linked data structure <i># Delete a node by making sure that the tree shrinks from the bottom (i.e., the deleted node is replaced by the bottom-most and rightmost node)</i>	10
3. Implement an unbounded branch tree using linked data structure and 3.1. array for storing the children 3.2. linked list for storing the children	10
4. Implement Binary Search Tree using linked data structure and perform Insertion, Deletion, Search operations and report the number of comparisons made for each operation.	10
5. Implement the Pre-order, In-order, and Post-order tree traversal algorithms for 5.1. binary tree 5.2. binary search tree	10
6. Implement AVL Tree using linked data structure and perform Insertion, Deletion, Search operations.	10
7. Generate a random permutation [1...n] and construct a AVL tree and perform In-order traversal for sorting a large sequence and compare with insertion sort find out the smallest n_0 for which AVL tree-based sorting is faster than insertion sort using clock time. Do not use parallel program for tree recursion	Additional

Note:

- Students need to practice all questions in the assignments
- TAs will assign a random question in the lab