HACETTEPE UNIVERSITY

DEPARTMENT OF COMPUTER ENGINEERING

BBM203

SOFTWARE LABORATORY I

ASSIGNMENT – 4

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Software Usage

This program takes two input files from console at running time. First input file consists the data of nodes of the tree structure. Second input file includes the operations; deletion and list. Program creates a tree based on first input file. Then operates the command in the second file. It prints the tree to the output file when a list operation comes.

Note: In this program i was not able to do the deletion operation. So this program lists the tree beginning from the desired node but it inludes the nodes which should have been deleted from the tree.

Sample Input And Output

Input File 1	Input File 2	Output File
2 2 3 3 1 3 5 2 7 4 13 6 11 5 12 3 14 2 17 1 85 3 92 4 127 5 8 9 19 4 25 13 75 1 68 2 94 6	d 3 d 2 d 75 l 11 l 5 l 2	11 17 92 25 19 75 5 11 17 92 25 19 75 2 3 5 11 17 92 25 19 75 13 12 85 127 68 1 7 14 8 94

Software Design Notes

Problem

In this experiment we are expected to implement a tree structure. Nodes in the tree should have a list that keeps the child nodes of this node. Also there is two types of command; deletion and list. For deletion comand there is three type; deleted node could be root, internal node or leaf node. After all commands in the second input file there should be an output file in the same directory with the program and it should include the outcome of the list operations.

Solution

In my algorithm, i wrote most of the code in main function like reading input files. There is four other function for creation the tree and operations on the tree. Those are 'findingLeafNodes', 'insert', 'list' and 'search'.

I think the functions' names are very clear about what they does. The program first reads the first input file and keeps it columns in two array seperately. First column includes the datas of nodes and second column specifies how many node will be added each iteration. When first column is done, program stops reading and stops adding to the tree. Then reads second input file for operations. Meanwhile it creates an output file and when a list operation appears int the second input file, program prints the result to that output file.

Unfortunally, i couldn't do the deletion part of the experiment. But program does list operation correctly. It finds the desired node and prints that node and its child nodes as asked from us.