HW5-Report

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I designed my homework according to following steps:

- Create a JTree by reading 'tree.txt' file and print the tree.
- Design a menu to get input from user.
- Implement methods which do the tasks in pdf file.

While reading data from file, I used useDelimiter(…) method from Scanner class to separate data.

While creating a tree, I implemented helper methods like isSame(…) and searchNode(…). These allow us to determine whether there is already node in the tree and to traverse between nodes if the node exists.

For BFS search, I used queue data structure because Queue allows us to traverse in desired order due to first in first out feature.

For DFS search, I used stack data structure because Stack allows us to traverse in desired order due to last in first out feature.

For post order traversal search, i used again stack but this time, I filled the stack with recursion by starting last child of nodes.

Before move operation, I checked the existence of node that we want to move. If it exists, moving operation (in moveNode(…) method) and removing the node in old location are done. In moveNode(…), I move not only the node but also parents of this node if they don't exist in destination. If the node already exists in destination, it is overwritten which means old node is removed and moved node is added. After moving operation has been done, source location is checked. If there was no other child after moved node, parent node is deleted.

I used array while taking inputs. Their first capacities are 10 but if they reach full capacity, their capacity is increased thanks to some methods like resizeColumnCapacity().

After compiling and running the program, the menu will appear. You can choose which operation will be done by enter numbers (1-5). Please be careful about entering input in move node operation. When source node is asked, you should write node location with comma and without space between them (like 2022,CSE321,Lecture1).