Bryan Arnold

CSE 2100

Assignment 5

10/30/16

Description

The goal of this assignment was to create an interactive card game to find ways to get to 24 using three operators. The way I designed my program was that I first did all the implementation and class definitions to get a linked list binary tree, then used another class to create methods to get all the permutations to later check what is equal to 24. After it has the permutations, it builds trees pertaining to each type of postfix permutation, uses postorder traversal of the trees to evaluate them and print out the process. Note: this program is nowhere near completion but I had so much on my plate I just couldn't finish it. So, a lot doesn't work.

Tradeoffs

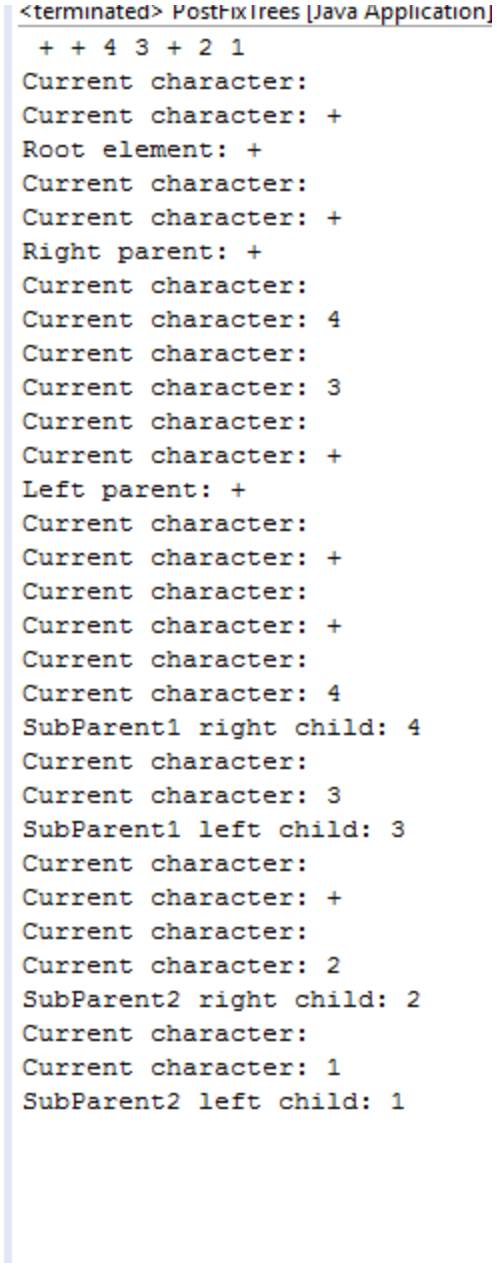
I considered some tradeoffs such as how to properly do the postorder and create the trees. I could think of a good way to do the postorder traversal and save the result as the proper string, but my building works perfectly. My permutations class adds a lot of extra code, but it simplifies later steps by having all permutations at the ready.

Extensions

There is a lot of potential improvements for my program. First, my main method for running the game would be fully functional, as well as the evaluation of the tree, as it is also no functional/existent. I only traversed the tree, never evaluated. All my other methods and completed classes were strong overall, but the severe time crunch I had this week and work load put me far behind on this project, so I couldn't finish it to its full potential. I could've achieved a fully functional program, given more time.

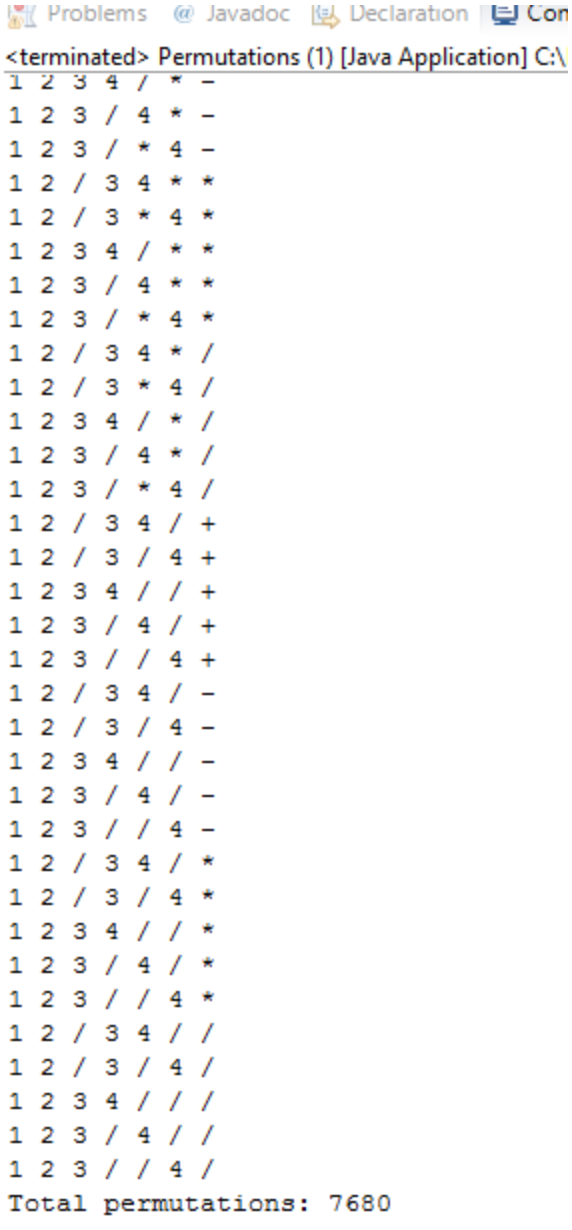
Test

As far as testing goes, I couldn't do too much. I could test out the permutations fully as well as the construction of the tree. Those were fully functional. As far as the main game itself and the evaluation, no testing could be done. Here is some testing for my other things though:



This screenshot shows the step by step output of the child and parents being assigned into the tree, its being constructed. For all types of postfix notation these work, so this works perfectly fine.

This was the test for the postfix permutations:



This shows the permutations that are possible for the four cards, 24 card combos * 64 operator combos * 5 postfix combos. These were all known from the last assignment or calculated out for this one. I'm very confident in this being correct. Despite the fact I couldn't test anything else due to incompleteness, I feel I could've completed this given the time. My schedule has cleared up so I should be able to get up to my usual standard for next project.