Project Report

I am happy to report that all features appear to be working on the project.

1. Add a product - WORKING
2. Edit a product – WORKING (see below)
3. Find and display a product – WORKING
4. View all products – WORKING
5. Delete a product – WORKING
6. Find and purchase a product – WORKING
7. Display the current order – WORKING
8. Clear the current order – WORKING
9. Quit the program - WORKING

2. Edit a product - Had an issue that I cannot say I completely fixed but that only appears intermittently and I was unable to reproduce in my last round of testing. I believe that if you edit a node into the tree in a place it does not belong (IE greater than a parent when it should be less than), it may crash. I did just this in an effort to test it but it did not happen but I had 2 crashes that I did not feel I had adequately resolved or were able to identify completely. In an attempt to mitigate this, I decided to export the current product tree to file, clear the current product tree, then rebuild the product tree from the file after every edit. I had one crash after doing this that I couldn’t identify so I cannot say this is completely resolved. While perhaps the better solution would be to run a function to rebuild the product tree without exporting it, the export function had already been designed and was working properly.

5. Delete a product – This function was the most headache inducing. I tried my best to write the code on my own without looking it up but after three days of scratching my head I decided to do so. I was close, but my implementation was flawed.

6.7. Find and purchase a product & Display the current order - I thought my solution for the order storage was elegant. I believe the obvious choice was to search through the binary tree for quantities greater than 1 and then display those products. What I did was that I created a second binary search tree called orderTree and then copy the product object into a node object on the new tree. This solution would be more intensive on memory but less intensive on processing as it would not require a longer search on the larger product tree. This also perhaps meant I should have removed displaying the quantity on the product tree but I felt this extra work was pretty trivial.

I feel going forward that I learned a lot about references and pointers in this project. Wrestling with the delete function definitely taught me how to understand pointers well and having to pass different objects into and through classes and functions taught me how references are supposed to be used as well as object oriented programming in general. I do feel that my code got a bit messy towards the end but it really was one large cycle of writing good code, then investigating errors, then adding in messy hacky code to fix the errors. I feel that I am weakest at understanding scope in classes. I think my private and public variables in my classes were not categorized well at all and I will be looking more into the correct way of assignment going forward.