Barrett Honors Contract for CSE 240

For this contract I have chosen option 2 which entails creating a functional binary search tree in Python. Before this project I have had little experience with Python so the bulk of my initial research has revolved around learning the syntax of Python. Luckily Python is a fairly forgiving language in regards to typing and spacing so this hasn't been too difficult. The second phase of my research has centered around binary search trees. I learned how to create binary search trees and traverse them on paper last semester in CSE 205 but refreshing that knowledge and converting it into functional code has proved to be the central challenge of this assignment.

I have worked on this project for a number of hours and have made significant progress. The four core methods for this assignment are main, search by key, insertion, and deletion. So far I have completed all but the deletion method.

The program works by creating a class called dataFile which creates file objects that are to be stored in the binary search tree. The main method first creates the root of this tree named "head" which cannot be deleted, moved, or searched for. This is done to give the tree a solid foundation from which to build of off, and removes the case where the user tries to delete the head of the list. From this point the program enters a loop where it asks the user if they would like to add, search, or delete a file. Here the program branches into whichever option the user chose. If add is chosen then the program takes in information and assigns the new file a unique key and calls the placeInTree method to put the new file in the correct position. If the search option is chosen then the program asks for a key and returns the information of said key if it exists. Finally, if the delete option is chosen the program asks for a key but does not do anything with it at the moment. Later I shall implement a functional deleteFile method, but as of right now the program simply prints "operation not ready yet".

My goals for the rest of this project are to implement the aforementioned deleteFile method and fix any errors or edge cases I come across. One edge case that my program does not yet consider is the case of a full list. In the current state of my program a full list will create an infinite loop, so this must be addressed before completion.

Overall, my work on this project is going well and I am getting close to completing the assignment with time to spare.

Time Table:

In 2 Weeks	In 4 Weeks	In 6 Weeks	In 8 Weeks
Ensure of full list is possible	Work on deleteFile	Complete deleteFile	Finalize project and submit