

For Project 3A I Wanted to make sure that I followed the time complexity of a binary search tree to be $O(\log n)$. I implanted a search, insert, and remove methods so that I could be able to successfully perform the traversal count. This assignment was pretty challenging but very insightful. I used a count getter method and went through a couple of implementations, so that I could get the traversal count. When I created the search function I made it into a boolean so that it would return true or false (1 or 0) to indicate whether this integer was in the tree.

Read more below:

```
File Opened  
building the tree. inserting everything...  
[1[2[3[4[5[6[7[8[9[10[11[12[13[14[15]]]]]]]]]]]]]  
  
searching the tree for things  
searching for 5: 1  
searching for 4: 1  
searching for 3: 1  
searching for 5: 1  
searching for 7: 1  
searching for 13: 1  
searching for 25: 0  
removing the tree for things  
removing 11  
removing 6  
removing 7  
removing 2  
removing 12  
removing 6  
[1[3[4[5[8[9[10[13[14[15]]]]]]]]]  
Time to Construct Binary Tree: 2998788  
  
The Traversal Count for the Binary Search tree was: 199  
Program ended with exit code: 0
```

I have been trying to figure out how to open the file on the server without having to implement a direct file source that only exists on my computer. I could not seem to figure it out so I have provided a screenshot above, if the command does not work when running the file.