

CS10C SI Activity: Binary Search Tree

Question 1 (Binary Search) *Quick! A BST is best for which algorithm???? YES! That's correct, a binary search algorithm! You're a genius. Just knowing that already makes you 50% an expert with Binary Search Trees. Now, for the actual activity.*

*You will be programming a Binary Search Tree. No way!? Coding in a cs class? That's insane... is what you might say in the future *wink wink*. Since you'll be given a good portion of session to do this activity, it will be slightly longer/harder. **I suggest working together on this, create a repl.it!***

Here's the specs:

1. Create a the basic structure of a BST for integers (The tree class and a node class)
2. Create a **member** function that will insert a value we pass in
3. Create a function that will get an input from the user to insert into the tree
4. Create a **member** function that will remove a value we pass in
5. Create a function that will get an input from the user to remove from the tree
6. Create a **member** function that will search for a value we pass in
7. Create a function that will get an input from the user to search in the tree
For the above functions, the run-time should be $\Theta(\lg n)$
8. Create a function that will print all values **inorder**
9. Test the print with input order: 5 1 -1 2 7 9 8 10 6