

CE 221 – Binary Search Tree Lab

Download *Node.java*, *BST.java* and *Main.java*, from <http://homes.ieu.edu.tr/tunay>. Create a Java Project, put all downloaded Java files in the same package.

1. **(10 points)** Instantiate a new **BST** object in the main function.
2. **(15 points)** BST class has an ***add(int data)*** method which adds the data to the binary search tree. Use that method to add your school number digits one by one to the binary search tree (one group member is enough).
3. **(5 points)** Print the tree elements using the method ***inorderPrint()***.
4. **(13 points)** BST class has a ***remove(int data, Node parent)*** method which removes the given data if the tree contains it. Using this method, remove one odd number you choose from the tree.
5. **(2 points)** Print the tree elements using the method ***inorderPrint()***, again.
6. **(10 points)** Declare and define a ***search(int data)*** method in BST class which looks for the given data in the binary search tree. If it finds the data, it will print “Found” to the screen. Otherwise, it will print “Not found” to the screen.
7. **(10 points)** Search for the digit 2 in your tree using the ***search(int data)*** function.
8. **(15 points)** Declare and define a ***postorderPrint()*** function in BST class, which prints all elements in the tree in post-order fashion.
9. **(10 points)** Print the tree elements using the method ***postorderPrint()***.
10. **(10 points)** Submit *Node.java*, *BST.java*, *Main.java* to ce221ieu@gmail.com.
 - a. No project files or .class files, just **.java** files.
 - b. **DO NOT** compress your files (no .zip or .rar etc...)
 - c. Your subject must be **BSTLab_Friday**.
 - d. One e-mail for each group.
 - e. Declare each group member in the body of the e-mail.

Grading

- 1) If you work as a group up to three people, your submission will be graded over **100** points.
- 2) If you work as a group up to four people, your submission will be graded over **90** points.
- 3) If you work as a group up to five people, your submission will be graded over **80** points.
- 4) Groups more than five people are not allowed.

Cheating

- 1) Any obvious similarities between multiple groups will be considered as cheating and all group members will get 0 as their grades.
 - a. Use internet only to check official Java documentation i.e. if you forgot how to use a specific library or a method. Codes which are adapted to your project from a website are going to be considered as cheating, no matter what.
 - b. Never send your work to another group even you sure they will not send it as their work.
 - c. Do not show your code to a member of another group.
 - d. You don't have to finish the entire lab. Instead of cheating, just do your best.
- 2) Please consider that cheating is also a disciplinary matter.