SE953102 Abstract Data Type  
College of Arts Media and Technology  
Chiang Mai University

**Programming Assignment 2**  
**A Simple Binary Search Tree**  
Due date is February 3d, 2012

In this program you need to implement your own Binary Search Tree with the following properties in Java. Please forget the AVL properties for this assignment.

* + Insert
  + remove
  + findMin
  + findMax
  + Pre-order traversal
  + Post-order traversal
  + In-order traversal

Here, I provide you the Node class as following.

|  |
| --- |
| public class Node {  Node left;  Node right;  int value;  public Node(int value) {  this.value = value;  }  } |

You may modify the Node class to suit your program as long as the Node value is Integer. Also, your program is going to read the input data from the data file just like your previous assignment and here is the example of the input.

|  |
| --- |
| 60, 20, 10, 40, 30, 50 |

This is an example of the running program.

$> java BST input.dat

----Building BST----  
Inserted 60 as root  
Inserted 20 to the left of node 60  
Inserted 10 to the left of node 20  
Inserted 40 to the right of node 20  
Inserted 30 to the left of node 40  
Inserted 50 to the right of node 40  
----the BST has been created----  
$> insert 70  
Inserted 70 the right of node 60  
 ----Node 70 has been inserted to the BST----  
$>findMin  
10  
$>findMax  
70  
$>preorder  
----Traversing tree pre-order----  
30, 20, 10, 40, 30, 50, 70  
$>postorder  
----Traversing tree post-order----  
10, 30, 50, 40, 20, 70, 60  
$>inorder  
----Traversing tree in-order----  
10, 20, 30, 40, 50, 60, 70  
$>remove 40  
---- Node 40 has been remove from the BST----

You will also need to print out your program source code (\*.java) and instruction of how to compile and run your program. Put them into an envelope with your name and student ID. If there is any question regarding the assignment please feel free to email me at [pree.t@cmu.ac.th](mailto:pree.t@cmu.ac.th)