Lab 5 – Binary Tree

Instructions:

- *You are expected to completed Problems 1 - 3 before attending the lab.*
- *Please submit the hardcopy of your program by the end of the lab.*

1. Your tasks

The initial code for this lab provide you a skeleton to implement the following functions. Your tasks are to complete these functions to make them work.

Problem 1.

Complete `bool countTwoChildrenNodes()` method in class `BinaryTree` that returns the number of nodes with two children. *You are allowed to write another supported (recursive) method to complete this problem.*

Example

```
Problem 01
       3
   6       4
 8   9       7
      2     1
The number of nodes with two children: 2
```

Problem 2.

Complete `void printBreadthFirstSearch()` method in the class `BinaryTree` that print out all the node in breadth first search order.

Example:

```
Problem 02
       3
   6       4
 8   9       7
      2     1
The breadth first search traversal: 3 6 4 8 9 7 2 1
```

Problem 3.

Complete `bool isBST()` method in the class `BinaryTree` that return whether the tree is binary search tree or not. *You are allowed to write another supported (recursive) method to complete this problem.*

Example:

```
Problem 03
       3
   6       4
 8   9       7
      2     1
Tree 1 is BST: 0
       3
   2       6
 1       4   8
           7 9
Tree 2 is BST: 1
```

Problem 4. (*to be released in the lab*)