CS1027b Assignment 4 Marking Scheme

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Specification	Your Mark	Out Of
Program Design and Implementation		
• Required components ◦ LinkedBinaryTree methods (20) ▪ Either left or getLeft() accepted ◦ TestPathToRoot (Exception handling 2, rest 3) ◦ FindCommonAncestors (Exception handling 2, rest 3)	27	30
• Running without errors ◦ TestPathToRoot Runs correctly for small and large trees (10) ◦ FindCommonAncestor runs correctly for small and large trees (10)	15	20
• Design quality (how good is the programming?) ◦ Elegant implementation of path to root and common ancestor without unnecessary steps or traversals	18	20
Programming Style		
• variables and constants		
◦ meaningful identifier names	3	5
◦ conventions for variable, constant names	5	5
◦ named constants instead of “magic numbers”	5	5
• readability		
◦ indentation, white space, consistency	5	5
Commenting		
• significant variables well commented	5	5
• block comments within code to explain algorithm used	5	5
Deductions		
• incomplete submission (up to 10%)		
• lateness (10% per day late, up to 2 days maximum)		
Total	88	100

Comments:

- Many of catch blocks in TestPathToRoot and FindCommonAncestor do not print useful messages: -1
- Path to root:
    - TestPathToRoot
        - Line 16 – *theTree.iteratorInOrder()* called before *theTree = theTreeBuilder.buildTree();* was called. This causes your program not to work. When you run it, only *null* is printed and then the program exits. This is because you are calling *iteratorInOrder()* on an

empty tree: -5

- Lowest Common Ancestor:
  - FindCommonAncestor
    - Line 8 – instead of having the main method throw *IOException*, you should catch it in the finally block: -2
    - try/catch organization - only 1 try/catch block is needed for this file: -2
  - LinkedBinaryTree
    - Lines 368 and 369 - Use more meaningful names instead of *one* and *two*. For e.g. targetOneIterator, targetTwoIterator: -2