Assignment Name: Red/Black Tree

Assignment Specifications: Implement a Red/Black Tree in Java. For information on Red/Black Trees, visit: https://en.wikipedia.org/wiki/Red%E2%80%93black_tree

You are to implement the following methods: insert, delete, inorder_traverse_az, inorder_traverse_za, and display_level_order. The specifications for each method is as follows:

1. insert – insert an element into the red/black tree following the red/black tree rules.
2. delete – delete element from the red/black tree following the red/black tree rules.
3. inorder_traverse_az – output the in order traversal of the red/black tree ordered from smallest element to largest element **using recursion**.
4. inorder_traverse_za – output the in order traversal of the red/black tree ordered from largest element to smallest element **using recursion**.
5. display_level_order – display the elements in the red/black tree in order by level.

Assignment Grading Rubric:

Major functionalities[1]	50 pts
Project Correctness[2]	40 pts
Documentation[3]	10 pts
Total	100 pts

1. All required functionality implemented, properly tested, and working for full credit.
2. Project specifications met, and project compiles (your instructor will not fix compile errors – make sure your project compiles) for full credit.
3. Properly fill out Programmer Documentation text file.

Additional Notes:

Provide in your project a test driver main class demonstrating the project correctness (I will give 5 points extra credit if you are adventurous in creating a Junit test class with a minimum of 5 test methods per red/black tree method listed above).

This project must be done using Netbeans 8.1+ (as this is the IDE your instructor will be compiling your project when grading).

Name your project: your-lastname-your-firstname-red-black-tree

School policy on academic honestly is strictly enforced on this project. Your work is to be your own individual work, no copying from other students or Internet sources. Plagiarism in any form will result in an automatic zero!