RedBlackTreeViewer Instruction

CS 150: Data Structures and Algorithm

1 Getting started

Check that you have the following Java files in the current directory:

- `BinaryTreePanel.java`
- `Node.java`
- `RBTree.java`
- `RedBlackTreeViewer.java`

Compile all the above files by typing in the terminal

```
javac *.java
```

To run the program, type in the terminal

```
java RedBlackTreeViewer
```

A user interface will pop up, allowing you to interact with a red black tree.

2 Using the program

The user interface consists of a text box and 4 buttons:

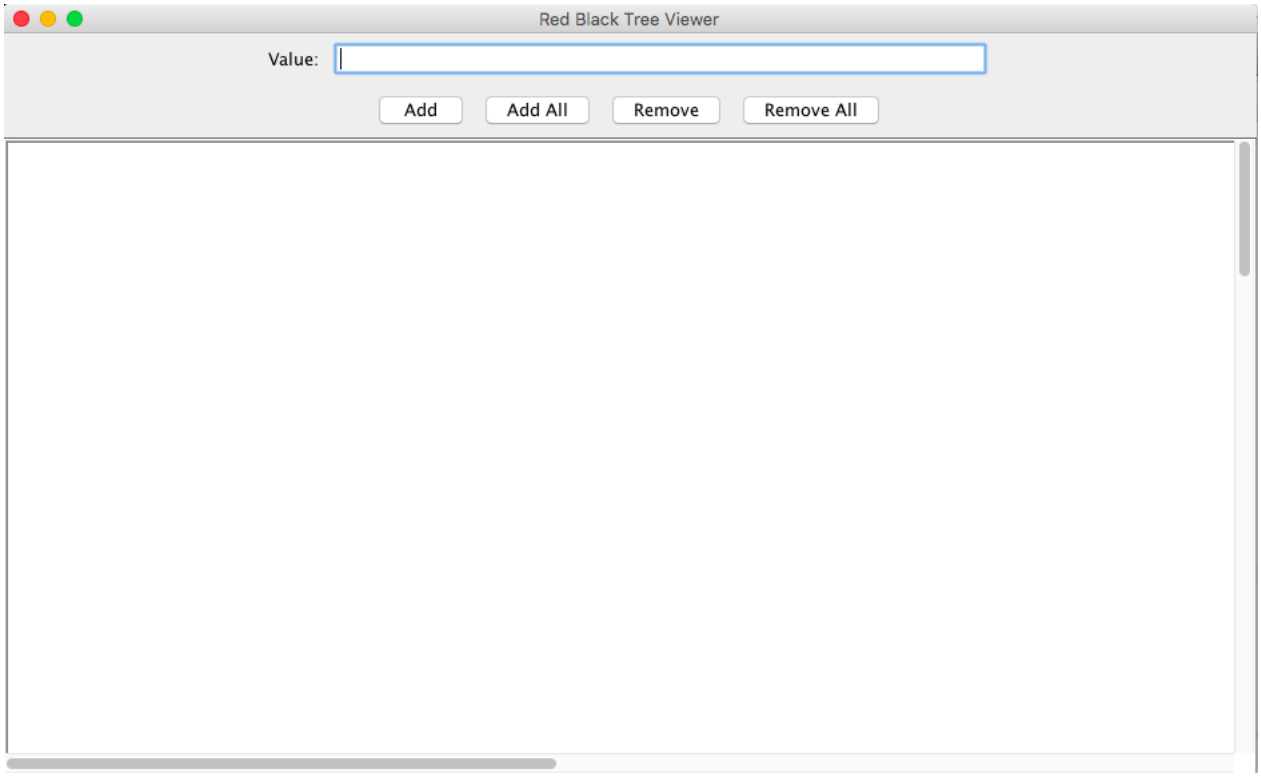

Figure 1: The user interface.

The program works as follows:

- You can enter one *integer* to the text box and press *Add* to add it to the current tree, which is initially empty.
- You can enter an array of *integers* to the text box and press *Add All* to add all of them one by one to the tree. Use `space` as the separator between integers. For example,

```
-2 -10 4 56 932
```

- You can enter one *integer* to the text box and press *Remove* to remove it from the current tree.
- You can press *Remove All* to delete all nodes in the tree. Note that this operation does not take any input. What you enter to the text box has no impact on it.

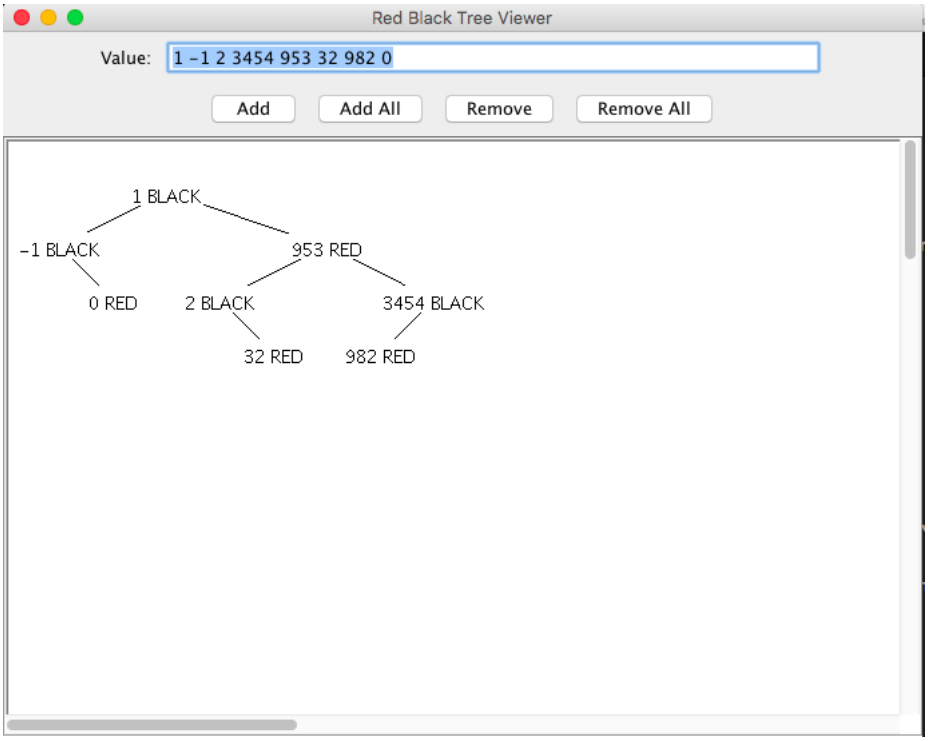

Figure 2: A screenshot of the program.

The tree will then be modified and displayed accordingly so that you can check with your work. The source code in `RBTree.java` might also be useful for reference.

CAUTION. This program is not made to handle invalid inputs, including but not limited to:

- Input is not integer (double, string, ...).
- The separator is not `space`. For example, 1,2,3,4,5 instead of 1 2 3 4 5.
- A duplicate value is entered.
- *Add* or *Remove* is pressed when the text box has more than one integer.

When an invalid input is entered, the program crashes so horribly that you will wish you could unsee that bloody scene. In the worst case that such a tragedy does happen, take a deep breath, reflect on yourself, close the existing interface, then re-run the program. And don't mess up again.

If you encounter any problem, contact Huy Nguyen at `nguyenha@lafayette.edu`.