

Lab 8
CSCI232
Assignment due 10/30, at 11:30pm
Work with your partner of choice

Purpose: To understand 2-3 trees and red black trees

1. Do Not Program: Draw the 2-3 tree for I L O V E D A T A S T R U C T U R E S (remember, no duplicates). Show your work as you add. Show in your tree the final value assigned to the key.
2. Do Not Program: Using the same input as problem 2, draw the red-black tree. Start with that tree from 2 and show the red links. (Don't construct it – use the final tree from problem 1 and show what it looks like as a red-black tree with proper red and black nodes). Show in your tree the final value assigned to the key.
3. Program: To ensure you got it right, change the code to print out node (key, value, and color) in the end. (Hint: put it in keys()). Make sure it matches your solution to 2 (which will then match your solution to 1).

Due: Wednesday, 10/30 at 11:30pm

Note: work with a lab partner – only 1 of you will submit your answers to brightspace in the lab8 folder. In each of your files that you submit, put lab partners: <your name and partner's name> at the top of the file (along with your name of course).

Submission You will submit the source file (remember just the changed method(s) and output for question 3. For 1 and 2 write up your answers and submit to brightspace – either a picture or scan of your handwritten answer or a file from the computer. (Do not turn anything in to the TAs). Zip the files together and name them: <partner1first/lastname>_<partner2first/lastname>.zip.

Rubric:

1. — 8 pts (4 pts for showing work, 4 pts for correct tree with proper value for each node)
2. – 18 pts (4 pts for showing work, 4 pts for showing the correct tree with proper value for each node)
3. – 4 – (2 pts for showing the code you changed and 2 pts for showing output). Just submit the method(s) you changed (not all the code) and a screen shot of the output.