

# Homework 3

CS:3330 Summer 2019  
Due Friday, July 19 at midnight

**Instructions** Complete the following tasks and questions.

## 1 Theory

1. 12.1-3
2. 12.2-1
3. 12.2-2
4. 13.1-2
5. 13.3-2

## 2 Programming

Complete the implementations for

- BinarySearchTree.java
  - put
  - get
  - getNode
  - delete
  - transplant
  - findMinimum
  - remove
- RedBlackTree.java
  - getNode
  - get
  - put
  - insertFix
  - rotateLeft
  - rotateRight

**Hint:** As much as possible, use already implemented functions to implement other functions. For example, if you already have a function that finds a node in a BST, you don't need to re-implement that logic every time you want to find a node.