CS 624: Analysis of Algorithmns

Assignment 3

Due: Tuesday, October 15, 2019

1. Exercise 2.2 from the Lecture 5 handout (on page 2). Really big hint: this is essentially the same as an exercise from a previous HW assignment. You can use that result here without proving it again. But you have to explain your reasoning clearly.
2. Question 9.3-5 (p.223).
3. Exercise 1.1 in Lecture note 7 (binary search trees).
4. Exercise 1.2 in Lecture note 7 (binary search trees).
5. Exercise 1.3 in Lecture note 7 (binary search trees).
6. Exercise 1.4 in Lecture note 7 (binary search trees).
7. Exercise 1.5 in Lecture note 7 (binary search trees).
8. Exercise 1.6 in Lecture note 7 (binary search trees).
9. Exercise 2.2 in Lecture note 7 (binary search trees).
10. Exercise 4.1 in the Lecture 7 handout. Please be careful. This is an exercise about binary search trees, not about algorithms used to construct those trees. So all you can use in doing this problem is the definition of a binary search tree. If you write something like, "this can't happen because the algorithm would have placed this element somewhere else", then your reasoning can't possibly be correct.