CS180 Fall 19 Homework 4

assigned 10/23 , due 10/30 at 9:59 am

All algorithms/proofs should be in bullet form: step by step or psuedo code.

1. Exercise 13 on page 194
2. Exercise 17 on page 197
3. Exercise 3 on Page 246
4. Exercise 7 on page 248
5. Suppose you are given an array of sorted integers that has been circularly shifted k positions to the right. For example taking (1 3 4 5 7) and circularly shifting it 2 position to the right you get (5 7 1 3 4). Design an efficient algorithm for finding K. Note that a linear time algorithm is obvious.
6. Consider a (balanced) heap on n nodes. Show details of how you extract the minimum, insert a new number, and change a number (along with the corresponding post heapify process). Analyze the time complexity of your three algorithms.