

## Assignment 2

25 points

1. Problem 7-4 on p. 188
2. Use the Master Theorem and the recurrence (2.1) on page 36 to prove that MergeSort has runtime  $\Theta(n \log n)$ .
3. Prove correctness (including halting) of SelectionSort (use loop invariants).
4. Provide worst and average case runtime analysis of SelectionSort.
5. Provide runspace analysis of SelectionSort.