CSC 212: Data Structures and Abstractions

Fall 2018

University of Rhode Island

Weekly Problem Set #6

Due Thursday 11/1 at the beginning of class. Please turn in neat, and organized, answers hand-written on standard-sized paper **without any fringe**. At the top of each sheet you hand in, please write your name, and ID.

1. Implement merge sort. Your function should take an array of integers and the indices of the first and last elements in the list to sort.

2. Implement quicksort. Your function should take an array of integers and the indices of the first and last elements in the list to sort.

3. Define a recurrence relation for the best case for quicksort. Assume that a partition for an array of size n takes n comparisons.

4. Solve your recurrence relation for question 3.

5. Define a recurrence relation for the worst case for quicksort. Assume that a partition for an array of size n takes n comparisons.

6. Solve your recurrence relation for question 5.