CS302: Design and Analysis of Algorithms
Assignment 02

Due Date: 15th November 2020 **Total Marks: 100 Points**

1. Illustrate (by steps) on the array
   A={0.635,0.860,0.450,0.450,0.251,0.101,0.981,0.327,0.011}
   the operations by Quick Sort, Radix Sort, Bucket Sort. For Counting Sort, use B = {4,2,8,9,0,1,1,3,3,3}. Discuss Time Complexity of each sorting algorithm [20 Points]

2. Solve 8.2.2, 8.2.3, 8.3.1, 8.3.2, 8.3.3, 8.3.4 from Book [30 Points]

3. Given an array of integers, write pseudocode that can find and print contiguous subarray with maximum sum in it. Design two algorithms, one with $O(n)$ complexity and $O(nlogn)$ complexity. Use simple example to illustrate. Also use loop invariant to prove its correctness [50 Points]