Introduction to Computer Science and Programming 1
CSCI120

Chapter14: Data Structures and Algorithms

Lab 14

Problem1

- The following list is given, visually show how the <u>insertion sort</u> is used to sort the list.
  - o [10, 2,3,7,1,7,9,2]

Problem2

- The following list is given, visually show how the <u>merge sort</u> is used to sort the list.
  - o [10, 2,3,7,1,7,9,2]

Problem3

- Explain when you would use Merge sort and when you would use another algorithm for sorting even though the time complexity order of Merge sort is O(NLogN)

Problem4

- Suppose a dictionary given where the keys are student's IDs and the values of the list of grades each student has receives. Write a Python program which calculates the GPA for each student. What is the time complexity of your algorithm.

Good Luck ☺