CC4– DATA STRUCTURES AND ALGORITHMS

Laboratory Exercise #1

Sorting Algorithms

Name: Date:

Code/Schedule: Terminal #:

Topic(s) Covered: Sorting Algorithms

Estimated Completion Time:2 weeks

Objectives:

1. Identify five fastest sorting algorithms.
2. Compare and contrast the efficiency of these five sorting algorithms.
3. Rank the five fastest sorting algorithms based on actual tests.

Discussion:

Sorting algorithms have different priori and posteriori estimates. The basis of efficiency test will be based on the worst-running time complexity of the algorithm known as the BIG-O notation. Each instruction in the sorting algorithm will have a corresponding frequency count to determine the actual time trials. The lowest frequency count amongst all sorting algorithm tested will be the fastest.

Activity**:**

Part I : My Five Top Sorting Algorithms (Individually)

* Identify your own five top sorting algorithms based from research.
* Download the java code of each sorting algorithm.
* Include a counter variable every end of an instruction.
* Rank each according the lowest frequency count.

Part II : The Best Sorting Algorithms (Group of 5)

* Select you champion sorting algorithm.
* Compete with other groups to determine the fastest amongst all the rest.
* There will be three time trials to be conducted

1. Input: 1 up to 1000 Output: 1 up to 1000
2. Input: 1000 down to 1 Output: 1 up to 1000
3. Input: 1 to 1000 random Output: 1 up to 1000

Laboratory Exercise Score Sheet

Criteria (Part I: Individually) Score

1. Identified 5 sorting algorithms 25
2. Downloaded java code 25
3. Ranked 5 sorting algorithms 50

Criteria (Part II: Group) Score

1. Identified top sorting algorithm 25
2. Conducted three time trials 25
3. Ranked the fastest sorting algorithm 50