CS2400 Project #3 (120 Points)
Spring - 2019
Instructor: Tannaz R.Damavandi
Due Date: Fri - 05/10/2019 at 11:59 pm.

Purpose:

1. Understand different sorting methods and their application.
2. Analyze the complexities of sorting algorithms through experiment.

Task #1: Sorting Algorithms (100 Pts.)

Implement **Bubble Sort**, **Selection Sort, Insertion Sort,** **Merge Sort** and **Quick Sort** to sort a list of n elements. Carry out a complete test of your sorting algorithms with n =10,000, 20,000, 50,000, 100,000, … (up to the largest size of n that your computer can handle – You should stop the program for any method if it takes more than 10 minutes to run). Report your results.

Task #2 : Time complexity analysis(20 Pts.)

For each sorting method, record the sorting time for different number of n and then graph time versus *n* (number of elements). In your report compare all sorting algorithms in terms of their time complexities. Explain if your empirical results are consistent with theories.

What to Submit?

1- Java source code and .jar file **(Please comment your code properly)**
2- A detailed report and explanation together with graphs comparing your algorithms as explained in task#2.
3- Readme.txt (Please describe how to run your code)
4- Please zip all files as yourname CS2400 Project3.zip and submit it on blackboard via provided link no later than due date/time.

Discussion among students is encouraged, but I expect each student to hand in original work.