CMSC 451 Project 2

Project 2 involves writing an analysis of the results that you obtained in first project. You are to submit a paper that discusses the results of your analysis. Your paper should include the following items:

- A brief introduction of the sorting algorithm that you have selected and how the two versions of the algorithm compare including:
  - High-level pseudocode for the sorting algorithms
  - A Big-Θ analysis of the two versions of the algorithm
  - An explanation of your approach to avoiding the problems associated with JVM warm-up
  - A discussion of the critical operation that you chose to count with an explanation of why you selected it
- An analysis of the results of your study, which should include:
  - graph of critical operations for both algorithms and one for the execution times
  - a comparison of the performance of the two versions of the algorithm
  - a comparison of the critical operation results and the actual execution time measurements
  - a discussion of the significance of the coefficient of variance results and how it reflects the data sensitivity of your algorithm
  - how your results compare to your Big-Θ analysis
- A conclusion that summarizes the important observations of your study

If for any reason, it was necessary to revise the program you submitted in project 1, the revised source code should also be included along with the paper.

Grading Rubric

Criteria	Meets	Does Not Meet
	100 points	**0 points**
Introduction	**35 points**	**0 points**
	Contains a brief description of the sorting algorithm together with high-level pseudocode for the algorithm (10)	Does not contain a brief description of the sorting algorithm together with high-level pseudocode for the algorithm (0)
	Contains a correct Big-Θ analysis of the algorithm (10)	Does not contain a correct Big-Θ analysis of the algorithm (0)
	Contains an explanation of your approach to avoiding the problems associated with JVM warm-up (10)	Does not contain an explanation of your approach to avoiding the problems associated with JVM warm-up (0)

	Contains a discussion of the critical operation that you chose to count with an explanation of why you selected it (5)	Does not contain a discussion of the critical operation that you chose to count with an explanation of why you selected it (0)
Analysis	**50 points**	**0 points**
	Contains a graph of critical operations and one for the execution times (20)	Does not contain a graph of critical operations and one for the execution times (10)
	Contains a comparison of the performance of the two versions of the algorithm (5)	Does not contain a comparison of the performance of the two versions of the algorithm (0)
	Contains a comparison of the critical operation results and the actual execution time measurements (10)	Does not contain a comparison of the critical operation results and the actual execution time measurements (0)
	Contains a discussion of the significance of the coefficient of variation results and how it reflects the data sensitivity of your algorithm (5)	Does not contain a discussion of the significance of the coefficient of variation results and how it reflects the data sensitivity of your algorithm (0)
	Contains a discussion of how your results compare to your Big-Θ analysis (10)	Does not contain a discussion of how your results compare to your Big-Θ analysis (0)
Conclusion	**15 points**	**0 points**
	Contains a conclusion that summarizes the important observations of your study (20)	Does not contain a conclusion that summarizes the important observations of your study (0)