CSC 255

Unit 3 Programming Assignment 2 [50 points]

Sorting Comparisons

Compare the following sorting algorithms: heap sort, insertion sort, merge sort, and quick sort.

Use the provided source code associated with your course textbook that implements these sorting algorithms. A minor modification of the algorithms may be necessary if they are not designed to sort integers.

Sort an array of 5000 randomly generated integers using each of these sorting algorithms and compute the runtime. Run each sort on the array at least five (5) different times. Each time you run the sorts, ensure the same array is sorted for consistency. **[25 points]**

Capture these runtimes for each algorithm and write a 200-word summary of your findings. In the summary, identify the best performing sorting algorithm and provide computational and analytical reasoning for why it performed better than the others. **[25 points]**