Green University of Bangladesh
Department of Computer Science and Engineering (CSE)

Faculty of Sciences and Engineering

Semester: (Summer, Year:2022), B.Sc. in CSE (Day)

LAB REPORT NO 03

Course Title: Data Structure Lab

Course Code: CSE 106 Section: DA

Lab Experiment Name:

Quick Sort and Merge Sort in C Programming Language

Student Details

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Submission Date : 24-07-2022

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Lab Report Status

Marks: …… **Signature: .....**

Comments: ..... **Date:.....**

1. TITLE OF THE LAB EXPERIMENT

Quick Sort and Merge Sort in C Programming Language

2. AIM

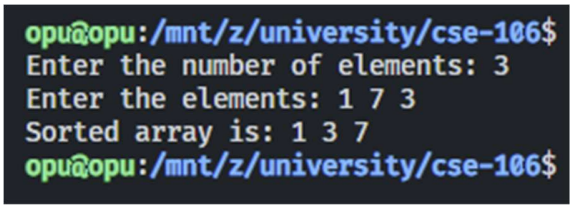
Sort an unsorted array of integers using quick sort and merge sort algorithm.

3. DESIGN

Quick Sort: Quick sort is a sorting algorithm based on the divide and conquer approach where an array is divided into subarrays by selecting a pivot element (element selected from the array). While dividing the array, the pivot element should be positioned in such a way that elements less than pivot are kept on the left side and elements greater than pivot are on the right side of the pivot. The left and right subarrays are also divided using the same approach. This process continues until each subarray contains a single element. At this point, elements are already sorted. Finally, elements are combined to form a sorted array.

Merge Sort: Merge Sort is one of the most popular sorting algorithms that is based on the principle of Divide and Conquer Algorithm. Here, a problem is divided into multiple sub-problems. Each sub-problem is solved individually. Finally, sub-problems are combined to form the final solution.

4. TEST RESULT / OUTPUT



5. ANALYSIS AND DISCUSSION

Quick sort is the fastest sorting algorithm and show END performance in case of any number of elements compared to other sorting algorithm.
On the other hand, using merge sort, sorting smaller list is faster than sorting larger list. And combining two sorted sub lists is faster than of two unsorted list.