**Computer Science and Engineering Discipline**

**Khulna University, Khulna - 9208**

Roll#:

Name:

email:

Mobile:

**Assignment on Merge and Quick Sort**

Generate random numbers and implement the Merge sort and Quick sort algorithms separately with the same sets of data **using C/C++** (Any other programming language **is not allowed**). Input will be the different numbers of positive integers. Execute your program and fill in the following Table 1 and provide other information.

**I. Write the code of your program below.**

**A. Merge sort:**

**B. Quick sort:**

**II. Fill in Table 1.**

Table 1: Simulation results

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **No. of Integers** | **Sorting Algorithm** | **No. of data comparisons** | **No. of data movements** | **Execution time (sec)** | **Difference in execution time** | **Comments (if any)** |
| 200 | Merge |  |  |  |  |  |
| Quick |  |  |  |  |  |
| 500 | Merge |  |  |  |  |  |
| Quick |  |  |  |  |  |
| 1000 | Merge |  |  |  |  |  |
| Quick |  |  |  |  |  |
| 10000 | Merge |  |  |  |  |  |
| Quick |  |  |  |  |  |
| 1000000 | Merge |  |  |  |  |  |
| Quick |  |  |  |  |  |
| 10000000 | Merge |  |  |  |  |  |
| Quick |  |  |  |  |  |

**III. Input and Output of the program**

1. Input of 200 integers:

2. Output of 200 integers.

**A. Merge sort:**

**B. Quick sort:**