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CENG356

Database Management Systems

Lab Work 1

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Introduction

The process is designed using the C ++ language. A random name, id, and phone are assigned for each 10000 "person". The data obtained afterwards was assigned to the text file with the "write" operation. Reading operation was performed with the "read" command.

The user was asked to enter an id and the time it took after the file was searched was calculated. An experiment was designed by repeating 10 times and an average time was established after the results of each were recorded. The same experiment was carried out after sorting for id. The resulting values were calculated and two different experiments were observed.

Methods

Since I use C ++ language, instead of C language commands such as "fread", "fwrite", "fopen"; I have used "ofstream", "ifstream" commands, which belong to C ++ language.

As I explained in the .cpp file, I wrote a script to assign a unique random value for the id, but when I run it, it does not save any data in the .txt file. I continued the process by taking that part in the comment line.

In the experiment of the first process, an algorithm that found 10 out of 10 was implemented and the average was 0.0015s. Likewise, an algorithm that found 10 out of 10 of the second process was realized and the average was 0.0013s.

Conclusion

2 experiments with 10 replicates were conducted.

The second operation, in which the sorting algorithm was performed according to the results, gave the desired value in a shorter time. The random order listing yielded the value slower and longer. However, this process may vary depending on the input data. While the difference was quite large in a few different experiments, a few of them gave very close results. In only one experiment, the sequenced text file was delayed. In general, the second operation, in which the sorting algorithm was performed, gave the desired value in a shorter time. For this reason, the second process, the sorting algorithm, should be preferred and used because it is faster and saves time.

References

- https://stackoverflow.com/questions/51501410/clocks-per-sec-in-c-language-found-the-time-h-library
- https://codescracker.com/cpp/program/cpp-program-binary-search.htm