

Project 1: DBMS Performance Evaluation

DBMS can help us to manage data conveniently and also can improve the efficiency of data retrieval greatly. Please compare data retrieval and other operations implemented by yourself using Java, C/C++ or any other language with DBMS to find the differences.

Requirements

1. Find some data for experiments. You can use all films with titles, directors, actors and other related information. Some other data such as 'Stock data', 'Library data' etc. is also fine. But the size should be reasonably large. Store the data into a PostgreSQL database table, and into a file (any format you prefer).
2. Retrieval comparison: Use select in SQL to find the films with word "XXX" in titles and record the execution time. You can get the execution time from a client after the execution. Write a Java or C/C++ program to do that through the file. Compare the differences of the two methods.
3. Update comparison: Use update in SQL to change all "To" in person names to "TTOO". Write a Java or C/C++ program to do that in the file. Compare the differences of the two methods.
4. Some other comparisons and experiments you would like to do. Such as you can reorganize data into some other format for faster retrieval. You are recommended to study the mechanism of DMBS for storing and retrieval.

The Report

1. It is a personal project. Each student should do it separately and submit one report for the project.
2. The submitted report should contain the design, implementation, and evaluation of the function.
3. Presentation of the project highlighting the key features and results.

Rules:

1. The project report and the source code must be submitted before the deadline. Any submission after the deadline (even by 1 second) will result in **a score of 0**. The deadline is 23:59 on Oct. 15.
2. The files should be submitted as report.pdf, [filename].Java or [filename].cpp. The files should **NOT** be compressed into one.
3. The score will depend on the quality of both the source code and the report. The report should be easy to understand and provide a clear description of the project, especially the highlights.