

Writing Assignment 1
Spring 2009
CMSC 362
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First Draft Due: Feb. 25
Final Version Due: Apr. 8

Background and Introduction

Because organizations depend so heavily on Database Management Systems (DBMS), it is critical that these applications perform well. Of course, different workloads will perform better on different DBMS systems. For instance, some applications may perform better on Postgresql than on Mysql. Other applications may work best with the SQLite library.

In addition to performance, there are many other features that distinguish the different DBMS systems. For instance, some of them support transactions and rollback while others do not.

Your Assignment

Contrast and compare two relational database management systems. Your comparison should include performance measurements of both systems as well as a feature comparison. You may use any performance metric you like -- from amount of memory used to how long it takes to process a fixed number of queries. Your paper should be between 4 and 6 pages long and should follow the traditional format of a computer science paper, which includes at least the following sections:

1. An introduction

In the introduction, you should state the motivation of the work. You should also provide some background from the computer science literature on other performance comparisons between databases. You should then explain why your comparison is different (and better!) from previous approaches. Probably this means that you will use a different data set for your comparison, or examine features that no one else has looked at before.

Because it is impossible to prove a negative (i.e. that no one else has done exactly what your paper is about), this can be the hardest part of a scientific paper. Please come to me for help in searching the literature or take advantage of the library's reference desk.

2. Methodology

In the methodology section, you should explain the set up of your experiment by describing what versions of the software you installed, what data set you are using to compare the two systems, and what measurements you used to compare them. This section can be broken up into pieces if you feel that makes the organization flow better.

3. Results

In the results section, you should present all the data you gathered. It should be organized into an easy to read format and should make it easy to interpret the results. A good way to do this is to use charts and graphs to illustrate your findings.

4. Conclusion

Here you should interpret the data for the reader. Explain your results and what they mean. For instance, you might say something like "when working with binary data, Postgres clearly outperformed MySQL". This is also a good place to summarize the rest of the paper. At the end of your conclusion, you should describe possibilities for future work – ways to extend the research you have done to obtain better or more interesting results. You should also have a bibliography (failure to properly cite your sources IS an honor code violation -- please see me if you have any questions).

Grading

You will receive a grade on this assignment based on the following criteria:

(10 pts) Spelling and Grammar

Your paper must follow proper English diction and syntax. Avoid things like passive voice and run-on sentences.

(10 pts) Organization

Your paper must follow the structure outlined above. It is not enough to simply write a sentence or two for each of these parts. You will lose points if these sections are not thorough and complete. Pay particular attention to the introduction, which **MUST** contain references to other work on database performance. Be sure to cite your references carefully. Failing to give credit to others is plagiarism and is an honor code violation.

(20 pts) Data Collection

The bulk of your grade will come from providing accurate data in a form which is easy to interpret. You must provide a comprehensive performance evaluation and must **ALSO** compare other features of the two systems. Appropriate use of figures and charts to present your data is very important in this section.

(10 pts) Appearance and Readability

The remaining ten points of your grade will come from having a paper that is attractive and easy to read. Please make sure your paper is double spaced with 1/2 inch margins and in a readable font (it should be a size between 10pt and 14pt). Please provide a title page with the title, your name, and the due date (and nothing else) at the front of your paper. The title page and bibliography do not count toward the page limit.