

CIS 560 Database System Concepts

Fall 2006

Homework 8 of 10: Machine Problem (MP8) / Project Part 2 of 3 Queries and Performance Measurement

Assigned: Sat 25 Nov 2006
Due: Thursday 30 Nov 2006 (before midnight)

The purpose of this assignment is to exercise your basic understanding of SQL queries through implementation in ODBC or JDBC.

This homework assignment is worth a total of 20 points and the project design component (combined over any of MP6, 8, and 10 that you turn in) is worth 60 points. Use your KSOL drop box to turn in a.zip file MP2-XYZ.zip, with your initials in place of XYZ.

Use C++ or Java **only** to solve the problem. Specify which you are using in a README.txt file and name the programs accordingly: each problem should have a source code file mp8_i.[LANGUAGE]. Put the compile line in your README.txt file. Indicate on the first line of the README.txt file whether you are using ODBC or JDBC. The file names should be given on the command line, e.g., "mp8_i file1 file2". The file format consists of a list of attributes for the relation, each beginning with @, then zero or more rows.

References for Problem 1

Form components:

http://www.w3schools.com/html/html_forms.asp

1. **(10 points) Queries and Transactions.** Add a simple drop-down box to the form you implemented in MP6, for two queries:
 - a) Return the average number of Persons sharing each distinct office phone number.
 - b) Return the count of Phone Numbers located in each Office.

You must load your test data from a given file to be supplied in class on Mon 27 Nov 2006 and write it out to a table and to disk.

Turn in the form and all source code in a file named mp8_1.jsp. Also turn in one or more screenshots of the form loaded from your ~/public_html page, named mp8_1-screenshot-i.jpg. Be sure to give the URL of the updated form in your README file (leave the old one up and append the suffix "MP8" to the new one).

References for Problem 2

Measuring time:

<http://www.javaworld.com/javaworld/jw-03-2001/jw-0330-time.html>

2. **(10 points) Measuring Performance.** Measure the wall-clock time required to compute the above queries, in **milliseconds**, and the I/O time for loading the relations and writing them out to the screen and to disk. Turn in the code required to compute this (or indicate where in the MP8-1 source you compute elapsed time) and a test run on the given file. **Four** times should be printed: *scan*, *query*, *print*, and *save*.

The Road Ahead

- Homework 9 will give you a basic exposure to principles of transaction processing.
- Finally, Homework 10 will wrap up your project with an update to the database using the principles of Homework 5 (E-R design and normalization)