CS121 Midterm Fall 2014

CS121 Midterm Instructions

This midterm has a time limit of 6 hours, in multiple sittings. If you go beyond the time limit, just indicate what work you did after time ran out. You will get 50% credit for approximately the first hour of work over the time limit, and no credit thereafter.

> NOTE: Start your timer when you get to the actual problems. The description is a bit long, so feel free to read it carefully without being rushed, and then you can start your timer when you get to the actual problems.

Feel free to consult any course material, including the MySQL online manual, the Database System Concepts book, any lecture slides, your graded homework assignments, or the solution sets for the assignments. Do not talk to anyone else about the midterm contents until both of you have actually completed it and turned it in. Do not look for answers to the problems on the Internet.

You may use your MySQL database for this midterm, if you would find it helpful. In general, minor issues with SQL syntax will not be penalized (e.g. missing a single-quote somewhere, a misspelled keyword, forgetting a parenthesis), but larger or more fundamental syntactic or structural issues will be penalized (e.g. putting the `WHERE` clause before the `DELETE` instead of after it, or confusing `WHERE` with `HAVING`, or just making up your own syntax).

If you run into any ambiguities in the midterm, identify the issue, state your assumptions, and then give your answer. I try to make things as abundantly clear as possible, but it doesn't always happen. If you identify a real problem then we will take this into account while grading.

Relational Algebra Guidelines

Feel free to hand-write your answers to the relational algebra problems. Students who type their answers generally spend much more time on formatting things than they intended to. One suggestion is to hand-write your answers, and then if you have time (and also motivation), you can go back and type them up at the end.

Of course, however you decide to write up your answers, make sure your work is neat and readable. Sloppy or unreadable work will lose points. Submit a hard copy of hand-written work; don't scan it.

For multiple-step operations that modify data, make sure to respect all referential integrity constraints. You will lose points if you are not careful to do this.

SQL Guidelines

For problems involving SQL, please restrain yourself to only valid MySQL syntax, with the following exception:

> **You may not use vendor-specific extensions to the `UPDATE` statement.** Use the version of `UPDATE` covered in the book and in class. (For example, do not use MySQL's "multiple table" version of the `UPDATE` statement.) These extensions vary from system to system, so it is important to be able to follow the standard in this area.

If your SQL is sloppy then you will lose points. Make sure to clearly and cleanly format your SQL commands. Do not put more than 80 chars on a line; wrap long statements at appropriate points.

For SQL that creates or modifies schema or data, if you have multiple steps, make sure to respect all referential integrity constraints. You will lose points if you are not careful to do this.