

Assignment 7

(40 Points)

Step 5 of Your PDA

Note: This assignment is a modification of material developed by the [Stanford Database Group](#).

For a brief introduction to MySQL scripting, check out this [Script Programming Reference](#) (especially Sections 1.4, 4.1, 4.2, 4.3, 4.4, and 4.5).

- 1 (10 points) Make sure you have foreign key constraints in your database. If you do not, add them. Show the create table statement that defines these foreign key constraints. Create an update that violates the foreign key constraint. List the update command, and then show the output of running this update.
- 2 (15 points) Write a MySQL procedure or function (your choice) and script that calls this procedure/function. This procedure/function should be logical for your database and should include one or more inputs and an output. After calling the procedure, you should print the results of the output. If your procedure/function makes multiple database state changes, document the changes with before/after select commands showing a (small) set of data that is changed. Include prose (English) that describes what the procedure/function does.
- 3 (15 points) Create an index and show how it speeds up two types of queries: 1) a selection on a single relation, and 2) a selection that involves a join. Note: To get times that will be measurably different, you will likely need to populate your databases with a larger dataset.

Grading Rubric:

| Criteria | Rating | Maximum Points |
|-------------------------|--|----------------|
| Foreign key constraints | 10 points: Shows create table statements with constraints, update command that violates constraint, and proof of running the update that violates the constraint 5 points: Shows the create table statements but no update and/or proof of constraint violation 0 points: No marks | 10 |
| Stored procedure | 15 points: Shows procedure with one or more input and output, prints the results, and has good English description 10 points: Description missing, output missing, or procedure does not meet requirements of input and output 5 points: Major problems 0 points: No marks | 15 |
| Index | 15 points: Index created and convincing evidence of query speedup for two queries 10 points: Only one query presented 5 points: Index created, but no convincing evidence of speedup 0 points: No marks | 15 |