Programming Assignment #5
Due Wednesday June 3

For this assignment you will want to refer to Handout #43: *Introduction to Pro*C – Embedded SQL.*

Your final PDA assignment is to build a user-friendly interactive application program front end to your personal database using C or C++. Your program should consist of a continuous loop in which:

1. A list of at least five alternative options is offered to the user. (An additional alternative should be *quit*.)
2. The user selects an alternative.
3. The system prompts the user for appropriate input values.
4. The system accesses the database to perform the appropriate queries and/or modifications.
5. Data or an appropriate acknowledgment is returned to the user.

You should include both queries and modifications. For example, a UC campus applicant database interface might include in its menu:

- A number of useful queries on the database, with both input and output in a format more convenient and pleasing than raw interactive SQL.
- Option to insert a new student record.
- Option to insert a new application record.
- Options to update a student's address, GPA, or SAT.
- Option to update an application's decision field.

You should code your interface using embedded SQL commands in a C or C++ program, as described in Handout #43: *Introduction to Pro*C – Embedded SQL.* We are not expecting anything particularly fancy in terms of the interface itself. For example, a menu printed via `printf` is fine. Also, handling of SQL errors can be simple. You can write a `sqlerror` routine that just prints the error message from Oracle, or you can copy the error handler from one of our sample programs.

Please turn in your C/C++ code along with a script showing an interaction with your program in which all of its features are exhibited. You may use your small database if it is sufficient to demonstrate that you have done the required work.

Note: At the beginning of the quarter several students asked if they could write a Web-based front end to their database, use other application programming languages (such as Perl), or use other database access protocols (such as ODBC or JDBC). It is fine with us if you deviate from this assignment *provided that you submit a written proposal describing what you plan to do to* `cs145@ta` *by Friday May 29 at 5:00 PM.* Your proposal will be approved or rejected within 48 hours of its submission. Of course we cannot necessarily provide programming support except when following this assignment, and the same due-date and late policy holds for all students.