**CS425: Database Design and Applications (Database Organization)**

Application Project – Group Work

Semester: Spring 2015

Assigned: April 15, 2015

Due date and time: Your application is due at the start of your demo time. Demos will be scheduled on the last week of class and during the finals week. Demo slots (which your group will sign up for) will be given in late-April.

*Please note that you MUST work in a group unless you received permission to work solo.*

*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

**Application Requirements**

**Insert, update and delete:**

The application should provide a way to insert, update, and delete all data. For testing purposes, there should be a way to see all data in a particular table (i.e. an interface which displays all data for a “select \* from <tablename>”).

**Basic capabilities:**

1. Membership: membership registration, e-commerce (account information and update), participation in interest groups.
2. Interest groups: see reviews, rate reviews and post reviews. Filtering based on restaurant name or PC brand. Post new topics (restaurant or PC). E-commerce on PCs.
3. Credit points and rankings: obtaining credit points and rankings, assigning credit points to contributions routine and specific, deny membership, assign ranking.

**Authorization and privileges:**

1. Create a view that contains only the user id, user name and the user’s credit points per interest group.
2. Assign a user as group leader and authorize the group leader the ability to change a user’s credit points using the views defined above. Show that the group leader can now change other users’ credit points.
3. Show that the group leader can assign credit points to certain member activities (such as commenting on a restaurant) but other group members cannot.
4. Show that an ordinary user cannot change another user’s credit points.
5. Show a case that a user is denied the purchase of a laptop because he does not have sufficient funds in his account.

**Queries:**

1. Display the 20 most recently added restaurants in the first interest group.
2. Display the 20 most recently commented laptops.
3. Display the names of the users in each interest group who do not have their financial information set up.
4. Display the balance in the account of a user after she purchased a laptop.
5. Display the members, in ascending order, with the 5 highest credit points in each interest group, and the credit points that they have earned.
6. Display the names of the group leaders, the group(s) that they are leading and the group(s) they belong to.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Deliverables**

1. **Design Document (10%)**

Your Design Document is a revision of your HW 3 which is updated to address feedback that you will receive. The organization of your document should make it easy for its reader to see that the design meets the requirements of the application.

1. **Application Software (65%)**
2. All the code and test data that will be demonstrated in your demo, including scripts that build the executable.
3. A README that describes how to build and execute the code and test data submitted in (a).
4. Your code and test data should support the insertion, update, delete and query functionalities described earlier in this project description.
5. **Test Data and Test Document (20%)**
6. In the testing document, for each requirement in the project, you must:

\_ List the requirement

\_ List all tests necessary to perform on that requirement

\_ List the expected outcome

\_ List the actual outcome

\_ Indicate if the implemented requirement passed all testing

1. You must provide all the necessary test data for the above tests.
2. **Demo (5%)**

Each demo will last 25 minutes. All group members must be present in the demo. The demo should introduce each member of the group and the roles that they play in the project development. It should include a conclusion slide summarizing the results. The grade for the demo will be based on how effective and smooth the demo went.

The bulk of the demo should be used to demonstrate the capabilities of your application software. You goal is to show that your application supports all the requirements. You will be asked to show you can perform the insertion, updates, deletions, and queries described earlier. The grade on the Application Software (65%) will mostly be determined whether you can show the functionalities in the demo.

1. **Self Evaluation (no grade if not submitted)**

The group should submit a single feature ownership table. We ask each member of the group to submit a self evaluation. Your grade on the project may be adjusted according to your self evaluation and your group mates’ evaluation of you.