Milestones and Guidelines for Term Project

Database-driven Web/Mobile Application

1 Goals

The goal of this project is to deepen the understanding of topics and problems discussed in class and gain hands-on experience about database systems and implementation details. You will first identify an application which heavily relies on a database system. The application can either be built on web or on Android devices. You will then design the underlying database and define the application functionalities which you will implement. Finally, you will demo your application and write a report summing up your term project. You are encouraged to choose your own project provided that it is relevant to the course and challenging enough.

2 Participation

All students are required to participate and complete the project in a small group of three to four people. We will expect equal amount of work to be done by each team members. This means that we will deduct points for those who do not fulfil their duties. Note that working individually on a project is not allowed since working in a team is so much desirable on its own merits. It will be a valuable learning experience and it will help you improve skills for communication and coordination for effective collaboration. Besides, collective wisdom and synergistic effort will help you learn from each other and attempt more serious challenges.

3 Submitting Your Work

All papers should be written in PDF format and submitted via eTL unless otherwise stated. Code packages should be compressed using tar or zip. For each team, only the coordinator should submit the files. Don't forget to include team name, team members, and their student IDs in each submission.

4 Milestones

There are several steps to complete the project. Please read carefully and do not miss any deadlines.

4.1 Team Formation

You must form a team of three to four people and pick a coordinator. The coordinator will be responsible for submitting project files, dividing workload, and keeping the team on track. After forming a team, the coordinator should fill out this form before the deadline.

Deadline: 11pm, Mar. 14, 2014

4.2 Project Proposal

Each group should submit a short paper (1 to 2 pages) that includes the following:

- Description - What's its purpose? Who will mainly use this application?
- Uniqueness - Are there any similar or equivalent applications out there? How is yours unique?
- Usefulness - State as clearly as possible why your application is useful.
- Data - Describe what your data is and where you plan to get them.
- Functionality - Describe what your application will offer. Also, you must design at least one advanced function. More on this below.
- Development Plans - Which OS/programs are you intending to use? What are some programming languages required for your project? Lastly, which DBMS and its version are you going to use?

Data should be "real." For example, you can build a web crawler to gather data from the web or ask your friends to use your application to get some data. Dummy data will not be acceptable at the final demo.

For functionality, each team must implement four *basic functions* and at least one *advanced function*. Basic Functions:

1. Insert - show how to insert records to the database.
2. Update - show how to update records.
3. Delete - show how to delete records from the database.
4. Retrieve - show how to query the database and print the retrieved result. Your application should have multiple queries and one of the queries must involve JOIN of multiple tables.

Now, for the advanced function, each team should come up with something that is creative and technically challenging to implement. This means that you need to spend some significant time implementing your advanced function. Normally, the advanced function should be related to an interesting algorithm. Consider an example of a project that archives all the weather forecasts from serveral major weather sites. One possible advanced function would be to predict which weather site is the most accurate, given the current weather state. This would require an intelligent algorithm that uses many query statements. Another example would be a school cafeteria recommender application that predicts and recommends cafeteria on daily basis to users. Based on user's taste and today's menu, the application recommends a cafeteria the user will be satisfied the most. Such task would be technically challenging.

Note: There is a chance of getting your proposal rejected for various reasons (i.e. duplicate work, insufficient functionality, etc.) and if that is the case, you must revise your project and get it approved by the TA. If you are unsure about your project, feel free to contact the TA and ask for help.

Deadline: 11pm, Mar. 25, 2014

4.3 Midterm Checkpoint

Each team must present its application in its beta working status to the TA and submit code packages. Each team will be given about 10 minutes to present its work. There should be some data in the database and basic functions should be implemented as well. You may make up data for this demo. The TA will ask some questions regarding the work done and future plans. More details and timeslots are to be announced later.

Deadline: 11pm, Apr. 22, 2014

4.4 Final Demo

Each team must demo its application in class. The presentation will take about 10 to 15 minutes. During the presentation, each team must show that there are "real" data in the database and explain

how they were gathered. Each team must also show that basic and advanced functions are fully working and explain details of those functions. More details and timeslots are to be announced later.

Deadline: May 22, 2014

4.5 Final Report

Each team must submit its code package and a report that summarizes the whole project. Also, each team must hand in a hard copy of the report in class on May 29. The report should be no longer than 15 pages long. In addition to the proposal written before, the final report should include the following as well.

- ER Diagram
- Relational Schema of the Database
- Work Division
- Final Thoughts - any experience or lesson learned during the project. One for each team member respectively.

Each team must also include a README.txt file in its code package's root folder. The file should explain how to install and run the application.

Deadline: 11pm, May 28, 2014

5 Grading

The term project will sum up to 35% of your final grade. To be specific, the grade distribution is:

Project Proposal	5%
Midterm Checkpoint	10%
Final Demo	10%
Final Report	10%

6 Help on Getting Started

6.1 Web Application

For web development, you will need a server. You may setup a webserver on your own but that is unnecessary work for this project. Instead, running a local webserver on your computer is more desirable. Both XAMPP Server and WAMP Server are recommended for such purpose. Both come with Apache, PHP, and MySQL pre-installed and interpret scripts written in web programming languages such as PHP.

6.2 Android Application

For Android development, you need JDK and Android SDK. Also, Google has a great reference so be sure to take a look at it. If you don't have Eclipse installed, download the ADT Bundle which is essentially Eclipse plus SDK. Otherwise go with the SDK Tools.

If you have any concerns, please send me an email at (sgsohn@snu.ac.kr).

Good luck and have fun!