CSE 3330 / CSE 3345 Semester Project

Spring 2011

Introduction

In this project, you will design and implement a 3-tier software solution for a fictitious client's Classical CD store. You will make use of concepts from the Database Concepts and Graphical User Interface Design classes to bring this project to fruition.

Goals

1. Demonstrate mastery of:
   a) User-interface best practices
   b) Database analysis and design best practices
2. Implement modern software development tools and technologies
3. Soft skill maturation and community interaction
   a) group interaction and communication
   b) interaction with the open source community

High-level Software Architecture

In this project, your team will implement a three-tier software solution to the problem. Figure 1 provides an overview of the architecture.

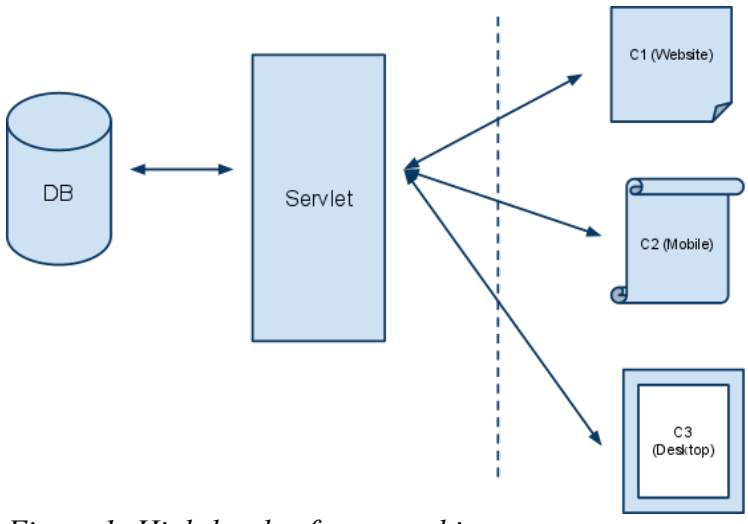

Figure 1: High-level software architecture

Database Layer

The database that will be used for this project will be MySQL. Connectivity to the DB layer will be via JDBC using the native MySQL Connector/J JDBC implementation.

Application Server Layer

You team will implement the application server logic using Java EE 6 technologies. In particular, you will use Java servlets to interact with the various client-side applications as well as with the database layer.

Client/UI Layer

Your team will implement two separate user interfaces of the three possible options:

1. Website Application
2. Mobile Application
3. Desktop Application

Team Composition

CSE 3330 and CSE 3345 have a large overlap in the enrollment. Guidelines and best practices for team formation:

- Each team must contain between 4 and 6 students
- Each team must contain at least 2 students from CSE 3330 and at least 2 students from CSE 3345. A student in both CSE3330 and CSE3345 can count to both quotas but still must maintain minimum number of students requirement indicated above.

Note: Do not choose team members just because they are your friends or just because you are in the same social organizations. This has backfired many times in the past.

Timeline and Major Deliverables For Project

March 2, 2011 – Project Kickoff

March 28. 2011 – Milestone Deliverables Due

Your team should produce a design document containing at a minimum:

- Software Architecture diagram (more detailed than the one above)
- Details on Application Server (Servlet) decisions made
- Database analysis and design documents such as ERD
- Screen Mockups

April 14, 2011 – Sanity Check

This is an opportunity for you to ask questions and get informal feedback on your project thus far. The only specific requirement is that progress be demonstrated.

April 29, 2011 – Final Project Due

Your team will submit and/or demonstrate the following:

- Final design report (updated version of Milestone deliverable)
  - Should include a detailed description of each tier of your architecture
  - Should include a description of hurdles encountered and how they were surmounted
- Complete implementation that can be demonstrated

Grading

The project grade will be 30% of your final grade in both CSE 3330 and CSE 3345. The breakdown for this 30% is as follows:

- Milestone – 10%
- Sanity Check – 10%
- Final Design Document – 30%
- Final Project Demonstration/Presentation – 30%
- WOW Factor – 20%

The WOW Factor

The project documentation indicates the minimum requirements for achieving an 80% on this project assuming perfect performance in each of the indicated areas. To achieve more, your team must go over and above. To achieve the WOW factor, you must implement something significant that is over and above the basic project requirements. This could be done by researching and integrating a significant additional technology, or by adding significant additional features to the software that would be to the benefit of the client. For the additional-feature option, your team must be able to make a case that the added feature or functionality would be beneficial to the business. In other words, software-based "Easter eggs" do not count.

Team Dynamics

We recognize that situations occur in which a particular team member does not "pull their weight". To this end, other team members usually become disgruntled. In order to address this problem, we have put in to place two review mechanisms that you will have at your disposal.

1. End-of-project peer and project reviews: Each team member will have the opportunity to critically evaluate the performance and contribution of other team members.
2. Team member grievance process: In the event that a team member becomes completely non-productive and fails to communicate, the remainder of the team (or a majority of its members) may initiate a grievance process with the professors.

   Step 0: The team will email the non-producing team member and inform said team member that the grievance process is about to be initiated if work habits do not change. The professors should be copied on this email.

   Step 1: If behavior of non-producing team member does not begin to become a contributing member within 3 calendar days from the sending of email from Step 0, the

team may contact the professors via email and request assistance. The professors (one or both) will set up a meeting with the non-producing team member to address the issue.

Step 2: If the non-producing team member does not begin to become a contributing member within 3 calendar days from the meeting with the professors, the team may dismiss the non-contributing student from the team. At this point, the non-contributing team member must complete the project alone. *Note:* A student may not be dismissed from a team during the last two weeks of the project.