

Term Project

Due Dates

5PM October 28 (Monday), 2013	1st Preliminary Design Document
2PM October 30 (Wednesday), 2013	1st Prototype Demo
5PM November 25 (Monday), 2013	2nd Preliminary Design Document
2PM November 27 (Wednesday), 2013	2nd Prototype Demo
5PM December 20 (Friday), 2013	Complete Design Document
December 23 (Monday) – 24 (Tuesday), 2013	Complete System Demo
2PM December 25 (Wednesday), 2013	Final Report and Oral Presentation

Project Description

The goal of this term project is to develop a Web-based system (called “AlumniBook” perhaps) for facilitating the interactions between an academic department (within a university) and her alumni and also interactions among the alumni. Given the time and person-hour constraints, we shall focus on the following two groups of functions (besides authentication/authorization and access control). *We assume that the user of this system has a computer/email account with the university for authentication purposes.*

- User Profiles Maintenance
 - The user of the system may be an alumnus, student, staff, or faculty member of the department.
 - A user profile should include the user’s name, postal address, phone number, email address, current employer, position, and a short autobiography. It may be useful to keep also the past positions of a user. If the user is an alumnus or student, his profile should also include his student ID or one of his student IDs (in the case that he has enrolled in different programs).
 - A user may update his profile, even switching to a new student ID.
 - A user may look up the profiles of other users when permitted.
 - It should be a good idea to allow the user to post a recent picture as part of his profile.
- Forum for Exchanging Ideas
 - A user may raise an issue (including asking a question or announcing an event), hoping others to respond.
 - A user may follow up an issue by posting his comments.
 - A user may browse all issues that have been raised. To make browsing easier, the issues may be sorted, for example, by date or category.
 - A user may view all comments addressing a particular issue, which may be sorted or filtered in some way.
 - A user may subscribe to a category of issues and be informed by email when new comments are added or a new issue in the category is raised.

Additionally, the system should provide APIs for mobile applications to query the phone number of a user.

APIs for Mobile Applications

The description below may be incomplete and we shall try to resolve any remaining issues in class.

For querying phone numbers, the fields and their types are as follows:

field name	type	comment
name	string	name of the user

The result of a query is an array, each entry of which includes the following fields:

field name	type	comment
name	string	name of the user
id	string	account ID
phone	string	phone number

All data should be encoded in the JSON format.

Non-functional requirements

There are also non-functional requirements, including security (secrecy, privacy, access control, software security, etc.), concurrency control, and system robustness.

- **Access Control:** An adequate access control policy should be in place. Every piece of data can be accessed only by a person with the access right.
- **Concurrency Control:** Several users may access the website at the same time, without interfering with each other or causing inconsistency in the data.
- **System Robustness:** The system should be robust and gracefully handle any illegal inputs by the user.

General Instructions

- *You must use the Git version control system, set up for this course, to manage your development work.*
- The design documents and the final report should be in printed form. Please use A4 paper and *double-sided* printing. Simply staple on the upper left corner; NO plastic or cardboard covers and NO binders, either. Drop each design document, by its deadline, in the physical mailbox of Yih-Kuen Tsay (the instructor); put the final report on the instructor's desk before the final presentations start. Late submissions will be penalized 20% for each working day overdue.
- If you are willing to make your design and implementation available to future participants of the course, we would appreciate very much a copy of CD-ROM that contains all relevant sources to accompany your final report. Please include in the CD-ROM compilation and installation instructions.
- DO NOT plagiarize (i.e., do not use material without crediting the source).

Design Documents

The term project is expected to be implemented in three stages:

1. Stage 1: functions related to user profiles maintenance
2. Stage 2: functions related to the forum for exchanging ideas (and improved functions from Stage 1)
3. Stage 3 (completion of the project): access control, the mobile APIs (a mobile client is optional), and other enhancements (including improved functions from previous stages)

Accordingly, there will be three required design documents: two preliminary design documents and one complete design document, at most 10, 15, and 20 pages long respectively. The preliminary design documents constitute an evolution to the complete design document, which gives a complete and thorough description of your system design.

A design document should include at least the following items:

- an overview of the entire system,
- design of the components in the covered scope, including the various UML diagrams and their accompanying specifications,
- any other verbal or diagrammatic descriptions that would help clarify the design (e.g., the graphical interfaces), and
- discussion on how knowledge learned from the course has been applied.

Demonstrations

- Preliminary prototype demos
 - A prototype demo should be short, about 10 minutes, showing sufficient evidence that the current implementation meets the goals of its preliminary design.
 - They will be scheduled during the breaks of the class meeting on their due date.
- Complete system demo
 - The complete system demonstration should be about 30 minutes long.
 - To allow time for discussions, one hour will be allotted to each team.
 - Please schedule well in advance (at least one week before the due dates) a date and time with the instructor.

Oral Presentation

Each team should give a 30-minute oral presentation with an appropriate set of slides; the presentation is to be followed by a Q&A session. The slides should be designed in such a way that they can be made publicly available on the course website. The presentation must include a demo. The prototype website must be on a remote server, rather than on the local host.

Final Report

The final report should be at most 15 pages long and include the following two parts:

Part One

- an overview of the system from the users' perspectives
- simple (but self-contained) manuals for the user or application developer

Part Two

- a summary of the final design (including possible changes and the reasons for these changes)
- the lessons (not necessarily technical) you have learned
- the task allocation, identifying what each team member has contributed to the project

Grading

Item	Percentage
1st Preliminary Design Document	10%
1st Prototype Demo	10%
2nd Preliminary Design Document	10%
2nd Prototype Demo	10%
Complete Design Document	10%
Complete System Demo	10%
Final Report	10%
Oral Presentation (with slides)	20%
Usage of Tools (Git, etc.)	10%

All members of a team basically will receive the same score for the term project. However, a peer evaluation will be conducted within each team following the final oral presentations. The evaluation result will be used to adjust the score of each team member, up to a 20% difference with the original score.