Term Project

Due Dates

5PM October 13 (Wednesday), 2010	1st Preliminary Design Document
9AM October 28 (Thursday), 2010	1st Prototype Demo
5PM November 10 (Wednesday), 2010	2nd Preliminary Design Document
9AM November 25 (Thursday), 2010	2nd Prototype Demo
5PM December 08 (Wednesday), 2010	Complete Design Document
December 27 (Monday) – 29 (Wednesday), 2010	Complete System Demo
January 06 (Thursday), 2011	Final Report and Oral Presentation

Project Description

The goal of this term project is to design and implement a *customizable*, *multi-lingual* Web-based software system (or website), that facilitates admission application and evaluation processes for large universities with over a hundred departments or programs. The project is open-ended and its precise scope is up to the decision of each individual team. Nonetheless, we pose the following requirements that should be essential for such a system.

The system is customizable in that, before a particular university has its admission application and evaluation website open to the users (including prospective applicants, recommenders, department staff, faculty, etc.), the university should be able to

- add or remove a department or program,
- set up the appropriate roles in applications processing,
- select the items required for an application, which may be program dependent,
- select the style and layout of its Web pages,
- set up the language selection options,
- etc.

The support for presenting Web pages in multiple languages is considered to be a very important customizability requirement.

The system, for a particular university, should provide the following functions to its various users.

- An applicant should be able to
  - select the preferred language to view a Web page,

  - fill out on-line application forms (he may apply for several departments or programs),
  - download possibly other forms that are to be completed off-line,
  - upload completed forms,
  - save his application data and return to complete them later, and
  - check the status of his application.

- A recommender should be able to
  - fill out on-line recommendation forms,
  - upload completed recommendation letters, and
  - save his recommendation data and return to complete them later.

- The university admission office should be able to
  - inspect the applications using different views,
  - get various statistics,
  - record exam scores (assumed to be received through ordinary mail from "standard test" organizations) of an applicant,
  - monitor the progress of the evaluation made by each individual department/program, and
  - send acceptance/rejection notifications to the applicants.

- The chair of the admission committee of a department or program (and probably his assistants) should be able to
  - inspect all applications to the department or program,
  - get various statistics,
  - assign applications to its faculty members for evaluation, and
  - report the progress and result of the evaluation to the university.

- A faculty member in a department or program should be able to
  - inspect the applications that are assigned to him,
  - conduct discussions with other faculty members on a particular application, and
  - give his assessments of the applications.

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

- **Secrecy**: Transmission and storage of sensitive data should be protected.

- **Privacy**: Privacy of applicants should be respected. A policy of privacy should be in place and enforced.
- **Access Control**: An adequate access control policy should also be in place. Every piece of data can be accessed only by a person with the access right.
- **System Robustness**: The system should be robust and gracefully handle any illegal inputs by the user.
- **Browser Neutrality**: The system should work on as many browsers as possible. So, try not to utilize a feature that is supported only by a particular browser.

General Instructions

- The term project is to be carried out by teams (groups). Rules for the formation of teams will be announced in class. In principle, we will try to divide the entire class into three teams of roughly equal numbers of students. We will also try to ensure that each team has sufficient numbers of both junior and senior students.
- All design documents and reports should be in printed form and dropped, by their respective deadlines, in the physical mailbox of Yih-Kuen Tsay (the instructor). Late submissions will be penalized 20% for each working day overdue. Please use A4 paper and staple on the upper left corner. NO plastic or cardboard covers; NO binders, either.
- You are encouraged to write in English.
- The design documents, the demonstrations, the final report, and the oral presentation will all be taken into account for the grading of your project.
- 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. Accordingly, there will be three required design documents: two preliminary design documents and one complete design document. While the scopes of the stages are up to the individual team, the first stage should cover about 20–30% and the second stage about 40–60% of the entire system.

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, and
- discussion on how knowledge learned from the course has been applied.

Demonstrations

- 1st and 2nd 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 discussion, 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.

Final Report

The final report should include two parts:

Part One

- an overview of the system from the users' perspectives
- simple (but self-contained) manuals for the different users

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

Oral Presentation

Each team should give a 30-minute oral presentation with an appropriate set of slides. The slides should be designed in such a way that they can be made publicly available on our course website. The presentation will be a good opportunity for you to share special experiences or ideas with other teams. A brief demo during the presentation is optional.

Grading

Item	Percentage
1st Preliminary Design Document	10%
1st Prototype Demo	5%
2nd Preliminary Design Document	10%
2nd Prototype Demo	5%
Complete Design Document	10%
Complete System Demo	20%
Final Report	20%
Oral Presentation	20%

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.