Senior Project – FALL 2013
Online Judge App Version 2

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Problem
Grading Senior Projects at the end of the semester can be very hectic and time consuming. Judges currently use score sheets to keep track of all the students evaluations. This method is prone to human errors and delays the announcement of the grades.

Current System
Currently, there’s no an automated way of grading the Senior Project for Computer Science. Judges used a rubric based on a set of criteria and standards. One student would be graded by multiple judges and each student would receive an average score from the scores received from each judge. This method still leaves room for human error, data inaccuracy and is very time consuming.

Solution
As a solution to this problem, we implemented a Mobile Web Application. I developed the User Interface (UI), a user friendly environment where participating judges can easily grade the students, the system administrator can manage the students grades and publish them for the students to see.

Requirements
Our system contains 12 main functional requirements. Each of the requirements make a direct use of the UI.
FR1: Allow Admin to send Invitations.
FR2: Allow Judges to register in the system.
FR3: Allow Judges to identify conflict of interest with Students
FR4: Randomly assign Students to Judges.
FR5: Allow Admin to set Students distribution rule.
FR6: Allow Admin to add/remove Questions.
FR7: Allow Admin to set Students location.
FR8: Allow Admin to set event map.
FR9: Allow Judges to grade Students assigned to them.
FR10: Allow Admin to accept/reject each Judge evaluation.
FR11: Allow Students to view their grades.
FR12: Keep record of all participants in previous semesters.

Implementation
To build the UI, I used the Sencha Touch framework, a user interface JavaScript Library. Sencha Touch makes extensive use of HTML5 and CSS3 to provide a robust styling layer. It allowed us to build a mobile web app that look and feels native on Android, iPhone and any HTML5 capable device.

Verification
Our verification process was divided into three different stages:
- Unit Testing: All UI specific functionalities were tested (i.e. button click, pages loading)
- System Integration Testing: Using the bottom up approach, test cases were made to read/write data into the Database.
- Acceptance Testing: The System as whole was tested by our mentor, to make sure it meets the requirements

System Design
We decided to go with the three their system design architecture for this project. The three tiers are as followed: 1st) Client Tier, 2nd) Business Logic Tier, 3) Database Tier. Most of my work was done on the Client Tier also called the presentation layer. This is were the data is presented to the user and also allows for data entry. I was also involved in helping developing the business Logic tier, this level contains all of different queries and algorithm that accesses the data needed.

Object Design
Our Object Design is made of the following main objects:
- Admin, Invite, Judge, Question, Student and History.

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