

## **Computer Science 361 – Spring 2014**

### **Team Project Description – Phase 0**

#### **(5 Points)**

The Computer Science Department at UW-Oshkosh needs help managing assessment data for its students. Essentially, the department wants to track how students perform in specific *assessment items* over time.

Here is a more detailed description:

- A student has a university ID, first, middle and last names, a date they began the program and a date they ended with the program. They also have an emphasis (CS, SE or CIS) and a status (active/inactive/graduated).
- Every semester, the department administers multiple assessment items (AI's). Each AI has a unique ID, a course number it is assessed in, the faculty member who administered this AI, the semester it is administered in (starting date of the semester), and specific criteria on how it is graded. Each criterion has to be graded on a 4 level rubric (1-deficient, 2-marginal, 3-satisfactory, 4-exemplary). The number of criteria for each AI varies, and is specific to each AI. When a student takes an AI, they receive a score (1-4) for each criteria of that AI. This score must be recorded for all students.
- Every CS emphasis student ideally must participate in each AI exactly once. In reality, some students will miss certain AIs (absences, transfers, etc) and may participate in a specific AI multiple times (if they repeat a course). There is no requirement on the participation of SE and CIS emphasis students, but their scores must be recorded when they do participate.
- The start-date and end-date of a student is automatically computed from the date of the first AI and the last AI taken by the student.

The department wants to be able to quickly find answers to a number of questions from this data. For example:

1. What is the average score on each criterion for a specific AI (across all students)? Can we graph this? Can we generate a summary spread sheet of this data?
2. What are the average scores for all AI's, averaged across the average scores for each criterion in that AI? Can we graph this? Can we generate a summary spread sheet of this data?
3. What is the average score of a particular student across all AI's. Can we plot these scores against time?
4. What are the 5 top AI's with best and worst average scores?

The department will also need to be able to update this database. For example:

1. Edit specific criteria, AI, or student details.
2. Add a new AI (and associated criteria) or a new student.
3. Delete an AI that has no data associated with it.
4. Delete a student who has not participated in any assessment items.

The department has an initial spreadsheet from which existing data may need to be imported into this new database. Many columns in the spreadsheet may have missing data and would need to be handled appropriately.

The department also wants to set this database up publicly so that it is accessible to approved users who can login to the system. These users may have different privileges - some can just view data, and some can actually edit data. The user interaction should allow a simple mode that allows common tasks to be performed with minimum user training, and more advanced tasks to be performed with more programmatic interfaces (e.g. SQL queries).

**Your goal: Build a complete product that meets the project requirements as best as you can.**

There are roughly 4 phases in this project as shown below, with tentative milestones provided:

- **Phase 1:** Conceptual design due – **3/11**
- **Phase 2:** Relational schema design, refinement and SQL database definition due – **4/01**
- **Phase 3:** Data Import and SQL Implementation of essential queries due – **4/15**
- **Phase 4:** Application development and testing completed –**5/13**

More information will be given on each phase, at the start of that phase.

You must work on this project with a partner of your choice. (I reserve the right to expand your team to a team of size three to ensure that everyone is in a team.) **I want an email from every team, stating its composition, by Tuesday, 2/25 at 11:30PM. If, after trying, you are unable to find a team mate, you should still send me an email stating exactly this by the deadline specified.**