Proposed Requirements
Software Design
SUNY Oswego
Spring 2017
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Introduction:

Purpose:

This document shall specify the requirements for the OpenClicker system created by the Spring 2017 SUNY Oswego Software Design class. This document shall enable the participants of the class to read and clearly understand the requirements for the system. The intended audience of this document is the team working on the OpenClicker system.

Scope:

The OpenClicker system will enable course instructors to ask their students questions, which the students answer. It shall provide question results to the instructor, who can allow students to see as well. This system shall offer a free, mobile alternative to other automated response systems that require students and instructors to pay for specialized physical devices.

Definitions:

An **active question** is a question which is currently receiving responses. If the active question accepts a response, it will record the answer as data.

A **class list** is a list of students enrolled or to be enrolled in a given course.

A **closed course** is a course which no user may freely join.

A **confidence scale** is a slider (1-10) indicating a student's confidence with their answer.

An **individual quiz** is a quiz which each student takes privately.

A **generic question** is a poll to collect results, without a built-in question. (This is similar to the way iClicker handles polling).

A **group quiz** is a quiz which students take at the same time. Students answer the same question at the same time, with the potential for the instructor to show class results after each question (or even during).

An **open course** is a course which anyone can join.

A **private question** will be seen only by the sending user and the instructor.

A **public question** will be posted for all students to see, as well as the instructor. (*Other users can respond to public questions with comments?*)
A **question board** is a web page where questions can be posted and responded to.

A **quiz review** will display to the user their overall score and each question in an *individual quiz*. For each question, the correct answer will be indicated, along with the answer chosen by the student. This list shall appear as a *consecutive list of questions.* This **quiz review function** can be turned on or off.

A **timed question** is a question with a timer.

Overview:

This document shall outline requirements in more specific detail than the above outlined system. They will specify the functions and qualities of the system, which will allow it to fulfill its purpose in a successful manor. Any constraints imposed upon the team will also be specified.

Constraints:

The system shall be completed before the end of the Spring 2017 semester.

High Usability:

The system shall be a web based application.

The interface shall resize cleanly for common screen sizes.

The interface shall be simple to use.

The interface shall be intuitive.

The interface shall be aesthetically appealing.

The system shall provide a link to a help page.

The help page shall further explain the system's functions and interface.

The interface shall be readable.

The system shall be able to interface with blackboard.

While students are connecting to a course, a "connecting…" message shall be displayed that they are connecting to the course.

Legality

The name for the system must not violate any licensing laws.

The contents of the system must not violate any licensing or privacy laws.

Login:

Users shall be given feedback after successful login.

A hash system shall be used for login security.

Users shall log in by a username and personal password.

Upon login the user shall be taken to a dashboard.

The dashboard shall be relevant to the logged in user.

Dashboard:

Student View:

Students shall be able to view any active questions for a course in which they are enrolled.

Students shall be able to submit an answer to any active questions for a course in which they are enrolled.

Course notes shall be visible to all students in a given course.

A student's answer to a question shall remain anonymous from other students.

Instructor View:

Instructors shall be able to add students to their closed courses.

Instructors shall be able to add course notes to their course(s).

A student's answer shall be visible to the instructor who owns the course(s).

Instructors shall have control over their courses.

The instructor may set permissions for what functionality students have access to during an *individual quiz*.

Instructors shall be able to input answers to questions for their students.

Instructors shall be able to regulate which users are able to join that course.

The instructor shall be able to see what students are logged in to a given course.

Questions:

Instructors shall be able to create questions.

Created questions shall have one of several answer types:

- Multiple Choice Questions with one correct answer.
- Multiple Choice Questions with more than one correct answer.
- Extended response questions (*Text fields*).
- Upload a file.
- Slider Responses (*Scale of 1-10*).

Instructors shall be able to start a *generic question*.

Instructors shall be able to set the answer type for a *generic question*.

Instructors shall be able to start a question for their course.

Instructors shall be able to end a question for their course.

Instructor's shall be able to start a *timed question*'s timer.

When a *timed question*'s timer is running, it shall count down in real-time.

When a *timed question*'s timer hits zero, it shall stop running.

A *timed question* shall only accept responses while its timer is running.

A *timed question's* display shall be formatted minutes:seconds (mm:ss).

A *timed question*'s timer shall be displayed when the question is displayed.

Instructors shall be able to extend the time of an *active question*'s timer for their course.

Instructors shall be able to end an *active question*'s timer for their course.

Instructors shall be able to add a *confidence scale* to a question.

Students shall be able to answer an *active question* by pressing a button on their interface.

If a student submits an answer but still has access to the question, the student may resubmit a new answer.

A user shall have access to their previously submitted answers to questions.

A selected but not submitted answer shall be indicated to the student.

Results:

The system shall be able to display real-time histograms displaying answer results while a question is active.

Answer statistics shall be displayable using histograms after a question is completed.

Upon successful answer submission, users shall receive feedback indicating their answer was properly submitted.

The system shall detect strange behavior that may indicate academic dishonesty. Strange behaviors include but are not limited to:

- Frequent logging in or out of multiple accounts during a question

The system shall measure attendance for each question.

Attendance information shall be available to the instructor of the course for a given *group quiz*.

Upon encountering an error, an informative message shall be displayed. Errors include but are not limited to:

- Connection loss

When possible, error messages should offer a choice to the user to attempt to fix the error automatically.

CRUD Courses:

The system will have a feature to download a *class list* as a csv file.

The system will have a feature to upload a *class list* as a csv file.

An instructor shall be able to create a course.

All users shall be able to create an *open course*.

All users shall be able to join an open course by entering a unique code generated by the system.

Admin. Role:

Admins shall be able to assign *closed courses* to instructors (*Admin vs Instructor?*).

Admins shall be able to add students to a closed course.

Group Quizzes:

Course class can be split into teams for trivia game type quizzes.

During a *group quiz* a counter shall display the number of user answers that have been received out of the total number of users enrolled in the course. (*For example, 5/13 shows that 5 users have submitted an answer, out of 13 users that are able to submit an answer*)

Application Program Interface:

The system shall have an application program interface (denoted as API).

This API shall allow users to use parts of the system's capabilities separately from the system.

Exportable Data:

The system shall detect strange behavior that may indicate academic dishonesty. Strange behaviors include but are not limited to:

- Frequent logging in or out of multiple accounts during a question

Question Posting:

Every course shall have a *question board*.

Users shall be able to post *private questions* or *public questions* .

Public questions shall be displayed to all students enrolled in a course.

Public questions shall allow students to respond by posting a text response.
Public questions shall allow instructors to respond by posting a text response.

Private questions shall be displayed only to the student who posts the question, and the instructor of the course the question is posted in.

Private questions shall allow the student who posted the question to respond by posting a text response.

Private questions shall allow instructors to respond by posting a text response.