Acceptance Test

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Generation Java

ID-10t Consultations

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Section 1: Product Overview and Summary

Students learn best through practice and application of course materials. Generation Java will provide students with the ability to practice, complete homework assignments, take quizzes and tests, in an input based web application that will compile and run the student's Java code for instantaneous feedback. Instructors will be able to create question sets and allow student access as well as being able to offer more practice for students. Administrators will manage and update, and maintain this application management system.

Section 2: Subprogram Interface Specifications

The modules included with Generation Java are the System Administrator, the Program Administrator, Instructor, and the Student. These four modules or users work independently of one another, while some of the data they create is shared through the database. Each user does their specific tasks to create the desired outcome of functionality from Generation Java.

Section 3: Testing Requirements

Requirements Inventory

Functional Requirements

Requirements grouped according to Use Case.

System Administrator:

There is only one System Administrator.

Once logged in, a System Administrator has three views available:

- Student
- Instructor
- Administrator

The System Administrator can perform different tasks based on which view is currently be used:

Student View

- Registration
  - The System Administrator views the system as a Student that is registered in all possible courses.
  - The System Administrator is not seen as registered for any course by any user.
  - The System Administrator does not need to log out to switch between courses.
- Questions/Question Sets
  - The System Administrator is able to attempt any question set, including all homework, quiz, test, and practice sets for any section of any course by having the same functionality a student would have in attempting a question set.
  - The System Administrator is able to save code to a database**.**
  - Once code is compiled and executed, the System Administrator will receive feedback on it.
  - The feedback received by the System Administrator is identical to that of a Student; however, it is not viewable by any Instructor.
  - The System Administrator's grades are not counted in any reports, including reports run by an Administrator.
  - The System Administrator should be aware when the maximum number of attempts (if specified) has been reached on a question, but should not be restricted by it as a Student would be.
  - The System Administrator has the ability to click any links (if provided and enabled) on any question.
  - The System Administrator can view all files posted by all Instructors.

Instructor View

- Registration
  - The System Administrator views the system as an Instructor that is instructing all possible courses.
  - The System Administrator is not seen as an Instructor of any course by any user.
  - The System Administrator does not need to log out to switch between courses.
- Questions/Question Sets
  - The System Administrator can create, edit, delete, and distribute all questions and question sets.
  - The System Administrator can set a time and date for any question set to become available.
  - The System Administrator can set a time and date for any questions set to be due.
  - The System Administrator can assign point totals to any question set.
- Instructor Privileges
  - The System Administrator can see all Students' last submissions and submission information for every (attempted) question in every question set.
  - The System Administrator can see all Students' statistics (including login information) and all statistics for every question in every question set.
  - Statistics will be provided in a report that can be requested by the System Administrator.

Administrator View

- The System Administrator can create, edit, and delete the following types of accounts:
  - Program Administrator
  - Instructor
  - Student

- Editing an account consist of changing a user's account type, e-mail, password and courses taught or enrolled in.
- The System Administrator can add questions/question sets to the global pool.
- The System Administrator may logout in any view.

Program Administrator:
A Program Administrator coordinates one more sections/courses.
There may be multiple Program Administrators.
Program Administrators do not register.
A Program Administrator's account is created by the System Administrator.

Once logged in, a System Administrator has three views available:

- Student
- Instructor
- Administrator

A Program Administrator can perform different tasks based on which view is currently be used:

Student View

- Registration
  - A Program Administrator views the system as a Student that is registered in all courses specified by the System Administrator.
  - A Program Administrator is not seen as registered for any course by any user except by the System Administrator.
  - A Program Administrator does not need to log out to switch between courses.

- Questions/Question Sets
  - A Program Administrator is able to attempt any of the question sets specified by the System Administrator, including homework, quiz, test, and practice sets.
  - A Program Administrator is able to save code to a database.
  - Once code is compiled and executed, A Program Administrator will receive feedback on it.
  - The feedback received by a Program Administrator is identical to that of a Student; however, it cannot be viewed by any Instructor.
  - A Program Administrator's grades are not counted in any reports, including reports run by an Administrator.
  - A Program Administrator should be aware when the maximum number of attempts (if specified) has been reached on a question, but should not be restricted by it as a Student would be.
  - A Program Administrator has the ability to click any links (if provided and enabled) on any question specified by the System Administrator.

- A Program Administrator can view all files posted by Instructors specified by the System Administrator.

Instructor View

- Registration
  - A Program Administrator views the system as an Instructor that is instructing all courses specified by the System Administrator.
  - A Program Administrator is not seen as an Instructor of any course by any user.
  - A Program Administrator does not need to log out to switch between courses.
- Questions/Question Sets
  - A Program Administrator can create, edit, delete, and distribute course-specific questions and question sets.
  - A Program Administrator can set a time and date for any question set specified by the System Administrator to become available.
  - A Program Administrator can set a time and date for any questions set specified by the System Administrator to be due.
  - A Program Administrator can assign point totals to any question set specified by the System Administrator.
- Instructor Privileges
  - A Program Administrator can see all Students' (specified by the System Administrator) last submissions and submission information for every (attempted) question in every question set.
  - A Program Administrator can see all Students' (specified by the System Administrator) statistics (including login information) and all statistics for every question in every question set (also specified by the System Administrator).

Administrator View

- A Program Administrator can create, edit, and delete the following types of accounts:
  - Instructor
  - Student
- The Program Administrator can add question/question sets to any of the course-specific pools specified by the System Administrator.
- The Program Administrator may logout in any view.

<u>Instructor:</u>
An Instructor does not register.
An Instructor's account is created by a Program Administrator or the System Administrator.
Once logged in, an Instructor has two views available:

- Student
- Instructor

An Instructor can perform different tasks based on which view is currently be used:

Student View

- Registration

    - An Instructor views the system as a Student that is registered in all courses specified by the Program Administrator.
    - An Instructor is not seen as registered for any course by any user.
    - An Instructor does not need to log out to switch between courses.

- Questions/Question Sets
    - An Instructor is able to attempt any of the question sets specified by the Program Administrator, including homework, quiz, test, and practice sets.
    - An Instructor is able to save code to a database.
    - Once code is compiled and executed, an Instructor will receive feedback on it.
    - The feedback received by an Instructor is identical to that of a Student. No one else can view this feedback.
    - An Instructor's grades are not counted in any reports, even reports run by an Administrator.
    - An Instructor should be aware when the maximum number of attempts (if specified) has been reached on a question, but should not be restricted by it as a Student would be.
    - An Instructor has the ability to click any links (if provided and enabled) on any question specified by the Program Administrator.
    - An Instructor can view all files posted by themselves or other Instructors specified by the Program Administrator.

Instructor View

- Registration
    - An Instructor can view all courses specified by a Program Administrator.
    - An Instructor is seen as the Instructor for all courses specified by the Program Administrator.
    - An Instructor does not need to log out to switch between courses.
    - If an Instructor wishes to teach a new course, the new course may be added by inputting the Course ID into the appropriate location. A Course ID is provided by the Program Administrator or System Administrator.
- Questions/Question Sets
    - An Instructor has the ability to create, edit, and delete java questions in the Instructor's own private pool.
    - An Instructor can upload a question or enter it into a text box.
    - An Instructor may provide links to aid a Student.
    - An Instructor has the ability to create, edit and delete question sets in the Instructor's own private pool.
    - An Instructor can use questions from the Instructor's private pool, the course-specific pool, or the global pool when creating question sets.
    - When creating a question set, an Instructor can set point totals and a maximum number of attempts allowed for each question.
    - An Instructor can set a time and date for a question set to become available and unavailable.

    - If an Instructor wishes to add a question or question set to the course-specific pool, it must be submitted to the Program Administrator.
    - If an Instructor wishes to add a question or question set to global pool, it must be submitted to the System Administrator.
- Instructor Privileges
    - An Instructor can see all Students' (registered in the Instructor's course) last submissions and submission information for every (attempted) question in every question set.
    - An Instructor can see all Students' (registered in the Instructor's course) statistics (including login information) and all statistics for every question in every question set (also in the Instructor's course).
    - These statistics (which include grade information) can be generated into reports and exported to a tab delimited or .pdf file.
    - An Instructor may edit a Student's grade as seen fit.
    - An Instructor may deny a student access to a course.
    - An Instructor may post files that can be viewed by Students in the Instructor's course.

An Instructor can log out in either view.

Student:
A Student has only one view.

- Registration
    - A Student must register in a specific course by entering a Course ID in the appropriate location.
    - A Course ID is provided by the Instructor of that course.
    - A Student may be registered in multiple courses under the same username and password.
    - A Student does not need to log out in order to change which course is currently being worked in.
- Question Sets
    - A Student has the ability to view and attempt any question set provided by the Instructor.
    - When a Student submits code, feedback is returned indicating the code's degree of correctness.
    - A Student can retry a question until the number of attempts (if specified) has run out.
    - A Student may see only their own grades and statistics.
- Additional Privileges/Restrictions
    - A Student may view any link or file provided by the Instructor (if enabled).
    - A Student may not click out of the testing window during a test or the test will be terminated.
    - A Student may log out as desired.

Non-Functional Requirements Inventory

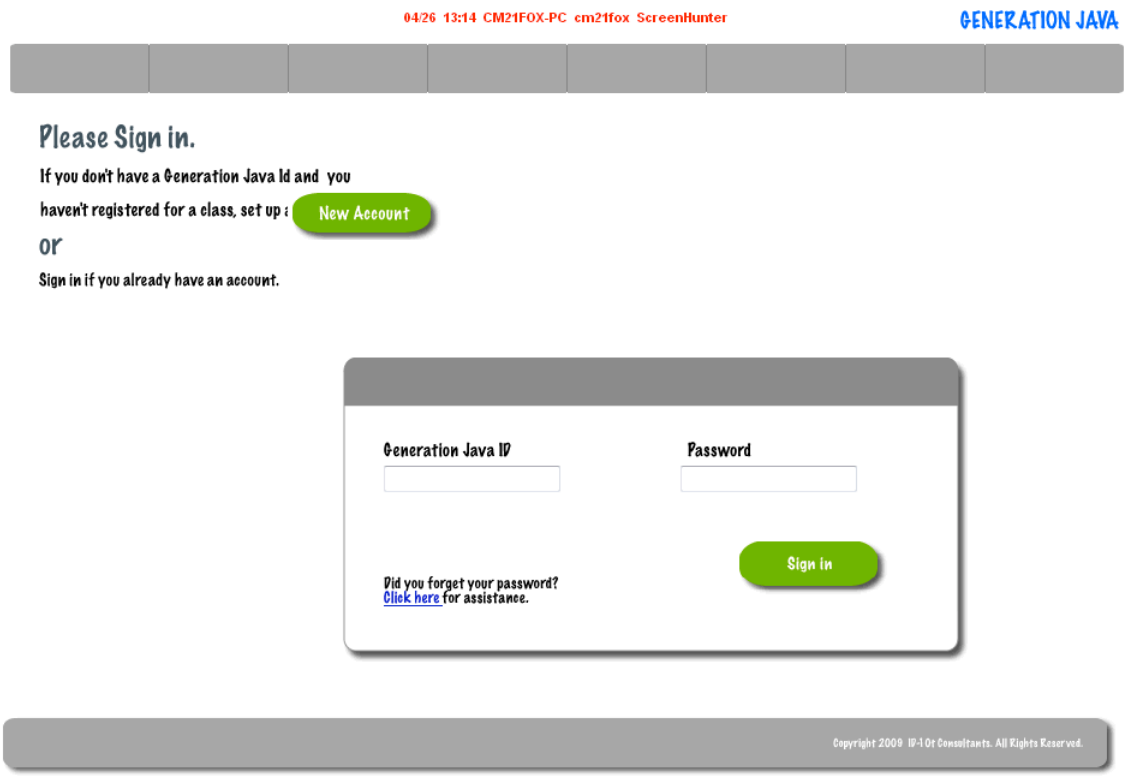
- The system should be quick and smooth, using fast servers and databases.
- The system should also be aesthetically pleasing.
- The system should be user-friendly.

Section 4: User Displays, report Formats, and User Command Survey

4.1: Login Page

This is the page that all users will see when first locating the website. This page is where all users will enter their username and password. If a user has not already created an account, they can click on the appropriate "New Account" link that will take them to the account creation page.

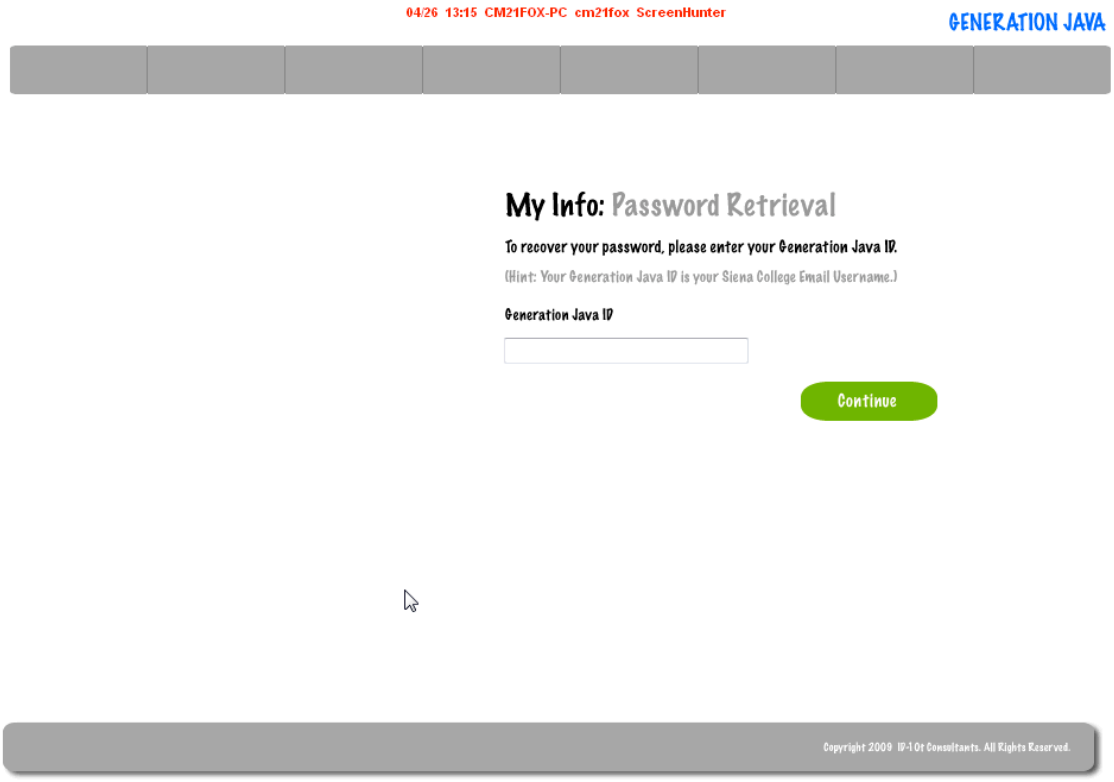
http://oraserv.cs.siena.edu/~perm_idiot/gen_java/index.php



4.2: Forgot Password

When a user forgets their password they must be able to provide their user id. The system will then send an e-mail to the user's e-mail address that was given at registration with their password.

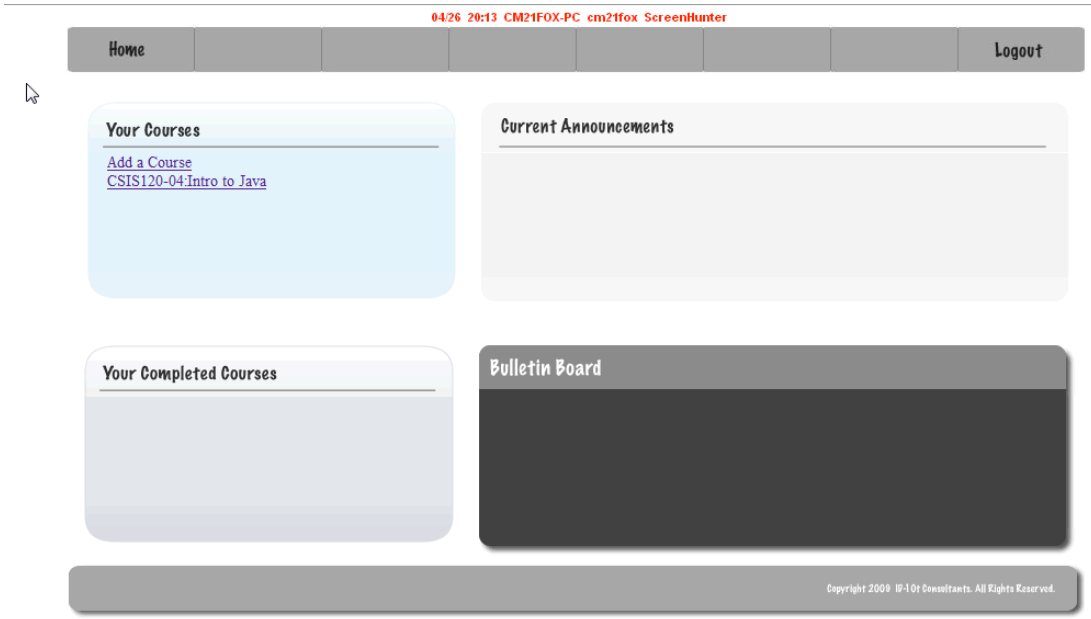
http://oraserv.cs.siena.edu/~perm_idiot/gen_java/forgot_pw.php



4.3: Student Home Screen

After a student successfully logs in they will be redirected to their home page.

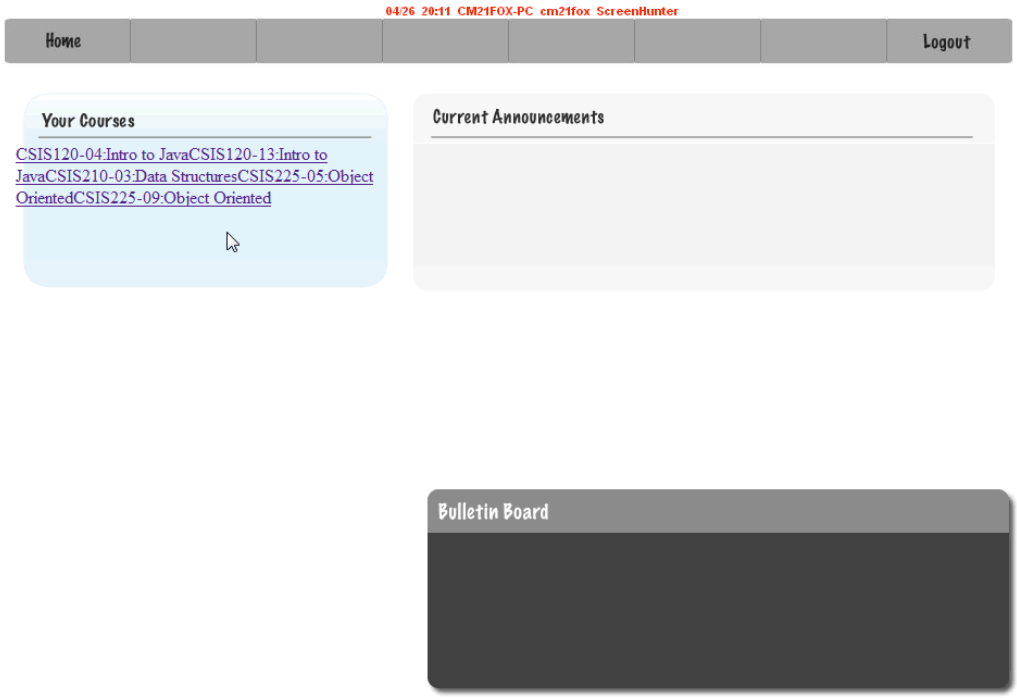
http://oraserv.cs.siena.edu/~perm_idiot/gen_java/student/home.php



4.4: System Administrator Home Screen

Once the System Administrator has logged in using the correct username and password they will be redirected to their Home Screen.

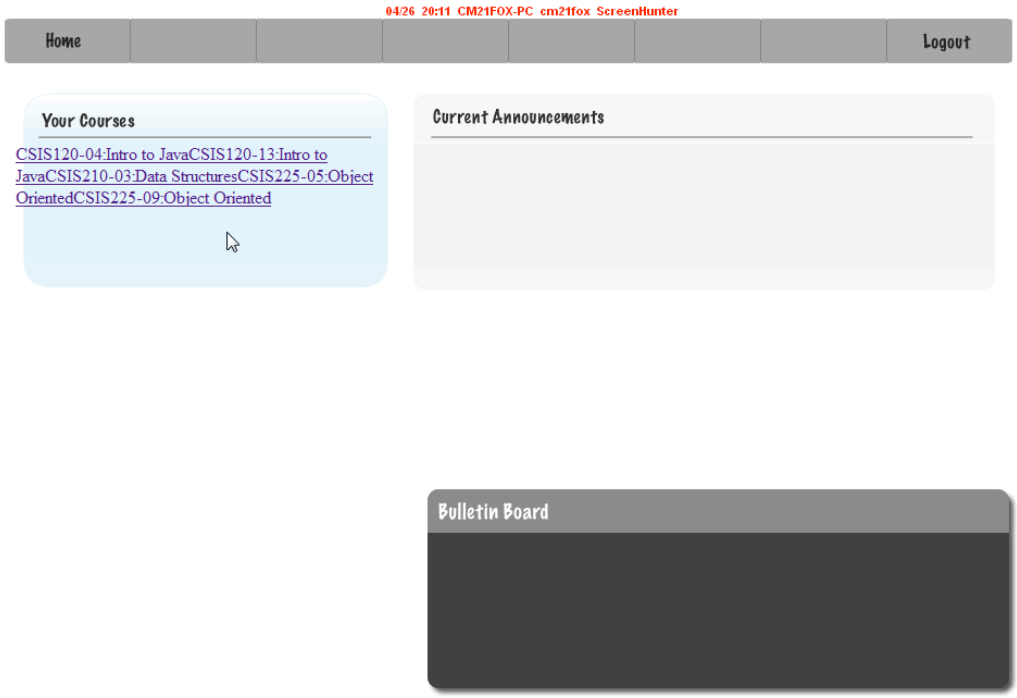
http://oraserv.cs.siena.edu/~perm_idiot/gen_java/sys_admin/home.php



4.5: Program Administrator Home Screen

Once a Program Administrator has logged in using the correct username and password they will be redirected to their Home Screen.

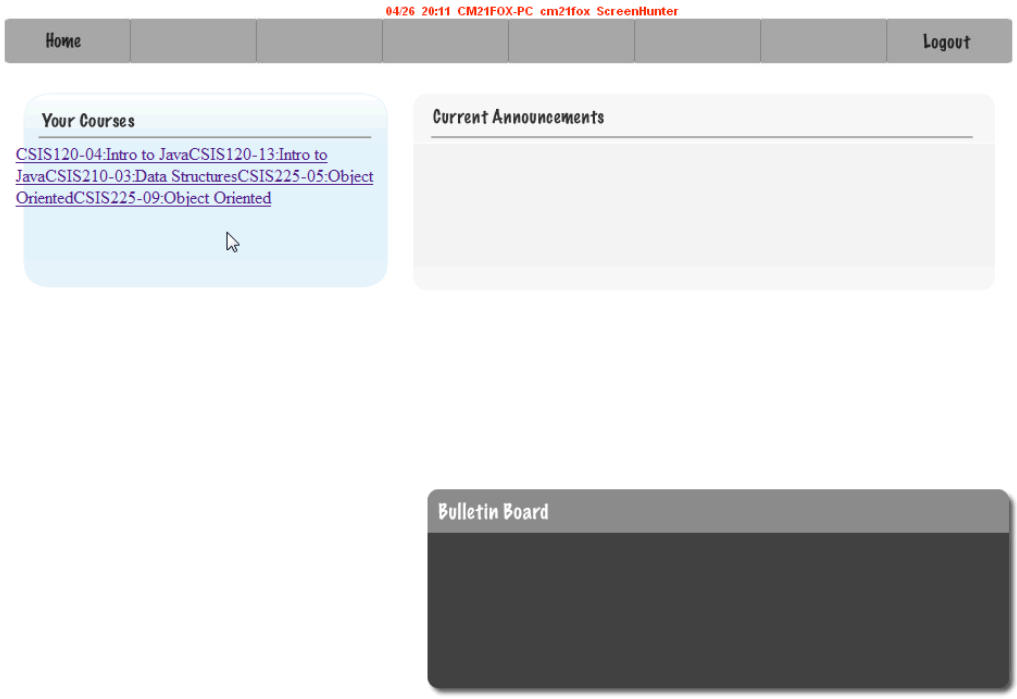
http://oraserv.cs.siena.edu/~perm_idiot/gen_java/prg_admin/home.php



4.6: Instructor Home Screen

Once an Instructor has logged in using the correct username and password they will be redirected to their Home Screen.

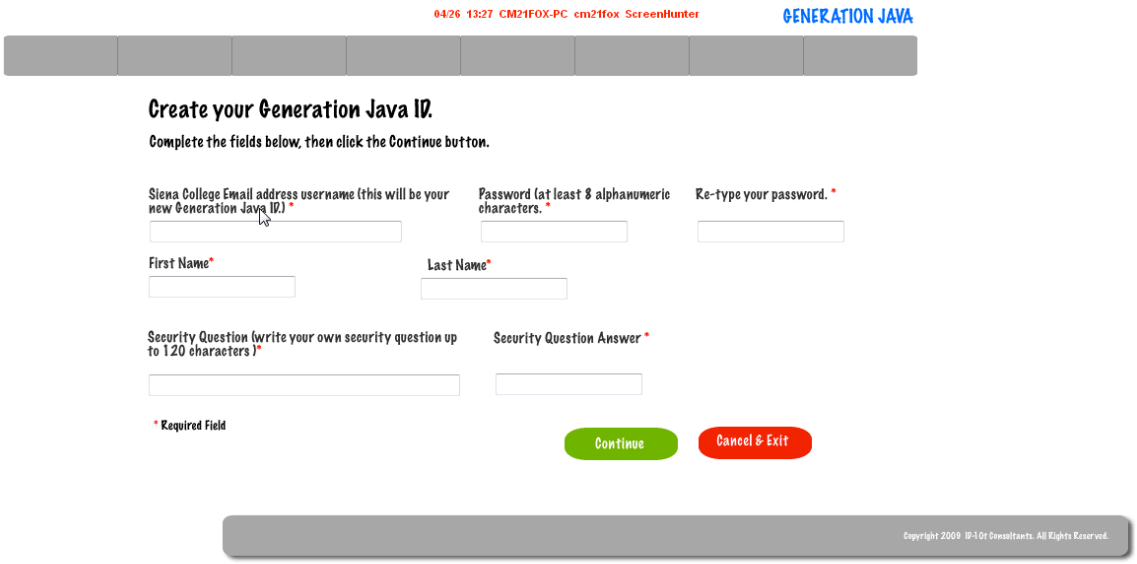
http://oraserv.cs.siena.edu/~perm_idiot/gen_java/instructor/home.php



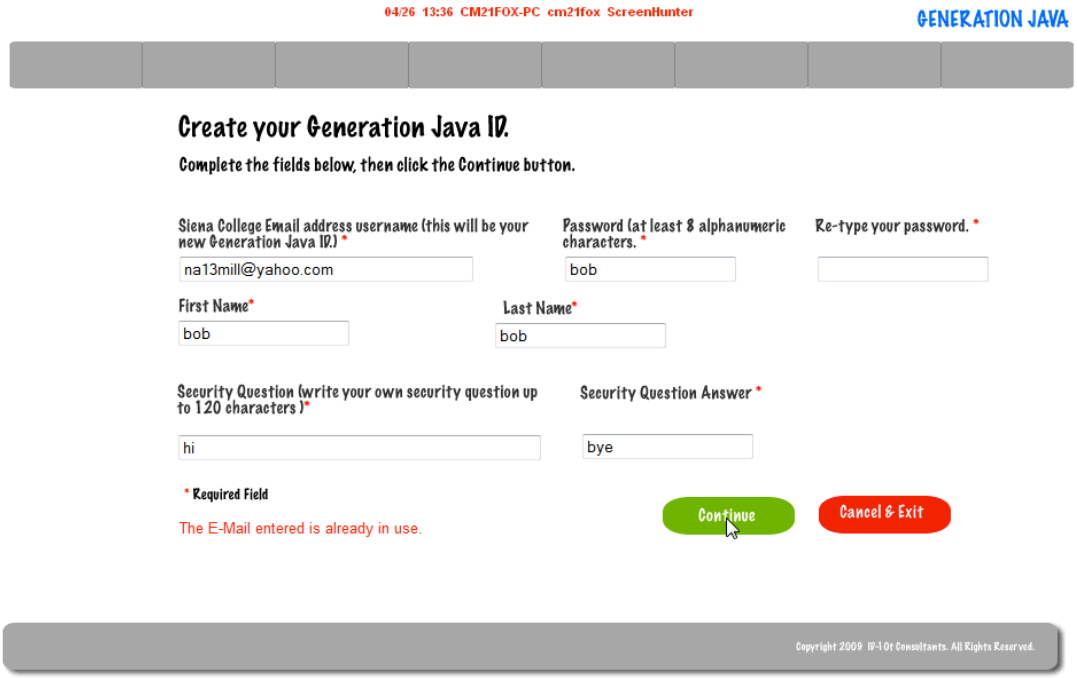
4.7: Student Account Creation

A student must successfully fill out this screen in order to be given a account for Generation Java.

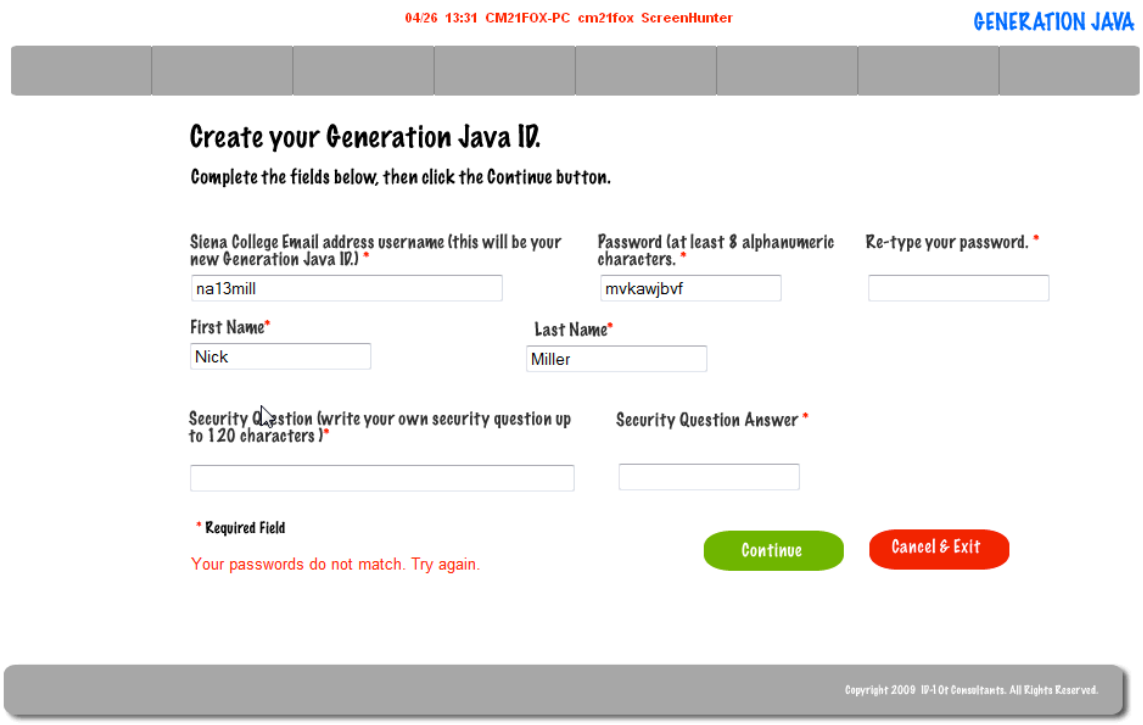
http://oraserv.cs.siena.edu/~perm_idiot/gen_java/create_acct.php



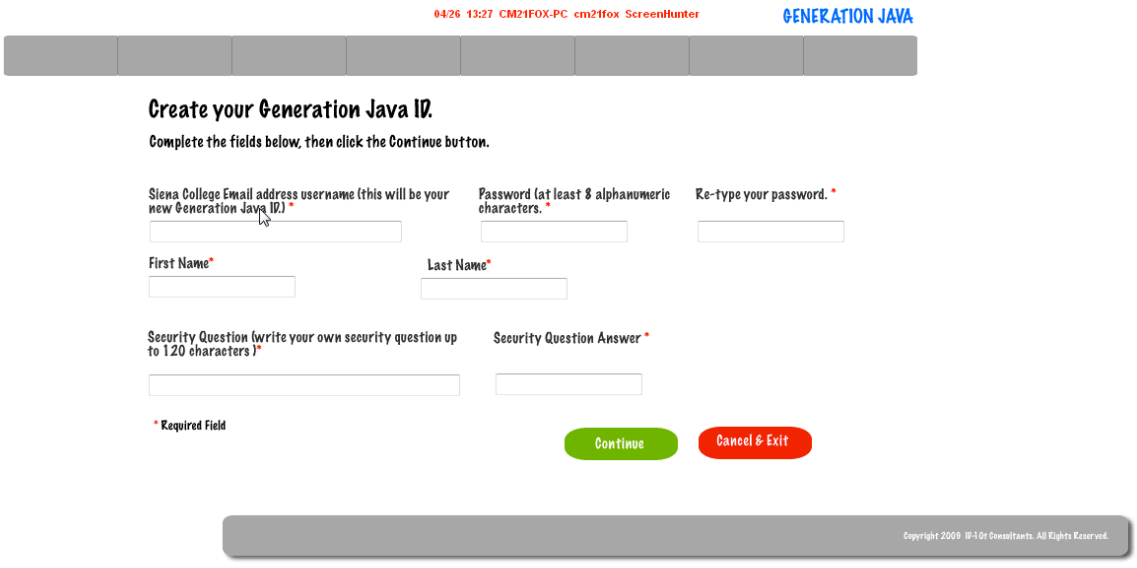
If a student is trying to register with an e-mail address that has already been used and registered they will be given an error.



If a student did not enter the same password in both of the necessary boxes they will be given an error message.

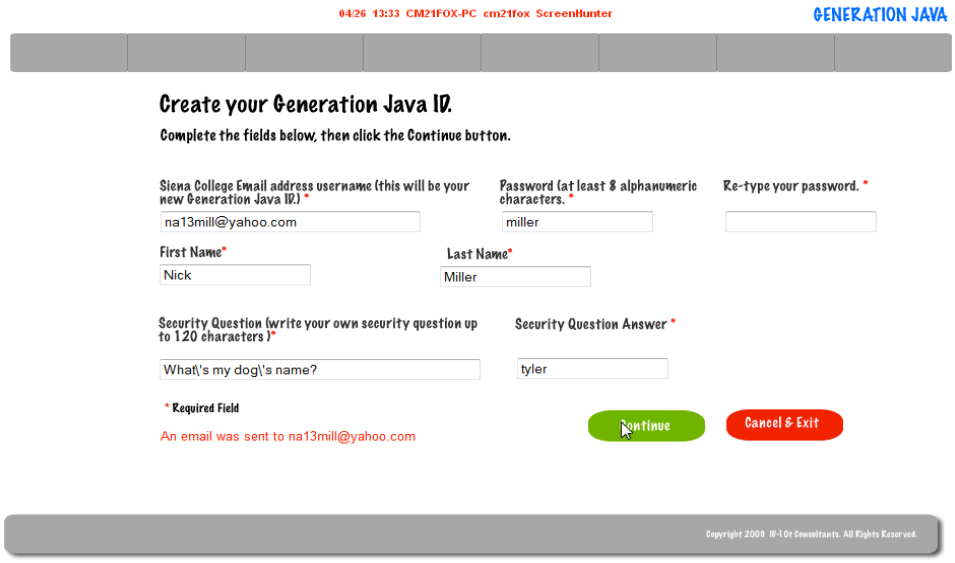


If a student did not complete all the necessary fields on the registration field they will be shown an error message.

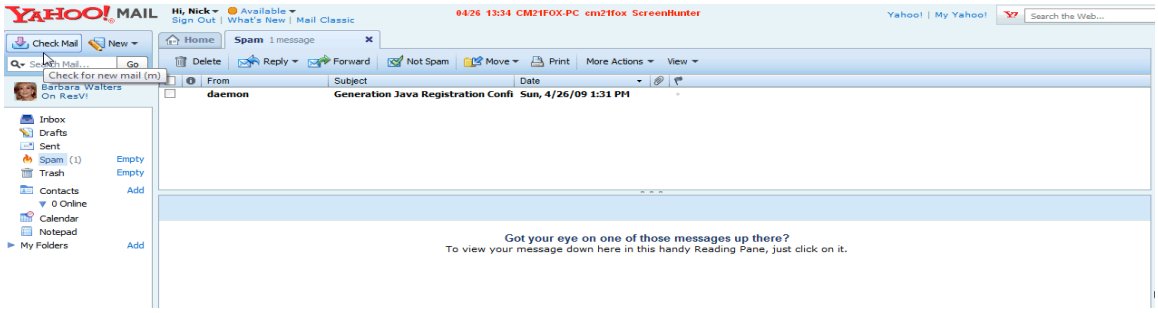


4.8: Student Account Creation Pop-up

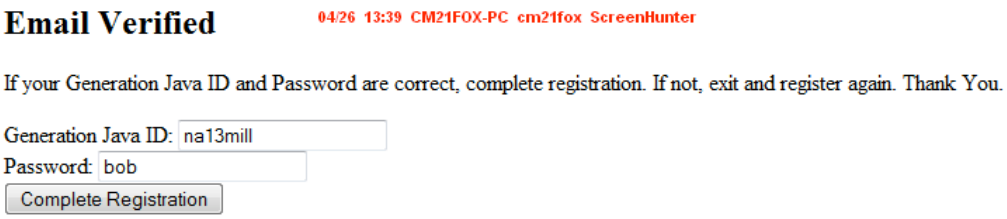
After a student successfully fills all fields an e-mail will be sent to the e-mail they registered with to ensure that it was entered properly and they will continue with the registration process by following the link in the e-mail.



The student must click on the link in their e-mail to continue with the registration process.



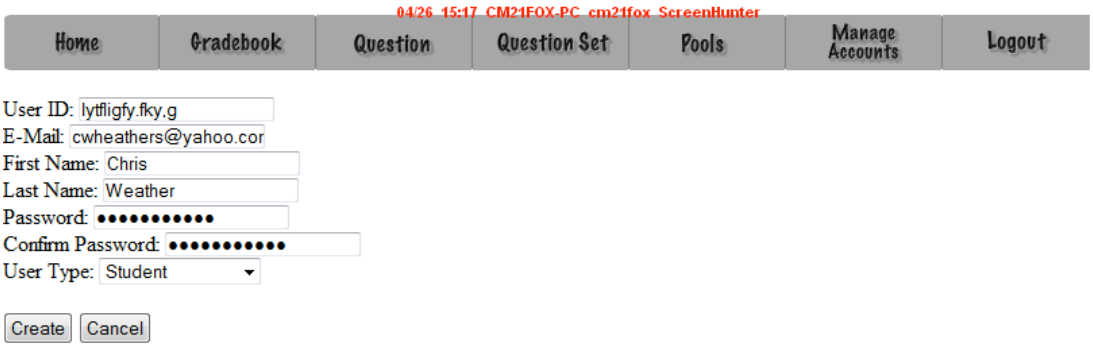
After a student successfully registers for a Generation Java a pop-up will appear that will allow them to log into the system.



4.9: Create Account – System Administrator

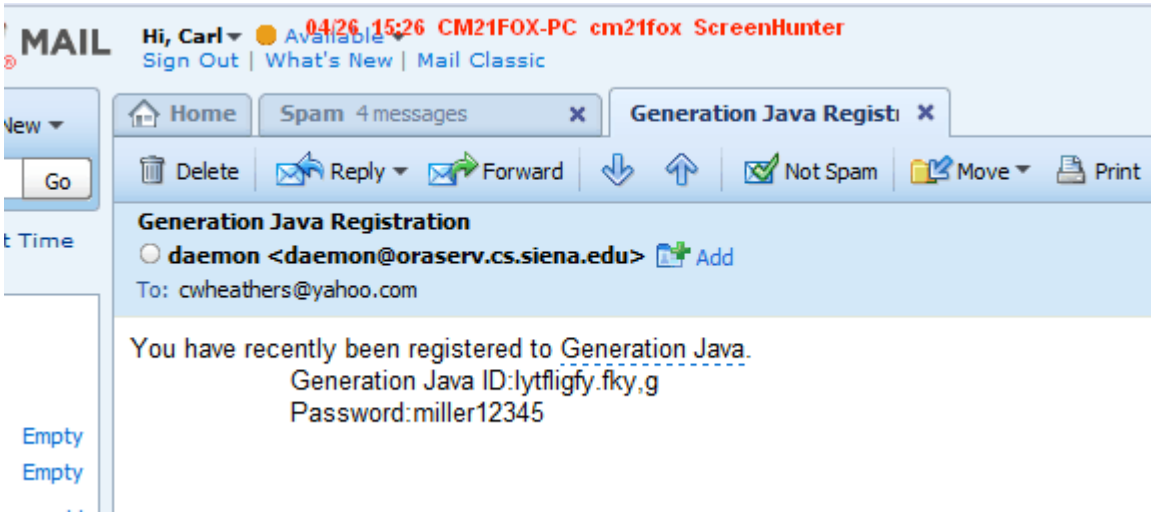
System Administrator has the ability to create student, instructor, and program administrator accounts.

http://oraserv.cs.siena.edu/~perm_idiot/gen_java/sys_admin/create_acct_sysadm.php



4.10: Created User Account System Administrator

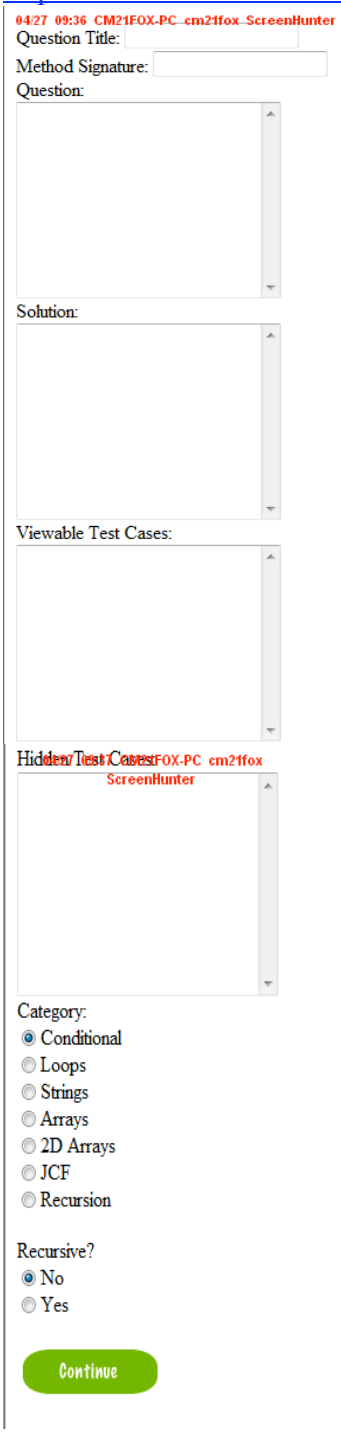
An e-mail will be sent to the user to let them know the user name and password that the system administrator created for them.



4.11: Create Question – Instructor/Program & System Administrator

In order for an Instructor, Program Administrator, or System Administrator to create a questions they must complete several required fields.

http://oraserv.cs.siena.edu/~perm_idiot/gen_java/sys_admin/create_qst.php



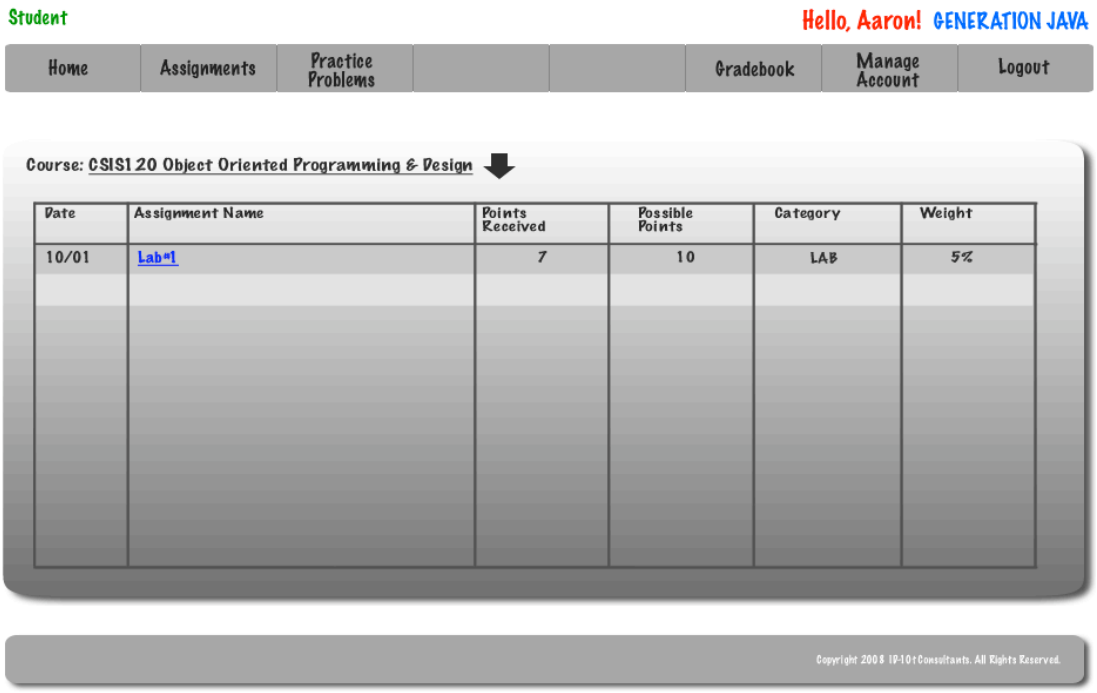
4.12: Student Question/ Question Set Answer Page

This is the screen that students will have when they are going to answer a question.

http://oraserv.cs.siena.edu/~perm_idiot/gen_java/student/answer_qst.php

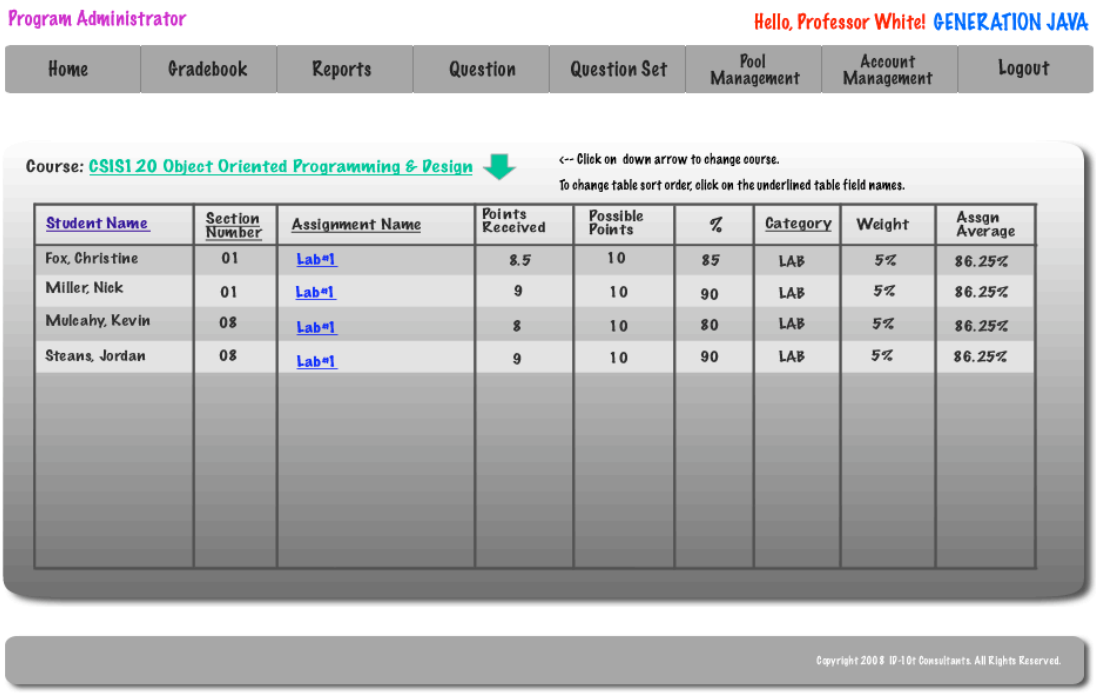
4.13: Student Grade book

In order for a student to view their grades or a completed assignment they must use the grade book.

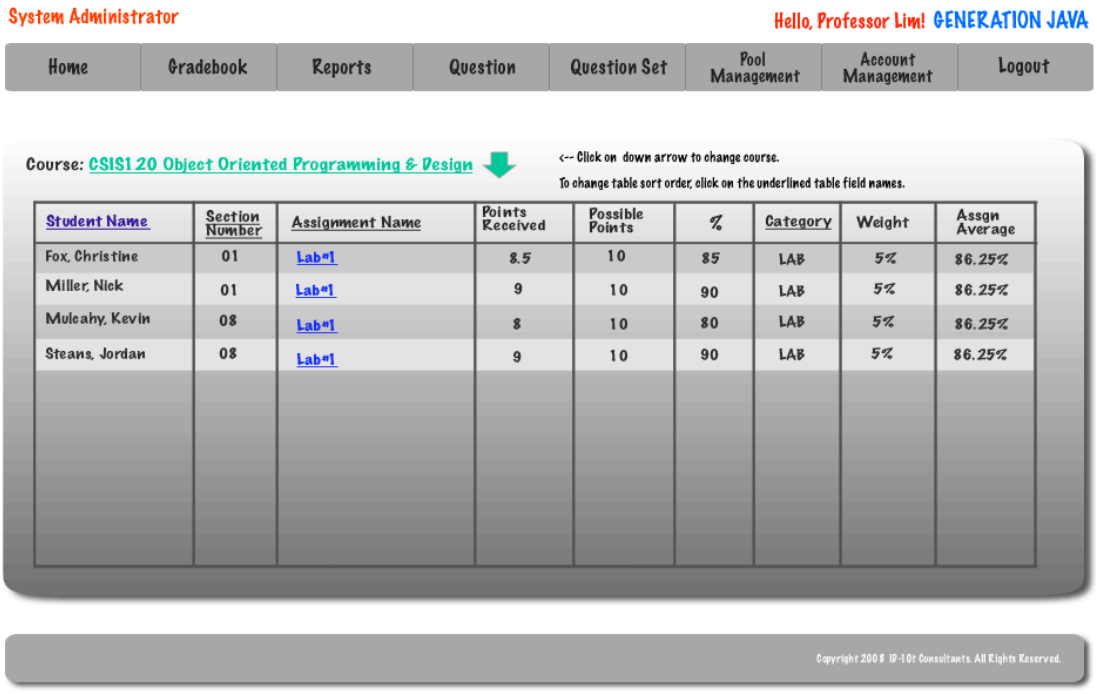


4.14: Administrator Grade book

Program Administrators are able to view a grade book for a course they are coordinating.

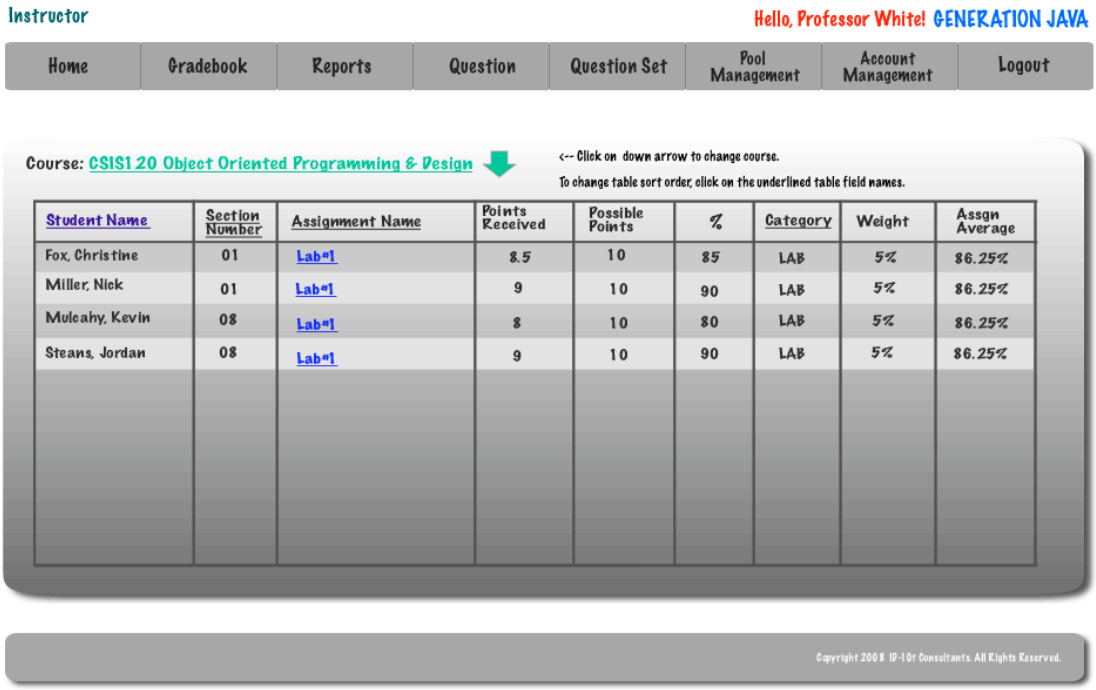


The System Administrator is able to view the grade book for any course.



4.15: Instructor Grade book

An Instructor is able to view the grade book for any course that they are instructing and can sort the grade book by student, section, assignment, and category.



4.16: System Admin Course Management – Link to Create Course

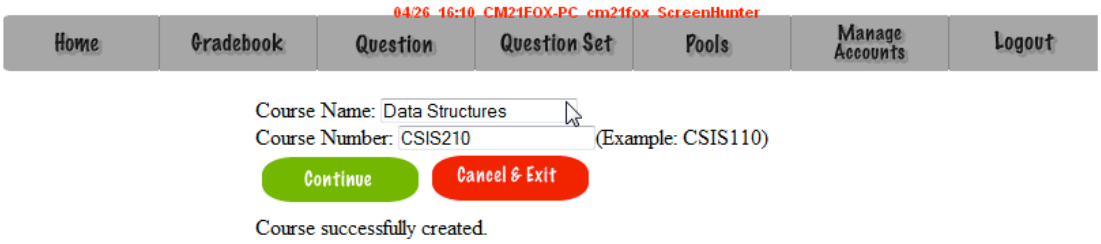
The System Administrator has the ability to create a new course by entering a title, course number, section, and instructor.

~ This functionality has been moved to both the create section page and the create course page.

4.17: System Administrator – Create Course

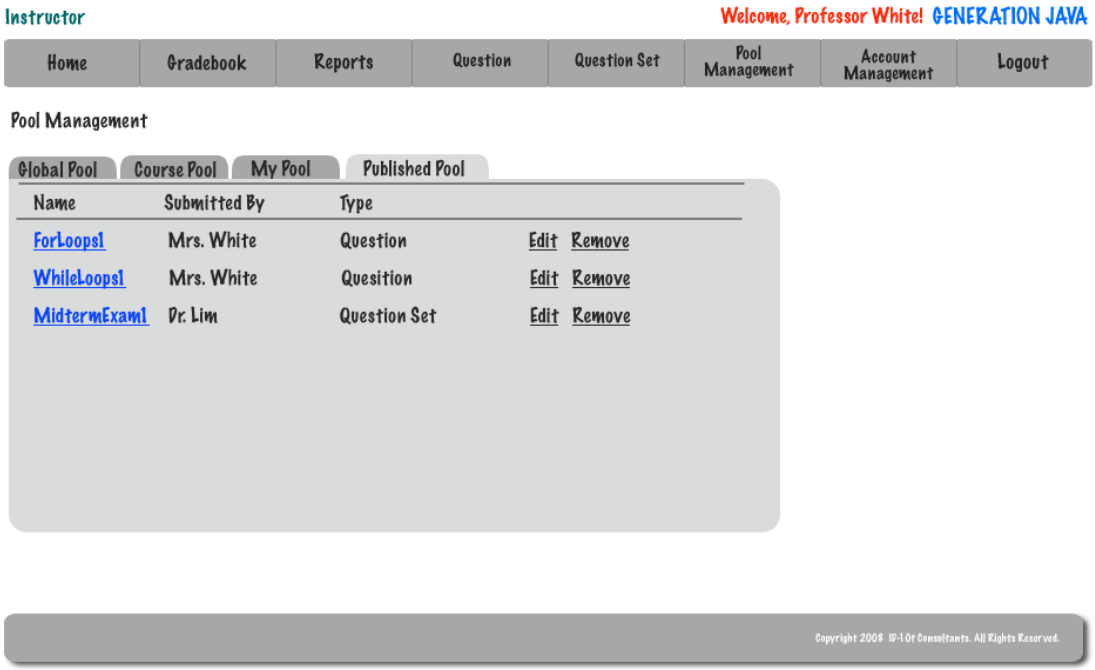
The System Administrator must enter a course name and number in order to create a course.

http://oraserv.cs.siena.edu/~perm_idiot/gen_java/sys_admin/create_course.php



4.18: Instructor – Published Content Pool

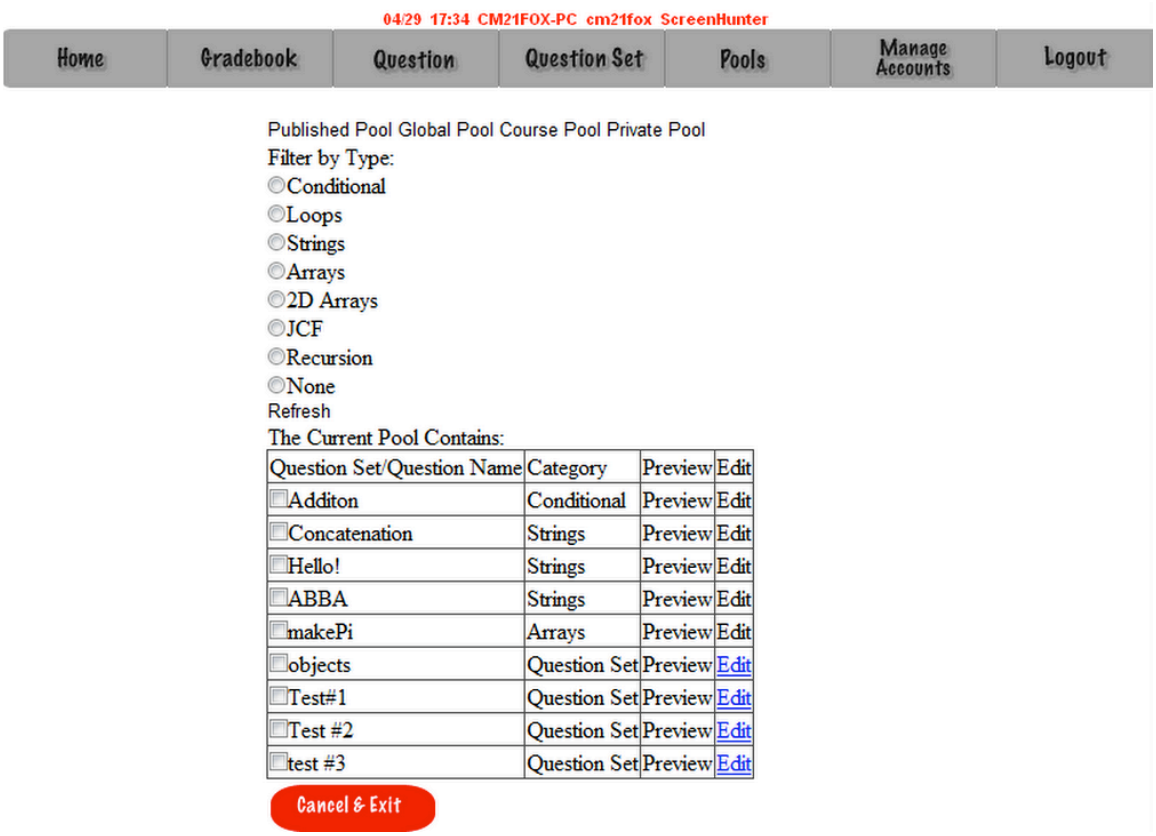
An Instructor has a pool that contains just the questions that are currently published.



4.19: Instructor – My Pool

An Instructor is able to view questions in the global and course pools as well as submit questions to be considered for them. They are able to edit and add questions to their pool as well as the published pool.

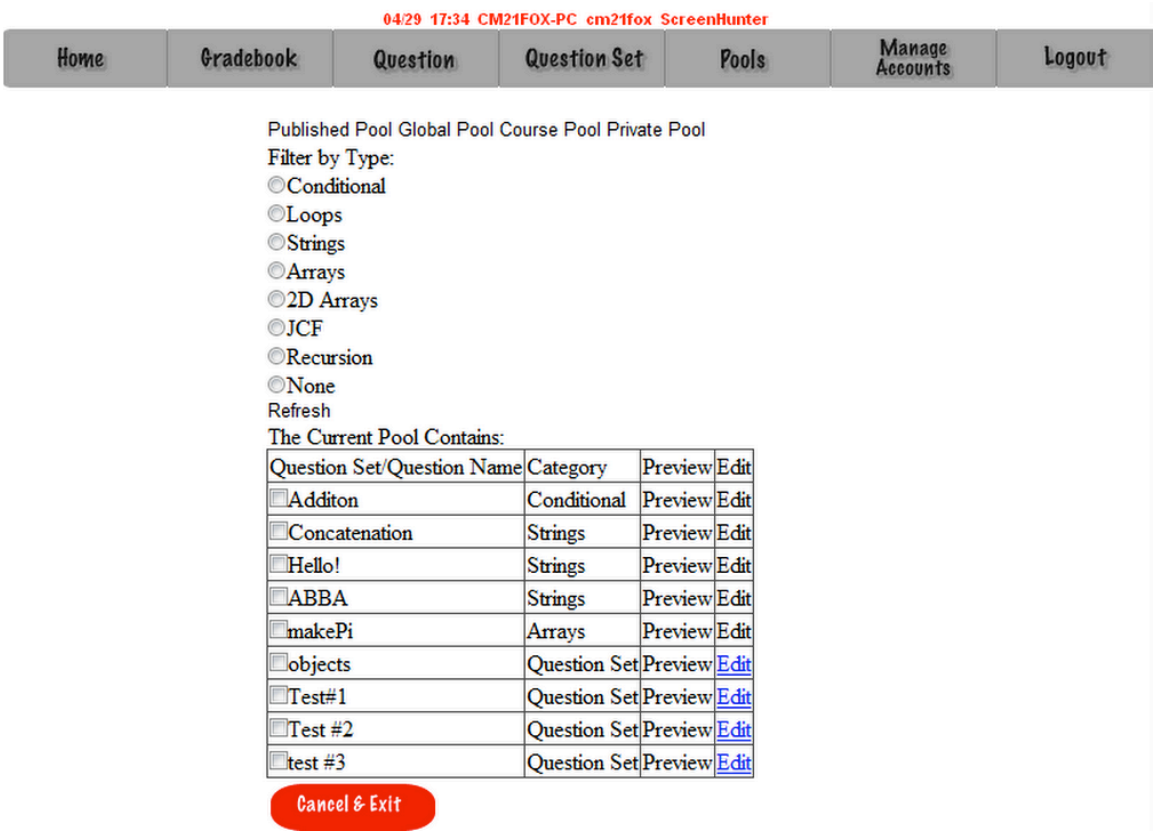
http://oraserv.cs.siena.edu/~perm_idiot/gen_java/pool/home.php



4.20: Instructor – Course Pool

An Instructor is able to view questions in the global and course pools as well as submit questions to be considered for them. They are able to edit and add questions to their pool as well as the published pool.

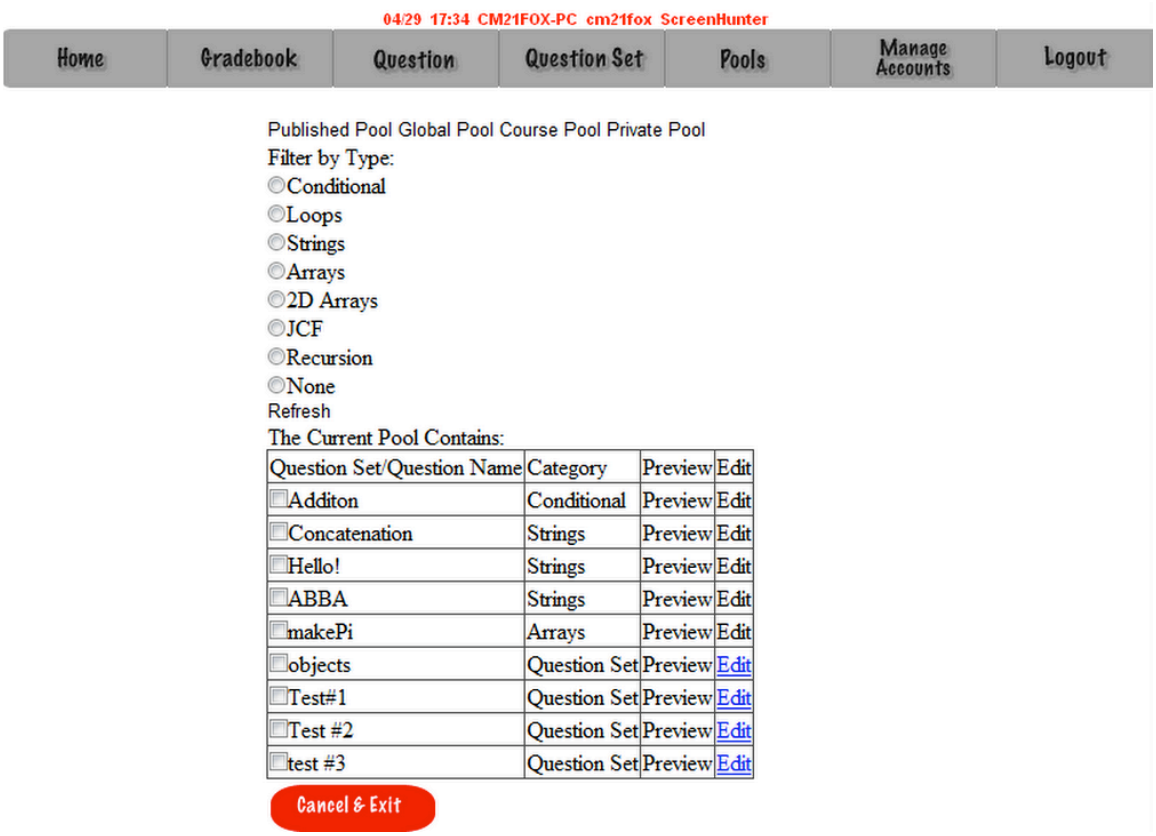
http://oraserv.cs.siena.edu/~perm_idiot/gen_java/pool/home.php



4.21: Instructor – Global Pool

An Instructor is able to view questions in the global and course pools as well as submit questions to be considered for them. They are able to edit and add questions to their pool as well as the published pool.

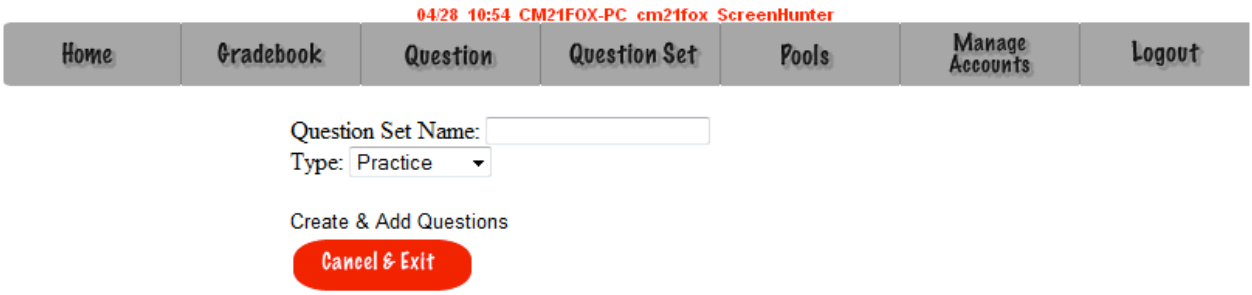
http://oraserv.cs.siena.edu/~perm_idiot/gen_java/pool/home.php



4.22: Question Set Creation

In order to create a question set the user (Instructor, Program Administrator, or System Administrator) must give the set a name and select a type for the set.

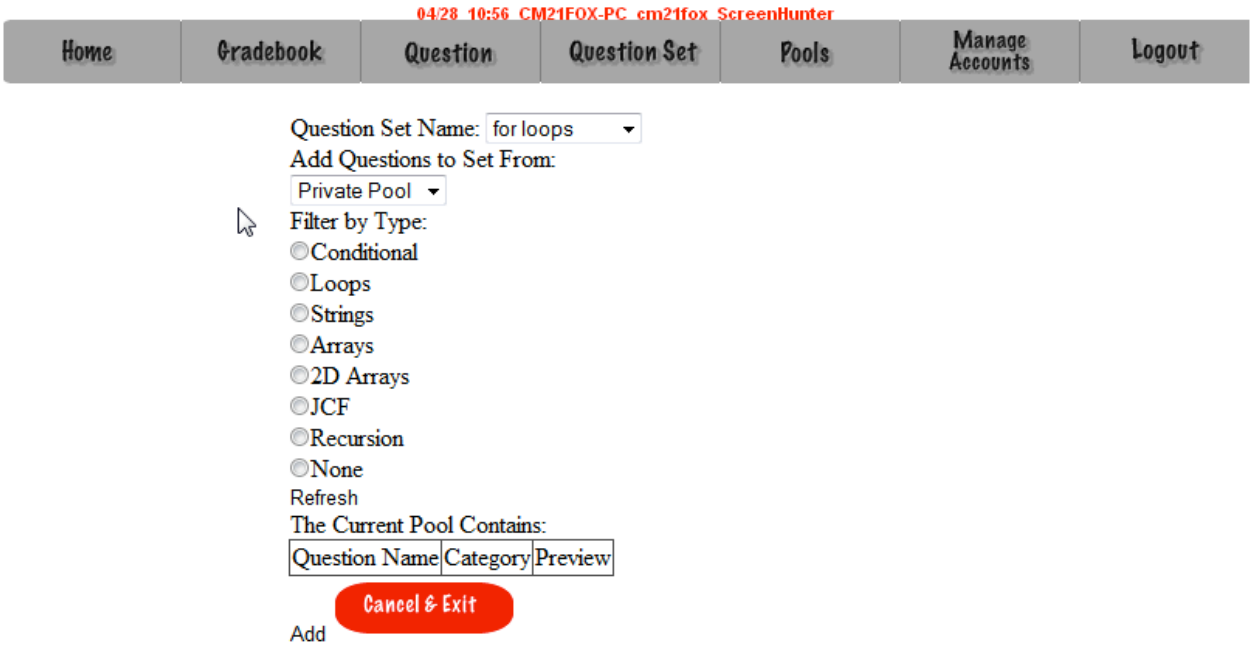
http://oraserv.cs.siena.edu/~perm_idiot/gen_java/question/create_qst_set.php



4.23: Question Set (Adding Question)

An Instructor, Program Administrator, or System Administrator is able to easily add an already completed question to a set.

http://oraserv.cs.siena.edu/~perm_idiot/gen_java/question/add_qst_set.php



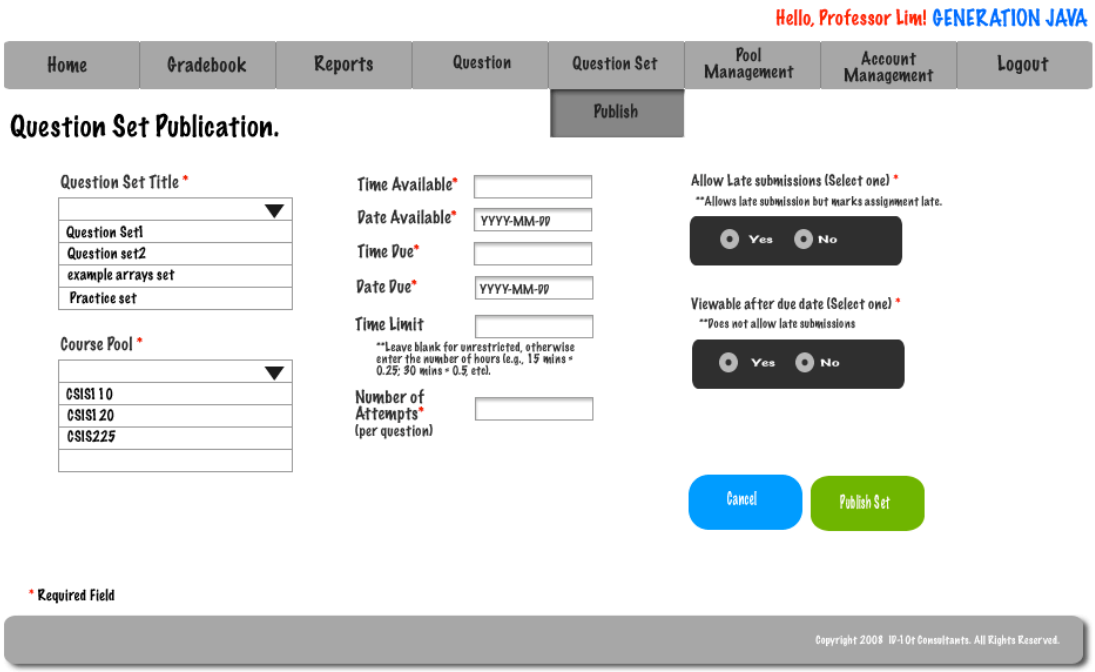
4.24: Submitted Created Question

When a user has successfully created a question a pop-up will appear on their screen allowing them to either be redirected to create another question or to be redirected to their homepage.

~ This functionality has been moved to the create question page. Once a question is submitted the creator will be shown a success message on that same screen.

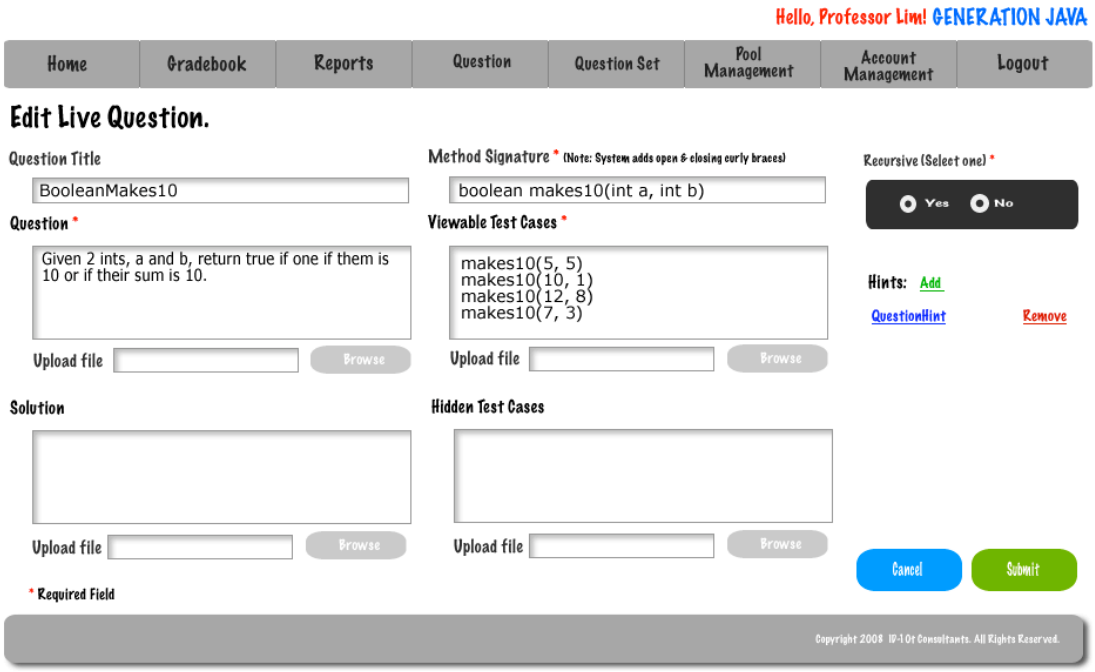
4.25: Question Set Publication

When an Instructor, Program Administrator, or System Administrator would like to publish a question set they must first fill out 9 required fields.



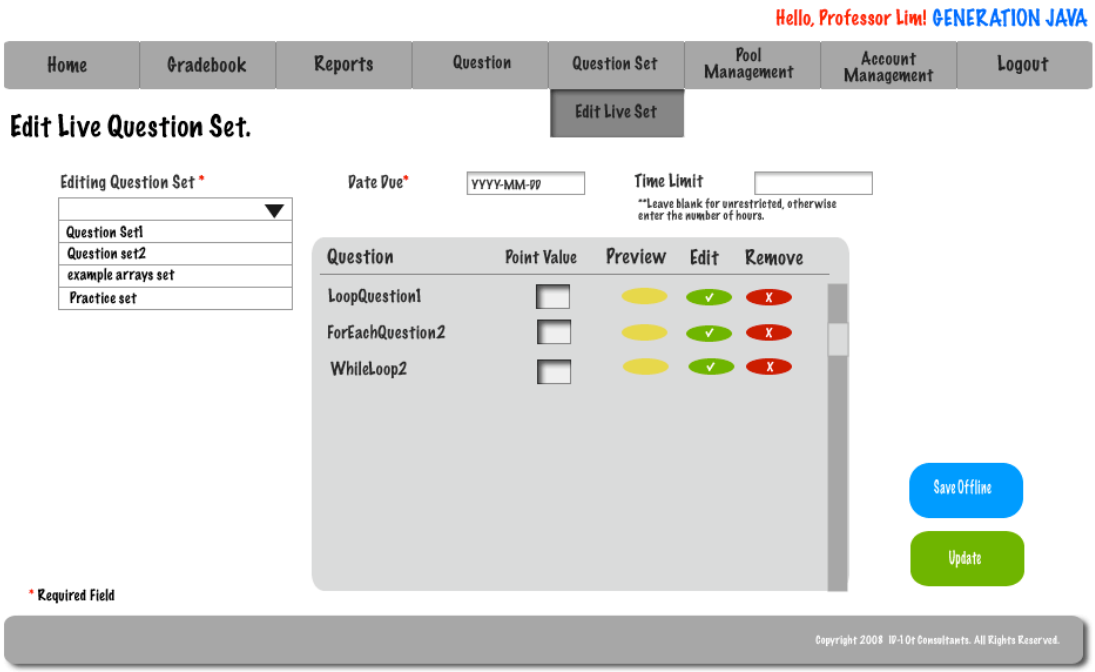
4.26: Editing Live Question

An Instructor, Program Administrator, or System Administrator is able to edit a live question.



4.27: Editing Live Question Set

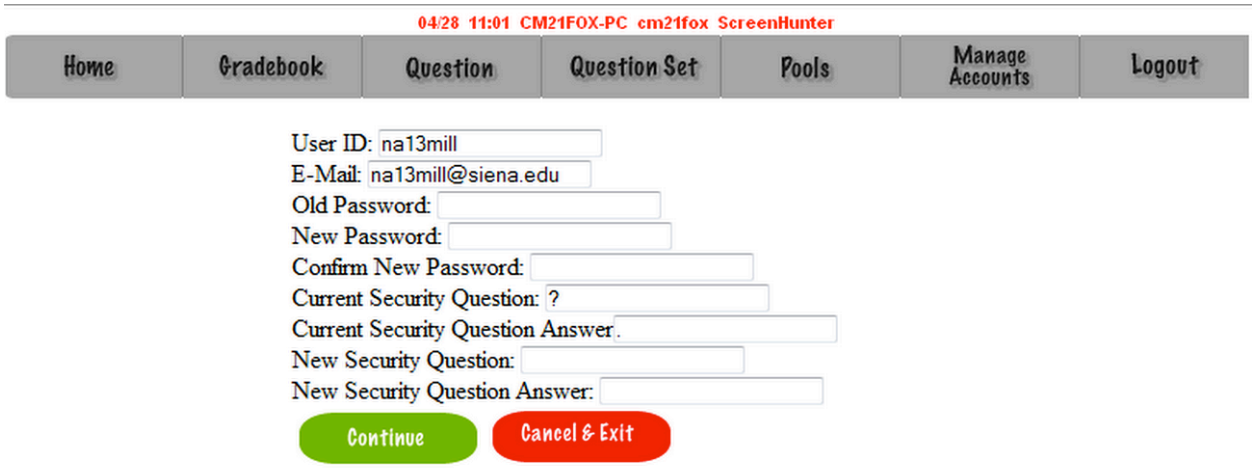
An Instructor, Program Administrator, or System Administrator is able to edit a live question set. They are able to edit a question in the set, the date due, or the time limit.



4.28: Account Management - Student

A student is able to change their password by utilizing the account management section of the system.

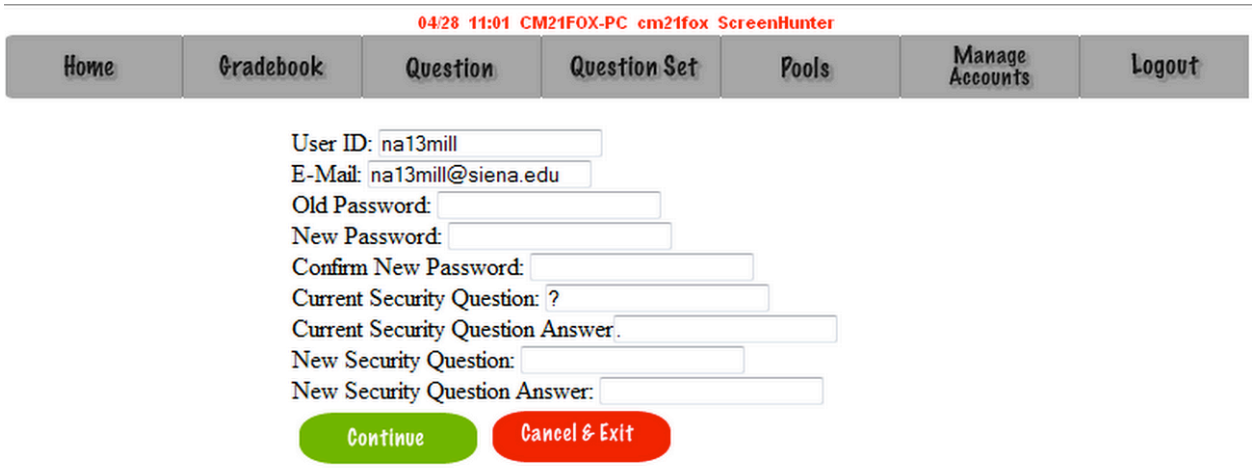
http://oraserv.cs.siena.edu/~perm_idiot/gen_java/student/edit_acct.php



4.29: Account Management – Instructor

An Instructor is able to change their password by utilizing the account management section of the system.

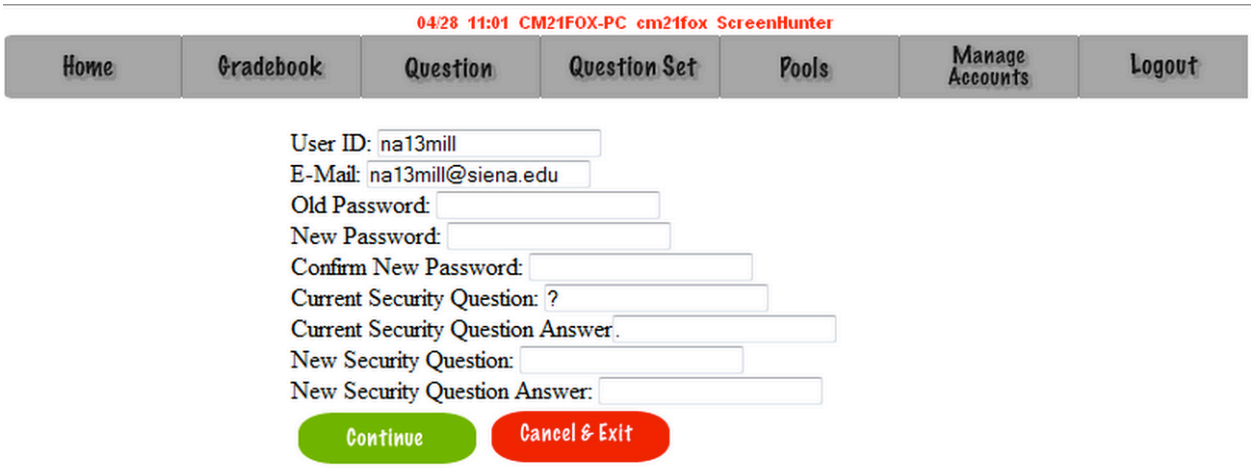
http://oraserv.cs.siena.edu/~perm_idiot/gen_java/edit_acct.php



4.30: Account Management – Program Administrator

If a Program Administrator wishes to change their password they must use Account Management.

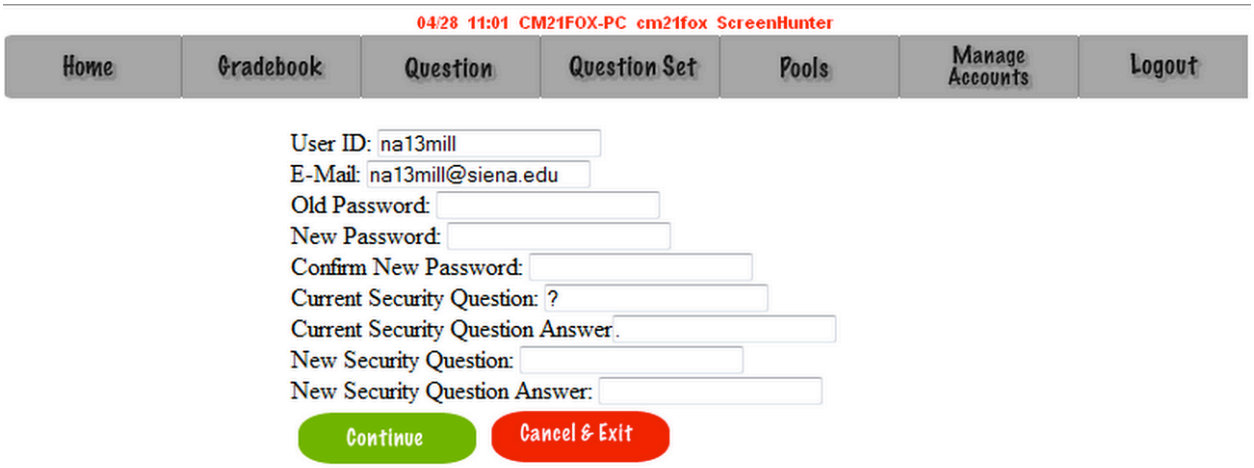
http://oraserv.cs.siena.edu/~perm_idiot/gen_java/edit_acct.php



4.31: Account Management – System Administrator

The System Administrator is able to delete users as well as reset their passwords if they are incurring difficulties doing it on their own.

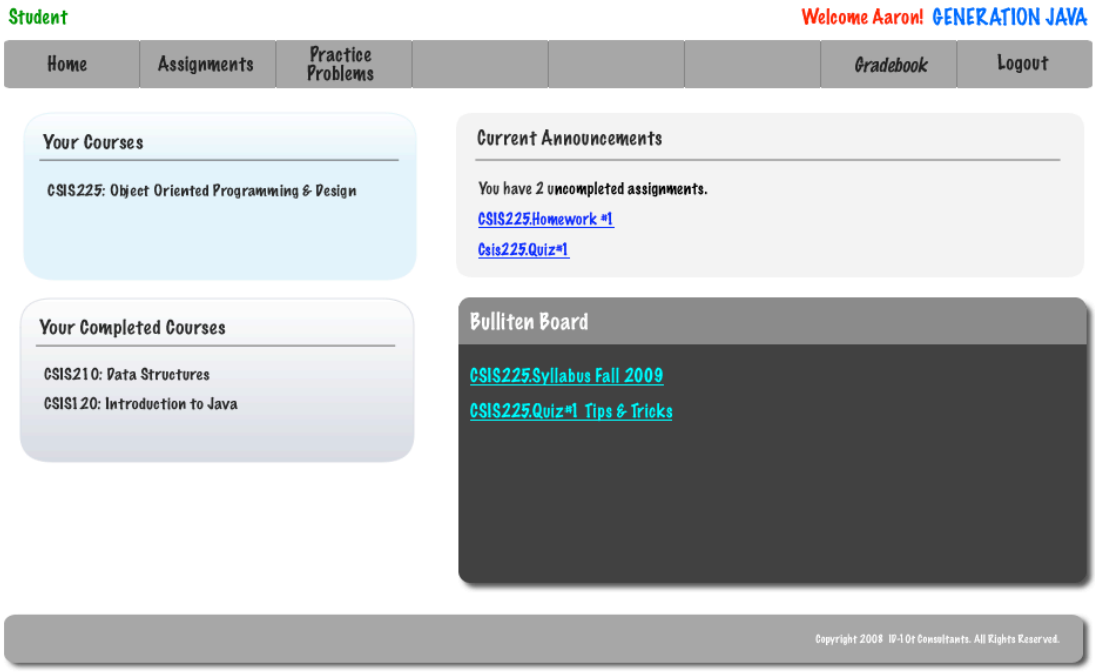
http://oraserv.cs.siena.edu/~perm_idiot/gen_java/edit_acct.php



4.32: Course Home Page - Student

When a Student selects a course they will be redirected to the course home page.

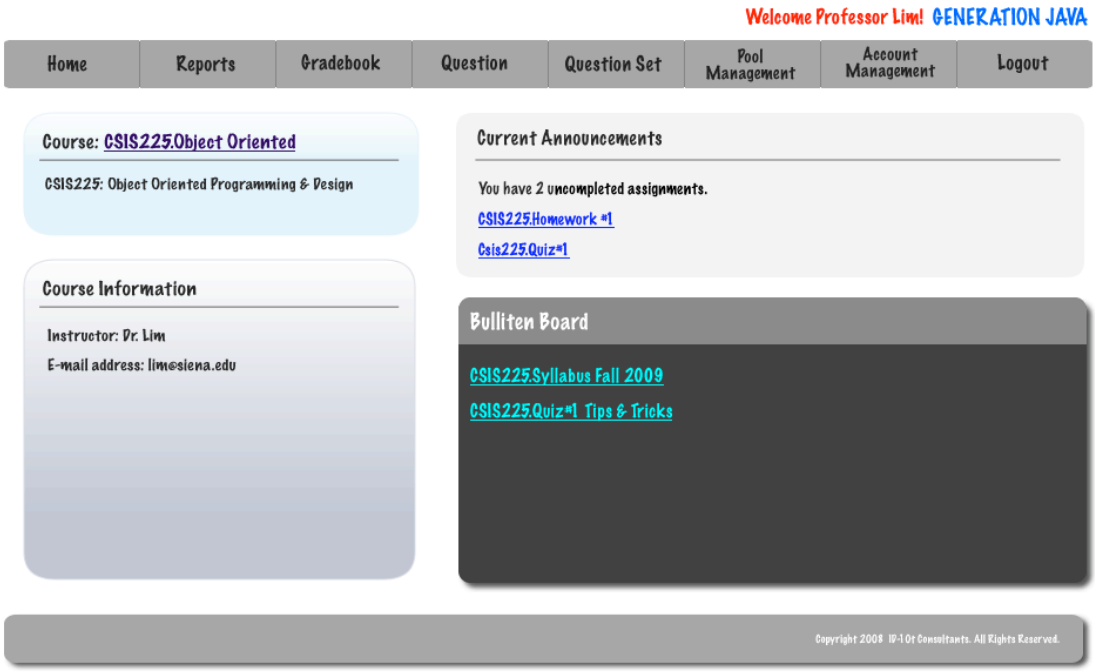
http://oraserv.cs.siena.edu/~perm_idiot/gen_java/student/course_home.php



4.33: Course Home Page – Instructor/ Program & System Admins

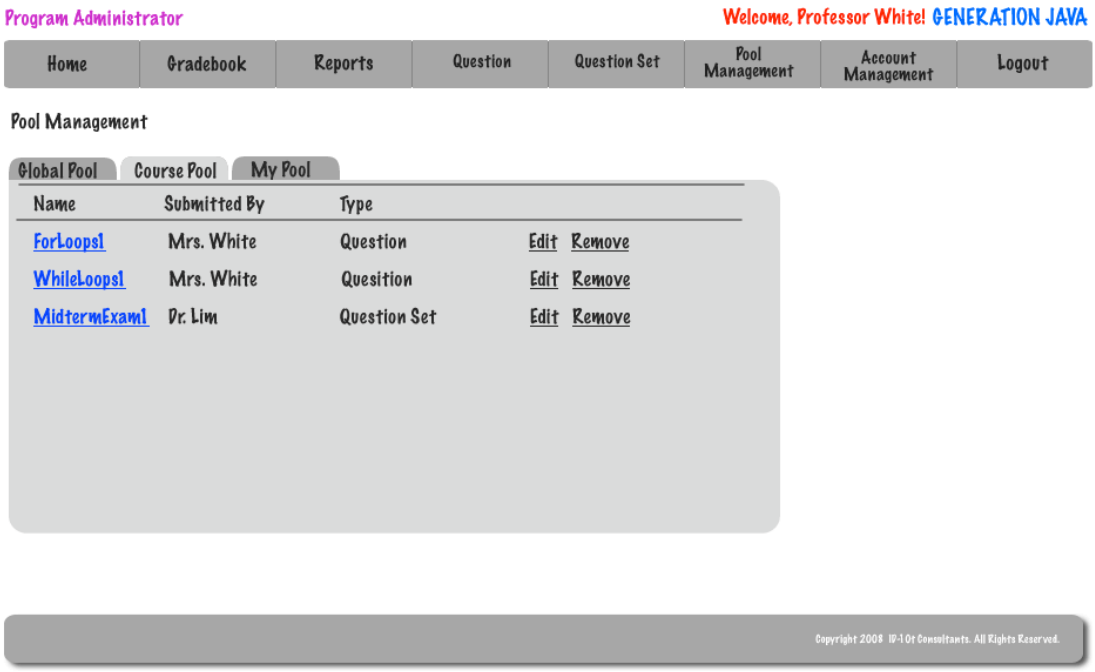
When a Instructor/Program Administrator or System Administrator chooses a course they will be redirected to the course home page.

http://oraserv.cs.siena.edu/~perm_idiot/gen_java/course_home.php



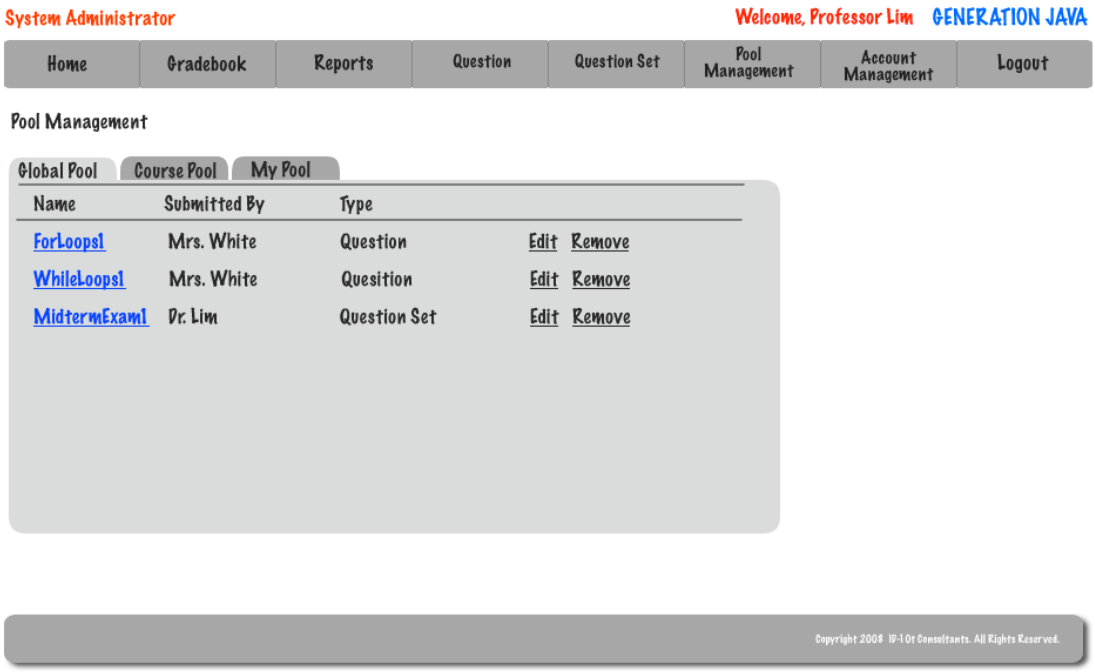
4.34: Pool Management – Program Administrator

A Program Administrator has access to their pool, the course pool, and the global pool.



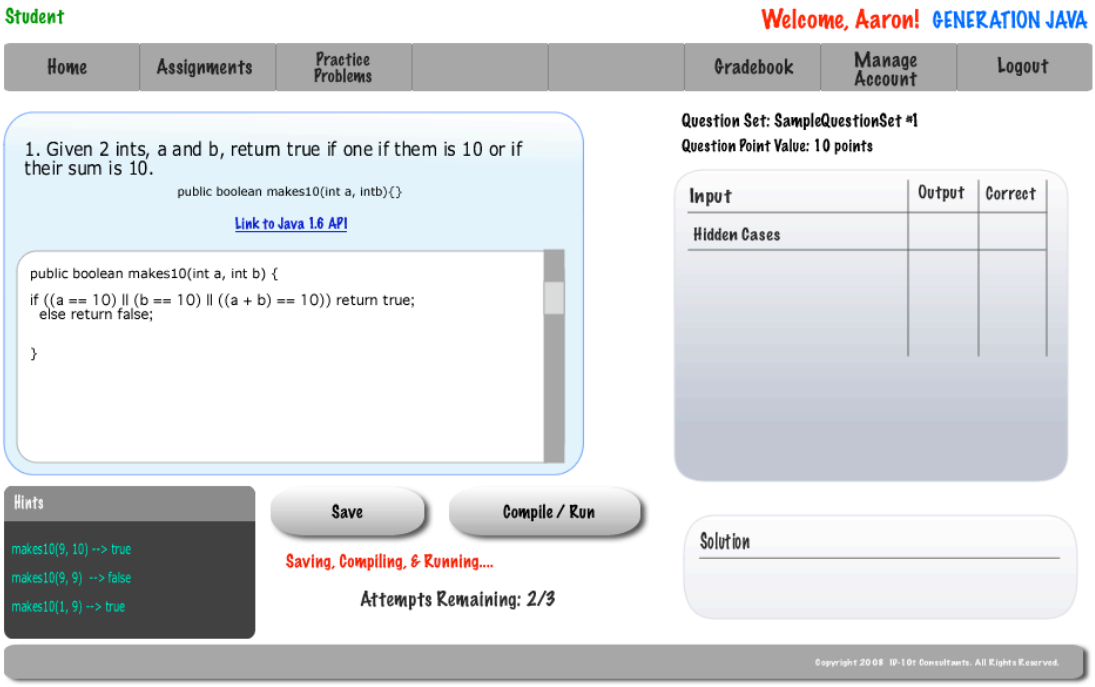
4.35: Pool Management – System Administrator

The System Administrator has access to their pool, all course pools, and the global pool.



4.36: Student Question Compile and Run

After a student feels their code is correct they are able to have the system compile and then run it. If the code compiles then the student will receive feedback based on viewable and hidden test cases.



4.37: Pop-up - Save Student Question

Once a student saves a question a popup will appear to confirm the success of the saving and allow the student to either navigate back to the question or to their home page.

~ This functionality has been moved to the answer question page. Once the student saves a question they will receive a success message on the answer question page.

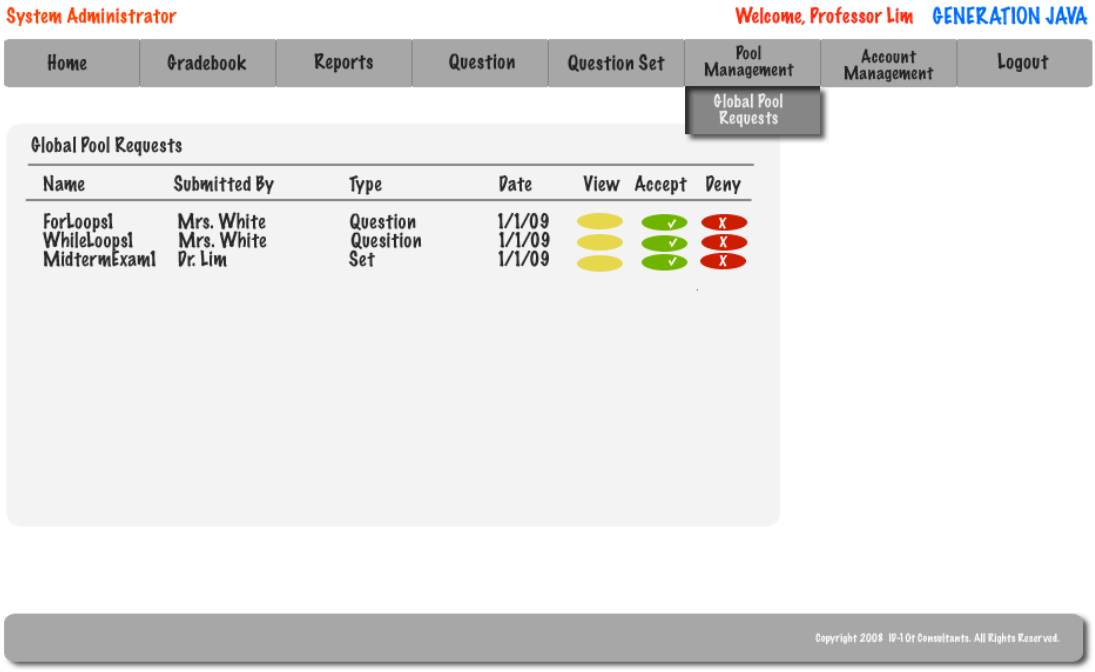
4.38: Created Course – System Administrator – Popup

Once the System Administrator successfully creates a course a popup will appear to confirm the creation of the course and allows the System Administrator to navigate back to creating another course or to their homepage.

~ This functionality has been moved to the create course page. Once a system administrator has created a course they will receive a success message on the create course page.

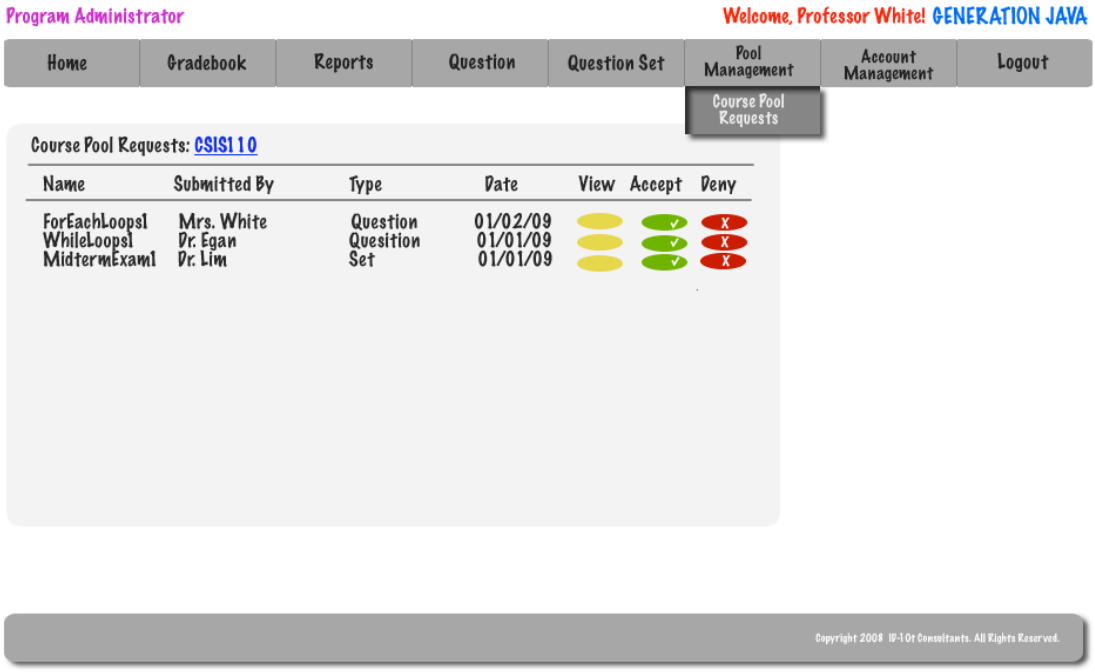
4.39: Approval of Global Pool Requests – System Administrator

Before a question can be admitted into the Global Pool the System Administrator must first approve it.



4.40: Approval of Course Pool Requests – Program Administrator

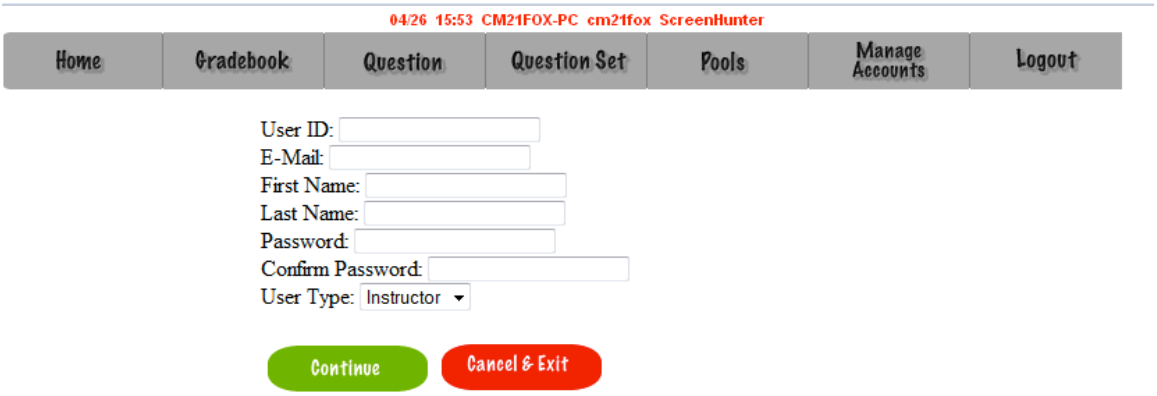
Before a question can be admitted into the Course Pool the Program Administrator must first approve it.



4.41 Create User Accounts – Program Administrator

The program administrator has the ability to create student and instructor accounts.

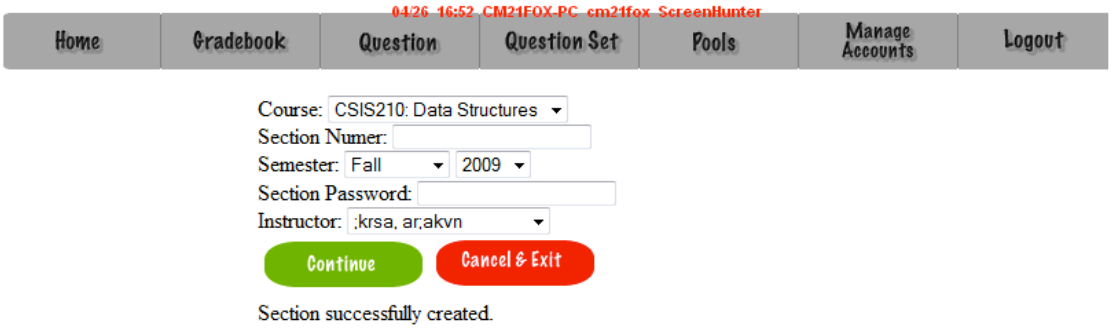
http://oraserv.cs.siena.edu/~perm_idiot/gen_java/prg_admin/create_acct_prgadm.php



4.42 Create Section

Once a course is created a section is then able to be added to that course.

http://oraserv.cs.siena.edu/~perm_idiot/gen_java/sys_admin/create_section.php



Section 5: Acceptance Test

See attached Test Results Document.

Section 6: Unit Tests

See attached Test Results Document.

Section 7: Appendix

7.1 Glossary of Terms

CSS – Cascading Style Sheets – These are used to describe a specific style for a web page or set of pages, a website.

Database - A collection of data arranged for ease and speed of search and retrieval.

Data Flow Diagram – A representation of the functional decomposition of a system.

Gantt Chart - A chart that depicts progress of jobs in relation to time. It is often used in planning and tracking a project.

Hypertext Markup Language (HTML) – Predominant markup language used for the creation of web pages.

Internet - A vast computer network linking smaller computer networks worldwide. The Internet includes commercial, educational, governmental, and other networks, all of which use the same set of communications protocols.

Internet Explorer(IE) – Microsoft based program used for browsing the Internet.

Linear Sequential Model / Classic Waterfall Model – A systematic, sequential approach to software development that begins at the system level and progresses through analysis, design, coding, testing, and support.

MySQL – A Multithreaded, multi-user Relational Database Management System.

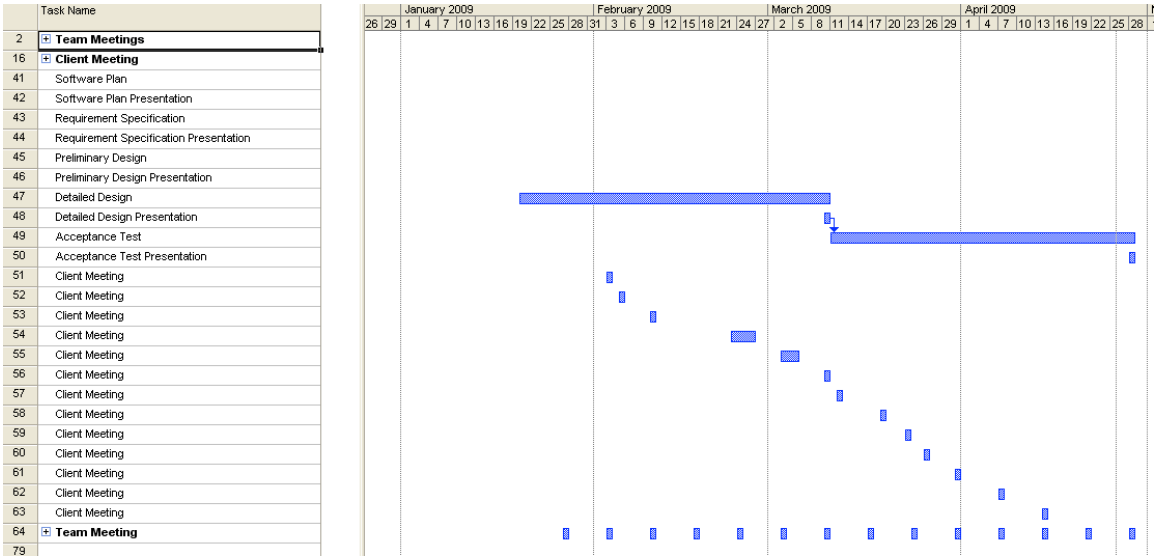
OS X - The latest operating system for Macintosh computers, based on the Linux kernel but with a more user-friendly graphic interface. It includes networking capabilities.

PHP – PHP Hypertext Preprocessor – An open source (free) programming language that is used for dynamic pages and is a high-level scripting language.

Profiles – User created accounts that will be customizable according to each specific person.

XHTML – Extensible HyperText Markup Language – has same capabilities of HTML but is more restricted to allow for conformity among multiple platforms.

7.2 Timeline (Gantt chart)



	Task Name
2	**Team Meetings**
16	**Client Meeting**
41	Software Plan
42	Software Plan Presentation
43	Requirement Specification
44	Requirement Specification Presentation
45	Preliminary Design
46	Preliminary Design Presentation
47	Detailed Design
48	Detailed Design Presentation
49	Acceptance Test
50	Acceptance Test Presentation
51	Client Meeting
52	Client Meeting
53	Client Meeting
54	Client Meeting
55	Client Meeting
56	Client Meeting
57	Client Meeting
58	Client Meeting
59	Client Meeting
60	Client Meeting
61	Client Meeting
62	Client Meeting
63	Client Meeting
64	**Team Meeting**
79	

7.3 Packaging Specifications

ID-10t Consultants will install all the necessary files of Generation java on Oraserv. A CD containing a full copy of ID-10t's website including all folders, files, images, etc., as well as a full copy of all files that comprise Generation Java.