We Like Krique?

Project Report

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Part 1:

Description of the Software's

Major Features

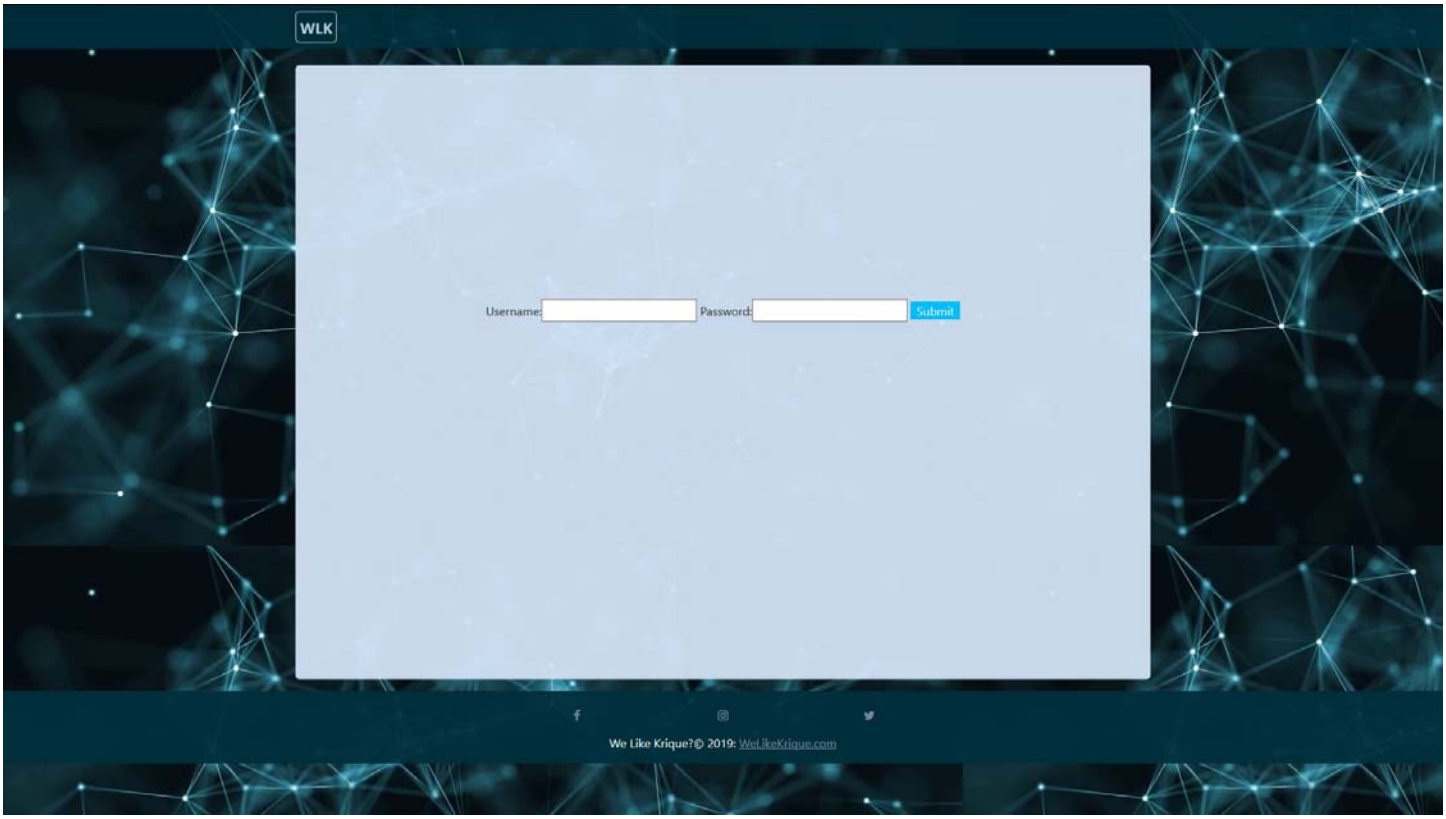
Our software is intended to help administrators & instructors assign TA's to class sections. When a user first accesses the software via the web interface, they are first asked to log in. Once logged in, a list of classes for the current semester is displayed, along with a links bar across the top of the page containing links and drop-down menus for the user to select what feature of the software they would like to use. We define three types of users: Administrators, Instructors, and TA's, who all have access to different features of the software. However, all users have access to several features, which are resetting their password, providing or changing their contact information, and viewing all courses and sections. The display of each section includes the assigned TA, if one has been assigned. In addition to these commands, the administrator has access to several other features. The administrator can access forms that allow them to input new users, classes, and sections into the system. They also have access to forms that allow them to assign instructor users as instructors for courses and all them to assign TA users to sections. They can also delete users and reset the system which removes all courses, sections, and users, except for the administrator. Administrators also have access to pages that display TA qualifications and preferences and display any conflicts between a TA's assigned section and their schedule as entered. TA users have access to a few unique features, which include editing their schedule by adding or removing sections from it (the sections must be already entered by the administrator) and setting their preferences for which course to TA and listing their qualifications for being a TA. Instructors have access to only one additional feature, which is assigning TA users to sections.

Part 2:

Screenshots of Each Web Page

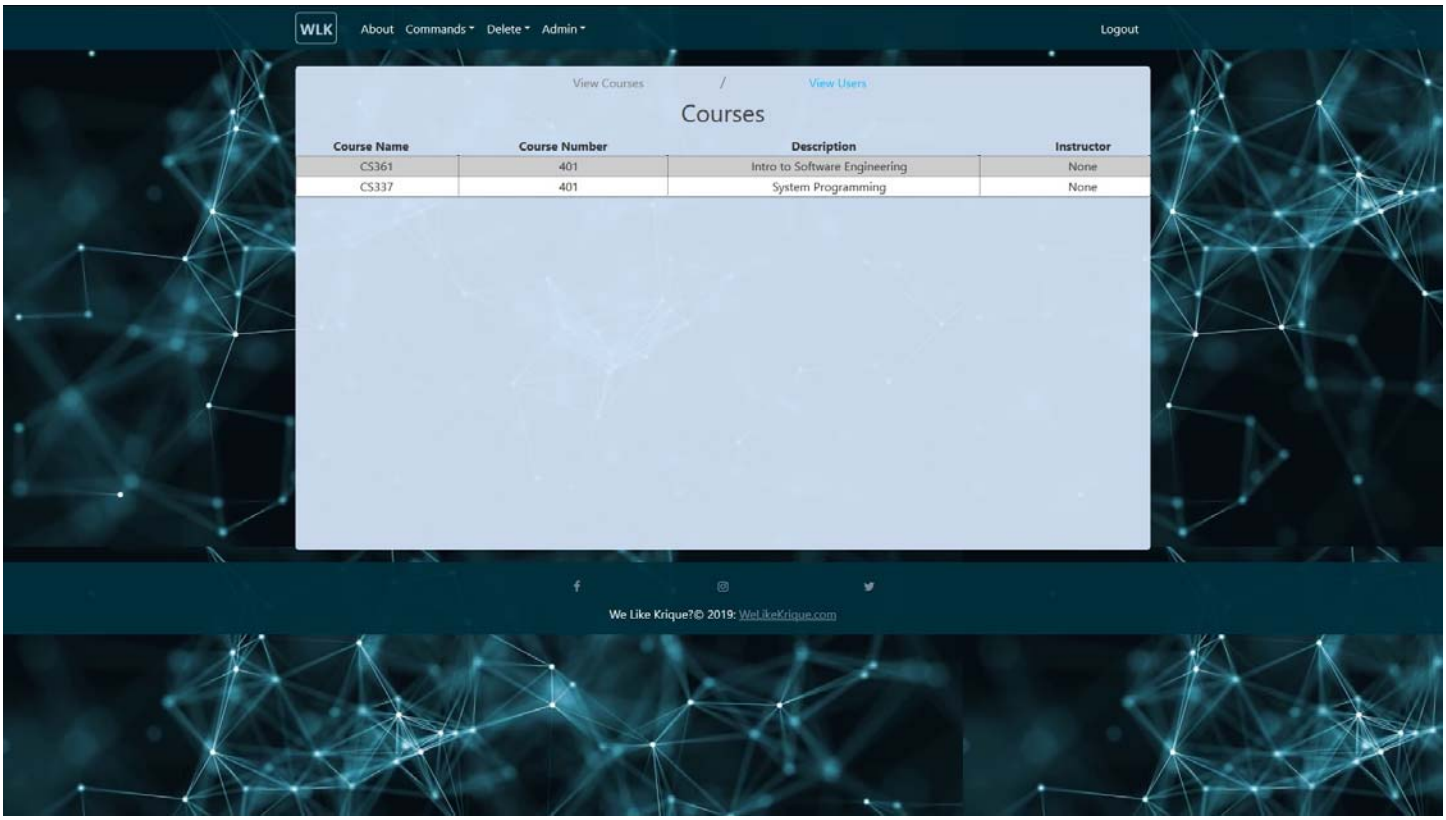
With Functional Descriptions

Login Page



This login page is what is displayed when the person first navigates to the website, or upon logging out of the system. The elements are extremely simple, displaying just a user name and password field for login to the system.

Admin Home Page - Courses View

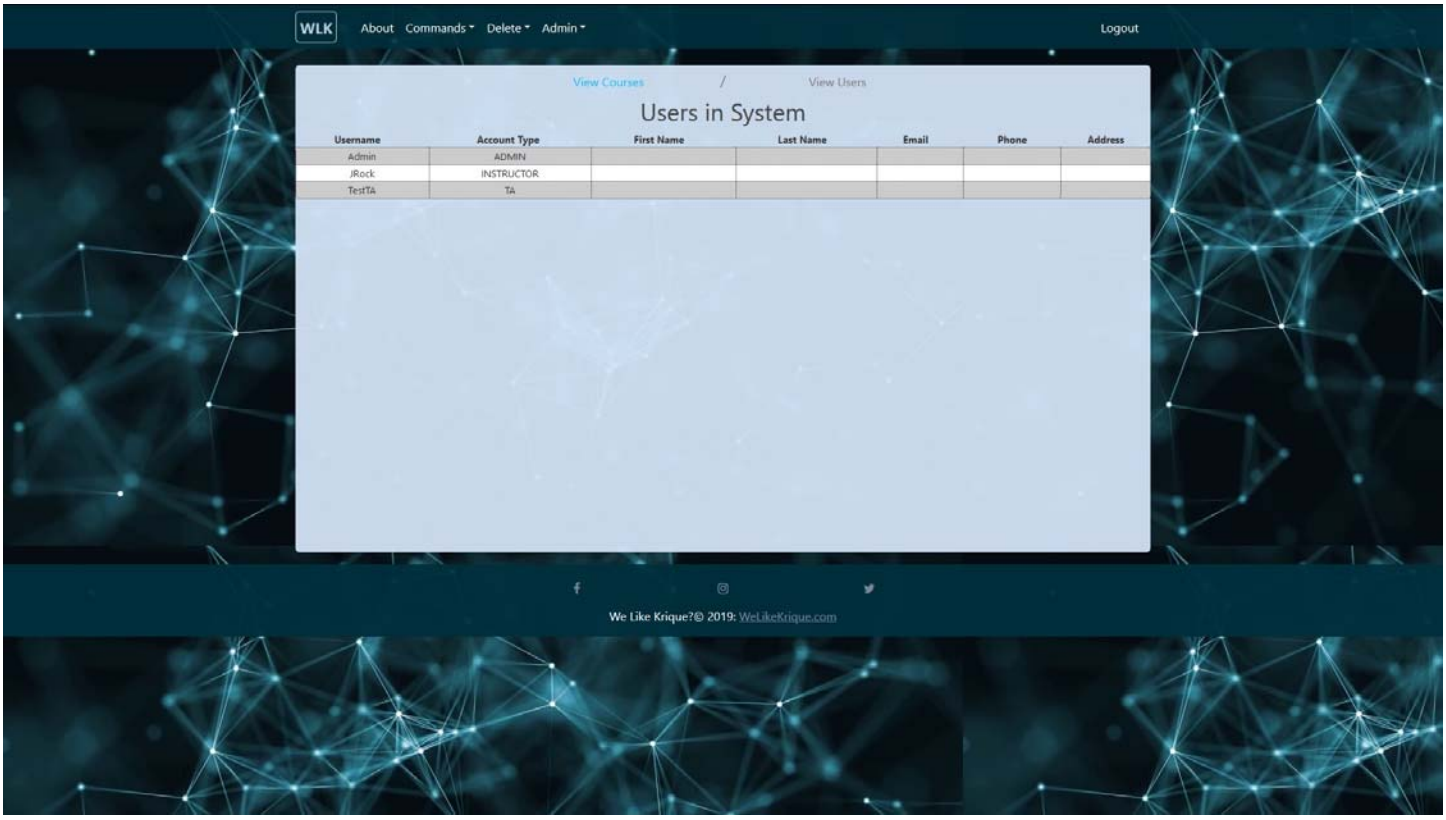


Upon the administrator logging into the system, the first screen that is displayed, and is basically the administrator's home page is the View Courses Screen.

On the View Courses screen, which is available to all users, displays all the courses entered into the system, providing the Course Name, Section Number, a Description of the Course, and the Assigned Instructor, if one has been assigned.

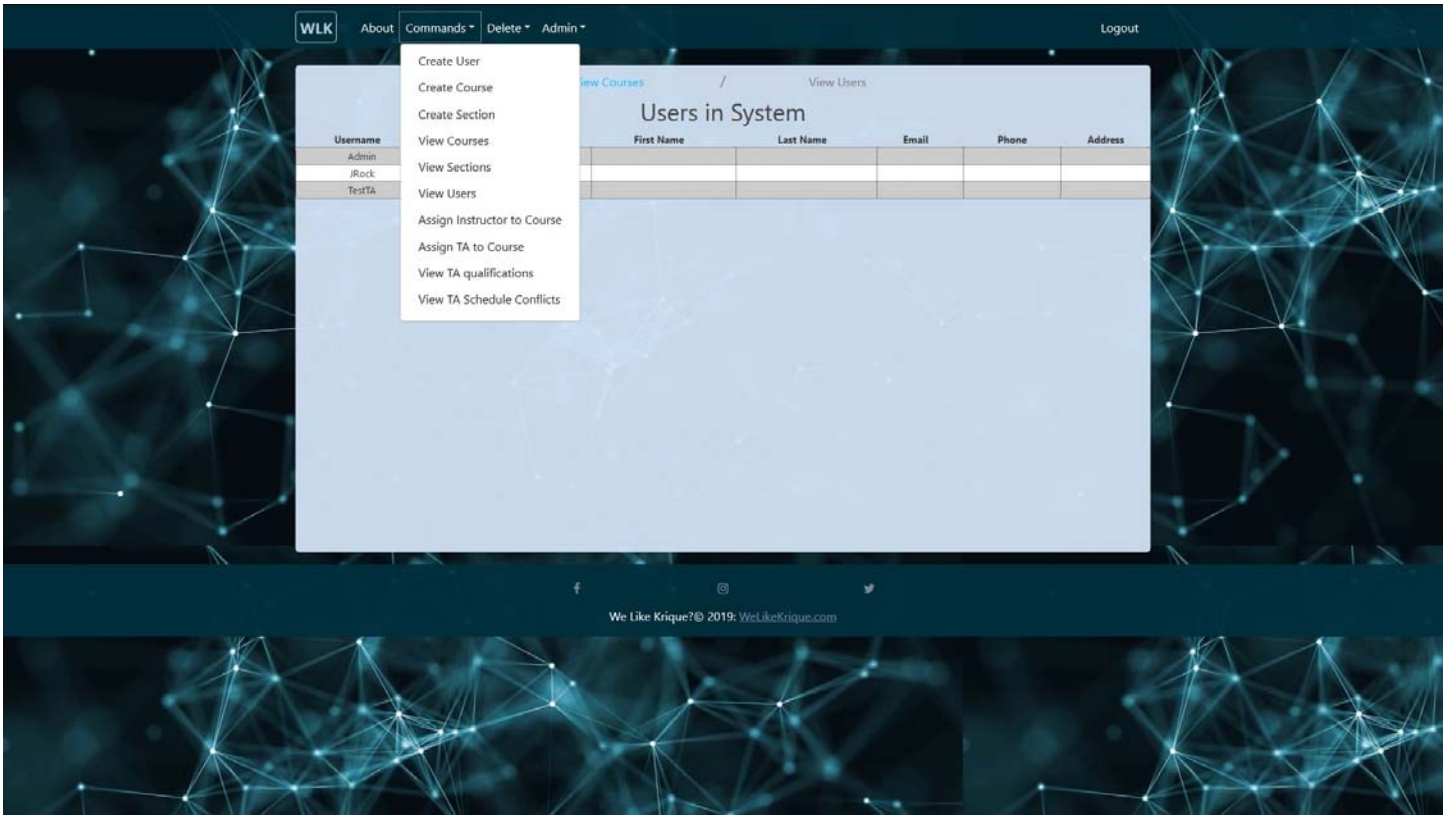
On the administrator's view of the home screen, there is also a link to the View Users page.

Admin Home Page - Users View



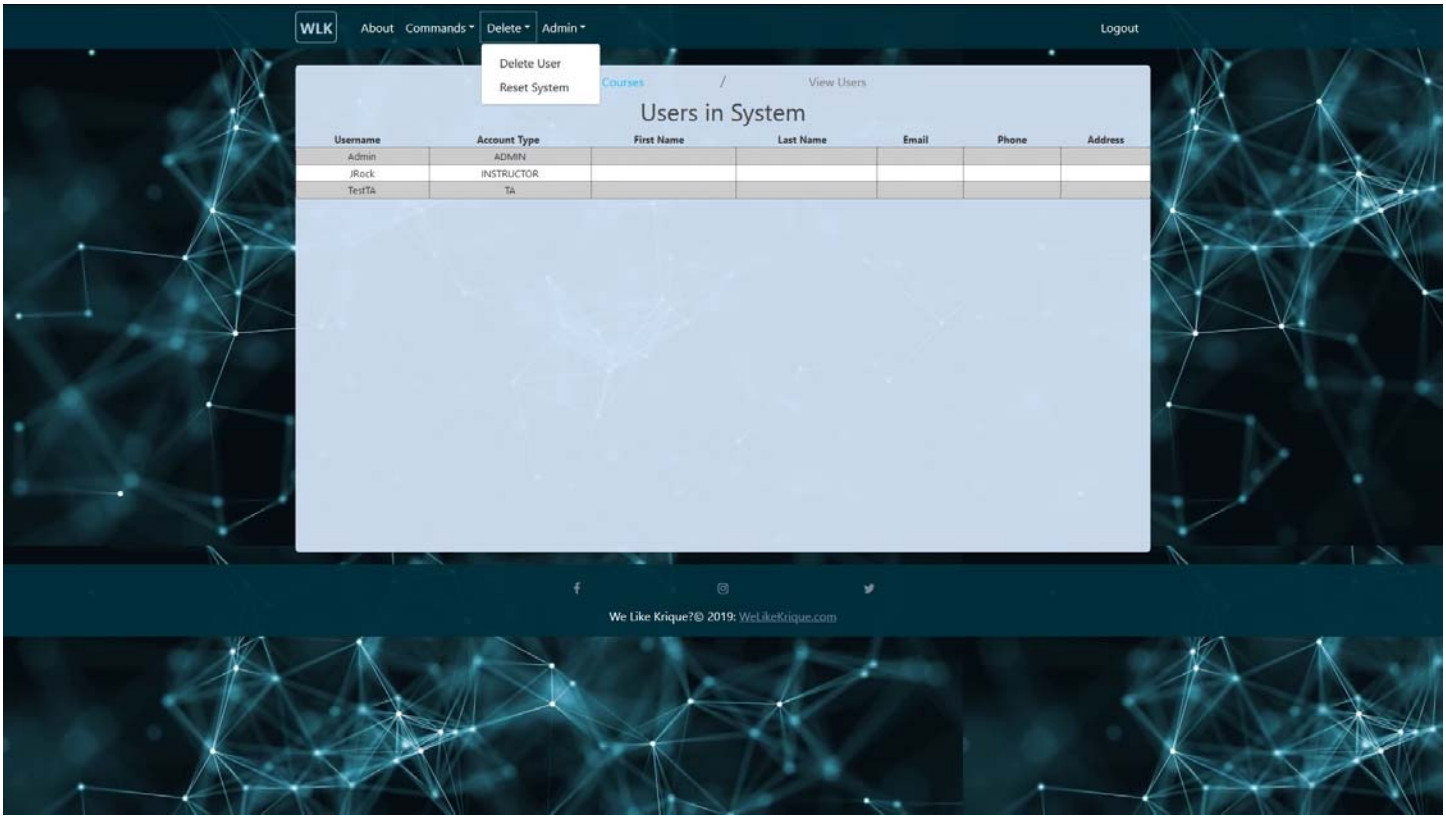
The View Users page displays all the users in the system, their access levels, along with their contact information, if it has been entered into the system. This allows the administrator easy access to locate contact information for a specific user or a group of users.

Admin Commands Menu



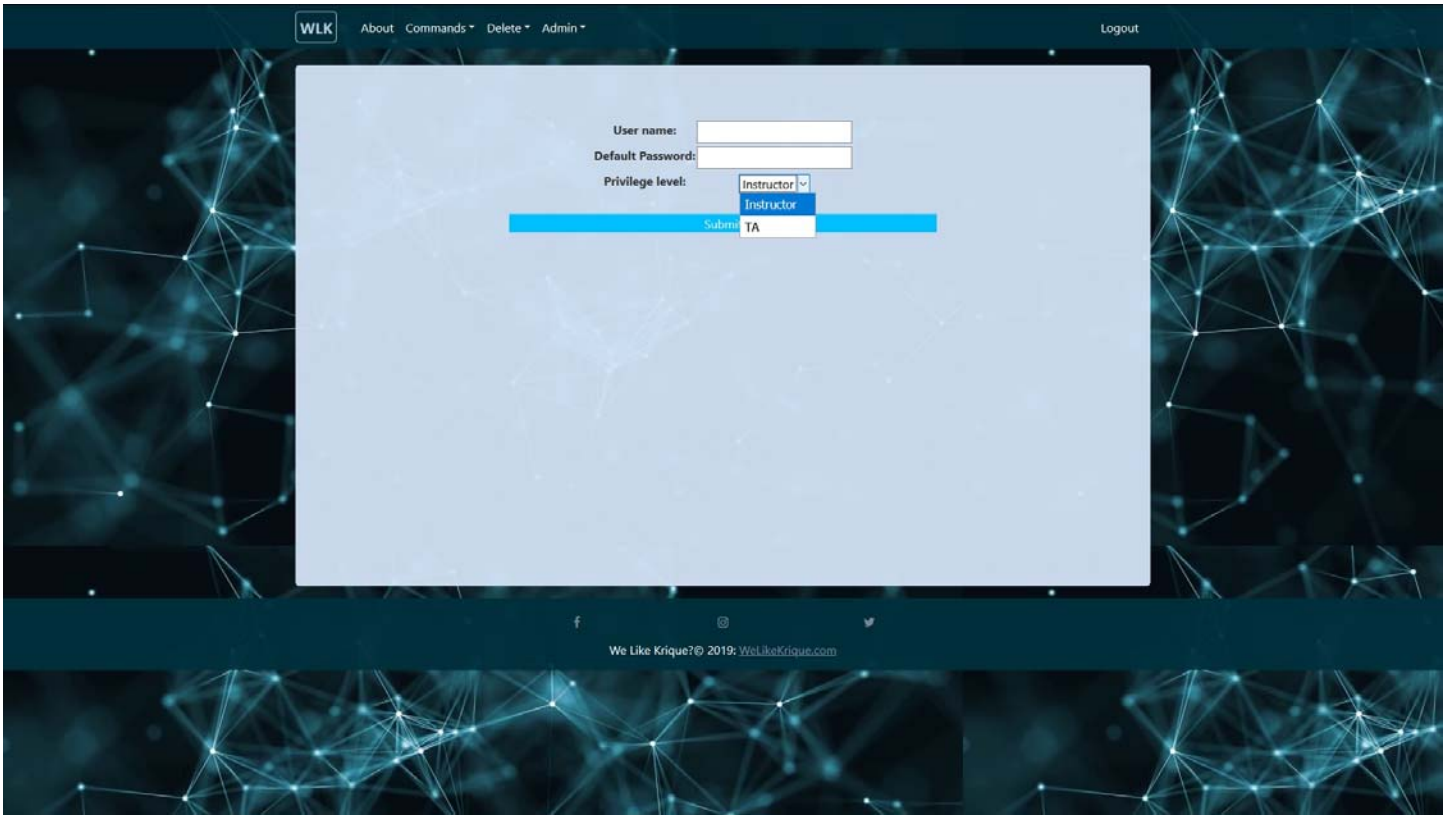
The administrator's commands menu lists all the commands available to the administrator of the system. This menu is activated by clicking on the Commands dropdown and then proceeding to select the option that the administrator would like.

Admin Delete Menu



The Delete Menu is only available to the administrator. Inside this menu are the options to either remove a user from the system or to reset the entire system for a new semester.

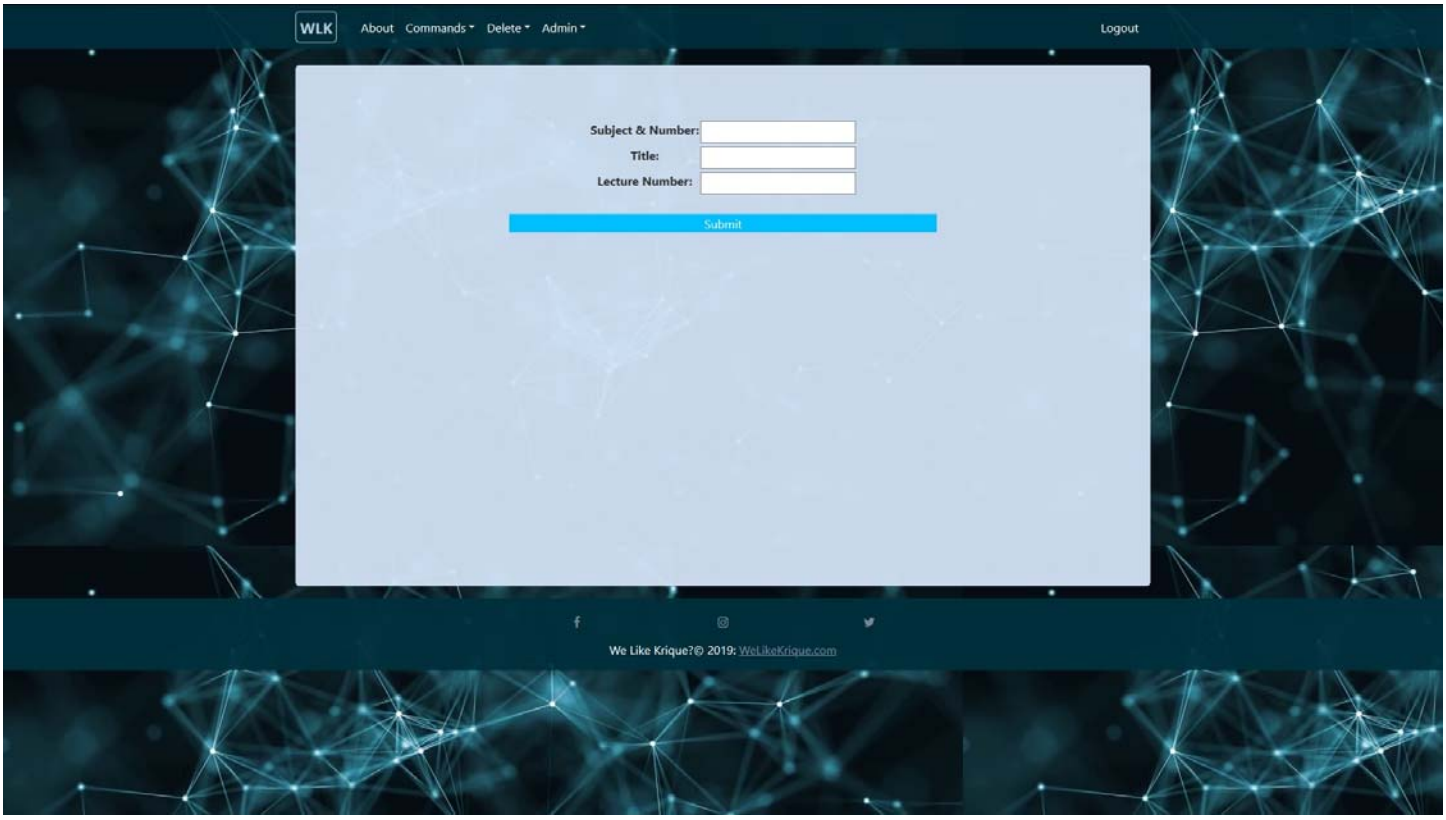
Admin Create User



The Create User page allows the administrator to add new users to the system. The user name and default password fields are text boxes and the privilege level field is a drop down menu that allows the administrator to choose from the available two options: Instructor and TA.

Once the administrator selects the Submit button, the user is created and saved into the database.

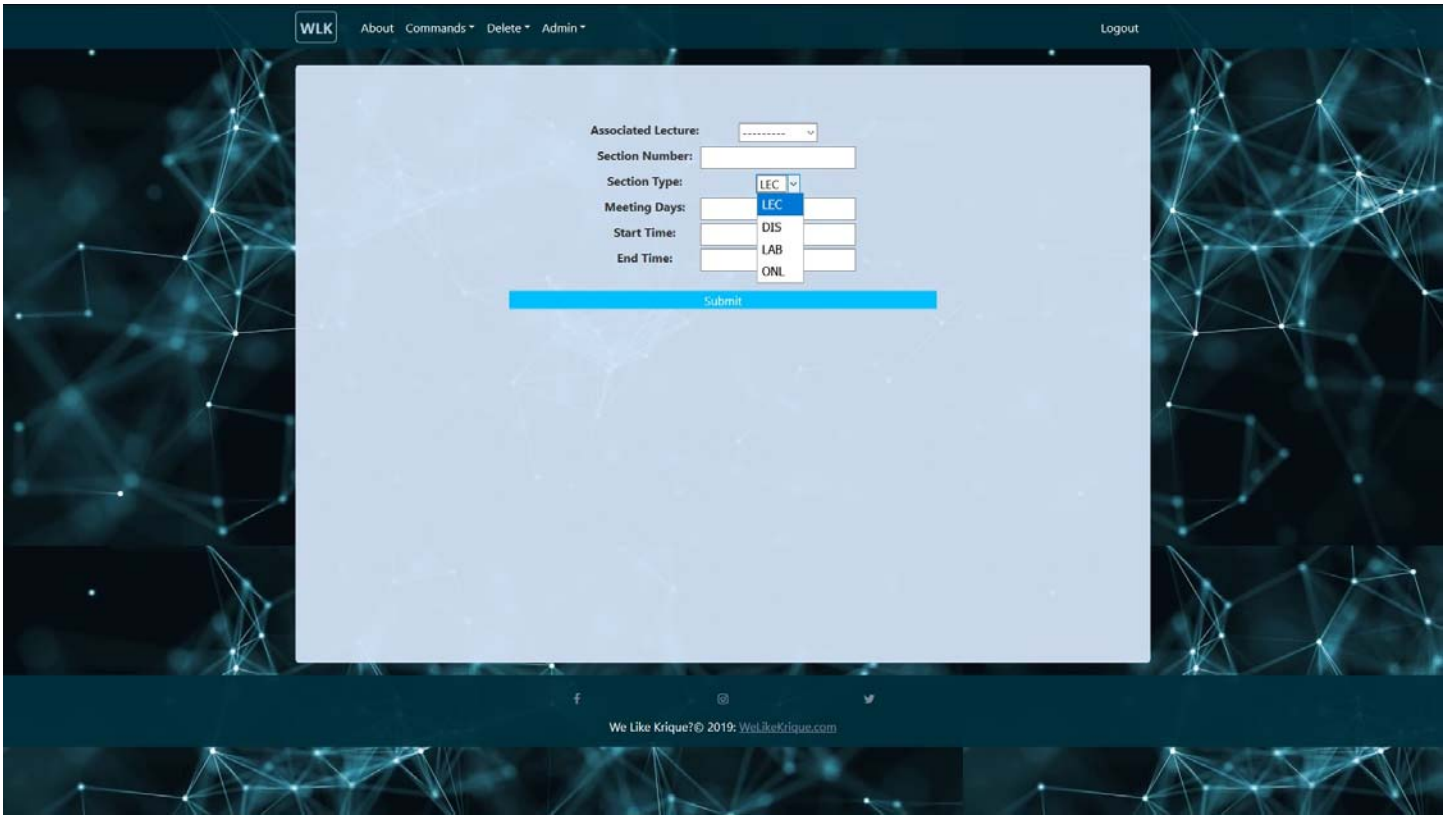
Admin Create Course



The Create Course page allows the administrator to create courses in the system. All three fields are text boxes that allow for free input of course information, including the Subject & Number, Title, and Lecture number of the course.

Once the administrator selects the Submit button, the course is created and saved in the database.

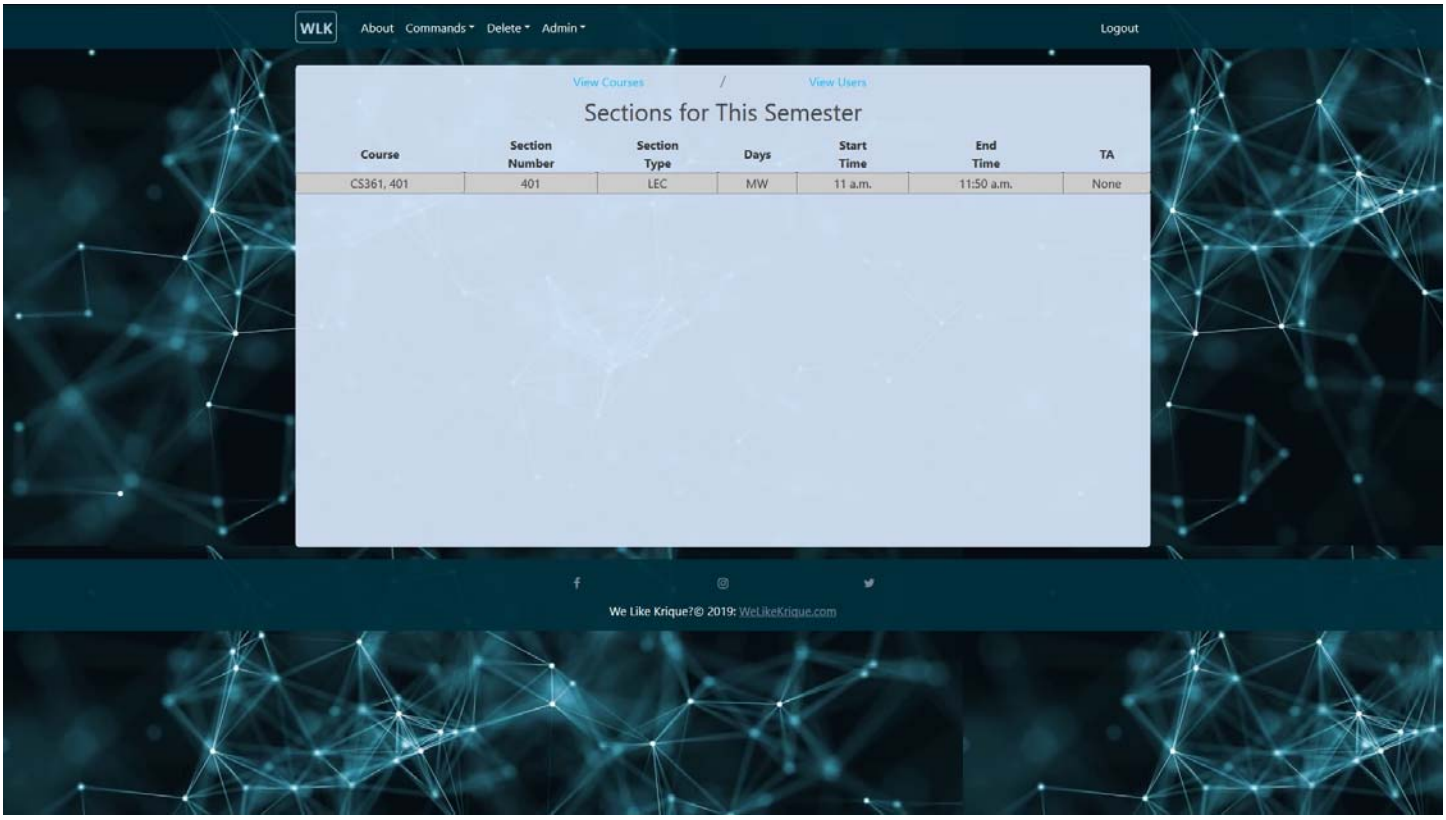
Admin Create Section



The Create Section page allows the administrator to create the various sections for each course. The first item that the administrator would want to select is the Associated Lecture, which is a drop down menu consisting of the existing courses in the system. Once the Associated Lecture is selected, the Section Number, Meeting Days, Start Time, and End Time fields are text boxes that allow for free entry to enter the appropriate information. The Section Type field is a drop down that provides the appropriate options for the section, including Lecture, Discussion, Lab, or Online.

Once the information is entered and the Submit button is selected, the section is created and saved in the database.

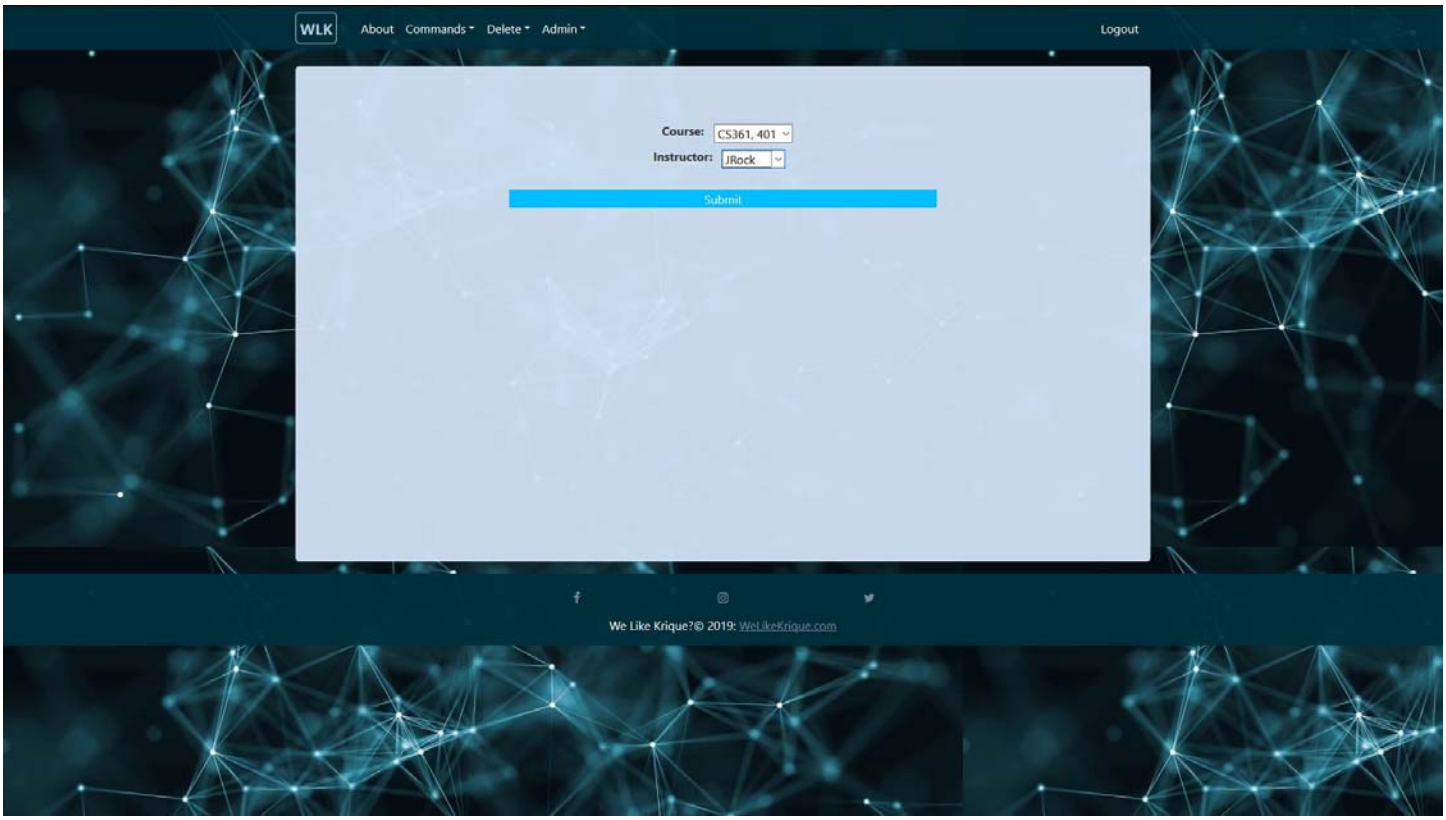
Admin View Sections



The View Section page allows the user to view all the various sections for each class entered into the system. This page includes the information for the Course, Section, Section Type, Days and Times of the section, along with the assigned TA, if a TA has been assigned to the section by the instructor.

There are also links on this page to return to either the View Courses or View Users page.

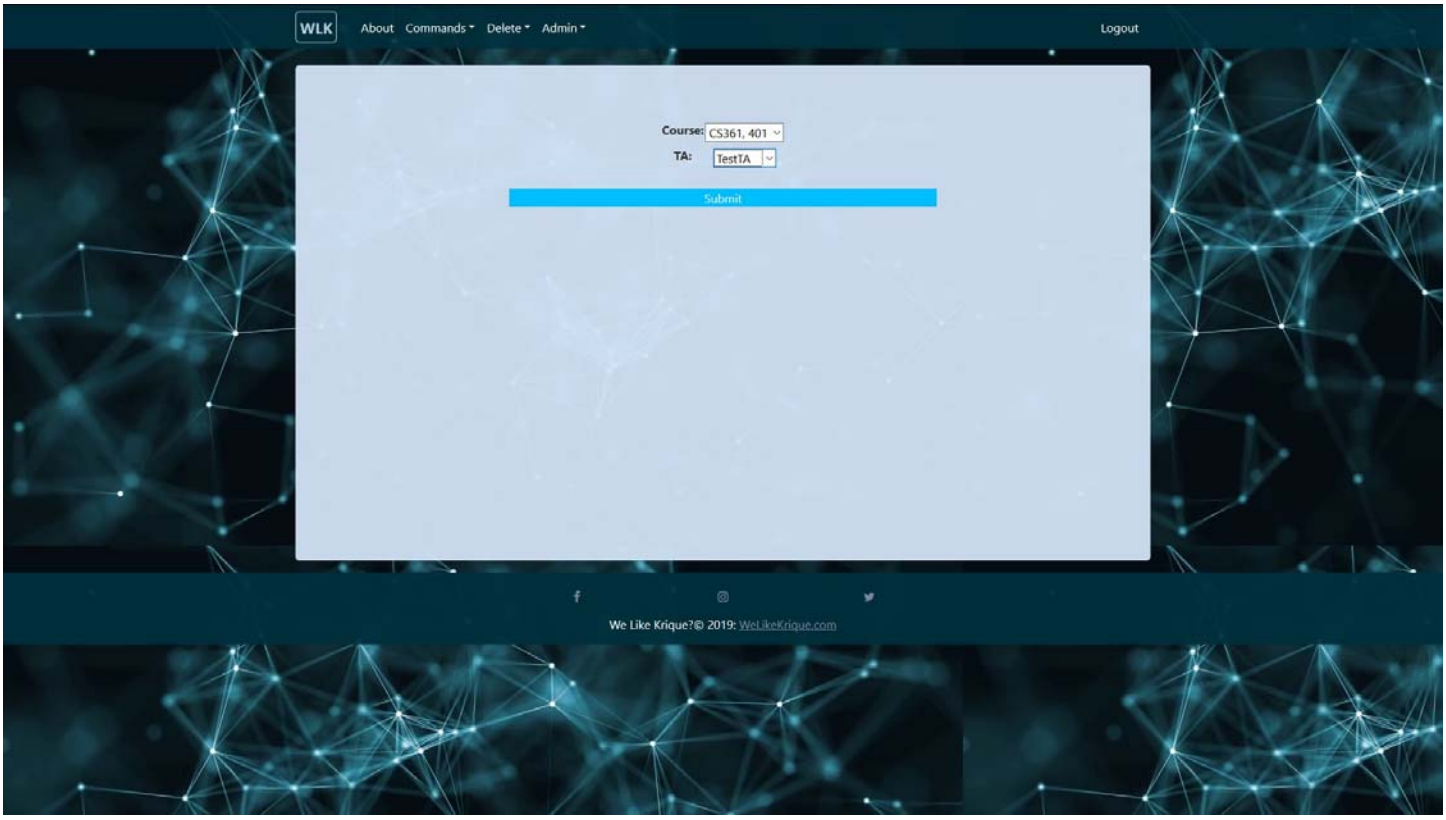
Admin Assign Instructor to Course



The Assign Instructor to Course Page allows the administrator to assign an instructor to a particular course. The two fields on this page are both drop down boxes. The Course field is pre-populated based on the courses entered in to the system and the Instructor field is pre-populated based on the instructors entered into the system.

Once the Submit button is selected, the instructor is assigned to the course and the database is updated with the assignment information.

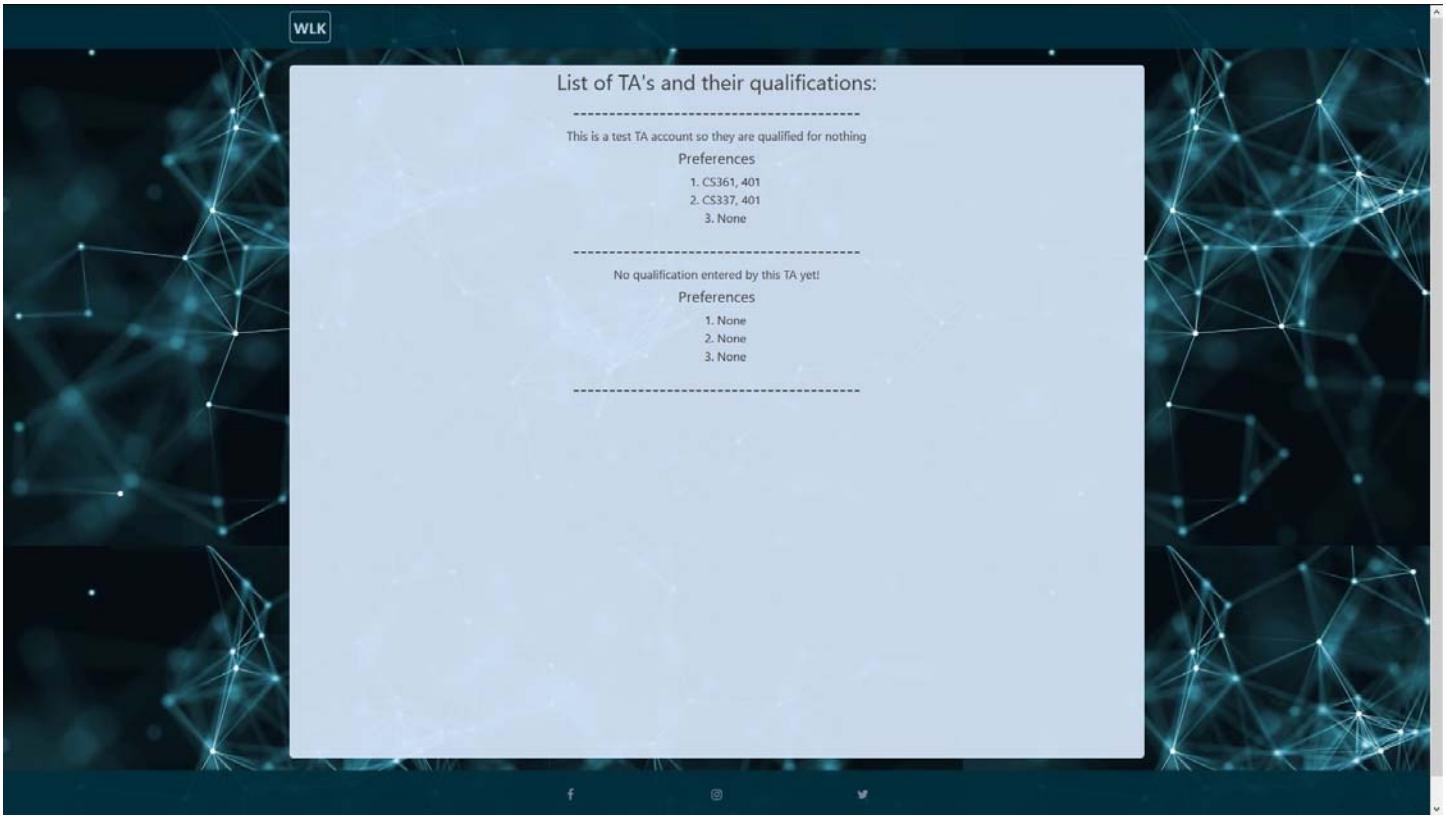
Admin Assign TA to Course



The Assign TA to Course page allows the administrator to assign a particular TA to a course, but not to a specific section, as that is for the instructor to do. The Course field is a drop down pre-populated with the courses already entered in the system where the TA field is also a drop down pre-populated with the TA's already entered into the system.

Once the Submit button is selected, the course information is updated and saved to the database. Once the administrator adds the TA to the course, then the instructor can assign the TA to a particular section.

Admin View TA Qualifications

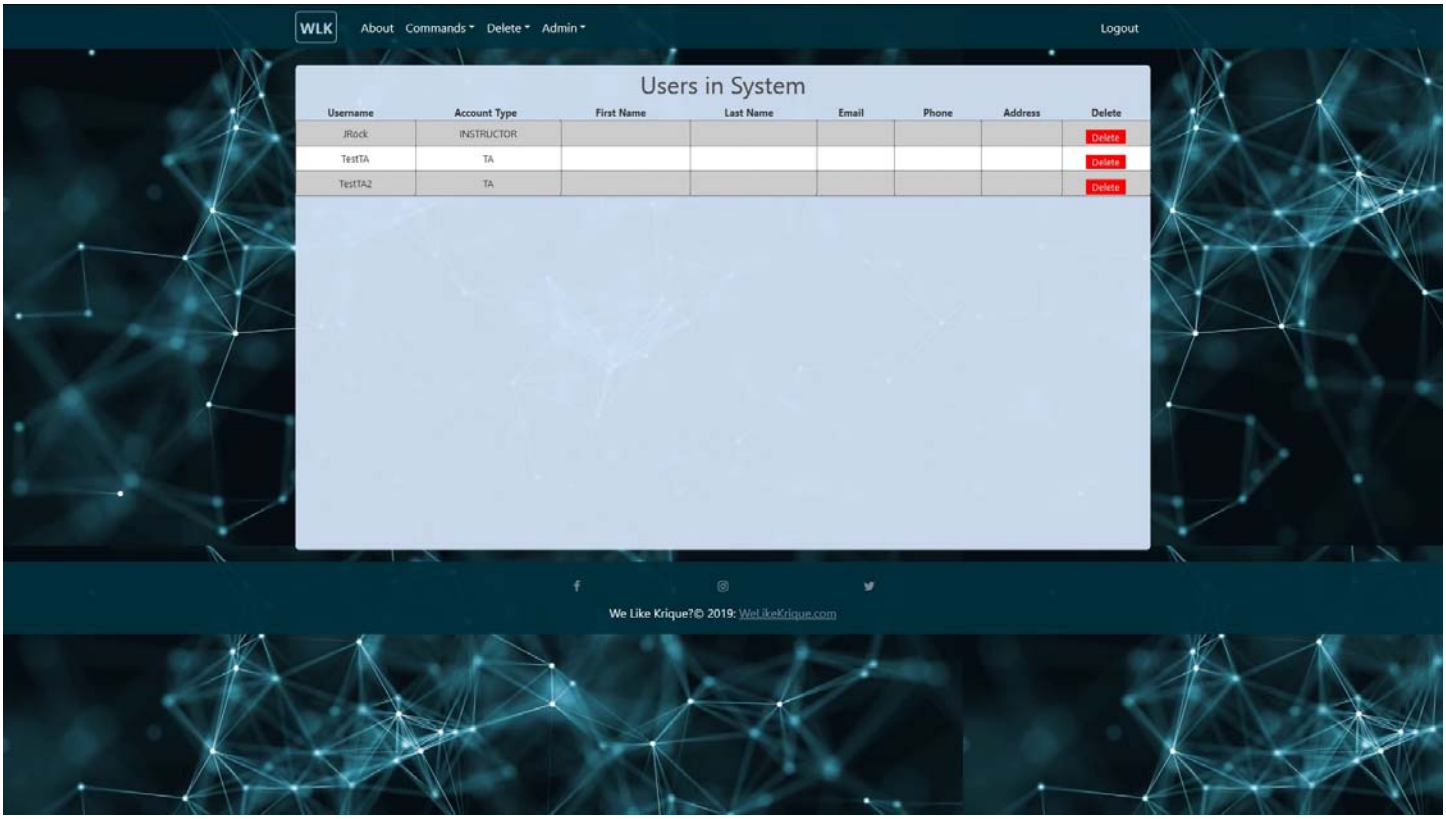


The View TA Qualifications allows the administrator to see both the TA's qualifications that they have entered along with the TA's particular course preferences for all TA's entered into the system. If a TA has not entered their information, the page does provide that information that it has not been entered.

Admin View TA Schedule Conflicts

The View TA Schedule Conflicts page allows the administrator to see if there are any conflicts between a TA's personal or course schedule, for which they are a student, and the sections that they are scheduled to instruct. This allows the administrator to stay ahead of and resolve any potential scheduling conflicts as soon as they are discovered.

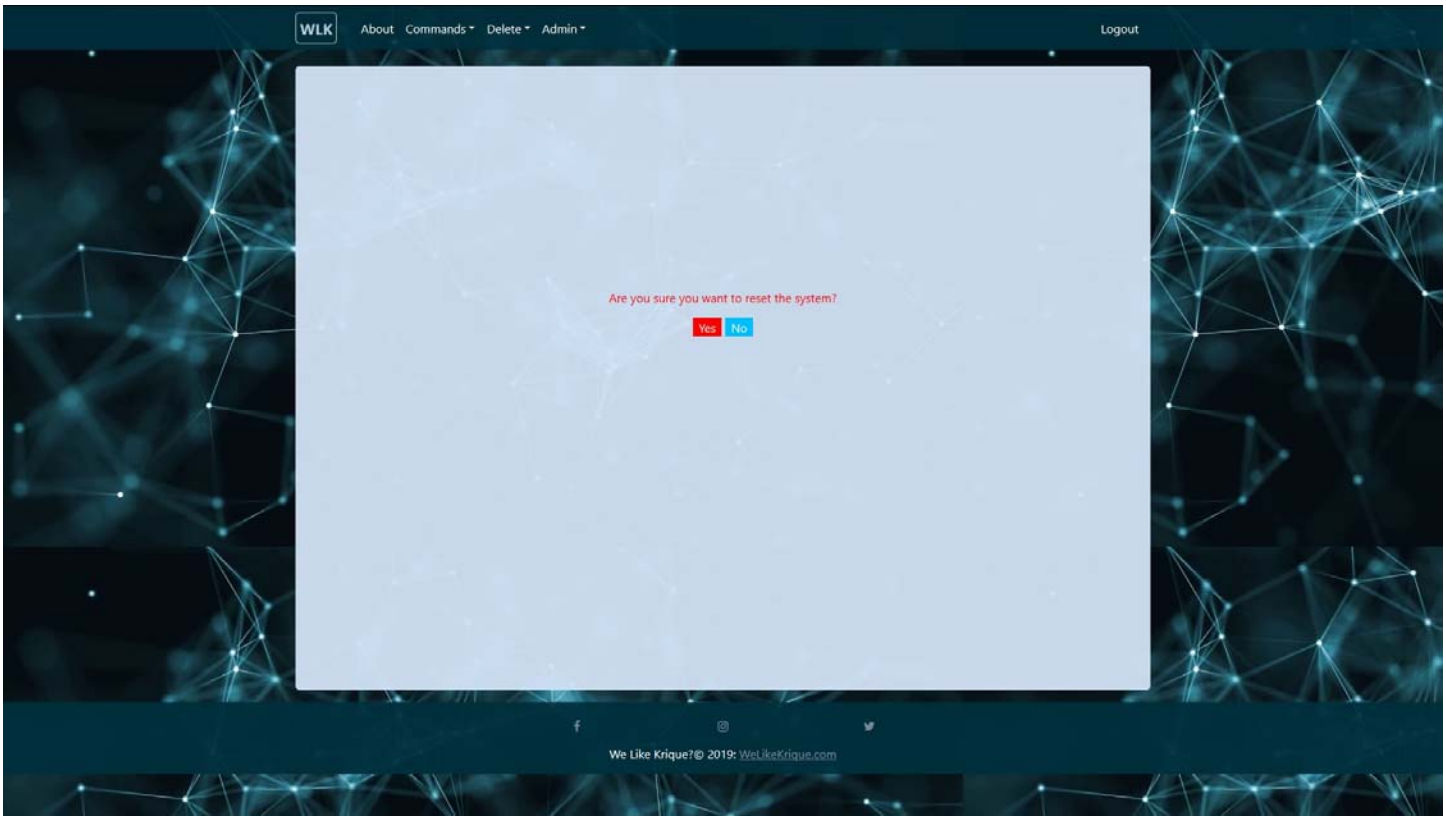
Admin Delete User



The Delete User page allows the administrator easy access to delete users from the system. The page shows all users at one, along with their information to make sure that they are deleting the correct user.

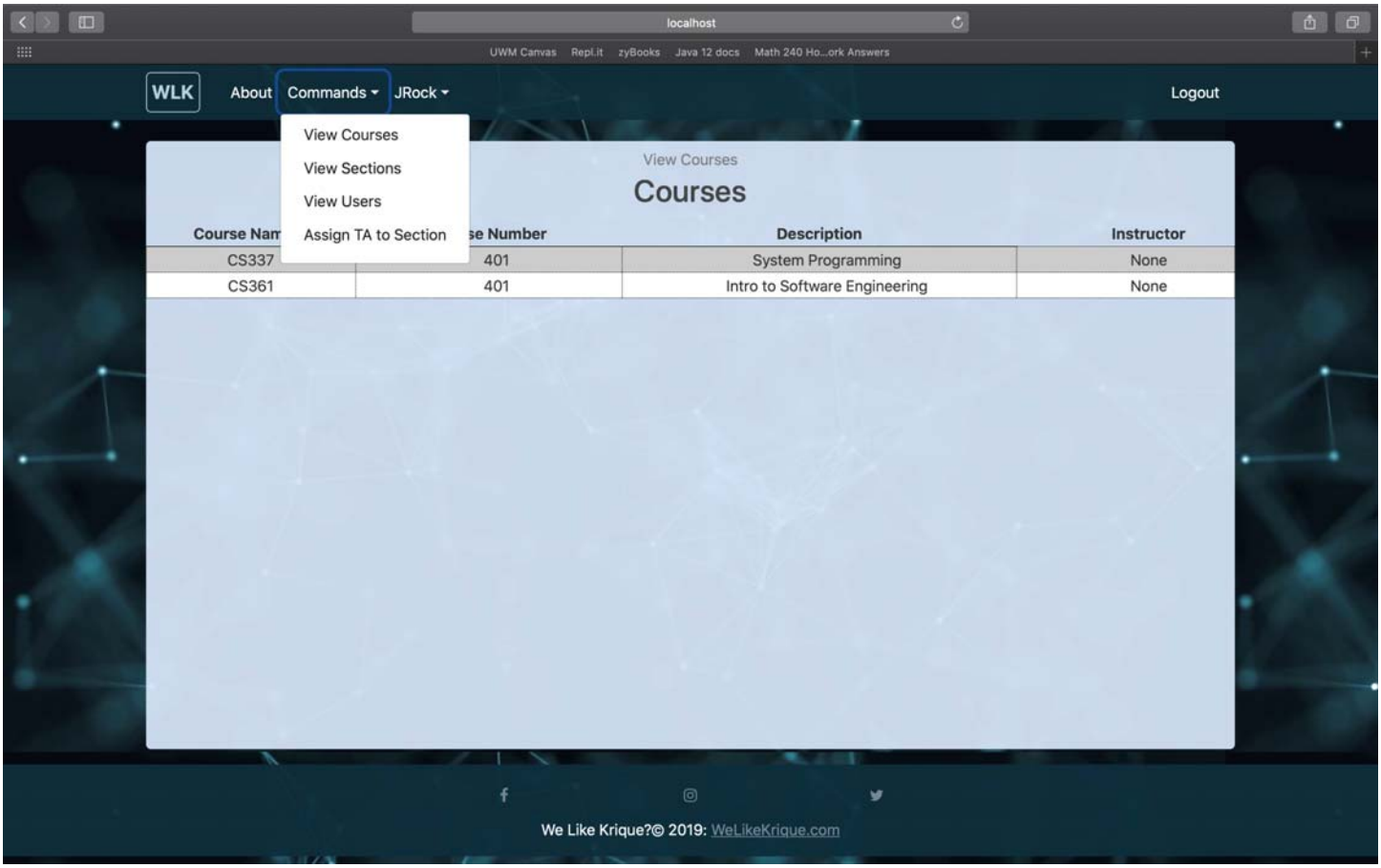
Once the Delete button is selected, the appropriate user is removed from the system and no longer has access to the system.

Admin Reset System



The Reset System page allows the Admin to reset the system for a new semester. This will remove all information from all the databases so that a new semester's set of information can be created.

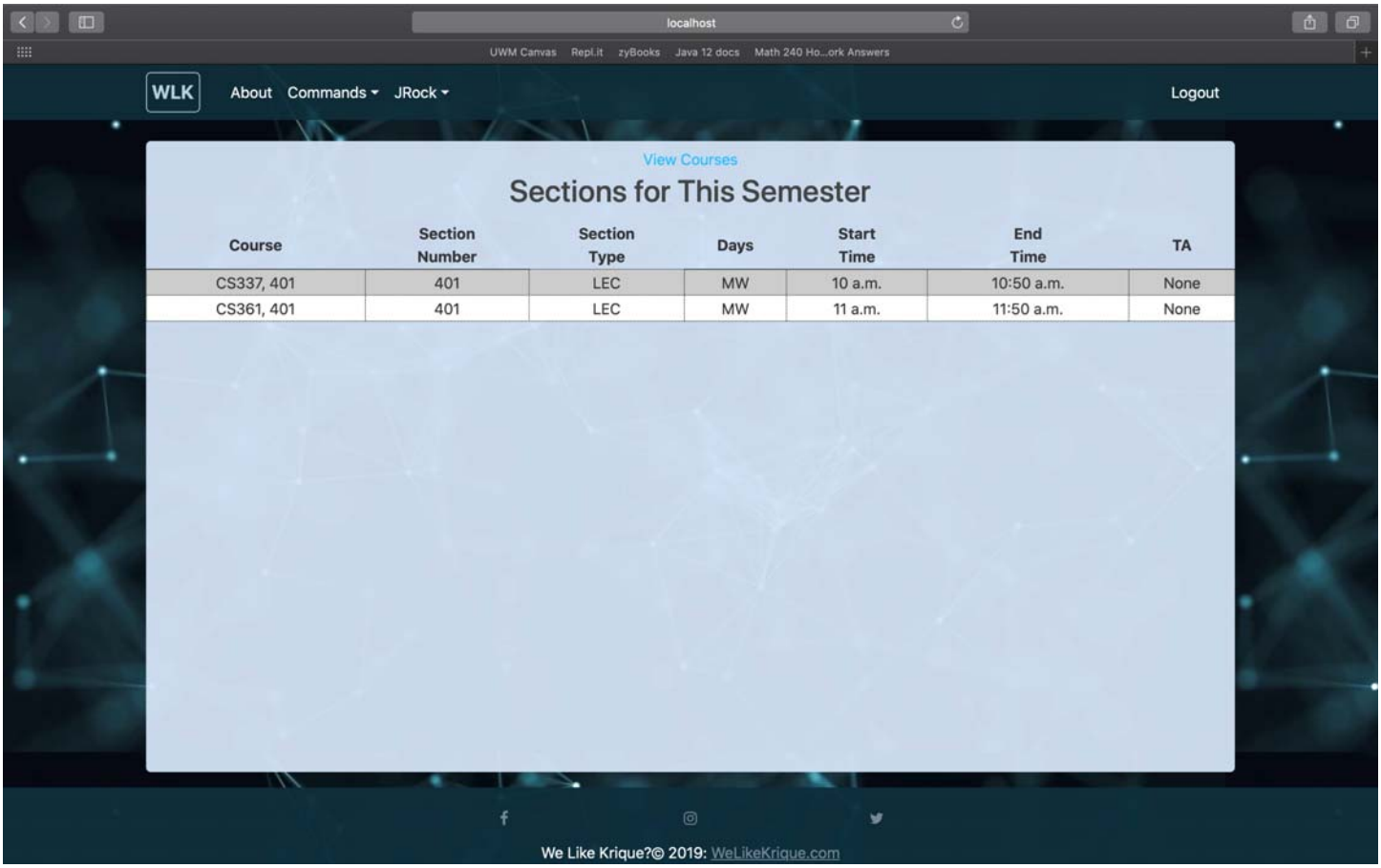
Instructor Commands Menu



When an Instructor logs into the system, they are presented with a View Courses page which displays all courses in the system.

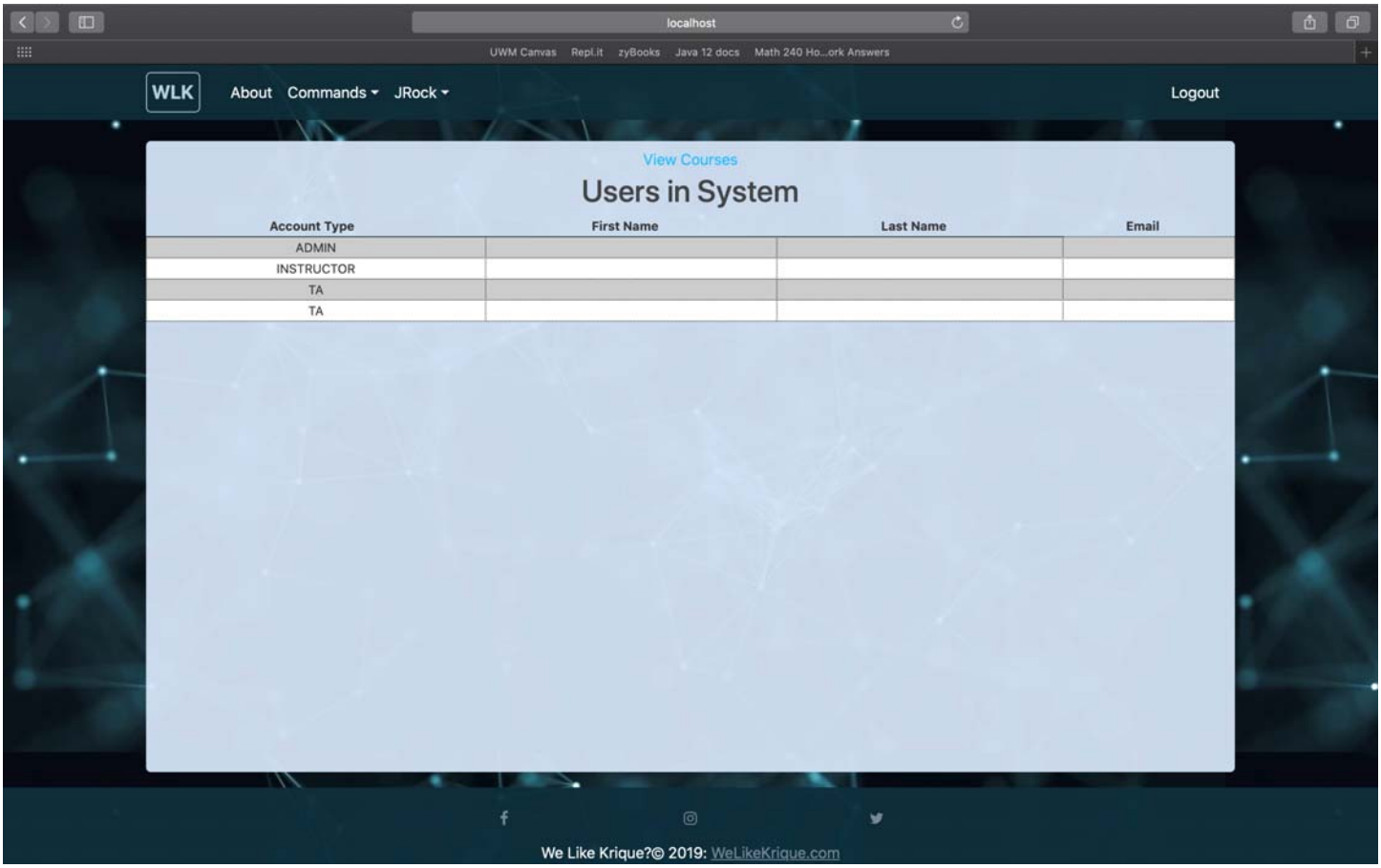
In addition, the Commands menu is tailored solely for the options that the Instructors have access to.

Instructor View Sections



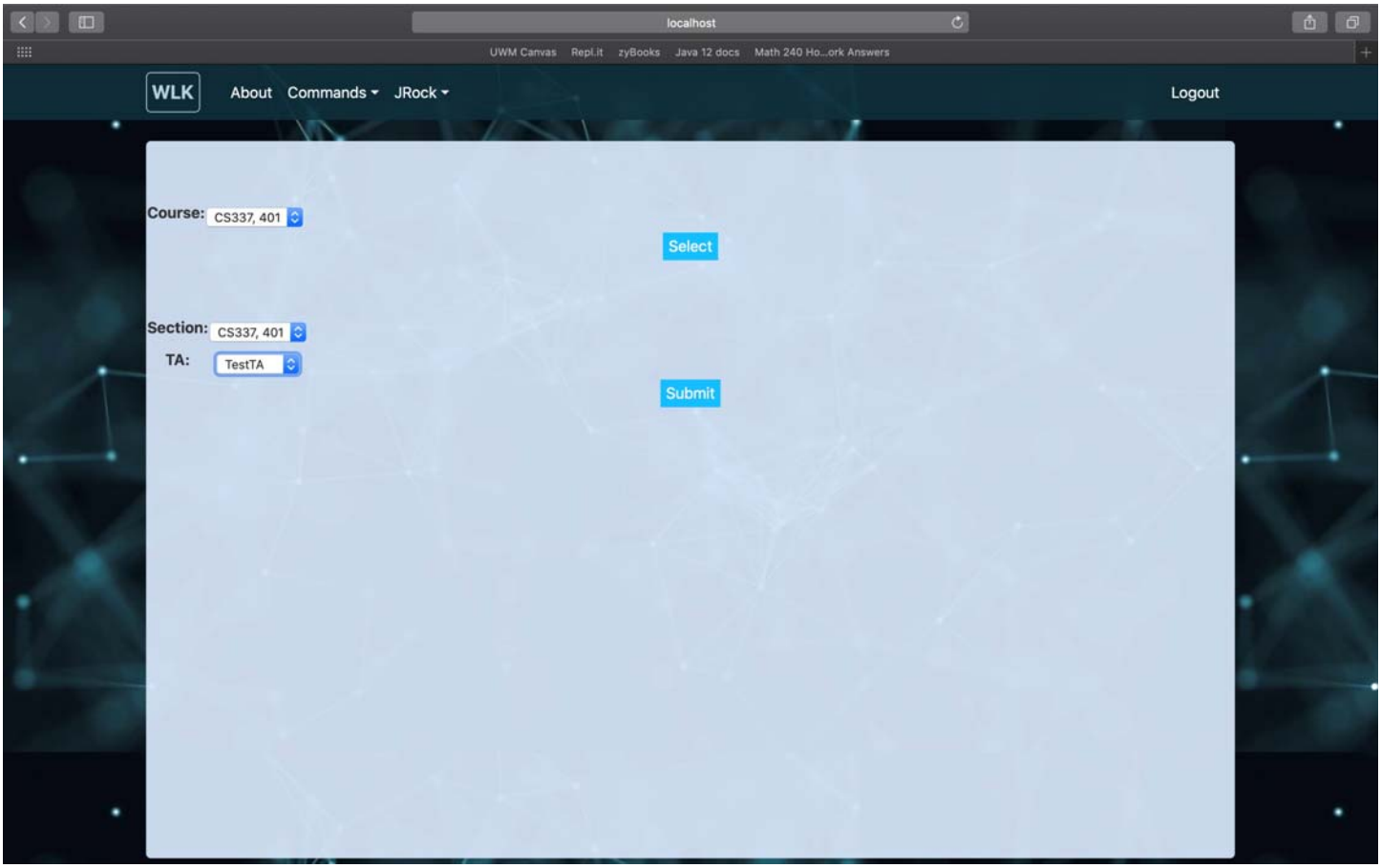
The instructor's View Sections page provides the information for all the sections in the system, including the Section Type, Days, Times, and the TA assigned to the section, if one has been assigned. There is also a link to return to the View Courses page.

Instructor View Users



The Instructor's View Users page does provide some information to the instructor about the users in the system, but the information provided is limited. The instructor is able to see the account types, along with the first and last names of the user along with their email address to contact them. There are no phone numbers or user name included on this view.

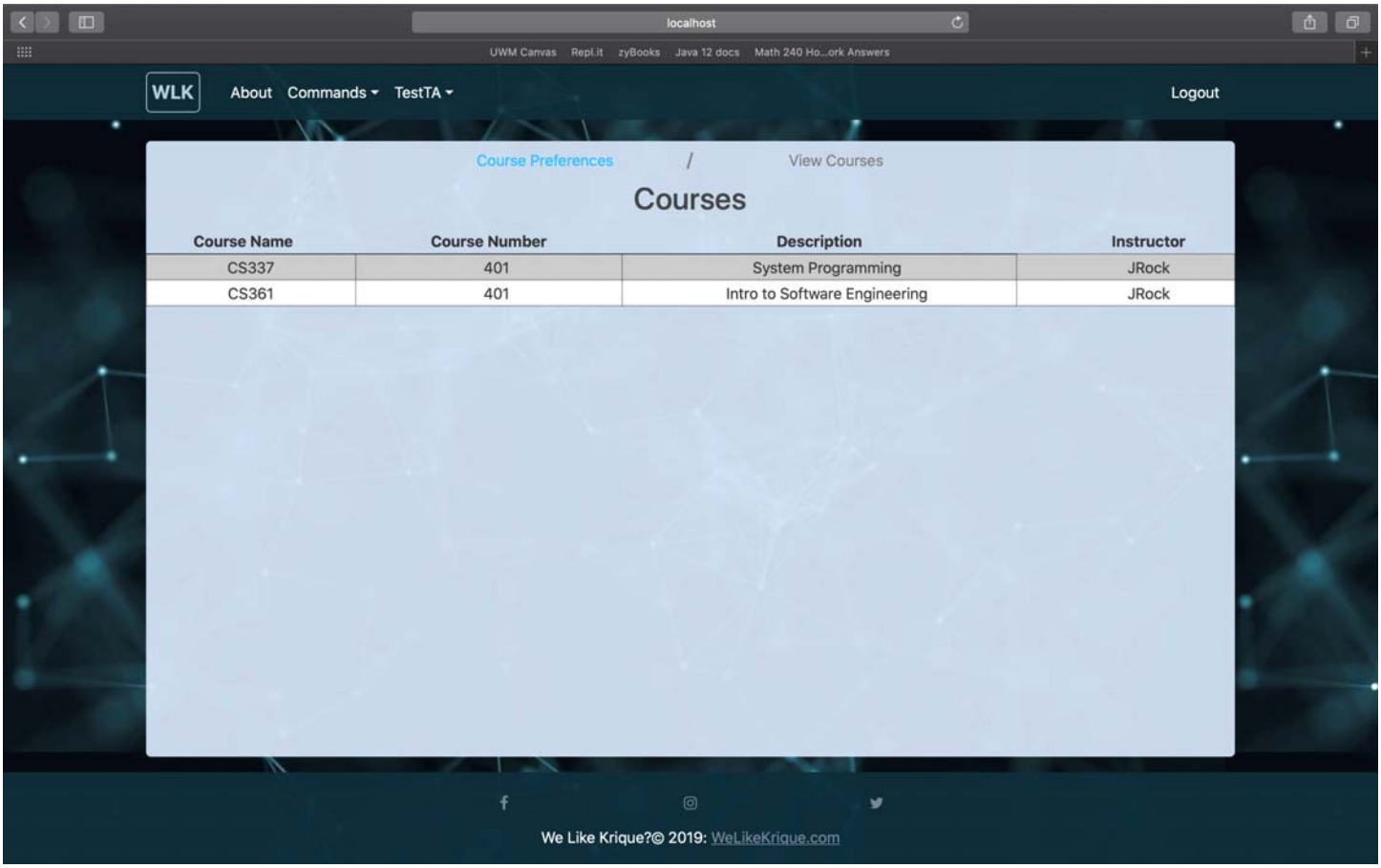
Instructor Assign TA to Section



The Assign TA to Section page is where the instructors can assign TA's to particular sections that they are instructing. Initially, only the Course field is visible. The Course field is a drop down that is populated based on the courses that the instructor is teaching. Once the Select button is selected, the Section and TA fields appear to be completed. The Section field is a drop down that is populated based on the Sections for the selected course and the TA field is populated based on the TA's that are assigned to the course by the administrator.

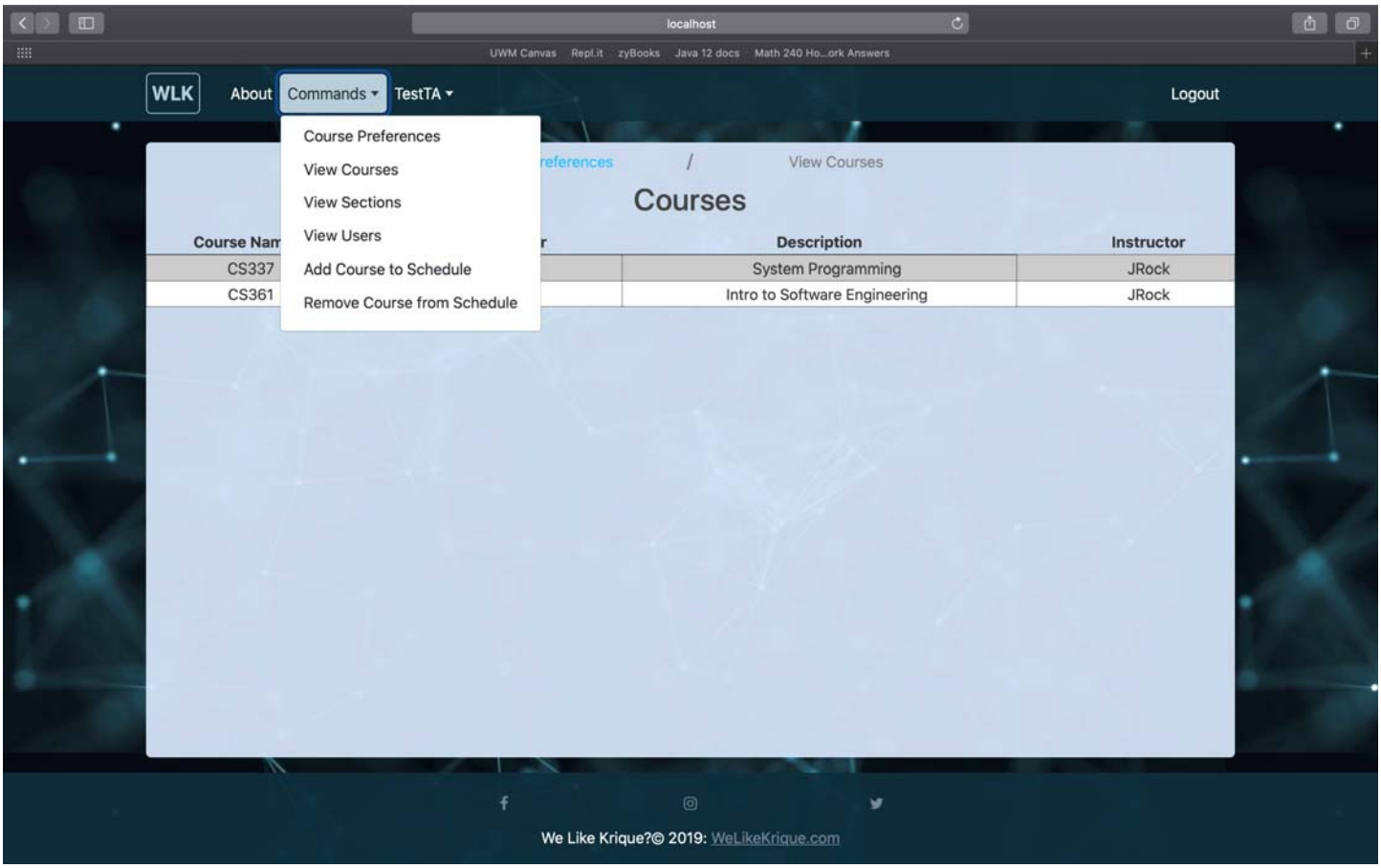
Once the Submit button is selected, the sections and TA schedules are updated and saved to the database.

TA Home Page



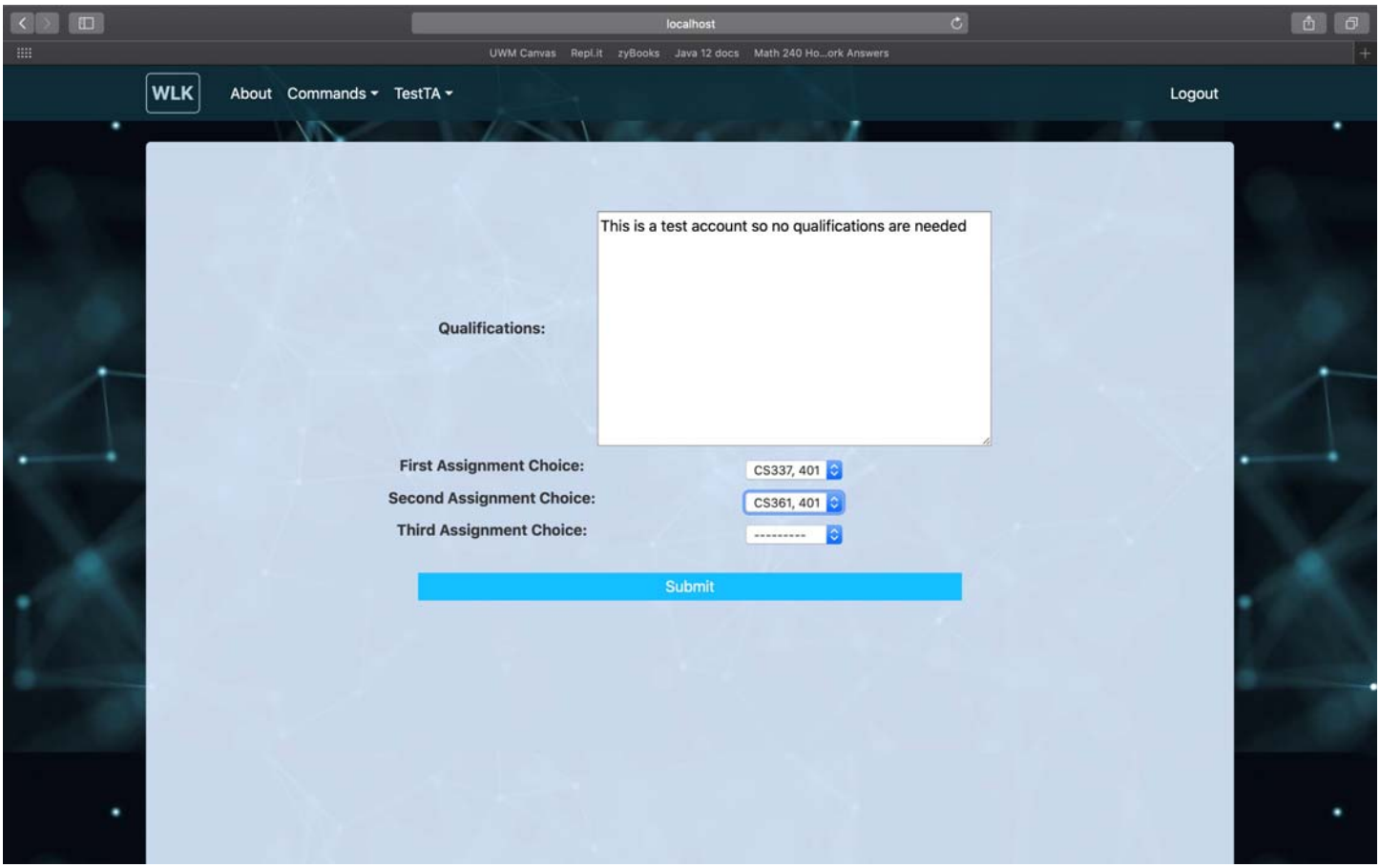
When a TA logs in to the system, they are presented with a home page displaying all the Courses in the system. There is a link to the Course Preferences page on the home page which allows the TA to enter their qualifications and/or course preferences.

TA Commands Menu



The Commands menu available to the TA is tailored to the options available that the TA has permission to access.

TA View/Set Qualifications & Preferences

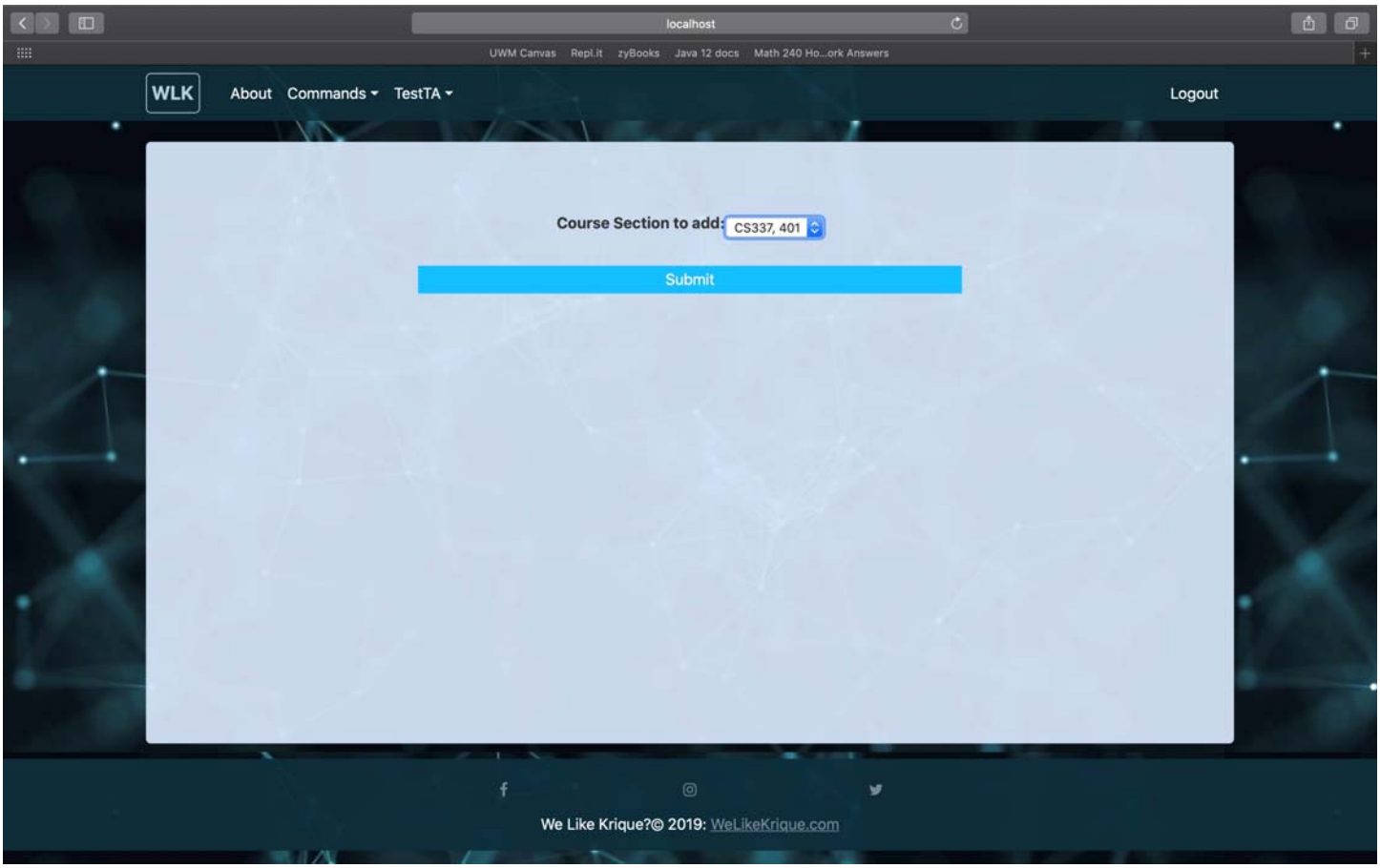


The TA's View/Set Qualifications & Preferences page allows the TA to either view the qualifications and preferences that they have entered or update their qualifications and preferences.

The Qualifications field is a text box that allows the TA to enter their qualifications. The preferences fields are drop downs that are populated with the courses that are entered in the system.

Once the Submit button is selected, the TA's information is updated and saved to the database.

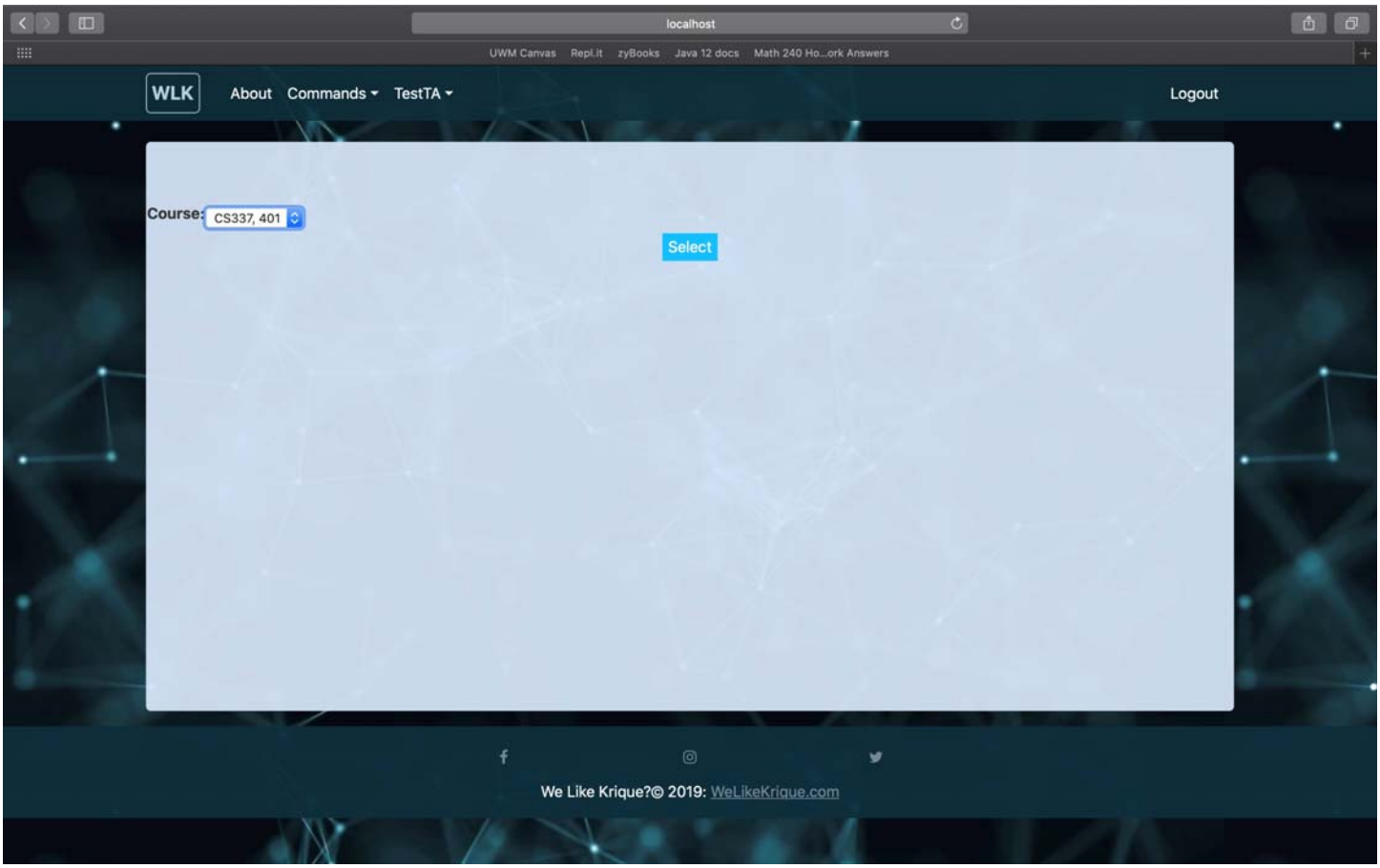
TA Add Course to Schedule



The Add Course to Schedule page allows the TA to add a course that they are taking as a student, so that they are not assigned to instruct a section at the same time. The Course Section to Add field is a drop down that is populated with the courses that are entered into the system.

Once the Submit button is selected, the TA's schedule is updated and saved to the database.

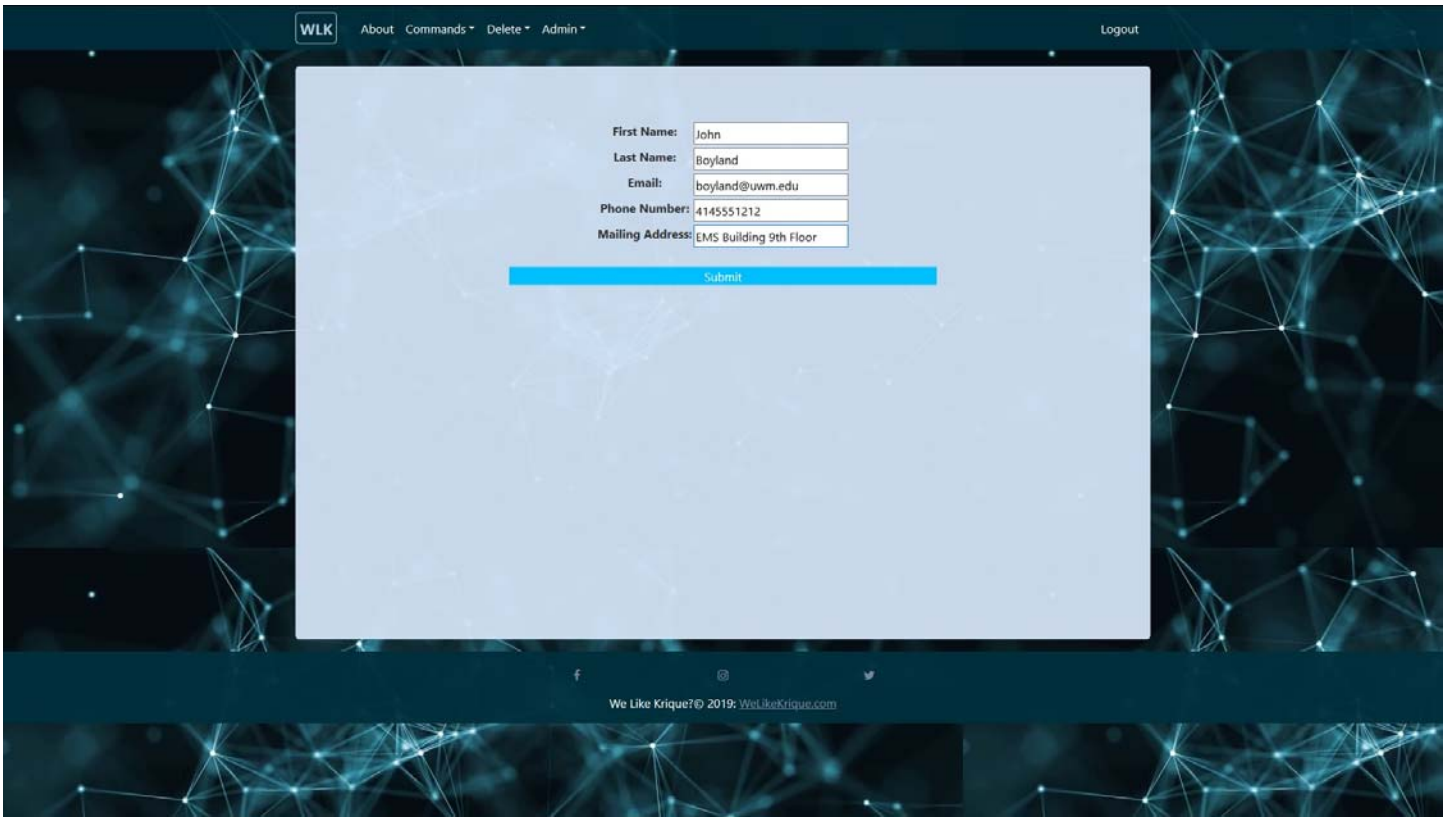
TA Remove Course from Schedule



The Remove Course from Schedule option allows a TA to remove a course that they have already set as a course that they are taking as a student. The course field is a drop down that is populated based on the list of courses that they are enrolled as a student.

Once the Submit button is selected, the course is removed from the TA's schedule and the database is updated.

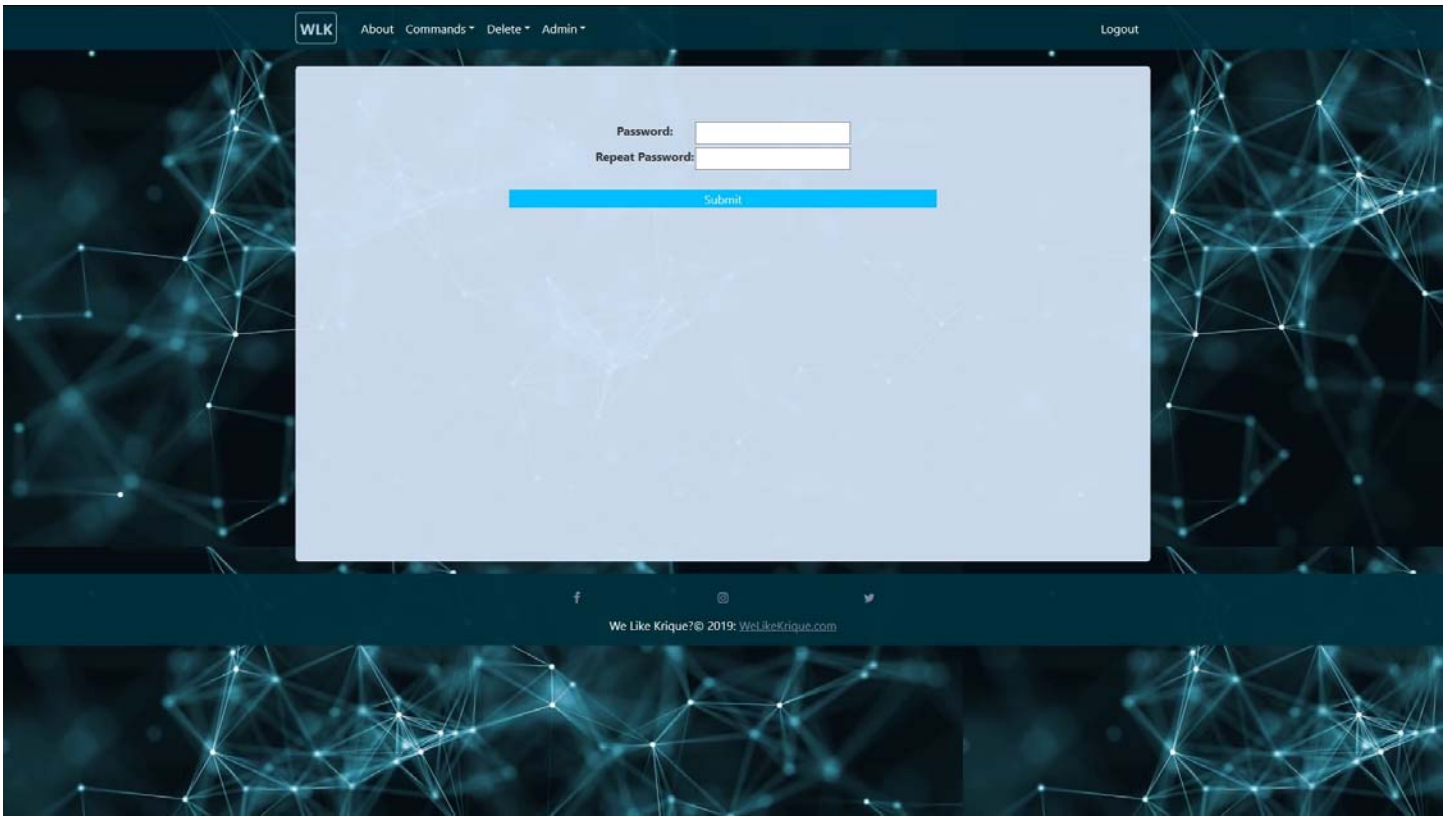
Contact Information Screen



The Contact Information Screen is available to all users and allows them to enter or update their name, email address, phone number, or mailing address.

Once the Submit button is selected, the user's information is saved and the database is updated.

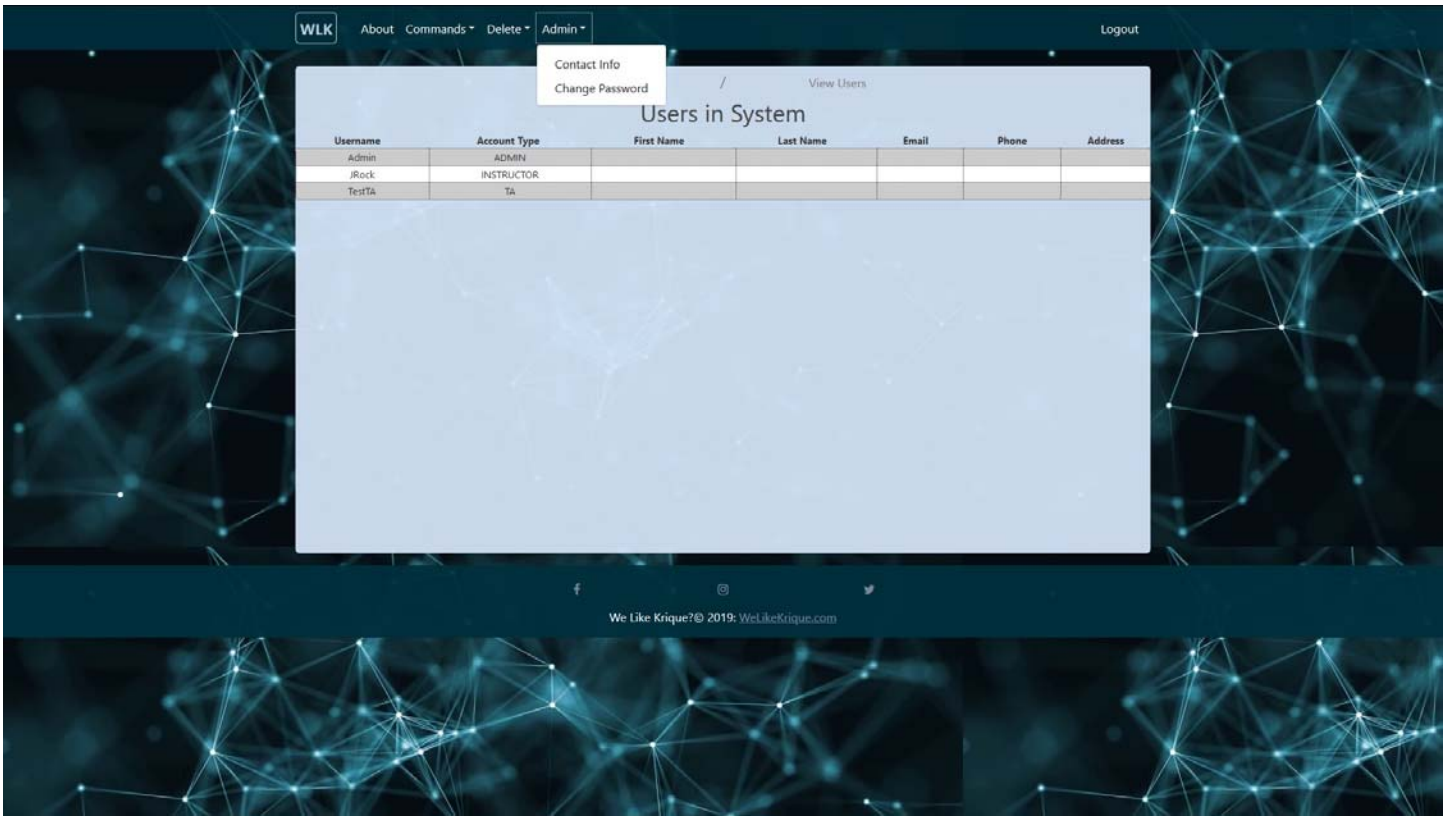
Change Password Screen



The Change Password screen is open to all users and allows the user to change their password. The user does have to enter and verify their password.

Once the Submit button is selected, if both password fields match, the user's information is saved and the database is updated.

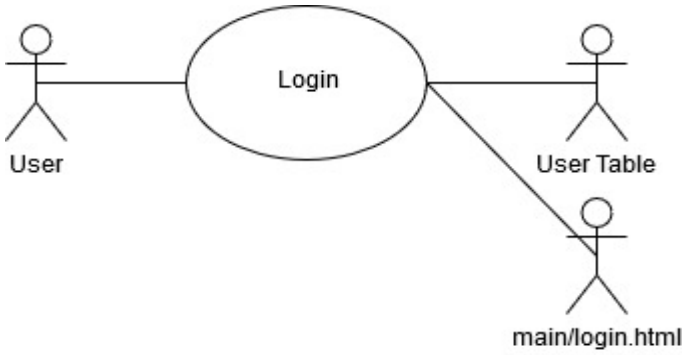
General User Information Menu

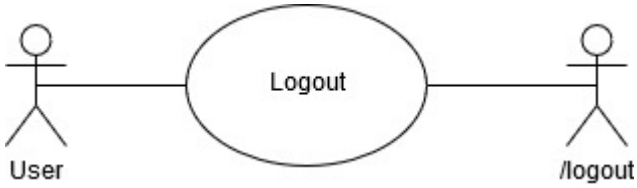


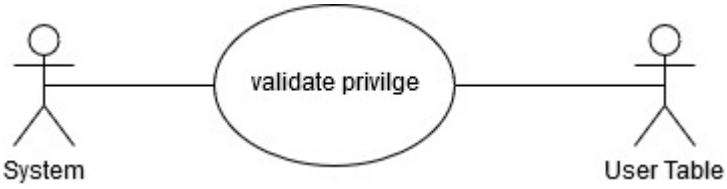
The user information menu, denoted by the current user's name, allows the user to update their contact information or change their password.

Part 3:

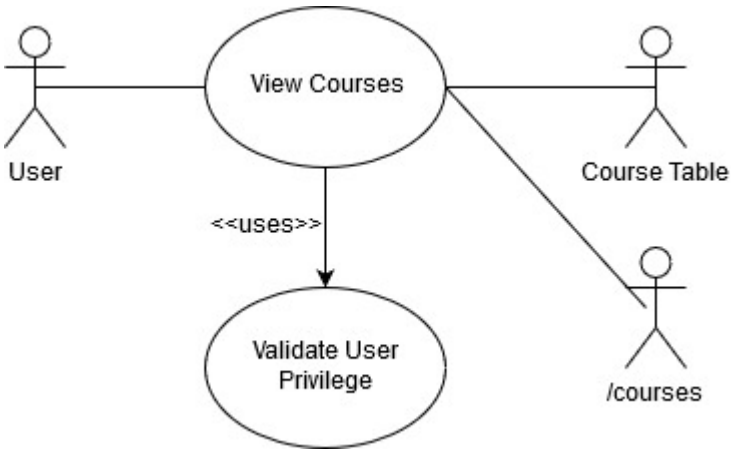
UML Use Case Diagrams

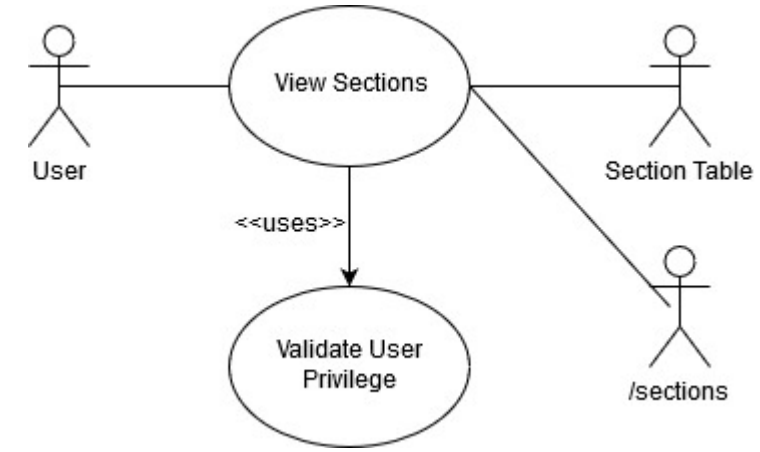


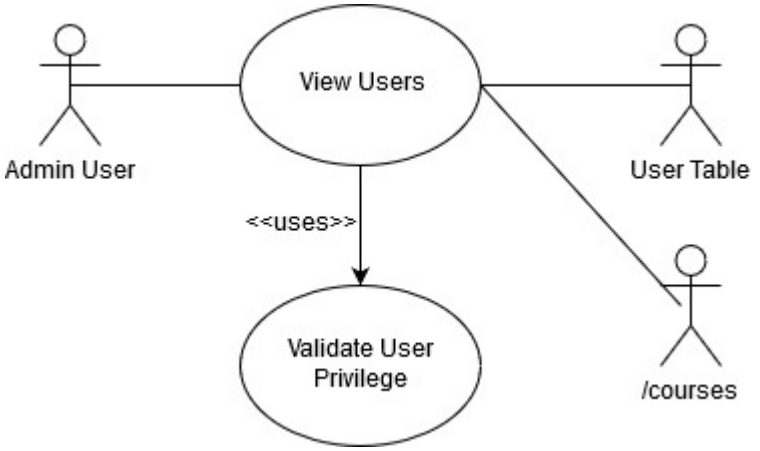


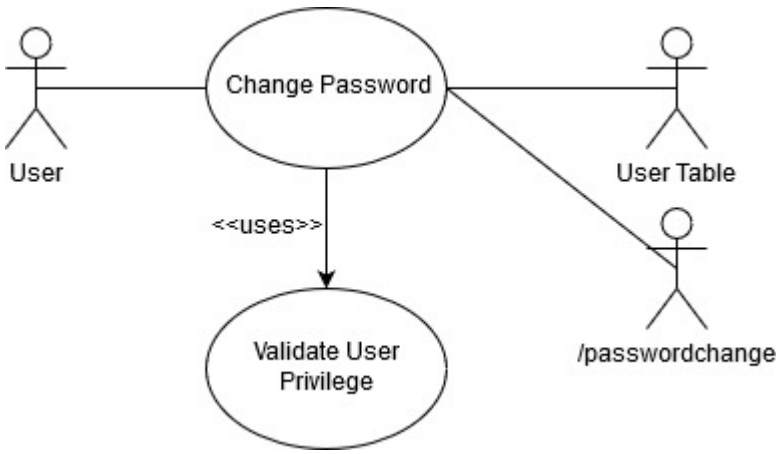


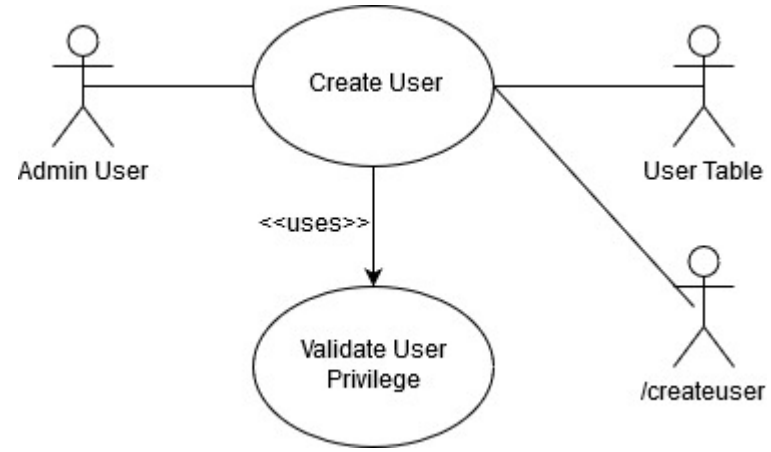
A note on this diagram: Validate Privilege & “Validate User privilege” as listed on other diagrams is intended to mean that the system checks that the user is logged in and checks their permissions for each use case that uses this.

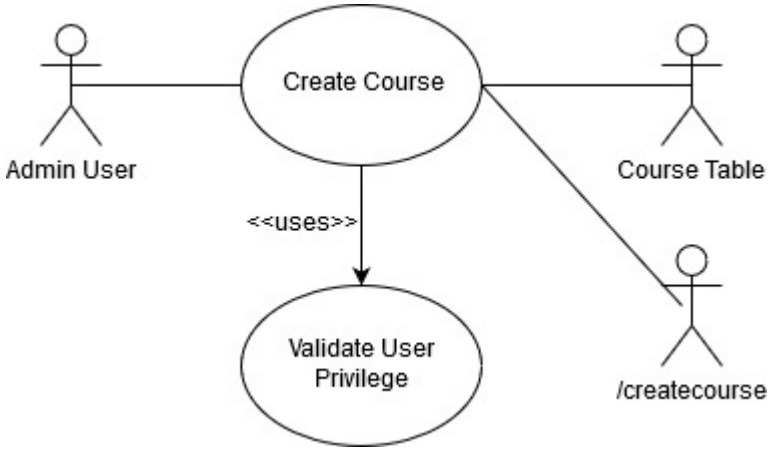


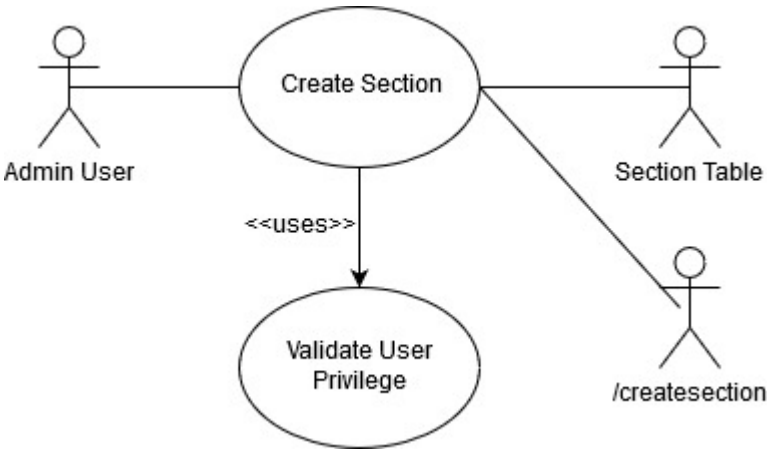

View Sections
User
Section Table
<<uses>>
Validate User Privilege
/sections

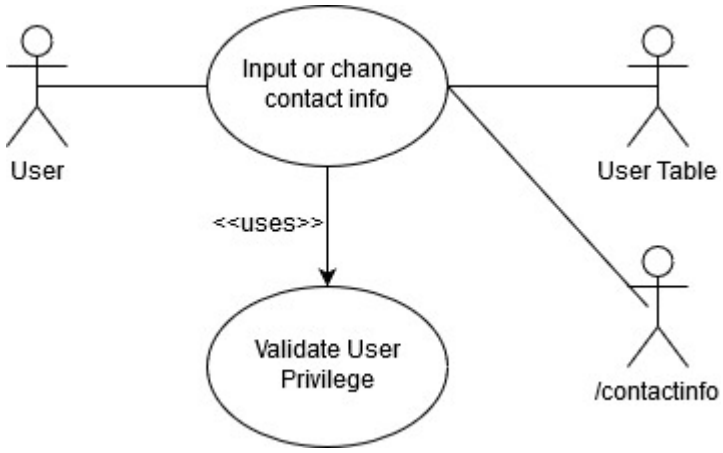

View Users
Admin User
User Table
<<uses>>
Validate User Privilege
/courses

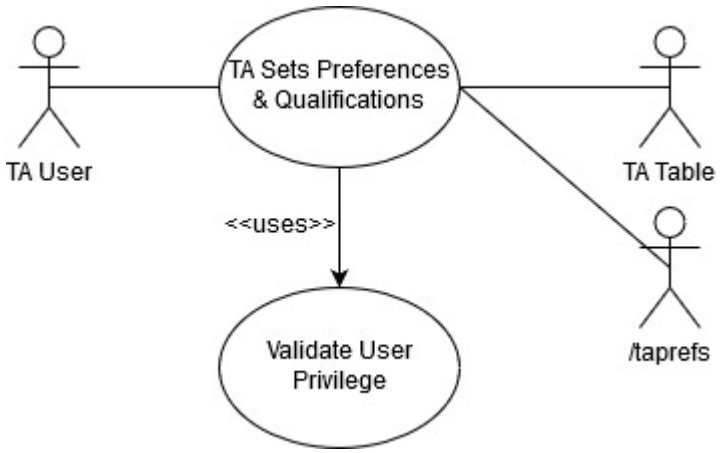

Change Password
User
User Table
<<uses>>
Validate User Privilege
/passwordchange

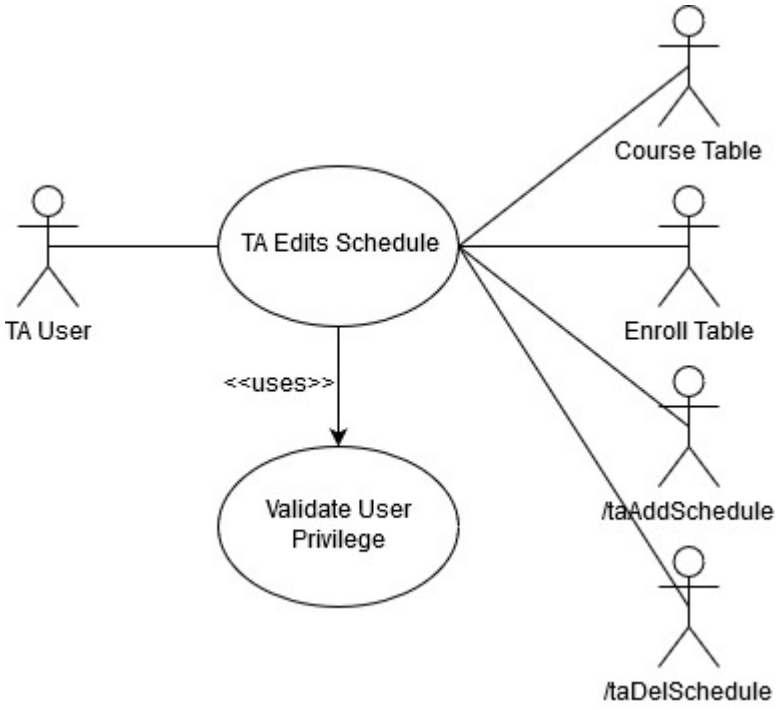

Create User
Admin User
User Table
<<uses>>
Validate User Privilege
/createuser

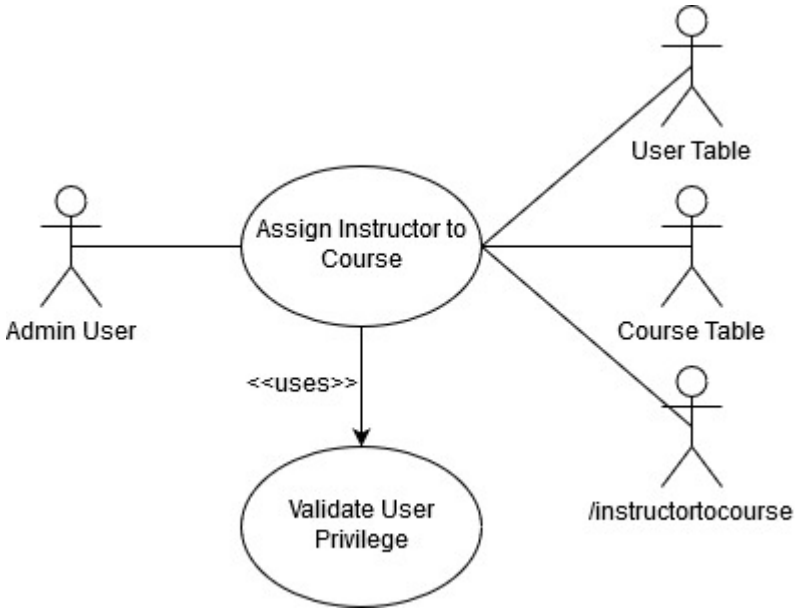

Create Course
Admin User
Course Table
<<uses>>
Validate User Privilege
/createcourse

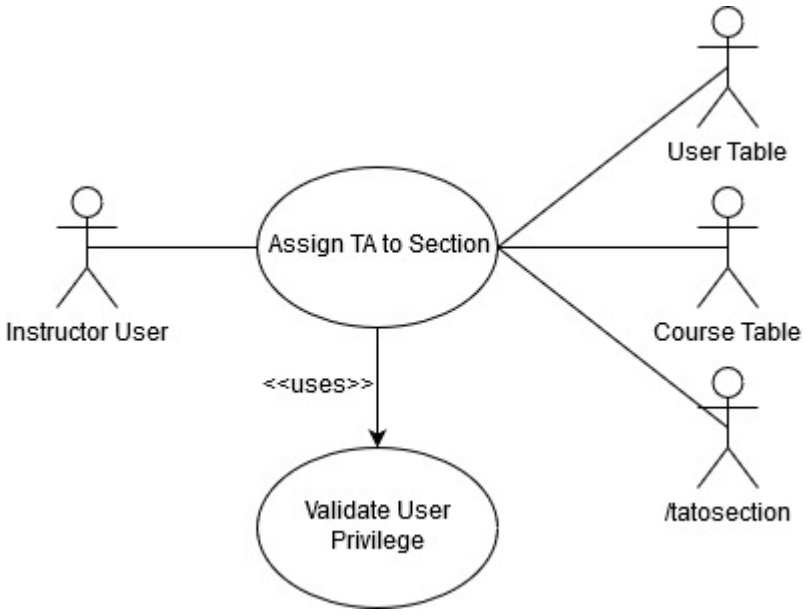

Create Section
Admin User
Section Table
<<uses>>
Validate User Privilege
/createsection

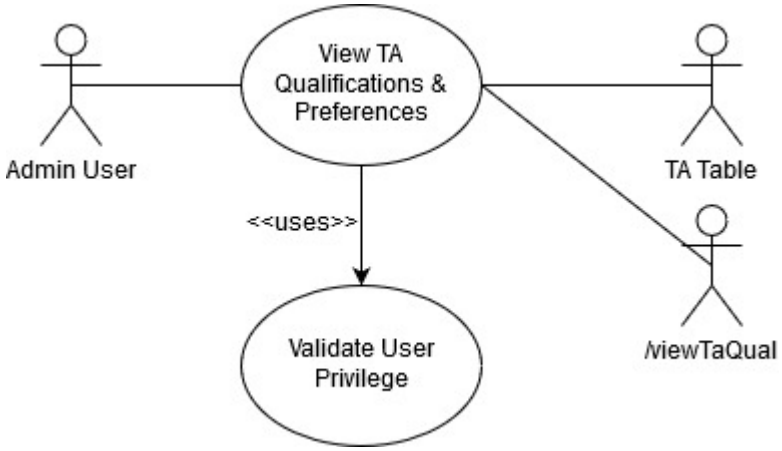

Input or change contact info
User
User Table
<<uses>>
Validate User Privilege
/contactinfo

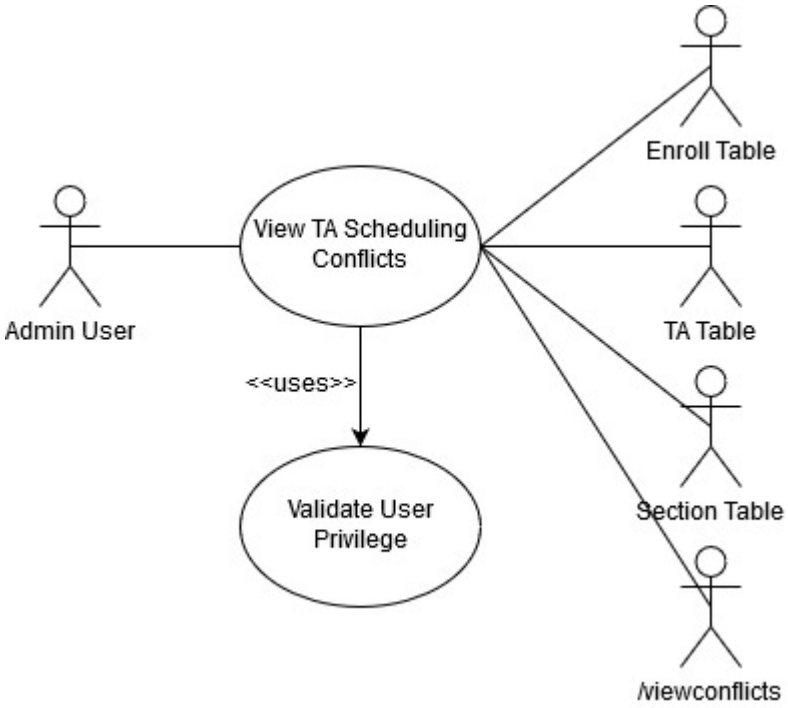

TA Sets Preferences & Qualifications
TA User
TA Table
<<uses>>
Validate User Privilege
/taprefs

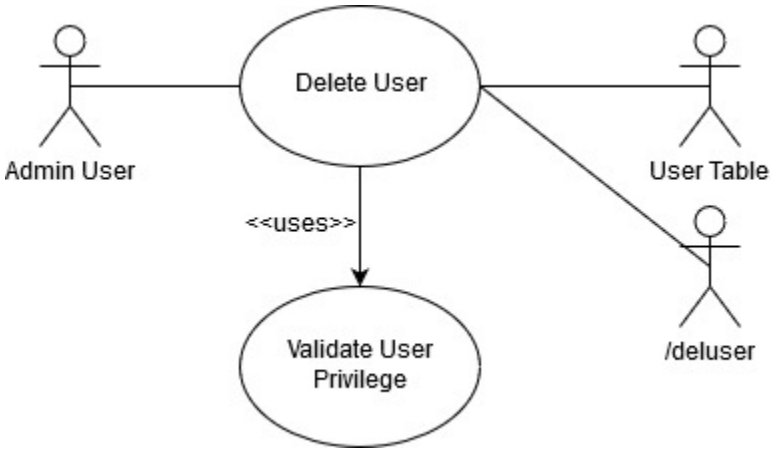

Course Table
TA Edits Schedule
TA User
Enroll Table
<<uses>>
Validate User Privilege
/taAddSchedule
/taDelSchedule

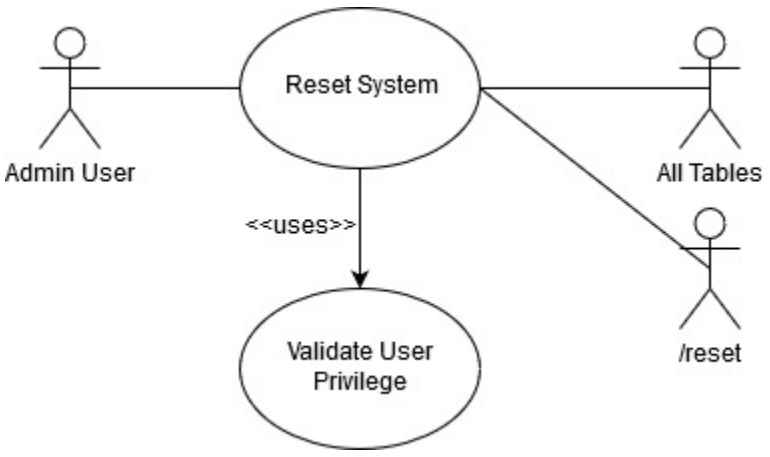

User Table
Assign Instructor to Course
Admin User
Course Table
<<uses>>
/instructortocourse
Validate User Privilege

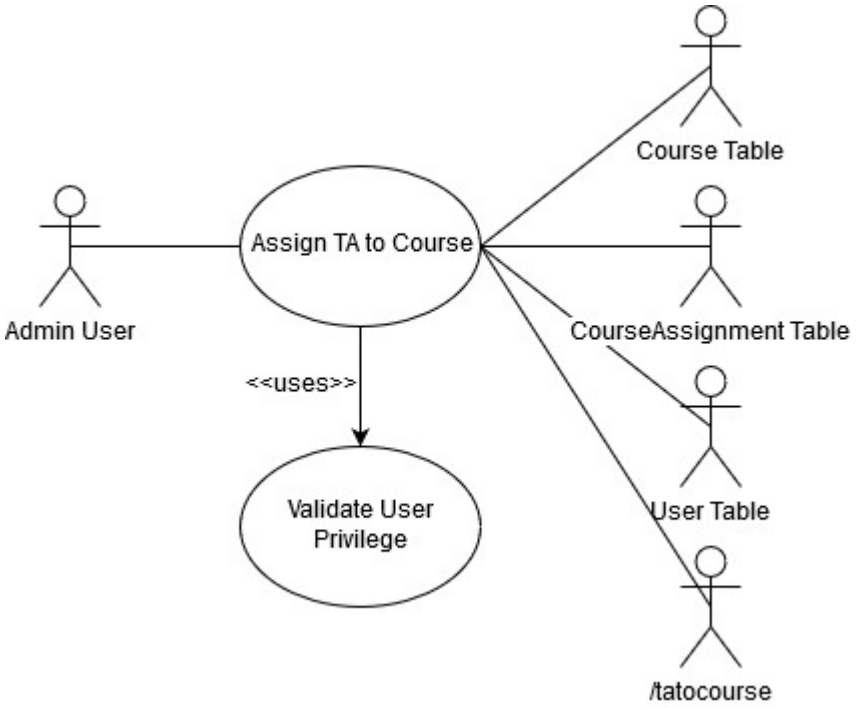

User Table
Assign TA to Section
Instructor User
Course Table
<<uses>>
/tatosection
Validate User Privilege


View TA Qualifications & Preferences
Admin User
TA Table
<<uses>>
/viewTaQual
Validate User Privilege


Enroll Table
View TA Scheduling Conflicts
Admin User
TA Table
<<uses>>
Section Table
Validate User Privilege
/viewconflicts


Delete User
Admin User
User Table
<<uses>>
/deluser
Validate User Privilege

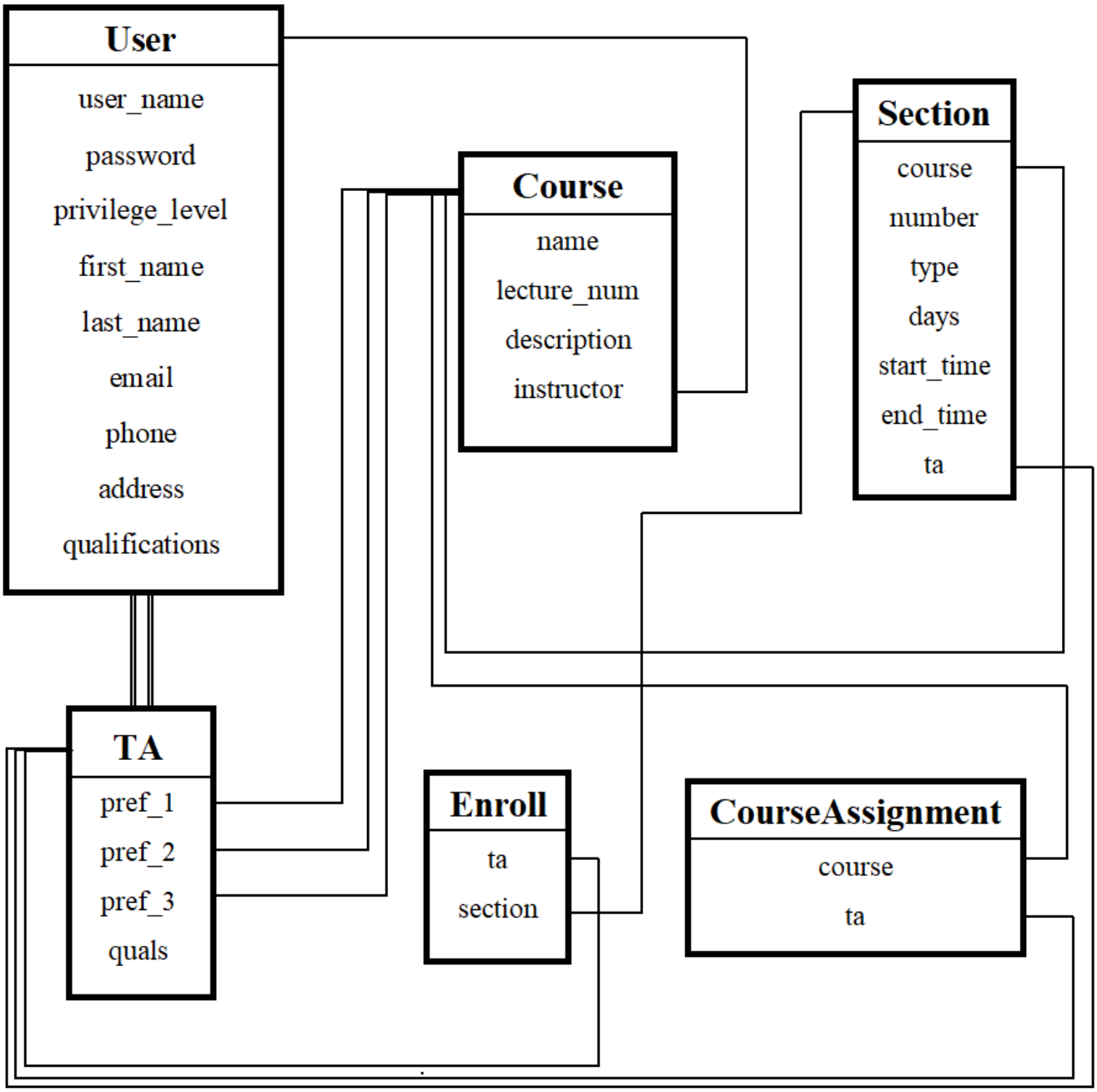

Reset System
Admin User
All Tables
<<uses>>
/reset
Validate User Privilege


Course Table
Assign TA to Course
Admin User
CourseAssignment Table
<<uses>>
User Table
Validate User Privilege
/tatocourse

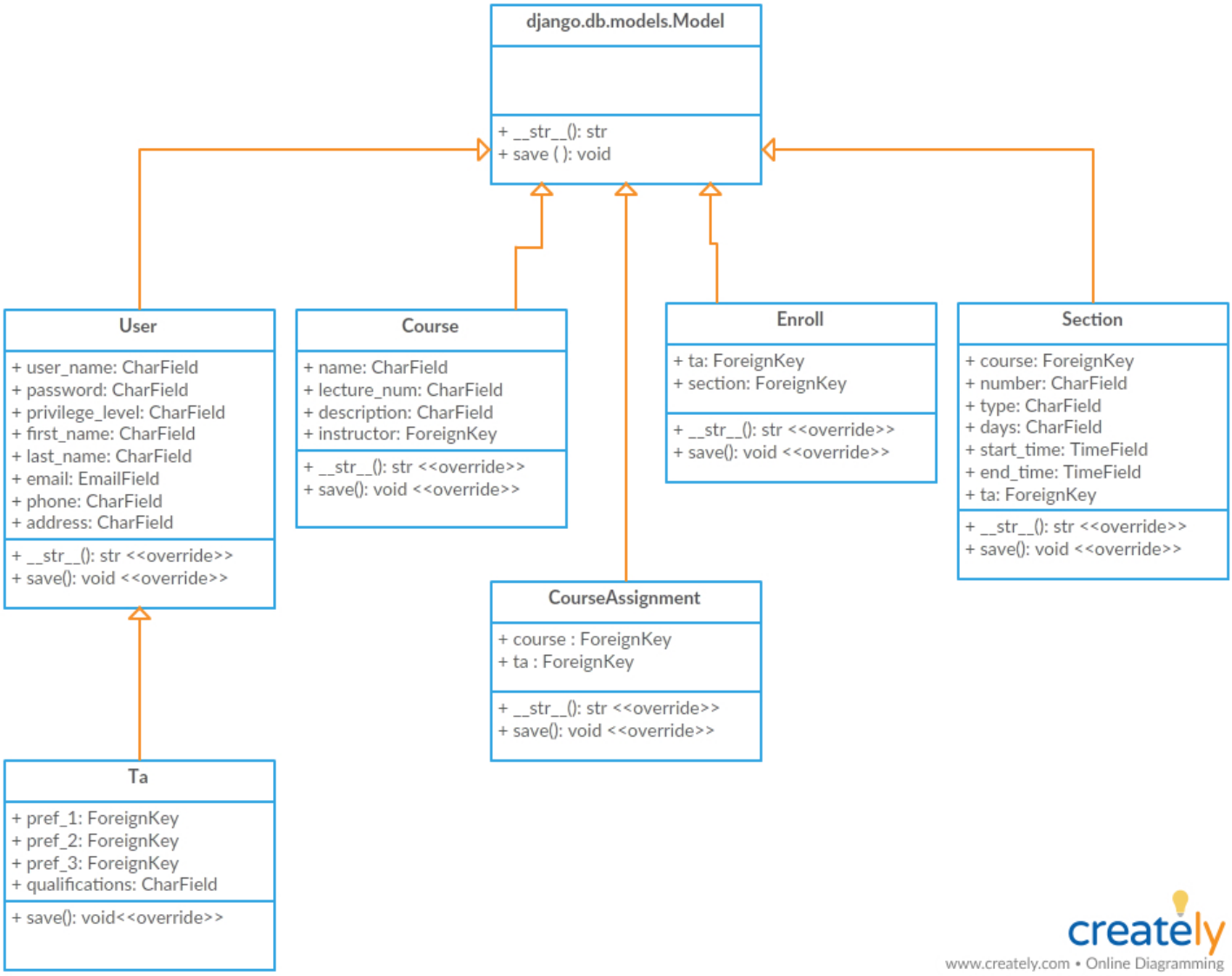
Part 3:

Class Diagrams

Database Design:



Model Classes:



Key:

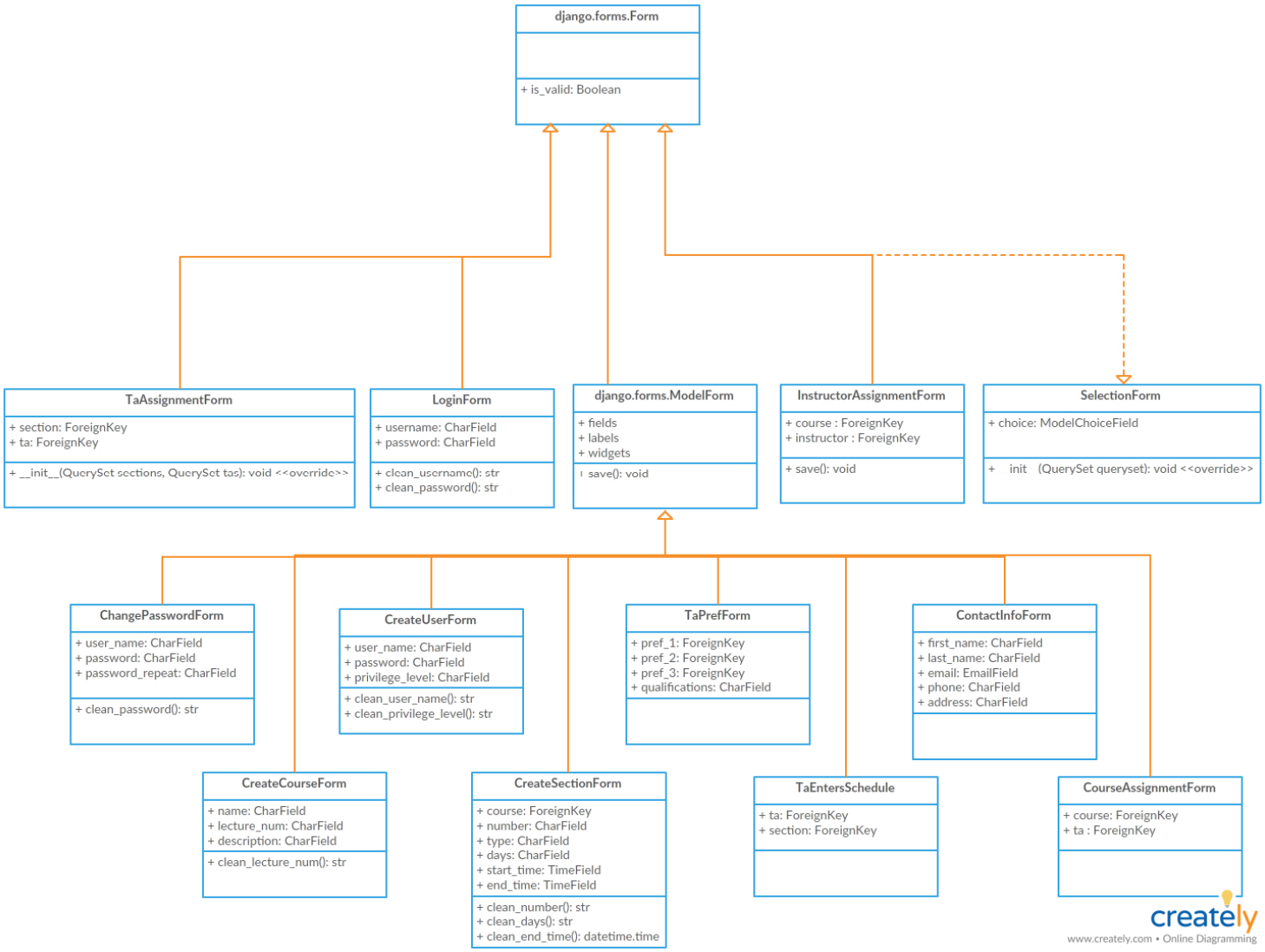
__str__(): Return a string representation of a model instance.

save(): Save a model instance to the database. Also perform validation to protect database integrity and raises appropriate errors.

Note:

The above methods perform identical functions in all the classes in which they appear.

Form Classes:



Key:

__init__(): Class constructor. Used to pass custom QuerySets to ModelChoiceFields.

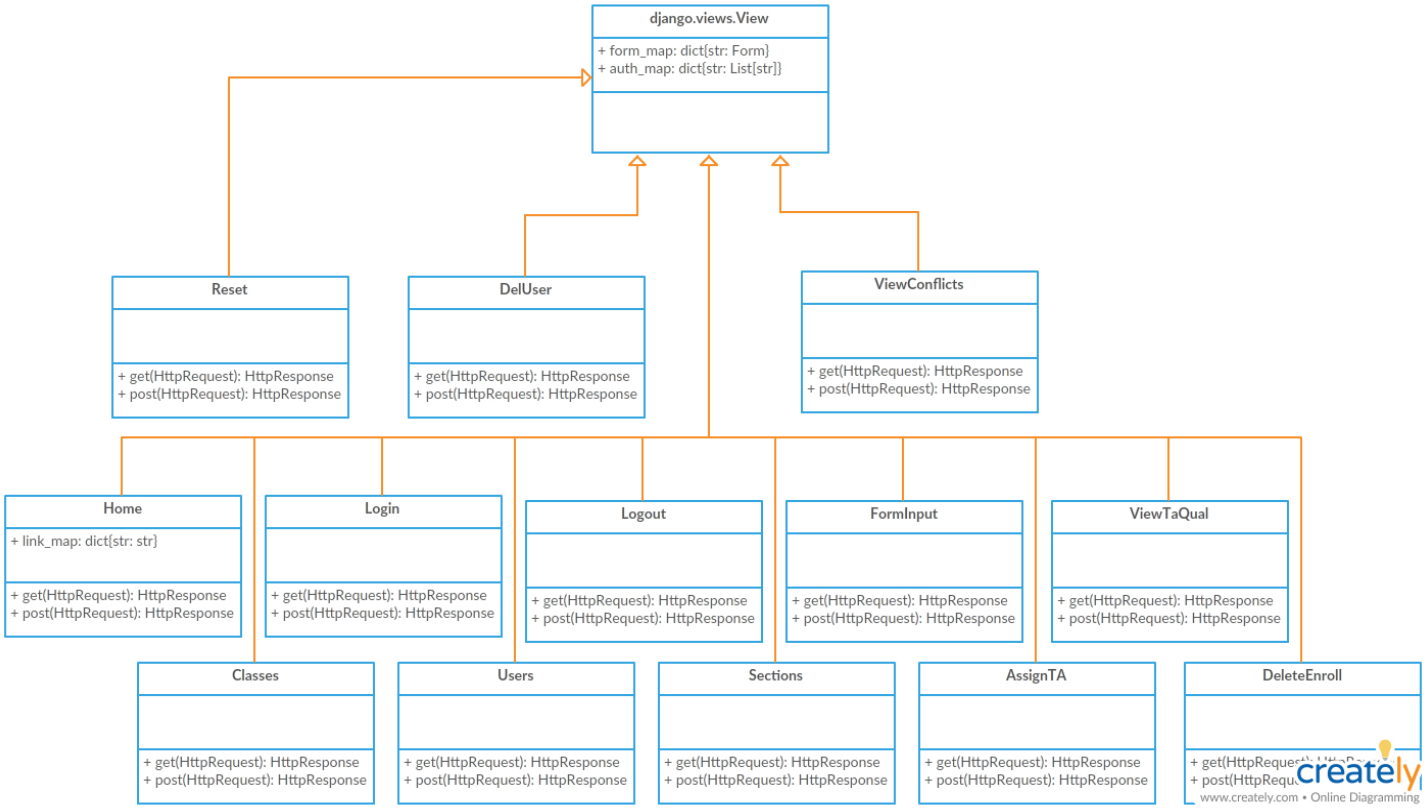
save(): Save data from a form instance to the database.

clean_<field>(): Perform validation on the specified field.

Note:

The above methods perform identical functions in all the classes in which they appear.

View Classes:



Key:

get(): Process a GET request.

post(): Process a POST request.

Note:

The above methods perform identical functions in all the classes in which they appear.

Part 4:
List of Completed PBIs

With Acceptance Criteria

Admin Assigns TA to Classes

Admin receives list of TA availability & preferences and assigns TA's to classes
Estimate: Medium

Admin Resets Software for a New Semester

Admin is able to remove all semester-specific information in preparation for a new semester while retaining all user accounts
Estimate: Small
Successful completion of this task will result in the following items being deleted: Entire class schedule, All TA assignments, and All TA schedules

Admin Deletes Accounts

Admin removes accounts that are no longer needed
Estimate: Small

Admin Views TA Qualifications

Admin is given TA's qualifications and verifies them.
Estimate: Small

Admin Views Schedule Conflicts

When admin logs in, they are shown that there are schedule conflicts and they can view these conflicts with a command. Time conflicts (Over/under time) are displayed as well.
Estimate: Medium
Successful completion of this task will result in the following:
All schedule conflicts are being successfully displayed when a TA has a class conflicting with an assignment
All schedule conflicts being successfully displayed when a TA has overlapping assignments
All conflicts when a TA has been over-assigned or under-assigned

Admin's First Login

Admin ID should be hardcoded, first login should prompt for a new password to replace the default password
Password should include at least 1 number and have at least 8 characters.
Estimate: Small

TA Updates Schedule

If a TA's schedule changes, they can change their schedule in the software.
Estimate: Small

Admin Views List of Class Sections

TA & Instructor Login

TA initial login, prompt for password change. Password is at least 8 characters long, with at least one number. Can't use Panther ID in the password.
Estimate: Small

Instructors Assign TA's to Lab Sections

Instructor receives list of TA's available to assign lab sections to, ordered by TA preference and assign TA's to lab sections.
Estimate: Small

Admin Views List of Accounts

User Logout

Process to allow a user to Logout from the system.

Admin Creates Courses

Admin enters all courses for the semester and associates instructors with courses. Admin also enters all class, lab, or discussion sessions for each course. A course may have multiple instructors. The instructor can't be assigned to more than one course during the same time.
Estimate: Medium

User Views TA Assignments for a Class

TA assignments (which have been confirmed by the admin) are displayed for the specified class.
Estimate: Small

Help Function to Re-Display Commands

Admin Creates TA & Instructor Accounts

Admin creates accounts for TA's and Instructors. Account has a default password and default values until the user changes them. Account uses Panther ID as identifier. No duplicate accounts.
Estimate: Medium

User Sets/Resets Password

User's password must include 1 number.
Estimate: Small

TA Sets Preferences

TA is presented with a list of classes and asked to provide 3 preferences. TA can choose if they woul dlike to grade or teach or both.

Estimate: Small

Successful completion of this task will result in:

A TA being presented with a list of classes that they are eligible to be assigned to and then the TA being prompted to select their top three picks.

TA's Enter Their Qualifications

TA's enter what classes they have the skills to TA.

Estimate: Small

TA's and Instructors Enter Contact Information

TA's and Instructors can enter and edit their contact information that the admin can access.

Estimate: Small

TA Enters Schedule

TA provides their schedule for the semester prior to the due date.

Estimate: Medium

User View All Classes

Part 5:

List of acceptance tests

TestLogin

TestCreateUser

TestCreateCourses

TestGetSchedule

TestGetPending

TestRemoveEnroll

TestChangePassword

TestReset

TestConflicts

TestPreferences

TestEnterQualifications

TestViewQualifications

TestContactInfo

TestViewAssignments

TestAcceptRejectAssignment

TestAccountDelete

TestSetFinalDate

Part 6:
List of Unit Tests

Note: Unit tests are organized into files for models, forms, and views. Each file contains the tests for the corresponding group of classes. Within each file, tests for each class are organized into their own test classes.

Models:

TestUser

TestTA

TestCourse

TestSection

TestEnroll

TestCourseAssignment

Forms:

TestLogin

TestChangePassword

TestCreateUser

TestCreateCourse

Views:

TestLogin

TestChangePassword

TestCreateUser

TestCreateCourse

TestUser

TestTA

TestSection

TestEnroll

TestCourseAssignment

TestLogin

TestLogout

TestUsers

TestClasses

TestSections

AssignTA

TestDeleteEnroll

TestViewQual

TestViewConflicts

Part 7:

Test Page/Test Analysis

Tests failed: 7, passed: 127 of 134 tests—600ms

(1) TestChangePassword: test_no_password_repeat

We never implemented a system to store old passwords and check if the user's new password was ever used before.

(1) TestTA: test_retrieve_ta

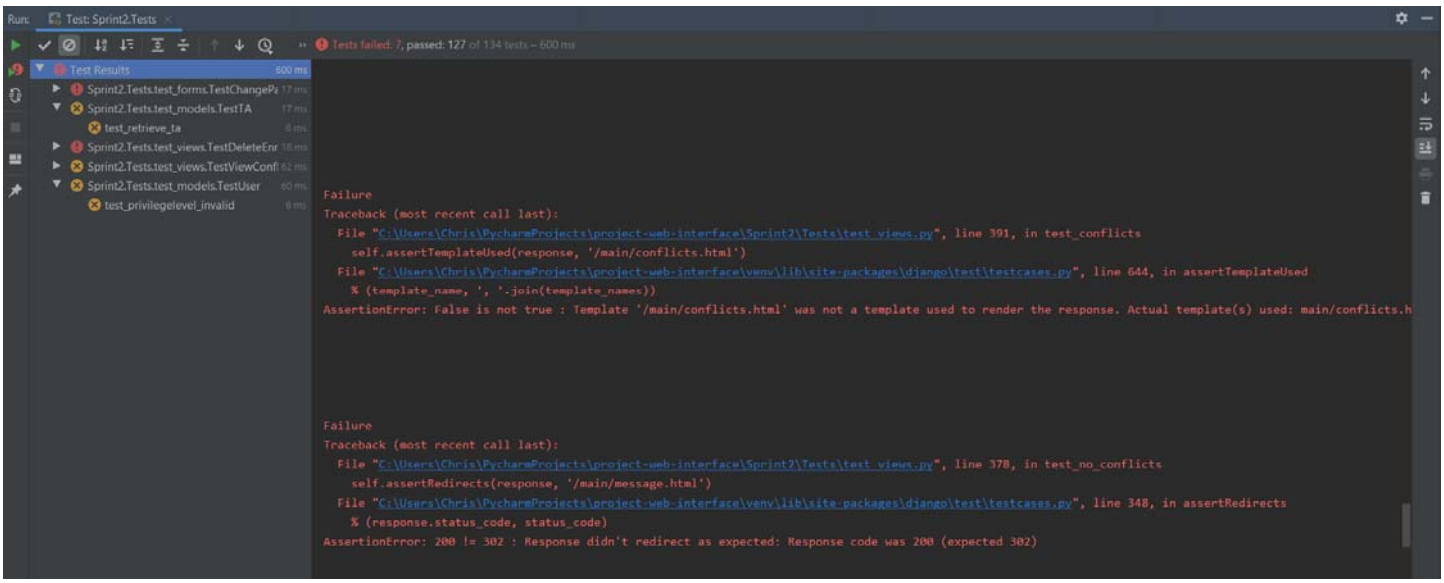
We didn't make specific error messages for each possible way to fail a retrieval.

(1) TestDeleteEnroll: test_get_deleteenroll_page_TA

This test was written with context scope issues. It needed to be completely rewritten.

(3) TestViewConflicts: test_conflicts, test_no_conflicts, test_wrong_privelege

These tests all fail because we reworked how test conflicts was implemented last minute, so they all needed to be rewritten with the new design in mind.

(1) TestUser: test_privilegelevel_invalid

The first version of the User model used a FieldError to reject bad input to the privilege_level field. We changed that field to accept only choices from a list, and in that case Django raises a different error. This test needs to be updated to reflect that change.