

Mobile Judge 12.0

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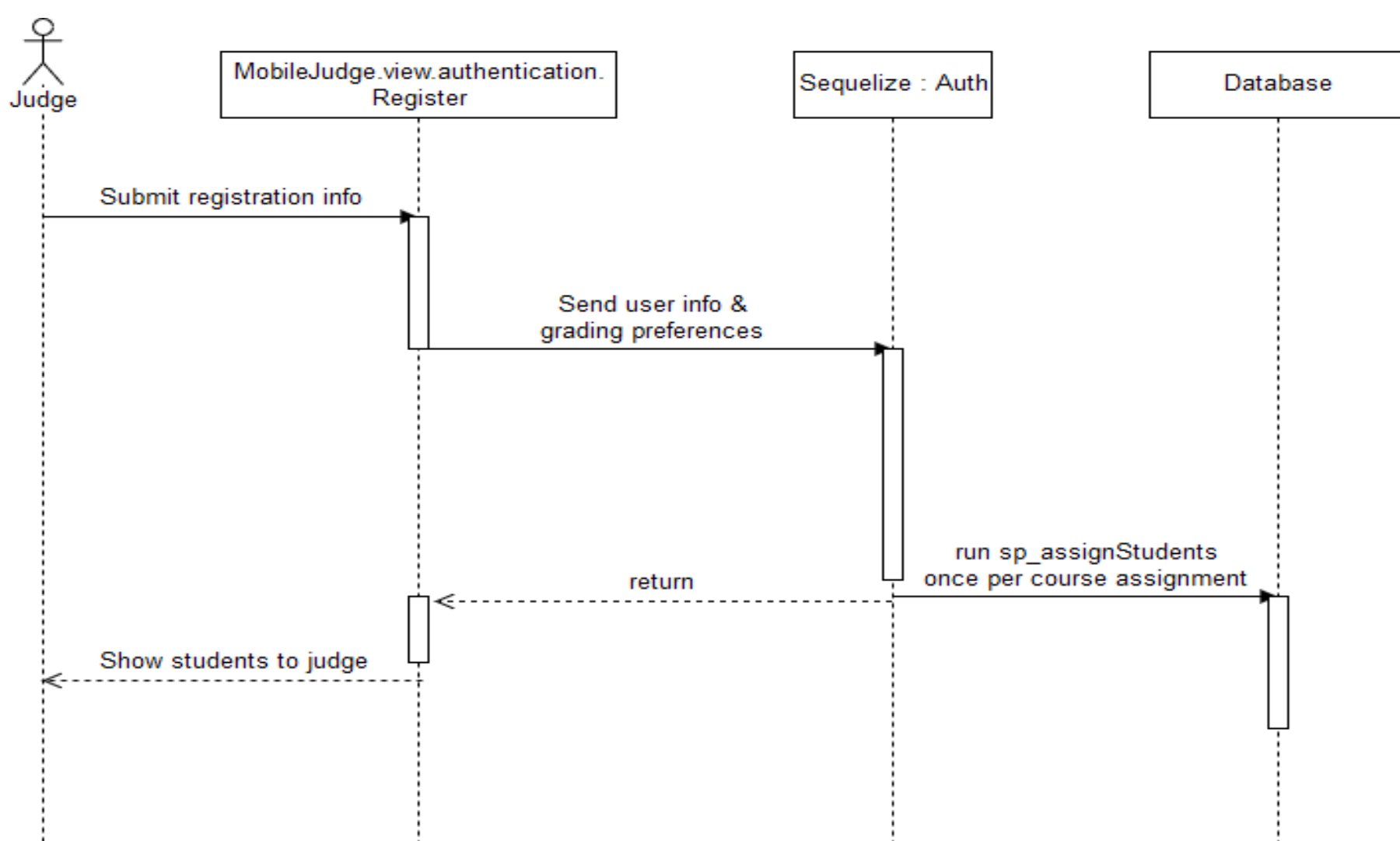
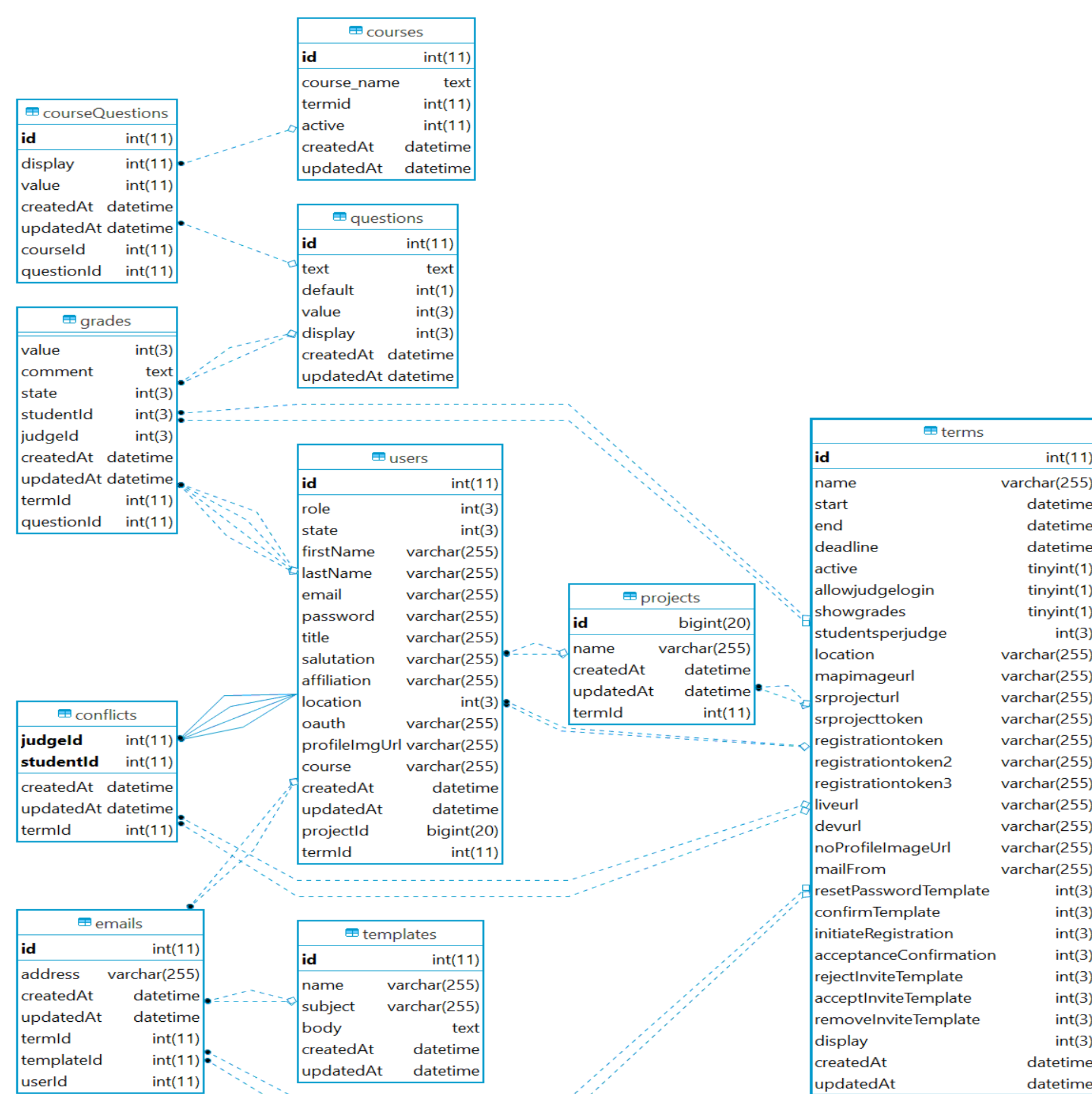
Problem

At the end of each semester, students graduating and enrolled in the Senior Project course present their capstone projects at the Senior Showcase. Alumni, faculty, and industry professionals attend this showcase to judge and present feedback to the student's projects. An application is needed to centralize and streamline all the efforts required to coordinate such an event.

Solution

Mobile Judge is a system that allows management of students and judges, as well as allows the showcase administrator to view all the necessary statistics and configure elements such as: questions, showcase start-time and end-time, student's grades, and much more.

Object Design



Current System

Administrator:

- Configure showcase information for a term.
- Invite judges via the internal emailing system.
- Sync students via an API through VIP's Senior Project Website.
- View statistics on judges and students.
- Configure grading criteria for each course

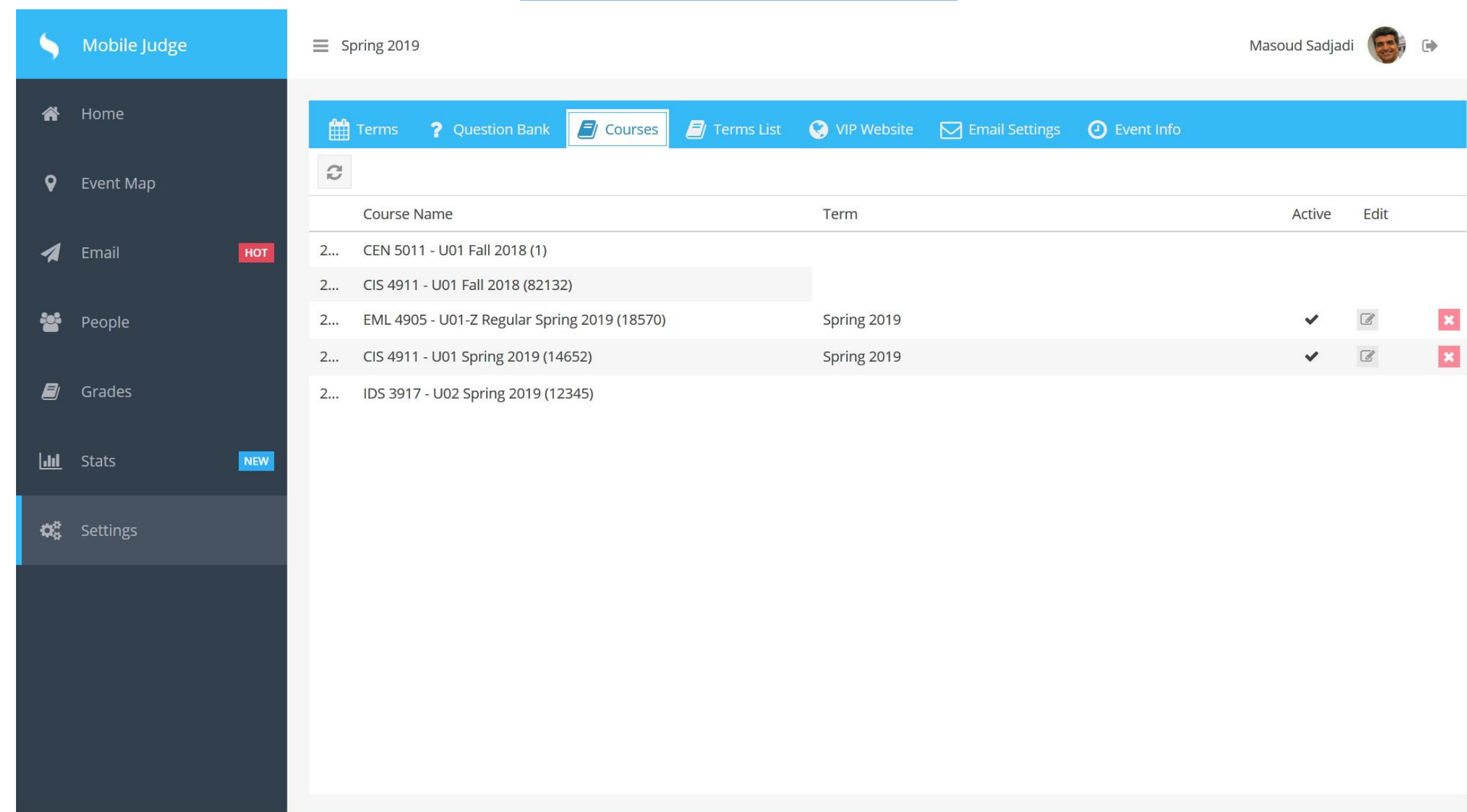
Judges:

- Register, view showcase map, comment on assigned students, and grade assigned students.

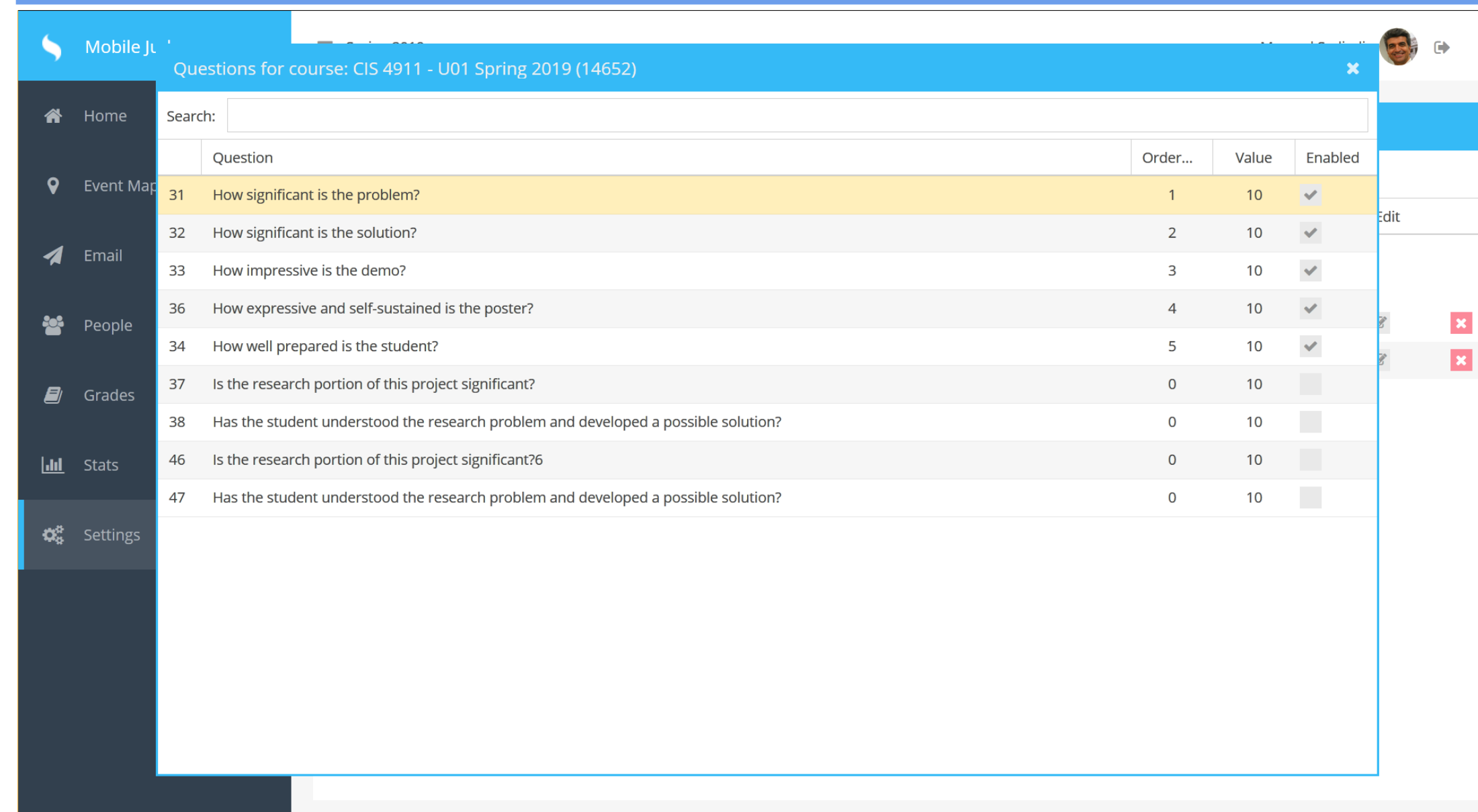
Students:

- View grades and their assigned showcase location.

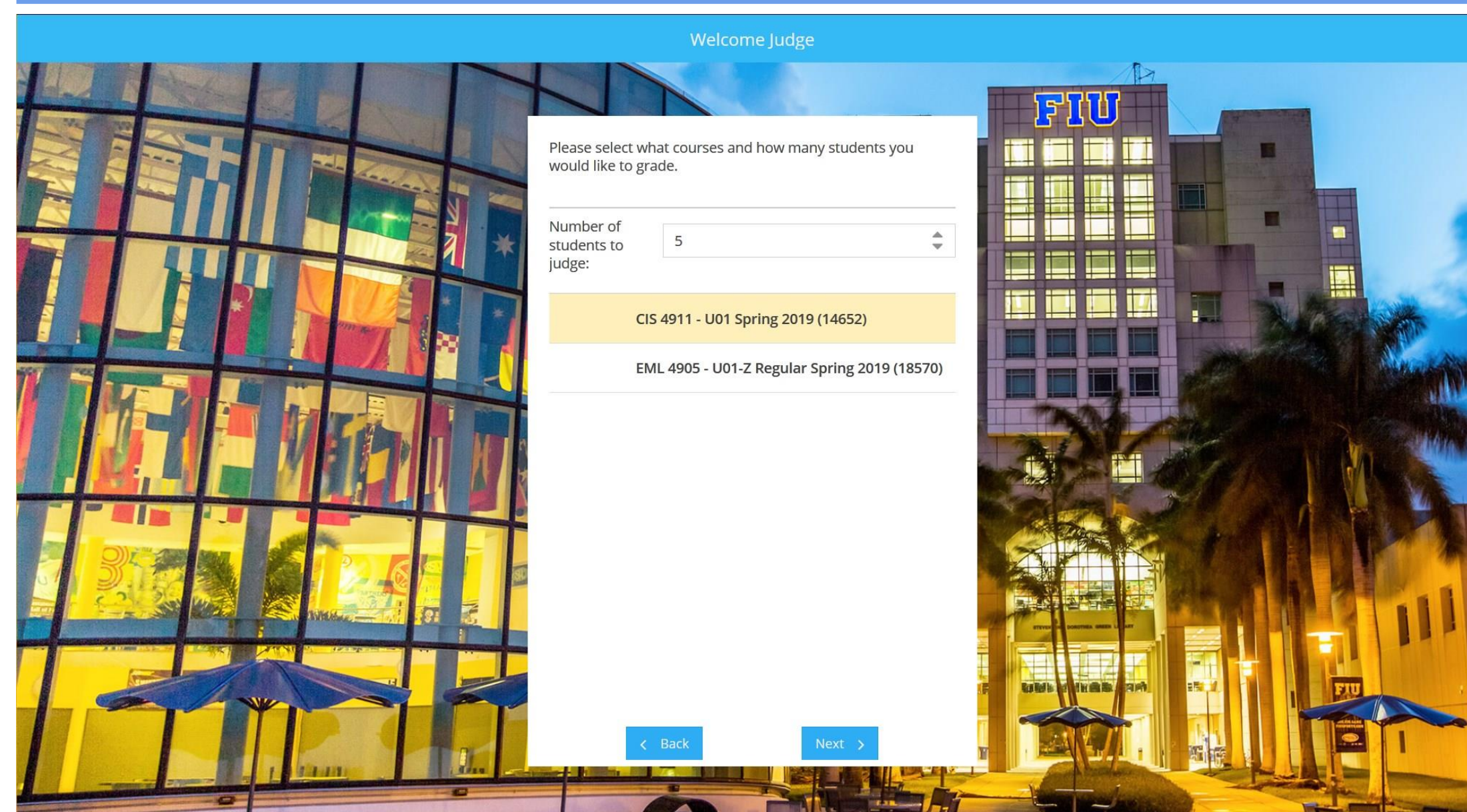
Screenshots



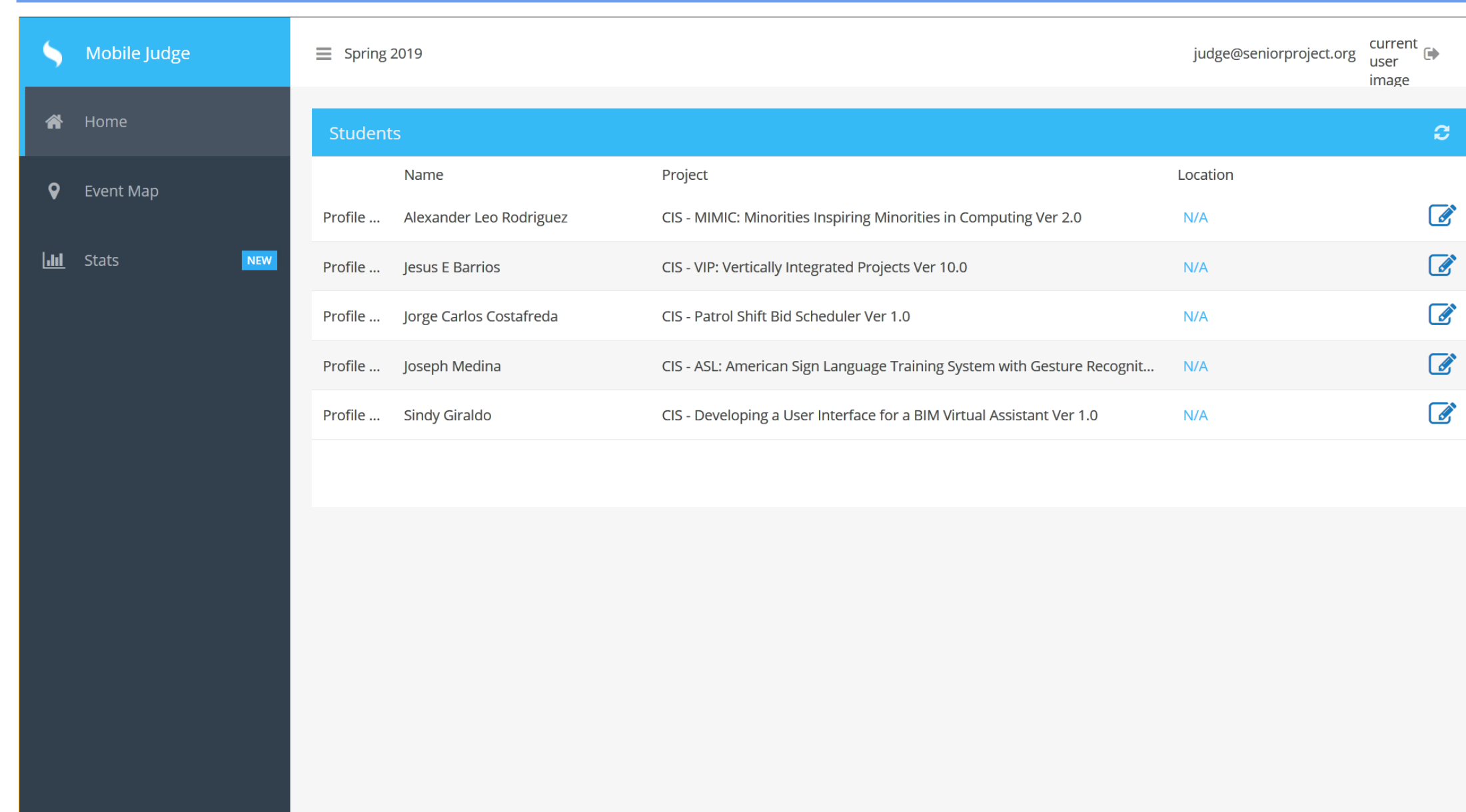
The administrator can now edit and modify options relating to how a course is graded on the courses page.



On the edit page the administrator can select the order and value of questions to use as grading criteria.



Judges can select how many students they wish to grade, and highlight what courses they would like those students to be from.

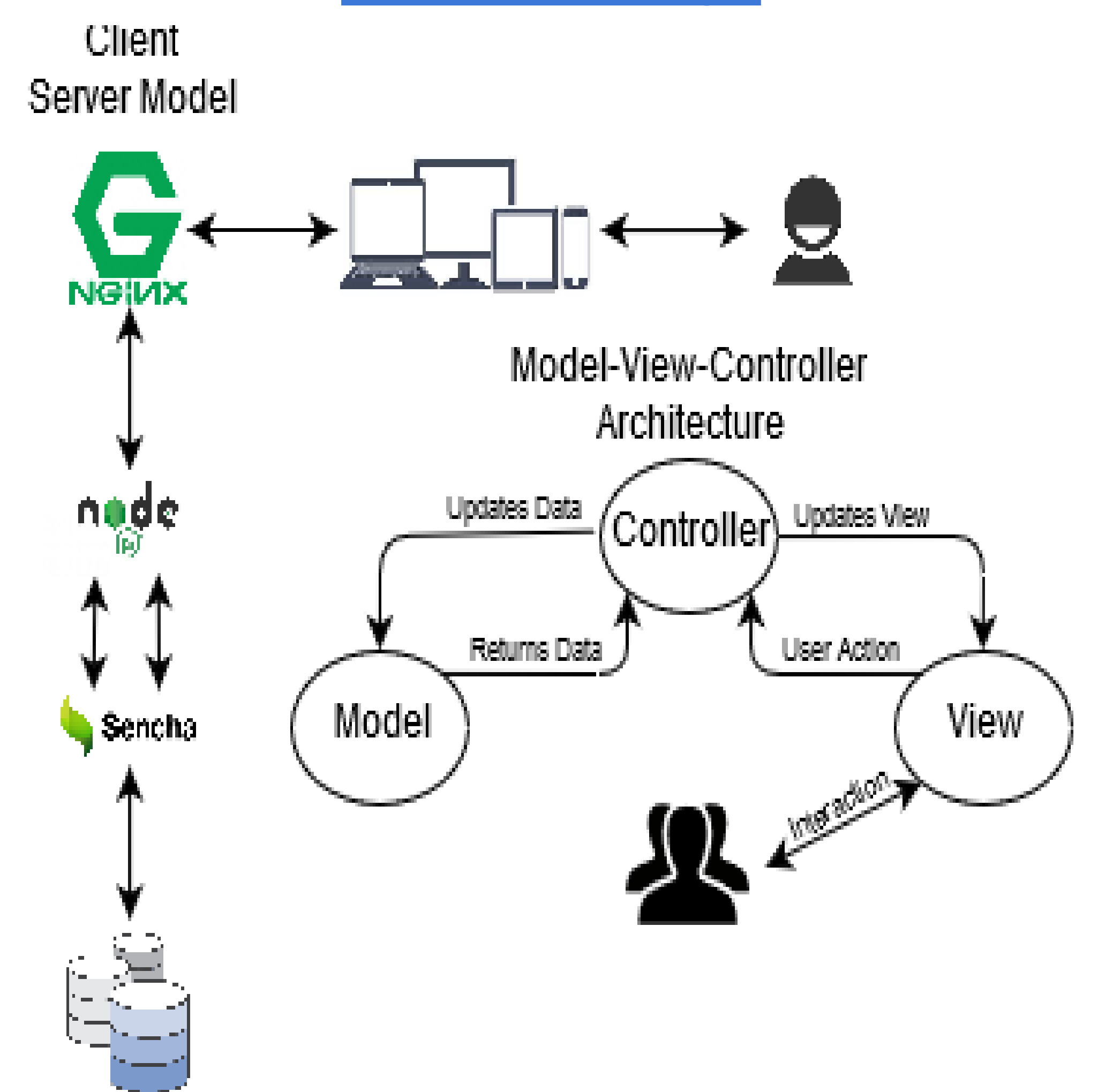


Judges can elect to judge students only from one course, or from as many courses as they like.

Requirements

- Create a view that allows the administrator to fine-tune the grading criteria for each course.
- Improve the check-in process to provide each judge with greater control over how many students and what courses they wish to judge.
- Enhance the backend infrastructure to support the association of questions with courses during grading.
- Fix current assignment of students to judges to allow even assignment across different courses.

System Design



Implementation

Sencha & ExtJS: A JavaScript framework used in the design of the website frontend.

NodeJS: Is a JavaScript server environment used in the backend to implement a REST API and communicate with the database.

NGINX: The web server solution used to host Mobile Judge.

OAuth: A third-party user authentication solution implemented to secure user login.

MySQL, PHPMyAdmin, MariaDB, & Redis: Used as the application's database and database management system.

PM2: Our process management system and monitor.

Vagrant: A virtual machine system used to quickly test and deploy changes during development.

Verification

Test ID: MJ-108 T1

Description/Summary of Test: During check-in, the judge elects to judge students from both CIS and ME Senior project courses.

Pre-Conditions: Courses must have questions and point values associated with them.

Expected Results: The judge is able to see some students from CIS and some students from ME during grading.

Actual Result: The judge was assigned students from both courses during grading.

Status: PASS

Summary

Mobile Judge has been utilized exclusively for the CIS Senior Showcase until now, and has been built to support a single active term and course at a time. As senior showcase expands to encompass more courses and disciplines, Mobile Judge must evolve to support this. My contributions in version 12 were focused on ensuring that multiple courses with different needs could be judged simultaneously at a showcase. This involved allowing the administrator to configure grading criteria on a course-by-course basis, changing how grades are stored without breaking historical grading records, and giving judges a choice during check-in to select what courses they wish to judge.

Acknowledgement

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