

CYBE / SE 491 Weekly Report

April 9 - April 15, 2025

sddec25-10

SmartClass: Transforming Engagement in Large Classrooms with Interactive Learning

Faculty Advisor / Client: Md Maruf Ahamed

### Team Members:

- Josh Dwight - Backend/Frontend
- Logan Pfantz - Frontend/Backend
- Matthew Gudenkauf - Frontend
- Michael Becker - Frontend /Backend
- Michael Geltz - Backend
- Ryan Lin - Frontend/Backend

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### Summary of Work:

Progress was made in getting more tables created in the backend for storing course and user information. The entire backend was restructured to allow for better upgradability in the future. On the frontend, user account creation is finished with options to create both Teacher and Student accounts. Work has also been started on keeping up to date documentation.

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### Work Period Accomplishments:

Josh Dwight:

- Created a few endpoints for the backend
  - I created the delete\_user endpoint to remove a registered user from the database
  - I tried fixing a nesting issue with the /users endpoint, but it ended up being an issue with my .jar file
- Updated the UserDataTransfer object and added a realName field to allow users to have a real name (User objects themselves had this variable, just not the UDT). This fix has not been fully implemented as my .jar file still breaks the /users endpoint.
- Fixed the Gitlab workflow
  - The .yml file had an npm start call that hung the workflow for an hour until timeout, causing it to appear as a failure on our pipeline. Using nohup on the npm call to ensure no hangup occurs fixed this
- Started working on implementing a couple of new endpoints for Matt

Logan Pfantz:

- Added Live Class page for lectures
  - Added chat feature to Live Class page

Matthew Gudenkauf:

- Added CorsConfig to backend, fixing problems when calling API
- Added /users and /user/{id} to backend

- Implemented login and create an account functionality
- Saving the user information to localStorage for later use

Michael Becker:

- Read through ISO 27000 which is the standard for web applications for security protocols
- Found what could be implemented testing wise or added to secure:
  - Data transfer
  - HTTPS encryption
  - Security for registration
  - User data

Michael Geltz:

- Implemented functionality for course creation and user enrollment, including tracking each user's role within a course.
- Added support for modifying course roles dynamically
- Refactored backend package structure for improved organization, all DTOs moved into subdirectories, entire code base moved into the application directory so Spring Boot won't be mad anymore
- Implemented variable validation across all DTOs to enforce input integrity
- Created dedicated database schemas and a separate Spring Boot properties file for test environments.
- Built a simple Spring Boot test class to serve as a template
- Modified login functionality for better clarity
- Added JavaDoc comments for the entire backend

Ryan Lin (Not in main yet still working on):

- Created new *classmgmt* backend module for managing classroom data (questions, students, materials)
- Added full backend support for class questions, students, and materials
- Added *Question*, *Student*, and *Material* entity classes and their associated repositories
- Built ClassService to handle question creation and data retrieval from the database
- Built ClassManagementController with route coverage
- Styled ClassManagement.js/css to look more visually appealing

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## Plans for Coming Week + Action Items:

Josh Dwight:

- I plan on creating some endpoints for Matt so he can create a Profile Customization page where certain aspects of an account can be changed.

Logan Pfantz:

- Add document support for Live Class page and allow instantaneous switching of slides for all viewers

Matthew Gudenkauf:

- Add a navbar that dynamically changes to user roles
  - Student
  - Professor

- Not logged in
- Join/Create classes

Michael Becker:

- Create security features within the application
  - Adhere to the guidelines and add security measures where its needed
  - Keep functionality.

Michael Geltz:

- Write more tests on the backend
- Add more robust functionality in the endpoints
- Setup mock endpoint testing on the backend

Ryan Lin:

- Connect the frontend and backend
- Populate sample data
- Finalize Create Question modal functionality

### Pending Issues:

Josh Dwight:

- N/A

Logan Pfantz:

- Getting SpringBoot and React running on personal machine always has issues
  - This is taking way too much time to get things running rather than working on implementing features

Matthew Gudenkauf:

- realName isn't tracking correctly upon registration

Michael Becker:

- N/A

Michael Geltz:

- N/A

Ryan Lin:

- Issues with frontend and backend connection causing 404 errors with new backend API calls

### Individual Contributions:

Team Member	Contribution	Weekly Hours	Total Hours
Josh Dwight	Added /delete_users Modified UserDataTransfer Object Fixed Gitlab Pipeline	7	20

	Created fix for realName (haven't tested) Created a couple of endpoints for Matt (haven't tested)		
Logan Pfantz	Added live classes using websockets - Currently only has chat functionality	8	27
Matthew Gudenkauf	Added login and registration functionality Added baseRole to backend (saving the main role of the account as student or professor) Added /users and /user/{id} to backend	8	22
Michael Becker	Read through ISO 2700 for security measures Implementing next week	7	20
Michael Geltz	Added course creation Added course role modification Added a course enrollment to each user, tracking what role a user has in which course Refactored backend packages for better presentation, all DTOs moved to subdirectories Added course enrollment Added variable verification to all DTOs Created new schemas for test cases and testing the program Wrote a new properties file for spring boot tests specifically Created a simple Spring boot test for others to template from Modified login endpoints Refactored entire backend code Made it so test classes can be implemented Added JavaDoc comments to all existing backend code	8	21
Ryan Lin	Created new <i>classmgmt</i> backend module for managing classroom data (questions, students, materials) Added full backend support for class questions, students, and materials Added <i>Question</i> , <i>Student</i> , and <i>Material entity classes and their associated repositories</i> Built ClassService to handle question creation and data retrieval from the database Built ClassManagementController with route coverage	8	20

	Styled ClassManagement.js/css to look more visually appealing		
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