
EE/CprE/SE 492 WEEKLY REPORT 3

Date: 10/02/25

Group Number: sddec25-10

Project title: SmartClass: Interactive Learning

Client &/Advisor: Md Maruf Ahamed

Team Members/Role:

- **Josh Dwight - Backend/Security**
- **Michael Geltz - Backend/System Admin**
- **Michael Becker - Frontend/Security**
- **Matt Gudenkauf - Frontend**
- **Logan Pfantz - Frontend & Advisor Liaison**
- **Ryan Lin - Frontend**

o Weekly Summary

Added some features and reworked some existing code. New features include: multiple question types for quizzes, bolstered server security, ... Reworked code includes: moving the quiz question types to a component to promote modularity, rewrote backend ...

o Past week's accomplishments

- **Josh Dwight:** Started working on SSO integration since session authentication is fixed. Implemented a couple of new security features in the server. Spun up an EC2 instance and started transferring some of the server content. Will need funding to be able to transfer the rest it seems. Attached an S3 bucket to this EC2 instance so we can have elastic storage.
- **Michael Geltz:** Changed login and registration to be session based for the full-stack, removed absolute url paths from the front-end, modified nginx to support cookies, setup "Dev" and "Prod" profiles on the backend to support local development. Setup a proper Docker image on the gitlab-runner to prevent the pipeline from breaking on a faulty runner.
- **Michael Becker:** I have been working on encryption methods for storing materials. This has proven quite difficult for me to implement and study, so

looking for the best and most efficient ways to store. AES-GCM, I think, might be the best way in terms of symmetric encryption in order to encrypt before the data is sent to the database. I am trying to research whether server-side or client-side would be better for the use case.

- **Matt Gudenkauf:**
 - Started working on a live lecture feature for the professor to be able to screenshare to the class.
 - Researched ways to be able to screenshare to the website and tested it on a local project on my local machine
 - Currently this implementation works, but it isn't consistent when streaming. During this next week I'm going to continue testing to ensure the screenshare stays on consistently.
- **Logan Pfantz:**
 - Reworked how the quiz questions are created to be separate components. Now, creating a file for the question type and following the format of the other types then importing them into the quiz creation page is all that's needed to add types.
 - Added three other types of questions: multiple choice, select multiple answers, and true/false.
 - Creating a quiz now creates a JSON formatted object that's ready to be exported to the backend for saving.
 - Added ability to remove questions and

SmartClass Student Dashboard Logout

China

Russia

×

Multiple Answer Question

Question:

Select all the options that are types in C

Options (select one or more correct answers)

int

string

void*

boolean

Write in answer
Multiple Choice
Select Multiple Options
True/False

Type ▾

- Ryan Lin:
 - Added JEST testing framework to project
 - Created test coverage for multiple frontend files:
 - ClassManagement
 - ForumPosts
 - Login
 - Registration
- o **Pending issues** *(If applicable: Were there any unexpected complications? Please elaborate.)*
 - Josh Dwight: We need money to be able to use an EC2 instance (also the S3 bucket). This would be the best way to increase our storage capacity and get us off the ISU network.
 - Michael Geltz: Finish announcement system now that session authentication is fixed & working.
 - Michael Becker: Going along with what Ryan said, storing images and files is an issue with limited storage, so also looking into ways to solve that problem through compression.
 - Matt Gudenkauf: Finish screenshare feature
 - Logan Pfantz: Need to save the quiz information to the backend. Decided how to save the information and settled on a JSON file. Now there needs to be an endpoint to send that information to.
 - Ryan Lin: Can't really store uploaded images/files very well unless we get cloud storage like AWS but it seems like our advisor is not very willing to do that
 - Everyone: N/A

Individual contributions (Creating this section is optional, but it is **Required to include the “Hours Worked for the Week” and their “Total Cumulative Hours” for the project for each member somewhere relevant in your report. Your individual weekly hours should be at a minimum of 6-8 hours for this course. So please manage your time well. Also, ensure that individual contributions support your claim to the weekly hours. Be honest with the reports.**)

| <u>NAME</u> | <u>Individual Contributions</u> (Quick list of contributions. This should be short.) | <u>Hours this week</u> | <u>HOURS cumulative</u> |
|----------------|---|------------------------|-------------------------|
| Josh Dwight | SSO, server security, EC2 instance, and S3 bucket | 11 | 40 + 11 = 51 |
| Michael Geltz | Session based authentication. | 12 | 43 + 12 = 55 |
| Michael Becker | A lot of research and testing different encryption methods. | 11 | 40 + 11=51 |
| Matt Gudenkauf | Researched screensharing features Tested on my local machine ready for implementation) | 13 | 42 + 13 = 55 |
| Logan Pfantz | Fleshed out the quiz creation. | 12 | 47 + 12 = 59 |
| Ryan Lin | Added tests to frontend | 12 | 41 + 12 = 53 |

o **Plans for the upcoming week** (Please describe duties for the upcoming week for each member. What is(are) the task(s)?, Who will contribute to it? Be as concise as possible.)

- Josh Dwight: Try to finish implementing the SSO system with Globus. Will finish migrating files to EC2 instance if we receive funding.
- Michael Geltz: Finish announcement system.
- Michael Becker: Finish implementation to the encryption methods.
- Matt Gudenkauf: Continue testing the screenshare feature to be able to start implementation on the project
- Logan Pfantz: Create a page for the student users to take a quiz. Move on to creating polls.
- Ryan Lin: Create more tests and start working on backend test coverage

o **Summary of weekly advisor meeting** (If applicable/optional)

Talked about the progress the team has made in communication and working together. Planning is now more of a focus and allows everyone to know what’s being worked on and by who through the use of git issues. Also talked about how each member feels in their engineering journey. Discussed things like what has been learned while working on this project and things that could still be improved. The purpose of the meeting was to recap our progress and look at the things that have benefitted team.