SE 491 Weekly Report #3

02/11/24 - 02/24/24

Group 46

Project

Learning Management System - SkillMagnet

Client / Advisor

Prof. Judith Islam

Backend Engineers

Nicholas Erickson

Sam DeFrancisco

Brayton Rude

Frontend Engineers

Jennifer Robles

Deepika Vempati

Nikhil Kuricheti

Weekly Summary

Backend: The backend team knocked out the main players of the project. We've created the main endpoints for Users, Courses, Lessons, Enrollments, and Videos. The frontend team should now have all the main endpoints to build out the core of the app. We can now start focusing on the more vague items such as quizzes, flashcards, and course recommendations.

Frontend: The frontend team has created a few of the main components that will be used throughout the website, such as course cards in the course marketplace, lesson cards in the course viewer, and the navigation bar. The team can start having the basic proof of concept pages of the course marketplace and course viewer use the created APIs.
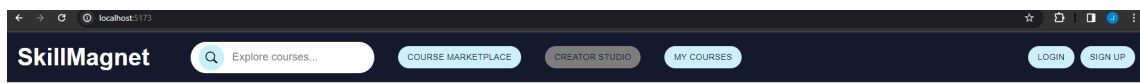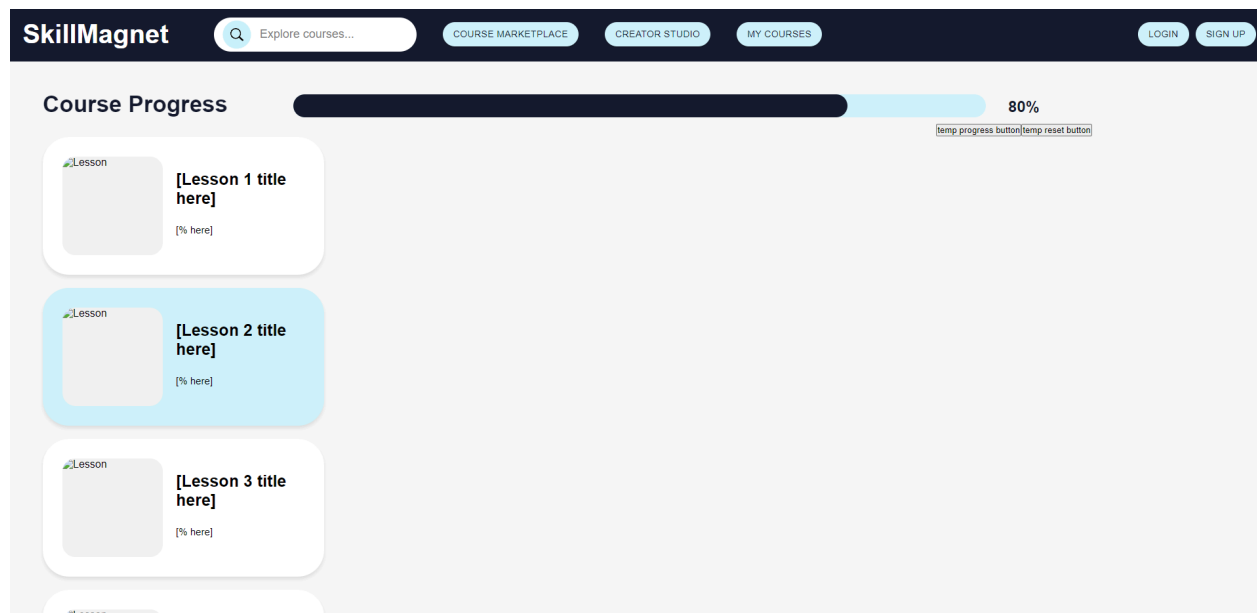

Navigation Bar (showing effect when hovering over button)
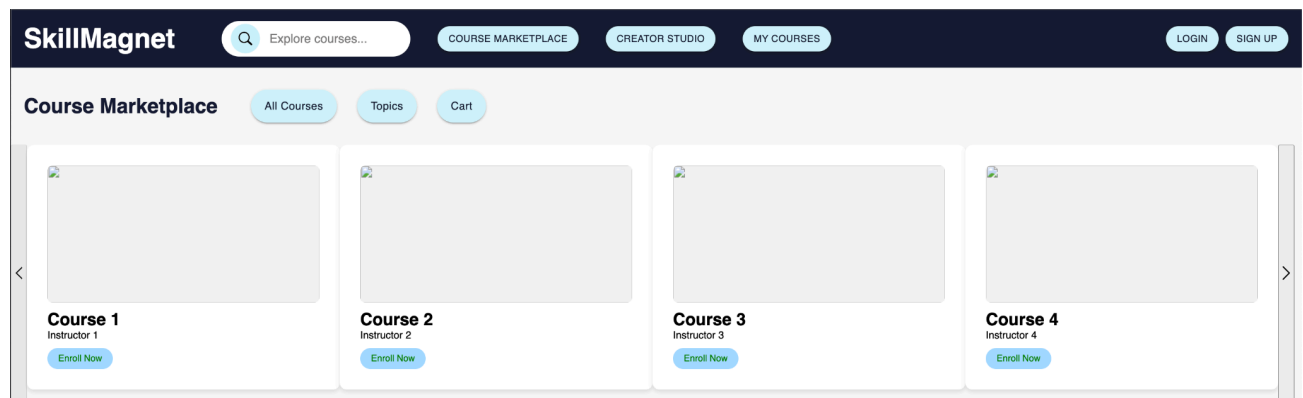
Course Marketplace POC
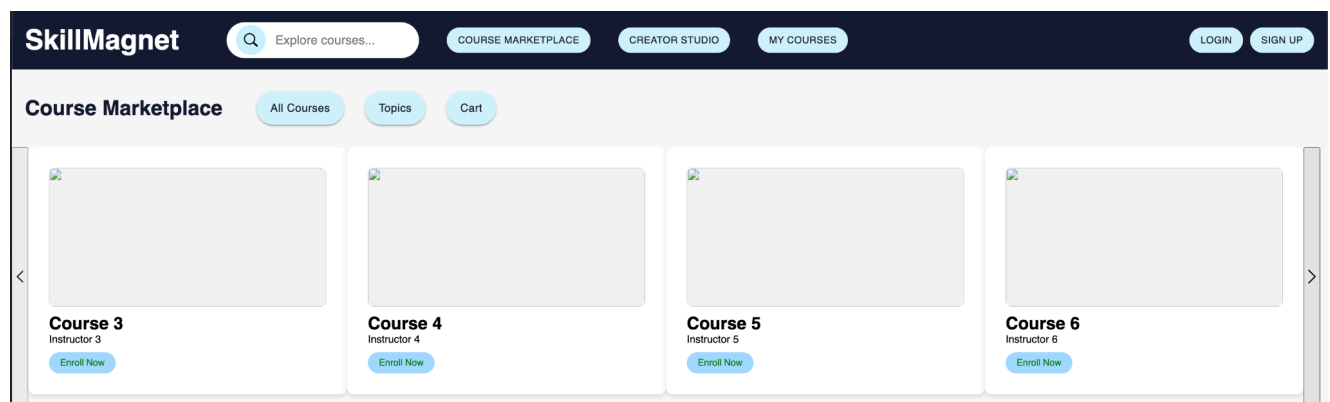
Course Marketplace POC (showing the following courses when 'next' icon is pressed)

Course Viewer POC

Past Week Accomplishments
- Video Lesson Mapping Discussion - Nick/Sam
  - Talked about ways to map videos to lesson objects as the endpoints are separated.
    - Decided on video naming pattern being `{courseId}-{lessonId}.mp4`
    - Decided to add `videoType` parameter to distinguish between self hosted videos and third party websites
- Lessons Endpoint - Nick
  - Created Lesson model following above discussion
    - Mapped Lessons to Courses
  - Created get, getAll, create, delete, and update lesson endpoints
  - Experimented introducing pattern of having generic RequestBody objects in hopes to simplify our API
- CI/CD and Client Build Fix / Environment Variables - Nick
  - Fixed issue with CI/CD pipeline failing to deploy latest build artifact
  - Fixed issue with client building but erroring out when you tried to serve it
    - Some AWS-SDK dependency weirdness
  - Removed public environment variables and injecting AWS secrets through Github Actions
- Navigation Bar - Jennifer
  - Website name routing to homepage
  - Search bar to later filter results in course marketplace

- ○ Buttons routing to course marketplace, creator studio, my courses, and sign in/sign up
- ● Course Viewer Page - Jennifer
  - ○ Course progress bar at the top
  - ○ Lesson cards listed on the side, with the currently selected lesson card clearly displayed
  - ○ Temporary buttons to test logic of progress bar
- ● Enrollment Endpoints - Sam
  - ○ Made large progress on enrollment endpoints
  - ○ Allows users to enroll in courses, view courses they are enrolled in
  - ○ Can be used as example for future join/relation tables to be implemented
- ● Course Marketplace - Deepika
  - ○ Added temporary buttons that will filter the courses based on the marketplace as well as direct the user to other relevant pages
  - ○ Coded the functionality for being able to view previous/subsequent courses
- ● Password Hashing & User Endpoints - Brayton
  - ○ Researched Java hashing and implemented an Argon2 hash algorithm provided by Spring Security. Passwords are now stored & compared as hashed strings.
  - ○ Added to user model and controller to match specifications in the Skill-Magnet Git issue #6.

Individual Contributions

Team Member	Contribution	Bi-Weekly Hours	Total Hours
Nicholas Erickson	Lesson endpoints, CI/CD Fix and Improvements, Client build fix	15	31
Jennifer Robles	Navigation bar, Course viewer page	12	26
Sam DeFrancisco	Enrollments, code review on multiple PR's	12	20
Deepika Vempati	Course Marketplace	10	15
Brayton Rude	Setup Password Hashing, Added to User Model/Controller Functionality	12	13
Nikhil Kuricheti	Create Mock screens for profile, login, and signup pages	7	8

Plans For Coming Week

- ● Backend / Frontend team sync - Everyone

- - Backend team is closing on core features and has some room to take on client work. Figure out where backend people can start helping the client to try to rush the basic app before spring break.
  - Investigate course recommendations / graph database - Nick
    - Look into alternative graph database hosting
      - AWS changed their free tier pricing for Neptune 😖
    - Design a API that's straightforward to use from the client
  - Create mock database data - Nick
    - Create a DB migration or script that will insert dummy data into our database to make testing locally easier for the client team
    - Possibly find intelligent solution to this such as a flag that overwrites the database on server startup versus manually running an SQL script
  - Finish course viewer screen - Jennifer
    - Get lesson cards to select and load a corresponding video independently
  - Create basic home page - Jennifer
    - Create basic homepage for when entering website, and make sure navigation bar buttons route to created sign in/sign up pages
  - Finish course marketplace screen - Deepika
    - Make the topics button a dropdown menu that will show all the relevant topics
    - Make the topics functional links that will lead the user to a certain course
    - Have different categories of courses in the marketplace that organize courses based on subjects or difficulty.

Broader Context
Making the assumption this section refers to section 3.4 in our design document, "Design Context"
1. Any updates to broader context effects

Our project more aims to improve society by providing students with reliable education from good sources. As a software project, environmental impacts are not very common, besides trying to ensure we manage the use of cloud infrastructure to minimize energy consumption. We haven't varied from these goals, so there have been no real broader context effects.

With that being said, when providing students with resources to learn, we need to ensure the resources are coming from reliable instructors and that the content is accurate. Spreading misinformation is a possible effect on society that we plan to try our best to mitigate.

2. Plans to demonstrate evidence of positive effects

Our first way to showcase positive results will be through a survey. We will be conducting a survey with our client Professor Islam's students. They will do a short run-through of our application and provide feedback on how we can improve the overall system, as well as improve the ability to learn through our platform. With these results, we can learn from the feedback to generate more positive interactions.

3. Ways to address or justify negative effects based on our discussion

As a team, we have already identified the risk of spreading harmful misinformation through courses on our platform, and we have come up with plans for mitigation. We will introduce feedback and reporting systems for all lessons available on the site. We plan on reviewing the results of the survey when it is conducted to make further improvements to the platform as well.