StudyRoom

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Project Overview

- StudyRoom is an innovative platform designed to facilitate collaborative learning among students. It allows users to join or create virtual study rooms tailored to specific languages, subjects, chapters, and lessons. The app fosters interaction, knowledge sharing, and efficient studying through many communication features and structured group discussions.
- By developing this new advanced study method our aim is to provide the most seamless education application and platform for not only interaction but for also sharing useful resources to other students to have an strong development skills for the diverse users.

Problem Statement

- Lack of important tools for collaborative research and studying
- Difficulty in finding other partners with the same skill level as them
- Performance issues in some existing platforms or may be too expensive for people that can’t afford
- Teachers find it difficult switch from multiple platforms when they are managing the class
- Barriers to achieving academic and specific professional goals

Solution Approach

Making different severs Open and private servers:

- For different languages , subjects and lesson based of there specific interest.
- Categories that helps people find who have the same skill level as them.

Interactive Tools:

- Screen sharing
- Chat box for those who don’t want to speak.
- Built in white board to explain by showing examples and diagrams.
- Tools for teachers (e.g Agendas, Schedules, Ai notes writer, etc.)

Visual Infographics

User personas

Persona 1: Ahmad Jaafar(High School Student)

Age: 17

Background:

-Ahmad is a high school student studying Programming as he aims to study in a Programming related Major.

-He struggles with practicing programming alone.

-Knowledgeable in technologies and comfortable using apps on his smartphone.

Goals:

-Improve his programming skills.

-Connect with peers who are also learning how to code to exchange tips and resources.

-Find a quick and convenient way to practice daily in a group.

Frustrations:

-Doesn't have any connections to programmers.

-Difficulty finding programming partners who are at the same level.

-Gets bored if he is studying programming alone.

Persona 2: Jacob Williams(College Proffesor)

Age: 35

Background:

Jacob is a college professor who teaches calculus to a diverse group of students. He frequently uses technology to deliver lectures and assign coursework. While he's comfortable with basic online tools, he finds switching between multiple platforms for communication, lectures, and student interaction inefficient. Jacob wants a centralized, intuitive solution to manage his classes, communicate with students, and deliver engaging online lectures.

Goals:

-Simplify communication with students by using a single platform for messaging and announcements.

-Conduct seamless online lectures with features like screen sharing and real-time Q&A.

-Create virtual rooms for office hours or group discussions to address student queries.

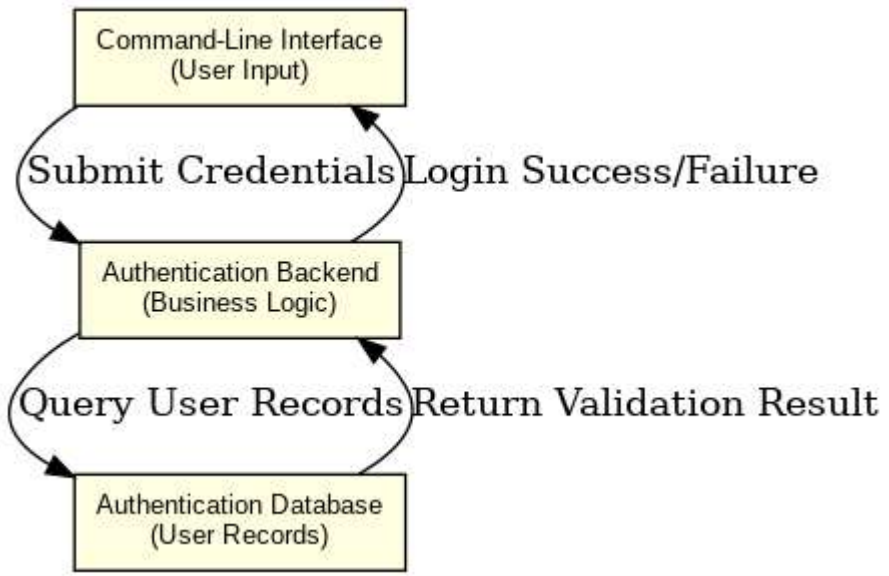
Frustrations:

-Switching between multiple tools (email, chat apps, video conferencing platforms) to manage class activities.

-Dealing with technical issues during live lectures, such as lag or connection drops.

Infographics Idea

CLI (inputs) ==> Logic Layer ==> Data Storage



We can show a flow diagram showcasing the apps workflow

User Login → Server Selection → Interactive Session.

This flow can be shown in the CLI

Test Cases (for logging in/out)

Test Case(TC-ID)	Test Scenario	Steps	Expected Outcome	Actual Outcome	Status
TC-1	Login with correct credentials	1. Enter username 2. Enter password 3. Click Login	User is successfully logged in	User logged in successfully	Pass
TC-2	Login with incorrect password	1. Enter username 2. Enter wrong password 3. Click Login	Error message displayed: 'Invalid username or password'	Error message displayed correctly	Pass
TC-3	View active study servers	1. Click 'View Active Study Servers' from the main menu	List of available study servers displayed	List displayed correctly	Pass
TC-4	Successful Logout	1. Log in successfully	User is logged out, and a success message is displayed	Pass	Pass

Development Journey

AGILE METHODOLOGY

Why Agile?

- Iterative Development
- Flexibility
- Team Collaboration
- Sprints

TECH STACK

Frontend- JavaScript, HTML/CSS, Typescript

Backend- python or Node.js

Database- MongoDB (NoSQL)

Authentication- JWT

Features Demonstration

Core Functionalities

- Create and enter severs due to your own preferences.
- Use tools where you can interreact with for collaborative learning
- Managing sessions much more efficient with much more advanced controls for the teacher/educator.

Non-Functional Strengths

- Rapid response time from the server
- Secure users personal information and data.

Lessons Learned

KEY INSIGHTS

- User centered design for the uses for there specific needs.
- Harmonizing scalability and performance in the development process.
- Effective use of Agile for different practices for organized progress.

CHALLENGES OVERCOME

- Selecting the main requirements from the many requirements of the users.
- Giving a map for ensuring our non-technical users an intuitive navigation.
- Keeping up with the Agile practices.

Future Improvements

Planned Improvements:

- AI power features
- Language Translate system For people who don’t speak English
- Programmed assistance

Advanced Analytics:

- Progress tracked and provide recommendation for our users

Mobile App Development:

- Dedicate our next project to create an app for iOS and Android so people can have an increased accessibility

THANK YOU
FROM OUR TEAM <3

Note: This presentation was made for an overview for the project, full information on the project is in the GitHub repository click on the link below:
https://github.com/ibrahimrzaiqat/StudyRoom-IAU-Software-Project