Lappeenrannan teknillinen yliopisto
School of Business and Management

Software Development Skills

<Tul Bahadur Khadka >, <001568664>

LEARNING DIARY

20.06.2025

Today I reviewed the overall goals of the project and finalized the idea: an e-learning platform named Wise Academy. The app will provide students with access to books and video lectures, and instructors will be able to upload and manage their courses. I chose the MERN stack because I'm already familiar with MongoDB, Express, React, and Node.js. I also set up the initial folder structure for both frontend and backend and created a GitHub repository to track progress.

25.06.2025

I began setting up the backend using Node.js and Express. I created models for User, Course, and Lecture using Mongoose. I also implemented basic routes for user registration and login and learned how to handle JWT authentication. I faced a problem with token verification but solved it after debugging using Postman and rechecking the middleware logic.

28.06.2025

I moved to the frontend and bootstrapped the React app. I installed necessary libraries like Axios, React Router, and Tailwind CSS. I designed the navigation bar and created basic routes for login, registration, and course pages. I tested API connections and successfully registered and logged in to a user through the frontend. Seeing this interaction work was very motivating.

01.07.2025

Today I worked on building the course management features for instructors. I developed forms for course creation and integrated file upload using Multer on the backend. I faced difficulty

handling large file uploads (e.g. videos), so I researched proper configurations and added file size limits and MIME type validations.

5.07.2025

I spent time designing the student dashboard. Students can now view available courses, filter them by category or instructor, and preview course content. I also added protected routes to ensure only authenticated users can access certain pages. I faced issues with JWT token expiration but handled it by refreshing tokens conditionally.

8.07.2025

Today I added admin features including viewing all users and courses. I implemented role-based access control (RBAC) using middleware. Admins can now delete users and approve or reject courses. I created a dashboard with statistics using simple charts to visualize platform activity. This part helped me understand conditional rendering and secure routing in more depth.

10.07.2025

I performed UI polish using Tailwind CSS. I added custom components and ensured responsive design across devices. I also added alerts and modals for better user interaction. During testing, I found that mobile users had trouble viewing the course details, so I fixed the overflow issues using Tailwind's responsive utilities.

13.07.2025

I deployed the backend using Render and the frontend on Netlify. I faced some CORS issues between Netlify and Render, but solved them by updating CORS policies in the Express server. I also configured environment variables securely in both platforms. Now Wise Academy is accessible from any device with full functionality.

16.07.2025

I asked for feedback from peers and made final improvements. Some users suggested adding loading indicators and better error messages, which I implemented. I also added basic validation

to all forms using Joi on the backend and custom checks on the frontend. I am happy with the progress and proud of the final product.