

EDUCATIONAL INTERNSHIP REPORT MINISTRY OF EDUCATION AND SCIENCE OF THE KYRGYZ REPUBLIC

Ala-Too International University

Faculty of Engineering and Informatics

Department

Computer science and engineering

Student's Full Name and group

Gulkaiyr Toktomusheva COM22B

Internal Advisor's Full Name and regales

Nursultan Begaliev

Goal/s:

End-to-End Project Experience:

I wanted to experience the complete development cycle, from writing backend code and developing frontend interfaces to deploying the application and performing final system checks. This holistic approach provided me with a comprehensive understanding of how different components interact within a full-stack application.

Internship schedule

dd/mm/yy | week day | 00:00-00:00

here must be represented 60 working hours

02/12/24 | Tuesday | 11:00 - 15:00

03/12/24 | Wednesday | 10:00 - 14:00

04/12/24 | Thursday | 10:00 - 14:00

05/12/24 | Friday | 09:00 - 13:00

08/12/24 | Monday | 11:00 - 15:00

09/12/24	Tuesday	09:00 - 14:00
10/12/24	Wednesday	09:00 - 15:00
11/12/24	Thursday	19:00 - 23:00
12/12/24	Friday	00:00 - 04:00
15/12/24	Monday	09:00 - 14:00
16/12/24	Tuesday	09:00 - 14:00
17/12/24	Wednesday	09:00 - 14:00
18/12/24	Thursday	09:00 - 14:00
19/12/24	Friday	09:00 - 14:00

Objectives:

Deepen Spring Boot Proficiency: Building on my previous experience with Spring Boot, I focused on developing a robust backend for a notebook application.

Implement Core Functionalities:

User Registration & Authentication: Developed secure user registration processes and implemented token-based authentication mechanisms to ensure safe access to the application.

CRUD Operations for Notes: Created, updated, and deleted notes within the application, enabling users to manage their content effectively.

Integrate Image Handling:

Cloudinary Integration: Configured Cloudinary to store images, saving image URLs in the database while managing the actual image files in the cloud.

Database Management: Ensured that image links were correctly stored and retrieved from the database, maintaining data integrity and accessibility.

Learn Node.js for Frontend: Acquired foundational knowledge in frontend development using Node.js to create dynamic and responsive user interfaces.

Develop User Interfaces:

API Integration: Connected frontend components with Spring Boot APIs to enable smooth data flow and real-time updates.

Utilize Frontend Frameworks and Libraries: Explored and applied relevant frameworks and libraries to enhance the functionality and aesthetics of the frontend application.

Master Docker Containerization: Learned to containerize the notebook application using Docker to ensure consistency across different development and production environments.

Deploy Applications on Digital Ocean:

Server Setup: Configured and managed servers on Digital Ocean to host the Docker containers, ensuring that applications were scalable and reliable.

Deployment Automation: Implemented automated deployment processes to streamline updates and maintenance, reducing downtime and improving efficiency.

Manage Cloud Infrastructure: Gained practical skills in managing cloud-based infrastructure, including monitoring application performance and handling server configurations.

The complete source code for this project is available on my GitHub repository:

<https://github.com/gulkaiyr13/notebook>

The repository is organized into two main directories: the backend code and Docker configurations are located in the root directory, while the frontend code resides in the frontend tree.

Conclusions

My educational internship has been an invaluable experience that significantly enhanced my technical and professional skills. Working with Spring Boot deepened my understanding of backend development, while my first experience with Node.js enabled me to create frontend interfaces. Mastering deployment using Docker and DigitalOcean provided me with practical knowledge in containerization and cloud-based server management, ensuring that my applications are scalable and reliable. Integrating Cloudinary for image handling improved the functionality and user experience of my projects. Moving forward, I plan to further explore server deployment and cloud infrastructure to build a more robust and scalable technical foundation. Overall, this internship has been a pivotal step in my professional growth, equipping me with the confidence and expertise needed to pursue a successful career in technology.

Tasks ranking

Learned a lot:

- **Strengthen Spring Boot Proficiency:** Building on my existing experience with Spring Boot, I focused on deepening my understanding by developing a backend for a notebook application. This included implementing user registration, token-based authentication, and CRUD (Create, Read, Update, Delete) operations for managing notes.
- **Advanced Backend Features:** I worked on integrating image handling capabilities, where images were stored in Cloudinary, and their URLs were saved in the database. This task enhanced my ability to manage file storage and external integrations within a backend system.

- Utilize Docker and Digital Ocean: I intended to learn effective deployment strategies by containerizing the notebook application with Docker and deploying it on Digital Ocean.

Learned something:

- Learn Node.js for Frontend: I sought to acquire foundational knowledge in frontend development using Node.js. My goal was to create dynamic and responsive user interfaces that seamlessly integrate with the backend services I had built for the notebook application.
- Integration with Backend Services: I aimed to understand how to effectively connect frontend applications with backend APIs developed in Spring Boot, ensuring seamless data flow and user interactions.