

Weekly Progress Report

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Domain: Full Stack Development

Date of Submission: 26/03/25

Week Ending: 05 (Final Week)

I. Overview:

This week focused on the development of a **Banking Information System** using **Java** for the backend and **HTML, CSS, and JavaScript** for the frontend. The project was designed to provide basic banking functionalities such as user registration, balance inquiry, deposit, and withdrawal operations, without using any databases.

Github Repository: <https://github.com/Sidd444/upskillcampus>

Main File:

<https://github.com/Sidd444/upskillcampus/blob/main/backend/BankingInformationSystem.java>

Video Demo:

<https://github.com/Sidd444/upskillcampus/blob/main/public/upskillcampus%20project%20demo.webm>

II. Achievements:

1. Backend Development (Java):

- Implemented a **server using Java** to handle API requests.
- Created **custom HTTP handlers** for different banking operations.
- Ensured **CORS support** for seamless frontend integration.
- Used **JSON for data exchange** between frontend and backend.

2. Frontend Development (HTML, CSS, JavaScript):

- Designed a **simple user interface** with separate sections for each operation.
- Used **fetch API** to interact with the backend.
- Implemented proper **error handling** and **real-time updates** for user actions.

3. API Integration and Testing:

- Developed API endpoints for:
 - **User Registration**
 - **Deposit Money**
 - **Withdraw Money**
 - **Check Balance**
 - Successfully tested the endpoints using **cURL** and **frontend requests**.
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III. Challenges:

1. CORS Policy Issues:

- Initially faced **CORS (Cross-Origin Resource Sharing) errors** when making API calls from the frontend.
- Fixed by adding **CORS headers** to HTTP responses.

2. Handling HTTP Requests Properly:

- Faced issues with **raw sockets vs. HTTPServer in Java**.
 - Resolved by implementing **`com.sun.net.httpserver.HttpServer`** to handle requests correctly.
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IV. Learning Resources:

1. Java Backend Development:

- Explored **Java's built-in HTTPServer** for handling API requests.

2. Frontend Integration:

- Used **MDN Web Docs** for JavaScript fetch API.
 - Referred to **W3Schools** for HTML and CSS best practices.
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V. Next Week's Goals:

1. Enhancing the Banking System:

- Implement **session-based storage** to maintain user data between requests.
- Improve **error messages and logging** for better debugging.

2. Additional Features:

- Add **transaction history tracking**.
 - Implement **better UI styling** for a more user-friendly experience.
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VI. Additional Comments:

This project provided hands-on experience in **building a full-stack application** from scratch. The biggest challenge was **backend-server communication**, which was successfully resolved. Looking forward to expanding the project with **persistent storage** and **additional functionalities**.