

## Training Day-16 report

11 July, 2025

Today, I continued development on the **Book Management Application**, focusing on implementing core **authentication** and **book handling functionalities**. The day involved backend development, middleware integration, and file management with external storage.

### Work Undertaken:

#### 1. Authentication System:

- Developed a complete **user authentication flow**, including:
  - Controller functions for login and registration
  - Middleware to validate JWTs and protect routes
  - Routes for authentication endpoints
- Utilized **JWT (JSON Web Tokens)** to securely handle session management.

#### 2. Book Management Features:

- Implemented all major CRUD operations for books:
  - **Upload a book** (including file handling)
  - **Update book details**
  - **Delete a book**
  - **View all books**

#### 3. File Handling & Storage:

- Used **multer** to temporarily store uploaded book files on disk.
- Integrated a **third-party cloud storage service** to permanently store book files, enabling scalable and reliable access.

### Key Learnings:

- Deepened my understanding of **modular authentication systems** using JWT and middleware protection.
- Gained practical experience with **file upload flows**, including disk storage and integration with external file storage providers.
- Reinforced RESTful API practices through complete implementation of **book resource routes**.

### Conclusion:

Today marked significant progress in the Book Management System, with both **authentication** and **book-related features** functioning end-to-end. File upload and storage integration add real-world practicality to the project. In the next phase, I plan to focus on frontend integration and UI improvements.