

RESTful Bookstore API Project Report

Introduction

This project is a RESTful Bookstore API built using Java, Spring Boot, and H2 Database. It provides CRUD operations for managing books and authors, along with advanced features such as filtering, pagination, and sorting. The API was tested using Postman and documented using Swagger UI for better usability.

Abstract

The aim of this project was to design and implement a backend system for managing books and authors efficiently. The system allows users to perform Create, Read, Update, and Delete (CRUD) operations on books and authors. In addition, filtering, pagination, and sorting functionalities were integrated to handle large datasets more effectively. Swagger was added to document and visualize the API endpoints.

Tools Used

1. Java (Spring Boot Framework) - For backend implementation
2. Spring Data JPA - For database interactions
3. H2 Database - In-memory database for development and testing
4. Postman - For testing RESTful endpoints
5. Swagger UI - For API documentation and visualization

Steps Involved in Building the Project

1. Created a Spring Boot project with JPA and Web dependencies.
2. Defined Book and Author entities with a one-to-many relationship.
3. Implemented repositories, services, and controllers for CRUD operations.
4. Added filtering, pagination, and sorting using Spring Data JPA.
5. Tested all endpoints using Postman with sample JSON requests and responses.
6. Integrated Swagger for documenting the API endpoints.

Conclusion

The RESTful Bookstore API successfully demonstrates how to design and build a robust backend system using Spring Boot. It provides CRUD functionality with extended features like filtering, pagination, and sorting. This project serves as a strong foundation for larger, real-world applications involving data management and API integration.