Project Report: RESTful Bookstore API

Abstract:
The RESTful Bookstore API project is a backend application designed to manage books and authors efficiently. It leverages Spring Boot with JPA for persistence, H2 as an in-memory database, and Swagger for API documentation. The project follows REST architecture principles and enables Create, Read, Update, and Delete (CRUD) operations for bookstore data.

Introduction:
The objective of this project is to create a robust backend API for managing bookstore operations. The system is built using Spring Boot, a widely adopted framework for Java-based applications, with REST endpoints to interact with book and author data. The API is tested using Postman and documented with Swagger UI for better usability and developer understanding.

Tools & Technologies Used:
- Java, Spring Boot
- Spring Data JPA
- H2 Database
- Postman (for testing APIs)
- Swagger (for API documentation)
- Maven (for build management)

Steps Involved in Building the Project:
1. Created a Spring Boot application with JPA and Web dependencies.
2. Defined Book and Author entities.
3. Implemented repositories for database interactions.
4. Developed REST controllers to expose CRUD operations.
5. Tested API endpoints with Postman.
6. Documented all endpoints using Swagger UI.

Conclusion:
The RESTful Bookstore API successfully demonstrates how modern backend applications can be built using Spring Boot. It provides efficient management of books and authors with CRUD functionality and well-documented APIs. This project can be further enhanced by integrating authentication, user roles, and deployment on cloud platforms.