■ Bookstore REST API – Project Report

Introduction

The **Bookstore REST API** is a backend web application developed using **FastAPI** that enables users to manage a bookstore's inventory. It provides endpoints to create, retrieve, update, and delete book records while supporting advanced filtering and search functionality. The API ensures efficient management of data with validation and error handling features.

Abstract

The aim of this project is to design a **RESTful API** that performs **CRUD operations** for managing book inventory. It allows users to filter books by author, genre, and price range. **Swagger UI** and **Postman** are used for testing and documentation. The project demonstrates strong backend development skills using **FastAPI**, **SQLite**, and **SQLAlchemy**.

Tools Used

1. Programming Language: **Python**
2. Framework: **FastAPI**
3. Database: **SQLite**
4. ORM: **SQLAlchemy**
5. Validation: **Pydantic**
6. API Documentation: **Swagger UI**, **ReDoc**
7. Testing: **Postman**
8. Version Control: **Git & GitHub**

Steps Involved in Building the Project

1. Set up project structure with FastAPI files (**main.py**, **models.py**, **schemas.py**, **database.py**).
2. Defined database schema using **SQLAlchemy** for the Book model.
3. Implemented **CRUD operations** to manage books.
4. Added query parameters for filtering and searching books.
5. Applied validation and error handling using **Pydantic**.
6. Tested API endpoints using **Postman** and documented them using **Swagger UI**.

Conclusion

This project demonstrates the creation of a fully functional **REST API** using **FastAPI** and **SQLite**. It highlights key backend development concepts such as **CRUD operations**, **ORM integration**, validation, and API testing. The **Bookstore API** serves as a strong foundational project for mastering RESTful backend development.