



Executive Summary

The **Online Bookstore Database Project** is a structured SQL-based system designed to organize, analyze, and manage data for a fictional online book retail platform. The project focuses on building a clean, relational database in PostgreSQL that captures essential business entities such as **Books**, **Customers**, and **Orders**. It also demonstrates the ability to perform meaningful data analysis using SQL queries.

◆ Objective of the Project

The main objective of this project is to design and implement an efficient database that can support real-world book-selling operations. The system is built to:

- Store book inventory details (title, author, price, genre, stock).
- Maintain customer information (name, email, phone, city).
- Record all customer orders and transaction values.
- Enable insights into sales, customer behavior, and inventory.

This project highlights the use of **SQL for database design, querying, reporting, and business understanding**, which is essential for data analysis and backend development roles.

◆ Database Structure

The project consists of **three main tables**, each interconnected using **Primary Keys** and **Foreign Keys**:

1. Books Table

Stores the catalog of all books available in the store.

- Columns include: `book_id, title, author, price, genre, stock`
- Helps track inventory levels and pricing.

2. Customers Table

Contains personal information about each customer.

- Columns include: `customer_id, name, email, phone, city`
- Allows segmentation and analysis of customer locations and behavior.

3. Orders Table

Captures purchase transactions from customers.

- Columns include: `order_id, customer_id, book_id, quantity, total_amount`
- Enforces relationships through foreign keys linked to the Books and Customers tables.

This well-structured schema supports seamless query execution, easy maintenance, and meaningful reporting.

◆ Key Functionalities and Analysis

The project includes more than **20 SQL queries** designed to answer real business questions. These queries showcase the ability to handle:

Inventory Insights

- Find the book with the **highest or lowest stock**.
- Calculate **total inventory** available.
- Track **overall pricing trends** with average price calculations.

Sales & Revenue Analysis

- Total revenue generated from all orders.
- Number of units sold per book or per genre.
- Identify the **most profitable** and **most demanded** books.

Customer Behavior Analysis

- Number of orders placed by each customer.
- Customers who have spent the most.
- Cities where high-value customers are located.

Operational Reporting

- Books with low stock.
- Orders above a certain amount.
- Customer segments based on order volume.

These queries simulate real industry tasks such as building dashboards, sales reports, and performance metrics.

◆ Business Value of the Project

This project demonstrates:

✓ Strong understanding of SQL schema design

Using constraints, foreign keys, and relational structure.

✓ Ability to analyze business data

By writing meaningful queries aligned with real-world scenarios.

✓ Skill in organizing project files for GitHub

Including schema, queries, documentation, and raw datasets.

✓ Practical knowledge relevant to data analyst, backend developer, and database roles.

◆ Conclusion

The **Online Bookstore SQL Project** is a complete end-to-end demonstration of database design, implementation, and analysis. It reflects a deep understanding of how SQL can be used not only to store data but also to generate actionable insights for business decision-making.

This system can serve as a foundation for more advanced functionalities such as automated dashboards, recommendation systems, or web integration with backend frameworks.