Project Report

Online Retail Sales Database

Introduction

The growth of online shopping has created the need for efficient systems that can handle customer information, manage products, and track transactions. This project, *Online Retail Sales Database*, focuses on designing a structured and normalized SQL database for an e-commerce platform. It helps store and organize data related to customers, products, orders, and payments in a systematic way.

Abstract

The main objective of this project is to build a relational database that supports the basic operations of an online retail store. The database allows insertion and retrieval of records while ensuring data integrity through the use of constraints and relationships. Analytical queries have been added to extract useful insights such as monthly sales, best-selling products, customer purchase behavior, and pending orders. The project demonstrates how SQL can be applied in real-world scenarios for business decision-making.

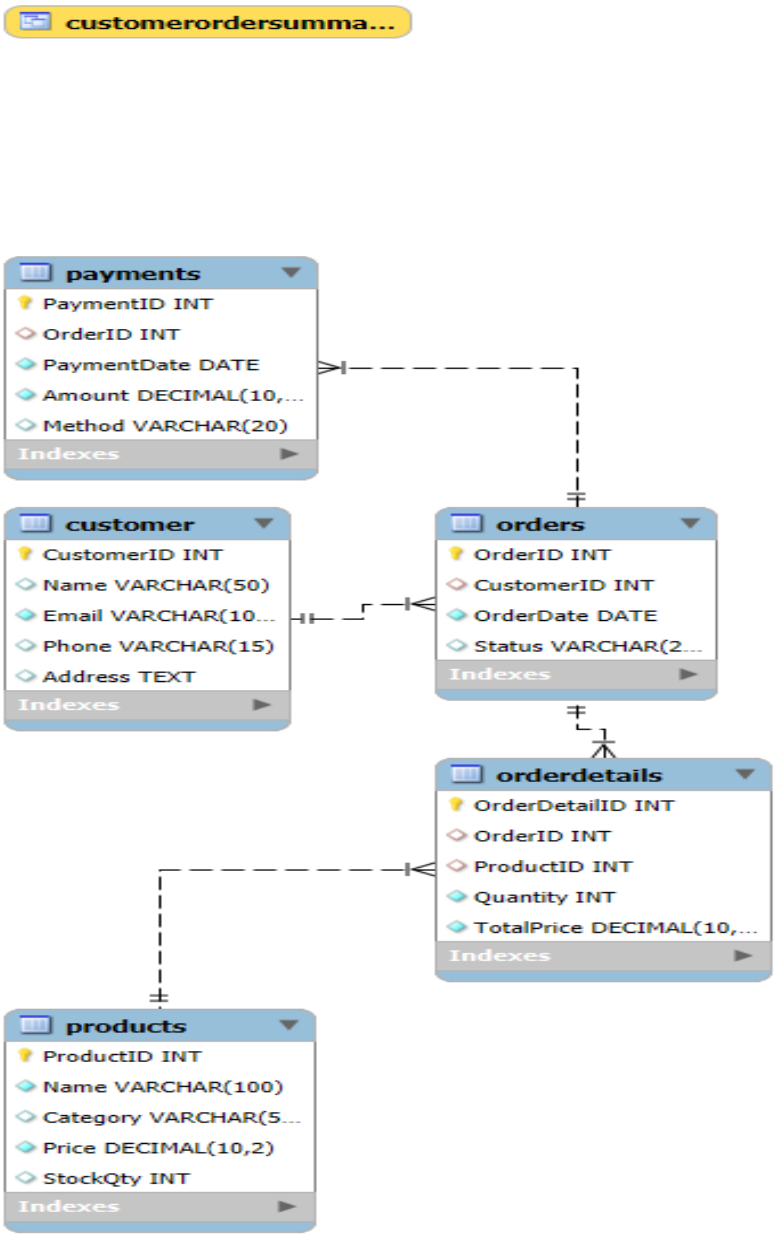
Tools Used

Database System: MySQL
SQL Client: MySQL Workbench

Steps Involved in Building the Project

1. **Requirement Analysis** – Identified the main entities: Customers, Products, Orders, OrderDetails, and Payments.
2. **Database Design** – Prepared an ER diagram and created normalized tables with appropriate keys and constraints.
3. **Data Insertion** – Inserted realistic sample records for customers, products, orders, and payments.
4. **Query Implementation** – Wrote queries to analyze total sales, track top-selling items, summarize monthly sales, and identify pending orders.
5. **Views & Reports** – Created a summary view to show customer orders with their status and total amounts.
6. **Testing** – Verified data consistency by running different queries and checking foreign key relationships.

ER Diagram



Conclusion

The project successfully demonstrates how SQL can be used to design and implement a database for an e-commerce system. By storing data in a structured manner and applying queries, the system generates meaningful insights into customer activity and sales performance. The project can be further extended to include advanced modules such as shipping details, product reviews, and discount management. Overall, it provides a solid foundation for understanding database-driven applications in the retail industry.