Online Retail Sales Database Project Report

1. Introduction

The Online Retail Sales Database project was developed to design, implement, and analyze a structured database system for an e-commerce platform. The primary goal is to maintain accurate and efficient management of products, customers, suppliers, orders, inventory, and delivery operations. The system ensures data integrity, normalization, and relationship consistency.

2. Abstract

This project focuses on the design and implementation of a normalized SQL database for an online retail sales system. It includes the creation of 29 relational tables covering Products, Customers, Orders, Payments, Inventory, and Suppliers. The schema was normalized up to Third Normal Form (3NF) to improve data consistency and efficiency. An ER Diagram was created using dbdiagram.io, and views were developed to analyze key business metrics.

3. Tools Used

Microsoft SQL Server – Database creation, queries, testing
dbdiagram.io – ER Diagram design
Visual Studio Code / SSMS – SQL script execution
ReportLab – PDF generation

4. Steps Involved in Building the Project

1. Requirement Analysis: Identified entities such as Products, Customers, Orders, and Payments.
2. Database Design: Created ER Diagram using dbdiagram.io.
3. Schema Creation (DDL): Defined tables with keys and constraints.
4. Data Insertion (DML): Inserted sample data maintaining foreign key integrity.
5. View & Query Creation: Developed analytical reports for insights.
6. Testing: Validated all joins, queries, and constraints.

5. Conclusion

The Online Retail Sales Database Project successfully demonstrates the process of designing and implementing a normalized SQL database. It ensures efficient data management, consistency, and reliability. The project serves as a foundation for scalable e-commerce data systems supporting reporting and analytics.

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Project Title: Online Retail Sales Database
Tools: MSSQL, dbdiagram.io, SSMS