ONLINE STORE SQL DATABASE PROJECT – DETAILED REPORT

1. Introduction

This project demonstrates the design and implementation of a complete SQL database system for an online retail store. It reflects key Data Analyst skills including relational database design, SQL automation, data analysis, and reporting.

2. Database Overview

The online store database contains seven core tables:

- customers: stores customer profiles
- categories: product categories
- products: product catalog with pricing and stock
- orders: customer orders
- order_items: items included in each order
- payments: payment tracking
- inventory_logs: logs inventory changes

3. Project Objectives

- Design a normalized relational schema
- Load sample data for analysis
- Write analytical SQL queries for insights
- Implement triggers for inventory automation
- Create stored procedures for simulated workflows

4. Key SQL Features Implemented

- DDL (CREATE TABLE with constraints)
- DML (INSERT sample data)
- Analytical queries (JOIN, GROUP BY, subqueries)
- Trigger for automatic stock updates
- Stored procedure for placing new orders

5. Example SQL: Customers Table

```
CREATE TABLE customers (
customer_id INT AUTO_INCREMENT PRIMARY KEY,
full_name VARCHAR(100),
email VARCHAR(150) UNIQUE,
phone VARCHAR(20),
created_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP
);
```

6. Analytical Insights Enabled

- Identify best-selling products
- Calculate revenue by customer
- Detect orders missing payments
- Monitor low-stock products
- Evaluate sales volume per category

7. Conclusion

This SQL project provides a strong foundation in data analysis, relational modeling, and backend data workflows suitable for Data Analyst portfolios and resumes.