Project title: RetailDB

Overview:

RetailDB is a relational database for retail analytics. It manages customers, products, orders, payments, and monthly reports. It supports generating monthly reports and comparing trends across months.

Features:

- Manage customers, products, orders, and payments
- Generate monthly reports: total sales, top product, top customer, top city
- Compare month-over-month growth for sales, orders, customers, and average order value
- Dashboard integration ready

Database Schema:

- **Customers**, **Products**, **Orders**, **OrderDetails**, **Payments**, **MonthlyReports**
- Relationships:
    - Customer → Orders (1:N)
    - Order → OrderDetails (1:N)
    - Product → OrderDetails (1:N)
    - Order → Payments (1:1)
    - MonthlyReports stores aggregated metrics

Stored Procedures:

- GenerateAndSaveMonthlyReport(month, year): Generates monthly analytics and saves in MonthlyReports
- CompareMonthlyReports(month1, year1, month2, year2): Compares metrics between two months and outputs growth percentages

Sample Data:

- 5 Customers, 5 Products
- Orders and Payments for August & September 2025
- MonthlyReports generated for both months

Example Queries:

```
-- Total sales by city
SELECT c.city, SUM(o.total_amount) AS Total_Sales
FROM Orders o
JOIN Customers c ON o.customer_id = c.customer_id
GROUP BY c.city;

-- Customer purchase history
SELECT c.name, o.order_id, o.order_date, p.name AS Product, od.quantity, od.unit_price
FROM Orders o
JOIN Customers c ON o.customer_id = c.customer_id
JOIN OrderDetails od ON o.order_id = od.order_id
JOIN Products p ON od.product_id = p.product_id
WHERE c.customer_id = 1;
```

Future Enhancements:

- Auto-generate monthly reports via Event Scheduler
- Inventory tracking & low-stock alerts
- Loyalty points or discounts
- BI tool integration (Power BI, Tableau, Python Dash)
- Rolling 3-month trend analysis and predictive analytics