📄 Urban Retail Co. SQL Inventory Analytics — Documentation

🏢 Project Overview

Urban Retail Co. is facing challenges with overstocking, stockouts, and a lack of inventory visibility. This SQL solution aims to provide data-driven insights to help optimize inventory, forecast demand, and improve supply chain decisions.

📦 Database Design

To manage data efficiently, we normalized the raw dataset into four relational tables:

Table Name	Description
Stores	Contains store IDs and regions
Products	Contains product info like category and seasonality
Sales	Daily sales transactions including promotions and weather
Inventory	Tracks stock levels, units ordered, demand forecasts, and pricing

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🧱 Schema Details

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Stores(Store_ID, Region)
Products(Product_ID, Category, Seasonality)
Sales(Sale_Date, Store_ID, Product_ID, Units_Sold, Discount,
Weather_Condition, Holiday_Promotion)
Inventory(Inv_Date, Product_ID, Store_ID, Inventory_Level,
Units_Ordered, Demand_Forecast, Price, Competitor_Pricing)
```

All foreign keys are properly linked between `Sales`, `Inventory`, `Products`, and `Stores`.

🔍 Key SQL Queries & Purpose

Query	Purpose
A. **Stock Level Report**	View current inventory across products and stores
B. **Low Inventory Detection**	Flag products with stock lower than 80% of recent orders
C. **Reorder Point Estimation**	Suggest reorder points using historical average sales
D. **Inventory Turnover**	Measures how efficiently inventory is sold
E. **KPI Summary**	Calculates stockout rate and average stock levels
F. **Fast-Selling Products**	Identifies top-performing SKUs
G. **Slow-Moving Inventory**	Detects underperforming products to reduce overstock
H. **Overstock Alert**	Flags products exceeding 150% of demand forecast
I. **Seasonal Demand Analysis**	Shows average demand by category and season

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📊 Business Impact

By implementing this SQL-based analytics system, Urban Retail Co. can:

- 📉 Reduce stockouts and overstock
- 🧠 Make smarter, data-informed inventory decisions
- 🔁 Optimize supply chain efficiency
- 😊 Enhance customer satisfaction and sales

✅ Next Steps

- Integrate these queries into dashboards (Power BI / Tableau)

- Automate alerts for low inventory & overstock
- Expand schema to include **supplier performance** and **lead time analytics**