

LOW LEVEL DOCUMENT

Key Features & Analyses

1. Data Quality Assurance

- **Duplicate Detection & Resolution:** SQL queries to identify and precisely remove logical duplicate entries across customer_profiles, product_inventory, and sales_transaction tables.
- **Price Discrepancy Management:** Identification and correction of inconsistencies between sales transaction prices and current product inventory prices.

2. Exploratory Data Analysis (EDA)

- **Univariate Analysis:** Deep dives into the distribution and summary statistics of individual columns (e.g., customer age, gender, location; product stock levels, pricing; sales quantities).
- **Derived Metrics:** Calculation of fundamental business metrics such as total revenue per line item, top-selling products by revenue and quantity, and top-spending customers.

3. Cross-Table Insights

- **Demographic-based Revenue Analysis:** Understanding revenue contributions segmented by customer gender, location, and categorized age groups.
- **Product Performance by Category:** Analyzing total revenue and average purchase quantities across different product categories.

4. Retail Dashboard Metrics

- **Overall Sales Performance:** KPIs like Total Revenue, Average Transaction Value, Unique Customers, and Unique Products Sold.

- **Customer-Centric Analytics:** Identifying most active customers and repeat purchasers for loyalty programs.
- **Product Inventory Management:** Queries for low-stock items, top-purchased products by volume, and identification of products with zero sales (dead stock).
- **Sales Trend Analysis:** Granular insights into sales performance on monthly, daily, day-of-week, and hourly bases to understand seasonality and peak periods.

5. Customer Loyalty & Behavior

- **Long-term Loyalty:** Identification of customers with consistent purchase history across multiple years.
- **High-Value & High-Frequency Customers:** Deep dive into top spenders and most frequent purchasers.
- **Customer Stickiness:** Calculation of average time between purchases for repeat customers.
- **Market Basket Analysis (Basic):** Discovery of popular product combinations for cross-selling opportunities