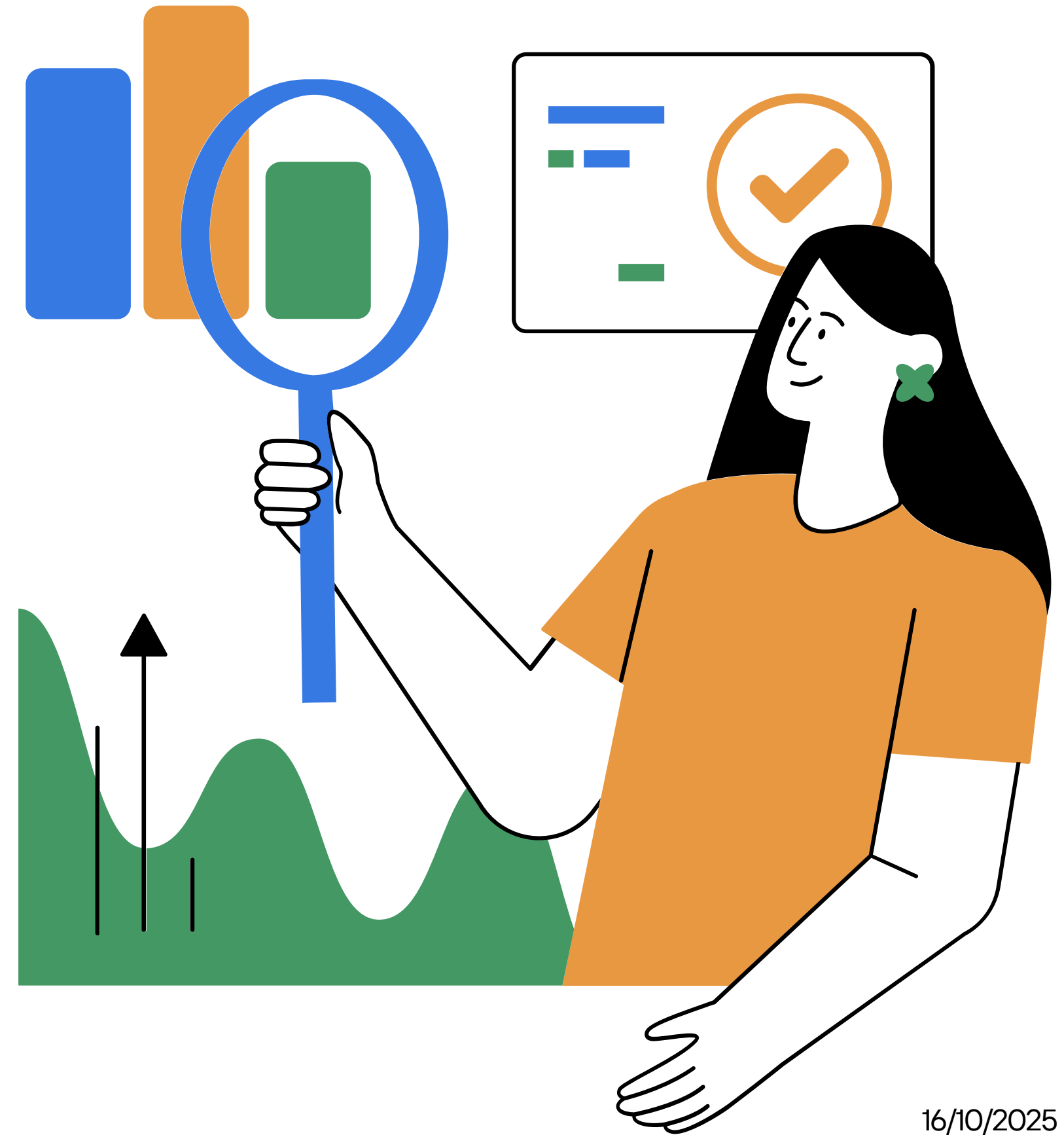
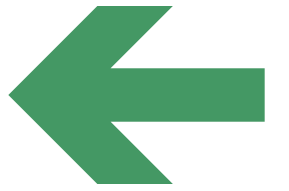


SQL DWH Project

Tomas Amir





What is this project?



SQL DWH project is a fully SQL-based Data Warehouse solution designed to integrate and consolidate data from multiple sources. It performs comprehensive data transformations and loads the processed data into a structured database and a centralized data warehouse.

The main objective is to prepare clean, reliable, and analytics-ready data for building insightful reports and interactive dashboards.

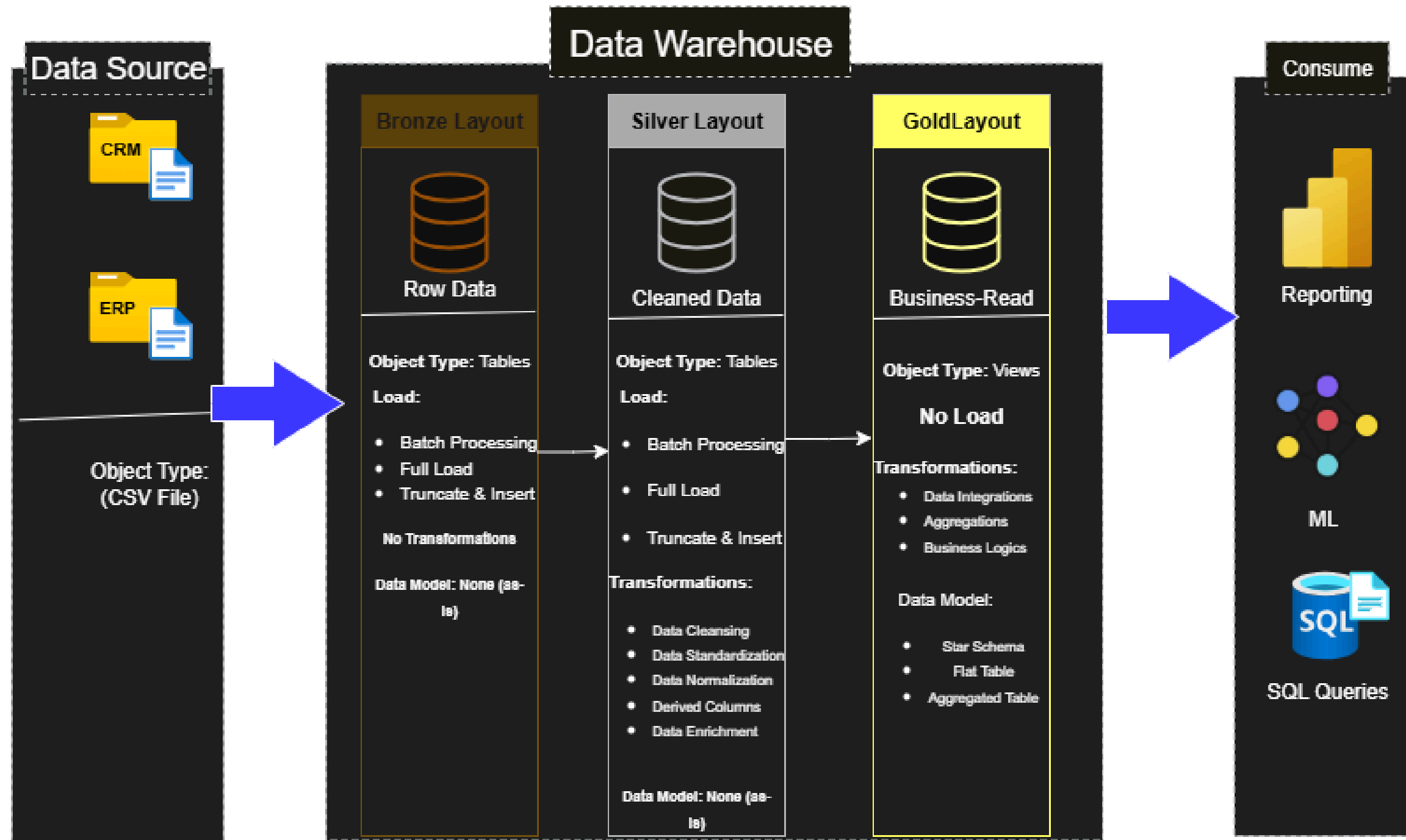
git hub for project <https://github.com/TAtomas/Sql-data-warehouse-project>

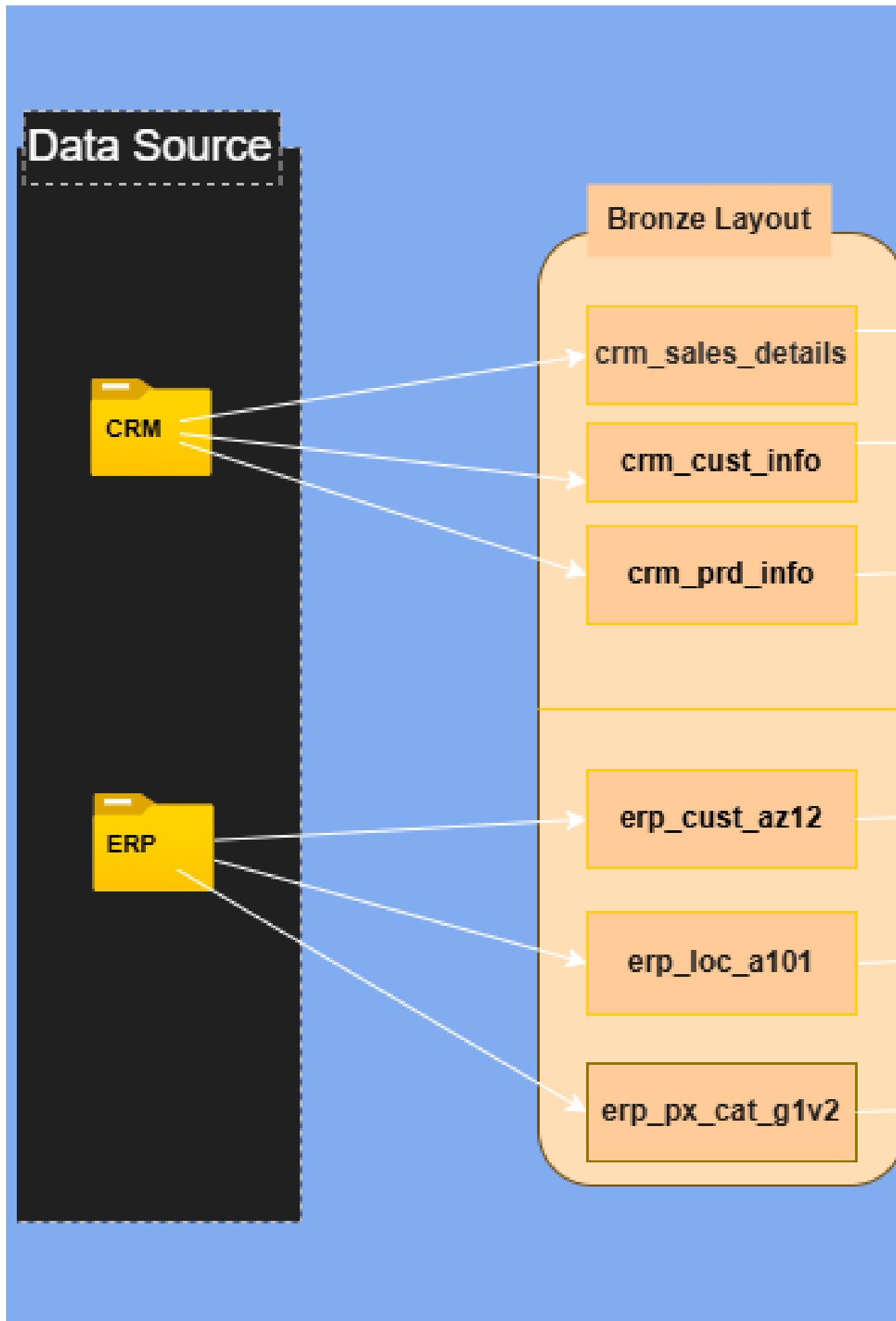
Modern Data Warehouse Architecture

Medallion Design

The Data Warehouse uses the Medallion Architecture with three layers:

- **Bronze (Raw/Load):** Stores raw data from sources with minimal processing for availability and traceability.
- **Silver (Cleansed/Transformed):** Data is cleaned and transformed for consistency and usability.
- **Gold (Analytics/Business-Ready):** Curated, high-quality data optimized for analytics, reports, and business insights.





Bronze Layer

Bronze layer DDL

Creates raw tables in the Bronze layer to store unprocessed data from CRM and ERP sources, including customer info, product info, sales details, and location/category data. Each table is dropped first if it exists to ensure a clean setup.

Bronze Layer Load Procedure

Loads raw CSV data into Bronze tables with error handling and logs the time taken for each table and the overall process. It truncates the tables before loading to ensure fresh data and reports success or errors during execution.

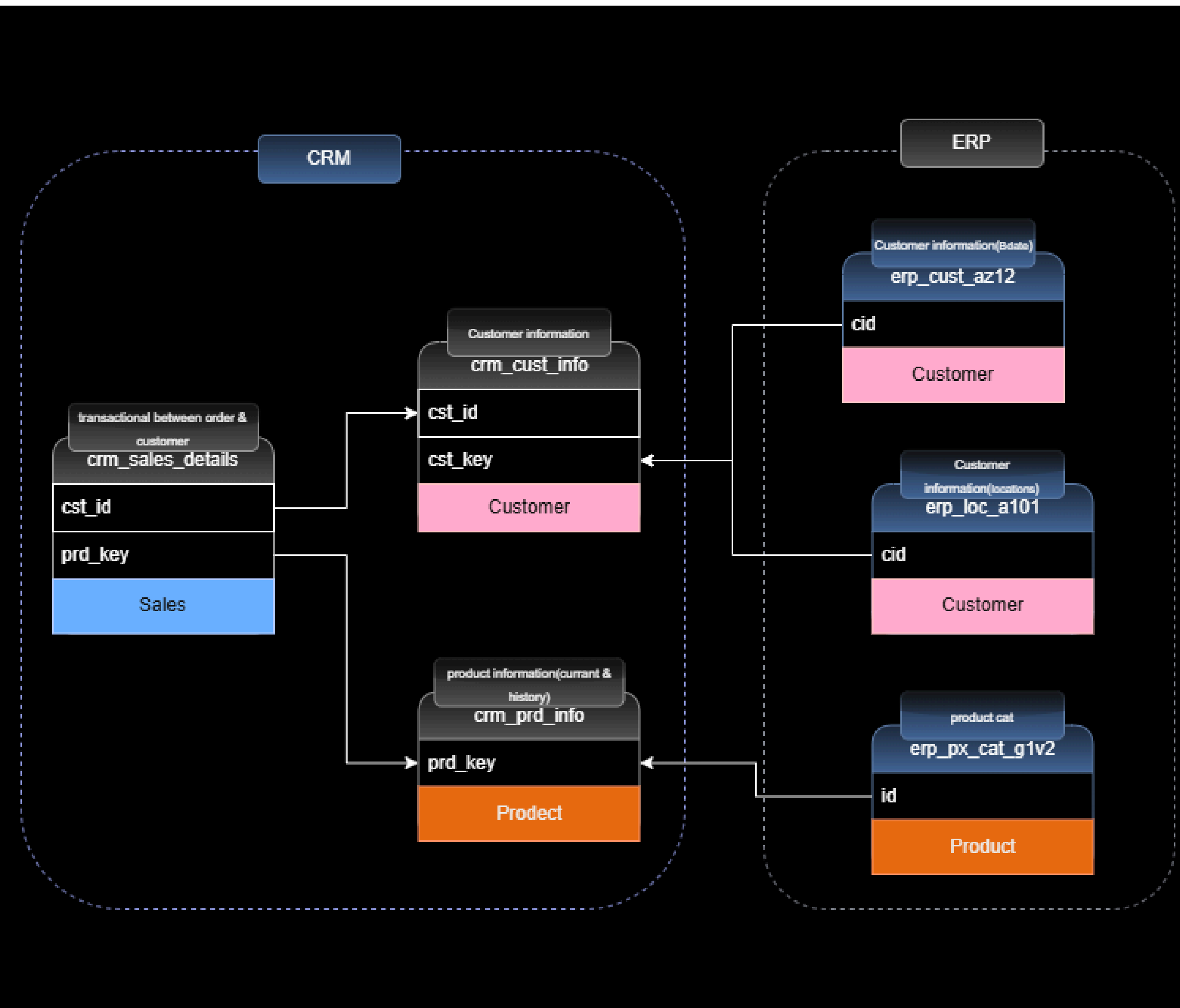


Silver Layer DDL

Loads raw CSV data into Bronze tables with error handling and logs the time taken for each table and the overall process. It truncates the tables before loading to ensure fresh data and reports .success or errors during execution

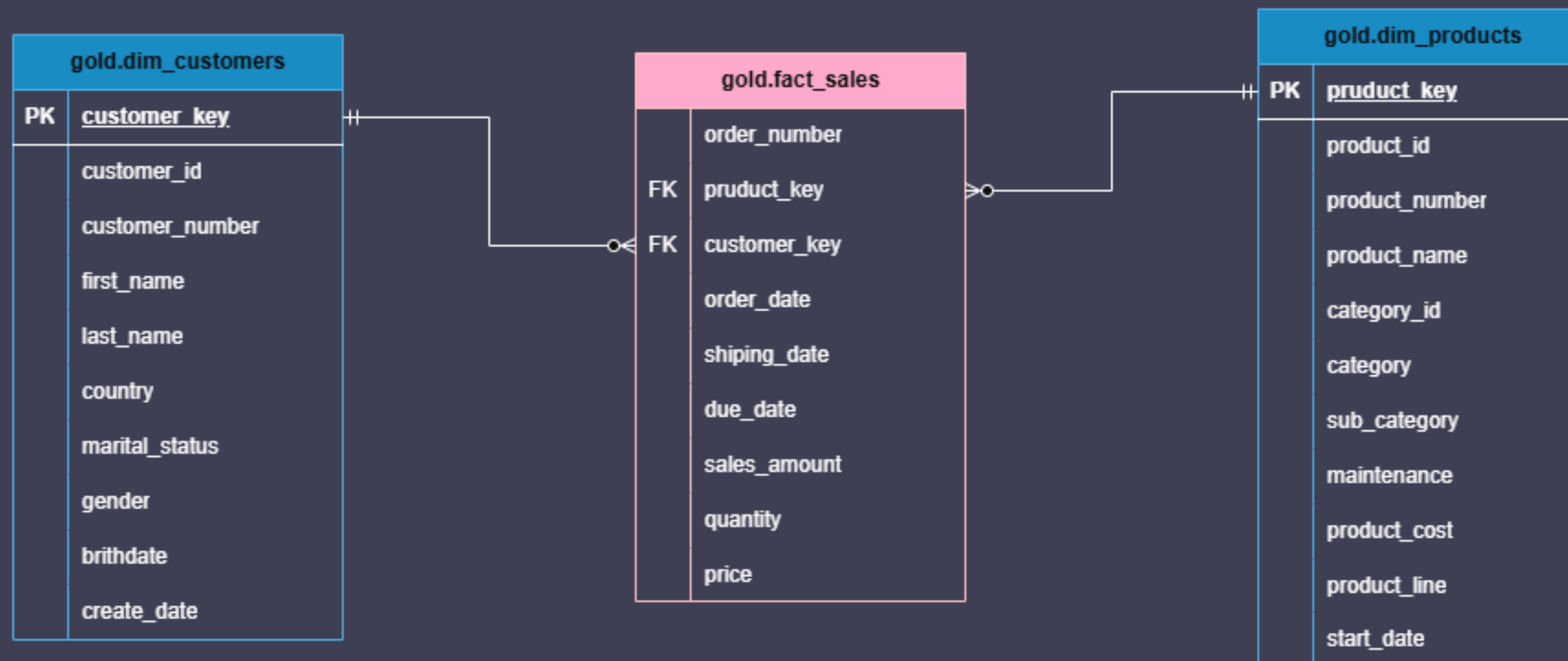
Silver Layer Load Procedure

Loads and transforms data from Bronze to Silver tables, performing cleaning, standardization, deduplication, and consistency checks. It truncates Silver tables before loading, handles errors gracefully, and logs the load time for each table and the total process.



Gold Layer

Sales Data Mart (Star Schema)



Gold Layer Views

, This script creates the Gold layer in the data warehouse representing the final business-ready dataset using a Star Schema. It defines dimension and fact views by combining and transforming data from the Silver layer

Fact View (fact_sales):

Aggregates sales data, linking customers and products to create a complete fact table for analytics, reporting, and KPIs

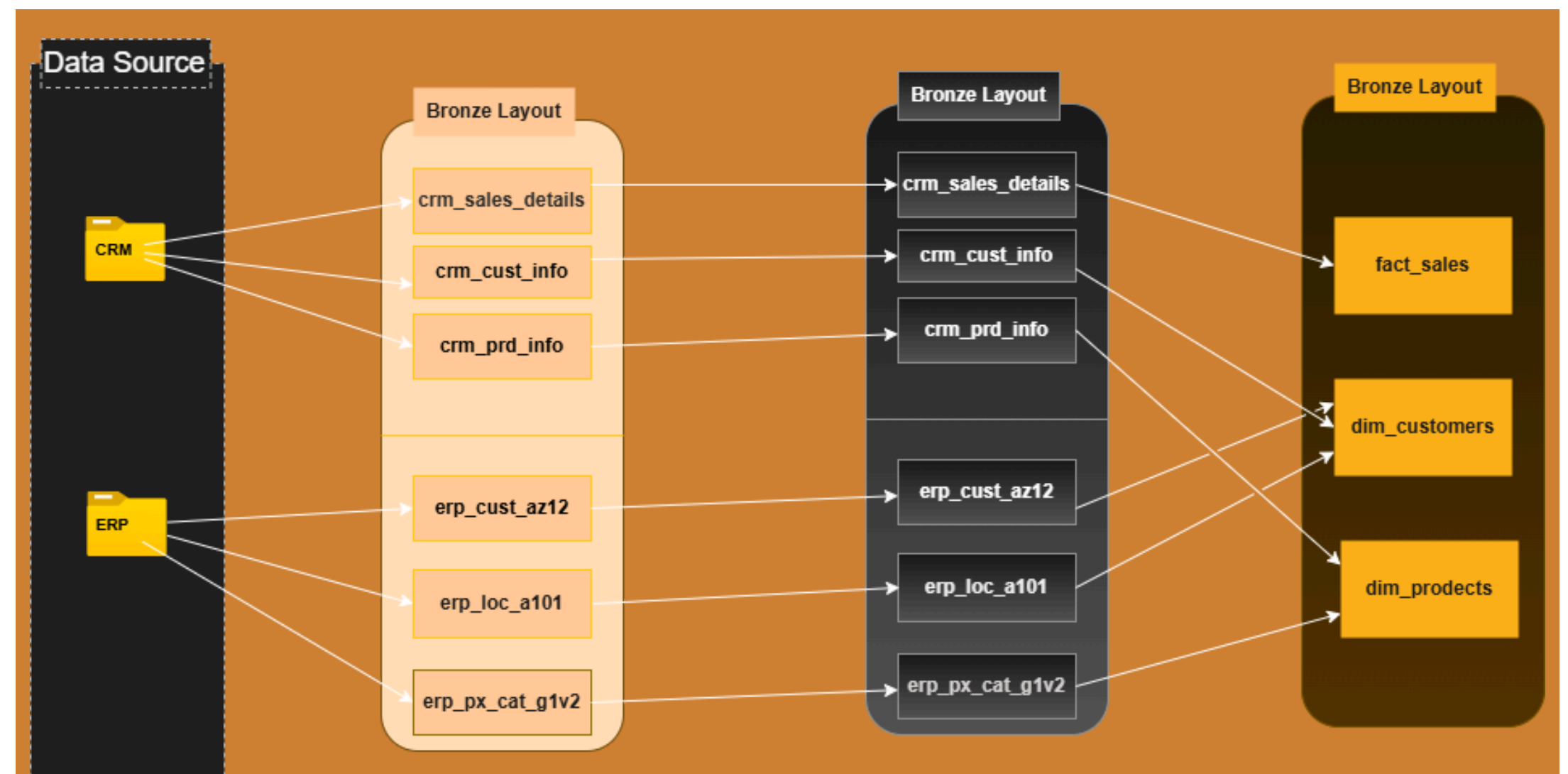
Product Dimension (dim_products):

Enriches product information with category details, filters for current products, and assigns surrogate keys for analytics

Customer Dimension (dim_customers):

Combines CRM and ERP customer data, resolves missing or inconsistent values, includes demographic details, and assigns surrogate keys for reporting

Data WH Process



Bronze Layer (Raw / Load):

Stores raw, unprocessed data directly from source systems (CRM, ERP, etc.). Minimal transformations are applied, ensuring data availability, traceability, and a reliable historical record.



Silver Layer (Cleansed / Transformed):

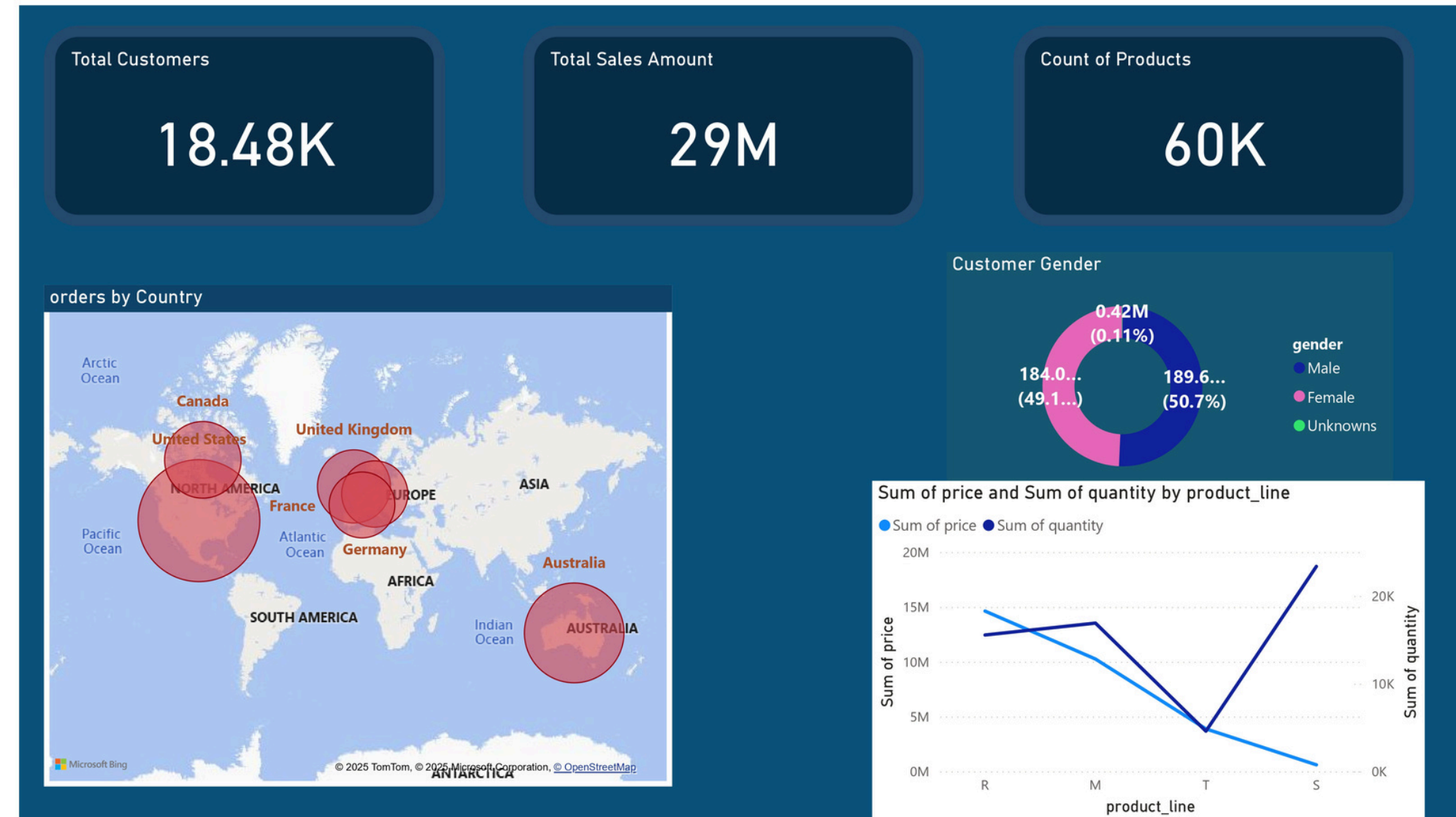
Data from Bronze is cleaned, deduplicated, standardized, and normalized. This layer ensures consistency, fixes errors or missing values, and prepares the data for analytics.



Gold Layer (Analytics / Business-Ready):

Contains curated, high-quality, business-ready datasets. Fact and dimension tables (or views) are created for reporting, dashboards, KPIs, and decision-making. This layer is optimized for query performance and analytics.

Applications of Data Analysis



This dashboard provides a holistic view of business performance, focusing on:

- Customer base and demographics,
- Geographic sales distribution,
- Product performance analysis,
- And overall sales trends.

It's ideal for management or sales teams to monitor performance, identify top markets, and understand customer behavior at a glance.

Displayed at the top of the dashboard:

1.Total Customers: 18.48K

→ **Represents the total number of unique customers.**

2.Total Sales Amount: 29M

→ **Indicates total revenue generated from all sales.**

3.Count of Products: 60K

→ **The total number of distinct products sold or available.**

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