



Optimizing **Business Intelligence** *for* **RETAIL ANALYTICS**

Data Warehouse Development

Data Processing Architecture

Server:

SQL Server

Database Name:

CAP – Submitted as “CAP.bak”

Warehouse Infrastructure:

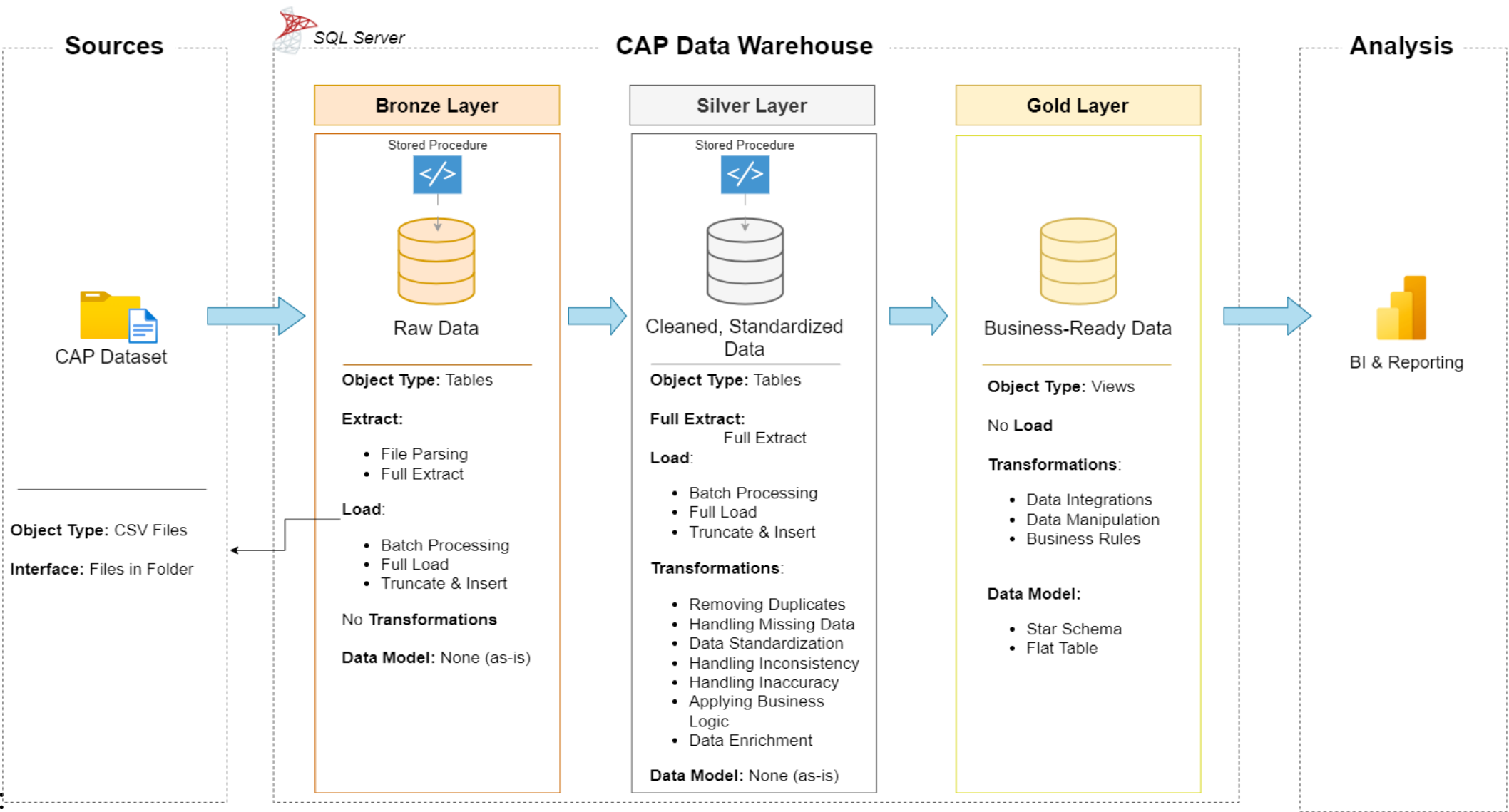
Medallion Architecture
(3 Layers)

Schemas:

- Bronze
- Silver
- Gold

Script to create CAP Data Warehouse:

“ddl_cap.sql”



Warehouse Coding Activities

Scripts (Bronze Layer) – ET, Extract and Transform:

- ddl_bronze.sql – creates empty tables
- proc_load_bronze.sql – extracts data from the source.

Scripts (Silver Layer) – ETL, Extract, Transform and Load:

- ddl_silver.sql – creates empty tables
- proc_load_silver.sql – extracts, transforms, and loads data from the bronze Layer

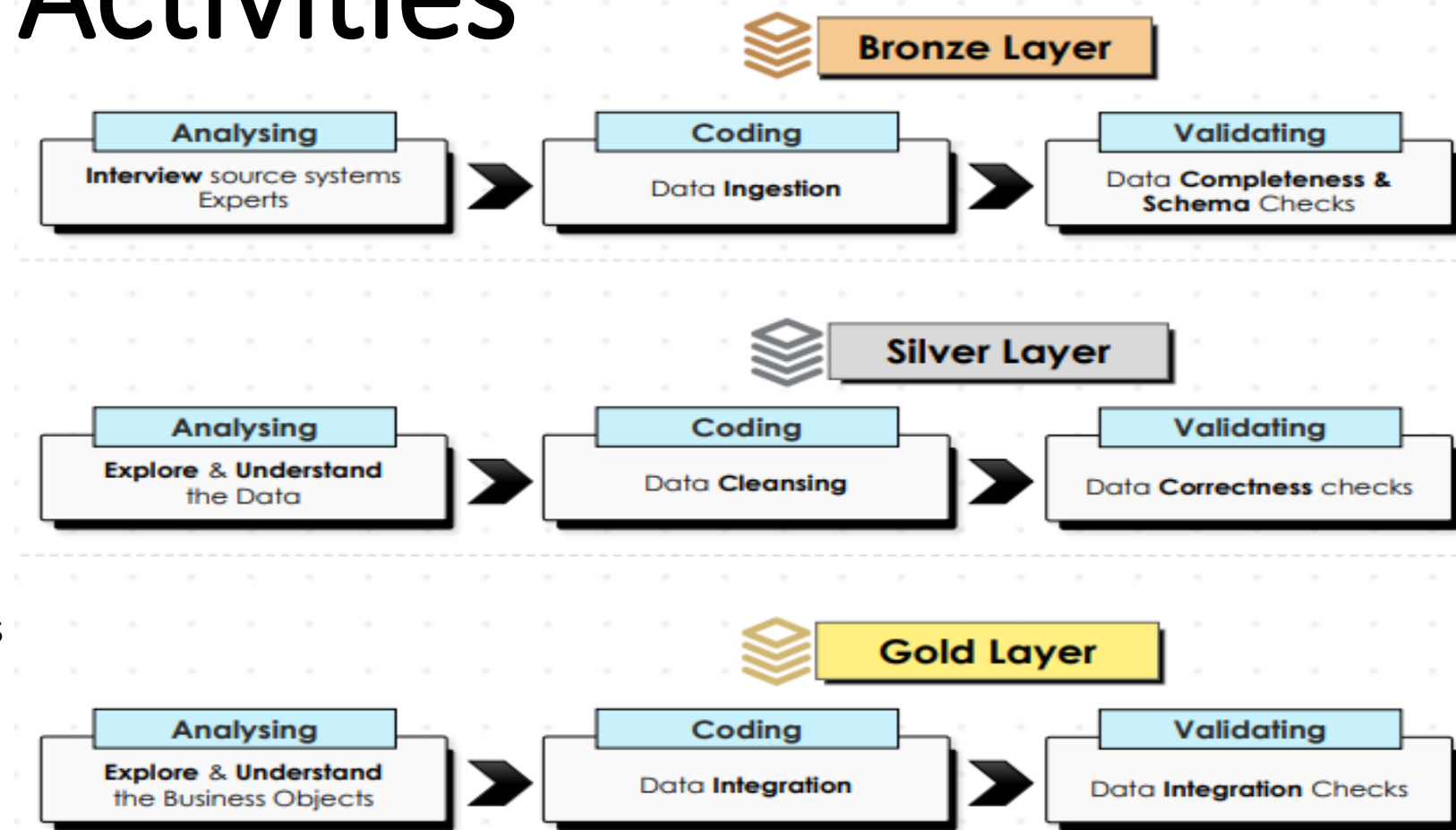
Exploration:

- qcheck_bronze.sql – checks before transformations
- qcheck_silver.sql – checks after transformation

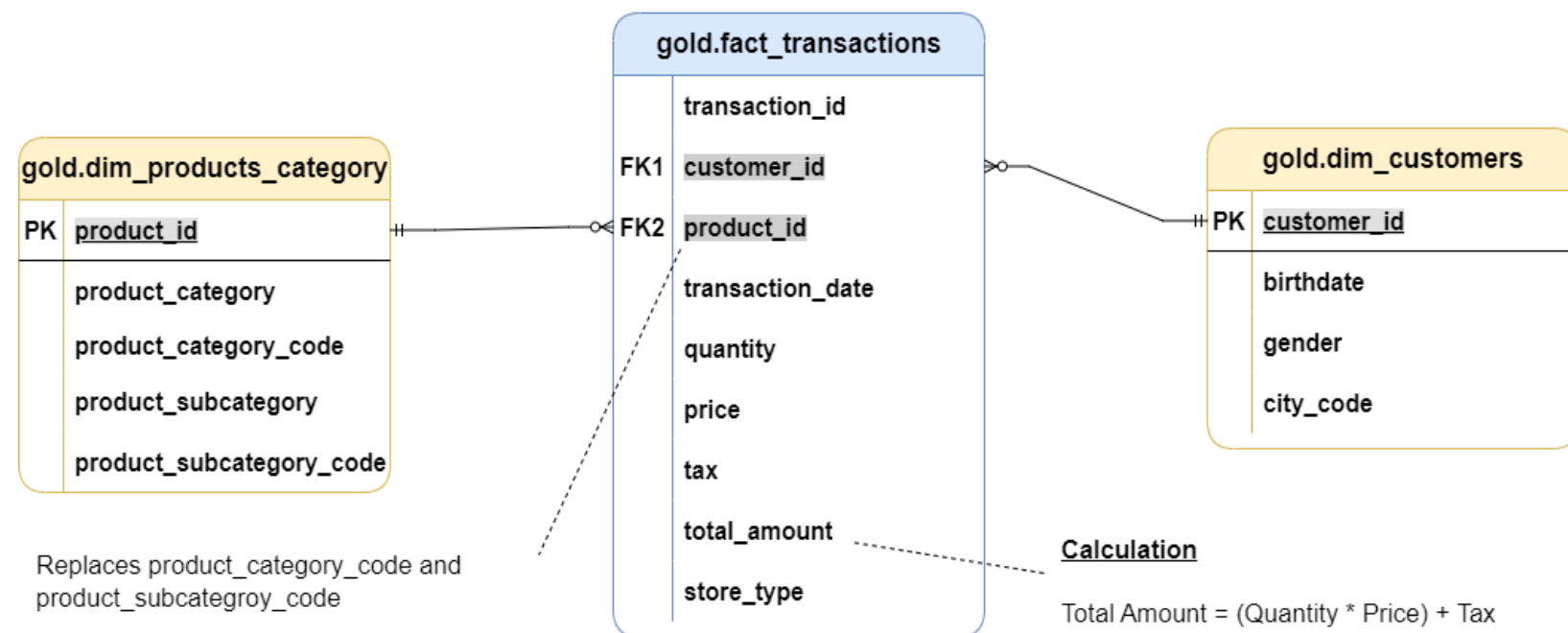
Scripts (Gold Layer):

- ddl_gold.sql – creates views of fact and dimension tables of data model from integration.

Business-Ready!



Data Model (Star Schema)



Dashboard and Report Development

Tool:

Power BI

Connection with SQL Server:

“IMPORT” mode for speed and flexibility

Automation for Daily Data Updates:

Schedule Refresh

Key Insights:

Sales Trend

Leading

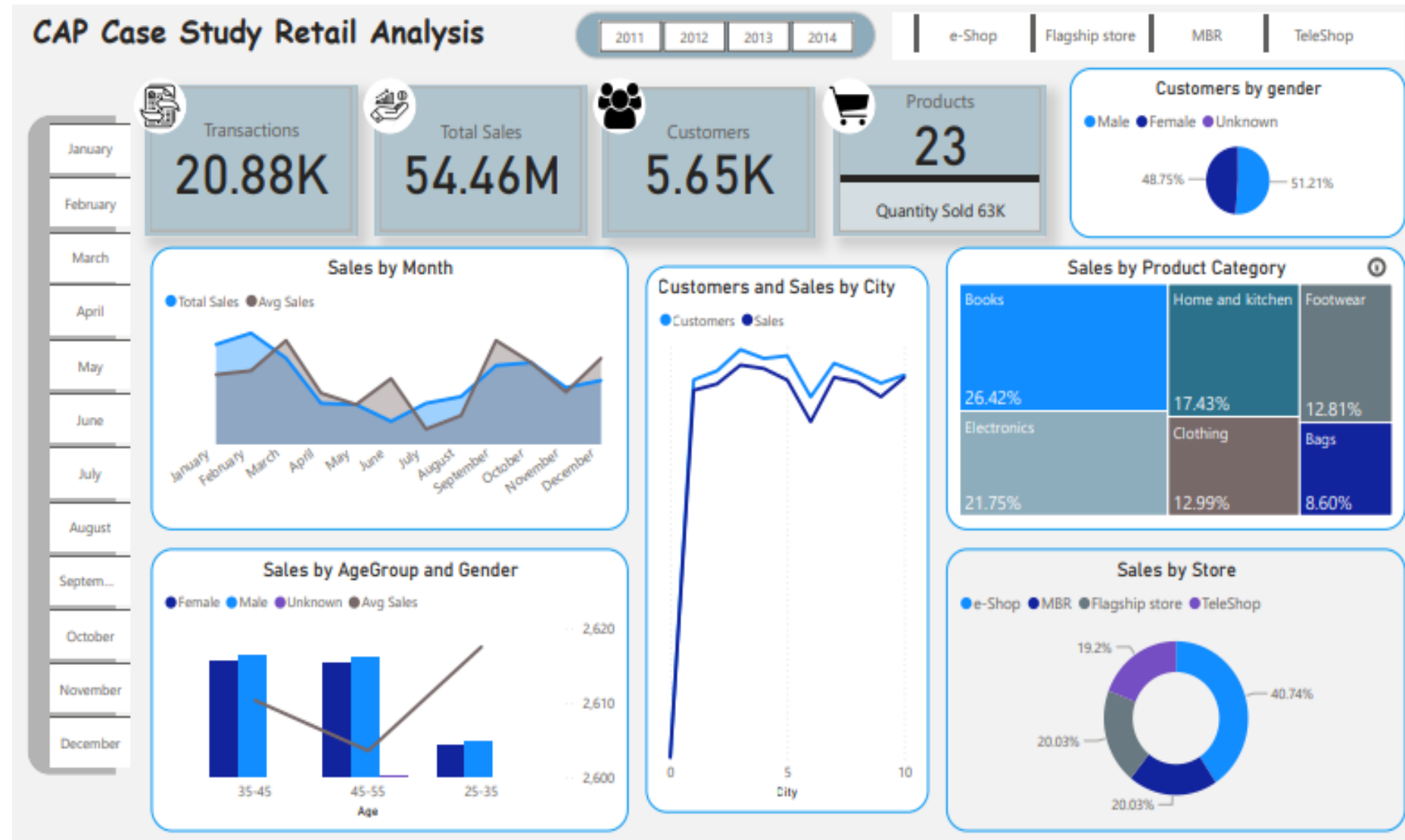
- February
- Age range 35-45
- Male gender
- City 3
- Books
- e-shop

Following

- March
- Age range 45-55
- Female gender
- City 4
- Electronics
- Flagship Store & MBR

Trailing

- June
- Age range 25-35
- Unknown gender
- City 0
- Bags
- Teleshop



Recommendation for Future Sales:

1. Leading and Following Classes

Maintain Existing Marketing Strategy

2. Trailing and Other Classes:

Introduce Rigorous Marketing

- **Incentivize Patronage** is possible

Automation for Daily Data Updates

Medium:

Window Task Scheduler

Script:

“RunCAPJob.bat” gets **updated** data from the source files into the CAP database and keeps activity **log** in “ETL_log.txt”

Schedule:

8:00 AM Everyday
(Daily SOB)

Power BI Visuals Refresh Schedule:

8:30 AM Everyday
(After Data Update)

