## Data warehouse and Analytics Project-

This project demonstrates a comprehensive data warehousing and analytics solution, from building a data warehouse to generating actionable insights. Designed as a portfolio project, it highlights industry best practices in data engineering and analytics.

## Data Architecture-

The data architecture for this project follows Medallion Architecture Bronze, Silver, and Gold layers:

1- Bronze Layer: Stores raw data as-is from the source systems. Data is ingested from CSV Files into SQL Server Database.

2- Silver Layer: This layer includes data cleansing, standardization, and normalization processes to prepare data for analysis.

3- Gold Layer: Houses business-ready data modeled into a star schema required for reporting and analytics.

## Project Overview-

This project involves:

1. Data Architecture: Designing a Modern Data Warehouse Using Medallion Architecture Bronze, Silver, and Gold layers.
2. ETL Pipelines: Extracting, transforming, and loading data from source systems into the warehouse.
3. Data Modeling: Developing fact and dimension tables optimized for analytical queries.
4. Analytics & Reporting: Creating reports and dashboards for actionable insights.

# Building the Data Warehouse (Data Engineering)

## Objective

Develop a modern data warehouse using SQL Server to consolidate sales data, enabling analytical reporting and informed decision-making.

## Specifications

- Data Sources: Import data from two source systems (ERP and CRM) provided as CSV files.
- Data Quality: Cleanse and resolve data quality issues prior to analysis.
- Integration: Combine both sources into a single, user-friendly data model designed for analytical queries.
- Scope: Focus on the latest dataset only; historization of data is not required.
- Documentation: Provide clear documentation of the data model to support both business stakeholders and analytics teams.

# BI: Analytics & Reporting (Data Analysis)

## Objective

Develop analytics to deliver detailed insights into:

- Customer Behavior
- Product Performance
- Sales Trends

These insights empower stakeholders with key business metrics, enabling strategic decision-making.