Business Problem Statement

A leading retail organization seeks to gain a deeper understanding of customer shopping behavior to drive sales growth, improve customer satisfaction, and strengthen long-term customer loyalty. Management has observed notable shifts in purchasing patterns across customer demographics, product categories, and sales channels, including online and in-store purchases. These changes have created a need for a more structured, data-driven approach to understanding consumer behavior.

The organization is particularly interested in identifying the factors that influence customer purchasing decisions and repeat buying behavior. These factors include pricing and promotional discounts, customer reviews and ratings, seasonal trends, preferred payment methods, and channel-specific behaviors. Currently, the lack of consolidated analytical insights limits the company's ability to effectively personalize marketing efforts, optimize product offerings, and enhance overall customer engagement.

Core Business Question

How can the company leverage consumer shopping data to identify behavioral trends, improve customer engagement, and optimize marketing and product strategies to support sustainable business growth?

Project Deliverables

1. Data Preparation and Modeling (Python)

- Clean, preprocess, and transform raw consumer data for analysis
- Address missing values, inconsistencies, and data quality issues
- Prepare analytical datasets suitable for exploratory and advanced analysis

2. Data Analysis (SQL Server)

- Design and structure relational tables to simulate real-world retail transactions
- Execute SQL queries to extract insights related to customer segmentation, purchase frequency, loyalty, and key purchase drivers

3. Visualization and Insights (Power BI)

- Develop interactive dashboards highlighting customer behavior patterns, sales performance, and channel-based trends
- Enable stakeholders to explore insights and support informed, data-driven decision-making

4. Reporting and Presentation

- Produce a comprehensive report summarizing analytical findings, insights, and business recommendations
- Create a professional presentation to clearly communicate results and actionable strategies to stakeholders

5. GitHub Repository

- Maintain a well-organized repository containing all Python scripts, SQL queries, Power BI dashboard files, and supporting documentation