

# Business Problem Statement

A retail company is looking to better understand the way its customers shop so it can make smarter decisions that improve sales, enhance customer satisfaction, and strengthen long-term loyalty. In recent months, the management team has observed noticeable shifts in customer purchasing behaviour differences across age groups, product categories, and shopping channels such as online versus in-store.

They suspect that valuable insights are hidden within their customer shopping data. By analysing this information, the company hopes to uncover what truly drives customer purchases: seasonal trends, discounts, reviews, payment preferences, and even the likelihood of repeat buying. Understanding these factors will help them refine their marketing strategies, personalize customer experiences, and optimize product offerings.

Your task is to analyze the consumer behaviour dataset and uncover insights that will help answer the most important business question:

**“How can the company leverage its customer shopping data to uncover trends, increase customer engagement, and strengthen marketing and product strategies?”**

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## Deliverables

### 1. Data Preparation & Modelling (Python)

You will clean and format the raw customer dataset so it's suitable for deeper analysis. This involves tasks such as handling missing values, correcting data types, creating new meaningful features, and preparing a complete dataset that supports accurate analytical results.

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### 2. Data Analysis (SQL)

Once the data is structured, you will use SQL to extract insights that matter to the business. This can include identifying customer groups, spotting buying trends, analysing loyalty patterns, evaluating payment preferences, and determining the factors that influence shopping behaviour across different demographics.

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### 3. Visualization & Insights (Power BI)

Build an interactive and visually appealing Power BI dashboard that summarizes key insights from the dataset. The dashboard should help decision-makers quickly understand customer trends—such as spending habits, category preferences,

demographic patterns, and seasonal changes—allowing them to act on data-driven recommendations.

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#### **4. Report and Presentation**

Prepare a clear and well-organized project report that outlines your approach and findings. This report should highlight:

- The most important insights uncovered
- Customer behaviour patterns
- Visual summaries of your analysis
- Actionable recommendations for the business

Additionally, create a presentation that communicates these insights in a way that is easy for both technical and non-technical audiences to understand.

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#### **5. GitHub Repository**

Organize the entire project into a clean, professional GitHub repository. This should include:

- Python analysis notebook(s)
- SQL query files
- Power BI dashboard
- Business problem statement and project report
- A complete and well-written README file

The goal is to make the repository easy to explore and useful for anyone reviewing your work.

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