Banking Data Analyst Challenge - Project Description

Project Overview

In this challenge, you are taking the role of a bank data analyst and analyzing a comprehensive banking dataset that simulates internal transaction data used by financial institutions to understand customer behavior, optimize services, and inform strategic planning.

This dataset contains 20,000 enriched financial transactions across products like checking accounts, loans, mortgages, and card payments. Each record is embedded with detailed attributes such as:

- Customer income brackets and credit scores

- Transaction types, fees, and amounts

- Branch location and transaction channels (ATM, Mobile, Branch)

- Segment classification and recommended financial offers

Project Objectives

The goal is to extract patterns, segment behaviors, and revenue drivers that banks use to:

- Improve personalization

- Assess customer risk and profitability

- Refine marketing campaigns

- Optimize branch and channel performance

Challenge Questions

1. Customer Insights & Segmentation

- Which customer segments (e.g., high income vs. low income) are most transaction-active?

- Which financial products are most popular within each segment?

- Do credit scores align with transaction frequency or accumulated fees?

2. Transaction Behavior Analysis

- What are the dominant transaction types by volume and value?

- Which cities or branches are transaction hotspots or underperformers?

- How does usage vary between mobile, ATM, and branch banking?

3. Revenue & Cost Insights

- Which transactions drive the most fee-based revenue (e.g., credit card, insurance, late payments)?

- Are certain customer groups incurring disproportionate costs?

- What are the most frequent sources of revenue-generating friction?

4. Trend & Performance Analytics

- Do certain months or seasons reflect transactional peaks or slowdowns?

- Are product recommendations aligned with actual customer needs and behaviors?

- What trends emerge across segments or channels over time?

Expected Outcomes

Your analysis will help the bank:

- Understand how different customer segments behave financially

- Identify high-fee and high-risk patterns for cost control and opportunity

- Evaluate operational efficiency by channel and region

- Develop data-driven strategies to boost engagement and retention