Week 7 Deliverables

**Team members' details**:

- Group Name: The Learner
- Name: Paula McCree-Bailey
- Email: paula.a.m-bailey@outlook.com
- Country: United States
- College/Company: n/a
- Specialization: Data Analyst

**Problem description**

XYZ credit union in Latin America is performing very well in selling the Banking products (eg: Credit card, deposit account, retirement account, safe deposit box etc.) but their existing customer is not buying more than 1 product which means bank is not performing good in cross selling (Bank is not able to sell their other offerings to existing customers). XYZ Credit Union decided to approach ABC Analytics to solve its problem. But as a data analyst, you need to inspect the data and suggest what action the bank can take to increase cross-selling (without using ML)

**Business Understanding**

Objective**:** Increase cross-selling effectiveness by identifying patterns, barriers, and opportunities in customer behavior using descriptive analytics.

Key Questions to Explore:

- What types of customers are buying only one product?
- Are there demographic or behavioral segments that tend to buy more than one product?
- Which products are most commonly bundled together?
- Are there operational or communication gaps preventing cross-selling?

Stakeholders:

- XYZ Credit Union's marketing and product teams
- ABC Analytics consultants
- Customer service and branch managers

Constraints:

- No machine learning
- Limited time window for insights

Week 7 Deliverables

**Project Lifecycle**

| Phase | Duration | Deadline | Key Deliverables |
|---|---|---|---|
| Week 7 | 1 week | 08/20/2025 | Business Understanding, Lifecycle, and Intake Report |
| Week 8 | 1 week | 08/26/2025 | Data |
| Week 9 | 1 week | 09/02/2025 | Data Cleansing and Transformation |
| Week 10 | 1 week | 09/09/2025 | EDA Jupyter Notebook file |
| Week 11 | 1 week | 09/16/2025 | EDA Presentation |
| Week 12 | 1 week | 09/23/2025 | Model Selection/ Dashboard |
| Week 13 | 1 week | 10/03/2025 | Final Report and Code |

**Data Intake report**

Name: Data Analyst: Cross-selling recommendation. How to increase cross-selling of Banking Products
Report date: August 20, 2025
Internship Batch: LISUM47
Version:1.0
Data intake by: Paula McCree-Bailey
Data intake reviewer: n/a
Data storage location: https://github.com/pmb-7684/Cross-Selling_Project
**Tabular data details:**
Total number of observations

- Test.csv 929,615 observations
- Train.csv 13,647,309 observations

Total number of files 2
Total number of features

- Test.csv 24 observations
- Train.csv 48 observations

Base format of the file .csv
Size of the data

- Test.csv 105 MB
- Train.csv 2.13 GB

**Proposed Approach**:
• When it comes to dedup validation (identification). Any duplicate observations will be

removed from the project.

• No assumptions.  We will be treating the data as if it's not clean.

Since we are not using any ML techniques, we will be focusing on the following analytical methods:

- Combine the Training and Testing datasets to complete the project.
- Descriptive statistics: Mean, median, mode of product ownership
- Correlation analysis: Identify relationships between product types and customer attributes.
- Cohort analysis: Track customer behavior over time.
- RFM analysis (Recency, Frequency, Monetary): Segment customers based on engagement.
- Basket analysis (association rules): Find common product combinations.

**GitHub Repo link**: pmb-7684/Cross-Selling_Project: Final Project for Data Glacier virtual internship

https://github.com/pmb-7684/Cross-Selling_Project