

# Banking Customer Churn Analysis

## Problem Statement

The banking sector faces significant challenges in retaining customers due to competition and shifting financial preferences. Customer churn directly affects profitability, making it crucial for banks to identify factors that influence customer exits and develop proactive retention strategies.

## Executive Summary

This project performs Exploratory Data Analysis (EDA) on a banking dataset to identify patterns and drivers of customer churn. Key demographic, behavioral, and financial features such as age, tenure, balance, geography, and account activity are analyzed. The analysis highlights important insights into why customers leave and helps in forming data-driven retention strategies.

## EDA Questions

### Basic Insights

1. What is the **distribution of target variable (Exited)**?
2. What is the **average age, balance, salary, and credit score** of customers who exited vs retained?
3. What is the **gender distribution** and does it impact churn?
4. Which **geography** (France, Spain, Germany, etc.) has higher churn?

### Behavioral Insights

5. Does **tenure** (years with bank) affect churn?
6. Does having a **credit card** reduce churn?
7. Do **active members** churn less than inactive ones?
8. How does the **number of products** relate to churn?

### Financial Insights

9. Is there a relation between **balance & churn**?
10. Is **estimated salary** related to churn?
11. Which credit score range has the highest churn?

### Key Conclusions

- About 20% of customers have churned, indicating class imbalance.
- Older customers are more likely to churn than younger ones.
- Shorter tenure customers show higher churn risk.
- Inactive members churn nearly twice as much as active ones.
- German customers have the highest churn rate among geographies.
- Balance alone does not prevent churn; even high-balance customers exit.
- Customers with 2 products are less likely to churn, but more products increase churn risk.
- Gender impact is small, with females slightly more likely to churn.- Estimated salary shows little correlation with churn.