# Customer Churn & Retention Analysis (Power BI)

## Project Overview

This project analyzes telecom customer churn patterns to identify high-risk segments and quantify the financial impact of customer attrition. The dashboard enables business stakeholders to prioritize retention strategies based on risk and revenue exposure.

## Business Objective

- Identify key drivers of churn
- Segment customers by contract type, tenure, and service usage
- Quantify lost monthly revenue due to churn
- Detect high-risk service combinations
- Provide actionable retention recommendations

## Tools & Technologies

Power BI | Power Query (ETL) | DAX | Star Schema Data Modeling | Conditional Formatting

## Data Preparation (Power Query)

- Corrected data types (MonthlyCharges, TotalCharges)
- Validated customerID as unique primary key
- Created tenure bins (0–12, 12–24, 24–48, 48+ months)
- Structured model into Fact_Churn and Dim_Services tables
- Cleaned null/duplicate records to ensure data integrity

## Key DAX Measures

- Total Customers
- Churn Rate % (using CALCULATE & DIVIDE)
- Lost Monthly Revenue
- Average Tenure

## Key Insights

- Month-to-month contracts show highest churn (~42%)
- Early-tenure customers (<12 months) show elevated churn
- Fiber optic customers without add-on services exceed 60% churn
- Electronic check payment correlates with higher churn
- Top 3 service combinations contribute significant revenue loss

## Business Recommendations

1. Incentivize long-term contracts
2. Improve onboarding for early-tenure customers
3. Bundle fiber optic with value-added services
4. Promote auto-pay methods

## Outcome

Developed a business-ready churn analytics dashboard enabling decision-makers to identify high-risk segments, quantify revenue exposure, and drive retention strategy.