**Customer Churn Analysis Dashboard 📊**

This repository contains a comprehensive **Customer Retention and Churn Analysis** project designed to identify key drivers of customer churn and provide actionable insights for improving retention strategies. The project leverages **Power BI**, **Python**, and **SQL** to create dynamic dashboards and conduct detailed data analysis.

**🎯 Project Highlights**

* **Dynamic Dashboard**: Interactive visualizations to explore churn trends, demographic insights, service usage patterns, and payment behaviors.
* **Key Metrics**:
  + Total Customers: 7,043
  + Churned Customers: 1,869
  + Churn Rate: 26.54%
  + Total Revenue Lost: 2.86M
  + Average Tenure: 32.37 months
* **Customer Insights**:
  + Churn rate analysis by gender, tenure range, and payment methods.
  + Breakdown of churned customers based on services like streaming, internet security, tech support, and more.
  + Correlation of contract type and paperless billing with churn behavior.
  + Identification of senior citizens and customers with dependents prone to churn.
* **Service and Revenue Analysis**:
  + Services with the highest churn rate.
  + Revenue impact due to churn across different customer contract types.
  + Churn distribution by tenure ranges (1–12 months, 13–24 months, etc.).

**🛠️ Tools and Technologies**

* **Power BI**: For developing an interactive dashboard.
* **Python**: Data preprocessing, handling missing values, and cleaning datasets.
* **SQL**: Advanced querying for deeper churn insights.

**📸 Dashboard Features**

1. **Churn Overview**: Highlights churn rates, customer demographics, and revenue loss.
2. **Churn by Services**: Analyzes churn rates across various subscribed services.
3. **Customer Demographics**: Insights into gender, senior citizen status, and partners/dependents among churned customers.
4. **Contract and Billing Analysis**: Explores the impact of contract type, payment methods, and billing preferences on churn.

**📝 Files Included**

* **Power BI File (.pbix)**: Interactive dashboard file for churn analysis.
* **Dataset (.xlsx)**: Contains customer and service data for the analysis.
* **Python Script (.py)**: Data cleaning and preprocessing script.
* **SQL Queries (.sql)**: Detailed queries for extracting and analyzing churn-related insights.
* **Supporting Documents**:
  + Problem Statement (.docx): Overview of the project’s focus areas and objectives.

**🔍 Insights and Learnings**

This project helped me:

* Understand the factors influencing customer churn.
* Develop advanced data cleaning and visualization skills.
* Build a storytelling approach for presenting insights.
* Implement retention strategies based on actionable data.