Business Problem Statement

A telecommunications company is experiencing increasing customer churn, which threatens its customer base and long-term growth. Although the company collects detailed data on customer demographics, contract types, payment methods, internet services, and service usage, it does not have clear visibility into **which customers are leaving, from which segments, and why.**
Management observes that customers behave differently based on:

- Contract type
- Payment method
- Internet service
- Tenure length
- Customer profile and location

However, they lack a clear, data-driven understanding of:

- Which customer segments are most likely to churn
- Which contracts, payment methods, and services are associated with higher churn
- Whether churn is driven more by customer profile, service type, or experience

The company wants to use customer data to **identify churn patterns, segment customers by risk, and uncover the main drivers of churn** in order to support more effective retention strategies.

Business Question :
"How can customer data be used to identify churn patterns, high-risk customer segments, and the key factors driving customer churn?"

Deliverables

1. **Data Preparation (Python / Jupyter)**
   The Telco customer dataset is cleaned, standardized, and transformed in Python using Jupyter Notebook. This includes handling missing values, correcting data types, and creating meaningful analytical features such as tenure groups that allow customers to be segmented by how long they have been subscribed.
2. **Data Analysis (SQL / PostgreSQL)**
   The prepared dataset is stored in PostgreSQL and analyzed using SQL to examine customer churn across multiple dimensions such as customer demographics, contract types, payment methods, internet services, tenure groups, geographic location, and churn reasons, enabling a structured and auditable analysis of churn behavior.
3. **Visualization (Power BI)**
   An interactive Power BI dashboard is built to visualize overall churn, churn by customer profile, churn by contract and payment behavior, churn by internet service and tenure, geographic churn distribution, and the main reasons customers leave, allowing stakeholders to quickly identify high-risk segments and key churn drivers.
4. **Insights & Recommendations**
   The results of the analysis are translated into business insights that explain who is most likely to churn and why, and these insights are used to support data-driven recommendations for improving customer retention and reducing future churn.