Summary and Recommendation

This analysis explores a telecom company's customer dataset to identify patterns and drivers of customer churn. Through thorough data cleaning, statistical exploration, and visual insights, key factors influencing churn were uncovered.

🔍 1. Dataset Overview

Total Records: 7,043 customers

Features: 21 variables including demographics, service subscriptions, billing, and churn status.

Objective: Understand which factors contribute most to customer churn (customers leaving the service).

🖌 2. Data Cleaning & Preparation

Blank values in TotalCharges for customers with tenure = 0 were identified and handled by replacing them with 0.

SeniorCitizen values were converted from 0/1 to more intuitive labels (Yes/No) to improve readability.

📈 3. Key Statistics

Feature	Mean	Min	Max
Tenure	32.4 months	0	458
Monthly Charges	₹64.76	₹18.25	₹118.75
Total Charges	₹2,283	₹18.80	₹8,684.80

These stats indicate a mix of new and long-term customers with varied billing behavior.

📉 4. Churn Rate

27% of customers have churned.

The churned customers are predominantly short-term users and those on flexible (monthly) contracts.

📊 5. Visual Insights (from Charts)

> Though images are not shown here, your markdown commentary describes clear visual patterns:

Contract Type & Churn:

Customers on Month-to-Month contracts have the highest churn rate.

Those on 1- or 2-year contracts are more loyal.

Payment Method:

Churn is higher among those using Electronic Check, which may indicate lower satisfaction or commitment.

Technical Services:

Lack of Online Security, Tech Support, and Device Protection is linked to higher churn.

Tenure & Churn:

Customers who leave typically have 1–2 months tenure, showing dissatisfaction early in their service.

🎯 6. Key Takeaways

Contract commitment matters: Long-term contracts reduce churn significantly.

Customer support services (like tech support, online security) play a critical role in retention.

Billing method is a strong behavioral signal—Electronic Check users are more likely to churn.

Focusing on early customer experience (first 2 months) could greatly improve retention.

✅ Overall Summary
This analysis successfully identifies behavioral, service-related, and financial patterns that influence churn. These insights can guide:

Customer retention strategies

Improved service offerings

Targeted interventions for at-risk customers