Telecom Churn Analysis: Summary from Jupyter Notebook

# 📌 1. Dataset Overview

• File loaded: customer.csv  
• Libraries used: pandas, numpy, matplotlib.pyplot, seaborn  
• Data Cleaning: TotalCharges column cleaned by replacing blanks with 0 and converting to float.

# 👥 2. Customer Demographics & Churn

• SeniorCitizen column was transformed for readability.  
• Churn distribution shows fewer customers churned.  
➡️ Insight: There is a significant imbalance, with fewer customers churning.

# 👩‍🦳 3. Gender & Senior Citizens

• Gender-wise churn showed no significant variation.  
• Senior citizens were visualized separately.  
➡️ Insight: Gender has little effect, but senior citizens may need targeted retention.

# ⏳ 4. Tenure

• Tenure distribution was plotted with a histogram.  
➡️ Insight: Many customers have low tenure, suggesting early-stage churn is common.

# 📝 5. Contract Type vs. Churn

• Countplot showed churn distribution across contract types.  
➡️ Insight: Month-to-month customers churn significantly more.

# 🧾 Other Features Analyzed

• PhoneService, MultipleLines, InternetService, OnlineSecurity, OnlineBackup, DeviceProtection, TechSupport, StreamingTV, StreamingMovies were explored.  
➡️ Common Insight: Lack of support or security services increases churn risk.

# ✅ Consolidated Key Takeaways

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| Category | Key Insight |
| Churn Distribution | ~25–30% of customers churned. |
| Tenure | Short-tenure customers churn more. |
| Contract Type | Month-to-month users churn the most. |
| Senior Citizens | Need focused retention efforts. |
| Online Services | Lack of security/support increases churn. |
| Gender | No major impact on churn. |