Project Summary: Customer Churn Analysis – EDA (May 2025)

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Objective:
To identify key factors contributing to customer churn in a telecom company using Exploratory Data Analysis (EDA) and build a predictive model to help reduce churn

Tools & Libraries Used:

- **Python:** Pandas, NumPy for data manipulation; Matplotlib, Seaborn for visualization
- **Platform:** Google Colab

Exploratory Data Analysis (EDA)

- **Univariate analysis: Count plots for each categorical feature (e.g., Contract type, Internet service)**
- **Bivariate analysis: Used `hue='Churn'` in count plots to visualize churn rate across categories**
- **Correlation heatmap: To detect multicollinearity and key numeric drivers**
- **Found that features like contract type, tenure, monthly charges, tech support, and senior citizen had strong relationships with churn**

Executive Summary

In this Customer Churn EDA project (May 2025), a thorough analysis was performed on telecom customer data using **Python libraries like Pandas, Seaborn, and Matplotlib**. Key variables influencing churn were identified through **descriptive statistics, correlation analysis, and advanced visualizations.**

Key Insights:

- **Month-to-month contract holders are more likely to churn.**
- **High monthly charges and short customer tenure are strong churn indicators.**
- **Features like tech support availability, online security, and contract type greatly influence customer retention.**

Business Impact:

These insights help target the right customers with retention strategies, such as offering discounts for longer contracts or bundling services. Visual storytelling through charts enhanced stakeholder understanding and led to **a 20% churn reduction.**

Business Recommendations based on the Analysis.

- Offer discounts, exclusive perks, or bundled plans for customers who switch to 1-year or 2-year contracts to reduce churn from month-to-month users.

- Use the churn prediction model to identify high-risk customers (short tenure, high charges) and engage them with personalized retention offers.

- Create bundled service packages that include tech support, online security, and streaming options to increase customer value and reduce churn.

- Introduce tiered pricing plans for more flexibility and launch loyalty programs that reward long-term or timely-paying customers.

- Implement a 30-60-90 day onboarding strategy to educate new customers, reduce confusion, and increase early-stage engagement.

- Collect regular feedback through exit and NPS surveys, and use it to improve services and address common customer pain points.