Telecom Customer Churn Analysis

Key Descriptions:

Data Preprocessing:

Missing values for tenure and total charges were replaced with 0.

Binary values (0 and 1) were converted to "Yes" and "No" for easier interpretation.

Churn Insights:

Overall churn rate: 26.54% of customers have churned.

Senior citizens are more likely to churn compared to other demographics.

Customers with shorter tenure (e.g., 1-2 months) tend to churn more frequently than long-term customers.

Month-to-month contracts have a higher churn rate compared to yearly contracts.

Service Distribution:

Subplots analyzed customer usage across multiple services (e.g., Phone Service, Internet Service, Streaming TV, etc.).

Notable trends include:

Higher "No" responses for services like OnlineSecurity, Online Backup, and Device Protection.

Strong adoption of Phone Service among customers.

Key Skills

Data Analysis: Experienced in analyzing customer behavior and churn patterns using statistical techniques.

Data Cleaning and Preparation: Proficient in handling missing values, normalizing data, and transforming datasets for improved interpretability.

Visualization: Skilled in creating visual insights using libraries like Matplotlib and Seaborn for actionable conclusions.

Project Highlights

Customer Churn Analysis:

Analyzed customer data to identify factors contributing to a 26.54% churn rate.

Conducted demographic segmentation and identified high churn rates among senior citizens and short-tenure users.

Revealed that customers with month-to-month contracts were more likely to churn than those with yearly contracts.

Visualized service usage patterns (e.g., Phone Service, Internet Service) and detected significant gaps in feature adoption like Online Security and Online Backup.

Provided actionable recommendations to improve customer retention through data-driven insights.

Technical Expertise

Languages: Python (Pandas, NumPy, Seaborn, Matplotlib).

Tools: Jupyter Notebook, SQL for data extraction.

Techniques: Exploratory Data Analysis (EDA), Feature Engineering, Statistical Visualization.

Impact

Improved understanding of customer behaviors and contract preferences to guide business retention strategies.

Delivered clear insights through compelling visualizations for cross-functional teams, including business and technical stakeholders.