

CAPSTONE PROJECT: TECHNICAL REPORT  
Data-Driven Churn Analysis

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1. Methodology:

- Data Cleaning: Removed missing values, cast features to correct types.
- Descriptive Analysis: Frequency counts and distribution metrics.
- Statistical Testing: Chi-Square test for categorical relationship.
- Correlation: Pearson analysis for numerical variables.

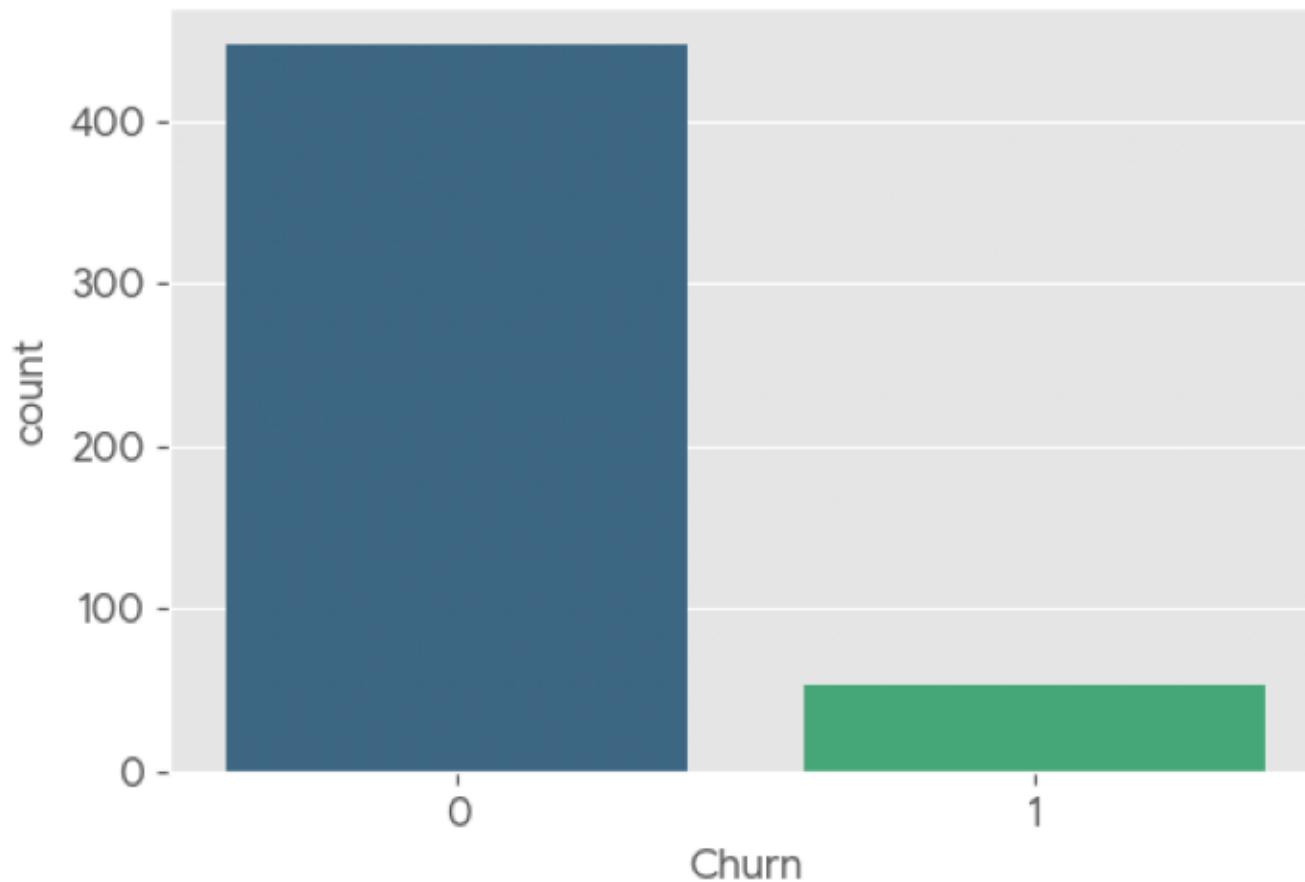
2. Statistical Results:

- Chi-Square p-value (Contract vs Churn): 9.5874e-07  
( $p < 0.05$  indicates a significant relationship)
- Correlation (Tenure vs Churn): -0.509

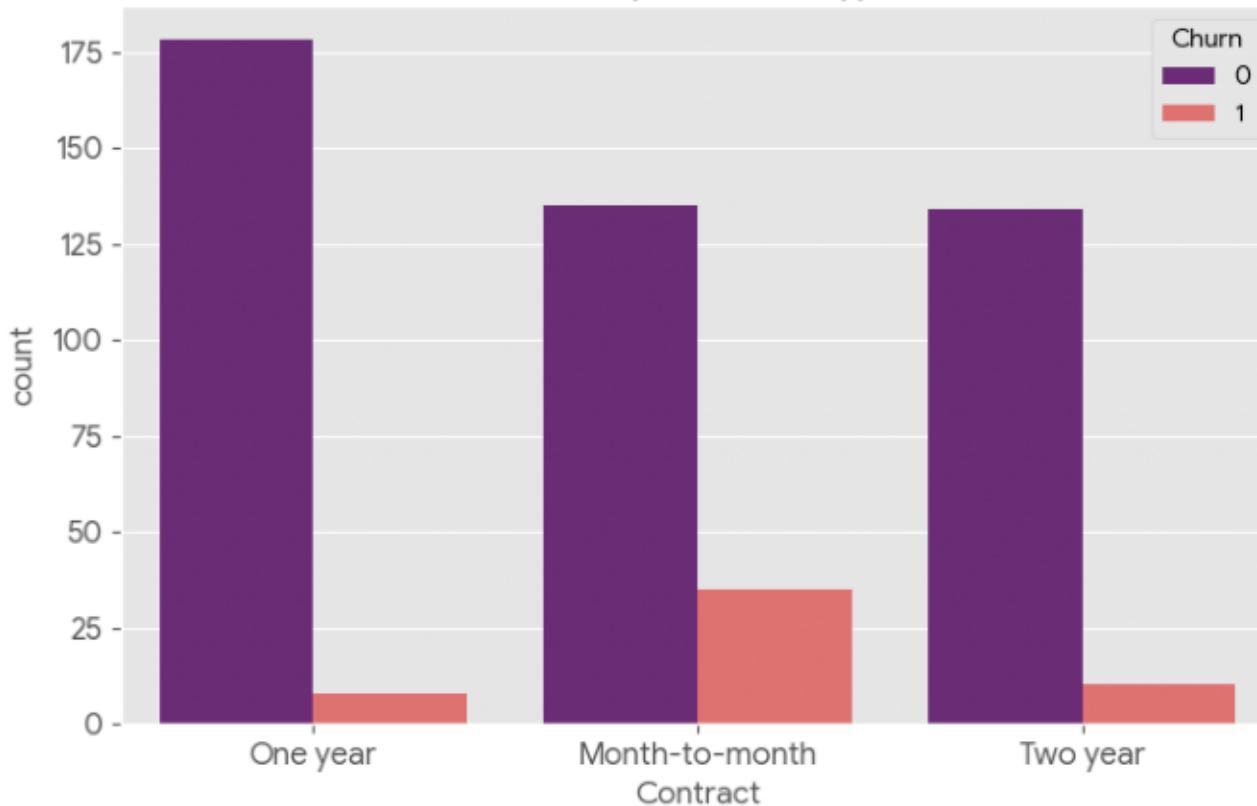
3. Implementation Plan:

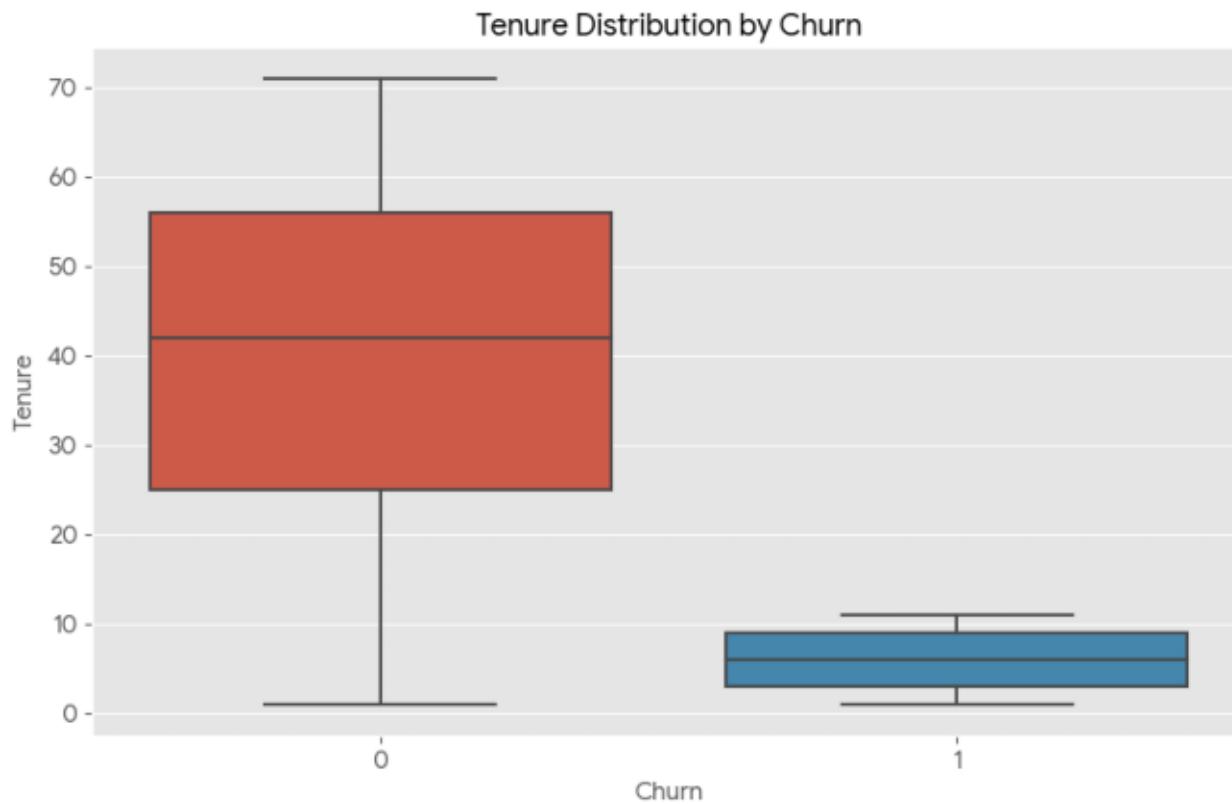
- Phase 1: Deploy retention campaigns for month-to-month users.
- Phase 2: Refine pricing strategies for high-charge tiers.
- Phase 3: Monitor tenure cohorts quarterly.

## Overall Churn Distribution



### Churn by Contract Type





Monthly Charges Density: Churn vs No Churn

