Functional Requirements Document (FRD)

# Project Title: Customer Churn Prediction Model

## System Overview

This churn prediction model uses logistic regression to classify customers into churn and non-churn categories. The system processes a cleaned CSV dataset, performs feature engineering, and outputs churn probability.

## Functional Requirements

1. Load dataset from CSV file.  
2. Clean and preprocess data: handle missing values, encode categorical features.  
3. Perform exploratory data analysis.  
4. Train logistic regression model using scikit-learn.  
5. Evaluate model performance using confusion matrix and classification report.  
6. Generate insights from model coefficients.

## Data Requirements

- Features: customer demographics, service type, billing information.  
- Target Variable: Churn (Yes/No).  
- Approximately 7,000+ records.

## Non-functional Requirements

- Usability: Should be well-documented and easy to understand.  
- Maintainability: Code and documentation should be organized for future extension.

## Constraints

- No real-time system integration.  
- Self-paced project with no real stakeholder feedback.  
- Based on static historical data.