CLV Model Interface - Project Report

# Overview

The Customer Lifetime Value (CLV) Predictor is a comprehensive tool designed to help businesses predict and analyze the long-term value of their customers using advanced machine learning techniques.

# Key Features

* Data Input Options: Upload CSV files, generate sample data, or manually enter customer information
* Advanced Predictions: ML-powered CLV predictions with confidence intervals
* Customer Segmentation: Automatic segmentation into High Value, Medium Value, and Low Value customers
* Interactive Visualizations: Dynamic charts and graphs for data exploration
* Churn Risk Analysis: Predict which customers are at risk of churning
* Export Capabilities: Download results in CSV or Excel format

# Data Requirements

The model requires the following customer data fields:

* customer\_id: Unique identifier
* age: Customer age (18-100)
* total\_purchases: Number of purchases made
* avg\_order\_value: Average order value in USD
* days\_since\_first\_purchase: Days since first purchase
* days\_since\_last\_purchase: Days since last purchase
* acquisition\_channel: Marketing channel (Online, Store, Social Media, Referral)
* location: Geographic location (Urban, Suburban, Rural)
* subscription\_status: Current status (Active, Inactive, None)

# Model Parameters

* Time Horizon: Prediction period (6, 12, 24, or 36 months)
* Discount Rate: Annual discount rate for future cash flows (0-20%)
* Confidence Threshold: Minimum confidence level for predictions (50-95%)

# Customer Segments

* High Value: Top 20% of customers by CLV
* Medium Value: Middle 60% of customers by CLV
* Low Value: Bottom 20% of customers by CLV

# Usage Instructions

1. Select your data source from the sidebar
2. Configure prediction parameters
3. Click "Generate CLV Predictions"
4. Explore results using interactive visualizations
5. Export predictions for further analysis

# Technical Details

The model uses ensemble machine learning techniques combining:

* Random Forest Regression
* Gradient Boosting
* Feature engineering for temporal and behavioral patterns
* Cross-validation for model reliability

# Support

For technical support or questions, contact: kratikasoni73@gmail.com