Solution Design Document – Car Price Prediction

Version History
v1.0 Initial draft

Executive Summary
This project aims to build a recommendation system to suggest relevant Prices to any one who is willing to buy a used car.

Purpose of Solution Design Document
This document defines the design, scope, and technical approach for the recommendation system.

Project Background
As a F1 Student I had a dream to buy a car but I was always hesitant to buy a car and negotiate price for used car hence my aim to build this project and give rough idea how much a used might cost us.

Project Team
Data Scientist, Data Engineer, Business Analyst, Project Manager

Point of Contact
Project Manager – client side, Data Science Lead – vendor side

Business Requirements
Provide personalized prices for used car.

Scope
Includes data ingestion, model training, API deployment and reporting.

Success Criteria

Solution Overview
ML-based collaborative filtering with content-based fallback.

Automation Flow
[To be added]

Implementation Timeline

6 weeks total – 2 weeks data prep, 2 weeks modeling, 2 weeks deployment.

Technology Stack
Python, Pandas, Scikit-learn, Azure ML, Power BI

Current State Process Flow
[To be added]

Future State Process Flow
[To be added]

Functional Requirements
Generate top-5 recommendations per user in real time.

Technical Requirements

API latency < 200ms, daily batch retraining.

Assumptions and Considerations

Sufficient historical data available.

Risks and Dependencies

Data quality issues, changing business logic.