

Client Requirement Document (CRD)

Project Title: Analysis of Pre-Owned Car Market Listings

Prepared For: Client Stakeholders

Prepared By: Data Analysis Consultant

1.0 Executive Summary

This document outlines the business requirements for analyzing the provided dataset (`Car.csv`), which contains detailed listings for pre-owned Maruti Suzuki vehicles across India. The dataset is rich with information on pricing, vehicle specifications, geographical distribution, and sales-related metrics. The primary goal is to transform this raw data into actionable business intelligence to understand market dynamics, pricing strategies, and customer engagement to drive sales and operational efficiency.

2.0 Background

The client possesses a comprehensive dataset of used car listings. The data includes key attributes such as sale price, original price, year of manufacture, kilometers driven, fuel type, location, advertisement engagement metrics, and various other vehicle and sale-related details. There is a clear opportunity to leverage this data to gain a competitive edge in the used car market.

3.0 Business Objectives

The overarching business goals this project aims to support are:

- **Increase Sales Conversion:** Identify the features that make a car sell faster and for a better price.
- **Optimize Pricing Strategy:** Understand the key factors that determine a car's optimal selling price to maximize profit and competitiveness.
- **Improve Inventory Management:** Identify which models, variants, and vehicle types are in highest demand in specific regions.
- **Enhance Marketing Effectiveness:** Understand what drives customer engagement (views) on listings to improve ad performance.

- **Regional Strategy Development:** Tailor sales and inventory strategies based on geographic performance and preferences.

4.0 Scope of Work (Proposed Analysis)

Based on the dataset, the analysis will be scoped to answer the following key business questions:

4.1 Pricing & Valuation Analysis:

- What is the average depreciation rate for different models (e.g., Wagon R, Swift, Alto K10) over time?
- How do factors like `Kms_Run`, `Year_Of_Manufacturing`, `Fuel_Type`, and `City` impact the `Sale_Price`?
- Can we build a model to predict the fair market value (`Sale_Price`) of a car based on its attributes?
- What is the typical difference between the `Original_Price` and the `Sale_Price` (depreciation)?

4.2 Geographic & Demographic Analysis:

- Which cities (`City`, `Registered_City`) have the highest volume of listings and the highest average prices?
- Are there specific models that are more popular in certain cities or states?
- Is there a price difference for the same car model in different cities?

4.3 Customer Engagement & Sales Performance:

- Which car features (e.g., `Transmission`, `Fuel_Type`, `Assured_Buy`) lead to higher `Times_Viewed`?
- Do `Is_Hot` or `Assured_Buy` cars command a price premium and get more views?

4.4 Vehicle Specification Analysis:

- What is the market share of different `Fuel_Types` and `Transmission` types?
- How does the `Total_Owners` field affect the sale price?
- Are cars with `Warranty_Available` or `Fitness_Certificate` priced higher?

5.0 Data Description & Sources

- **Primary Data Source:** The provided `Car.csv` file.
- **Key Data Categories:**
 - **Vehicle Identification:** `Car_Name, Make, Model, Variant, Body_Type`
 - **Vehicle Specifications:** `Year_Of_Manufacturing, Fuel_Type, Transmission, Kms_Run`
 - **Pricing & Financials:** `Sale_Price, Original_Price, Broker_Quote, EMI_Starts_From, Booking_Down_Payment`
 - **Location & Registration:** `City, Registered_City, Registered_State, RTO`
 - **Listing & Sales Metrics:** `Ad_Created_On_Date, Times_Viewed, Is_Hot, Assured_Buy, Reserved, Car_Rating, Source`
 - **Vehicle History:** `Total_Owners, Fitness_Certificate, Warranty_Available`

6.0 Target Deliverables

- A fully populated and cleaned `HealthData` table within a SQL Server database.
- A SQL script file (`.sql`) containing all queries used for the analysis.