**Car Price Prediction using Linear Regression Technique of Machine Learning**

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**ABSTRACT-** In 21’st century, everything is automated including the things we use daily such as washing machines, dishwashers, refrigerators, bus doors, air conditioner systems turning everything in a single click, etc.

In this fast-moving generation, the present study proposes the newer concept of voice-controlled devices that recognizes one’s voice. With an idea and motivation to help everyone we came up with a solution to get an appropriate estimate of one’s car using Machine Learning Techniques which will save a lot of time and money.

A car price prediction has been a high interest research area, as it requires noticeable effort and knowledge of the field expert. Considerable number of distinct attributes are examined for the reliable and accurate prediction. To build a model for predicting the price of used cars in, we applied one of the machine learning techniques i.e., Linear Regression.

**INTRODUCTION-** In our day to day lives everyone buys and sells a car everyday. Now there are limited facilities and applications to get an appropriate price for one’s car. Now we need an application to get an estimate value of the car. We use a linear regression algorithm for this purpose. This object comprises of Car as an object and the price for every car entered

dataset. The dataset we work on in this venture is imaginary i.e., not real.  
Linear Regression allows us to compare our entered data to the existing data in the dataset and gives us an estimate value. Car works as a main object. The attributes such as Company Name, Kilometres Driven, Fuel Type and Year of Purchase etc are upon which the comparison is performed using Machine Learning Techniques.  
Also, further on discussing the imperatives, we have utilized composite configuration design, which make it well extendable to include or uproot as numerous.

1. INTRODUCTION

In our day to day lives everyone buys and sells a car every day. Now there are limited facilities and applications to get an appropriate price for one’s car. Now we need an application to get an estimate value of the car. We use a linear regression algorithm for this purpose. This object comprises of Car as an object and the price for every car entered in the

1. LITERATURE REVIEW

There are many Car Price Prediction Models in the market available but which consider various indirect attributes and make the process slow and tiring. Our system is efficient and easy to use. Our system is a Car Price Prediction System which gives us an estimation of a car. The estimation is derived on the basis of five direct attributes that are Company, Name, Fuel Type, Year of Purchase and Kilometers driven. These attributes are essential to get the price of any car. The dataset we use is cleaned, reduced and transformed to get optimum and accurate results. The dataset is passed as an input, Linear Regression Algorithm is applied to it to get a prediction. The dataset after being transformed is passed as an input and the output we get that is the price is accurate and reliable.

V .RESOURCES USED

**Software Specification:**

|  |  |  |
| --- | --- | --- |
| **Sr No.** | **Resource** | **Configuration** |
| 1. | Operating System | Windows 10 |
| 2. | Coding language | Python, R |
| 3. | Software | Jupyter Notebook |

**Hardware Specifications:**

|  |  |  |
| --- | --- | --- |
| **Sr.No** | **Resource** | **Configuration** |
| 1 | Processor | Intel i5 core |
| 2 | Speed | 3.6 GHz |
| 3 | RAM | 8 GB |
| 4 | Hard Disk | 1 TB |

1. MOTIVATION

While setting up the genuine undertaking and report of the equivalent, we had a disarray and that how we'll begin the venture and what we'll do in the event that it doesn't work consummately, etc. Absence of inspiration was ascending in our gathering yet our venture manager guided us and encouraged us in finding the right sources which are needed to achieve our task.

First, we thought we’ll complete our project using Java language but after studying Java a little bit deeper, we’ve got to know that Python is simpler and more efficient language compare to Java. At that point we immediately started learning Python. and in the wake of the code that are available in Python language we got completely energized and roused to do further exercises to finish our venture. In this way, by overcoming the obstacles in our way we were fully focused and motivated for the completion of our project.

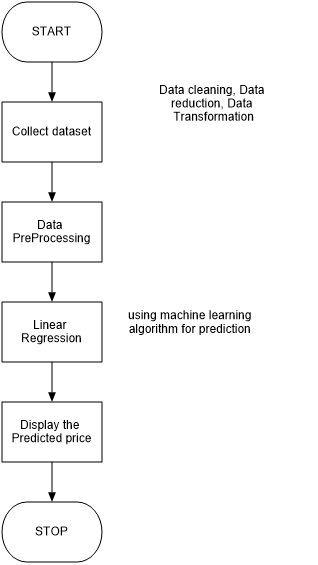
integrated into all of our activities in the years to come. In our day to day lives millions of cars are bought and sold. Like anyone else, if we decide to sell our car, we wish to get the best price. Proposed system of our project will help to generate it automatically also helps to save time.

VI.PROBLEM STATEMENT

### In our day to day lives millions of cars are bought and sold. Like anyone else, if we decide to sell our car, we wish to get the best price. Proposed system of our project will help to generate it automatically also helps to save time. It avoids the complexity of not knowing the estimated value of your car in today’s automation market. In our project we are going to use Machine Learning Techniques reduce the risk of not being aware. These algorithms incorporate a numeral of strategy, aimed to improve the cooperativeness of the search operation. The system will take various inputs like Company Name, Kilometres Driven, Fuel Type, Year of Purchase, etc. By relying on these inputs, it will generate the estimate value of one’s car. This will integrate by making optimal use of all resources in a way that will best suit the constraints.

cleaned the data which gave us the attributes based on which we have developed our system upon. We processed the data using multiple linear regression technique for predicting the price of a particular car.

**ARCHITECTURAL DESIGN**



1. In this system, we have created a website with some attributes I.e., company name of the car, model of the car, year of purchase, fuel type and number of kilometers driven which will estimate the price of the car. To get the estimated price of the car, we have taken an imaginary dataset.
2. PROPOSED SYSTEM

### Our research aims to develop a good machine learning model which offers accurate prediction of the price of a car using linear regression. In order to do this, we needed some previous data set of pre-owned cars for estimating the car price on the basis of some attributes like price, year of purchase, kilometers travelled, model etc. These attributes are taken as independent variables whereas the car price is dependent on these variables.

### The equation of linear regression which combines our attributes and displays the result is based on:

### Y = β0 + β1X

### In the above represented equation β0 , β1 represents the regression coefficients, Y as the output or required variable and X shows the input. Relation in case of single input is represented by the above equation. For multiple inputs by the user the given below equation is used.

### Y = β0 + β1X1+ β2X2+……. βnXn

There are many attributes and features that impact the price of a car which ultimately generates large sets of data which leads to complexity in analysing it. The focus of our research is to build such a model which is capable of dealing with high complexity algorithms and gives accurate results irrespective of the magnitude of the data set.

The input data set which is collected from online website Quikr in the time span of three to four months ranging from top shelf cars to daily commute cars. The collected data included variable inputs like colour, rims, body type, transmission, engine capacity, register city, power steering, alloys, mileage etc. which was super un-cleaneddata  
Once the data collection was over we

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**CONCLUSION-** Our Car Price Prediction System is used to get an accurate estimation of a car we would want to get the resale value of. Our Car Price Prediction System takes five attributes as inputs and based on those inputs we get an estimated price. We use Machine Learning Techniques such as Linear Regression to get our predicted price. Our Car Price Prediction System is reliable and efficient

1. In the dataset, some of the data were repeated so for that data cleaning and data reduction operations were performed and the data was transformed.
2. When we select all the attributes, the data starts to process and finds whether the data is available in the dataset or not.
3. When the processes starts, using machine learning algorithm technique I.e., Linear Regression, the estimated price of the car is predicted and displayed.
4. FUTURE SCOPE

Computer knowledge has truly transformed the way smart systems are used in our daily lives, and we are only beginning to understand how they will be

In our project we are going to use Machine Learning Techniques reduce the risk of not being aware.

These algorithms incorporate a numeral of strategy, aimed to improve the cooperativeness of the search operation. We can use a real dataset by the resources provided in the future and implement this project in real life. Implying we get real data we could actually implement this project in real life and benefit from it in many ways.