DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

IV YEAR / VII SEMESTER (ODD)

BATCH: 2019-2023

ACADEMIC YEAR 2022-2023

NAALAIYA THIRAN

TEAM ID : **PNT2022TMID15486**

TITLE OF THE PROJECT : **Car Resale Value Prediction**

OMIN : **Applied Data Science**

TEAM MEMBERS : J.Mohanasriharan

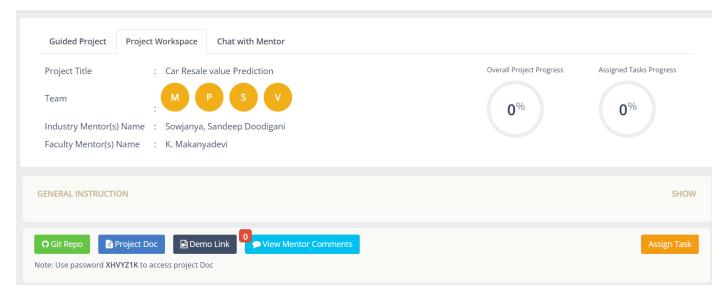   S.Saran

              C.Venis

              M.Prathab

INDUSTRY MENTOR(S) NAME : Sowjanya, Sandeep Doodigani

FACULTY MENTOR(S) NAME : K. Makanyadevi

Guided Project	Project Workspace	Chat with Mentor

Project Title : Car Resale value Prediction

Team : M P S V

Industry Mentor(s) Name : Sowjanya, Sandeep Doodigani

Faculty Mentor(s) Name : K. Makanyadevi

Overall Project Progress 0%

Assigned Tasks Progress 0%

GENERAL INSTRUCTION   SHOW

Git Repo   Project Doc   Demo Link   0   View Mentor Comments   Assign Task

Note: Use password **XHVYZ1K** to access project Doc

ABSTRACT

With difficult economic conditions, it is likely that sales of second-hand imported (reconditioned) cars and used cars will increase. In many developed countries, it is common to lease a car rather than buying it outright. After the lease period is over, the buyer has the possibility to buy the car at its residual value, i.e. its expected resale value. Thus, it is of commercial interest to sellers/financers to be able to predict the salvage value (residual value) of cars with accuracy.

In order to predict the resale value of the car, we proposed an intelligent, flexible, and effective system that is based on using regression algorithms. Considering the main factors which would affect the resale value of a vehicle a regression model is to be built that would give the nearest resale value of the vehicle. We will be using various regression algorithms and algorithm with the best accuracy will be taken as a solution, then it will be integrated to the web-based application where the user is notified with the status of his product.

LITERATURE SURVEY

1.1 TITLE: VEHICLE RESALE PRICE PREDICTION USING ML

AUTHOR: B.Lavanya, Sk.Reshma, N.Nikitha,M.Namitha

DESCRIPTION:

The production of vehicles has been consistently expanding in the previous decade, with more than 70 million traveler's vehicles being delivered in the year 2016. This has brought about the trade-in vehicle market, which all alone has become a roaring industry. The new approach of online gateways has worked with the requirement for both the client and the merchant to be better educated about the patterns and examples that decide the worth of a pre-owned vehicle on the lookout. Utilizing Machine Learning Algorithms like Linear Regression, Multiple Regression. we will attempt to foster a factual model which will actually want to anticipate the cost of a pre-owned vehicle, in light of past shopper information and a given arrangement of highlights. We will likewise be contrasting the forecast precision of these models to decide the ideal one.

1.2 TITLE : Car Price Prediction using Machine Learning Techniques

AUTHOR: Enis Gegic, Becir Isakovic, Dino Keco, Zerina Masetic, Jasmin Kevric

DESCRIPTION:

A car price prediction has been a highinterest 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 Bosnia and Herzegovina, we applied three machine learning techniques (Artificial Neural Network, Support Vector Machine and Random Forest). However, the mentioned techniques were applied to work as an ensemble. The data used for the prediction was collected from the web portal autopijaca.ba using web scraper that was written in PHP programming language. Respective performances of different algorithms were then compared to find one that best suits the available data set. The final prediction model was integrated into Java application. Furthermore, the model was evaluated using test data and the accuracy of 87.38% was obtained.

1.3 TITLE: **Predicting Used Car Prices**

AUTHOR: Kshitij Kumbar,Pranav Gadre,Varun Nayak

DESCRIPTION:

Determining whether the listed price of a used car is a challenging task, due to the many factors that drive a used vehicle's price on the market. The focus of this project is developing machine learning models that can accurately predict the price of a used car based on its features, in order to make informed purchases. We implement and evaluate various learning methods on a dataset consisting of the sale prices of different makes and models across cities in the United States. Our results show that Random Forest model and K-Means clustering with linear regression yield the best results, but are compute heavy. Conventional linear regression also yielded satisfactory results, with the advantage of a significantly lower training time in comparison to the aforementioned methods.

1.4 TITLE: Car Resale Value Prediction System

AUTHOR: Dhwani Nimbark, Akshat Patel, Sejal Thakkar

DESCRIPTION:

Used car resale market in India was marked at 24.2 billion US dollars in 2019. Due to the huge requirement of used cars and lack of experts who can determine the correct valuation, there is an utmost need of bridging this gap between sellers and buyers. This project focuses on building a system that can accurately predict a resale value of the car based on minimal features like kms driven, year of purchase etc. without manual or human interference and hence it remains unbiased.

1.5 TITLE: Predicting the Price of Pre-Owned Cars Using Machine Learning.

AUTHOR: G. Kalpana, Dr. A. Kanaka Durga, T. Anoop Reddy, Dr. G. Karuna

DESCRIPTION:

Storm Motors Is An E-Commerce Company Who Act As Mediators Between Parties Interested In Selling And Buying Pre-Owned Cars. They Have Recorded Data About The Seller And Car Details, Registration Details, Web Advertisement Details, Make And Model Information And Price. The Company Wishes To Develop An Algorithm To Predict The Price Of Pre-Owned Cars Based On Various Attributes Associated With The Car To Make A Sale Quickly, If The Price Is Reasonable And Satisfies Both The Seller And Buyer, By Comparing The Price Of Various Car Models Based On Car Features To Improve Their Business. In This Paper, We Have Conducted A Comparative Study Using Machine Learning Algorithms Like Linear Regression And Random Forest Algorithms Which Is Implemented With Jupyter Note Book. The Study Shows That Linear Regression Algorithm Performance Is More Than Random Forest Algorithm. We Have Also Experimented With Auto Ai Experimentation In Ibm Cloud Watson Studio, Which Automatically Builds The Best Predictive Model By Comparing With Other Algorithm, With Accurate Measures. In This Auto Ai Experiment We Have Found That Linear Regression Is Performing Better Than Ridge Algorithm And Random Forest. The Main Objective Of This Paper Is To Find The Best Predictive Model For Predicting Pre-Owned Car Price.

S.NO	YEAR	RESEARCHER	TITLE	ALGORITHM	REMARKS
1.	2021	B.Lavanya, Sk.Reshma, N.Nikitha, M.Namitha	VEHICLE RESALE PRICE PREDICTION USING ML	Random forest and Decision Tree	Learned data preprocessing
2.	2019	Enis Gegic, Becir Isakovic, Dino Keco, Zerina Masetic, Jasmin Kevric	Car Price Prediction using Machine Learning Techniques	SVM and ANN	Learned how the algorithm works
3.	2019	Kshitij Kumbar, Pranav Gadre, Varun Nayak	Predicting Used Car Prices	Linear regression, Random forest	Learned data validation
4.	2021	Dhwani Nimbark, Akshat Patel, Sejal Thakkar	Car Resale Value Prediction System	Gradient Boosting	Learned gradient boosting algorithm
5.	2022	G. Kalpana, Dr. A.Kanaka Durga, T. Anoop Reddy, Dr. G. Karuna	Predicting the Price of Pre-Owned Cars Using Machine Learning.	Linear regression, Random forest, Gradient Boost, XG Boost	Learning all regression techniques

REFERENCE:

1. **Shen Gongqi, Wang Yansong, Zhu Qiang** A New Model For Residual Value Prediction Of The Used Car Based On Bp Neural Network And Nonlinear Curve Fit" 011 Third International Conference On Measuring Technology And Mechatronics Automation, 978-0-7695-4296-6/11 $26.00 © 2011 Ieee

2. **Jose Manuel Pereiraª*, Mario Bastoa , Amelia Ferreira Da Silva"** The Logistic Lasso And Ridge Regression In Predicting Corporate Failure" Sciencedirect, 3rd Global Conference On Business, Economics, Management And Tourism, 26-28 November 2015, Rome, Italy.

3. **Frost, J.** 2013. Regression analysis: How do I interpret Rsquared and assess the goodness-of-fit. The Minitab Blog, 30. Available online from: http://blog.minitab.com/blog/adventures-instatistics/regression-analysis-how-do-i-interpret-rsquared-and-assess-the-goodness-of-fit (Last accesed: 29-11-206).

4. **Du et al, (2009).** Practice Prize Paper—PIN Optimal Distribution of Auction Vehicles System: Applying Price Forecasting, Elasticity Estimation, and Genetic Algorithms to Used-Vehicle Distribution.

5. **Minitab Express Support**. Interpret all statistics for Predict.[Online] Available from: http://support.minitab .com/en-us/minitab-express/1/help-and-how-to/modeling -statistics/regression/how-to/predict/interpret-the-results/ all-statistics/