Shree Rahul Education Society's (Regd.)
SHREE L. R. TIWARI COLLEGE OF ENGINEERING
Kanakia Park, Near Commissioner's Bungalow, Mira Road (East), Thane 401107, Maharashtra
(Approved by AICTE, Govt. of Maharashtra & Affiliated to University of Mumbai)
NAAC Accredited | ISO 9001:2015 Certified
Tel. No.: 022-28120144 / 022-28120145 | Email: slrtce@rahuleducation.com | Website: www.slrtce.in
DEPARTMENT OF COMPUTER ENGINEERING

# Submission of Approved Project Proposal Prepared under Supervision of guide

**Academic Year: 2021-2022** **Program: Computer Engg (UG)**

**Class: Final Year Computer Engg.** **Semester: V (Fifth)**

**Course Name: Mini-Project – 2A** **Course Code: CSM501**

**Group Unique ID: AY21TECSM50115**

**Team: <Zenith>**

| Role | Name of Group Members (Last name-First Name-Middle Name) | Roll No. | Mobile No. | Email ID | Gender (M/F) |
|---|---|---|---|---|---|
| GL | Pooruvi Singh | 56 | 9769389039 | pooruvi.singh@slrtce.in | F |
| GM 1 | Aditya Kini | 27 | 9004069948 | aditya.kini@slrtce.in | M |
| GM 2 | Suraj Maurya | 32 | 9769697116 | suraj.maurya@slrtce.in | M |
| GM 3 | Omkar Tendolkar | 59 | 8169181092 | omkar.tendolkar@slrtce.in | M |

## Project Proposal

### 1.1 Project Title.

Car and House price prediction web application

## 1.2 Number of Students (Strength of Group)

Four

## 1.3 Project Group members Qualifications (Abilities/specialization/etc.)

1)Pooruvi Singh(leader): C C++ with STL , Python , Django, Familiar with MYSQL, SQlite ,MangoDB ,Currently Learning Basics of ML and AI , Networking and Web development

2)Aditya Kini: Good knowledge in Game development , Python C C++
3)Omkar Tendolkar: Python , C C++ , Good Knowledge about frontend(HTML and CSS) , MYSQL, SQlite , currently learning backend (PHP)

4)Suraj Maurya: familiar with python , R, C, HTML, CSS, Django,javascript
Started learning networking

## 1.4 Statement of Problem

*To develop Machine learning and artificial intelligence models that predicts the resale values of used cars on the basis of various independent variables like a)car-brand b)Kms driven c)fuel type d)seler-type and the value of housing properties on the basis of independent variables like a)Area b)location c)Number of bedrooms d)maintenance by using regression techniques like linear regression lasso regression and random forest regression*

## 1.5 Domain of Project

Intelligent System Design And Development

## 1.6 Type of Project (application, product, research, review etc.)

Application

## 1.7 Project Objectives

1) To develop a web application that helps users to predict the resale value of the used cars and housing properties
2) To help users evaluate the worthiness of the vehicle
3) To help users evaluate the real time price of the housing properties and bring more transparency to real estate
4) To generate the report for the resale of the car or the housing property
5) To provide users with the platform to endross for their vehicle or housing property
6) To study various regression techniques like linear regression lasso regression and random forest regression which helps in generating predictive analysis model
7) To carry out data exploration and analysis
8) To test the data against various regression models for analyzing the performance and accuracy and selecting the best model with highest accuracy
9) To develop the frontend
    a) Developing the user interface of admin
    b) Developing the user interface for end users
    c) maintaining the data which gets collected over the time
    d) Developing the forum where user can endros for their vehicle or property
10) To develop backend
    a)To create database using real time databases like MYSQL or SQLITE
    b)To create website using django or flask
11) To test the working and effectiveness of the system

## 1.8 Technical Approach

1)Collection of dataset from sources like Kaggle, Google Public Datasets,UCI Machine Learning Repository

2)Data Cleaning is performed for Identifying null values, filling missing values and removing outliers the null values are filled with methods like Iterative Imputer

3)Data processing is done for standardizing and normalizing data
standardization is a technique which re-scale features value with the distribution value between 0 and 1
Normalization is applied to vary the values of numeric columns within the dataset to use a standard scale, without distorting differences within the ranges of values or losing information.

4)Data Analysis is done to find the correlation between the features

5)The data set is split into training data and test data

6)The training data is given to regression models

7)The performance of various models is analysed on the basis of test data

8)For deploying the model the web application is created using technologies like flask django Html css bootstrap sqlite

9) The web application is deployed on heroku server or AWS or Firebase.

## 1.9 Expected Deliverables (Outcomes)

1) By the end of the project we would be able to demonstrate a complete working model that would be capable of solving price prediction problem insights and provide more transparency to the process of buying and selling

2) Throughout the process we would be able to understand the societal and entrepreneurship problem by going through various research literature.

3)We would be able to understand and design methodology for our problem statement and would be able to apply engineering knowledge and skills

4)We would be able to analyze the impact of our solution on society

5) It will demonstrate capabilities of self learning and life-long learning

6) It will help us to grow as an individual and as team

7) It will help us to excel in written and oral communication and inculcate leadership qualities

## 1.10 Products do you intend to use in the design of your solution

### 1.10.1 Hardware Modules to be use (eg. Microprocessor, Microcontroller, PICs, Transducers, Receivers, Controller, Driver, etc.) and their use in project

1) User End
   Any android or IOS smartphone ,tablets PCs or Desktop
2) Developer End
   The Minimum system requirement
   Operating System: Windows 8 or later 64-bit Ubuntu 14.04+, Debian 8+, openSUSE 13.3+, or Fedora Linux 24+
   Processor: Intel Pentium 4 or later
   Memory:2 GB minimum 4GB recommended
   Screen resolution:1280x1024 or larger

### 1.10.2 Software Modules to be used (Eg. Front end, backend, ODBC, GUI, RAD tools, HLL, etc.) and their use in project

1)Frontend technologies
   a)HTML : provides basic structure to website
   b)CSS : Styling of the website
   c)Bootstrap: Provides a framework to website

2) Backend technologies
   a)Flask : An API of python for designing websites
   b)Sqlite :Database
   c)javascript:It makes web pages attractive and responsive

3)Jupyter :Notebook:Open Document format based on jason

4)Anaconda:A data science platform

5)Google colaboratory: Allows to write arbitrary python code using browser

6)Heroku:Heroku is a platform as a service (PaaS) that enables developers to build, run, and operate applications entirely in the cloud.

7)AWS:Amazon Web Services offers reliable, scalable, and inexpensive cloud computing services.

8)Github:GitHub is a web-based version-control and collaboration platform for software developers. GitHub facilitates social coding by providing a web interface to the Git code repository and management tools for collaboration

## 1.11 Applications:

### 1.11.1 Social

1)Due to increasing population there is an increased demand for housing properties which leads to continuous increase in prices of property which increase almost every year due to which it becomes difficult to predict the best price of the the property based on various factors like location and amenities available in the surrounding

2)House price prediction will help customers to decide the best time to buy or sell the properties

3) House price prediction will help customers to get best prices for their property that considers all its factors

4)Car price prediction will help user to determine the worthiness of the vehicle and get the best price for their vehicle

5)This will bring more transparency in real estate market and automobile industries

6)Customers will be assured for the value they are paying for their cars or property

7)Time to Time evaluation can be made

8)People can endross for their used cars and properties to attract customers

9)There will be no involvement of any intermediaries

### 1.11.2 Commercial

1)The predictive model can be used by various ventures and organizations which uses Organization to customer model for providing services like buying selling and renting in a whole new revolutionized way

2)This will remove biases and will bring more transparency

### 1.11.3 Industrial

1)House price prediction will help developers to determine the price for the property

2) It will help developers with the marketing strategy of the property

3) It will help developers to understand the demand of people which will help them to decide the location and enmities for their further project

4)Car price prediction will help the automobile management to understand how exactly the prices vary with the independent variables.

5)This will help automobile industries to manipulate the design of the cars, the business strategy etc. to meet certain price levels.

6)This will help budding automobile industries to enter into market and understand various factors affecting the automobile price

## 1.12 Estimated time for the demonstration of the final product as per the proposal (No. of Weeks):

24 weeks

## 1.13 References

[1] **House Price Prediction Using Machine Learning And Neural Networks**

Varma, Ayush; Sarma, Abhijit; Doshi, Sagar; Nair, Rohini (2018). [IEEE 2018 Second International Conference on Inventive Communication and Computational Technologies (ICICCT) - Coimbatore (2018.4.20-2018.4.21)] 2018 Second International Conference on Inventive Communication and Computational Technologies (ICICCT)

[2] **House Price Prediction Using Regression Techniques: A Comparative Study**

Madhuri, CH. Raga; Anuradha, G; Pujitha, M. Vani (2019). *[IEEE 2019 International Conference on Smart Structures and Systems (ICSSS) - Chennai, India (2019.3.14-2019.3.15)] 2019 International Conference on Smart Structures and Systems (ICSSS)*

[3] ]**Modeling House Price Prediction using Regression Analysis and Particle Swarm Optimization**

Case Study: Malang, East Java, Indonesia

(IJACSA) International Journal of Advanced Computer Science and Applications, Vol. 8, No. 10, 201

Adyan Nur Alfiyatin Faculty of Computer Science Brawijaya University, Malang, Indonesia

Hilman Taufiq Faculty of Computer Science Brawijaya University, Malang, Indonesia

Ruth Ema Febrita Faculty of Computer Science Brawijaya University, Malang, Indonesia

Wayan Firdaus Mahmudy Faculty of Computer Science Brawijaya University, Malang, Indonesia

[4] **Prediction of Prices for Used Car by Using Regression Models**

2018 5th International Conference on Business and Industrial Research (ICBIR), Bangkok, Thailand

Nitis Monburinon Faculty of Information Technology Thai-Nichi Institute of Technology Bangkok, Thailand boonitis@gmail.com

Prajak Chertchom Faculty of Information Technology Thai-Nichi Institute of Technology Bangkok, Thailand prajak@tni.ac.th

Thongchai Kaewkiriya Faculty of Engineering and Technology Panyapiwat Institute of Management Nontaburi, Thailand tkaewkiriya@gmail.com

Sabir Buya Faculty of Information Technology Thai-Nichi Institute of Technology Bangkok, Thailand bu.sabir_st@tni.ac.th

Suwat Rungpheung Faculty of Information Technology Thai-Nichi Institute of Technology Bangkok, Thailand ru.suwat_st@tni.ac.t

Pitchayakit Boonpou Faculty of Information Technology Thai-Nichi Institute of Technology Bangkok, Thailand bo.pitchayakit_st@tni.ac.th

[5] **Car Popularity Prediction: A Machine Learning Approach**

Sunakshi Mamgain Department of Computer Science M.Tech, I.I.I.T.-Bhubaneswar Bhubaneeswar, India a117009@iiit-bh.ac.in

Srikant Kumar Department of Computer Science M.Tech, I.I.I.T.-Bhubaneswar Bhubaneeswar, India a117008@iiit-bh.ac.in

Kabita Manjari Nayak Department of Computer Science M.Tech, I.I.I.T.-Bhubaneswar Bhubaneeswar, India a117003@iiit-bh.ac.in

Swati Vipsita Department of Computer Science I.I.I.T.-Bhubaneswar Bhubaneeswar, India swati@iiit-bh.ac.in