



**REPORT**

On

**Pre-Owned Car Price Prediction**

**using Machine Learning.**

Submitted by

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ABSTRACT

This project is all about prediction of pre-owned cars. We have used machine learning model regression model to predict price of cars with respect to their features.

INTRODUCTION

Driverless cars are getting closer to reality and at a faster pace than ever. But it is still a bit farfetched dream to have one in your garage. For the time being, there are still a lot of combustion and hybrid cars that roar around the road, for some its chills. Though the overall data on sales of automobiles shows a huge drop in sales in the last couple of years, cars are still a big attraction for many. Cars are more than just a utility for many. They are often the pride and status of the family. We all have different tastes when it comes to owning a car or at least when thinking of owning one.

Well here of course as the name suggests we are not concentrating on a new car, rather our interest is in knowing the prices of used cars across the country whether it is a royal l luxury sedan or a cheap budget utility vehicle. You will be predicting the costs of used cars given the data collected from various sources and distributed across various locations in India.

**LIBRARY USED**

**Tkinter**

 It is a standard Python interface to the Tk GUI toolkit shipped with Python. Python with tkinter outputs the fastest and easiest way to create the GUI applications. Creating a GUI using tkinter is an easy task.

**Pandas**

  Pandas is an open-source, Python library providing high-performance, easy-to-use data structures and data analysis tools for the Python programming language. Python with Pandas is used in a wide range of fields including academic and commercial domains including finance, economics, Statistics, analytics, etc. In this tutorial, we will learn the various features of Python Pandas and how to use them in practice.

**Sklearn**

Scikit-learn (formerly scikits.learn and also known as sklearn) is a [free software](https://en.wikipedia.org/wiki/Free_software) [machine learning](https://en.wikipedia.org/wiki/Machine_learning) [library](https://en.wikipedia.org/wiki/Library_(computing)) for the [Python](https://en.wikipedia.org/wiki/Python_(programming_language)) language.

It features various [classification](https://en.wikipedia.org/wiki/Statistical_classification), [regression](https://en.wikipedia.org/wiki/Regression_analysis) and [clustering](https://en.wikipedia.org/wiki/Cluster_analysis) algorithms including [support vector machines](https://en.wikipedia.org/wiki/Support_vector_machine), [random forests](https://en.wikipedia.org/wiki/Random_forests), [gradient boosting](https://en.wikipedia.org/wiki/Gradient_boosting), [*k*-means](https://en.wikipedia.org/wiki/K-means_clustering) and [DBSCAN](https://en.wikipedia.org/wiki/DBSCAN), and is designed to interoperate with the Python numerical and scientific libraries [NumPy](https://en.wikipedia.org/wiki/NumPy) and [SciPy](https://en.wikipedia.org/wiki/SciPy).

**METHODOLOGIES**

Firstly, we did data analysis on dataset. After that we started data pre-processing, in data pe-processing we cleaned data, filled null values by mean, mode or median whichever is appropriate. After data pre-processing, we divided our dataset in two parts first is train data and second is test data. We polynomial regressor method to train our model for training dataset and then checked its accuracy using test dataset.

Also, we created tkinter GUI (Graphical User Interface) in which we created a form where user will enter his car feature like mileage, power, engine, year, location, etc. Using that features our model predicts the price for that car.

**Individual Contributions**

**1] Mayur Lilani [reg no-11805247, roll no- 08]**

Firstly, I had an research on this topic and analysis on what I can do in this topic. Worked on data analysis, data pre-processing, splitting data set into training set and testing set. Worked on machine learning algorithms to train the model. Completed the coding work.

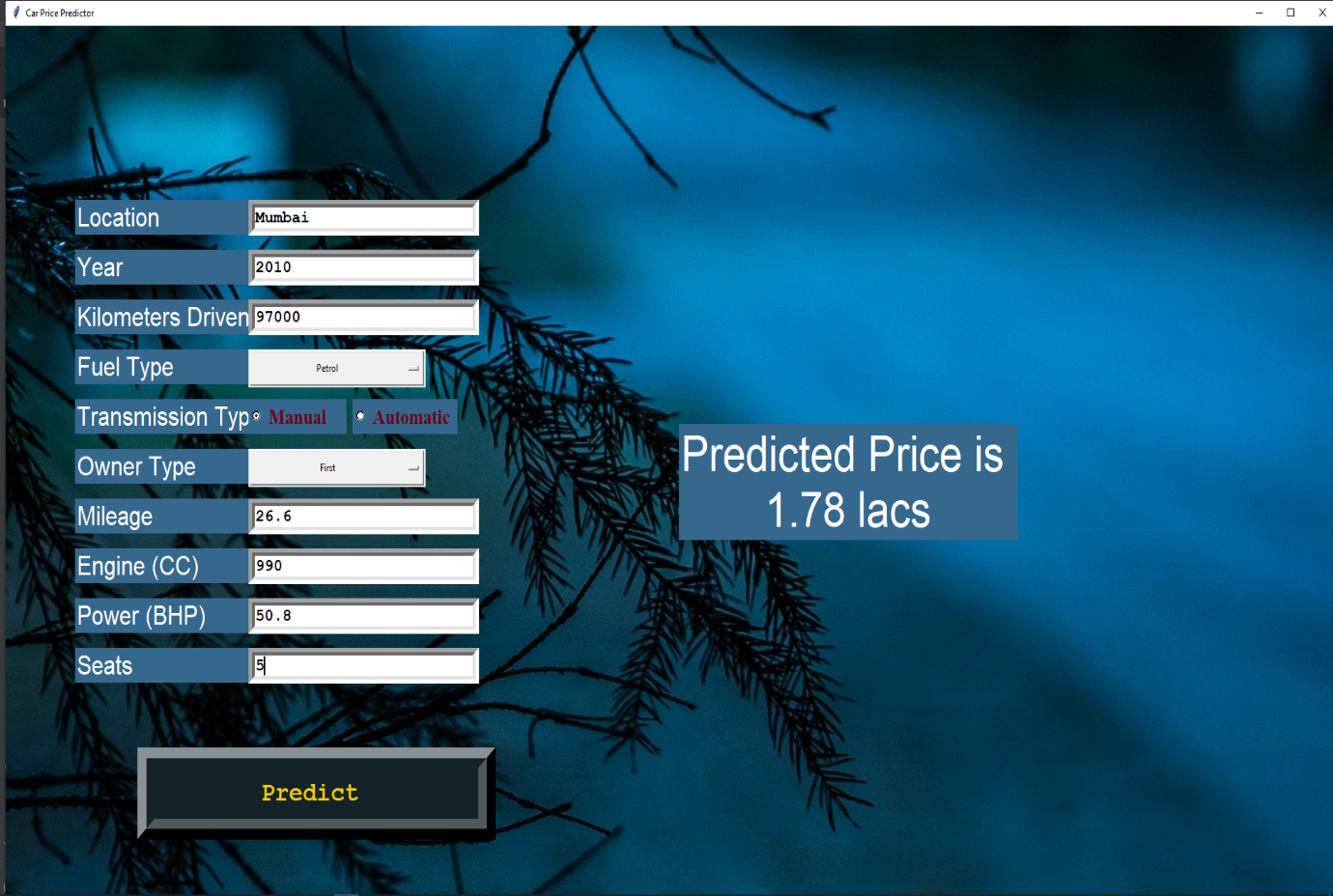
**2] Lavkush Singh [reg no- 11805239, roll no- 07]**

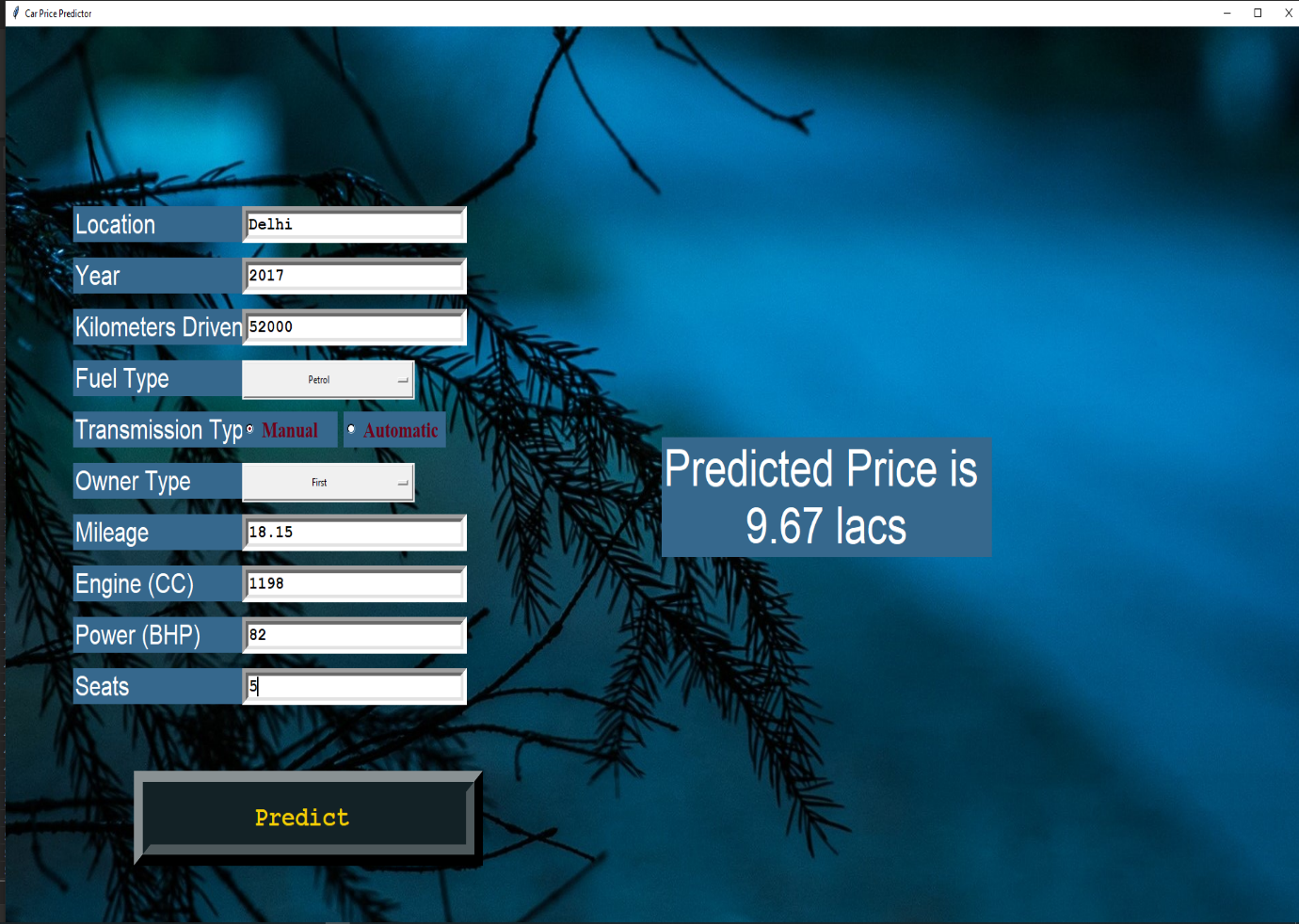
Started with researching and understanding about the topic thoroughly, I started learning and understanding about machine learning. Then after that I helped my teammates in building machine learning model and GUI and after afterwards when it was prepared, I started Integrating the modules.

**3] Suruchi Srivastava [reg no-11805235, roll no-24]**

After completing a thorough research on topic, I started learning about the model we are going to create and also, I decided to work on GUI part. I started working on GUI by the time other teammates were working on other modules of project. On basis of what our model requires I designed and coded a Tkinter Interface.

**Output Snapshots**

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