

Date	09 November 2022
Team ID	PNT2022TMID12043
Project Name	Project - car resale value prediction

OBJECTIVE:

Car Price Prediction project is the ability to predict the price of a used car given various attributes (data) of that car. There is a saying that a car loses 10% of its value the moment the user drives it off a lot. Given that the user would expect that one of the main predictors is the amount of miles driven in the car, since more driving wears down the car. Additionally, the user would expect the brand(make) of the car to also be a factor in the price of a used car, since some brands of cars cost more and may be better made. The user expects to encounter some issues with multidisciplinary since some aspects of cars may be highly correlated. For example, larger cars will probably have larger engines and more doors. Larger engines are correlated with more cylinders.

Classification:

Classification is when the feature to be predicted contains categories of values. Each of these categories is considered as a class into which the predicted value falls and hence has its name, classification., we use a data set that contains information about customers of an online trading platform to classify whether a given customer's car resale value will be highly accurate or not. Because a previous tutorial covered the various preprocessing steps that need to occur before model creation, we skip those details in this tutorial. Instead, we do a detailed study of the different classification algorithms and apply it to the same data set for the sake of comparison.

Regression:

Regression is when the feature to be predicted contains continuous values. Regression refers to the process of predicting a dependent variable by analyzing the relationship between other independent variables. There are several known algorithms that help in elevating these relationships to better predict the value.

Data Preprocessing:

Data preprocessing, a component of data preparation, describes any type of processing performed on raw data to prepare it for another data processing procedure. It has traditionally been an important preliminary step for the data mining process. More recently, data preprocessing techniques have been adapted for training machine learning models and AI models and for running inferences against them. Data preprocessing transforms the data into a format that is more easily and effectively processed in data mining, machine learning and other data science tasks. The techniques are generally used at the earliest stages of the machine learning and AI development pipeline to ensure accurate results.

What is Django?

Created by Adrian Holovaty and Simon Willison in the year 2003, Django is a python-based open-source framework to design web applications. It is a high-level web framework that is built to make the web development process faster and more efficient. Inspired by many of the old frameworks like CherryPy, Zope, Plone, etc. Django is a free source with enhanced features and better performance. Developers choose Django for it enables them to use it for the standard functionalities with a limited interference of systems, protocols, and management.

Django is also called a ‘framework for fussy budgets with deadlines’ as its framework encourages rapid development and clean, pragmatic design. The agile development process of the framework aims solely on providing quality with rapidness and efficiency. Django deals with some of the basic development functions quickly like site maps, content organization, client information, and, so many more. It just focuses on finishing the application as quickly as possible

Some of the key features of Django are as follows:

Fast: It is insanely Fast. Without any thought, the Django working process from concept to completion is extremely fast.

Versatile: Django is a versatile framework that enables developers to work on different platforms varying from content management systems like WordPress, etc, to social network sites like LinkedIn, Youtube, etc, to news sites like The New York Times, CNN, etc.

Adaptable: Django is adaptable to different formats like JSON, HTML, XML, and many more.

Scalable: It is a framework that ensures scalability (a system that allows making changes in different layers and updations without much cost and effort i.e., every layer is independent) and maintenance (the design and code are not susceptible to duplications and, hence, the code can be reused and maintained properly)**Secure:** Django guarantees security with powerful authentication systems and protocols to avoid clickjacking, unauthorized access, cyberattacks, etc.

Portable: Django is a python-based framework and, therefore, portable.

What is Flask?

Flask is also a Python-based microframework that is used for web application development. It was introduced by Armin Ronacher in the year 2011 as a trial method of joining two solutions i.e., Werkzeug (a server framework) and Jinja2 (a template library).

It was supposed to be a trial run in a zip file that ultimately originates from the positive influence of Flask.

Flask is categorized as a micro framework because it does not depend on external libraries to perform the tasks of a framework. It has its tools, technologies, and libraries to support the functionalities of web application development.

Since this framework is more independent and flexible, many developers prefer to start with Flask.

Key Features: Flask

Some of the features of Flask are:

Lightweight: It is a lightweight framework as it is independent of external libraries. It gives a quick start to the web development process of complex applications.

Independent: Flask gives independent or full control to the developer for creating applications. You can experiment with the architecture or the libraries of the framework.

Integrated Unit Testing: Flask's integrated unit testing system enables faster debugging, robust development, and freedom to experiment.

Secure Cookies: Secure cookie is an attribute of an HTTP request that enables the security of channels and ensures no unauthorized person has access to the text. Flask supports the feature of secure cookies.

Compatible: Flask is compatible with the latest technologies like Machine Learning, Cloud, etc.

Flexible and Scalable: Support WSGI templates that allow flexibility and scalability for web applications.

It comes with a built-in server and debugger.

Simple and adaptable configurations