Automatic Car Classification System

Client: Dirk Naude

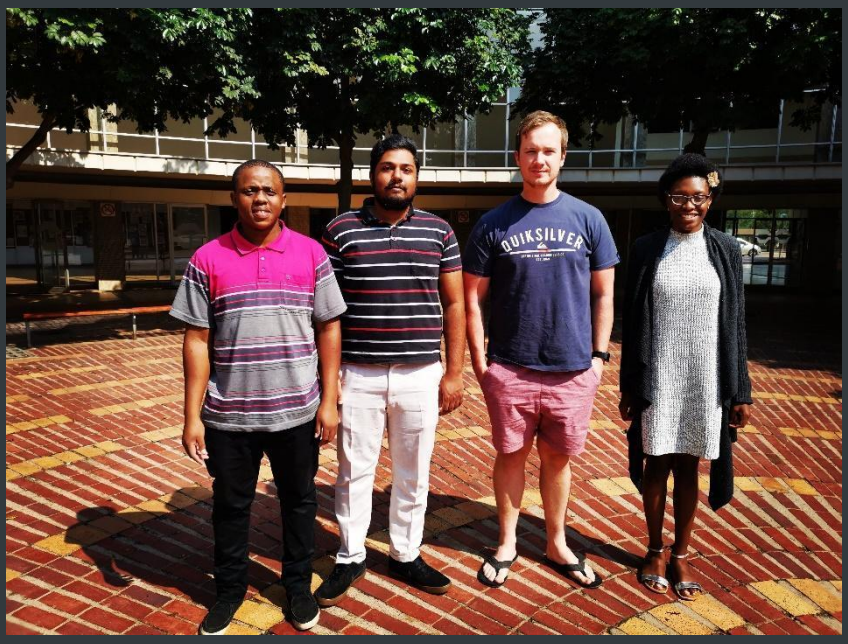
Sodalicium Members:

Baven Pavaday

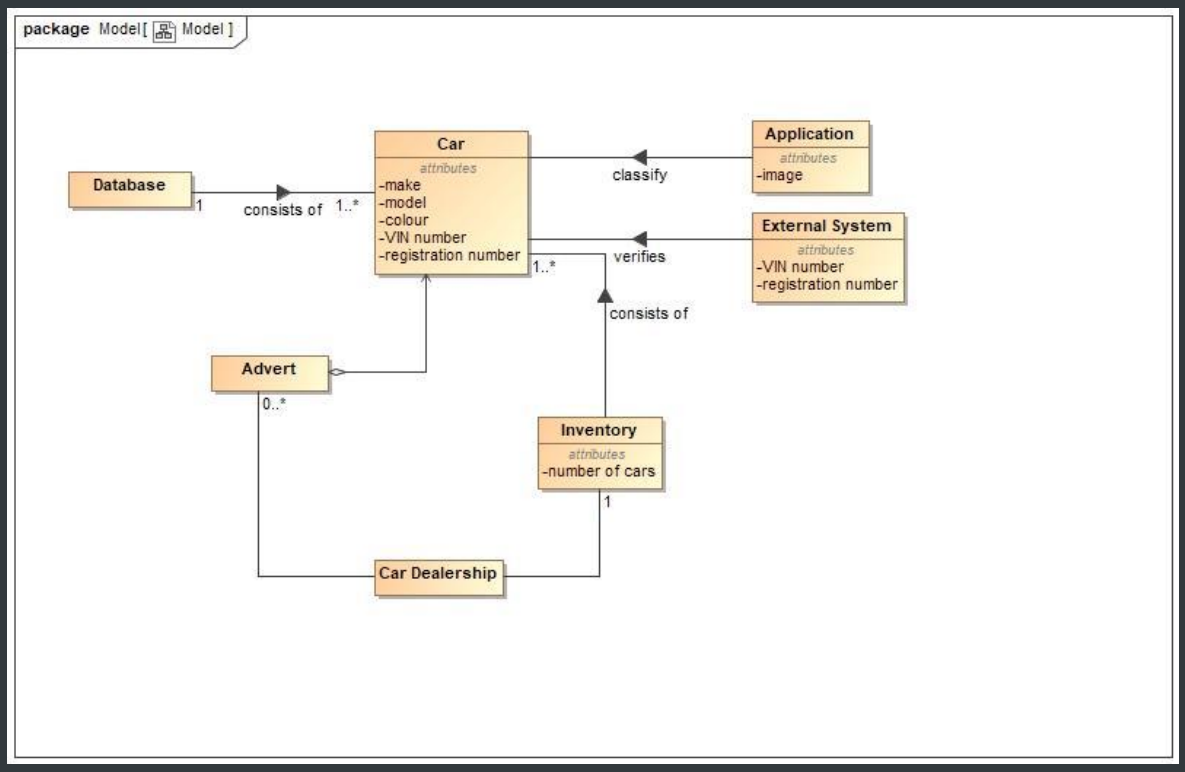
Oluwatosin Botti

Ryan Hartley

Tlou Lebelo



Domain Model



Description:

The automatic car classification system is meant to take in an image of a vehicle and from that image it is to automatically classify the make and model of the vehicle as well as its other features such as its colour. The system is also meant to extract the VIN (Vehicle Identification Number), a unique identification number of each vehicle which is like a vehicles fingerprint, as well as the vehicle's registration number. These attributes will be verified by an external source and can be used to ensure that the VIN and the features of the car match.

The aim of the automatic car classification system is for it to help manage the inventory in car dealerships and potentially car factories. The system will have a database where it will store information and, from the information stored,

will be able to automatically classify cars based on images submitted. The system should also be able to post adverts online of vehicles it has classified.

Technologies to be used:

Front end:

- Application - Android Studio for the mobile application, the phone's camera will also be used to take images of vehicles or one can be uploaded from the gallery.
- Web Application – HTML, CSS, Bootstrap, Node JS, Angular

Database:

- Database: MongoDB due to the large volume of data expected.

Development Methodology:

We are willing to put in as many work hours in as possible, we hope to develop multiple versions that will be available for client testing as soon as possible. We hope to involve our client using this iterative development process to not only develop an adequate product but also reach the expectations of the client. We want to spend a large portion of the development time immersing ourselves in the problem to better understand and solve the project. We plan on creating solid communication channels between our group members using not only weekly face to face meetings but also a host of mediums that will allow us to collaborate and share ideas. We want to set strict deadlines for ourselves in order to deliver a well-constructed and timely product.

We expect our client to be actively involved in the project, they should be open to regular communication and occasional consultation. The client must provide regular feedback based on the work that will be presented to them at certain developmental intervals.

Skills and Knowledge:

Baven Pavaday:

- Web Development Skills - HTML, CSS, Bootstrap, Javascript, Node JS
- Database Skills – MySQL, SQLite, MongoDB
- Application – Java, C++, C

Ryan Hartley:

- Web Development Skills – HTML, CSS, Bootstrap, Javascript, PHP
- Database Skills – MySQL, SQLite, Postgresql, MongoDB
- Application – Java, C++, Python

Oluwatosin Botti:

- Web Development Skills – HTML, CSS, Bootstrap, Javascript, PHP, Ajax, JQuery
- Database Skills – MySQL, MongoDB, Postgresql
- Application – Java, C++, C#

Tlou Lebelo:

- Server Setup and Configuration
- Web Development Skills – HTML, CSS, Bootstrap, Javascript, PHP
- Database Skills – MySQL, SQLite, Postgresql, MongoDB

Our collective web development skills and our application and database knowledge will be used to implement the classification of vehicles using the database as well as ensuring that the user interface is simple and easy to use.

Shortcomings may include a lack of experience and expertise in this domain. This will be solved through extensive research and interactions with the client to gather all the information needed to be able to implement the system