# Route Genie Developer Coding Task Brief

The demonstration must contain the required elements but it is up to you whether you want to add the optional elements.

Feel free to add any other things you may feel demonstrate your skills that we may not have asked for but make sure all required elements completed as a minimum.

It is important that the solution showcases your C# development skills/experiences.

You will find our application requirements below including the data example in the archive.

We are looking for solutions that are based around a service oriented architecture, preferably using Web API. You may want to use other design patterns and also separate your solution into common modules or projects that reflect your experiences for best practice regarding coding conventions, project structures and SOLID principles.

In the interview you may be asked to explain your design and coding decisions and questions about what you did and why.

The solution should be developed in Visual Studio (2015-2019) and work in Chrome.

## Requirements Overview

## Requirements Analysis

You have been provided with a document containing customer and vehicle information. This document will need to be imported into the application, processed and then stored in such a way that various reports can be run on this data.

### Data

#### *Customer Information*

* Forename
* Surname
* Date of Birth

#### *Vehicle Information*

* Manufacturer
* Model
* Registration number
* Registration date
* Engine size (in cc)
* InteriorColour

#### *Required Relationships*

* Customers can have 1 to many vehicles.
* Vehicle must have exactly one owner.

As part of the requirements, you need to develop a C# web application that provides the ability for a user to import the data file. You may wish to optionally add functionality to be able to add/remove customers/vehicles from the imported data.

You may also use a datastore of your choice to store the imported data, but after successful import, the user of the application will need to run a set of reports as follows.

* + All known customers and any vehicles they own.
  + All customers between the age of 20 and 30.
  + All vehicles registered before 1st January 2010.
  + All vehicles with an engine size over 1100.

The user can then be allowed to modify and delete each row in displayed report.

## Expected demonstrable skills

* Good understanding of C#.
* Good understanding of Object Orientated (OO) principles.
* Good understanding of relational data principles.
* Reusable code – low coupling, high cohesion.