Babcock Technical Test - Vehicle Hire Booking System

**Scenario**

A vehicle hire company has a number of cars and vans, and a variety of customers, some of whom are individuals who might only hire one vehicle at a time and some of whom are companies who might have multiple vehicles on hire at any one time. The hire company has many vehicles of the same make and model. Vehicles are hired on a daily basis, rather than hourly.

They have asked for a simple system to be written to keep a record of the vehicles they own and which ones are currently hired out to customers.

A vehicle has a number of attributes:

* Registration number
* Category of vehicle:
  + Small car
  + Estate car
  + Van
* Make
* Model
* Fuel type
  + Petrol
  + Diesel
* If it is hired out:
  + Customer it is hired out to
  + Date hire to finish
* Price per day – this is based on the category of vehicle, and can be assumed to be unchanging:
  + Small car - £25 / day
  + Estate car - £35 / day
  + Van - £50 / day

**Task Details**

Please complete the task below and provide the source code that you have written. You should approach this as though you are developing an enterprise solution rather than a personal project. The design and implementation that you create should consider likely future changes and therefore should be open to extension where necessary. The implementation can use third party libraries using a dependency management tool, where appropriate. Your implementation should be complete and easy to run, with instructions provided where appropriate.

It is expected that you take around 1 to 2 hours to complete this task but you can go beyond this if you deem appropriate – we are primarily interested in your approach and the quality of the implementation.

Once complete, please package up your project and send to us or provide a link where we can access it. As part of the deliverable, please supply any supporting documentation and detail any further enhancements or changes you would make to your completed project, if you had more time.

**Technical Task**

Using Java 8 and Maven, implement the following REST services:

1. List available vehicles for hire – all vehicles that can be hired today.
2. Calculate cost of hiring a specific vehicle for a provided date range.

Design a set of Java classes that suitably model a vehicle and its hire state as per the scenario description above. There should be an initial set of data loaded when your implementation starts that the REST services can then query upon and return the expected results.

Create a Web UI using Vue.js, with the following features:

* Display of all vehicles returned from the above REST service that are available for hire, with an option to also show vehicles that are already hired
* A mechanism where the user can select a specific vehicle with a start and end date and then a means to call the calculation REST service, with the result displayed

The UI should consider usability, provide validation and user feedback where appropriate.

**Note**: if you haven’t used any of the technologies mentioned please indicate this in your accompanying documentation – this will then be taken into account when we evaluate your submission.