1 Developer Test

This test aims to give a brief overview on how you write code and how you go about tackling a problem. There is no right or wrong way. If there is something unclear in the specification, please feel free to make your own interpretation.

1.1 Presentation

You will present and describe your solution to a skilled developer. Please send us the source code before the meeting so we can be prepared. Feel free to use either github.com, gitlab.com (or equivalent) or a cloud storage solution such as DropBox or OneDrive. When you have completed the task, please send an email to: benny.olsson@jetshop.se with information on where the solution may be retrieved.

1.2 Tools

Use either .NET Framework, .NET Standard or .NET Core. Write your solution using C#. Please make sure your application is connected to a database via an ORM mapper.

1.3 Scenario

You are part of a team at Jetshop AB who will build a system for Rental Car administarion. The system will be utilized by several merchants. Each having different requests for how to store data and the type of user interface to use.

1.4 Implementation

Your task is to implement the use cases stated in detail below (U1 and U2) and utilize appropriate test cases. The automated tests cases may be written in a test framework of your choosing. Please note that you can set values to all prices at your own discretion. You do not need to implement any UI if you do not want to (it is okay to trigger the application via, for instance, a test case, Rest API or a Command Line Interface).

2 Task

Your task is to implement a small part of business logic along with associated test cases that verify that the logic works according to the specification below.

2.1 Specification

Rental cars are divided into three categories:

1. Compact
2. Premium
3. Minivan

It should be possible to add more categories later. A reservation is identified by a unique reservation number. Each rental refers to a car at one time, meaing if car is already hired it is not available for rent during that time. Rental price is calculated according to formulas depending on the category. The price for BaseDayRental and KilometerPrice (Price per kilometer) and this price is the same for all categories.

1. Compact Price = baseDayRental * numberOfDays
2. Premium Price = baseDayRental * numberOfDays * 1.2 + kilometerPrice * numberOfKilometers
3. Minivan Price = baseDayRental * numberOfDays * 1.7 + (kilometerPrice * numberOfKilometers * 1.5)

2.2 Use Cases

The two following use cases should be implemented.

2.2.1 U1. - Rental registration

When a customer rents a car it should get registered in the system. The following data should be stored:

1. Booking number
2. Custmers date of birth
3. Car category
4. Time and date for the rental
5. Current car milage, in kilometer

2.2.2 U2 - Car Return

The system should be able to handle car return using the following details:

1. Booking number
2. Time and date for the return
3. Current milage of the car, when returned in kilometer

Upon return of a car the system calculates the price for the rental period according to the formulas specified above.