Code test for candidates

Scenario

You are part of a team that will build a car rental system that needs to be adaptable to different customers' needs, including storing data and UI requirements. Your task is to implement a small part of the business logic and associated test cases that verify the business logic's functionality according to the specification below.

Specification

The cars for rent are divided into three categories: Small car, Combi, and Truck. More categories may be added later in the system. A booking number uniquely identifies a rental. Each rental can only reference one car.

Rental rates

The rental price is calculated using different formulas based on the car category. The price calculation formulas have two input parameters that can vary: baseDayRental and baseKmPrice.

Small car

Price = baseDayRental * numberOfDays

Combi

Price = baseDayRental * numberOfDays * 1.3 + baseKmPrice * numberOfKm

Truck

Price = baseDayRental * numberOfDays * 1.5 + baseKmPrice * numberOfKm * 1.5

Use case

You will implement the following use cases:

Registration of car pickup

When the car rental company hands out a car to a customer, the following information is registered:

- Booking number
- Registration number
- The customer's social security number
- Car category
- Date and time of pick-up
- Current meter reading on the car (km)

Registration of returned car

When the customer returns a car, the following information is registered by the rental company's agent:

- Booking number
- Date and time of return
- Current meter reading on the car (km)

When registration is complete, the system calculates the price for the rental period according to the formulas above.

Your task

Your task is to implement the use cases above and associated test cases. The easiest way to run the tests is from a simple console application, but you can use a test framework.

Any ambiguities in the specification

If there is any ambiguity in the specification, you should make your interpretation and assumptions. Please present your assumptions to us.

Presentation

You will present, motivate and discuss your solution with us. Please be prepared to discuss your implementation and answer questions about your solution.