Databases I 2019/2020

Case Study for CA Project

***Speedy Rentals*** is a new car rental company with a number of branches across Europe. Each Speedy Rentalbranch has a unique numeric branch identifier, address and a branch phone number. Customers who wish to rent a car can either make a booking online or walk into one of the branches and talk to a sales representative who completes the rental with them in person.

Each car has its own unique registration number and a daily cost. Each car has a unique model identifier with details of the manufacturer e.g. Volkswagen, Ford, Renault etc. There are a number of car models available for each manufacturer e.g. Golf, Polo, Passat. Each car model has a category e.g. saloon, hatchback etc. Cars either take diesel or petrol fuel.

When a customer rents a car from a Speedy Rentals he or she is given a rental contract which includes details such as the rental period and amount (empty or full tank) of fuel in the car. A new customer rental contract is created with a unique identifier. This rental contract is created whether a customer makes the reservation online or in person at one of the branches. The pick up date and time and the return date and time needs to be recorded. The location of the car pick up and drop off also needs to be recorded. A customer can have many rental contracts with Speedy rentals but each contract is for one customer.

When a customer rents a car they must provide their name, address, email address which will be stored and cannot be missing. The customer must also provide their age which must be over 18. The customer is assigned a unique identifier, customer number.

The mileage on the car is stored before and after the rental period. If their mileage exceeds 3000 km for the whole rental period they will be charged a rate of €0.30 per km.

When a customer rents a car from a Speedy rental branch, the details of the store and the sales representative who handled the transaction are recorded. Sales representatives are assigned either to a particular branch or to head office, their location is stored as part of their employment record. Sales representatives allocated to head office handle online sales. All sales representatives have a unique identifier. Their name, address, phone number, email address, date of birth and start date of employment with Speedy rentals are also stored. Sales representative email addresses must be their company email (ending with @speedyrentals.com).

If the customer rents a car online, the request is processed by the backroom sales department staff. For each rental a member of the sales staff verifies the transaction by sending a secure link by e-mail to the customer’s e-mail address. If the customer does not respond, the transaction is cancelled and this must be recorded. If the transaction is verified then the sales representative completes the rental as they would for a customer in the physical branch but a copy of the rental agreement is emailed to the customer and recorded. Details of the sale representative who handled the transaction should also be recorded.

A final bill with the amount owed is sent to the customers which is based on the length of their rental, daily cost of their car and their mileage.