**Student Number: (enter on the line below)**

**Student Name: (enter on the line below)**

HS2021  
Database Design and Use  
final assessmeNt

Trimester 2, 2021

**Assessment Weight:** 50 total marks

**Instructions:**

* **All questions** **must be answered by using the answer boxes provided in this paper.**
* **Completed answers must be submitted to Blackboard by the published due date and time.   
    
  Submission instructions are at the end of this paper.**

**Purpose:**This assessment consists of seven (7) questions and is designed to assess your level of knowledge of the key topics covered in this unit

**CASE Study**

A car rental company has several locations with different addresses. The cars are classified as Hatch, Medium, Sedan and Luxury. Each car has a particular make, model, year made and colour, as well as a unique identification number and a unique registration number.

Cars rented in one location may be returned to a different location (or drop-off) For every rental we keep a record of the odometer reading before it is rented and after it is returned. The car is rented with a full tank of fuel and we record the volume of fuel when the car is returned, but only indicate if the tank is empty, quarter full, half full, three quarters full or full.

We keep track of which day the car was rented, but not the time, and similarly for when the car is returned. Each car class has its own per-day pricing, but each car in the same class is priced the same. When the car is returned we record how many days the car was rented for (return date – start date + 1). There is a drop-off charge also recorded if the car is dropped-off at a different location than it was rented from.  
  
For our customers, we record their name, address, phone and drivers license number (which is unique for each person. When a car is rented there may be multiple drivers, and each of these is recorded against the rental car.

**Question 1 ( 10 marks)**

Draw an ER model using the crows-foot notation we used throughout the semester. Use Draw.io then cut and past your ER diagram into the answer box below

**ANSWER: \*\* Answer box will enlarge as you type**

**Question 2 (5 marks)**

Provide a relational schema for the Database , (you will need to consult the appropriate lecture notes). Place your answers in the answer box below

**ANSWER:**

**Question 3 (10 marks)**

Build the Database you have constructed in the ER Diagram in Questions 1 (and provided the relational schema for in Question 2) within PostgreSQL and supply the SQL DDL statements below (the Create Table SQL statements). Place your SQL DDL statements in the answer box below.

**ANSWER:**

**Question 4 (5 marks)**

Construct some DML statements (SQL Insert statements) to insert some sample data in the tables you have constructed in Question 3 above. Place your SQL DML statements in the answer box below.

**ANSWER:**

**Question 5 (5 marks)**

Construct an SQL Query to give the last name of all customers who currently have a rental car from our company. Place the SQL query and a cut and paste of the DBeaver result of the query in the answer box below.

**ANSWER:**

**Question 6 (5 marks)**

Construct an SQL Query to give the make and colour of all cars currently rented out. Place the SQL query and a cut and paste of the DBeaver result of the query in the answer box below.

**ANSWER:**

**Question 7 (10 marks)**

Construct an SQL Query to find the value of the cheapest (completed) rental. Place the SQL query and a cut and paste of the DBeaver result of the query in the answer box below.

**ANSWER:**

**END OF FINAL ASSESSMENT**

**Submission instructions:**

* Save submission with your STUDENT ID NUMBER and UNIT CODE e.g. **EMV54897 HS2021**
* Submission must be in MICROSOFT WORD FORMAT ONLY
* Upload your submission to the appropriate link on Blackboard
* Only one submission is accepted. **Please ensure your submission** **is the correct document.**
* All submissions are automatically passed through SafeAssign to assess academic integrity.