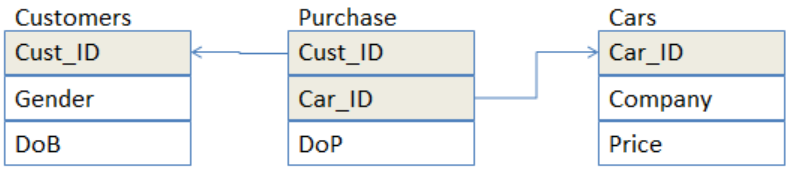
Database Lab

Date: 8th Oct 2020 MidTerm Test
Submission Filename: CS355_midterm.txt Duration: 3 hours

1 Overview

Consider the following relational model. There are three tables- *Customers*, *Cars* and *Purchase*.



For *Customers* table the attributes are

- *Cust_ID* `smallint` and this is also a primary key attribute
- *Gender* `char(1)` not null and it has only 'M' (for Male) or 'F' (for Female) values
- *DoB* `date` and it represents the Date of Birth of the customer

For *Cars* table the attributes are

- *Car_ID* `char(5)` and this is also a primary key attribute
- *Company* `varchar(20)` not null and represents the manufacturing company of the car
- *Price* `int` and represents the price of the car

For *Purchase* table the attributes are

- *Cust_ID* `smallint` and a foreign key references *Cust_ID* of *Customers* relation
- *Car_ID* `char(5)` and a foreign key references *Car_ID* of *Cars* relation
- *DoP* `date` and it represents the Date of Purchase of the car by the customer
- The combination of *Cust_ID* and *Car_ID* is considered as primary key attribute of this table

1.1 Task 1

Initially login as *root*. Create a database named `dbMidTerm`. Also, create a new user and grant "all privileges" on this `dbMidTerm` database to this new user. Now login as this new user. Use the `dbMidTerm` database and create the aforementioned tables using MySQL. Define the data types and constraints as specified in the figure and above descriptions. Populate each of the tables with relevant and sufficient number of records. 10 Marks

1.2 Task 2

Write queries using MySQL for performing the followings. $10 \times 4 = 40$ Marks

1. Find the car company which has maximum number of cars of price greater than 200000
2. Find all the details of the oldest customer
3. Find the total number of cars purchased by each gender
4. For each car company, find the car(s) (Car_ID) that was/were sold most recently.
5. Find the name of the car companies with exactly two 'a's.
6. For each car company, compute a star-rating by checking how many cars it sold. If it has sold more than equal to 5 cars then mention 5 star, if it has sold 1 to 5 cars then mention 3 stars otherwise mention 1 star.

7. Find the details of the customers who have purchased the car on their date of birth (same day and month of DoB and DoP)
8. Find the name of the customers who have more than one car (without using count function)
9. Find the Cust_ID(s) who own(s) the most expensive Honda's (car company) car (without using max function).
10. Create a view with name *unsoldCars* to list the car companies and number of cars that are currently not sold yet.

2 Submission

Write all the relevant MySQL queries that you have used to perform *Task 1* and *Task 2*. Submit the queries using a txt file. While writing the queries, please ensure that you use the table names and attributes as given in the above specification.