Part A: Design a database that will effectively store the data that is presented in the following related forms. Using MySQL Workbench, draw an ERD to present the design. Include entities, PKs, FKs, unique constraints, optional and mandatory fields and indicate 1:1, 1:M and M:N relationships

Note the following facts:

* The company owns several offices. Each office is at a different location and has one manager. A manager must be a driving instructor.
* Each driving lesson costs $45, lasts for 1 hour.
* 5 Hour Class - $50.00
* Driving Test can’t be scheduled before the client completes the 5 hour class
* Driving lessons start at 8:00am. The last lesson of the day begins at 8:00pm
* An employee can be both an instructor and a manager
* An instructor can only give one lesson at a time to a client
* An instructor can only be assigned one car at any given time
* A client can switch to a different instructor but each lesson is given by one instructor.
* If a client doesn’t choose a specific instructor, he will be assigned any instructor who is free to give a lesson on the date and at the time the client has requested.
* A client generally must complete several lessons before he can pass the driving exam.
* A client can’t schedule a lesson with an instructor that is on vacation.
* Sample Reasons for test failure
  + Inappropriate speed
  + Incorrect position for right turn
  + Lack of steering control
  + Incorrect positioning on road
  + Incorrect use of signals
  + Hit sidewalk or curb
  + Ineffective observation
  + Inadequate observation
* An instructor can’t complete a lesson completion form for a lesson that has not been scheduled

Part B:

1. Using SQL Server, implement the database you designed to complete Part A. Include entities, PKs, FKs, unique constraints, check constraints.
2. Implement the following constraints
   1. Lesson can’t be scheduled to start before 8am or after 8pm
   2. The school doesn’t purchase a car that is more than 5 years old
   3. A Client can’t register unless he is at least 18 years old.
3. Populate the database with at least 5 records in each table.

Part C:

Write queries to answer each of the following questions

1. For each instructor, list the instructor name, hiredate, instructor license id, and the number of lessons he/she has given
2. For each client, list the client name and his/her instructor’s name
3. For each client, list the client name and the date and time of each lesson that has been completed
4. For each car, list the purchase date and the date of each time it has been inspected
5. For each car,l list the car type, the name of the instructor to whom it has been assigned and types of repairs that have been performed on the car.
6. List the vin number of each car for which more than three repairs have been performed
7. List the name of each client who has completed more than 5 lessons
8. List the name of each employee who is not a driving instructor (perform this query two different ways)
9. For each instructor, list his full name and the total number of miles he has accumulated while giving lessons.
10. List how many of each type of employee are currently employed by the driving school.
11. For each car, list how many times it has been inspected. Include cars that have not been inspected.
12. For each type of car owned by the driving school, list how many repairs have been performed on that type of car
13. For each instructor, how much money has the school received for lessons completed.
14. How many clients have failed a driving test?
15. List the name of the instructor who has his instructor license the longest amount of time
16. List the clients who have not completed lessons that they scheduled.
17. List the name of the instructor who has given the most lessons.
18. List the name of the student who has took some lessons from **both** instructor ‘x’ and instructor ‘y’. You can identify the instructors based on the ones you entered into your database.
19. Extra Credit: Which students took lessons from the same instructors as student ‘x’. (Hint: Divide query)

Data Entry Forms









Internet Resource : Realistic Data Values

<https://en.wikipedia.org/wiki/Car_classification#Classification_methods>

Completed to assign a specific car to a specific instructor. An instructor can only be assigned one car at any given time.



Completed by a Client to request to be assigned to a certain instructor



Completed for each client who requests one or more lessons.



Completed by the instructor after each completed lesson









