

CDI

# MultiLease Management System

Database Architecture

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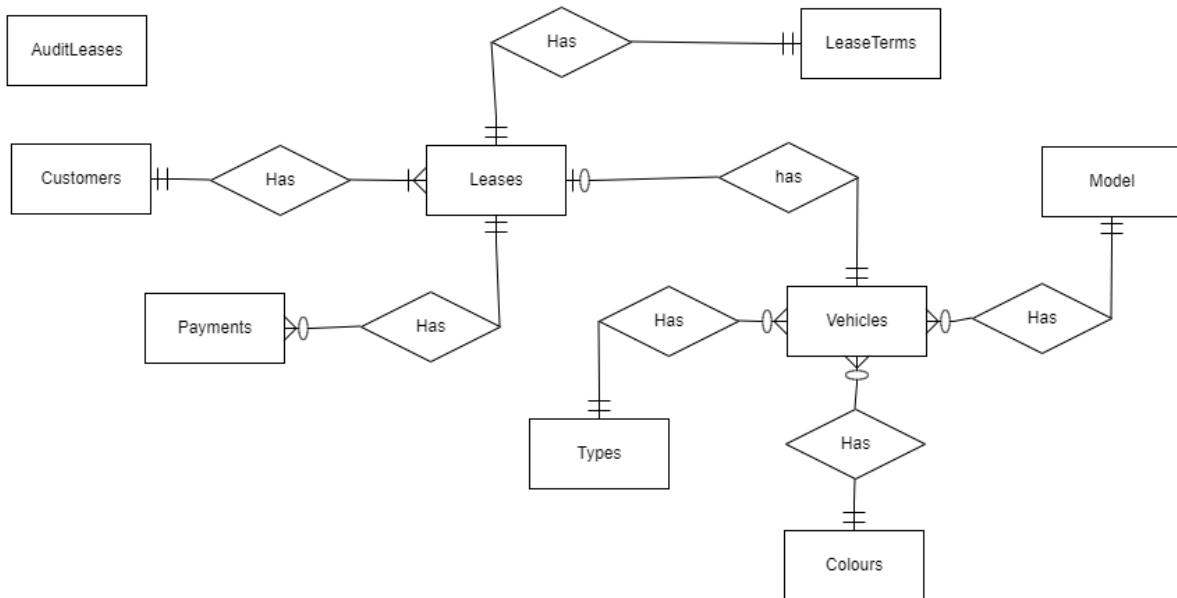
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## Problem Recognition and Initial Definitions

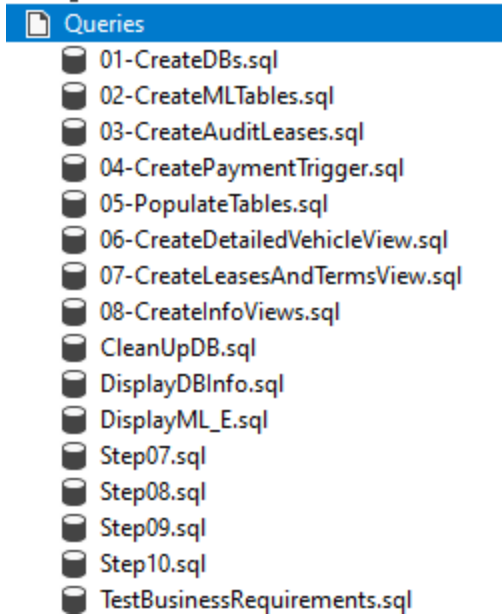
Based on the project description the following normalized database was developed.

### ERD



### Queries

To setup the database run the scripts in the numeric order they are named (from 1 to 8), the scripts requested by steps 7,8,9 and 10 of the project definition are named with the respective step, and the remaining scripts are for cleaning the DB (exclude everything, keeps only the database), display the DB information's (tables, views, triggers and constraints) and for test the business requirements in the project definition.



- 01-CreateDBs.sql  
Verifies if in the schema there is a database called "ML\_635-203263" or "ML\_E\_635-203263", being the first the main database and the second the database to hold the employee's information imported from the excel support file.
- 02-CreateMLTables.sql  
Create the tables structures in the "ML\_635-203263" database.  
If this script was run before, before running again its necessary to clean up the db, for that use the CleanUpDB.sql script.
- 03-CreateAuditLeases.sql  
Create the audit table and triggers to audit every change in the Leases table
- 04-CreatePaymentTrigger.sql  
Create the trigger that disallow the deleting from the Payment table.
- 05-PopulateTables.sql  
Insert data into the db tables, most of the data was obtained from the support files at the end of the project definition.
- 06-CreateDetailedVehicleView.sql  
Create a view that joins the information's about vehicles, color, models and types. This view is used to make it easier to write the select scripts requested by the project.
- 07-CreateLeasesAndTermsView.sql

Create a view that joins the information's about leases and its terms. This view is used to make it easier to write the select scripts requested by the project.

- 08-CreateInfoViews.sql  
Create views that facilitate the visualization of the db information's such as tables, triggers, views and constraints information's
- DisplayDBInfo.sql  
Script that returns the "ML\_635-203263" database information's.
- DisplayML\_E.sql
- Script that returns the "ML\_E\_635-203263" database information's.
- Step07.sql  
Script that will show a list of customers (first name, last name, and phone number) and the total number of vehicles each has leased.
- Step08.sql  
Script that returns a list of vehicles (vehicle VIN, model, type, color) that have never been leased.
- Step09.sql  
Script that returns a list of vehicles (vehicle VIN, model, type, color) that have air conditioning and power locks.
- Step10.sql  
Script that returns a list of vehicles (vehicle VIN, model, type, color) and the largest maximum kilometers field from any time the vehicle has been leased.
- TestBusinessRequirements.sql  
Script that tries to insert invalid entries to test the constraints.
- CleanUpDB.sql  
Script that delete all tables, constraints, triggers and views from the "ML\_E\_635-203263" database.

## Delivery

This project delivery is a SQL Server Management Studio project called “ML\_Project” that contains all scripts described above, a pdf with the ER diagram, and also the reports results of the select queries, each report is named after the query that generated it.

