

DATA MODELLING AND ERD DESIGN

INSTRUCTIONS: Create an ERD for a car dealership based on the criteria describe below.

SUBMISSION: Submit the ER Diagram in PDF with filename ***LASTNAME_lesson6_erd.pdf***. Score points are all or nothing.

The dealership sells both new and used cars, and it operates a service facility with parts for purchasing along the service. Since the dealership sells cars and provides services, it has sales person identified by a unique ID, and its name (last name and first name), and it has mechanics person identified by a unique ID together with its name (last name and first name). The customers should have full details – name (last name and first name), phone number, and address (broken down to its details). The cars are identified uniquely by an ID, and contains serial number, its make, model, color and year of make. Additionally, we have to identify if the car is for sale or not (yes or no). A service has a unique ID, a name, and its hourly rate. A part has a unique ID, a part number, its description, and a purchase (wholesale) price and its corresponding retail price.

Corresponding transactions are:

- A car sale will have a sales invoice that contains what car was bought, which customer bought it, and which sales person assisted. It also contains a unique invoice number (aside from its ID), and date of sale.
- A service transaction contains a unique ticket number (aside from its ID), the type of service being requested, the car for servicing, the owner of the car, comments or instructions for the service, the date the car was received for servicing, and the date the car was returned.
- A mechanic with its ID will be assigned to one or more service via the service ticket, and contains the hours spent in the service and its corresponding cost or amount. It can contain some remarks or comments by the mechanic.
- A service transaction may contain some parts that was used – it contains the service ticket it was part of, the part used, how many of these parts has been used, and its corresponding cost or price.

Show the relationships using the following business rules:

- A salesperson may sell many cars, but each car is sold by only one salesperson.
- A customer may buy many cars, but each car is bought by only one customer.
- A salesperson writes a single invoice for each car he or she sells.
- A customer gets an invoice for each car he or she buys.
- A customer may come in just to have his or her car serviced; that is, a customer need not buy a car to be classified as a customer.
- When a customer takes one or more cars in for repair or service, one service ticket is written for each car.
- The car dealership maintains a service history for each of the cars serviced. The service records are referenced by the car's serial number.
- The car dealership has many different types of servicing with an hourly rate (e.g., Preventive Maintenance, General Checkup, Tire Repair, Wheel Alignment & Adjustment, etc.)
- A car brought in for service can be worked on by many mechanics, and each mechanic may work on many cars.
- A car that is serviced may or may not need parts (e.g., adjusting a carburetor or cleaning a fuel injector nozzle does not require providing new parts).