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DATABASE DESIGN – 2ND EDITION

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Appendix B Sample ERD Exercises

Exercise 1

Manufacturer

A manufacturing company produces products. The following product information is stored: product name, product ID and quantity on hand. These products are made up of many components. Each component can be supplied by one or more suppliers.

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Create an ERD to show how you would track this information.

Show entity names, primary keys, attributes for each entity, relationships between the entities and cardinality.

Assumptions

- A supplier can exist without providing components.
- A component does not have to be associated with a supplier.
- A component does not have to be associated with a product. Not all components are used in products.
- A product cannot exist without components.

ERD Answer

Component(CompID, CompName, Description) PK=CompID

Product(ProdID, ProdName, QtyOnHand) PK=ProdID

Supplier(SuppID, SuppName) PK = SuppID

CompSupp(CompID, SuppID) PK = CompID, SuppID

Build(CompID, ProdID, QtyOfComp) PK= CompID, ProdID

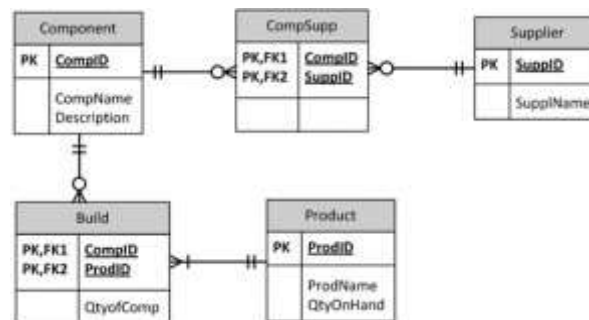


Figure B.1 by A. Watt.

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Exercise 2

Car Dealership

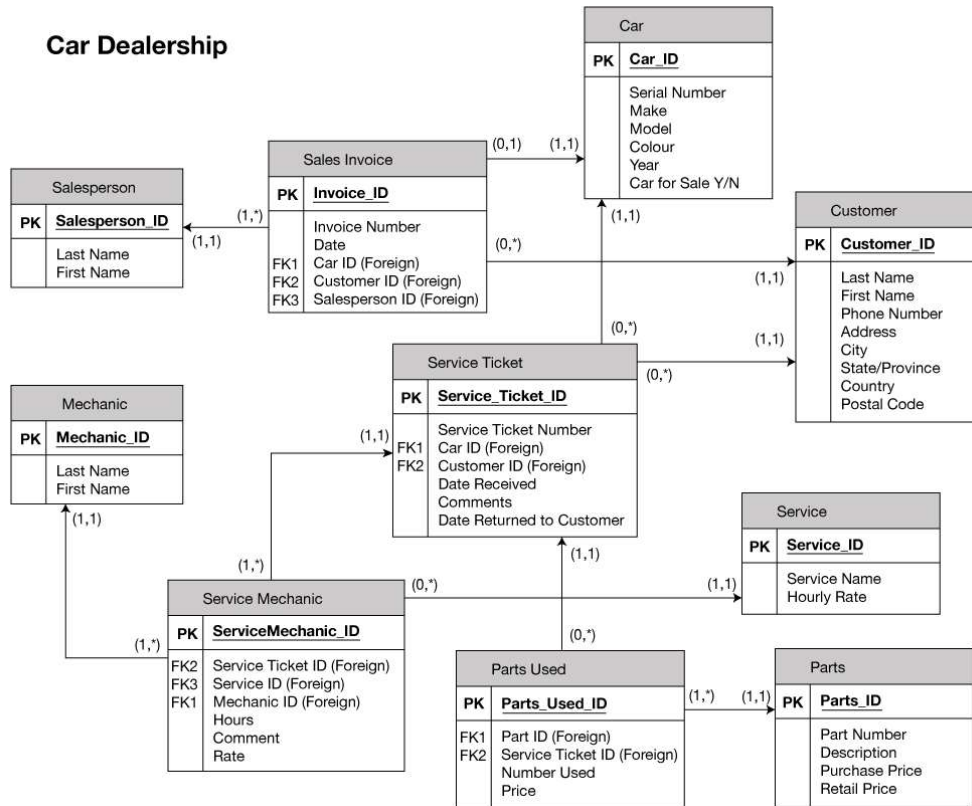
Create an ERD for a car dealership. The dealership sells both new and used cars, and it operates a service facility (see Figure B.2). Base your design on the following business rules:

- 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.
- 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).

ERD Answer

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Car Dealership**LICENSE****SHARE THIS BOOK**

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