Course: CSCE 4350.501 - 11546 Fundamentals of Database Systems

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Assignment: Group Project

Entities and their relationships

Manufacturer "Owns" → Brand – One-to-Many
Each manufacturer owns one or more brands, but each brand is owned by only one manufacturer.

Brand "Includes" → Model – One-to-Many
Each brand can have multiple models, but each model is associated with only one brand.

Vehicle "Is of" → Model – Many-to-One
Each vehicle is based on one specific model, but a single model can describe many vehicles.

Model "Contains" → ModelPart -Many-to-One
Model can contain many parts, but each part is tied to only one model.

ModelPart "Contains"→ Parts-Many-to-One
ModelPart can contain a Part, but each ModelPart refers to a single Part.

Parts "Contains"→ Partsinventory- Many-to-One
Part can be stored in the PartInventory, but each inventory entry references only one unique Part.

PartsInventory "Manages"→Supplier- Many-to-One
PartsInventory is associated with a single Supplier, but a Supplier can provide parts to multiple inventory records.

PartsInventory "Uses"→Assembler- Many-to-Many
PartsInventory entries (parts) can be used by multiple Assemblers. Assemblers may use various parts from different inventory entries.

PartsInventory "Fulfils"→SalesPart- Many-to-Many
PartsInventory can be used to fulfill multiple SalesPart orders, and each SalesPart may require parts from various inventory entries.

Assembler "Assembles"→Vehicle- Many-to-Many
Assemblers can work on assembling multiple Vehicles, and a single Vehicle can be assembled by multiple Assemblers.

SalesPart "Belongs to"→ Sales- Many-to-one
SalesPart is associated with one Sales transaction, but a Sales transaction can include multiple SalesParts.

Sales "Makes"→Customer- Many-to-Many
A Sale can involve multiple Customers, and a Customer can make multiple Sales over time.

Sales "Includes"→SalesVehicle- One-to-Many
Sale can include multiple SalesVehicles, but each SalesVehicle is associated with exactly one Sale.

SalesVehicle "Refrences"→Vehicle- One-to-Many
SalesVehicle corresponds to one Vehicle, but a single Vehicle could be referenced in multiple SalesVehicle records if the vehicle is sold more than once.

Sales "Makes"→ Dealer- Many-to-One
Sales are associated with exactly one Dealer, but a Dealer can make many sales.

Dealer "Manages"→DealerInventory-Many-to-Many
Dealers can manage multiple inventory items in their DealerInventory, and each inventory item can be managed by multiple dealers.

Vehicle "Listed in" → DealerInventory – Many-to-Many
Vehicles can be listed in the inventory of multiple dealers, and a DealerInventory can contain many vehicles.