

The Online Car Shopping DataBase ER

A. Entities

1. Customer(CustomerID[PK], FirstName, LastName, Password, Email, Address)
2. Car(CarID [PK], Price, Warranty, EngineType, CategoryID [FK], Maker[FK], Color, ModelID[FK], ConditionType, PhotoUrl)
3. Maker(MakerID, MakerName, Country, MakerEstablishedYear, MakerWebsiteURL)
4. Category(CategoryID [PK], CategoryName, CategoryDescription)
5. Review (ReviewID[PK], CustomerID[FK], CarID[FK], Rating, Comment, DataPosted)
6. Model (ModelID [PK], ModelName, ModelYear, TransmissionType, AverageFuelConsumption, Sales, StockQuantity)
7. Order (OrderID [PK] CustomerID [FK], CarID[FK], SalespersonID[FK] OrderDate, Total amount, Status, CardNumber, ExpiryDate, CVC)
8. Salesperson (SalespersonID [PK], FirstName, LastName, Email, PhoneNumber)

B. Normalization

1NF:

Already in 1NF:

- No repeating groups
- Each primary key determines all other attributes

Customer(CustomerID[PK], FirstName, LastName, Password, Email, Address)

Car(CarID [PK], Price, Warranty, EngineType, CategoryID [FK], Maker[FK], Color, ModelID[FK], ConditionType, PhotoUrl)

Maker(MakerID[PK], MakerName, Country, MakerEstablishedYear, MakerWebsiteURL)

Category(CategoryID [PK], CategoryName, CategoryDescription)

Review (ReviewID[PK], CustomerID[FK], CarID[FK], Rating, Comment, DataPosted)

Model (ModelID [PK], ModelName, ModelYear, TransmissionType, AverageFuelConsumption, Sales, StockQuantity)

Order (OrderID [PK] CustomerID [FK], CardID[FK], SalespersonID[FK] OrderDate, Total amount, Status, CardNumber, ExpiryDate, CVC)

Salesperson (SalespersonID [PK], FirstName, LastName, Email, PhoneNumber)

2NF:

- Already in 1NF:
- No Partial dependencies (No primary key is composite)

3NF:

- Already in 3NF:
- No Transitive dependencies (No non-key attribute determines another non-key attribute)