# $\begin{array}{c} {\rm Database\ Design} \\ {\rm CS\ 6360.003:\ Homework\ \#3} \end{array}$

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Entity-Relation diagram for NBA is shown in fig. 1.

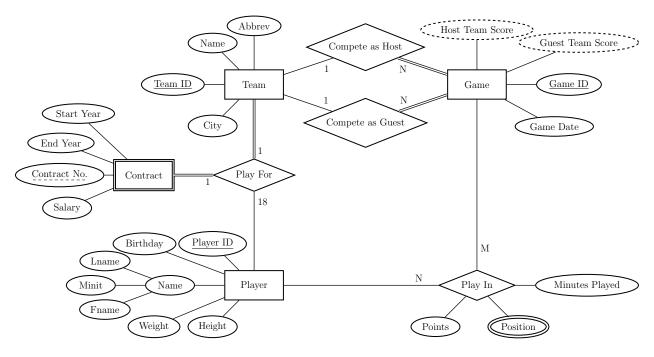


Figure 1: ER Diagram for NBA League

#### Assumption:

- A team can have contract with at most 18 players and must have at least 5 players in the team.
- For each game, there is a host team and a guest team.
- A player can play multiple positions in one game.
- The result of the game can be calculated by summing up the players' score of that team in that game.

# Part (a)

Entity-Relation diagram for museum is shown in fig. 2.

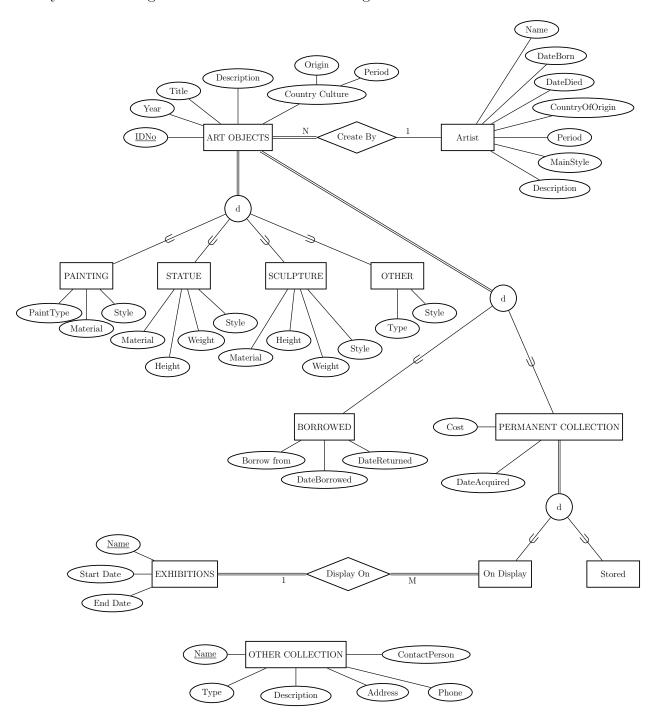


Figure 2: ER Diagram for Museum

#### Assumption:

- A art object is created by one artist, so the cardinality ratio for ARTIST in Create By relation is 1.
- All art objects in the museum will be created by an artist in the database, so for ART OBJECT has total participation in Create By relation.
- Other collection is the object museum interact with, so there is no relation between OTHER COLLECTION and other entity.

### Part (b)

The database schema for ER-diagram infig. 2 is shown in fig. 3.

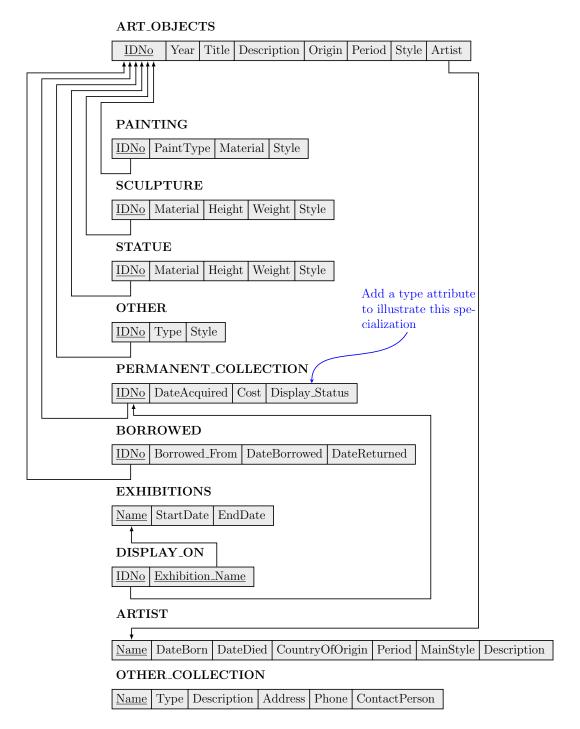


Figure 3: Database Schema for Museum

The database schema for bank is shown in fig. 4.

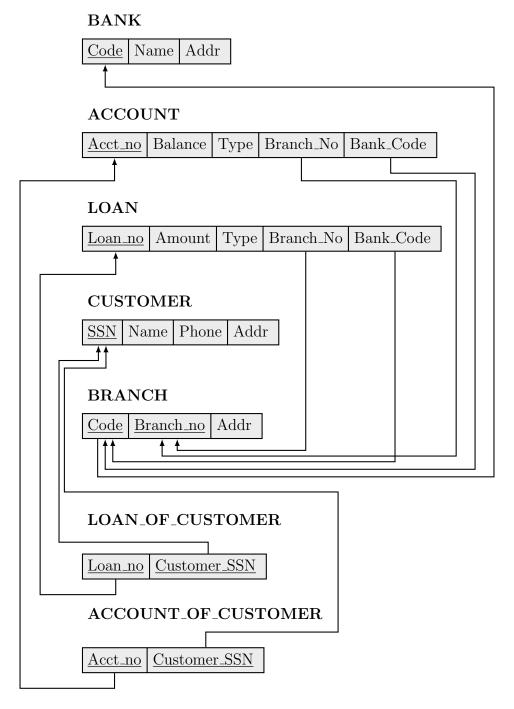


Figure 4: Database Schema for Bank

# Part (a) Use 8A

The database schema using 8A is shown in fig. 5.

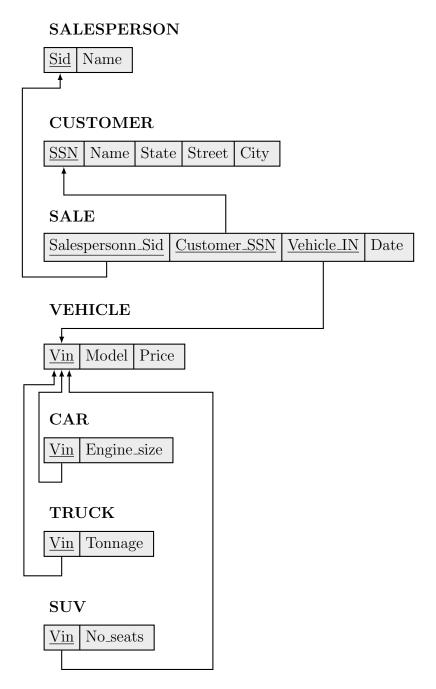


Figure 5: Database Schema using 8A

# Part (b) Use 8B

The database schema using 8B is shown in fig. 6.

# **SALESPERSON** Sid Name CUSTOMER City Name State Street $CAR\_SALE$ $Salespersonn\_Sid$ $Customer\_SSN$ Vehicle\_IN Date CARVin | Model | Price Engine\_size $TRUCK\_SALE$ Vehicle\_IN Salespersonn\_Sid Customer\_SSN Date **TRUCK** Vin | Model | Price Tonnage $SUV\_SALE$ Customer\_SSN Salespersonn\_Sid Vehicle\_IN Date SUVVin | Model | Price | No\_seats

Figure 6: Database Schema using 8B

# Part (c) Use 8C

The database schema using 8C is shown in fig. 7.

# SALESPERSON Sid Name CUSTOMER SSN Name State Street City SALE Salespersonn\_Sid Customer\_SSN Vehicle\_IN VEHICLE Vin Model Price Type Engine\_size Tonnage No\_Seats

Figure 7: Database Schema using 8C

# Part (d) Use 8D

The database schema using 8D is shown in fig. 8.

# SALESPERSON Sid Name CUSTOMER SSNState | Street City Name SALE Salespersonn\_Sid Customer\_SSN Vehicle\_IN **VEHICLE** Vin | Model | Price | isCar | isTruck | isSUV Engine\_size Tonnage $No\_Seats$

Figure 8: Database Schema using 8D