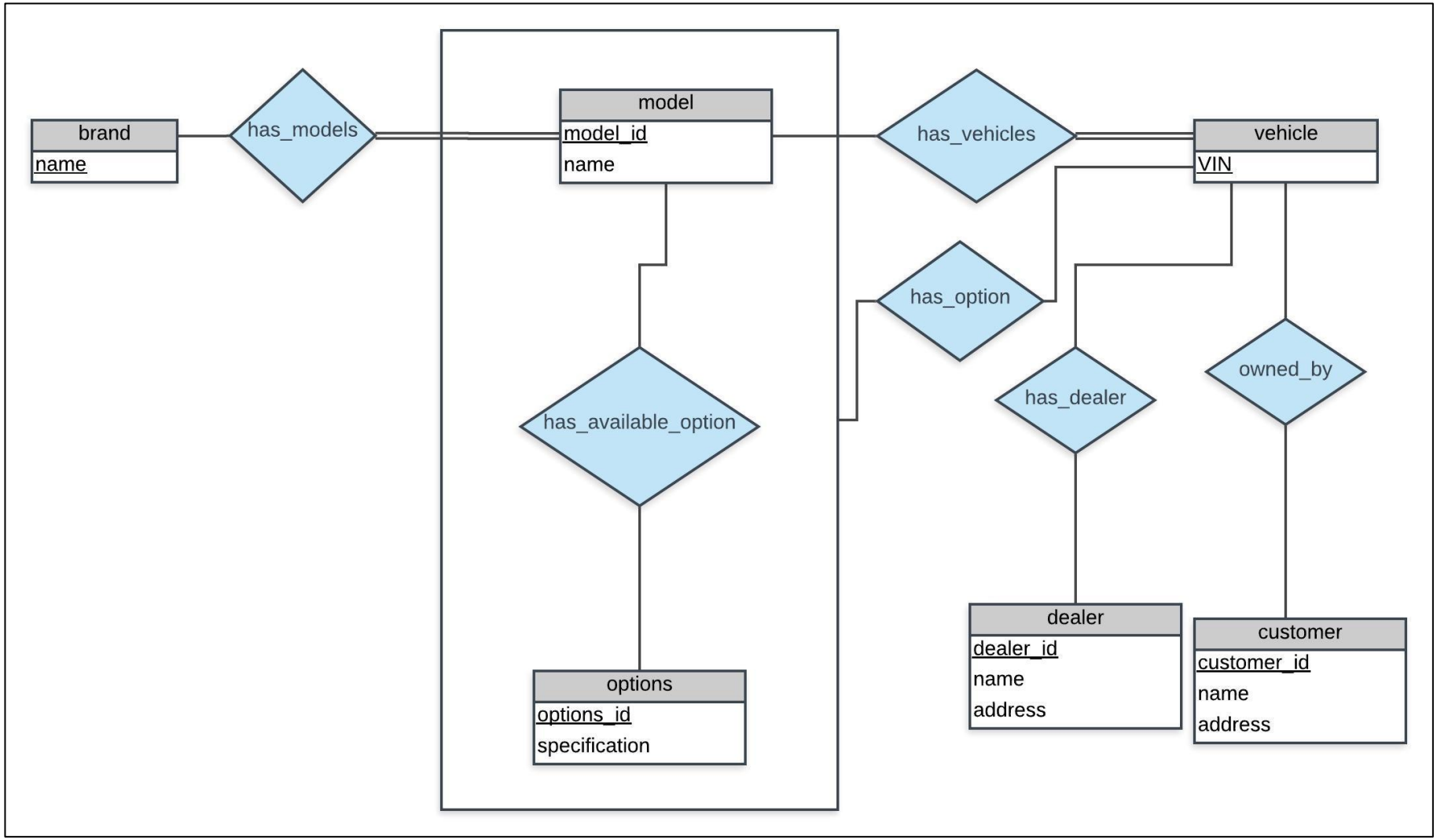
# Lab: Translating E-R Diagrams to Relational Schemas

**Parts 1 & 2**

# Process of Translating E-R Diagrams to Relational Schemas

1. Examine carefully the E-R diagram, identify entities, relationships, etc.
2. Translate entity sets
    1. Create schemas
    2. Define primary keys
3. Translate relationship sets
    1. Create a new schema or add attributes, depending on cardinality
    2. Define primary and foreign keys for new schemas
4. Translate aggregations and specializations, if any

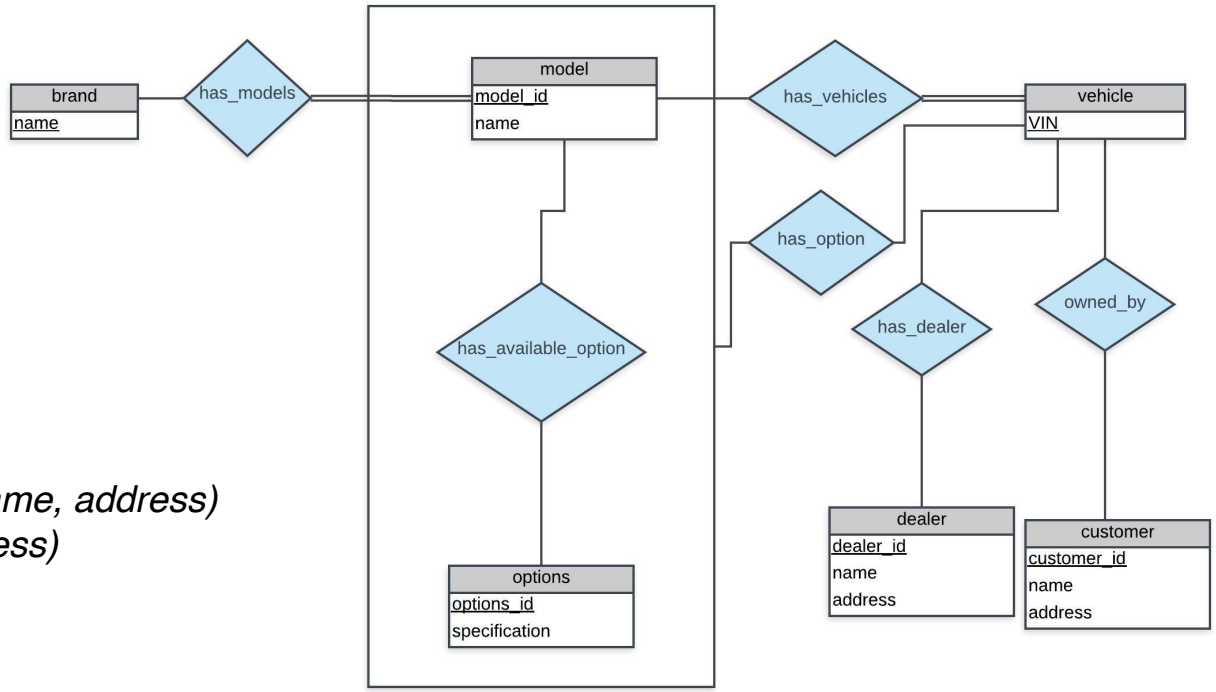
# Translating E-R Diagrams - Part1




- **Next: Translate entity sets - Create schemas**

# Translating E-R Diagrams to Relational Schemas

## Translate entity sets - Create schemas

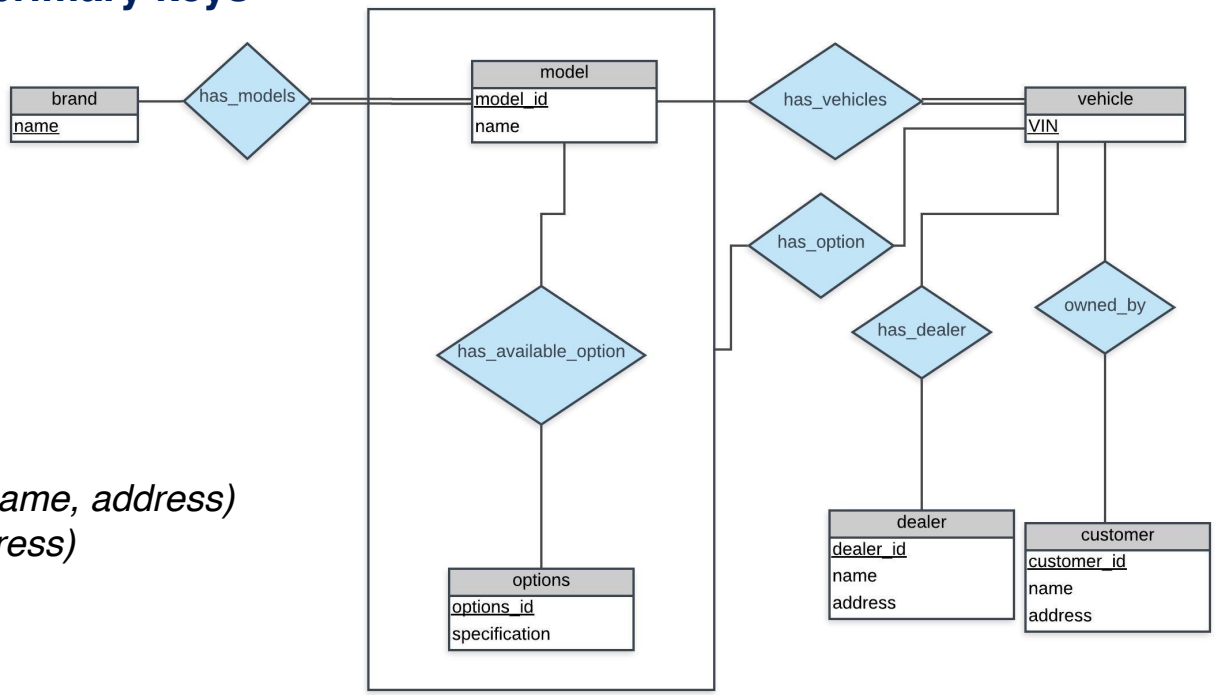



*brand(brand_name),*
*model(model_id, model_name)*
*vehicle(VIN)*
*option(option_id, specification)*
*customer(customer_id, customer_ name, address)*
*dealer(dealer_id, dealer_name, address)*

- **Next: Translate entity sets - Define primary keys**

# Translating E-R Diagrams to Relational Schemas

## Translate entity sets - Define primary keys



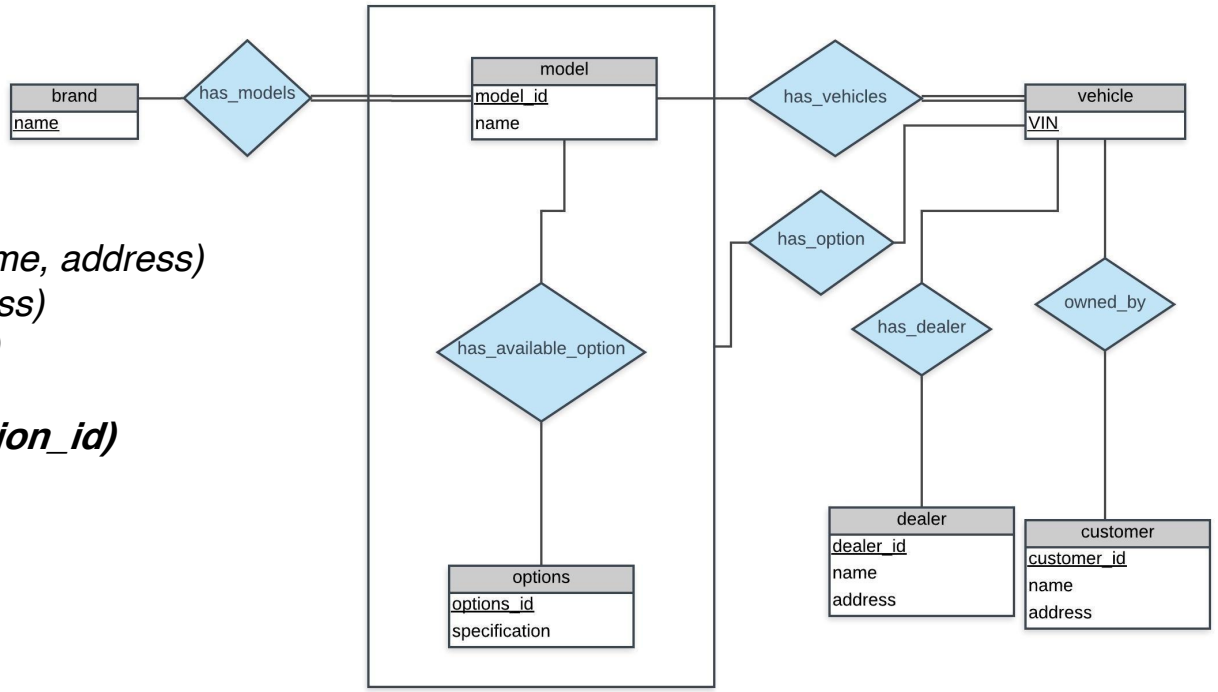

*brand( brand_name ),*
*model( model_id, model_name)*
*vehicle( VIN)*
*option( option_id, specification)*
*customer( customer_id, customer_ name, address)*
*dealer( dealer_id, dealer_name, address)*

- **Next: Translate relationship sets - Create new schemas**

# Translating E-R Diagrams to Relational Schemas

## Translate relationship sets - Create new schemas

*brand( brand_name ),*
*model( model_id, model_name)*
*vehicle( VIN)*
*option( option_id, specification)*
*customer( customer_id, customer_ name, address)*
*dealer( dealer_id, dealer_name, address)*
***has_model(brand_name, model_id )***
***has_vehicle(model_id, VIN)***
***has_available_option(model _d, option_id)***
***has_dealer(VIN, dealer_id )***
***owned_by(VIN, customer_id)***

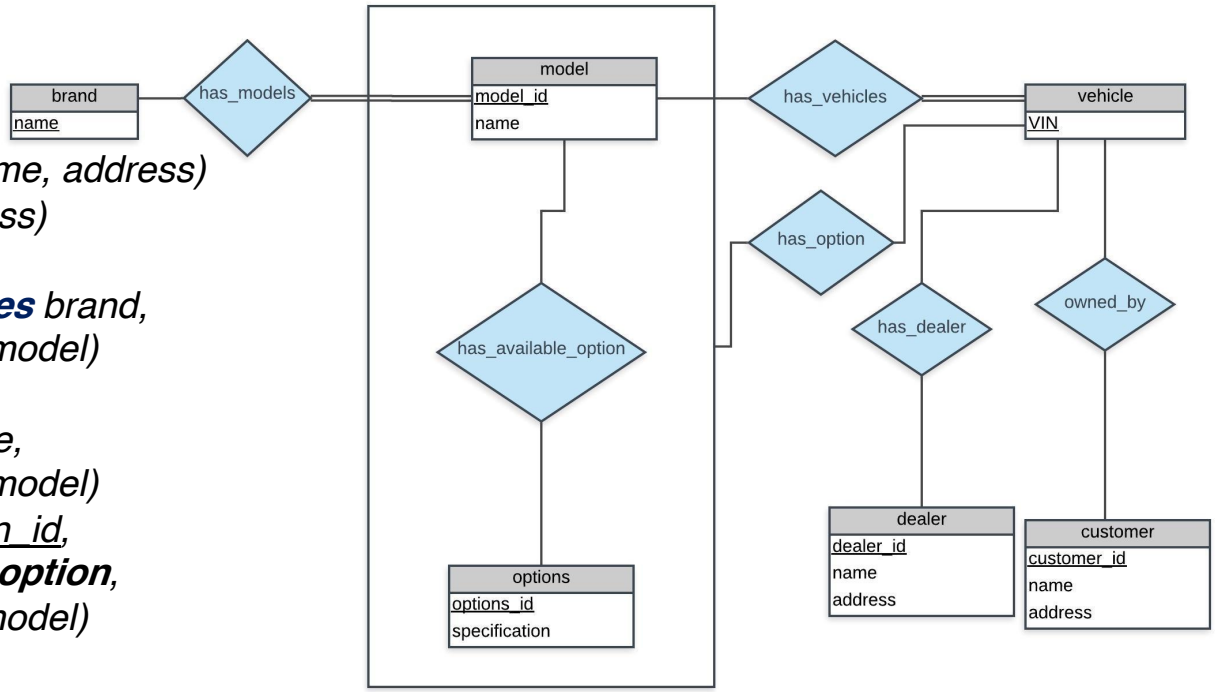



- **Next: Translate relationship sets: Define primary and foreign keys**

# Translating E-R Diagrams to Relational Schemas

## Translate relationship sets: Define primary and foreign keys

*brand( brand_name ),*
*model( model_id, model_name)*
*vehicle( VIN)*
*option( option_id, specification)*
*customer( customer_id, customer_ name, address)*
*dealer( dealer_id, dealer_name, address)*
*has_model( brand_name, model_id ,*
*foreign key brand_name references brand,*
*foreign key model_id references model)*
*has_vehicle( model_id, VIN,*
*foreign key VIN references vehicle,*
*foreign key model_id references model)*
*has_available_option( imodel_d, option_id,*
*foreign key option_id references_option,*
*foreign key model id references model)*
*has_dealer( VIN, dealer_id ,*
*foreign key dealer_id references dealer,*
*foreign key VIN references vehicle)*
*owned_by( VIN, customer_id,*
*foreign key customer_id references customer,*
*foreign key VIN references vehicle)*

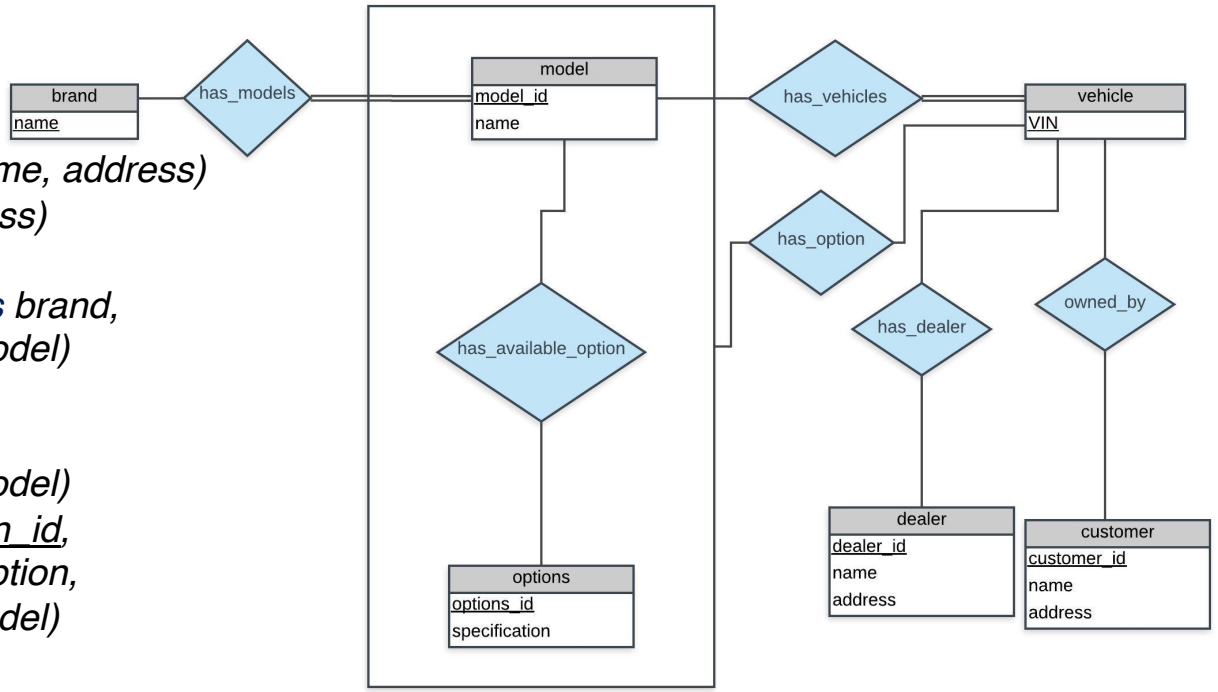



- **Next: Translate aggregations and specializations**

# Translating E-R Diagrams to Relational Schemas

## Translate aggregations and specializations

*brand( brand_name ),*
*model( model_id, model_name)*
*vehicle( VIN)*
*option( option_id, specification)*
*customer( customer_id, customer_ name, address)*
*dealer( dealer_id, dealer_name, address)*
*has_model( brand_name, model_id ,*
*foreign key brand_name references brand,*
*foreign key model_id references model)*
*has_vehicle( model_id, VIN,*
*foreign key VIN references vehicle,*
*foreign key model_id references model)*
*has_available_option( model_id, option_id,*
*foreign key option_id references_option,*
*foreign key model id references model)*
*has_dealer( VIN, dealer_id ,*
*foreign key dealer_id references dealer,*
*foreign key VIN references vehicle)*
*owned_by( VIN, customer_id,*
*foreign key customer_id references customer,*
*foreign key VIN references vehicle)*
***has_option(VIN, model_id, option_id,***
***foreign key VIN references vehicle,***
***foreign key (model_id, option_id) references has_available_option)***



# Lab

**Part 2**

To Submit the schemas

# Translating E-R Diagrams to Relational Schemas