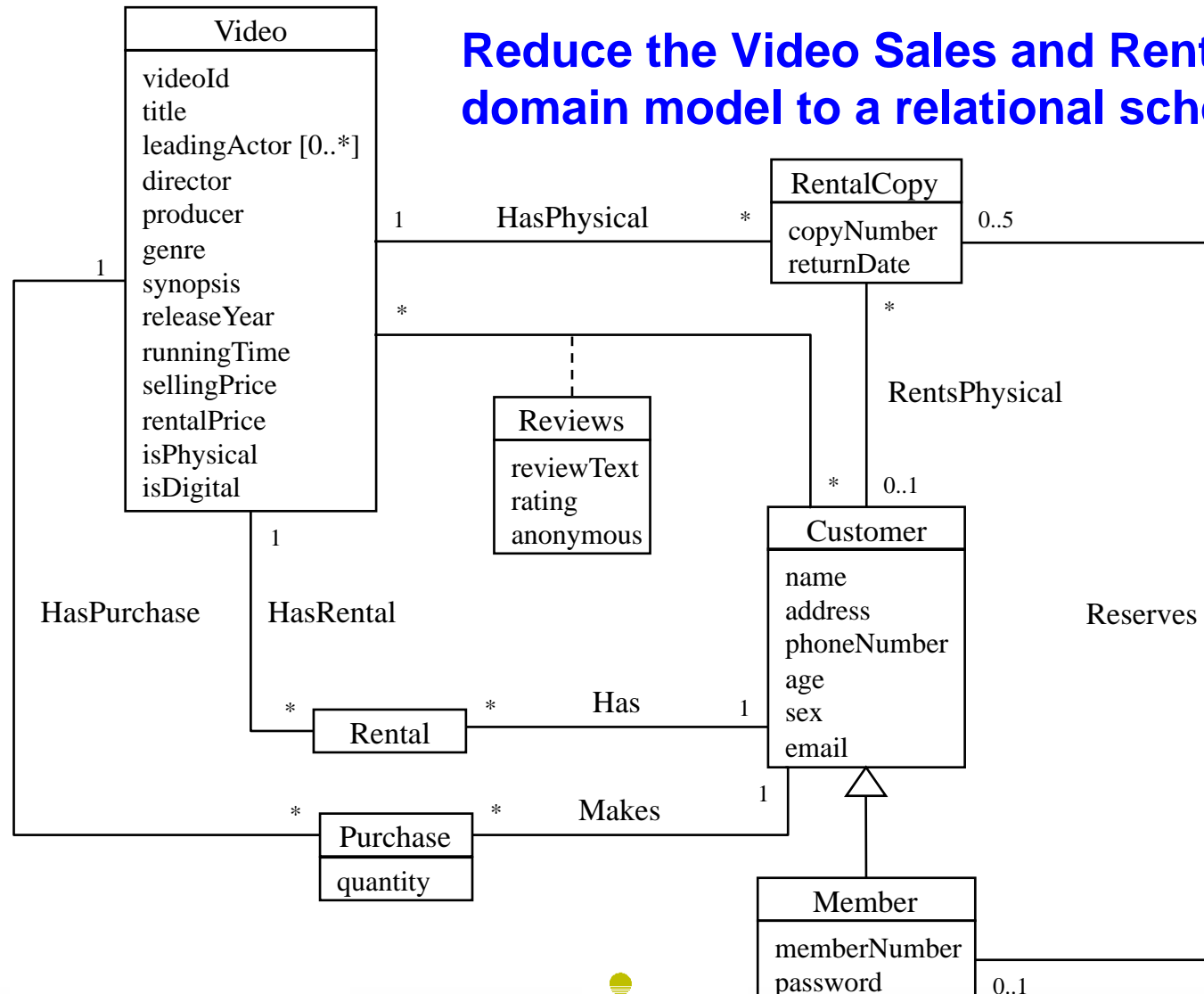


EXAMPLE: VIDEO SALES AND RENTAL SHOP DOMAIN MODEL REDUCTION

Reduce the Video Sales and Rental Shop domain model to a relational schema.



EXAMPLE: VIDEO SALES AND RENTAL SHOP DOMAIN MODEL REDUCTION—SOLUTION

To allow the reduction to proceed, it is necessary either to add a *surrogate key*, `customerId`, or to use email as a key for the Customer class.

- We will use a surrogate key in the reduction.

Reduce generalization using option 2

Customer(`customerId`, name, address, phoneNumber, age, sex, email)

Member(`memberNumber`, password, *`customerId`*)

`customerId` references Customer
on delete cascade

EXAMPLE: VIDEO SALES AND RENTAL SHOP DOMAIN MODEL REDUCTION—SOLUTION (cont'd)

Reduce multivalued attributes

Actor(actorId, name)

VideoLeadingActor(videoid, actorId)

videoid references Video

on delete cascade

actorId references Actor

on delete cascade

Reduce independent classes

Video(videoid, title, actorId, director, producer, genre, synopsis,
releaseYear, runningTime, sellingPrice, rentalPrice, isPhysical,
isDigital)

EXAMPLE: VIDEO SALES AND RENTAL SHOP DOMAIN MODEL REDUCTION—SOLUTION (cont'd)

Reduce dependent classes

HasPhysical between Video and RentalCopy

RentalCopy(copyNumber, videoid, returnDate)

videoid references Video
on delete cascade

HasPurchase between Video and Purchase

Purchase(videoid, quantity)

videoid references Video
on delete cascade

Makes between Customer and Purchase

Purchase(videoid, customerId, quantity)

customerId references Customer
on delete cascade

EXAMPLE: VIDEO SALES AND RENTAL SHOP DOMAIN MODEL REDUCTION—SOLUTION (cont'd)

HasRental between Video and Rental

Rental(*videoid*)

videoid references Video
on delete cascade

Has between Customer and Rental

Rental(*videoid*, *customerId*)

customerId references Customer
on delete cascade

1:N associations

RentsPhysical between Customer and RentalCopy

RentalCopy(*copyNumber*, *videoid*, returnDate, *customerId*)

customerId references Customer
on delete set null

EXAMPLE: VIDEO SALES AND RENTAL SHOP

DOMAIN MODEL REDUCTION—SOLUTION (cont'd)

Reserves between Member and RentalCopy

RentalCopy(copyNumber, videoid, returnDate, *customerId*, *memberNumber*)
memberNumber references Member
on delete set null

N:M associations

Reviews between Customer and Video

Reviews(videoid, customerId, reviewText, rating, anonymous)
videoid references Video
on delete cascade
customerId references Customer
on delete cascade

EXAMPLE: VIDEO SALES AND RENTAL SHOP

DOMAIN MODEL REDUCTION—SOLUTION (cont'd)

Customer(customerId, name, address, phoneNumber, age, sex, email)

Member(memberNumber, password, *customerId*)

customerId references Customer
on delete cascade

Video(videoid, title, actorId, director, producer, genre, synopsis,
releaseYear, runningTime, sellingPrice, rentalPrice, isPhysical,
isDigital)

Actor(actorId, name)

VideoLeadingActor(videoid, actorId)

videoid references Video
on delete cascade
actorId references Actor
on delete cascade

EXAMPLE: VIDEO SALES AND RENTAL SHOP

DOMAIN MODEL REDUCTION—SOLUTION (cont'd)

RentalCopy(copyNumber, *videold*, returnDate, *customerId*, *memberNumber*)

videold references Video

on delete cascade

customerId references Customer

on delete set null

memberNumber references Member

on delete set null

Purchase(*videold*, *customerId*, quantity)

videold references Video

on delete cascade

customerId references Customer

on delete cascade

Rental(*videold*, *customerId*)

videold references Video

on delete cascade

customerId references Customer

on delete cascade

EXAMPLE: VIDEO SALES AND RENTAL SHOP DOMAIN MODEL REDUCTION—SOLUTION (cont'd)

Reviews(videoid, customerId, reviewText, rating, anonymous)

videoid references Video

on delete cascade

customerId references Customer

on delete cascade

