KU LEUVEN

Enhanced Entity-Relationship (E)ER diagram

Assignment #1

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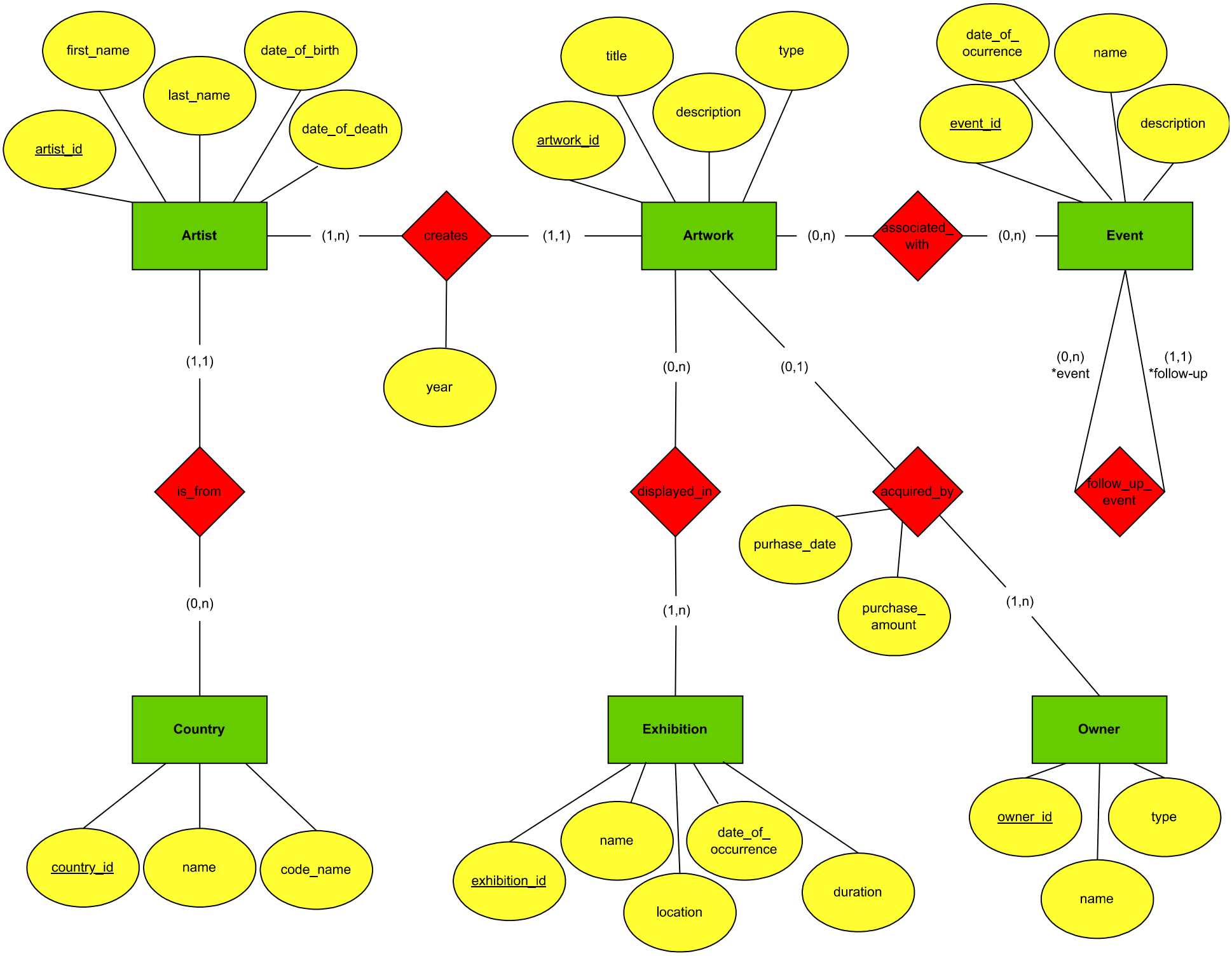
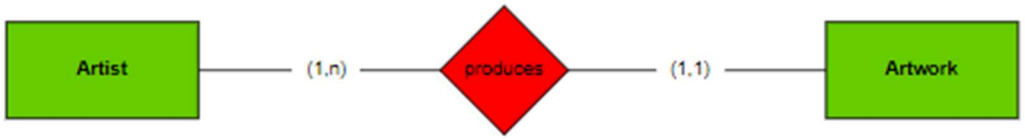

first_name
last_name
date_of_birth
artist_id
date_of_death
Artist
(1,n)
creates
year
(1,1)
title
type
description
artwork_id
Artwork
(0,n)
associated_with
(0,n)
date_of_ocurrence
name
event_id
description
Event
(1,1)
(0,n)
(0,1)
(0,n)
*event
(1,1)
*follow-up
is_from
displayed_in
acquired_by
follow_up_event
purhase_date
purchase_amount
(0,n)
(1,n)
(1,n)
Country
Exhibition
Owner
country_id
name
code_name
exhibition_id
name
location
date_of_occurrence
duration
owner_id
type
name

Reading the Relations

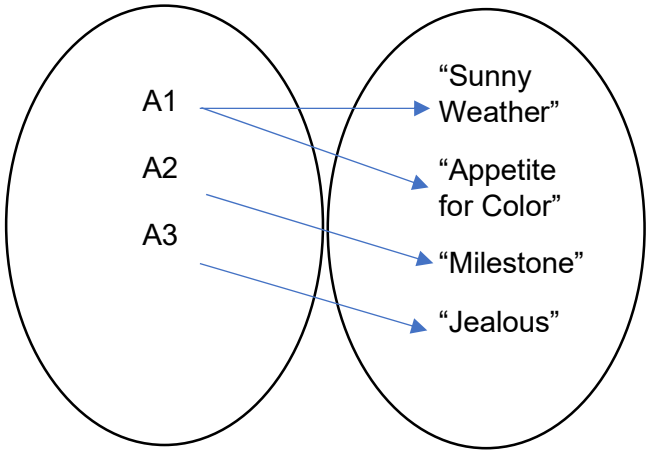
Cardinalities and their Interpretations

Relation #1: Many-to-One



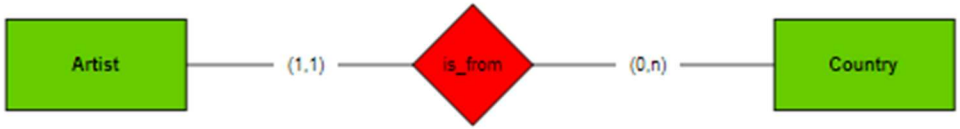
Assumptions: An artist can produce more than one artwork but must produce at least one artwork in order to be considered an artist. Each artwork has exactly one artist (no collaboration on artwork).

Artists can produce multiple *Artworks* (_,n)
Artworks have exactly one *Artist* (_,1)
Artist is depended on *Artwork* (1, n)
Artwork is depended on *Artist* (1,1)



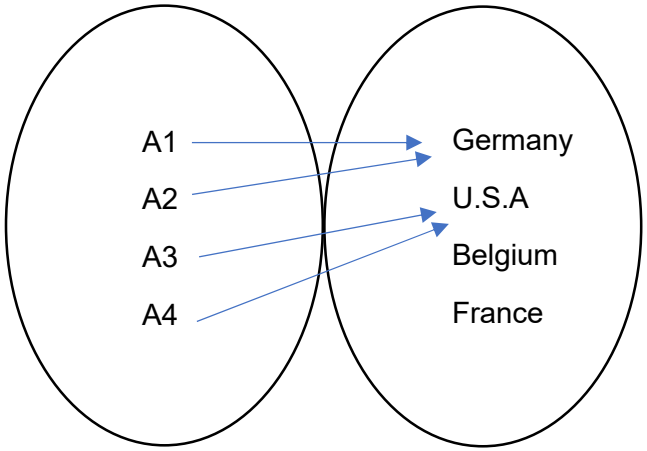
Example

Relation #2: One-to-Many



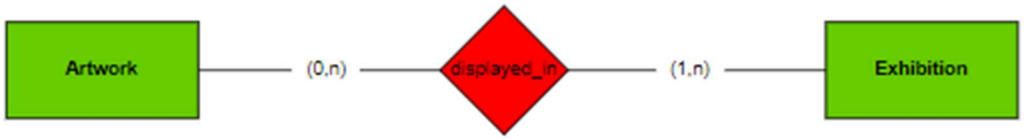
Assumptions: An artist is from exactly one country (in other words, interpreted as their place of birth). Multiple artists can be from the same country.

Artist is from exactly one *Country* (_,1)
Country can have multiple *Artists* (_,n)
Artist is depended on *Country* (1,1)
Country is not depended on *Author* (0,n)



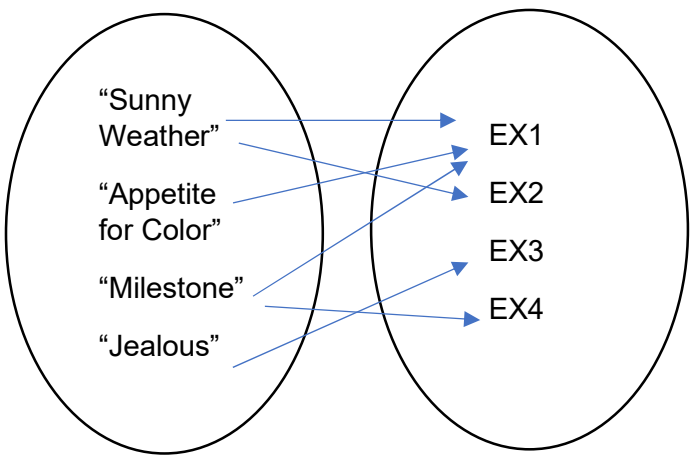
Example

Relation #3: Many-to Many

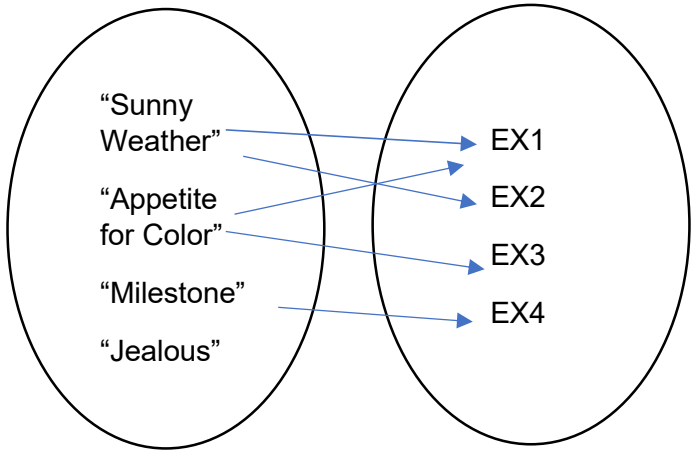


Assumptions: Though Artworks can only be held in one exhibition at a time, it is assumed these exhibitions occur in multiple years (which is why I added date_of_ocurrence as an attribute). An exhibition has at least one artwork in it, though an artwork is not necessarily part of any exhibition.

Artwork can be displayed in multiple *Exhibitions* (_,n)
Exhibitions can display multiple *Artworks* (_,n)
Artwork is not depended on *Exhibition* (0,n)
Exhibition is depended on *Artwork* (1,n)

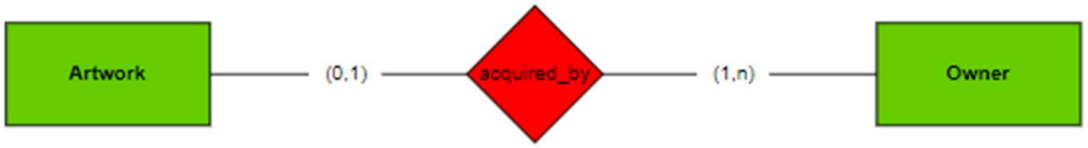


Example #1



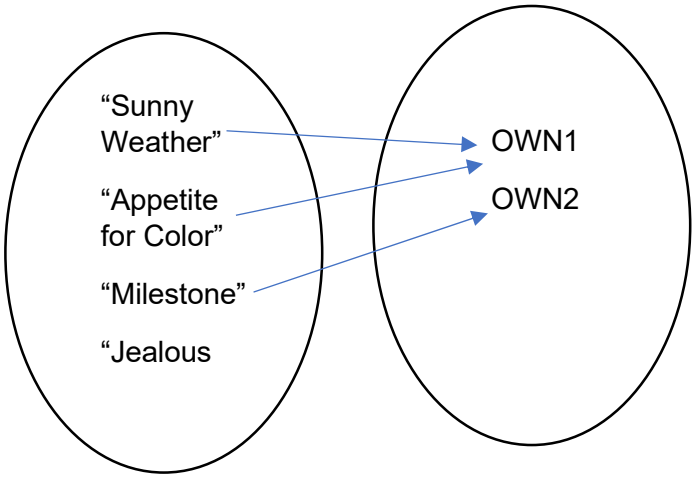
Example #2

Relation #4: One-to-Many



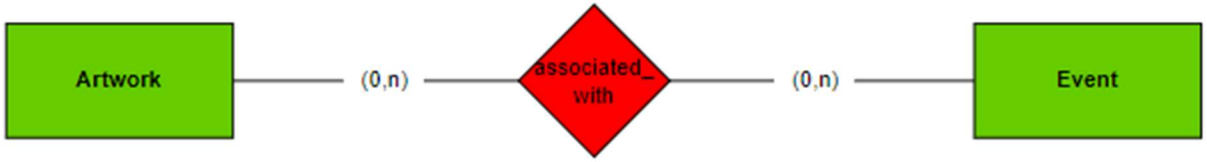
Assumptions: Is it assumed that artwork is acquired by only one owner. Each owner can own more than one artwork but must own at least one in order to be considered an owner.

Artwork is acquired by exactly one *Owner* (_,1)
Owners can acquire multiple *Artworks* (_,n)
Artwork is not depended on *Owner* (0,1)
Owner is depended on *Artwork* (1,n)



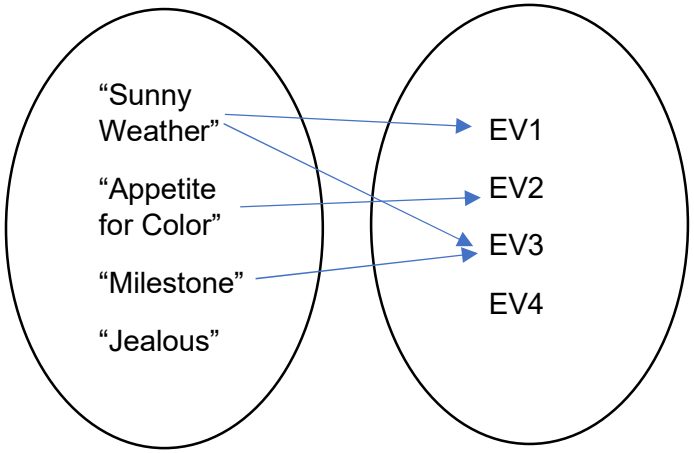
Example

Relation #5: Many-to-Many



Assumptions: Artworks can be associated with multiple events, and events can be associated with multiple artworks. It is assumed that an artwork may not necessarily be associated with an event, and an event might not necessarily be associated with an artwork.

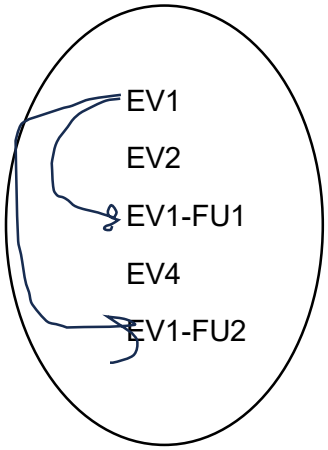
Artwork can be associated with multiple *Events* (_,n)
Events can be associated multiple *Artworks* (_,n)
Artwork is not depended on *Events* (0,n)
Events is not depended on *Artwork* (0,n)



Example

Relation #6: Recursive

Assumptions: Some events have their own follow-up events (which, it is assumed, can be a single follow-up event or multiple follow-up events). However, while not all events will necessarily have these follow-up events, a follow-up event can only occur through one event. In other words, a follow-up event cannot develop out of multiple events. So each follow-up event is dependent on event and only relates to only one event.



Example