University College London

Department of Information Studies

Database Design and Development

Module leader:

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This coursework is submitted as an assessment for INST0012

Database Systems Analysis and Design

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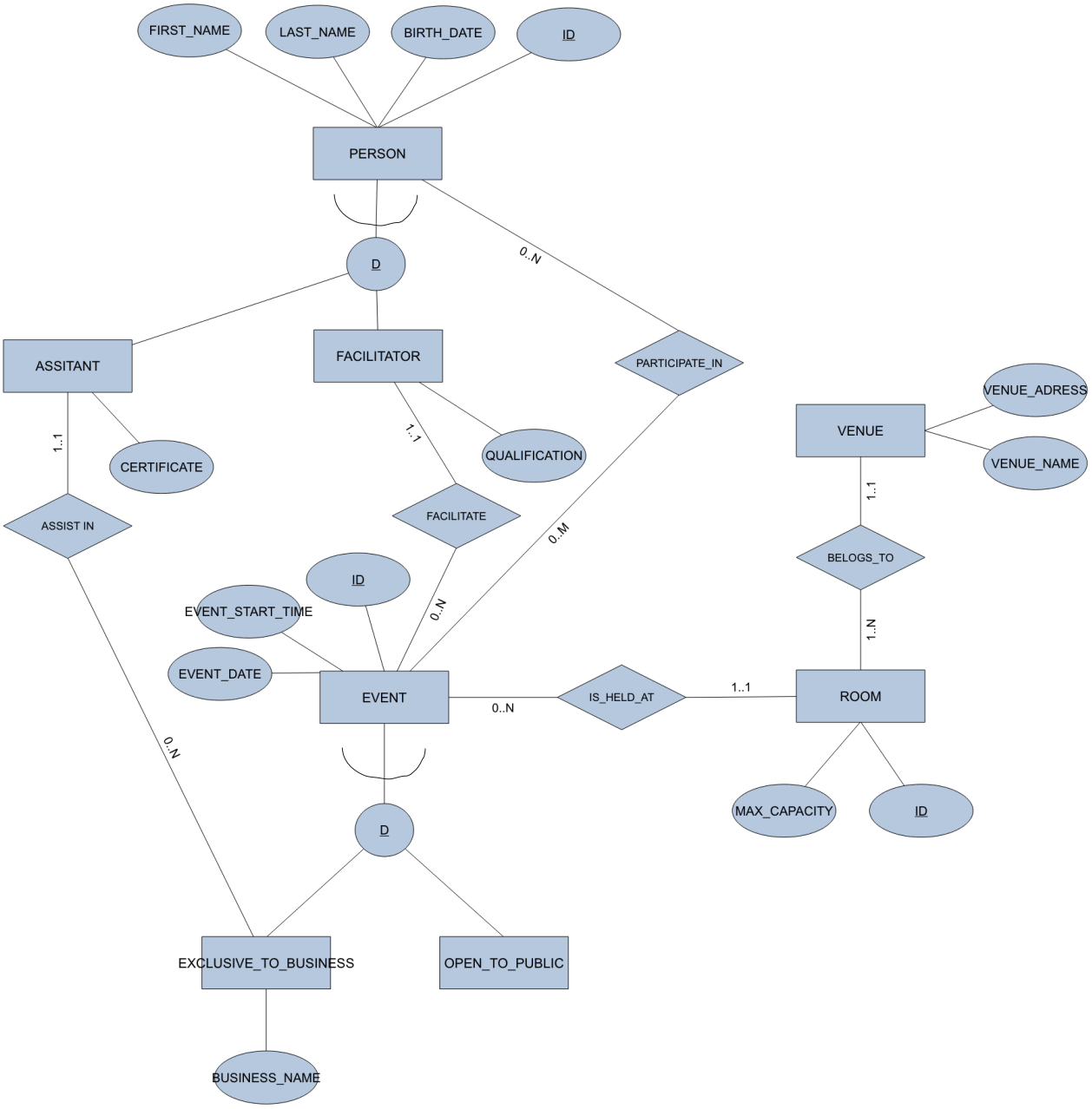
1. CONCEPTUAL DATA MODEL
THE EER OPTION



The brief states that the combination of first_name, last_name and birth_day is unique.. therefore, this could be used as a composite primary key for person. But for practicality reasons I decided to use ID. Because this information would likely be required by the application anyway and it is easier to access/manage.

2. MAPPINGS FROM CONCEPTUAL TO LOGICAL RELATIONAL REPRESENTATION:

2. 1. THE FOLLOWING SEMANTICS CANNOT BE ENFORCED BY THE EER MODEL:

Temporal aspects:

People can sign up only to an upcoming event

The facilitator/assistant of an event can be changed before event's start time

Changing or cancelling an event can be done before its start time

Changing an event's date can be done before its start time

Changing an event's adress can be done before its start time

Consistency across multiple relationship types:

There can not be more events at the same time in the same room

Facilitator or assistant can be also a member of an event

Integrity rules:

The year of the birth <1904 according to the oldest living person as to 17. 4. 2020

Number of members on the event < max capacity of the room

Behaviour:

A procedure to record information about which members participated in which meetings and which facilitator facilitated which event.

A procedure that checks:

If an Exsclusive to business event has its business name and assistant

If facilitator uploads their qualification documents

If assistant uploads their certification from a training

2. 2. THE EER MODEL CAN BE MAPPED TO THE FOLLOWING RELATIONAL MODEL (PRIMARY KEYS ARE UNDERLINED; FOREIGN KEYS ARE IN *ITALICS*):

Person (person_id, first_name, last_name, birth_date)

Assistant (*assistant_id*, certificate)
assistant_id: foreign key refers to person_id in relation **Person**:NULL not allowed, on delete/update cascade

Facilitator (*facilitator_id*, qualification);
facilitator_id: foreign key refers to person_id in relation **Person**: NULL not allowed, on delete/update cascade

Venue (vanue_name, address)

Room (room_id, *venue_name*, max_capacity)
venue_name: foreign key refers to venue_name relation **Venue**: NULL not allowed, on delete/update cascade
(NOTE: Composite primary key, which refers to room_id and venue_name)

Event(event_id, event_start_time, event_date, *room_id, venue_name, facilitator_id*)
facilitator_id: foreign key refers to facilitator_id in relation **Facilitator**: NULL not allowed, on delete restrict/on update cascade
room_id, venue_name: foreign key refers to composite primary key in relation **Room**: NULL not allowed, on delete restrict / on update cascade (NOTE: Composite primary key, which refers to room_id and venue_name)

OpenToPublic (*open_to_public_id*)
open_to_public_id: foreign key refers event_id in relation **Event**: NULL not allowed, on delete/update cascade

ExclusiveToBusiness (*exclusive_to_business_id*, business_name, *assistant_id*);
exclusive_to_business_id: foreign key refers event_id in relation **Event**: NULL not allowed, on delete/update cascade
assistant_id: foreign key refers event_id in relation **Assistant**: NULL not allowed, on delete restrict / on update cascade

PeronsOnEvent (*person_ID, event_id*)
person_id: foreign key refers event_id in relation **Person**: NULL not allowed, on delete/update cascade
event_id: foreign key refers event_id in relation **Event**: NULL not allowed, on delete/update cascade

Note: ON UPDATE CASCADE is in all foreign keys

The following semantics were lost in the mapping:
The overlap of People into Facilitator and Assistant.

3. A SCREENSHOT FROM PHPMYADMIN DEPICTING MY DATABASE UNDER MY UCL ACCOUNT