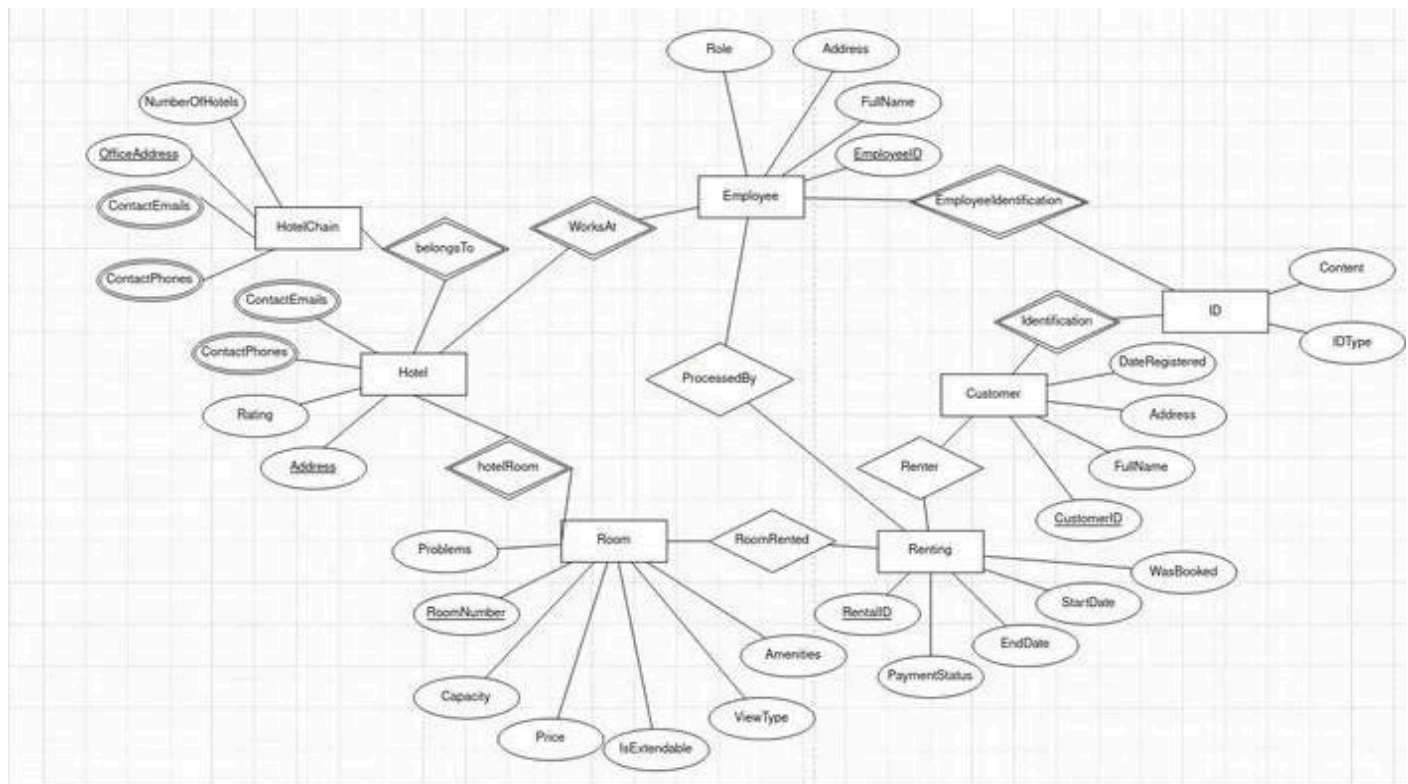


Roman Daher: 300352452

Stefan Zoranovic: 300072850

Moise Kenge ngoyi: 300308366

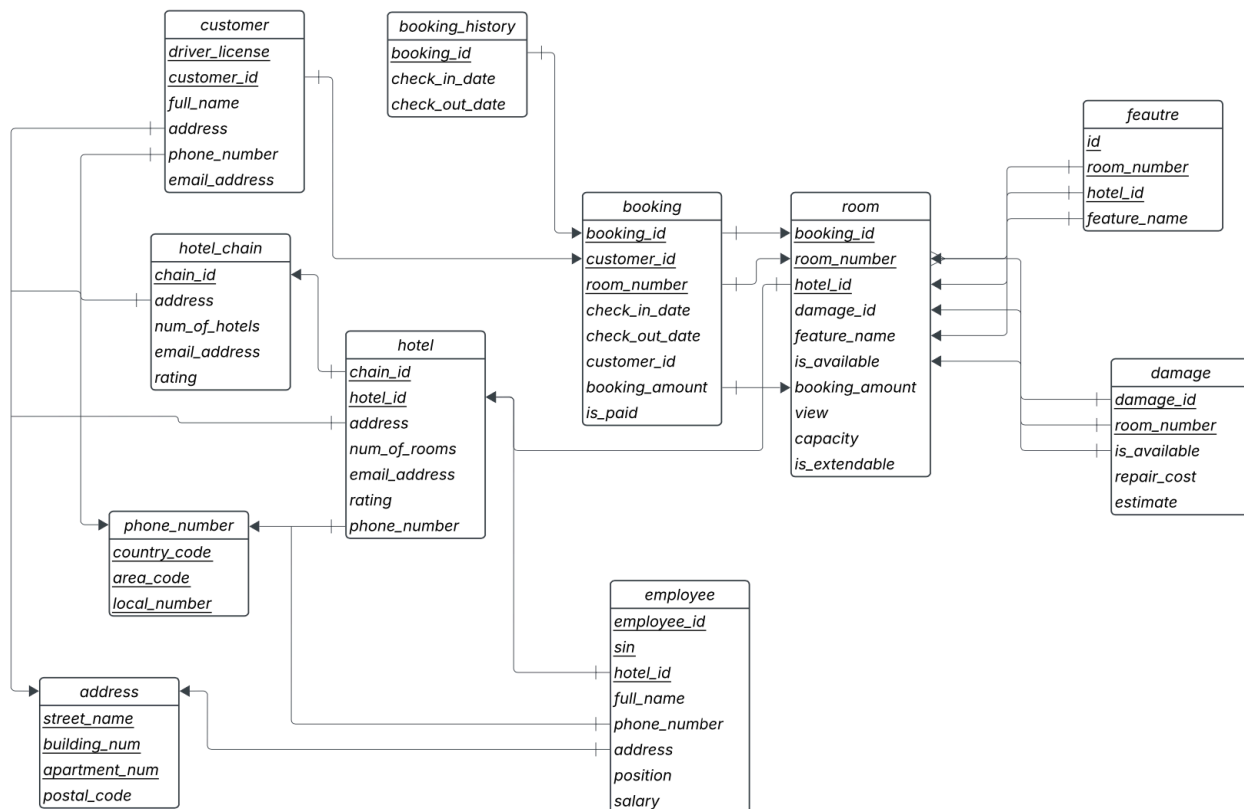
ER Diagram



Relational Model Schema

LINK TO SCHEMA:

https://lucid.app/lucidchart/2b6646e5-73fa-407d-b006-8f308722960f/edit?viewport_loc=-137%2C-351%2C2599%2C1490%2C0_0&invitationId=inv_fd6c0903-ca77-4606-96e9-7692c73a1c61



room(room_number, hotel_id):

- The given room numbers are unique in a hotel but are not cross functional

customer (customer_id):

- Ensures the uniqueness of each customer

employee(employee_id)

- Ensures the employee is uniquely identifiable.

booking (booking_id):

- Ensures the uniqueness of each booking

feature(id)

- Identifies each feature uniquely

damage (damage_id)

- Identifies each damage record.

Foreign key Constraints

To maintain the referential integrity:

Hotel.chain_id → hotel_chain.chain_id:

- A hotel has to belong to a hotel chain.

Room.hotel_id → hotel.hotel_id

- A room cannot exist without a hotel that's associated with it.

Booking.customer_id → customer.customer_id:

- A booking must be have an association with a customer

booking.room_number , booking.hotel_id → room.room_number, room.hotel_id

- Ensures that the specific booked room exist.

employee.hotel_id → hotel.hotel_id

- Ensures employees work for a specific hotel.

booking_history .customer_id → customer.customer_id:

- The booking history should still be retained even if the customer's records are deleted.

damage.room_number , damage.hotel_id → room.room_number, room.hotel_id

- The damage reports must be linked to existing ones.

feature.room_number , feature.hotel_id → room.room_number, room rom.hotel_id:

- A feature must be associated with a room that already exists

Domain and attributes Constraints

hotel_chain.num_of_hotels ≥ 0 :

- A hotel chain can not obviously have a negative number of hotels.

hotel.rating BETWEEN 1 AND 5

- Ensures valid hotel ratings

hotel.address is not null

Hotel.num_of_rooms ≥ 0

Room.price ≥ 0 :

- The prices should not be negative

room.capacity > 0 :

- A room must have at least one bed

employee.salary > 0

- Salary must be positive

Booking.check_in_date $<$ booking.check_out_date:

- Check-out- must be after check-in

damage.repair_cost ≥ 0

- Repair cost should not be negative

User define constraints

- A hotel must always have a manager specific to each branch
- A room can only be booked if it is available within a certain date or any.
- A booking cannot be made for a room that has been marked for repair.
- Booking history must remain if a hotel or customer is gone.

