CSCE – 5350 – Fundamentals of Database System

(Project Description and Oracle Installation)

Group - 18

Project Description:

QUEHOTEL is a well-known international hotel organization which requires a well-defined and precise database to manage its resorts and lodging facilities throughout the world. ***ROOMWISE*** (Resort Operations and Management Workflow Integration System), is a system which helps the management to store the details of all the resorts, employees, guests, amenities etc., all over the world.

To make a cohesive and efficient database management system, we create entities and entity-relationships in the first step. We may add more relationships in future depending on the requirements we assume.

Entities:

- ***Hotel chain*** – QUEHOTEL is assumed to have multiple hotel chains and each hotel chains are defined the following attributes -
  - **hotelchain_id, hotelchain_name, hotelchain_number, hotelchain_emailaddress, hotelchain_website, hotelchain_address, hotelchain_type, country**
- ***hotel*** - Each hotel in the hotel chain is defined by the following attributes -
  - **hotel_id, hotel_name, hotel_contact, hotel_emailaddress, hotel_website, hotel_description, hotel_capacity, hotelchain_id, address_id, rating, check_in_time, check_out_time, parking_availability**
- ***address*** – This entity will the address details of each hotel -
  - **address_id, address_line1, address_line2, city, state, country, zipcode**
- ***employee*** – Each employee working in the hotel is defined by the following attributes-
  - **employee_id, employee_name, employee_designation, employee_address, employee_contact, employee_email, department, hotel_id, education, certification, criminal_record**
- ***guest*** - Each guest in the hotel is defined by the following attributes -
  - **guest_id, guest_name, guest_number, guest_email, guest_paymentmethod, guest_idproof, address**
- ***rooms*** – The rooms in the hotel are defined by:
  - **room_id, room_number, room_type, hotel_id**
- ***Room type*** – each room will have a specific room type -
  - **roomtype_id, roomtype_name, room_cost, room_description, no_of_beds**
- ***bookings*** – Bookings in the hotel are defined by the following attributes -
  - **booking_id, booking_date, duration_of_stay, check_in, check_out, booking_payment, no_of_rooms_booked, hotel_id, guest_id, employee_id, total_amount**

- ***discount*** – Guests might sometimes be up for discount offers and they are defined by the following attributes -
    - **discount_id, discount_type, guest_id, hotel_id, rewardpoints**
- ***Star ratings –*** The guests will have to give ratings for the services they received
    - **star_rating_id, star_rating, star_rating_image**
- ***amenities*** – All the amenities and facilities provided at the hotels are defined by -
    - **swimming_pool, gyms, steam_rooms, child_day_care, medical_facilities, restaurants, auditorium, gameroom, meetingrooms, playground**
- ***maintenance*** – The maintenance provided by hotel is defined by -
    - **hotel_id, employee_id, room_id**
- ***passwords*** – The guests are provided with passwords, and they are defined by the following attributes -
    - **booking_id, guest_id, room_number, password**
- ***services –*** Services provided by the hotels
    - **service_id, name, description**
- ***hotel_service*** – The additional services provided by the hotel to the guest is defined as-
    - **hotel_service_id, service_id, hotel_id, cost**
- ***Emp rating*** – Each guest will give a rating to the employee who served them. This is defined by -
    - **guest_id, room_number, emp_id, rating**
- ***package*** – The packages chosen with the room are defined by -
    - **package_id, package_name, description, duration, in_services, price, validityperiod**
- ***promotion*** – promotions will have the following attributes
    - **Promotion_id, promotion_name, description, promotion_start_date, promotion_end_date, offer_details**
- ***Payment method*** – The payment methods of guests are defined by -
    - **cash, credit_card, guest_id**

Relationships:

Unary Relationships:

- Each employee **reports to** one employee
- Each room is **adjacent to** one or two rooms.

Binary Relationships:

One-to-One:

- hotelchain has one address ***(Each hotel chain has one headquarters stored in the address entity)***

- employee has one address ***(Each employee has one home address stored in the address entity)***
- guest has one password ***(Each guest has one password for their account security which is stored in the password entity)***
- service has one payment method ***(each service offered has one related payment method which is specified in paymentmethod entity)***

One-to-Many:

- Hotelchain has many hotels ***(Each hotel chain owns and manages many hotels across different locations which is given in hotel entity)***
- hotel has many rooms ***(Each hotel has many rooms of various types which is stored in rooms entity)***
- roomtype has many rooms ***(Each room type applies to many individual rooms across different hotels, reflected in the rooms entity)***
- employee works at one hotel ***(Each employee works at one specific hotel given my hotel entity)***
- guest makes many bookings ***(A guest can make bookings throughout their stay history which is recorded by booking entity)***
- booking is for one hotel ***(Each booking is linked with one specific hotel indicated by hotel entity)***
- booking is made by one guest ***(Each booking is made by one individual guest which is linked through the guest entity)***
- booking can be assigned to one employee ***(A booking can be assigned to one employee handling it, specified in the employee entity)***
- hotel offers many amenities ***(Each hotel offers many amenities which is listed in the amenities entity)***
- maintenance is performed on one room ***(Each maintenance record is performed on one specific room which is referenced in the room entity)***
- maintenance is done by one employee ***(Each maintenance record is assigned to one employee which is indicated by the employee entity)***

Many-to-Many

- hotel offers many room types ***(A hotel will have multiple rooms and a room type will be available in multiple hotels)***
- room type is available in many hotels ***(There are multiple room types available in multiple hotels)***
- booking can be for many rooms ***(The booking will have multiple rooms and each room maybe booked multiple times)***
- employee can provide many services ***(An employee can provide many services and each service can be provided by multiple services)***
- service can be provided to many guests ***(A service can be given to multiple guests and each guest can request multiple services)***

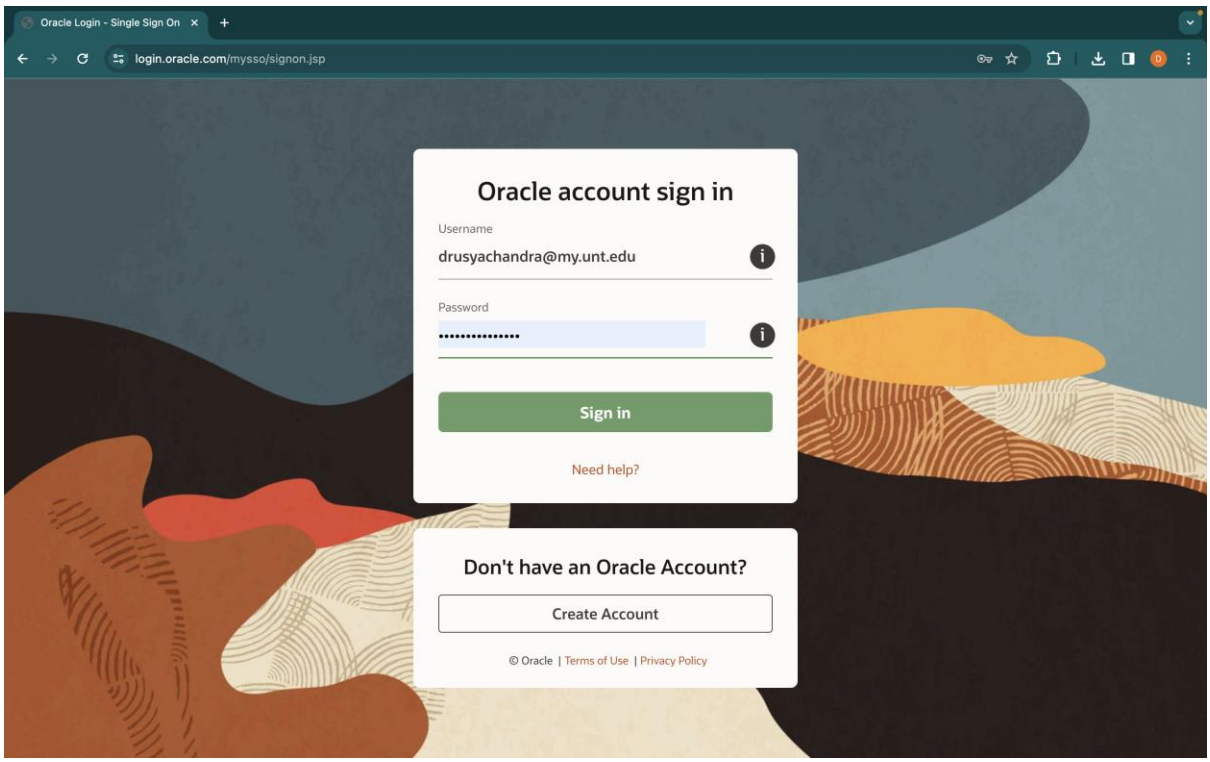
- guest can rate employees (***A guest can give rating to multiple employees and each employee can get ratings from multiple guests)***
- hotel can offer many packages (***A hotel can offer multiple packages and each package can be offered by multiple hotels)***
- package can be included in many bookings ***(A package can be associated with multiple bookings and each booking can have multiple packages).***

Ternary Relationships:

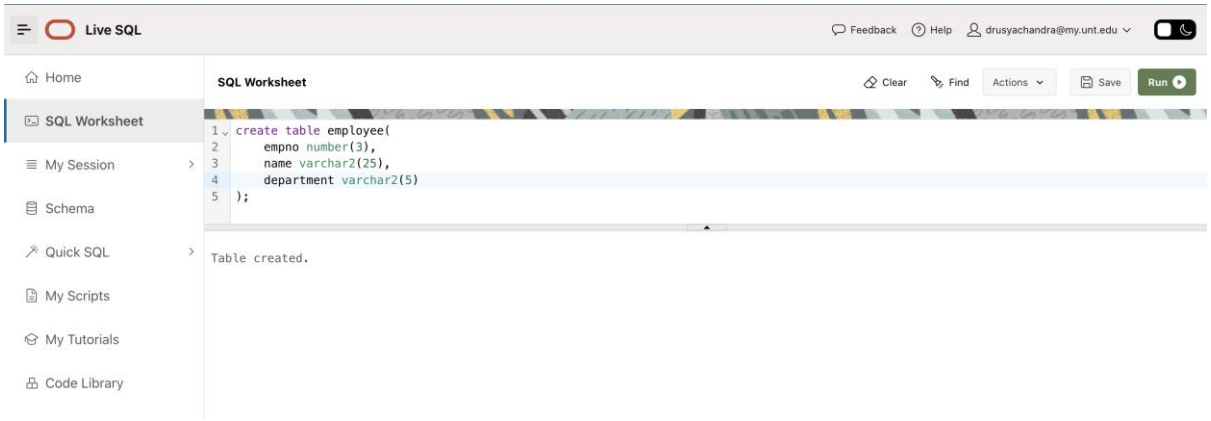
- Promotion can be offered by one hotel chain through hotel for one guest.

Live SQL – Screenshots

I already have an account so I login



Then, I run an SQL command to test



Individual Contribution:

I helped with the entity and entity-relationship sets that pertains to Passwords, Emp rating, Service and found one-to-many, many-to-many relationships. I helped with editing the documentation. I also assisted in organizing timely meetings to discuss the project.