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CENG 356

DATABASE MANAGEMENT SYSTEMS

PROJECT

REQUIREMENTS

- This database is for hotel/hostel reservation. It contains information about people who wants to reserve a room.
- A person can reserve a room several times to the same room type or different room types.
- The database contains information about all the guests and their reservations in the hotel.
- The database contains all the rooms types and definitions.
- The database also contains each guest's payment information.
- For each guest, the reserved room at any date is stored in the database.

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ENTITIES AND RELATIONSHIPS

Reservation:

    Attributes: Reservation ID, Reservation Date, Check-In Date, Check-Out Date, Adults, Children, Room ID, Guest ID

Guest:

    Attributes: Guest ID, First Name, Last Name, Address, E-Mail, Phone, City, Country

Room:

    Attributes: Room ID, Room Type ID, Room Status
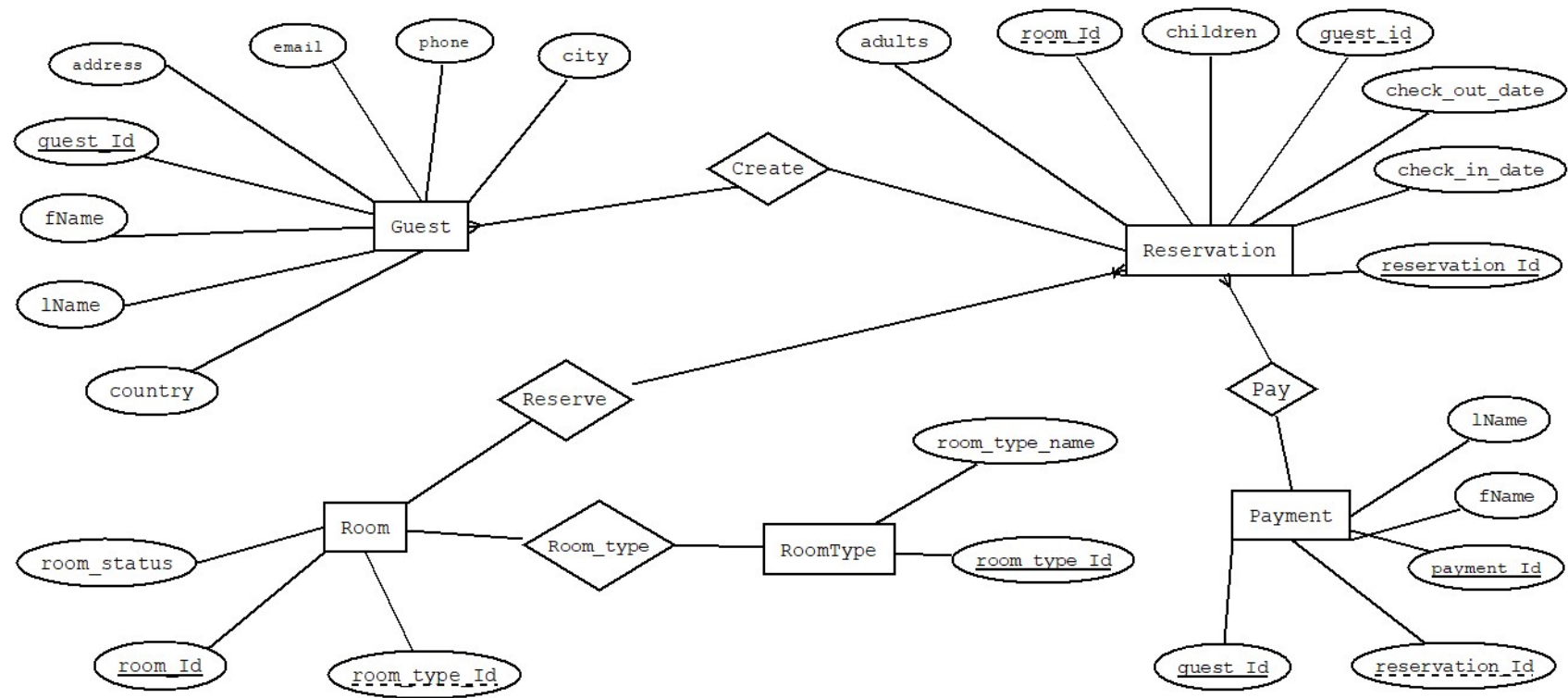
Room Type:

    Attributes: Room Type ID, Room Type Name

Payment:

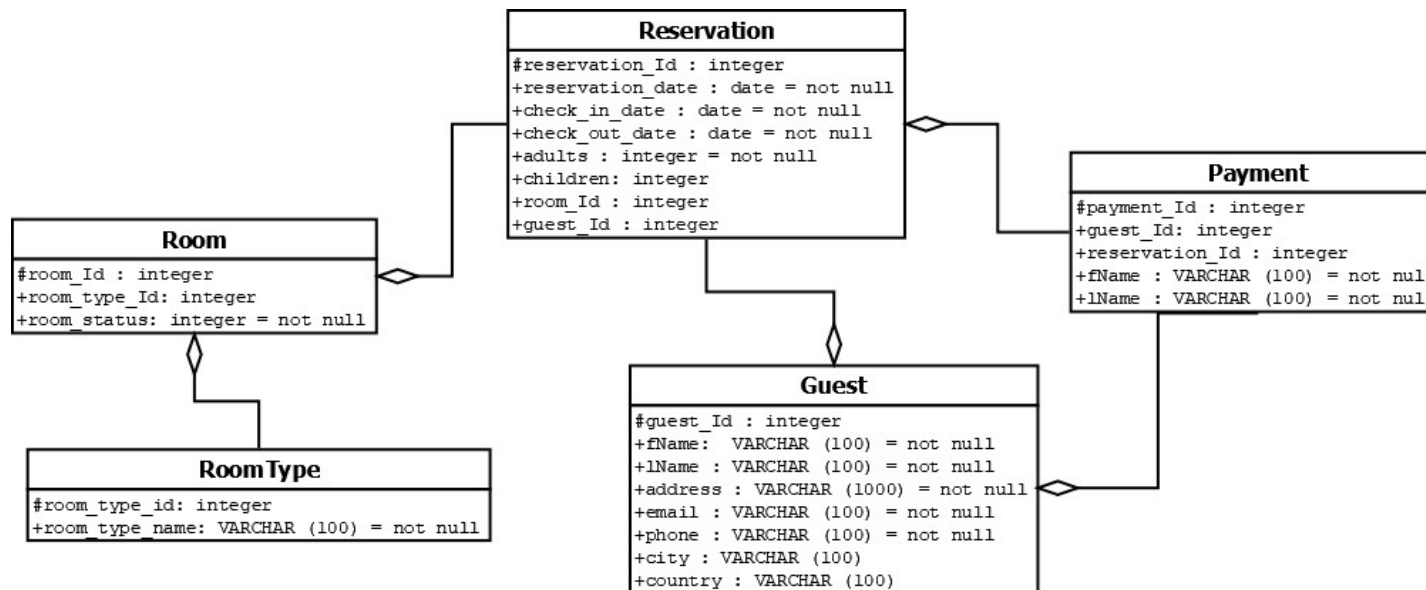   **Attributes:** Payment ID, Guest ID, Reservation ID, First Name, Last Name

E-R Diagram

Entities:

- Reservation
- Guest
- Room
- Room Type
- Payment

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Relationships:

- "Create" relationship is a one-to-many relationship. A guest can create many reservations at the same hotel. This Relationship is defined as a foreign key.
- "Reserve" is a one-to-many relationship. A room can be assigned only one guest at a time, but there could be a lot of room reservations that has been made before the current guest. This Relationship is defined as a foreign key.
- "Pay" is a one-to-many relationship. A guest can pay more than one reservation. This Relationship is defined as a foreign key.
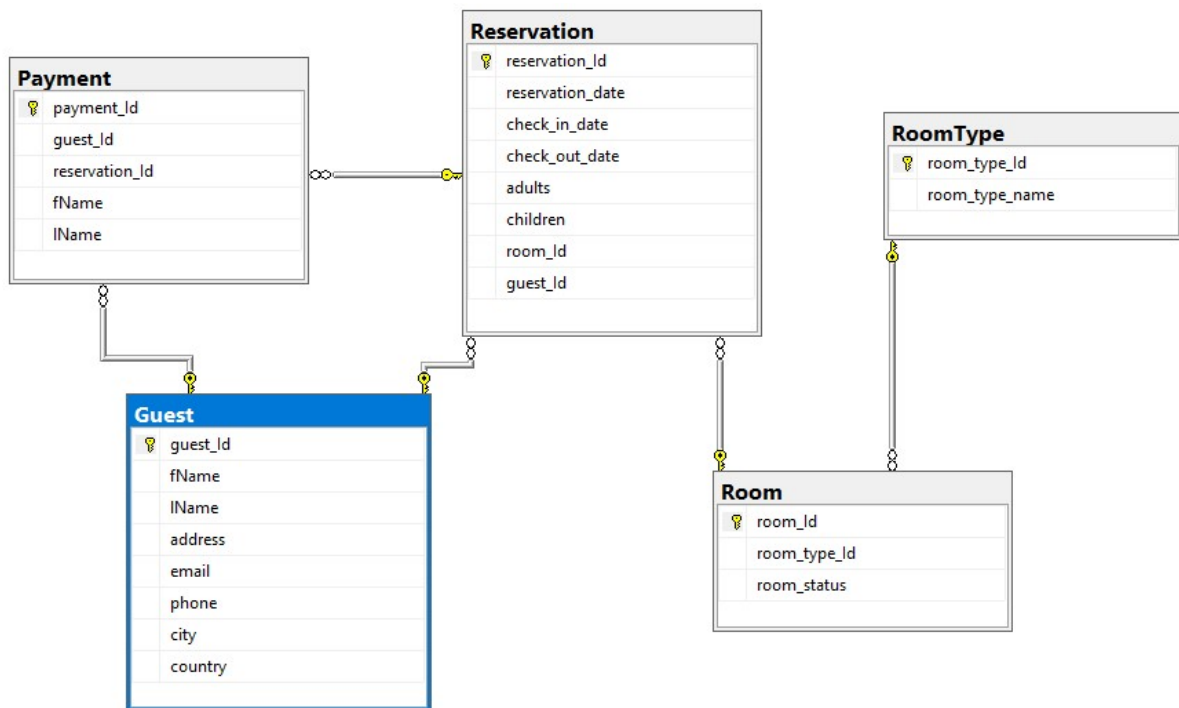- "Room_type" is a one-to-one relationship. Each reserved room can have one type.

UML Relation Model

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This table will be read as:

- Guest has Reservation
- Room has Reservation
- Reservation has Payment
- Room has RoomType

MS SQL HOTEL RESERVATION DIAGRAM

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CREATING SQL DATABASE

```sql
CREATE DATABASE HOTELRESERVATION

CREATE TABLE Guest(
        guest_Id integer,
        fName varchar(100) not null,
        lName varchar(100) not null,
        g_address varchar(1000) not null,
        email varchar(100) not null,
        phone varchar(100) not null,
        city varchar(100),
        country varchar(100),
        PRIMARY KEY(guest_Id)
);

CREATE TABLE RoomType(
        room_type_Id integer,
        room_type_name varchar(100) not null,
        PRIMARY KEY(room_type_Id)
);

CREATE TABLE Room(
        room_Id integer,
        room_type_Id integer
                references RoomType(room_type_Id) ON DELETE Cascade,
        room_status integer not null,
        PRIMARY KEY(room_Id)
);

CREATE TABLE Reservation(
        reservation_Id integer,
        reservation_date date not null,
        check_in_date date not null,
        check_out_date date not null,
        total_days integer not null,
        adults integer not null,
        children integer,
        room_Id integer
                references Room(room_Id) ON DELETE Cascade,
        guest_Id integer
                references Guest(guest_Id) ON DELETE Cascade,
        PRIMARY KEY(reservation_Id)
);

CREATE TABLE Payment(
        payment_Id integer,
        guest_Id integer
                references Guest(guest_Id),
        reservation_Id integer
                references Reservation(reservation_Id),
        fName varchar(100) not null,
        lName varchar(100) not null,
        amount integer not null,
        PRIMARY KEY(payment_Id)
);
```

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SQL QUERIES

Inserting guest information

```
INSERT INTO Guest(guest_Id, fName, lName, g_address, email, phone, city, country)
VALUES(1, 'Rana', 'ÇAKMAK', 'Akdere', 'rcakmak@gmail.com', '123456789', 'Ankara',
'Turkey')
```

Assigning Room Type IDs

```
INSERT INTO RoomType(room_type_Id, room_type_name)
VALUES(100, 'Single')
INSERT INTO RoomType(room_type_Id, room_type_name)
VALUES(200, 'Double')
INSERT INTO RoomType(room_type_Id, room_type_name)
VALUES(300, 'Quad')
INSERT INTO RoomType(room_type_Id, room_type_name)
VALUES(400, 'Queen')
```

Assigning Available Room IDs

(all these steps have been done to the all room_type_Id's)

```
INSERT INTO Room(room_Id, room_type_Id, room_status)
VALUES(401, 400, 0)
INSERT INTO Room(room_Id, room_type_Id, room_status)
VALUES(402, 400, 0)
INSERT INTO Room(room_Id, room_type_Id, room_status)
VALUES(403, 400, 0)
```

Reserving a room with reservation

```
INSERT INTO Reservation(reservation_Id,reservation_date,check_in_date,check_out_date,
total_days, adults, children,room_Id,guest_Id)
VALUES(1, '2020-06-07', '2020-11-06', '2020-11-08', 2, 2, 0, 401, 1)
```

Inserting payment information of reservation

```
INSERT INTO Payment(payment_Id, guest_Id, reservation_Id, fName, lName, amount)
VALUES(1, 1, 1, 'Rana', 'ÇAKMAK', 800)
```

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//FOR RANA AND IREM

```sql
CREATE TABLE Guest(
guest_Id integer,
fName varchar(100) not null,
lName varchar(100) not null,
g_address varchar(1000) not null,
email varchar(100) not null,
phone varchar(100) not null,
city varchar(100),
country varchar(100),
PRIMARY KEY(guest_Id)
);
CREATE TABLE RoomType(
room_type_Id integer,
room_type_name varchar(100) not null,
PRIMARY KEY(room_type_Id)
);
CREATE TABLE Room(
room_Id integer,
room_type_Id integer
        references RoomType(room_type_Id) ON DELETE Cascade,
room_status integer not null,
PRIMARY KEY(room_Id)
);
CREATE TABLE Reservation(
reservation_Id integer,
reservation_date date not null,
check_in_date date not null,
check_out_date date not null,
total_days integer not null,
adults integer not null,
children integer,
room_Id integer
        references Room(room_Id) ON DELETE Cascade,
guest_Id integer
        references Guest(guest_Id) ON DELETE Cascade,
PRIMARY KEY(reservation_Id)
);
CREATE TABLE Payment(
payment_Id integer,
guest_Id integer
        references Guest(guest_Id),
reservation_Id integer
        references Reservation(reservation_Id) ON DELETE Cascade,
fName varchar(100) not null,
lName varchar(100) not null,
amount integer not null,
PRIMARY KEY(payment_Id)
);
```

```sql
INSERT INTO Guest(guest_Id, fName, lName, g_address, email, phone, city, country)
VALUES(1, 'Rana', 'ÇAKMAK', 'Akdere', 'rcakmak@gmail.com', '123456789', 'Ankara',
'Turkey')

INSERT INTO RoomType(room_type_Id,room_type_name)
VALUES(100, 'Single')
INSERT INTO RoomType(room_type_Id,room_type_name)
VALUES(200, 'Double')
INSERT INTO RoomType(room_type_Id,room_type_name)
VALUES(300, 'Quad')
INSERT INTO RoomType(room_type_Id,room_type_name)
VALUES(400, 'Queen')

INSERT INTO Room(room_Id, room_type_Id, room_status)
VALUES(101, 100, 0)
INSERT INTO Room(room_Id, room_type_Id, room_status)
VALUES(102, 100, 0)
INSERT INTO Room(room_Id, room_type_Id, room_status)
VALUES(103, 100, 0)

INSERT INTO Room(room_Id, room_type_Id, room_status)
VALUES(201, 200, 0)
INSERT INTO Room(room_Id, room_type_Id, room_status)
VALUES(202, 200, 0)
INSERT INTO Room(room_Id, room_type_Id, room_status)
VALUES(203, 200, 0)

INSERT INTO Room(room_Id, room_type_Id, room_status)
VALUES(301, 300, 0)
INSERT INTO Room(room_Id, room_type_Id, room_status)
VALUES(302, 300, 0)
INSERT INTO Room(room_Id, room_type_Id, room_status)
VALUES(303, 300, 0)

INSERT INTO Room(room_Id, room_type_Id, room_status)
VALUES(401, 400, 0)
INSERT INTO Room(room_Id, room_type_Id, room_status)
VALUES(402, 400, 0)
INSERT INTO Room(room_Id, room_type_Id, room_status)
VALUES(403, 400, 0)

INSERT INTO Reservation(reservation_Id,reservation_date,check_in_date,check_out_date,
total_days, adults, children,room_Id,guest_Id)
VALUES(1, '2020-06-07', '2020-11-06', '2020-11-08', 2, 2, 0, 401, 1)

INSERT INTO Payment(payment_Id, guest_Id, reservation_Id, fName, lName, amount)
VALUES(1, 1, 1, 'Rana', 'ÇAKMAK', 800)



INSERT INTO Guest(guest_Id, fName, lName, g_address, email, phone, city, country)
VALUES(2, 'İrem', 'ÖZTÜRK', 'Esat', 'irozturk@gmail.com', '234567891', 'Ankara',
'Turkey')
INSERT INTO Guest(guest_Id, fName, lName, g_address, email, phone, city, country)
```

```sql
VALUES(3, 'Mert', 'BAYRAMUSTA', 'Beysukent', 'mbayramusta@gmail.com', '345678912',
'Ankara', 'Turkey')
INSERT INTO Guest(guest_Id, fName, lName, g_address, email, phone, city, country)
VALUES(4, 'Zeynep', 'ÖZDOĞAN', 'Esat', 'zozdogan@gmail.com', '456789123', 'Ankara',
'Turkey')
INSERT INTO Guest(guest_Id, fName, lName, g_address, email, phone, city, country)
VALUES(5, 'Gipsy', 'KRALOĞLU', 'Scottish Köyü', 'gipsy@gmail.com', '567891234',
'Glasgow', 'Scotland')
INSERT INTO Guest(guest_Id, fName, lName, g_address, email, phone, city, country)
VALUES(6, 'Rabia', 'ÇAKMAK', 'Akdere', 'rabicakmak@gmail.com', '678912345', 'Ankara',
'Turkey')
INSERT INTO Guest(guest_Id, fName, lName, g_address, email, phone, city, country)
VALUES(7, 'Katy', 'PERRY', 'Santa Barbara', 'katyperry@gmail.com', '789123456',
'California', 'United States')
INSERT INTO Guest(guest_Id, fName, lName, g_address, email, phone, city, country)
VALUES(8, 'Taylor', 'SWIFT', 'Nashville', 'taylorswift@gmail.com', '891234567',
'Tennesse', 'United States')
INSERT INTO Guest(guest_Id, fName, lName, g_address, email, phone, city, country)
VALUES(9, 'Lady', 'GAGA', 'Yonkers', 'ladygaga@gmail.com', '912345678', 'New York',
'United States')
INSERT INTO Guest(guest_Id, fName, lName, g_address, email, phone, city, country)
VALUES(10, 'Do', 'KYUNGSOO', 'Seoul', 'dokyungsoo@gmail.com', '123456780', 'Seoul',
'South Korea')

SELECT*
FROM Guest

INSERT INTO Reservation(reservation_Id,reservation_date,check_in_date, check_out_date,
total_days, adults, children, room_Id, guest_Id)
VALUES(2, '2020-06-08', '2020-08-14', '2020-08-20', 6, 5, 0, 402, 2)
INSERT INTO Reservation(reservation_Id,reservation_date,check_in_date, check_out_date,
total_days, adults, children, room_Id,guest_Id)
VALUES(3, '2020-06-09', '2020-07-06', '2020-07-10', 4, 4, 1, 301, 3)
INSERT INTO Reservation(reservation_Id,reservation_date,check_in_date, check_out_date,
total_days, adults, children, room_Id,guest_Id)
VALUES(4, '2020-06-10', '2020-12-26', '2020-12-28', 2, 2, 0, 103, 4)
INSERT INTO Reservation(reservation_Id, reservation_date, check_in_date, check_out_date,
total_days, adults, children, room_Id, guest_Id)
VALUES(5, '2020-06-09', '2020-08-06', '2020-08-08', 2, 1, 0, 402, 5)
INSERT INTO Reservation(reservation_Id, reservation_date, check_in_date, check_out_date,
total_days, adults, children, room_Id, guest_Id)
VALUES(6, '2020-06-01', '2020-06-06', '2020-06-16', 10, 3, 0, 303, 6)
INSERT INTO Reservation(reservation_Id, reservation_date, check_in_date, check_out_date,
total_days, adults, children, room_Id, guest_Id)
VALUES(7, '2020-06-09', '2020-08-06', '2020-08-08', 2, 1, 1, 403, 7)
INSERT INTO Reservation(reservation_Id,reservation_date,check_in_date, check_out_date,
total_days, adults, children, room_Id, guest_Id)
VALUES(8, '2020-06-07', '2020-12-13', '2020-12-17', 4, 2, 0, 201, 8)
INSERT INTO Reservation(reservation_Id,reservation_date,check_in_date, check_out_date,
total_days, adults, children, room_Id, guest_Id)
VALUES(9, '2020-06-07', '2020-10-04', '2020-10-08', 4, 1, 0, 202, 9)
INSERT INTO Reservation(reservation_Id,reservation_date,check_in_date, check_out_date,
total_days, adults, children, room_Id, guest_Id)
VALUES(10, '2020-06-07', '2021-01-12', '2021-01-14', 2, 2, 0, 203, 10)
```

```sql
SELECT*
FROM Reservation

INSERT INTO Payment(payment_Id, guest_Id, reservation_Id, fName, lName, amount)
VALUES(2, 2, 2, 'İrem', 'ÖZTÜRK', 2400)
INSERT INTO Payment(payment_Id, guest_Id, reservation_Id, fName, lName, amount)
VALUES(3, 3, 3, 'Mert', 'BAYRAMUSTA', 1200)
INSERT INTO Payment(payment_Id, guest_Id, reservation_Id, fName, lName, amount)
VALUES(4, 4, 4, 'Zeynep', 'ÖZDOĞAN', 200)
INSERT INTO Payment(payment_Id, guest_Id, reservation_Id, fName, lName, amount)
VALUES(5, 5, 5, 'Gipsy', 'KRALOĞLU', 800)
INSERT INTO Payment(payment_Id, guest_Id, reservation_Id, fName, lName, amount)
VALUES(6, 6, 6, 'Rabia', 'ÇAKMAK', 3000)
INSERT INTO Payment(payment_Id, guest_Id, reservation_Id, fName, lName, amount)
VALUES(7, 7, 7, 'Katy', 'PERRY', 800)
INSERT INTO Payment(payment_Id, guest_Id, reservation_Id, fName, lName, amount)
VALUES(8, 8, 8, 'Taylor', 'SWIFT', 800)
INSERT INTO Payment(payment_Id, guest_Id, reservation_Id, fName, lName, amount)
VALUES(9, 9, 9, 'Lady', 'GAGA', 800)
INSERT INTO Payment(payment_Id, guest_Id, reservation_Id, fName, lName, amount)
VALUES(10, 10, 10, 'Do', 'KYUNGSOO', 400)

SELECT*
FROM Payment

DELETE FROM Reservation
Where room_Id = 401

DELETE FROM Reservation
Where reservation_Id = 1

SELECT*
FROM Reservation

SELECT*
FROM Payment
```