3. The following tables form part of a database held in a relational DBMS:

Hotel (HotelNo, Name, City) HotelNo is the primary key

= create table hotel(hotelno int,name char(50),city char(50),primary key (hotelno));

Room (RoomNo, HotelNo, Type, Price)

= create table room (roomno int,hotelno int,type char(50),price int,primary key(roomno));

Booking (HotelNo, GuestNo, DateFrom, DateTo, RoomNo)

= create table booking(hotelno int,guestno int,datefrom date,dateto date,roomno int, FOREIGN KEY (hotelno) REFERENCES hotel(hotelno), FOREIGN KEY (guestno) REFERENCES guest(guestno));

Guest (GuestNo, GuestName, GuestAddress) GuestNo is primary key

= create table guest(guestno int ,guestname char(50),guestaddress char(50),primary key(guestno));

Room contains room details for each hotel and (HotelNo, RoomNo) forms the primary key.Booking contains details of the bookings and the primary key comprises

(HotelNo, GuestNo and DateFrom)

Solve following queries by SQL

1. List full details of all hotels.

= SELECT * FROM Hotel;

1. How many hotels are there?

= SELECT COUNT(*) AS num_hotels FROM Hotel;

2. List the price and type of all rooms at the Grosvenor Hotel.

= select price, rtype from room,hotel where hotel.hotelno = room.hotelnos and hname = 'grosvenor';

3. List the number of rooms in each hotel.

= select count(roomno) from room;

4. Update the price of all rooms by 5%.

update room set price = price + price*0.05;

5. List full details of all hotels in London.

= SELECT * FROM Hotel;

WHERE address = 'London';

6. What is the average price of a room?

```
= SELECT  AVG(price) AS avg_price FROM Room;
```

7. List all guests currently staying at the Grosvenor Hotel.

```
= select guest_name,guest_add from guest,booking,hotel where guest.guestno =
booking.guestnoss and booking.hotelnoss = hotel.hotelno and

hotel.hname =' grosvenor';
```

8. List the number of rooms in each hotel in London.

```
select count(*) from room,hotel where room.hotelnos = hotel.hotelno and city = 'london';
```

9. Create one view on above database and query it.

```
create view hotel_view as

select * from hotel,room,booking,guest;

select * from hotel_view;
```

List all double or family rooms with a price below £40.00 per night, in ascending order of price

```
= SELECT type FROM Room WHERE (type = 'D') OR (type = 'F')   AND (price <
40.00) ORDER BY price ASC;
```

What is the total revenue per night from all double rooms?

```
= SELECT SUM(price) AS total_rev FROM Room WHERE (type = 'D');
```

List the details of all rooms at the Grosvenor Hotel, including the name of the guest staying in the room, if the room is occupied.

```
= SELECT Guest.name FROM Guest,Hotel WHERE (Hotel.name = 'Grosvenor');
```

1. What is the total revenue per night from all double rooms?

```
select SUM(price)from Room where type1 = 'double';
```

2. List the details of all rooms at the Grosvenor Hotel, including the name of the guest staying in the room, if the room is occupied.

```
SELECT r.* FROM Room r LEFT JOIN (SELECT g.guestname, h.hotelno, b.roomno FROM Guest g, Booking
b, Hotel h WHERE g.guestno = b.guestno AND b.hotelno = h.hotelno AND name='Grosvenor' AND
datefrom <= CURRENT_DATE AND dateto >= CURRENT_DATE) AS XXX ON r.hotelno = XXX.hotelno AND
r.roomno = XXX.roomno;
```

3. What is the average number of bookings for each hotel in April?

```
SELECT COUNT(DISTINCT guestNo) FROM BookingWHERE (datefrom <='2022-08-01' AND dateto>='2022-
08-01') OR (datefrom >='2022-08-01' AND datefrom <= '2022-08-31');
```

4. Create index on one of the field and show is performance in query.

CREATE INDEX showON Hotel (hotelno, name);

5. List full details of all hotels.

select h.hotelno,h.name,h.city,r.type1,r.price from Hotel h, Room r ;

6. List full details of all hotels in London.

SELECT * FROM Hotel WHERE city = 'London';

7. Update the price of all rooms by 5%.

update Room set price = price + 5;

select * from Room;

8. List the number of rooms in each hotel in London.

SELECT h.hotelno ,COUNT(roomNo) AS count FROM Room r, Hotel h WHERE r.hotelno = h.hotelno AND city = 'London' GROUP BY hotelno;

9. List all double or family rooms with a price below £40.00 per night, in ascending order of price

SELECT * FROM Room WHERE price < '40' AND type1 IN ('double', 'family')

ORDER BY price;

1. List full details of all hotels.

select h.hotelno,h.name,h.city,r.type1,r.price from Hotel h, Room r ;

2. How many hotels are there?

select count(name) from Hotel;

3. List the price and type of all rooms at the Grosvenor Hotel.

select type1 from Room;

4. List the number of rooms in each hotel

5. List all guests currently staying at the Grosvenor Hotel.

6. List all double or family rooms with a price below £40.00 per night, in ascending order of price.

SELECT * FROM Room WHERE price < '40' AND type1 IN ('double', 'family')

ORDER BY price;

7. How many different guests have made bookings for August?

select guestno from Booking where datefrom between '2022/08/01' and '2022/08/31';

8. What is the total income from bookings for the Grosvenor Hotel today?

9. What is the most commonly booked room type for each hotel in London?

select MAX(type1) from Room where hotelno = '01';

10. Update the price of all rooms by 5%.

Update Room set price=price+5;

1. List full details of all hotels.

select h.hotelno,h.name,h.city,r.type1,r.price from Hotel h, Room r ;

2. List full details of all hotels in London.

SELECT * FROM Hotel WHERE city = 'London';

3. List all guests currently staying at the Grosvenor Hotel.

select * from Booking where dateto >= '2022/11/11';

4. List the names and addresses of all guests in London, alphabetically ordered by name.

select guestname , guestaddress from Guest where guestaddress = 'London' order by guestname;

5. List the bookings for which no date_to has been specified.

select * from Booking where dateto = 'null';

6. How many hotels are there?

select count(name) from Hotel;

7. List the rooms that are currently unoccupied at the Grosvenor Hotel.

8. What is the lost income from unoccupied rooms at each hotel today?

9. Create index on one of the field and show is performance in query.

CREATE INDEX showON Hotel (hotelno, name);

10. Create one view on above database and query it

CREATE VIEW hotel_view ASSELECT name, cityFROM Hotel;

UPDATE hotel_view SET name = 'India meal' WHERE name = 'Indigo'; (query on view)

```
select * from hotel_view;
```