1. 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;

* + 1. 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';

* + 1. List the number of rooms in each hotel.

= select count(roomno) from room;

* + 1. Update the price of all rooms by 5%.

update room set price = price + price\*0.05;

* + 1. List full details of all hotels in London.

= **SELECT** \* **FROM** Hotel;

**WHERE** address = ‘London’;

* + 1. What is the average price of a room?

= **SELECT** AVG(price) **AS** avg\_price **FROM** Room;

* + 1. 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';

* + 1. List the number of rooms in each hotel in London.

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

* + 1. 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;