1. List full details of all hotels.

ANS: SELECT * FROM hotel;

	hotel_no [PK] character varying (255)	hotel_name character varying (255)	city character varying (255)
1	H111	Empire Hotel	New York
2	H235	Park Place	New York
3	H432	Brownstone Hotel	Toronto
4	H498	James Plaza	Toronto
5	H193	Devon Hotel	Boston
6	H437	Claimont Hotel	Boston

2. List full details of all hotels in New York.

ANS: SELECT * FROM hotel

WHERE city='New York';

|	hotel_no [PK] character varying (255)	hotel_name character varying (255)	city character varying (255)
1	H111	Empire Hotel	New York
2	H235	Park Place	New York

3. List the names and cities of all guests, ordered according to their cities.

ANS: SELECT guest_name, city

FROM guest

ORDER BY city;

```
SELECT guest_name, city
FROM guest
ORDER BY city;
```

Data output   Messages   Notifications

	guest_name character varying (255)	city character varying (255)
1	Robert Swift	Atlanta
2	Tara Cummings	Baltimore
3	Edward Cane	Baltimore
4	Tom Hancock	Philadelphia
5	Adam Wayne	Pittsburgh
6	Vanessa Parry	Pittsburgh

4. List all details for non-smoking rooms in ascending order of price.

ANS: SELECT *

FROM room

WHERE room_type='N'

ORDER BY price ;

```
SELECT *
FROM room
WHERE room_type='N'
ORDER BY price ;
```

Data output   Messages   Notifications

	room_no [PK] integer	hotel_no character varying (255)	room_type character (1)	price numeric (5,2)
1	257	H437	N	140.00
2	412	H111	N	145.00
3	223	H437	N	155.00
4	345	H498	N	160.00
5	1201	H193	N	175.00
6	1267	H235	N	175.00
7	467	H498	N	180.00
8	1289	H235	N	195.00

5. List the number of hotels there are.

ANS: SELECT COUNT(hotel_no)

FROM hotel;

```
SELECT COUNT(hotel_no)
FROM hotel;
```

Data output   Messages   Notifications

	count bigint
1	6

6. List the cities in which guests live. Each city should be listed only once.

ANS: SELECT DISTINCT city

FROM guest;

```
SELECT DISTINCT city
FROM guest;
```

Data output   Messages   Notifications

	city character varying (255) 🔒
1	Philadelphia
2	Baltimore
3	Pittsburgh
4	Atlanta

7. List the average price of a room.

ANS: SELECT AVG(price)

FROM room;

```
SELECT AVG(price)
FROM room;
```

Data output   Messages   Notifications

	avg numeric 🔒
1	155.6666666

8. List hotel names, their room numbers, and the type of that room.

ANS: SELECT hotel.hotel_name, room.room_no, room.room_type

FROM hotel, room

WHERE hotel.hotel_no = room.hotel_no;

```
SELECT hotel.hotel_name, room.room_no, room.room_type
FROM hotel, room
WHERE hotel.hotel_no = room.hotel_no;
```

Data output   Messages   Notifications

	hotel_name character varying (255) 🔒	room_no integer 🔒	room_type character (1) 🔒
1	Empire Hotel	313	S
2	Empire Hotel	412	N
3	Park Place	1267	N
4	Park Place	1289	N
5	Brownstone Hotel	876	S
6	Brownstone Hotel	898	S
7	James Plaza	345	N
8	James Plaza	467	N
9	Devon Hotel	1001	S
10	Devon Hotel	1201	N
11	Claimont Hotel	257	N
12	Claimont Hotel	223	N

9. List the hotel names, booking dates, and room numbers for all hotels in New York.

ANS: SELECT hotel.hotel_name, booking.date_from, booking.date_to, booking.room_no

FROM hotel, booking

WHERE hotel.hotel_no = booking.hotel_no

AND hotel.city ='New York';

```
SELECT hotel.hotel_name, booking.date_from, booking.date_to, booking.room_no
FROM hotel, booking
WHERE hotel.hotel_n⟳ Loading... hotel_no
AND hotel.city ='New York';
```

Data output   Messages   Notifications

	hotel_name character varying (255) 🔒	date_from date 🔒	date_to date 🔒	room_no integer 🔒
1	Empire Hotel	1999-08-10	1999-08-15	412
2	Empire Hotel	1999-08-18	1999-08-21	412
3	Park Place	1999-09-05	1999-09-12	1267

10. What is the number of bookings that started in the month of September?

ANS: SELECT COUNT(date_from)

FROM booking

WHERE date_from BETWEEN '1999-09-01' AND '1999-09-30';

```
SELECT COUNT(date_from)
FROM booking
WHERE date_from BETWEEN '1999-09-01' AND '1999-09-30';
```

Data output   Messages   Notifications

	count bigint 🔒
1	4

11. List the names and cities of guests who began a stay in New York in August.

ANS: SELECT guest.guest_name, guest.city

FROM hotel, booking, guest

WHERE hotel.hotel_no = booking.hotel_no

AND booking.guest_no = guest.guest_no

AND hotel.city = 'New York'

AND booking.date_from BETWEEN '1999-08-01' AND '1999-08-31';

```
SELECT guest.guest_name, guest.city
FROM hotel, booking, guest
WHERE hotel.hotel_no = booking.hotel_no
AND booking.guest_no = guest.guest_no
AND hotel.city = 'New York'
AND booking.date_from BETWEEN '1999-08-01' AND '1999-08-31';
```

Data output   Messages   Notifications

	guest_name character varying (255)	city character varying (255)
1	Adam Wayne	Pittsburgh
2	Tara Cummings	Baltimore

12. List the hotel names and room numbers of any hotel rooms that have not been booked.

ANS: SELECT hotel.hotel_name, booking.room_no

FROM hotel LEFT JOIN booking

ON hotel.hotel_no = booking.hotel_no

WHERE booking.room_no IS NULL;

```
SELECT hotel.hotel_name, booking.room_no
FROM hotel LEFT JOIN booking
ON hotel.hotel_no = booking.hotel_no
WHERE booking.room_no IS NULL;
```

Data output   Messages   Notifications

	hotel_name character varying (255) 🔒	room_no integer 🔒
1	Brownstone Hotel	[null]

13. List the hotel name and city of the hotel with the highest priced room.

ANS: SELECT hotel.hotel_name, hotel.city

FROM hotel, room

WHERE hotel.hotel_no = room.hotel_no

 AND room.price = (SELECT MAX(price) FROM room);

```
SELECT hotel.hotel_name, hotel.city
FROM hotel, room
WHERE hotel.hotel_no = room.hotel_no
 AND room.price = (SELECT MAX(price) FROM room);
```

Data output   Messages   Notifications

	hotel_name character varying (255) 🔒	city character varying (255) 🔒
1	Park Place	New York

14. List hotel names, room numbers, cities, and prices for hotels that have rooms with prices lower than the lowest priced room in a Boston hotel.

ANS: SELECT hotel.hotel_name, room.room_no, hotel.city, room.price

FROM hotel, room

WHERE hotel.hotel_no = room.hotel_no

  AND room.price < (

     SELECT price FROM room

     GROUP BY room_no

     HAVING hotel_no = 'H432'

     ORDER BY price

     LIMIT 1);

```
SELECT hotel.hotel_name, room.room_no, hotel.city, room.price
FROM hotel, room
WHERE hotel.hotel_no = room.hotel_no
    AND room.price < (
    SELECT price FROM room
    GROUP BY room_no
    HAVING hotel_no = 'H432'
    ORDER BY price
    LIMIT 1);
```

Data output   Messages   Notifications

hotel_name character varying (255)	room_no integer	city character varying (255)	price numeric (5,2)

15. List the average price of a room grouped by city.

ANS: SELECT hotel.city, AVG(room.price) FROM room, hotel

WHERE hotel.hotel_no= room.hotel_no

GROUP BY hotel.city;

```sql
SELECT hotel.hotel_name, hotel.city
FROM hotel LEFT JOIN room
ON hotel.hotel_no = room.hotel_no
HAVING room.price = MAX(room.price) ;
SELECT MAX(price) FROM room;
SELECT hotel.city, AVG(room.price) FROM room, hotel
WHERE hotel.hotel_no= room.hotel_no
GROUP BY hotel.city;
```

Data output   Messages   Notifications

	city character varying (255)	avg numeric
1	New York	165.0000000000000000
2	Toronto	147.0000000000000000
3	Boston	155.0000000000000000