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EE436L: Database Engineering

Department of Electrical Engineering
University of Engineering and Technology Lahore
Instructor: Mr. Umer Shahid

Name _____

Registration Number _____

Introduction to Aggregation, Group By, and JOINs

Please execute the following script, understand each line, draw the conceptual schema diagram for given relations and then start on the questions listed below:

create schema hotelBooking;
use hotelBooking;
create table hotel(hotelno varchar(10) primary key, hotelname varchar(20), city varchar(20));
insert into hotel values('fb01', 'Grosvenor', 'London');
insert into hotel values('fb02', 'Watergate', 'Paris');
insert into hotel values('ch01', 'Omni Shoreham', 'London');
insert into hotel values('ch02', 'Phoenix Park', 'London');
insert into hotel values('dc01', 'Latham', 'Berlin');
create table room(roomno numeric(5), hotelno varchar(10), type varchar(10), price decimal(5,2), **primary key** (roomno, hotelno), **foreign key** (hotelno) REFERENCES hotel(hotelno));
insert into room values(501, 'fb01', 'single', 19);
insert into room values(601, 'fb01', 'double', 29);
insert into room values(701, 'fb01', 'family', 39);
insert into room values(1001, 'fb02', 'single', 58);
insert into room values(1101, 'fb02', 'double', 86);
insert into room values(1001, 'ch01', 'single', 29.99);
insert into room values(1101, 'ch01', 'family', 59.99);
insert into room values(701, 'ch02', 'single', 10);
insert into room values(801, 'ch02', 'double', 15);
insert into room values(901, 'dc01', 'single', 18);
insert into room values(1001, 'dc01', 'double', 30);
insert into room values(1101, 'dc01', 'family', 35);

create table guest(guestno numeric(5), guestname varchar(20), guestaddress varchar(50), **primary key** (guestno));
insert into guest values(10001, 'John Kay', '56 High St, London');
insert into guest values(10002, 'Mike Ritchie', '18 Tain St, London');
insert into guest values(10003, 'Mary Tregear', '5 Tarbot Rd, Aberdeen');
insert into guest values(10004, 'Joe Keogh', '2 Fergus Dr, Aberdeen');
insert into guest values(10005, 'Carol Farrel', '6 Achray St, Glasgow');
insert into guest values(10006, 'Tina Murphy', '63 Well St, Glasgow');
insert into guest values(10007, 'Tony Shaw', '12 Park Pl, Glasgow');
create table booking(hotelno varchar(10), guestno numeric(5), datefrom datetime, dateto datetime, roomno numeric(5), **primary key** (hotelno, guestno, datefrom), **foreign key** (roomno, hotelno) REFERENCES room(roomno, hotelno), **foreign key** (guestno) REFERENCES guest(guestno));
insert into booking values('fb01', 10001, '02-04-01', '02-04-08', 501);
insert into booking values('fb01', 10004, '04-04-15', '04-05-15', 601);
insert into booking values('fb01', 10005, '03-05-02', '03-05-07', 501);
insert into booking values('fb01', 10001, '04-05-01', null, 701);
insert into booking values('fb02', 10003, '09-04-05', '10-04-04', 1001);
insert into booking values('ch01', 10006, '04-04-21', null, 1101);
insert into booking values('ch02', 10002, '04-04-25', '04-05-06', 801);
insert into booking values('dc01', 10007, '06-05-13', '06-05-15', 1001);
insert into booking values('dc01', 10003, '12-05-20', null, 1001);

Exercise:
1. List the names and addresses of all guests in London, alphabetically ordered by name.
2. Display the names of all the hotels along with the number of rooms present in each of them.
3. Display the AVG price of each hotel situated in London.
4. Display the most expensive double, single and family rooms respectively.
5. Display hotelname, cityname along with distinct number of room types available in each of them.
6. Display the name and city of the hotel where guests from London are staying. The list should not contain any hotel twice.
7. Display the name, city of all the hotels along with the number of reservations it has, in descending order.
8. Display the names of all the guests who have not provided with the end date of their reservations.
9. Display the HotelName and RoomNo which was reserved in either year 2003 or 2004, also display the Guest No of the respective guest.
10. Display the name of the hotel and city which has not been reserved.
11. How many different guests have made bookings till May, 2015?

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

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

14. List the price and type of all rooms at the 'Avari' Hotel in Lahore.

15. List all guests currently staying at the 'Marriott' Hotel. ('system date' is used to determine current date)

16. What is the total income from bookings for the 'Hotel Inn' Hotel today?

17. List the rooms which are currently unoccupied at the 'Hotel Inn' Hotel.

18. What is the lost income from unoccupied rooms at the 'Hotel Inn' Hotel?

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

20. For each hotel with more than two different types of rooms, what is the lost income from unoccupied rooms?