DBMS LABSHEET SIX

Normalize the given data into relations (must satisfy the third normal form).

Attributes:-

Convention_Centre_name,
facility,
facility_Address,
usage_fee_per_hour,
bookingid,
customerno,
customername,
customer_Addr,
booking_date,
booking_start_time,
Booking_hours,
booking_advance

First Normal Form:-

Here as per my assumptions and scenario I am not going to split the attributes further; atomicity is assumed to be satisfied.

Second Normal Form:-

Taking the bookingid as the primary key. There is no partial dependency here.

Bookingid → Convention_Centre_name, facility, facility_Address, usage_fee_per_hour, customerno, customername, customer_Addr, booking_date, booking_start_time, Booking_hours, booking_advance.

Third Normal Form:-

From transitive dependecy I have come across tables 1 and 2.

Table1:-
customerno → customer_name, customer_addr.

Table2:-
convention_centre_name,facility → facility_addr, usage_fee_per_hr.

Table3:-
booking_id → booking_date, booking_start_time, booking_hrs, booking_advance, convention_centre_name, customer_no.

SQL Code:-
Use Postgres reference material for Q1 and Q3.

1. Relate the relations through suitable constraints. In the foreign key, use on delete cascade option.

create table customer6
(
        customer_no int primary key,
        customer_name Varchar(20),
        customer_addr Varchar(20)
);

Table Screenshot:-

	customer_no integer	customer_name character varying(20)	customer_addr character varying(20)
1	1	Savita	Thrissur
2	2	Sowmya	Palakkad
3	3	Athira	Kotayam
4	4	Darshana	Kochi
5	5	Anjana	Angamaly
6	6	Aishwarya	Coimbatore
7	8	Tina	Kochi
8	7	Anu	Thrissur
9	9	Sreepriya	Palakkad
10	10	Vipin	Mala

create table convention6
(
        convention_center_name Varchar(20),
        facility Varchar(20),
        primary key(convention_center_name,facility),
        facility_addr Varchar(20),
        usage_fee_per_hour float
);

Table Screenshot:-

	convention_center_name character varying(20)	facility character varying(20)	facility_addr character varying(20)	usage_fee_per_hour double precision
1	Zonko	Wedding Hall	First floor	4000
2	Surya	Restaurant	Ground floor	6000
3	Times	Coaching Room	Ground floor	500
4	Lulu	Conference Hall	Second floor	5000
5	Zonko	Dining Hall	Ground floor	1000
6	Lulu	Entertainment Hall	First floor	2000
7	Alpha Aquatic	Rent/Lease 1	First floor	4000
8	Alpha Aquatics	Rent/Lease 2	Ground floor	2000

create table booking6
(

    booking_id int primary key,
    booking_Date Date,
    booking_advance float,
    customer_no int references customer6(customer_no) ON DELETE CASCADE,
    booking_start_time time,
    booking_hrs float,
    convention_center_name Varchar(20),
    facility Varchar(20),
    foreign   key(convention_center_name,facility)   references
    convention6(convention_Center_name,facility) ON DELETE CASCADE
);

Table Screenshot:-

2. Find the customers who have booked the facility of a centre for the 21/09/2014 date and time 8am.
Solution:-

select c.customer_no, c.customer_name from
customer6 c ,booking6 b where b. booking_date ='09/21/2014'
and booking_start_time= '08:30' and
b.customer_no = c.customer_no;

	customer_no integer	customer_name character varying(20)
1	1	Savita
2	5	Anjana

3. Find the facility along with the number of times it has been booked during the year 2014. (Use the extract function)

solution:-

select b.facility,count(b.booking_id) from booking6 b
where extract (year from booking_Date)='2014' group by b.facility;

	facility character varying(20)	count bigint
1	Restaurant	2
2	Coaching Room	1
3	Rent/Lease 1	1
4	Conference Hall	1

4. Find the booking details in the order of facility and date together.
solution:-

select * from booking6 order by facility,booking_Date;

	booking_id integer	booking_date date	booking_advance double precision	customer_no integer	booking_start_time time without time zone	booking_hrs double precision	convention_center_name character varying(20)	facility character varying(20)
1	3	2014-04-07	1500	3	15:00:00	7	Times	Coaching Room
2	1	2014-09-21	1000	1	08:30:00	6.5	Lulu	Conference Hall
3	2	2013-05-05	500	2	18:30:00	3	Zonko	Dining Hall
4	4	2014-08-30	2000	10	10:00:00	5.15	Alpha Aquatic	Rent/Lease 1
5	6	2014-03-03	250	6	18:30:00	5	Surya	Restaurant
6	5	2014-09-21	3000	5	08:30:00	4	Surya	Restaurant

5. Find the facility that was booked more than 2 times in each year for each centre.

solution:-

select b.facility,b.convention_center_name,extract (year from b.booking_Date),
count(b.booking_id) from booking6 b group by b.facility,
b.convention_center_name,extract (year from b.booking_Date) having count(b.booking_id)>2 ;

	facility character varying(20)	convention_center_name character varying(20)	date_part double precision	count bigint
1	Restaurant	Surya	2014	4
2	Restaurant	Surya	2013	3

6. Use the concat function to concatenate the centre name and the facility name.
solution:-

select convention_center_name || ' ' || facility as
"convention_center_name:facility" from convention6;

	convention_center_name:facility text
1	Zonko Wedding Hall
2	Surya Restaurant
3	Times Coaching Room
4	Lulu Conference Hall
5	Zonko Dining Hall
6	Lulu Entertainment Hall
7	Alpha Aquatic Rent/Lease 1
8	Alpha Aquatics Rent/Lease 2