

**BAN 610**

**DATABASE MANAGEMENT AND APPLICATIONS**

**GROUP 7**

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## **Marina International Hotel Database Management System**

Marina International is a chain of hotels. Every hotel has several departments such as inventory, housekeeping, front office, security, guest service, repairs, pantry, etc. A hotel has only two types of rooms, Regular and Premium. Each type of room is priced differently. There are many types of services offered by a hotel.

A guest books a room either through the hotel's website or directly by walk-in. At the time of booking, a booking ID is generated, and the guest's booking details are stored. Guest must show the booking ID before check-in at the front desk. Along with the booking ID, the guest must also show some valid ID such as Real ID, Driver's license, Passport, etc. If there are any dependents with the guest, then their information is also stored. On the day of check-out, the guest clears all the bills.

Our aim is to design a management system for Marina International Hotels to track their day-to-day operations. They can track bookings, reservations, and guest information and help manage inventory and pricing. In addition, databases can also provide insights into customer trends and behaviors.

Now let's look at the detailed operation of the hotel and entity types of the hotel.

**Hotel:** There are many hotels under the group Marina International in many locations. Attributes of a hotel are Unique Hotel ID, Name of the hotel, Address (Street, City, State, and Zipcode), Phone No., website link, and rating of the hotel (on a scale of 1-5).

A hotel can have multiple employees working for them.

**Room** – There are two types of rooms – Regular and Premium. Attributes of a room are Room ID, Price, Room Type, and Capacity of a room.

A hotel can have many rooms. One room belongs to one hotel. One room can be booked by multiple guests at different period of time.

**Guest** – Details of guest information include Guest ID, ID Type, Name (First Name and Last Name), Address, and Phone Number.

One guest can have multiple dependents accompanying them to the hotel. We are recording their name and relationship with the guest.

When a guest books a room, a booking ID is generated. A guest must select a check-in and check-out date and then proceed with the booking. Check-in time, check-out time, and mode of payment are also recorded for every guest.

One guest can book multiple rooms.

**Department** – The attributes of the department are department ID, and name. One employee must belong to one department and one department can have many employees.

One department can have any employees, but one employee can belong to only one department.

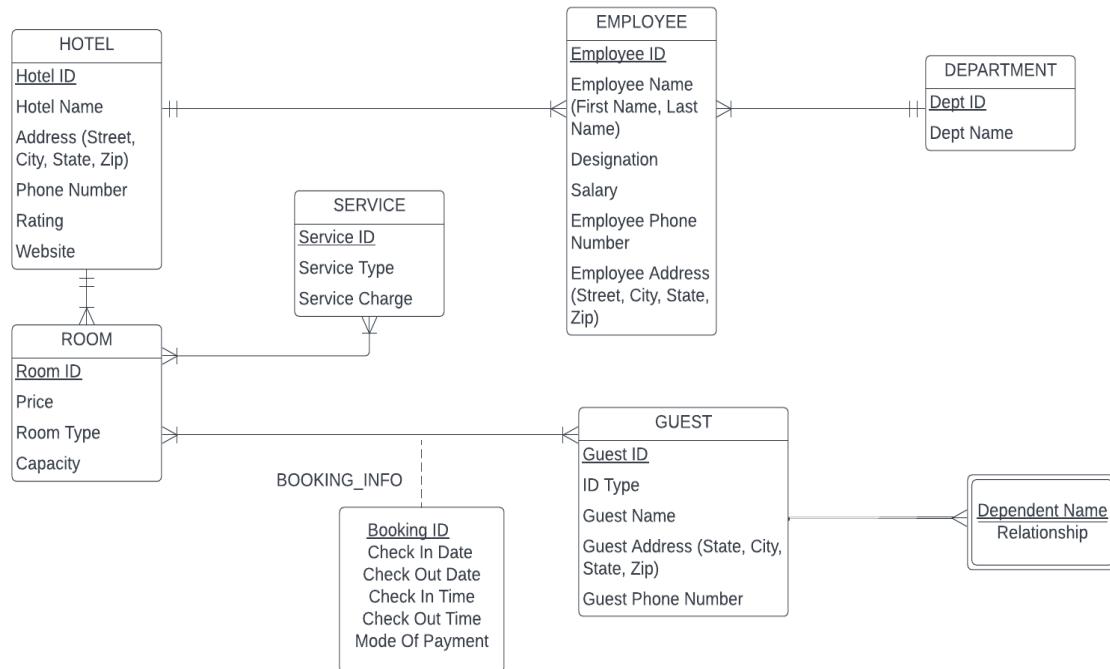
**Employee** – Details of employees include, employee ID, Name (first name and Last name), Phone No., Address, salary, and Designation.

One employee works for one hotel.

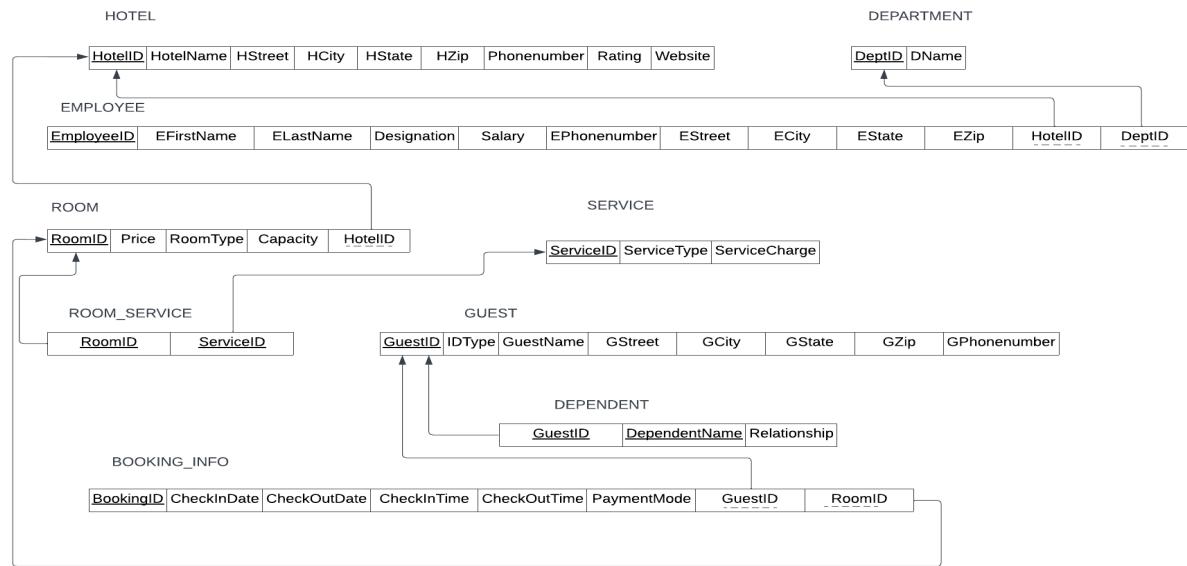
**Service** – There are many services offered like- Breakfast, laundry, gym, spa, etc. Attributes of the service are Service ID, Service Charge, and Service Type.

One service can be availed by many rooms. One room can avail many services.

### Entity Relationship Diagram



## Relational Model



Based on the relational model we have created the below metadata:

HOTEL	Data Type	Size	AUTO	Null	Constraint
HotelID	int	11	Yes	No	primary
HotelName	varchar	30		No	
HStreet	varchar	30			
HCity	varchar	30			
HState	varchar	30			
HZip	int	10			
Phononenumber	int	20			
Rating	int	5			
Website	varchar	30			

EMPLOYEE	Data Type	Size	AUTO	Null	Constraint
EmployeeID	int	11	Yes	No	primary
EFirstName	varchar	11			
ELastName	varchar	11			

Designation	varchar	30			
Salary	int	10			
EPhonenumber	varchar	20			
EStreet	varchar	30			
ECity	varchar	30			
EState	varchar	10			
EZip	int	10			
HotellID	int	11			foreign
DeptID	int	11			foreign

ROOM_SERVICE	Data Type	Size	AUTO	Null	Constraint
RoomID	int	11			foreign
ServiceID	int	11			foreign

GUEST	Data Type	Size	AUTO	Null	Constraint
GuestID	int	11	Yes	No	primary
IDType	varchar	30			
GuestName	varchar	30			
GStreet	varchar	30			
GCity	varchar	30			
GState	varchar	30			
GZip	int	10			
GPhonenumber	varchar	20			

BOOKING_INFO	Data Type	Size	AUTO	Null	Constraint
BookingID	int	11	Yes	No	primary
CheckInDate	date				
CheckoutDate	date				
CheckinTime	time				
CheckoutTime	time				
PaymentMode	varchar	11			
GuestID	int	11			foreign

RoomID	int	11			foreign
DEPENDENT	Data Type	Size	AUTO	Null	Constraint
GuestID	int	11	No	No	part of primary/foreign
DependentName	varchar	30			part of primary
Relationship	varchar	30			

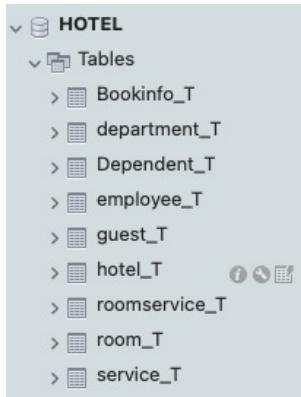
DEPARTMENT	Data Type	Size	AUTO	Null	Constraint
DeptID	int	11	Yes	No	primary
DName	varchar	30			

ROOM	Data Type	Size	AUTO	Null	Constraint
RoomID	int	11	Yes	No	primary
Price	int	10			
RoomType	varchar	30			
Capacity	int	10			
HotelID	int	11			foreign

SERVICE	DataType	Size	AUTO	Null	Constraint
ServiceID	int	11	Yes	No	primary
ServiceType	varchar	30			
ServiceCharge	int	10			

We have created a **Database Hotel**, in which we have created the below tables:

```
CREATE DATABASE HOTEL;
USE HOTEL;
```



Below are the SQL codes for the tables created:

```
/* Create a Hotel table */
CREATE TABLE hotel_T
(hotel_id int(11) AUTO_INCREMENT NOT NULL,
hotel_name varchar(30) NOT NULL,
h_street varchar(30),
h_city varchar(30),
h_state varchar(30),
h_zipcode int(10),
phonenum varchar(20),
rating int(5),
website varchar(30),
CONSTRAINT hotel_pk PRIMARY KEY (hotel_id));

/* Create a Department table */
CREATE TABLE department_T
(dept_id int(11) AUTO_INCREMENT NOT NULL,
d_name varchar(30),
CONSTRAINT department_pk PRIMARY KEY (dept_id));

/* Create a Employee table */
CREATE TABLE employee_T
(emp_id int(11) AUTO_INCREMENT NOT NULL,
e_firstname varchar(11),
e_lastname varchar(11),
designation varchar(30),
salary int(10),
e_phonenum varchar(20),
e_street varchar(30),
e_city varchar(30),
e_state varchar(10),
e_zip int(10),
hotel_id int(11),
dept_id int(11),
CONSTRAINT employee_pk PRIMARY KEY (emp_id),
CONSTRAINT employee_fk1 FOREIGN KEY (hotel_id) REFERENCES hotel_T (hotel_id) ON UPDATE CASCADE ON DELETE CASCADE,
CONSTRAINT employee_fk2 FOREIGN KEY (dept_id) REFERENCES department_T (dept_id) ON UPDATE CASCADE ON DELETE CASCADE);

/* Create Service table */
CREATE TABLE service_T(
service_id int(11) NOT NULL AUTO_INCREMENT,
service_type varchar(30),
service_charge int(10),
CONSTRAINT service_pk PRIMARY KEY(service_id);
```

```

/* Create a Guest table */
CREATE TABLE guest_T
(
    guest_id int(11) AUTO_INCREMENT NOT NULL,
    id_type varchar(30),
    guestName varchar(30),
    g_street varchar(30),
    g_city varchar(30),
    g_state varchar(30),
    g_zip int(10),
    g_phonenumber varchar(20),
    CONSTRAINT guest_pk PRIMARY KEY (guest_id);

/* Create Room table */
CREATE TABLE room_T(
    room_id int(11) not null auto_increment,
    price int(10),
    roomtype varchar(30),
    capacity varchar(10),
    hotel_id int(11),
    CONSTRAINT rm_pk PRIMARY KEY (room_id),
    CONSTRAINT rm_fk FOREIGN KEY(hotel_id) REFERENCES hotel_T(hotel_id)
    on update cascade on delete cascade);

/* Create Booking_info table */
CREATE TABLE Bookinfo_T
(
    booking_id int(11) AUTO_INCREMENT NOT NULL,
    checkIn_date date,
    checkOut_date date,
    checkIn_time time,
    checkOut_time time,
    Paymentmode varchar(11),
    guest_id int(11),
    room_id int(11),
    CONSTRAINT booking_pk PRIMARY KEY (booking_id),
    CONSTRAINT bookinfo_fk1 FOREIGN KEY (guest_id) REFERENCES guest_T (guest_id) ON UPDATE CASCADE ON DELETE CASCADE,
    CONSTRAINT bookinfo_fk2 FOREIGN KEY (room_id) REFERENCES room_T (room_id) ON UPDATE CASCADE ON DELETE CASCADE);

/* Create a Dependent table */
CREATE TABLE Dependent_T
(
    guest_id int(11),
    dependentName varchar(30),
    relationship varchar(30),
    constraint dependent_pk primary key (guest_id, dependentName),
    constraint dependent_fk1 foreign key (guest_id) references guest_T (guest_id) ON UPDATE CASCADE ON DELETE CASCADE);

/* Create Room Service table */
CREATE TABLE roomservice_T(
    service_id int(11),
    room_id int(11),
    CONSTRAINT rmsv_fk1 foreign key(service_id) references service_T(service_id) ON UPDATE CASCADE ON DELETE CASCADE,
    constraint rmsv_fk2 foreign key(room_id) references room_T(room_id) ON UPDATE CASCADE ON DELETE CASCADE);

```

After creating the tables in SQL, we populated the sample data in the tables. Following is the code for data insertion:

### Hotel

```
INSERT INTO hotel_T (hotel_id, hotel_name, h_street, h_city, h_state, h_zipcode, phonenum, rating, website) VALUES  
(1001, 'Regal', '200 Walnut', 'Metropolis', 'Illinois', 62960, '7736005562', 4, 'www.regalhotels.com'),  
(1002, 'Royal', '860 Fulton', 'Oak Run', 'California', 96069, '6192491422', 3, 'www.royalhotels.com'),  
(1003, 'Luxor', '321 Highland', 'Wolf Creek', 'Montana', 59648, '4062303543', 5, 'www.luxorhotel.com'),  
(1004, 'Mandalay', '262 Blackburn', 'Fort Myers', 'Florida', 33901, '8139656478', 3, 'www.mandalayhotel.com'),  
(1005, 'Flamingo', '735 University Circle', 'Hanover', 'Pennsylvania', 17332, '5706708910', 4, 'www.flamingohotel.com'),  
(1006, 'Plazzo', '9930 South Sutor', 'Bedford', 'Massachusetts', 01730, '5085609358', 4, 'www.plazzohotel.com'),  
(1007, 'Harrah', '31B Foster Ave', 'Orlando', 'Florida', 32810, '3052012355', 5, 'www.harrahhotel.com'),  
(1008, 'Palms', '7071 West', 'Locust Grove', 'Virginia', 24072, '7576854368', 3, 'www.palmshotel.com'),  
(1009, 'Tropicana', '4996 Coal Street', 'Mahaffey', 'Pennsylvania', 15757, '2673140079', 3, 'www.tropicanahotel.com'),  
(1010, 'Westgate', '3429 Oak Way', 'Omaha', 'Nebraska', 02026, '4352289765', 5, 'www.westgatehotel.com'),  
(1011, 'Encore', '283 Augusta Park', 'Charleston', 'Virginia', 25301, '3045500902', 4, 'www.encorehotel.com'),  
(1012, 'Orleans', '4629 Hog Camp Road', 'Summit', 'Illinois', 60501, '8472697340', 5, 'www.orleanshotel.com'),  
(1013, 'Circa', '746 Buck Drive', 'South Burlington', 'Vermont', 05403, '8027371063', 3, 'www.circahotel.com'),  
(1014, 'Delano', '4076 Oak Drive', 'Santa Pier', 'Alabama', 36602, '2514985435', 3, 'www.delanohotel.com'),  
(1015, 'Skyloft', '1543 Hedge Street', 'Weehawken', 'New Jersey', 07087, '8622361120', 4, 'www.skylofthotel.com'),  
(1016, 'Ellis', '1029 Roane Avenue', 'Baltimore', 'Maryland', 21202, '4434180572', 5, 'www.ellishotel.com'),  
(1017, 'Nobu', '4841 Zimmerman Lane', 'Santa Ana', 'California', 92705, '7144839964', 4, 'www.nobuhotel.com'),  
(1018, 'Victorian', '3255 Wiseman Street', 'Loudon', 'Tennessee', 37774, '8658983232', 4, 'www.victorianhotel.com'),  
(1019, 'Fremont', '3755 Burke Street', 'Cambridge', 'Massachusetts', 02141, '7812239111', 5, 'www.fremonthotel.com'),  
(1020, 'Tahiti', '2745 Drummond Street', 'Bloomfield', 'New Jersey', 07003, '8622029057', 4, 'www.tahitihotel.com');
```

### Department

```
INSERT INTO department_T (dept_id, d_name) VALUES  
(100, 'Housekeeping'),  
(101, 'Sales'),  
(102, 'Operations'),  
(103, 'Marketing'),  
(104, 'Staffing & Career'),  
(105, 'Technology'),  
(106, 'Maintenance'),  
(107, 'Human Resource'),  
(108, 'Front Office'),  
(109, 'Food and Beverage'),  
(110, 'Reservations'),  
(111, 'Revenue Management'),  
(112, 'Software'),  
(113, 'Distribution'),  
(114, 'Cashier office'),  
(115, 'Business center');
```

## Employee and Service

```
INSERT INTO employee_T (emp_id, e_firstname,e_lastname, designation,salary,e_phonenum,e_street, e_city, e_state, e_zip, hotel_id, dept_id) VALUES  
(900,'James','Smith','Room attendant',2000,'4949502738','3977 Chicago Ave.', 'Riverside','CA',92507, 1002, 100),  
(905,'Thomas','Miller','Hotel manager',4000, '9840281637', '4489 W Sunset Ave', 'Washington', 'AR',72764, 1003, 103),  
(950,'Williams','Clark','Receptionist',2500,'4639482947','14500 W Colfax Ave', 'Lakewood', 'CO',80401, 1005, 108),  
(945,'Anton','Lopez','Parking attendant',1900,'3549202819','250 North' , 'SLC', 'UT',84108, 1003, 102),  
(934,'Mark','Martin','Chef',2800,'8682738231','200 Main', 'Tucson', 'AZ',45102, 1007, 109),  
(990,'Mike','Lee','Room attendant',2000,'6972917363','100 College', 'SF', 'CA',17118, 1009, 100),  
(923,'Daniel','White','Assistant hotel manager',3500,'4229473829','River Rd', 'Junction City', 'WI',54443, 1018, 111),  
(960,'Paul','Harris','Chef',2800,'2847361028','130 University', 'SLC', 'UT',84102, 1004, 109),  
(963,'Margaret','Taylor','Room attendant',2000,'4848253748','E Washington St', 'Greenville', 'SC',29601, 1010, 100),  
(955,'Stephanie','Trumph','Room attendant',2000,'3582392837','Bellevue Square', 'Bellevue', 'WA',98004, 1020, 100),  
(980,'David','Johns','Chef',2800,'6934362960','1300 Hollywood', 'LA', 'CA',12117, 1012, 109),  
(975,'Richard','Brown','Assistant hotel manager',3500,'4978201637','W Colonial Drive', 'Ocoee', 'FL',34761, 1017, 111),  
(991,'Charles','Smith','Chef',2800,'9809482628','SW Barbur Boulevard', 'Portland', 'OR',97232, 1016, 109),  
(920,'Robert','Lee','Receptionist',2500,'4087320496','W Lincoln Hwy', 'Exton', 'PA',19341, 1015, 108),  
(921,'George','White','Hotel manager',4000,'2378105735','130 Descanso Dr', 'San Jose', 'CA',95134, 1020, 103),  
(933,'Jane','Jackson','Room attendant',2000,'7643582716','1030 Northpark Center', 'Dallas', 'TX',75225, 1011, 100),  
(976,'Jeff','Moore','Assistant hotel manager',3500,'4076301937','3201 Lawrence Rd', 'Dallas', 'TX',75229, 1015, 111),  
(999,'Jason','Jonas','Chef',2800,'2009394728','20 Descanso Dr', 'San Jose', 'CA',95134, 1018, 109),  
(940,'Kevin','Anderson','Parking attendant',1900,'9879402938','Mirada St', 'San Jose', 'CA',95134, 1013, 102),  
(988,'Michael','Wilson','Room attendant',2000,'6039201849','Popular Avenue', 'Memphis', 'TN',38119, 1014, 100);  
  
INSERT INTO service_T (service_id, service_type, service_charge) VALUES  
(61000,'Breakfast',75),  
(61002,'Laundry',150),  
(61003,'Gym',30),  
(61004,'Spa',50);
```

## Guest

```
INSERT INTO guest_T(guest_id, id_type, guestName, g_street, g_city, g_state, g_zip, g_phonenumber) VALUES  
(2001,'Driving License','Bob Donald','Columbus St','Dublin','CA',94568, '9982738231'),  
(2002,'Passport','Lilly Sue','Union St','Oakland','CA',94607, '2872917363'),  
(2003,'Student ID','Mary Comb','Highway St','North Bend','OR', 97459, '4829473829'),  
(2004,'Military Identification Card','Xing Hang','Shoshoni St','Thermopolis','WY',82443, '2847361028'),  
(2005,'Social Security Card','Peter Buck','Rio Bravo Blvd SW','Albuquerque','NM',87105, '4836253748'),  
(2006,'Insurance Card','John Walker','Monarch Highway','San Antonio','TX',78204, '3627392837'),  
(2007,'Voter Registration Card','Melissa Harry','River Rd', 'Junction City', 'WI',54443,'2748362960'),  
(2008,'State ID card','Kim Gusto','Main St','Clay',25043, '3859201637'),  
(2009,'Passport','Cristine Fischer','E Washington St','Greenville', 'SC',29601, '3749502738'),  
(2010,'Social Security Card','Moore Scott','North Kierland Blvd','Scottsdale', 'AZ',85254,'5840281637'),  
(2011,'Driving License','Baker Hall','Avocado Ave','Newport Beach','CA',92660, '2839482947'),  
(2012,'Voter Registration Card','Jose Solomon','Buena Vista Drive','Lake Buena Vista', 'FL',32830, '22849202819'),  
(2013,'Social Security Card','Micheal Chenn','Mauna Lani Dr.', 'Kohala Coast', 'HI',96743, '3950482628'),  
(2014,'State ID card','Rahul Dutt','Beachwalk','Honolulu','HI',96815, '5849320496'),  
(2015,'Insurance Card','Evelyn Voron','Bellevue Square', 'Bellevue', 'WA',98004, '3829105735'),  
(2016,'Military Identification Card','Racheal Brundson','Eastchase Parkway', 'Montgomery', 'AL',36117, '6940382716'),  
(2017,'Social Security Card','Perez Lee','Broadway','New York', 'NY',10010, '3758301937'),  
(2018,'Voter Registration Card','Smith Miller','Reservoir Ave', 'Cranston', 'RI',29101, '2910394728'),  
(2019,'Insurance Card','Clark Lewis','Popular Avenue', 'Memphis', 'TN',38119, '1839402938'),  
(2020,'Passport','Davis Lopez','University Pkwy', 'Orem', 'UT',84097, '2719201849');
```

## Room

```
INSERT INTO room_t (room_id, price, roomtype, capacity, hotel_id) VALUES  
(8001,200,'Regular',2,1001),  
(8002,500,'Premium',3,1005),  
(8003,200,'Regular',2,1004),  
(8004,500,'Premium',3,1003),  
(8005,350,'Premium',2,1006),  
(8006,300,'Regular',3,1009),  
(8007,200,'Regular',2,1001),  
(9001,200,'Regular',2,1005),  
(9002,500,'Premium',3,1012),  
(9003,200,'Regular',2,1011),  
(9004,500,'Premium',3,1004),  
(9005,350,'Premium',2,1005),  
(9006,300,'Regular',3,1002),  
(9007,200,'Regular',2,1003),  
(7001,200,'Regular',2,1008),  
(7002,500,'Premium',3,1001),  
(7003,200,'Regular',2,1007),  
(7004,500,'Premium',3,1014),  
(7005,350,'Premium',2,1006),  
(7006,300,'Regular',3,1001),  
(7007,200,'Regular',2,1009),  
(7008,200,'Regular',2,1016),  
(7009,200,'Regular',2,1002),  
(9008,500,'Premium',3,1017),  
(9009,500,'Premium',3,1002),  
(6001,500,'Premium',3,1012),  
(6002,200,'Regular',2,1007),  
(6003,200,'Regular',2,1018),  
(6004,200,'Regular',2,1010),  
(6005,300,'Regular',3,1002),  
(6006,200,'Regular',2,1015),  
(6007,200,'Regular',2,1008),  
(6008,200,'Regular',2,1018),  
(6009,350,'Premium',2,1006),  
(5001,350,'Premium',2,1013),  
(5002,200,'Regular',2,1010),  
(5003,350,'Premium',2,1019)
```

## Booking Information and Dependent

```
INSERT INTO Bookinfo_T(booking_id,checkIn_date,checkOut_date,checkIn_time,checkOut_time,Paymentmode, guest_id, room_id) VALUES  
(58802,'2019-11-11','2019-11-13','9:00:00','11:00:00','Card',2002, 8001),  
(58004,'2021-12-21','2021-12-25','12:30:00','22:30:00','Cash', 2004, 7001),  
(58001,'2018-11-03','2018-11-13','12:05:00','23:05:00','Cash', 2005, 7005),  
(58009,'020-01-11','2020-01-12','10:00:00','11:00:00','Cash', 2002, 8004),  
(58003,'2021-11-05','2021-11-10','8:15:00','10:15:00','Cash', 2007, 9005),  
(58005,'2019-06-07','2019-06-09','10:30:00','11:30:00','Cash', 2018, 5009),  
(58007,'2019-09-12','2019-09-14','12:05:00','13:00:00','Cash', 2015, 5003),  
(58008,'2021-11-30','2021-12-01','16:00:00','18:00:00','Cash', 2013, 6004),  
(58010,'2022-05-19','2022-05-29','19:00:00','18:00:00','Cash', 2010, 7002),  
(58006,'2022-04-30','2022-05-05','20:30:00','12:05:00','Cash', 2009, 7001),  
(58011,'2020-03-21','2020-03-24','6:00:00','11:00:00','Card', 2002, 8004),  
(58012,'2019-06-18','2019-06-29','11:00:00','12:07:00','Card', 2005, 5005),  
(58015,'2019-09-08','2019-09-10','15:15:00','13:00:00','Card', 2004, 6008),  
(58013,'2022-06-24','2022-06-28','14:30:00','13:00:00','Card', 2009, 9003),  
(58014,'2020-09-02','2020-09-10','12:15:00','14:30:00','Card', 2010, 6004),  
(58016,'2019-05-06','2019-05-07','16:04:00','16:00:00','Cash', 2012, 5001),  
(58018,'2020-02-27','2020-02-29','13:00:00','12:05:00','Card', 2014, 5006),  
(58020,'2021-11-02','2021-11-05','9:00:00','10:30:00','Card', 2013, 7002),  
(58019,'2019-07-29','2019-07-30','12:07:00','10:00:00','Card', 2018, 7005),  
(58021,'2019-11-11','2019-11-15','5:00:00','9:00:00','Card', 2020, 7001);  
  
INSERT INTO Dependent_T(guest_id, dependentName, relationship) VALUES  
(2001,'Oliver','Father'),  
(2002,'Noah','Mother'),  
(2003,'Emma','Sister'),  
(2004,'Liam','Friend'),  
(2005,'Mia','Spouse'),  
(2006,'William','Friend')),  
(2007,'Henry','Son'),  
(2008,'Darwin','Spouse'),  
(2009,'Theodore','Friend'),  
(2010,'Isabella','Daughter'),  
(2011,'Benjamin','Son'),  
(2012,'Lucas','Friend'),  
(2013,'Harper','Friend'),  
(2014,'Amelia','Sister'),  
(2015,'Elijah','Friend'),  
(2016,'Ava','Mother'),  
(2017,'Evelyn','Mother'),  
(2018,'James','Brother'),  
(2019,'Charlotte','Spouse'),  
(2020,'Sophia','Sister');
```

### Room Service

```
INSERT INTO roomservice_T (service_id, room_id) VALUES  
  (61000, 8001),  
  (61002, 7005),  
  (61004, 5006),  
  (61000, 9005),  
  (61003, 8007),  
  (61004, 9003),  
  (61002, 7004),  
  (61000, 6005),  
  (61000, 9004),  
  (61002, 7001),  
  (61003, 6002),  
  (61002, 8006),  
  (61000, 9002),  
  (61004, 8004),  
  (61002, 5001),  
  (61003, 7003),  
  (61004, 9006),  
  (61000, 7002),  
  (61000, 8003),  
  (61000, 9007);
```

## SQL Queries

### 1. JOIN

- a. CROSS JOIN – cross join of all the tables:

```
select * from hotel_T cross join department_T cross join employee_T cross join service_T cross join guest_T cross join room_T cross join Bookinfo_T cross join Dependent_T cross join roomservice_T;
```

Result Grid	Filter Rows:	Search	Export:	Fetch rows:						
hotel_id	hotel_name	h_street	h_city	h_state	h_zipcode	phonenum	rating	website	dept_id	d_name
1004	Mandalay	262 Blackburn	Fort Myers	Florida	33901	8139656478	3	www.mandalayhotel.com	111	Revenue Management
1004	Mandalay	262 Blackburn	Fort Myers	Florida	33901	8139656478	3	www.mandalayhotel.com	110	Reservations
1004	Mandalay	262 Blackburn	Fort Myers	Florida	33901	8139656478	3	www.mandalayhotel.com	110	Reservations
1004	Mandalay	262 Blackburn	Fort Myers	Florida	33901	8139656478	3	www.mandalayhotel.com	110	Reservations
1004	Mandalay	262 Blackburn	Fort Myers	Florida	33901	8139656478	3	www.mandalayhotel.com	110	Reservations
1004	Mandalay	262 Blackburn	Fort Myers	Florida	33901	8139656478	3	www.mandalayhotel.com	109	Food and Beverage
1004	Mandalay	262 Blackburn	Fort Myers	Florida	33901	8139656478	3	www.mandalayhotel.com	109	Food and Beverage
1004	Mandalay	262 Blackburn	Fort Myers	Florida	33901	8139656478	3	www.mandalayhotel.com	109	Food and Beverage
1004	Mandalay	262 Blackburn	Fort Myers	Florida	33901	8139656478	3	www.mandalayhotel.com	109	Food and Beverage
1004	Mandalay	262 Blackburn	Fort Myers	Florida	33901	8139656478	3	www.mandalayhotel.com	108	Reception
1004	Mandalay	262 Blackburn	Fort Myers	Florida	33901	8139656478	3	www.mandalayhotel.com	108	Reception
1004	Mandalay	262 Blackburn	Fort Myers	Florida	33901	8139656478	3	www.mandalayhotel.com	108	Reception
1004	Mandalay	262 Blackburn	Fort Myers	Florida	33901	8139656478	3	www.mandalayhotel.com	108	Reception

- b. INNER JOIN-

Example 1: Employee names and department names of employees who live in CA:

```
select distinct employee_T.e_firstname, employee_T.e_lastname, employee_T.e_state, department_T.d_name from employee_T inner join department_T on employee_T.dept_id=department_T.dept_id where e_state='CA';
```

	e_firstname	e_lastname	e_state	d_name
▶	James	Smith	CA	Housekeeping
	George	White	CA	Marketing
	Kevin	Anderson	CA	Operations
	David	Johns	CA	Food and Beverage
	Mike	Lee	CA	Housekeeping
	Jason	Jonas	CA	Food and Beverage

**Example 2:** roomID of rooms which took any kind of service:

```
select distinct roomservice_T.room_id from roomservice_T inner join room_T on  
roomservice_T.room_id=room_T.room_id;
```

room_id
5001
5006
6002
6005
7001
7002
7003
7004
7005
8001
8003
8004
8006
8007
9002
9003
9004
9005
9006
9007

- c. **LEFT JOIN** – selecting guests who have dependents:

```
select distinct guest_T.guest_id, guest_T.guestName, Dependent_T.dependentName,  
Dependent_T.relationship from guest_T left join Dependent_T on  
guest_T.guest_id=Dependent_T.guest_id;
```

guest_id	guestName	dependentName	relationship
2001	Bob Donald	Oliver	Father
2002	Lilly Sue	Noah	Mother
2003	Mary Comb	Emma	Sister
2004	Xing Hang	Liam	Friend
2005	Peter Buck	Mia	Spouse
2006	John Walker	William	Friend
2007	Melissa Harry	Henry	Son
2008	Kim Gusto	Darwin	Spouse
2009	Cristine Fischer	Theodore	Friend
2010	Moore Scott	Isabella	Daughter
2011	Baker Hall	Benjamin	Son
2012	Jose Solomon	Lucas	Friend
2013	Micheal Chenn	Harper	Friend
2014	Rahul Dutt	Amelia	Sister
2015	Evelyn Voron	Elijah	Friend
2016	Racheal Brun...	Ava	Mother
2017	Perez Lee	Evelyn	Mother
2018	Smith Miller	James	Brother
2019	Clark Lewis	Charlotte	Spouse
2020	Davis Lopez	Sophia	Sister

- d. Rooms which took any kind of service :

```
select distinct roomservice_T.room_id from roomservice_T natural join room_T;
```

room_id
5001
5006
6002
6005
7001
7002
7003
7004
7005
8001
8003
8004
8006
8007
9002
9003
9004
9005
9006
9007

- e. Average price of premium rooms:

```
select avg(room_T.price) as 'Avg Price'  
from room_T where roomtype = 'Premium';
```

Avg Price	Refresh data re-exe
► 440.0000	

- f. Employee details for employee whose name starts with M:

```
SELECT * from employee_T where e_firstname LIKE 'M%';
```

emp_id	e_firstname	e_lastname	designation	salary	e_phonenum	e_street	e_city	e_state	e_zip	hotel_id	dept_id
934	Mark	Martin	Chef	2800	8682738231	200 Main	Tucson	AZ	45102	1007	109
963	Margaret	Taylor	Room attendant	2000	4848253748	E Washington St	Greenville	SC	29601	1010	100
988	Michael	Wilson	Room attendant	2000	6039201849	Popular Avenue	Memphis	TN	38119	1014	100
990	Mike	Lee	Room attendant	2000	6972917363	100 College	SF	CA	17118	1009	100

- g. Guest information for guest who checked-in on 2020-03-21:

```
select * from guest_T INNER JOIN Bookinfo_T ON guest_T.guest_id =
Bookinfo_T.guest_id WHERE Bookinfo_T.checkIn_date = '2020-03-21';
```

guest_id	id_type	guestName	g_street	g_city	g_state	g_zip	g_phonenum	booking_id	checkin_date	checkOut_da...	checkIn_t...	checkOut_t...	Paymentmode	guest_id	room_id
► 2002	Passport	Lilly Sue	Union St	Oakland	CA	94607	2872917363	58011	2020-03-21	2020-03-24	06:00:00	11:00:00	CC	2002	8004

## 2. VIEWS

A view is a virtual table based on the result-set of an SQL statement.

### Example 1

```
CREATE VIEW v_hotel1 AS
SELECT room_t.room_id, price, roomtype, capacity, hotel_id, booking_id, checkin_date,
checkOut_date, checkIn_time, checkOut_time, Paymentmode, guest_id FROM room_t Inner
join bookinfo_t on room_t.room_id=bookinfo_t.room_id;
```

```
select * from v_hotel1;
```

room_id	price	roomtype	capacity	hotel_id	booking_id	checkin_date	checkOut_da...	checkIn_t...	checkOut_t...	Paymentmode	guest_id
► 7005	350	Premium	2	1006	58001	2018-11-03	2018-11-13	12:05:00	23:05:00	Cash	2005
9005	350	Premium	2	1005	58003	2021-11-05	2021-11-10	08:15:00	10:15:00	Cash	2007
7001	200	Regular	2	1008	58004	2021-12-21	2021-12-25	12:30:00	22:30:00	Cash	2004
5009	200	Regular	2	1015	58005	2019-06-07	2019-06-09	10:30:00	11:30:00	Cash	2018
7001	200	Regular	2	1008	58006	2022-04-30	2022-05-05	20:30:00	12:05:00	Cash	2009
5003	350	Premium	2	1019	58007	2019-09-12	2019-09-14	12:05:00	13:00:00	Cash	2015
6004	200	Regular	2	1010	58008	2021-11-30	2021-12-01	16:00:00	18:00:00	Cash	2013
8004	500	Premium	3	1003	58009	0020-01-11	2020-01-12	10:00:00	11:00:00	Cash	2002
7002	500	Premium	3	1001	58010	2022-05-19	2022-05-29	19:00:00	18:00:00	Cash	2010
8004	500	Premium	3	1003	58011	2020-03-21	2020-03-24	06:00:00	11:00:00	Card	2002
5005	500	Premium	3	1011	58012	2019-06-18	2019-06-29	11:00:00	12:07:00	Card	2005
9003	200	Regular	2	1011	58013	2022-06-24	2022-06-28	14:30:00	13:00:00	Card	2009
6004	200	Regular	2	1010	58014	2020-09-02	2020-09-10	12:15:00	14:30:00	Card	2010
6008	200	Regular	2	1018	58015	2019-09-08	2019-09-10	15:15:00	13:00:00	Card	2004
5001	350	Premium	2	1013	58016	2019-05-06	2019-05-07	16:04:00	16:00:00	Cash	2012
5006	350	Premium	2	1019	58018	2020-02-27	2020-02-29	13:00:00	12:05:00	Card	2014
7005	350	Premium	2	1006	58019	2019-07-29	2019-07-30	12:07:00	10:00:00	Card	2018
7002	500	Premium	3	1001	58020	2021-11-02	2021-11-05	09:00:00	10:30:00	Card	2013
7001	200	Regular	2	1008	58021	2019-11-11	2019-11-15	05:00:00	09:00:00	Card	2020
8001	200	Regular	2	1001	58802	2019-11-11	2019-11-13	09:00:00	11:00:00	Card	2002

Update cell value in view:

UPDATE v\_hotel1 SET Paymentmode = 'Card' WHERE Paymentmode = 'CC';

room_id	price	roomtype	capacity	hotel_id	booking_id	checkIn_date	checkOut_da...	checkIn_t...	checkOut_t...	Paymentmode	guest_id
► 7005	350	Premium	2	1006	58001	2018-11-03	2018-11-13	12:05:00	23:05:00	Cash	2005
9005	350	Premium	2	1005	58003	2021-11-05	2021-11-10	08:15:00	10:15:00	Cash	2007
7001	200	Regular	2	1008	58004	2021-12-21	2021-12-25	12:30:00	22:30:00	Cash	2004
5009	200	Regular	2	1015	58005	2019-06-07	2019-06-09	10:30:00	11:30:00	Cash	2018
7001	200	Regular	2	1008	58006	2022-04-30	2022-05-05	20:30:00	12:05:00	Cash	2009
5003	350	Premium	2	1019	58007	2019-09-12	2019-09-14	12:05:00	13:00:00	Cash	2015
6004	200	Regular	2	1010	58008	2021-11-30	2021-12-01	16:00:00	18:00:00	Cash	2013
8004	500	Premium	3	1003	58009	0020-01-11	2020-01-12	10:00:00	11:00:00	Cash	2002
7002	500	Premium	3	1001	58010	2022-05-19	2022-05-29	19:00:00	18:00:00	Cash	2010
8004	500	Premium	3	1003	58011	2020-03-21	2020-03-24	06:00:00	11:00:00	CC	2002
5005	500	Premium	3	1011	58012	2019-06-18	2019-06-29	11:00:00	12:07:00	CC	2005
9003	200	Regular	2	1011	58013	2022-06-24	2022-06-28	14:30:00	13:00:00	CC	2009
6004	200	Regular	2	1010	58014	2020-09-02	2020-09-10	12:15:00	14:30:00	CC	2010
6008	200	Regular	2	1018	58015	2019-09-08	2019-09-10	15:15:00	13:00:00	CC	2004
5001	350	Premium	2	1013	58016	2019-05-06	2019-05-07	16:04:00	16:00:00	Cash	2012
5006	350	Premium	2	1019	58018	2020-02-27	2020-02-29	13:00:00	12:05:00	CC	2014
7005	350	Premium	2	1006	58019	2019-07-29	2019-07-30	12:07:00	10:00:00	CC	2018
7002	500	Premium	3	1001	58020	2021-11-02	2021-11-05	09:00:00	10:30:00	CC	2013
7001	200	Regular	2	1008	58021	2019-11-11	2019-11-15	05:00:00	09:00:00	CC	2020
8001	200	Regular	2	1001	58802	2019-11-11	2019-11-13	09:00:00	11:00:00	CC	2002

Update to view will update cell value in original table too:

select \* from bookinfo\_t;

booking_id	checkIn_date	checkOut_da...	checkIn_t...	checkOut_t...	Paymentmode	guest_id	room_id
► 58001	2018-11-03	2018-11-13	12:05:00	23:05:00	Cash	2005	7005
58003	2021-11-05	2021-11-10	08:15:00	10:15:00	Cash	2007	9005
58004	2021-12-21	2021-12-25	12:30:00	22:30:00	Cash	2004	7001
58005	2019-06-07	2019-06-09	10:30:00	11:30:00	Cash	2018	5009
58006	2022-04-30	2022-05-05	20:30:00	12:05:00	Cash	2009	7001
58007	2019-09-12	2019-09-14	12:05:00	13:00:00	Cash	2015	5003
58008	2021-11-30	2021-12-01	16:00:00	18:00:00	Cash	2013	6004
58009	0020-01-11	2020-01-12	10:00:00	11:00:00	Cash	2002	8004
58010	2022-05-19	2022-05-29	19:00:00	18:00:00	Cash	2010	7002
58011	2020-03-21	2020-03-24	06:00:00	11:00:00	CC	2002	8004
58012	2019-06-18	2019-06-29	11:00:00	12:07:00	CC	2005	5005
58013	2022-06-24	2022-06-28	14:30:00	13:00:00	CC	2009	9003
58014	2020-09-02	2020-09-10	12:15:00	14:30:00	CC	2010	6004
58015	2019-09-08	2019-09-10	15:15:00	13:00:00	CC	2004	6008
58016	2019-05-06	2019-05-07	16:04:00	16:00:00	Cash	2012	5001
58018	2020-02-27	2020-02-29	13:00:00	12:05:00	CC	2014	5006
58019	2019-07-29	2019-07-30	12:07:00	10:00:00	CC	2018	7005
58020	2021-11-02	2021-11-05	09:00:00	10:30:00	CC	2013	7002
58021	2019-11-11	2019-11-15	05:00:00	09:00:00	CC	2020	7001
58802	2019-11-11	2019-11-13	09:00:00	11:00:00	CC	2002	8001

**Example 2:**

```
CREATE VIEW v_hotel2 AS SELECT hotel_t.hotel_id, hotel_name, h_state, rating, emp_id,
e_firstname, e_lastname, designation, department_t.dept_id, d_name FROM hotel_t inner join
employee_t on hotel_t.hotel_id=employee_t.hotel_id inner join department_t on
employee_t.dept_id=department_t.dept_id
```

```
select * from v_hotel2
```

hotel_id	hotel_name	h_state	rating	emp_id	e_firstname	e_lastname	designation	dept_id	d_name
1002	Royal	California	3	900	James	Smith	Room attendant	100	Housekeeping
1011	Encore	Virginia	4	933	Jane	Jackson	Room attendant	100	Housekeeping
1020	Tahiti	New Jersey	4	955	Stepahnie	Trumph	Room attendant	100	Housekeeping
1010	Westgate	Nebraska	5	963	Margaret	Taylor	Room attendant	100	Housekeeping
1014	Delano	Alabama	3	988	Michael	Wilson	Room attendant	100	Housekeeping
1009	Tropicana	Pennsylvania	3	990	Mike	Lee	Room attendant	100	Housekeeping
1013	Circa	Vermont	3	940	Kevin	Anderson	Parking attendant	102	Operations
1003	Luxor	Montana	5	945	Anton	Lopez	Parking attendant	102	Operations
1003	Luxor	Montana	5	905	Thomas	Miller	Hotel manager	103	Marketing
1020	Tahiti	New Jersey	4	921	George	White	Hotel manager	103	Marketing
1015	Skyloft	New Jersey	4	920	Robert	Lee	Receptionist	108	Front Office
1005	Flamingo	Pennsylvania	4	950	Williams	Clark	Receptionist	108	Front Office
1007	Harrah	Florida	5	934	Mark	Martin	Chef	109	Food and Beverage
1004	Mandalay	Florida	3	960	Paul	Harris	Chef	109	Food and Beverage
1012	Orleans	Illinois	5	980	David	Johns	Chef	109	Food and Beverage
1016	Ellis	Maryland	5	991	Charles	Smith	Chef	109	Food and Beverage
1018	Victorian	Tennessee	4	999	Jason	Jonas	Chef	109	Food and Beverage
1018	Victorian	Tennessee	4	923	Daniel	White	Assistant hotel...	111	Revenue Management
1017	Nobu	California	4	975	Richard	Brown	Assistant hotel...	111	Revenue Management
1015	Skyloft	New Jersey	4	976	Jeff	Moore	Assistant hotel...	111	Revenue Management

Update cell value in view:

```
UPDATE v_hotel2 SET d_name = 'Front Office' WHERE d_name = 'Reception';
```

```
select * from v_hotel2;
```

hotel_id	hotel_name	h_state	rating	emp_id	e_firstname	e_lastname	designation	dept_id	d_name
1002	Royal	California	3	900	James	Smith	Room attendant	100	Housekeeping
1011	Encore	Virginia	4	933	Jane	Jackson	Room attendant	100	Housekeeping
1020	Tahiti	New Jersey	4	955	Stepahnie	Trumph	Room attendant	100	Housekeeping
1010	Westgate	Nebraska	5	963	Margaret	Taylor	Room attendant	100	Housekeeping
1014	Delano	Alabama	3	988	Michael	Wilson	Room attendant	100	Housekeeping
1009	Tropicana	Pennsylvania	3	990	Mike	Lee	Room attendant	100	Housekeeping
1013	Circa	Vermont	3	940	Kevin	Anderson	Parking attendant	102	Operations
1003	Luxor	Montana	5	945	Anton	Lopez	Parking attendant	102	Operations
1003	Luxor	Montana	5	905	Thomas	Miller	Hotel manager	103	Marketing
1020	Tahiti	New Jersey	4	921	George	White	Hotel manager	103	Marketing
1015	Skyloft	New Jersey	4	920	Robert	Lee	Receptionist	108	Reception
1005	Flamingo	Pennsylvania	4	950	Williams	Clark	Receptionist	108	Reception
1007	Harrah	Florida	5	934	Mark	Martin	Chef	109	Food and Beverage
1004	Mandalay	Florida	3	960	Paul	Harris	Chef	109	Food and Beverage
1012	Orleans	Illinois	5	980	David	Johns	Chef	109	Food and Beverage
1016	Ellis	Maryland	5	991	Charles	Smith	Chef	109	Food and Beverage
1018	Victorian	Tennessee	4	999	Jason	Jonas	Chef	109	Food and Beverage
1018	Victorian	Tennessee	4	923	Daniel	White	Assistant hotel...	111	Revenue Management
1017	Nobu	California	4	975	Richard	Brown	Assistant hotel...	111	Revenue Management
1015	Skyloft	New Jersey	4	976	Jeff	Moore	Assistant hotel...	111	Revenue Management

Update to view will update cell value in original table too:

```
select * from department_t;
```

dept_id	d_name
100	Housekeeping
101	Sales
102	Operations
103	Marketing
104	Staffing & Career
105	Technology
106	Maintenance
107	Human Resource
108	Reception
109	Food and Beverage
110	Reservations
111	Revenue Management
112	Software
113	Distribution
114	Cashier office
115	Business center

### **3. STORED PROCEDURE**

A stored procedure is a prepared SQL code that you can save, so the code can be reused over and over again.

Example1:

```
Selecting employees from a particular state DELIMITER //  
CREATE PROCEDURE sp_emp_by_city(IN instate VARCHAR(10))  
BEGIN  
SELECT * FROM employee_T WHERE e_city = instate;  
END//  
DELIMITER;
```

```
CALL sp_emp_by_city('San Jose');
```

emp_id	e_firstname	e_lastname	designation	salary	e_phonenum	e_street	e_city	e_state	e_zip	hotel_id	dept_id
921	George	White	Hotel manager	4000	2378105735	130 Descanso Dr	San Jose	CA	95134	1020	103
940	Kevin	Anderson	Parking attendant	1900	9879402938	Mirada St	San Jose	CA	95134	1013	102
999	Jason	Jonas	Chef	2800	2009394728	20 Descanso Dr	San Jose	CA	95134	1018	109

**Example 2:**

Find all guest information

```
DELIMITER //  
CREATE PROCEDURE sp_guest()  
BEGIN  
SELECT * FROM guest_T;  
END//  
DELIMITER ;
```

```
CALL sp_guest;
```

guest_id	id_type	guestName	g_street	g_city	g_state	g_zip	g_phonenumb...
► 2001	Driving License	Bob Donald	Columbus St	Dublin	CA	94568	9982738231
2002	Passport	Lilly Sue	Union St	Oakland	CA	94607	2872917363
2003	Student ID	Mary Comb	Highway St	North Bend	OR	97459	4829473829
2004	Military Identification Card	Xing Hang	Shoshoni St	Thermopolis	WY	82443	2847361028
2005	Social Security Card	Peter Buck	Rio Bravo Blvd SW	Albuquerque	NM	87105	4836253748
2006	Insurance Card	John Walker	Monarch Highway	San Antanio	TX	78204	3627392837
2007	Voter Registration Card	Melissa Harry	River Rd	Junction City	WI	54443	2748362960
2008	State ID card	Kim Gusto	Main St	Clay	WV	25043	3859201637
2009	Passport	Cristine Fischer	E Washington St	Greenville	SC	29601	3749502738
2010	Social Security Card	Moore Scott	North Kierland Blvd	Scottsdale	AZ	85254	5840281637
2011	Driving License	Baker Hall	Avocado Ave	Newport B...	CA	92660	2839482947
2012	Voter Registration Card	Jose Solomon	Buena Vista Drive	Lake Buen...	FL	32830	22849202819
2013	Social Security Card	Micheal Chenn	Mauna Lani Dr.	Kohala Coast	HI	96743	3950482628
2014	State ID card	Rahul Dutt	Beachwalk	Honolulu	HI	96815	5849320496
2015	Insurance Card	Evelyn Voron	Bellevue Square	Bellevue	WA	98004	3829105735
2016	Military Identification Card	Racheal Brun...	Eastchase Parkway	Montgomery	AL	36117	6940382716
2017	Social Security Card	Perez Lee	Broadway	New York	NY	10010	3758301937
2018	Voter Registration Card	Smith Miller	Reservoir Ave	Cranston	RI	29101	2910394728
2019	Insurance Card	Clark Lewis	Popular Avenue	Memphis	TN	38119	1839402938
2020	Passport	Davis Lopez	University Pkwy	Orem	UT	84097	2719201849