



Indian Institute of Technology Indore

CS 257
DBMS Minor Preproject
Hotel Management

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Project Description-

The aim of the project is to create a Hotel Management software. It contains a manager login which can assign membership to interested customers and have access to employee database. The functionalities which can be accessed by the employees of respective departments are customer check-in, check-out, feedback, dining, laundry and salon info.

ER Analysis: Identifying Entity sets and Relationship sets-

Entity relation for booking of a customer-

(1) Booking_info(E)

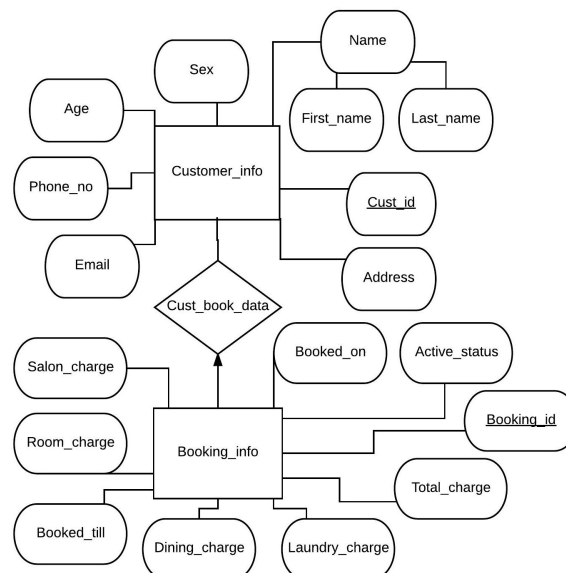
- Booked_on (DATE)
- Active_status (ENUM)
- Booking_id (INT)
- Total_charge (INT)
- Laundry_charge (INT)
- Dining_charge (INT)
- Salon_charge (INT)
- Room_charge (INT)
- Booked_till (DATE)

(2) Customer_info(E)

- First_name (VARCHAR)
- Last_name (VARCHAR)
- Cust_id (INT)
- Age (INT)
- Sex (ENUM)
- Adress (VARCHAR)
- Phone_no (VARCHAR)
- Email (VARCHAR)

Cust_book_data(R)

Entity relation diagram for booking of a customer-



Entity relation for booking a room-

(1) Booking_info(E)

-same attributes as before

(2) Rom_info(E)

-Room_no (INT)

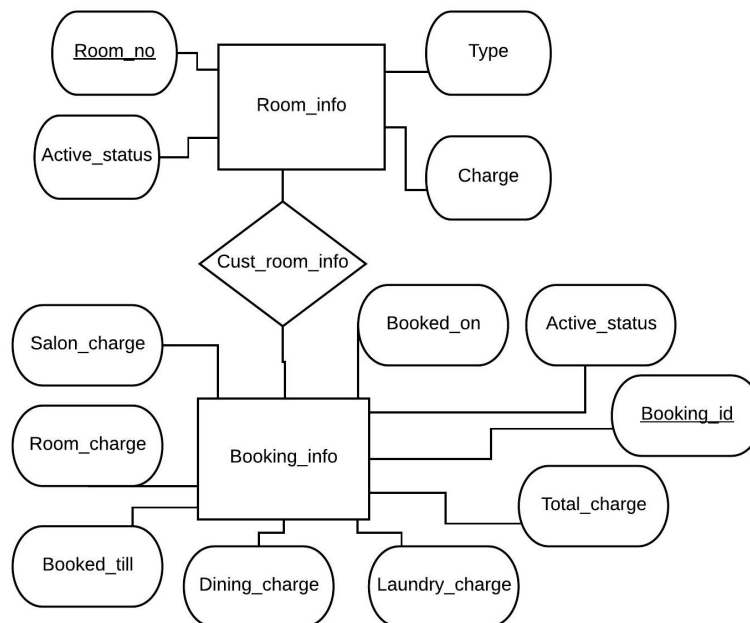
-Type (ENUM)

-Active_status (ENUM)

-Charge (INT)

(3) Cust_room_info(R)

Entity relation diagram for booking a room-



Entity relation for laundry billing-

(1) Booking_info(E)

-same attributes as before

(2) Laundry_info(E)

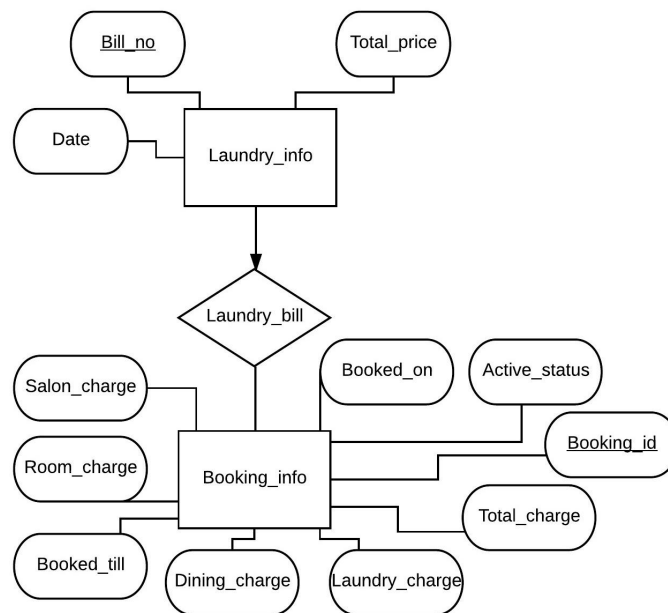
-Bill_no (INT)

-Total_price (INT)

-Date (DATE)

(3) Laundry_bill(R)

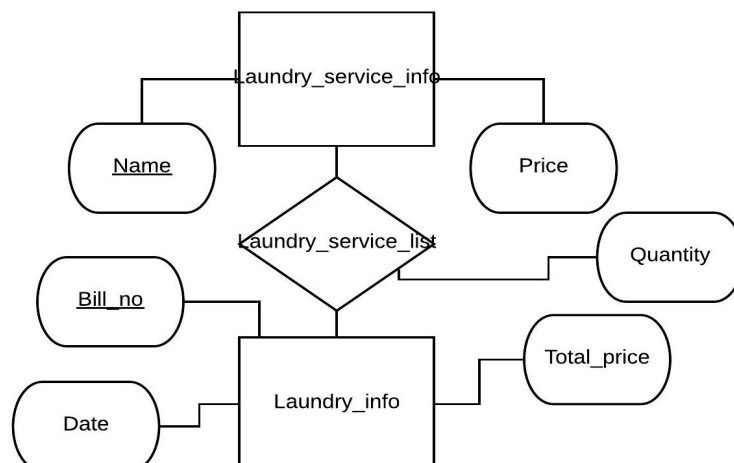
Entity relation diagram for laundry billing-



Entity relation for selecting type of laundry service-

- (1) Laundry_info(E)
-same attributes as before
- (2) Laundry_service_info(E)
-Name (VARCHAR)
-Price (INT)
- (3) Laundry_service_list(R)
-Quantity (INT)

Entity relation diagram for selecting type of laundry service-



Entity relation for dining billing-

(1) Booking_info(E)

-same attributes as before

(2) Dining_info(E)

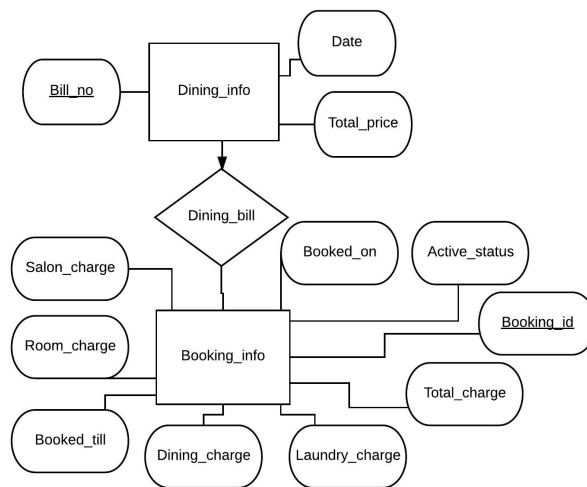
-Bill_no (INT)

-Total_price (INT)

-Date (DATE)

(3) Dining_bill(R)

Entity relation diagram for dining billing-



Entity relation for selecting dining product-

(1) Dining_info(E)

-same attributes as before

(2) Dining_product_info(E)

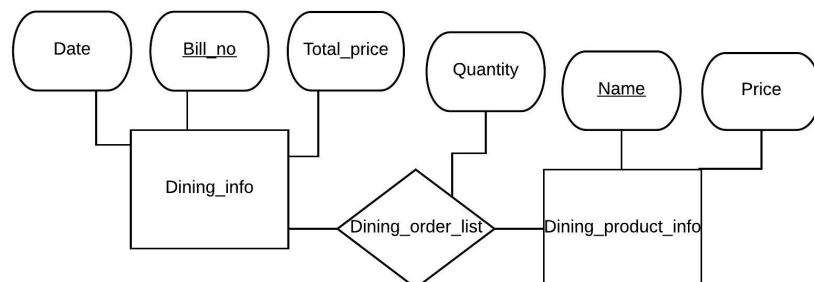
-Name (VARCHAR)

-Price (INT)

(3) Dining_order_list(R)

-Quantity (INT)

Entity relation diagram for selecting dining product-

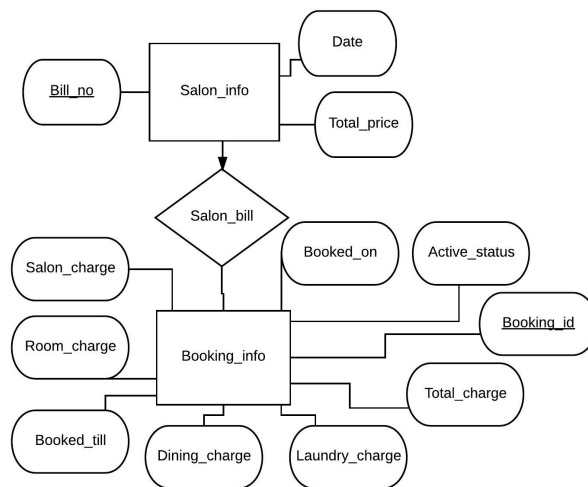


(1) Booking_info(E)
-same attributes as before

- same attributes as before

- Bill_no (INT)
- Total_price (INT)
- Date (DATE)

Entity relation diagram for salon billing-

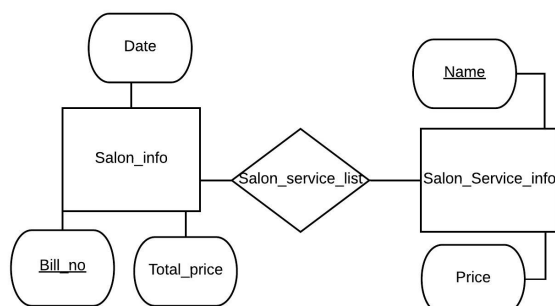


(1) Salon_info(E)
-same attributes as before

-same attributes as before

- Name (VARCHAR)
- Price (INT)

Entity relation diagram for selecting type of salon service-



Entity relation for assigning membership to a customer-

(1) Customer_info(E)

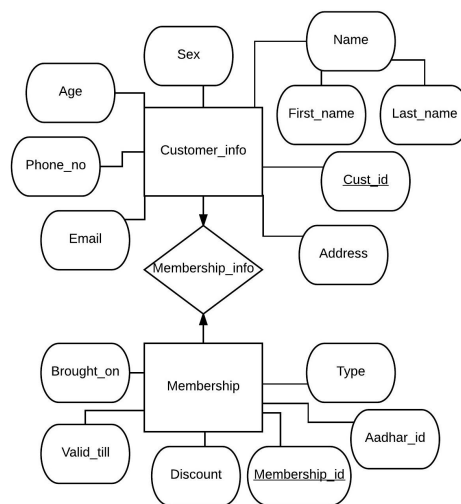
-same attributes as before

(2) Membership_info(E)

- Membership_id (INT)
- Type (ENUM)
- Aadhar_id (BIGINT)
- Discount (INT)
- Brought_on (DATE)
- Valid_till (DATE)

(3) Membership_info(R)

Entity relation diagram for assigning membership to a customer-



Entity relation for assigning departments to employees-

(1) Employee(E)

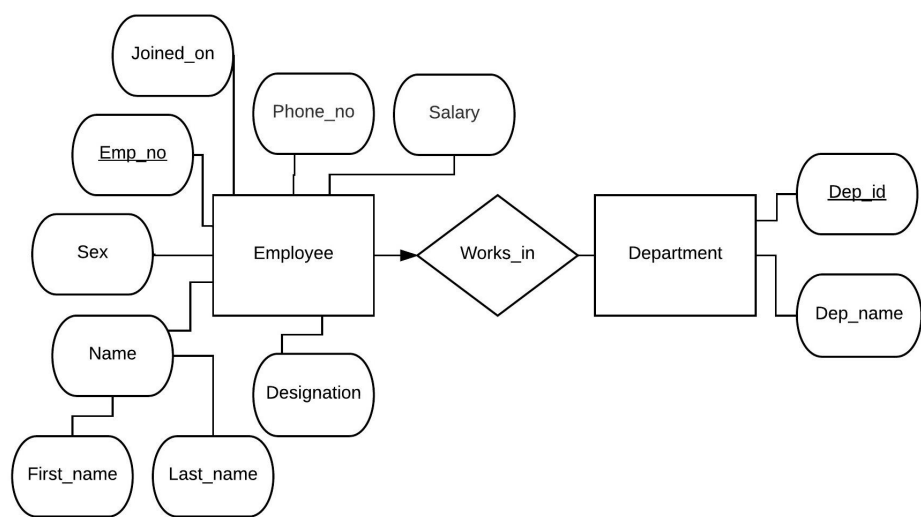
- Emp_no (INT)
- First_name (VARCHAR)
- Last_name (VARCHAR)
- Sex (ENUM)
- Phone_no (VARCHAR)
- Designation (VARCHAR)
- Joined_on (DATE)
- Salary (DOUBLE)

(2) Department(E)

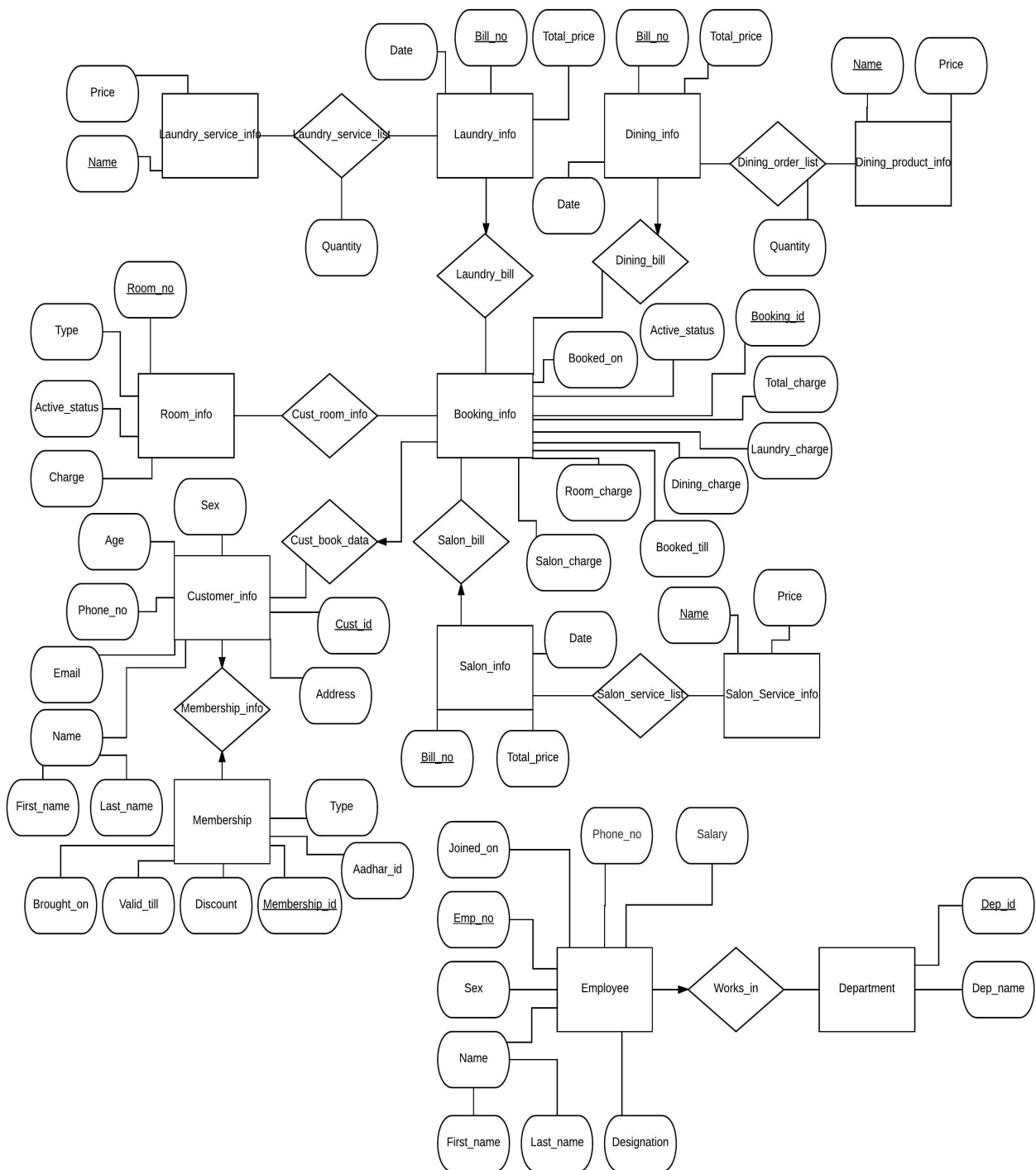
- Dep_id (VARCHAR)
- Dep_name (VARCHAR)

(3) Works_in(R)

Entity relation diagram for assigning departments to employees-



Complete ER Diagram-



Transform ER Realations into set of Tables-

```
create table Customer_info(  
    First_name varchar(15) NOT NULL,  
    Last_name varchar(15) NOT NULL,  
    Cust_id int Primary Key,  
    Age int NOT NULL,  
    Phone_no varchar(15) NOT NULL,  
    Email varchar(50) DEFAULT NULL,  
    Sex enum('M','F') NOT NULL,  
    Address varchar(80) NOT NULL  
);  
  
create table Room_info(  
    Room_no int Primary Key,  
    Type enum('Regular','Premium'),  
    Active_status int NOT NULL,  
    Charge double NOT NULL  
);  
  
create table Membership(  
    Membership_id int Primary Key,  
    Cust_id int NOT NULL,  
    Discount int NOT NULL,  
    Type enum('Gold','Platinum') NOT NULL,  
    Aadhar_id bigint NOT NULL,  
    Brought_on date NOT NULL,  
    Valid_till date NOT NULL,  
    UNIQUE (Aadhar_id)  
);  
  
create table Booking_info(  
    Booking_id int Primary Key,  
    Cust_id int NOT NULL,  
    Active_status int NOT NULL,  
    Laundry_charge double DEFAULT 0,  
    Dining_charge double DEFAULT 0,  
    Salon_charge double DEFAULT 0,  
    Room_charge double DEFAULT 0,  
    Total_charge double DEFAULT 0,  
    Booked_on date NOT NULL,  
    Booked_till date NOT NULL  
);  
  
create table Salon_info(  
    Bill_no int Primary key,  
    Booking_id int NOT NULL,  
    Total_price double NOT NULL,  
    Bill_date date NOT NULL  
);
```

```

create table Salon_Service_info(
    Name varchar(35) Primary key,
    Price double NOT NULL
);
create table Salon_service_list(
    Bill_no int NOT NULL,
    Name varchar(35) NOT NULL,
    Primary key (Bill_no, Name)
);

create table Laundry_info(
    Bill_no int Primary key,
    Booking_id int NOT NULL,
    Total_price double NOT NULL,
    Bill_date date NOT NULL
);

create table Laundry_Service_info(
    Name varchar(35) Primary key,
    Price double NOT NULL
);

create table Laundry_service_list(
    Bill_no int NOT NULL,
    Name varchar(35) NOT NULL,
    Quantity int NOT NULL,
    Primary key (Bill_no, Name)
);

create table Dining_info(
    Bill_no int Primary key,
    Booking_id int NOT NULL,
    Bill_date date NOT NULL,
    Total_price double NOT NULL
);

create table Dining_product_info(
    Name varchar(50) Primary key,
    Price int NOT NULL
);

create table Dining_Order_list(
    Bill_no int NOT NULL,
    Name varchar(50) NOT NULL,
    Quantity int NOT NULL,
    Primary key (Bill_no, Name)
);
create table cust_room_info(
    Room_no int NOT NULL,
    Booking_id int NOT NULL,
    Primary key (Room_no, Booking_id)
);

```

```

create table Employee (
    Emp_no int Primary key,
    First_name varchar(15) NOT NULL,
    Last_name varchar(15) NOT NULL,
    Sex enum('M','F') NOT NULL,
    Joined_on date NOT NULL,
    Dep_id varchar(5) NOT NULL,
    Designation varchar(25) NOT NULL,
    Phone_no varchar(15) NOT NULL,
    Salary double NOT NULL
);

```

```

create table Department (
    Dep_id varchar(5) Primary key,
    Dep_name varchar(35) NOT NULL
);

```

TRIGGERS-

```

delimiter //
create trigger laundry_totalling
after insert on Laundry_info
for each row
begin
    update Booking_info
    set Laundry_charge = Laundry_charge + new.Total_price where Booking_id = new.Booking_id;
end //
delimiter ;

```

```

delimiter //
create trigger dining_totalling
after insert on Dining_info
for each row
begin
    update Booking_info
    set Dining_charge = Dining_charge + new.Total_price where Booking_id = new.Booking_id;
end //
delimiter ;

```

```

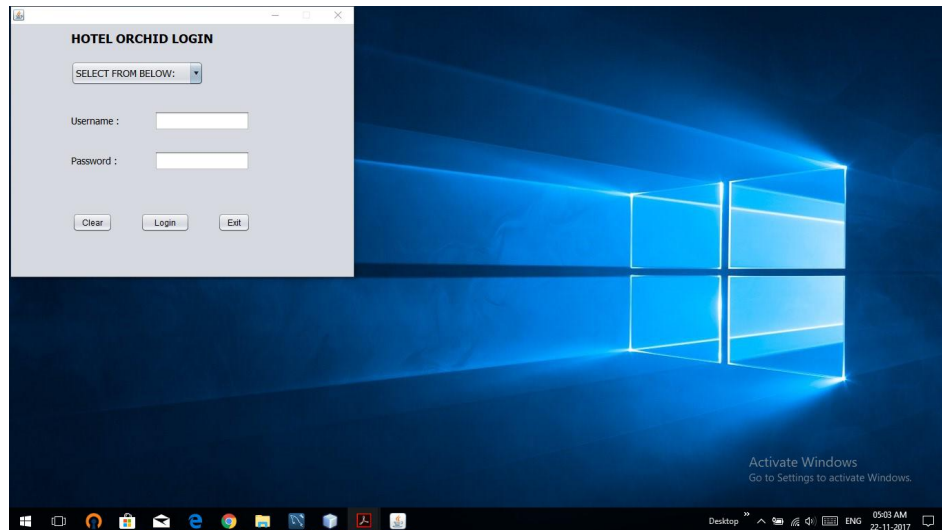
delimiter //
create trigger salon_totalling
after insert on Salon_info
for each row
begin
    update Booking_info
    set Salon_charge = Salon_charge + new.Total_price where Booking_id = new.Booking_id;
end //
delimiter ;

```

Features and Functionlities of our Project-

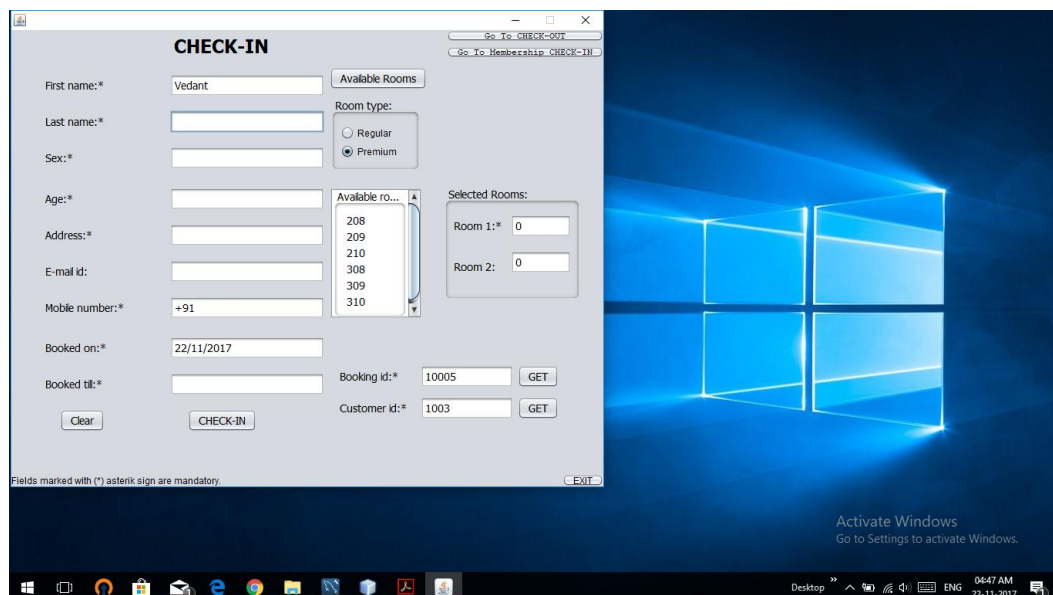
Employee and Manager Login:

As we open the software, a login page(hotel orchid login as header) appears through which the employees or manager can get access to the management system. From here onwards the employees can access their respective department's frames. The user ID and the password are provided to the employees which is stored in the software.



Customer Check-In:

The frame headed as CHECK-IN is used to enter the data related to the customer who checks into the hotel. The data related to the customers go into the Customer_info table in the SQL back-end, the booking details goes into the Booking_info table and some of the data goes into the Room_info table. This way the data is divided and stored in the tables. We can check the vacant rooms and accordingly allot them to new customers. The check-in date is automatically imported from the system. Also we can access the membership check-in or check-out frame from this frame.



Customer check-out:

On this page all the expenses made by the customer are shown. If there is any kind of membership allowance then we can see it on this frame. Then finally the total charges are shown which should be paid by the customer. We can access the new customer check-in or the membership login page from this frame.

CHECK-OUT

Booking id: 10001 [Show Details and Charges](#)

Membership id (if present):

Details:

Name: Mahesh Mahotra Room No. 1: 201
Room No. 2: NOT ASSIGNED

Charges:

Room Charge: 4000.0 Laundry Charge: 200.0
Dining Charge: 225.0 Salon Charge: 250.0

TOTAL CHARGE: 4675.0 % Discount offered: No Discount

[GENERATE BILL AND CHECKOUT](#) [CLEAR](#) [EXIT](#)

Dining Service:

Dining Service frame contains the bill generation software. The customer can search from variety of food items present and select according to his/her choice. The search box makes it easier to find items from the data previously inserted in the tables in the back-end. Finally generate bill button computes all the transactions made and passes on the final amount to the database which is later on shown in the check-out page.

DINING SERVICE

Current Bill No.: 100004 [GET](#)

Booking id: Date: 22/11/2017

Search: chic [Find](#)

Items matched:

- chicken bryani
- chicken noodles
- chilly chicken
- kabuli chicken
- tandoori chicken

Name	Quantity
chilly chicken	1
tandoori chicken	2

[Select](#) [Delete](#)

[GENERATE BILL](#) [CLEAR ALL](#) [EXIT](#)

Laundry Service:

This page works in a similar way as the dining service page. The services provided by the hotel's laundry department are shown in the box at the left. The customer needs to select the service he/she wants to avail and enter the quantity of the clothes he/she is giving to get them cleaned. Finally clicking on the generate bill button will show them the final amount of the transaction made and the amount will be transferred to the database which will be later on shown during the time of check-out.

LAUNDRY SERVICE

Current Bill No.: 100004 GET

Booking id: Date: 22/11/2017

Services offered:

- dry clean
- press
- washing

Name	Quantity
press	3
washing	8

Select Delete

GENERATE BILL CLEAR ALL EXIT

Salon Service:

The hotel also has a salon which provides hair cut, massage, facial, etc services. These can be selected from the box provided on the left of this frame. After availing the service the bill can be generated and the final amount will be later on shown at the time of check-out.

SALON SERVICE

Current Bill No.: 100004 GET

Booking id: Date: 22/11/2017

Search: hair FIND

Services matched:

- hair cut

Name
pedicure
hair cut

Select Delete

GENERATE BILL CLEAR ALL EXIT

Membership facility:

Also the software has a Membership check-in page where a customer can apply for membership. There are two kinds of membership available, those are Gold and Platinum. Both of them provide 5 and 10 percent discount respectively. When next time the customer visits the hotel he/she can claim the discount. The membership cards are valid for a limited period of time and can be renewed. It requires the Aadhar Id of the customer.

The screenshot shows a Windows desktop with a blue background and a taskbar at the bottom. A window titled "Membership Check-in" is open. The form contains the following fields and buttons:

- Membership id: 001
- Customer id: 1001
- Name: Mahesh Mahotra
- Membership Booked Date: 2017-11-19
- Membership Validity Date: 2019-11-19
- Membership Validity: VALID
- Booked on: 22/11/2017
- Booked till: (empty)
- Booking id: 10005
- Room type: ☐ Regular ☐ Premium
- Available rooms: (empty list)
- Selected Rooms: Room 1: 0, Room 2: 0
- Buttons: "Go To CHECK-OUT", "Go To New Customer CHECK-IN", "Available Rooms", "Check Validity", "GET", "Clear", "EXIT", "Get Membership info", "CHECK-IN".

Checkout Status:

This page shows the customers stay duration. If a person stays more than specified then this page shows the status. This page can be accessed by the manager.

The screenshot shows a Windows desktop with a blue background and a taskbar at the bottom. A window titled "Checkout Status" is open. The form contains a table with the following columns:

Cust id	Name	Booking id	Checkout date	Status

Buttons: "Go back"

Managing Page:

This can be accessed by the manager only. The functions are as shown. Manager can see or update the employee data, assign membership to the customers and see the checkout status. As we can see the list of employees is also shown in the image below. Even that frame is exclusively accessed by the manager. Below that the third image shows how a manager can add a new employee or update the data of the existing employees. A template of the membership assigning form is also given below which shows how the manager offers membership to the customers who apply for it.

