Group No.: ____A____ Project No.: ____E____

Project Name: _____Hotel Management System_____

PHASE - IV
DATABASE MANAGEMENT & APPLICATIONS

I. CHANGES MADE:

1. In the requirement specification:
   a.
   b.

2. In the ER Diagram:
   a. <NO CHANGES MADE>

3. In the Logical Database Design
   a. In relational schema we have changed the room_1 into room.
   b. In room table changed the hotel name attribute with hotel id.
   c. In room table we have added one more attribute 'status' to check the room status.
   d. We have removed the table named 'SINGLEROOM', 'DOUBLEROOM', 'MULTIROOM' because these table increases the redundancy and ROOM table covers these table's attribute room type with room number.
   e. We have removed the security table because there were no primary key.
   f. We have merged the BILL_1 and BILL_2 and made a new table named as BILL which covers both table's attribute.
   g. We have merged the BOOKING_1 and BOOKING_2 and made a new table named as BOOKING which covers both table's attribute.
   h. We have added invoice_id and price attribute into SERVICE table.
   i. We have removed the table named 'GYM', 'MEDICAL_SERVICES', 'TOURISM' because these table increases the redundancy and SERVICES table covers these table's attribute service type with service id.

II. SQL QUERIES TO CREATE DATABASE AND TABLES:

1. To create Database:
   Commands to create 'Hotel_Management_System' database:-

```
CREATE DATABASE Hotel_Management_System;
USE Hotel_Management_System;
```

2. To create Tables:
   Commands to create 'WEBSITE' table:-

```
CREATE TABLE WEBSITE(
Url VARCHAR(100) NOT NULL,
PRIMARY KEY (Url)
);
```

Commands to create ‘HOTEL’ table:-

```
CREATE TABLE HOTEL(
Hotel_id INT NOT NULL,
 Hotel_name VARCHAR(20) NOT NULL,
Address VARCHAR(100) NOT NULL,
 Url VARCHAR(100) NOT NULL,
 PRIMARY KEY ( Hotel_id ),
FOREIGN KEY (Url) REFERENCES WEBSITE (Url));
```

Commands to create ‘EMPLOYEE’ table:-

```
CREATE TABLE EMPLOYEE(
employee_id INT NOT NULL,
Hotel_id INT NOT NULL,
employee_name VARCHAR(20) NOT NULL,
salary INT NOT NULL,
gender VARCHAR(6) NOT NULL,
Designation VARCHAR(20) NOT NULL,
PRIMARY KEY ( employee_id ),
FOREIGN KEY (Hotel_id) REFERENCES HOTEL (Hotel_id));
```

Commands to create ‘ROOM’ table:-

```
CREATE TABLE ROOM(
room_number INT NOT NULL,
Hotel_id INT NOT NULL,
price INT NOT NULL,
room_type VARCHAR(20),
status VARCHAR(20),
PRIMARY KEY ( room_number ),
FOREIGN KEY (Hotel_id) REFERENCES HOTEL (Hotel_id));
```

Commands to create ‘CUSTOMER’ table:-

```
CREATE TABLE CUSTOMER(
customer_id INT NOT NULL AUTO_INCREMENT,
first_name VARCHAR(20) NOT NULL,
mid_name VARCHAR(20),
last_name VARCHAR(20) NOT NULL,
pin_code INT NOT NULL,
country VARCHAR(20) NOT NULL,
city VARCHAR(20) NOT NULL,
driving_license VARCHAR(20),
pan_card VARCHAR(20),
aadhar BIGINT NOT NULL,
passport VARCHAR(20),
visa INT,
Url VARCHAR(100), room_number INT,
PRIMARY KEY ( customer_id ),
FOREIGN KEY (Url) REFERENCES WEBSITE (Url),
FOREIGN KEY (room_number) REFERENCES  ROOM(room_number) );
```

Commands to create ‘CUSTOMER_PHONE’ table:-

```
CREATE TABLE CUSTOMER_PHONE(
customer_id INT NOT NULL ,
phone_number BIGINT NOT NULL,
PRIMARY KEY (customer_id ,phone_number),
FOREIGN KEY (customer_id) REFERENCES  CUSTOMER(customer_id) );
```

Commands to create ‘CUSTOMER_EMAIL’ table:-

```
CREATE TABLE CUSTOMER_EMAIL(
customer_id INT NOT NULL,
email_id VARCHAR(30) NOT NULL,
PRIMARY KEY (customer_id ,email_id),
FOREIGN KEY (customer_id) REFERENCES  CUSTOMER(customer_id) );
```

Commands to create ‘INVOICE’ table:-

```
CREATE TABLE INVOICE(
invoice_id INT NOT NULL,
date DATE NOT NULL,
```

```
status VARCHAR(20) NOT NULL,
details VARCHAR(50),
customer_id INT NOT NULL,
PRIMARY KEY ( invoice_id ),
FOREIGN KEY (customer_id) REFERENCES CUSTOMER (customer_id) );
```

Commands to create 'BILL' table:-

```
CREATE TABLE BILL(
bill_id INT NOT NULL AUTO_INCREMENT,
invoice_id INT NOT NULL,
amount INT NOT NULL,
b_name VARCHAR(20) NOT NULL,
date DATE NOT NULL,
PRIMARY KEY (bill_id ,invoice_id),
FOREIGN KEY (invoice_id) REFERENCES INVOICE (invoice_id) );
```

Commands to create 'BOOKING' table:-

```
CREATE TABLE BOOKING(
customer_id INT NOT NULL ,
room_number INT NOT NULL,
booking_id INT NOT NULL,
Url VARCHAR(100),
start_date DATE NOT NULL,
end_date DATE NOT NULL,
PRIMARY KEY (customer_id, room_number, booking_id, url),
FOREIGN KEY(customer_id) REFERENCES CUSTOMER (customer_id),
FOREIGN KEY(room_number) REFERENCES ROOM(room_number),
FOREIGN KEY(Url) REFERENCES WEBSITE(Url) );
```

Commands to create 'SERVICES' table:-

```
CREATE TABLE SERVICES(
service_id INT NOT NULL AUTO_INCREMENT,
service_type VARCHAR(30),
bill_id INT NOT NULL,
price INT NOT NULL,
PRIMARY KEY ( service_id ),
FOREIGN KEY(bill_id) REFERENCES BILL (bill_id)
```

);

Commands to create ‘RESTAURANTS’ table:-

```
CREATE TABLE RESTAURANTS(
service_id INT NOT NULL AUTO_INCREMENT,
lunch VARCHAR(30),
dinner VARCHAR(30),
breakfast VARCHAR(30),
beverages VARCHAR(30),
PRIMARY KEY ( service_id )
);
```

III. SQL QUERIES FOR ALL THE APPLICATION REQUIREMENTS:

1. Addition of new customer into hotel.

```
INSERT INTO CUSTOMER (first_name, last_name,
        pin_code,country,city,aadhar,Url,room_number) VALUES
        ('Munna','Bhaiyya',300300,'India','Mirzapur',123456781234,'www.myhotel.com',1);
INSERT INTO CUSTOMER_PHONE VALUES (1,1876543211);
INSERT INTO CUSTOMER_EMAIL VALUES (1,'munna@gmail.com')
```

2. Booking of new rooms in Hotel

```
UPDATE  ROOM_1 SET STATUS=’BOOKED’ WHERE room_number = ()
UPDATE  CUSTOMER SET room_number = () WHERE customer_is = ()
```

3. Addition of new employee

```
INSERT INTO EMPLOYEE  VALUES (1,1,'ramesh',20000,'Male','Manager');
```

4. Displaying list of available rooms.

```
SELECT * FROM ROOM WHERE status='UNBOOKED';
```

5. Displaying list of all staff

```
SELECT * FROM EMPLOYEE
```

6. Ordering food or beverages

```
INSERT INTO SERVICES VALUES(2,'GYM',2,500);
INSERT INTO  (service_id,lunch)RESTAURANTS  VALUES (2,'Thali')
```

7. Check out of room.

```
INSERT INTO BILL VALUES (1,1,500,'ROOM RENT','2019-2-2')
UPDATE ROOM SET Status='UNBOOKED' WHERE room_number=1;
UPDATE CUSTOMER SET room_number=NULL WHERE customer_id=1;
```

8. Payment amount

```
SELECT  SUM(cost) AS AMOUNT  FROM ( SELECT price AS cost FROM SERVICES
WHERE Bill_id IN (SELECT Bill_id FROM BILL WHERE Invoice_id=1)) AS T;
```

9. Add services to the final invoice

```
SELECT * FROM SERVICES WHERE Bill_id IN (SELECT Bill_id FROM BILL WHERE
Invoice_id=1);
```

10. Add service to database

```
INSERT INTO SERVICES VALUES(1,'GYM',1,500);
```

11. Adding of new room in hotel

```
INSERT INTO ROOM VALUES(1,1,2000,'SINGLE','UNBOOKED')
```

12. Removing Employee

```
DELETE FROM EMPLOYEE WHERE employee_id =1
```

13. Updating room records

```
UPDATE ROOM SET room_type='DOUBLE' WHERE room_id=1
```

14. Updating Customer information

```
UPDATE  CUSTOMER SET first_name='Guddu' WHERE customer_id=1;
```

15. Updating Employee Records

UPDATE EMPLOYEE SET employee_name=’suresh’ WHERE employee_id=1

16. Change Room for Customer

UPDATE ROOM SET status= ‘UNBOOKED’ WHERE room_id=1
UPDATE ROOM SET status= ‘BOOKED’ WHERE room_id=2

17. Cancelling a Booking

DELETE FROM BOOKING WHERE Booking_id=1

19. Adding Website

INSERT INTO WEBSITE (Url) VALUES ('www.myhotel.com');

20.Adding Hotel

INSERT INTO HOTEL VALUES (1,'TAJ HOTEL','MUMBAI','www.myhotel.com')

21. Set Invoice for customer

INSERT INTO INVOICE VALUES (1,'2019-2-2','UNPAID','INVOICE FROM TAJ HOTEL',1)

IV. CHALLENGES FACED:

1. **Lack of Check in MYSQL 5.6 resulted us in being unable to write some constraint.**