**HOTEL DATABASE MANAGEMENT SYSTEM**

FINAL PROJECT REPORT

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**DATABASE OVERVIEW:**

**OBJECTIVE:**

The Hotel Database Management System aims to provide a fully functional and offline automated system, with some online capabilities. Its primary objective is to offer a reliable and well-organized system with minimal errors. The system seeks customer feedback to demonstrate the hotel's commitment to its clients.

Customers have the convenience of creating an account from the comfort of their homes and logging in for their intended purposes. A centralized database has been implemented to address the challenges and flaws associated with the current manual approach while ensuring secure record-keeping. Executives can access information about room availability by logging in with their unique IDs.

The main goal of the Hotel Database Management System is to design and maintain comprehensive records of users and room details, including hotel bookings.

**SCOPE:**

There are several reasons to consider implementing a new computer-based hotel management system. One of the key advantages of the proposed solution is the elimination of laborious tasks for both customers and hotel executives when searching for and booking hotel rooms. The system will streamline these processes, making them more efficient.

The suggested solution will also benefit administrative personnel or hotel executives by providing accurate databases for maintaining daily and historical records of clients. Additionally, the system will generate appropriate reports for customers upon check-out. Despite its advanced capabilities, the system is designed to be user-friendly, even for new users.

Once implemented, the hotel management system will enable remote access to the hotel database, allowing authorized individuals to retrieve information and perform various functions from anywhere. Customers will have the ability to search for available rooms, make reservations, and provide feedback or reviews on their experiences.

**USER REQUIREMENTS:**

The hotel management system faces significant challenges when it comes to retrieving customer booking data. The system struggles to access and display all the necessary customer details along with their reservation information. As a result, it becomes difficult to track bookings, reservations, and guest information effectively. This hinders the hotel's ability to manage inventory and pricing efficiently.

Implementing a robust database can address these issues by providing a comprehensive view of customer records and their corresponding reservation details. With improved access to data, the hotel management system can track bookings more accurately, manage reservations effectively, and maintain updated guest information. Additionally, the database can offer valuable insights into customer trends and behaviors, enabling the hotel to make informed decisions and improve customer satisfaction.

**BUSINESS RULES:**

1. Each customer has the option to make multiple bookings.
2. A single customer can only make one reservation at a time.
3. Employees have the flexibility to enter zero or more bookings.
4. Each reservation can only be entered by one employee.
5. Customers are allowed to make one or more payments.
6. Only one customer can make a payment at a given time.
7. Each reservation for a room can have one and only one associated payment.
8. A payment can be linked to one or more reservations for rooms.
9. Each reservation is assigned to a specific room.
10. A room can be part of one or more bookings but cannot be assigned to multiple room reservations simultaneously.
11. Room reservations can only be entered into the system by designated staff.

**ENTITY RELATIONSHIP DIAGRAM:**

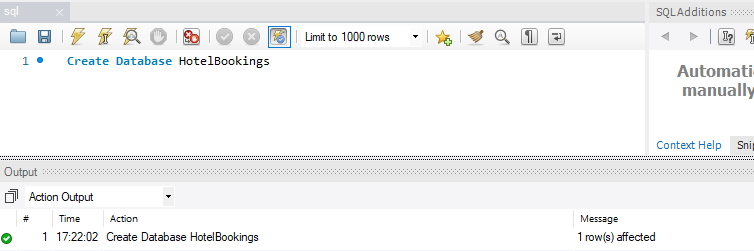
Diagram

Description automatically generated

**DATA DICTIONARY:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **TABLE NAME** | **ATTRIBUTE NAME** | **DATA TYPE** | **PRIMARY KEY REQUIRED** | **FOREIGN KEY REQUIRED** |
| USERS | user\_id  first\_name  last\_name  email  phone\_number  location | int  varchar  varchar  Varchar  int  varchar | user\_id |  |
| RESERVATION | reservation\_id  hotel\_id  user\_id  room\_id | int  int  int  int | reservation\_id | user id |
| room | room\_id  hotel\_id  Capacity  Price  reservation\_id | Int  Int  Int  Double  Int |  | reservation\_id |
| Hotel | hotel\_id  hotel\_name  location  reservation id | int  varchar  varchar  int |  | reservation\_id |
| PAYMENT | user\_id  reservation\_id  transaction\_status  payment\_type | int  int  varchar  varchar |  | reservation\_id |
| transaction | reservation\_id  user\_id  transaction\_status | int  int  varchar |  | reservation\_id |
| Emp loyees | Employees\_id  Employee\_name  Hotel\_id  Reservation\_id | int  varchar  int  int |  | reservation\_id |
| Room\_type | Room\_name  Room\_rating  Reservation\_id | Varchar  Int  Int |  | Reservation\_id |

**Creating the Database “HotelBookings”**



**Using Database HotelBookings**

Graphical user interface, text, application, Word

Description automatically generated

**Creating “User” table:**

create table user(

user\_id int,

first\_namevarchar(15),

last\_namevarchar(15),

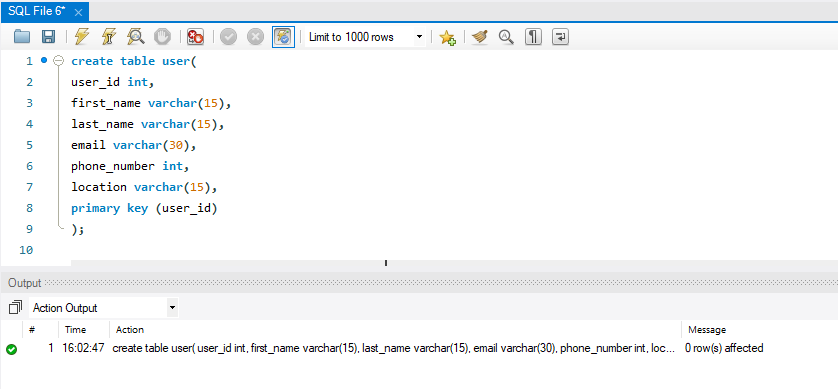
email varchar(30),

phone\_number int,

location varchar(15),

primary key (user\_id)

);

**Inserting Values Into “User” table:**

Insert into user value(1001,'James','Robert','jRobert3@gmail.com',2345678,'Austin');

Insert into user value(1002,'Swetha','Goli','gswetha@gmail.com',1234567,'Austin');

Insert into user value(1003,'Liki','tha','likitha@gmail.com',0987654,'Arlington');

Insert into user value(1004,'Bindu','hh','Bindu@gmail.com',76654097,'Houston');

Insert into user value(1005,'John','Michael','John@gmail.com',8568946,'Irving');

Insert into user value(1006,'David','William','William@gmail.com',2309764,'clevland');

Insert into user value(1007,'Richard','Barbara','Barbara@gmail.com',5568790,'Irving');

Insert into user value(1008,'Anabella','Susan','Susan@gmail.com',7468536,'Coppel');

Insert into user value(1009,'Jessica','Sarah','Sarah@gmail.com',6479075,'Coppel');

Insert into user value(1010,'Margaret','Donaldson','Donaldson@gmail.com',8753689,'Houston');

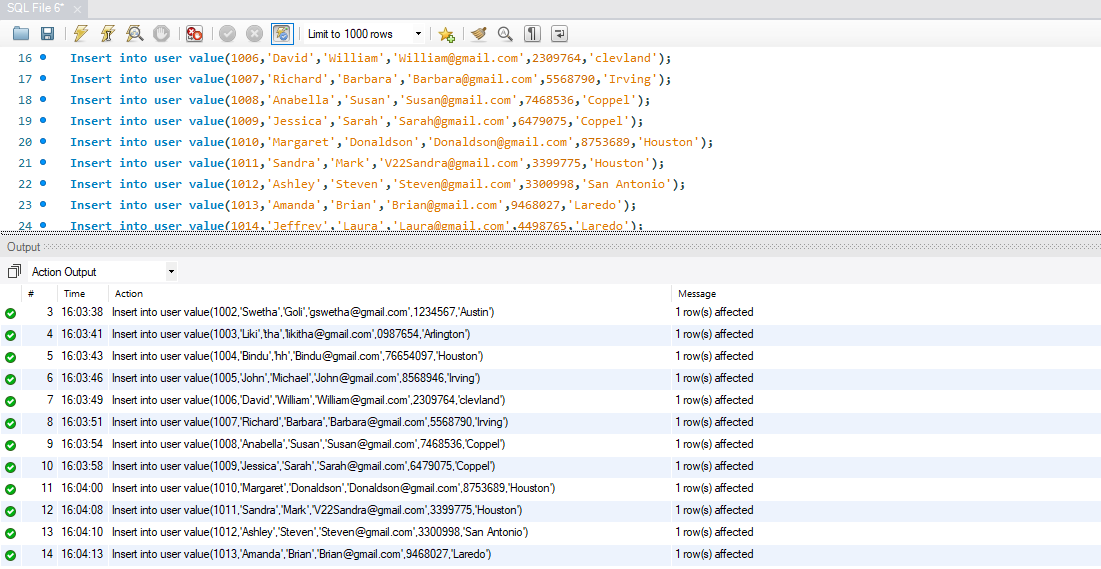
Insert into user value(1011,'Sandra','Mark','V22Sandra@gmail.com',3399775,'Houston');

Insert into user value(1012,'Ashley','Steven','Steven@gmail.com',3300998,'San Antonio');

Insert into user value(1013,'Amanda','Brian','Brian@gmail.com',9468027,'Laredo');

Insert into user value(1014,'Jeffrey','Laura','Laura@gmail.com',4498765,'Laredo');

Insert into user value(1015,'Timothy','George','Timothy@gmail.com',0685356,'Laredo');



**Creating “Reservation” table:**

create table reservation

(

reservation\_id int,

hotel\_id int,

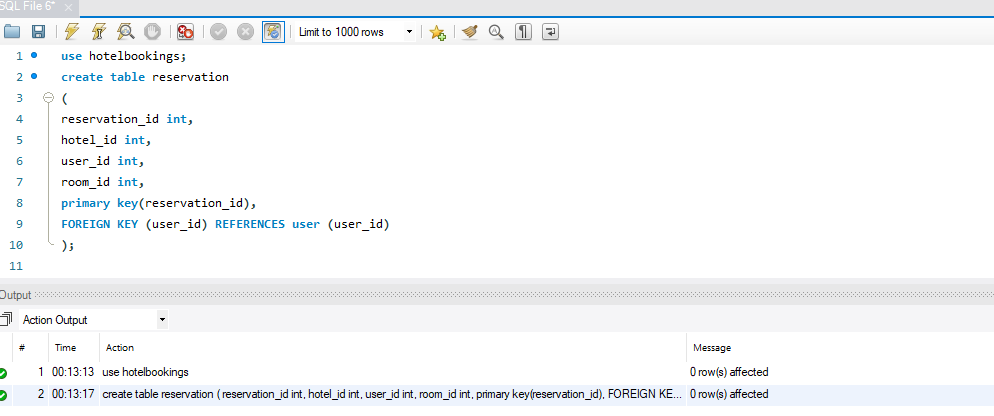
user\_id int,

room\_id int,

primary key(reservation\_id),

FOREIGN KEY (user\_id) REFERENCES user (user\_id)

);



**Inserting values into “Reservation” table:**

Insert into reservation value(1789,888,1001,171);

Insert into reservation value(2637,888,1002,172);

Insert into reservation value(3227,888,1003,173);

Insert into reservation value(4778,888,1004,174);

Insert into reservation value(5222,888,1005,175);

Insert into reservation value(6082,888,1006,176);

Insert into reservation value(7752,888,1007,177);

Insert into reservation value(8767,888,1008,178);

Insert into reservation value(9279,888,1009,179);

Insert into reservation value(1089,888,1010,180);

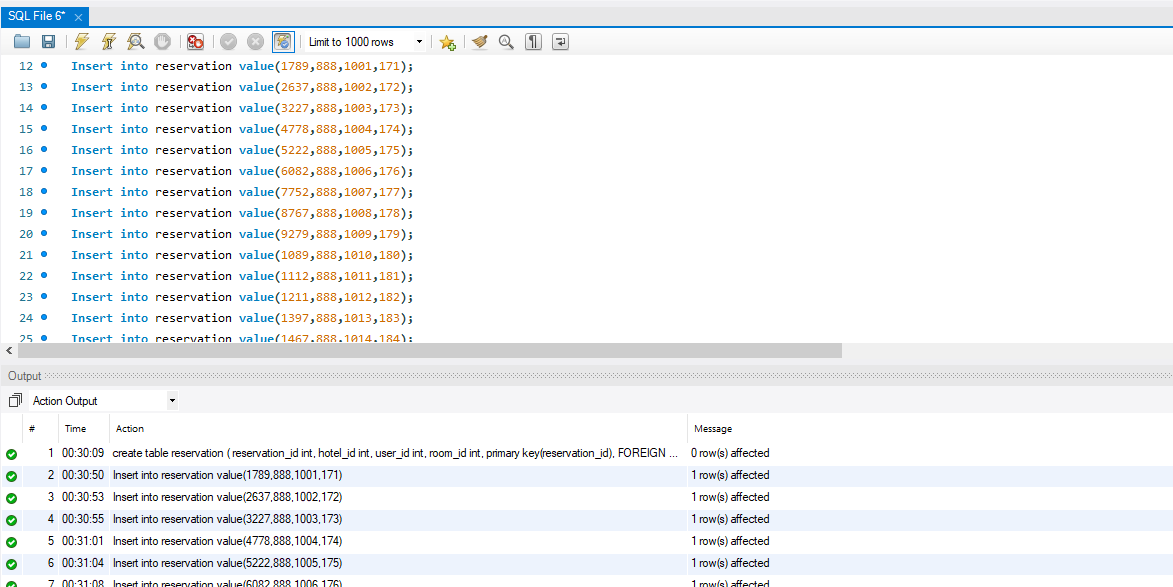
Insert into reservation value(1112,888,1011,181);

Insert into reservation value(1211,888,1012,182);

Insert into reservation value(1397,888,1013,183);

Insert into reservation value(1467,888,1014,184);

Insert into reservation value(1513,888,1015,185);



**Creating “room” table:**

create table room

(

room\_id int,

hotel\_id int,

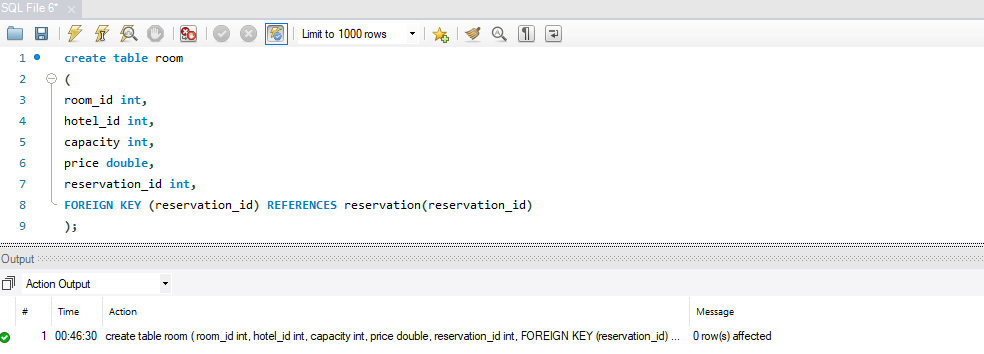
capacity int,

price double,

reservation\_id int,

FOREIGN KEY (reservation\_id) REFERENCES reservation(reservation\_id)

);



**Inserting values into “room” table:**

Insert into room value(171,888,2,1000,1789);

Insert into room value(172,888,2,1000,2637);

Insert into room value(173,888,2,1000,3227);

Insert into room value(174,888,2,1000,4778);

Insert into room value(175,888,2,1000,5222);

Insert into room value(176,888,2,1000,6082);

Insert into room value(177,888,3,1500,7752);

Insert into room value(178,888,3,1500,8767);

Insert into room value(179,888,3,1500,9279);

Insert into room value(180,888,3,1500,1089);

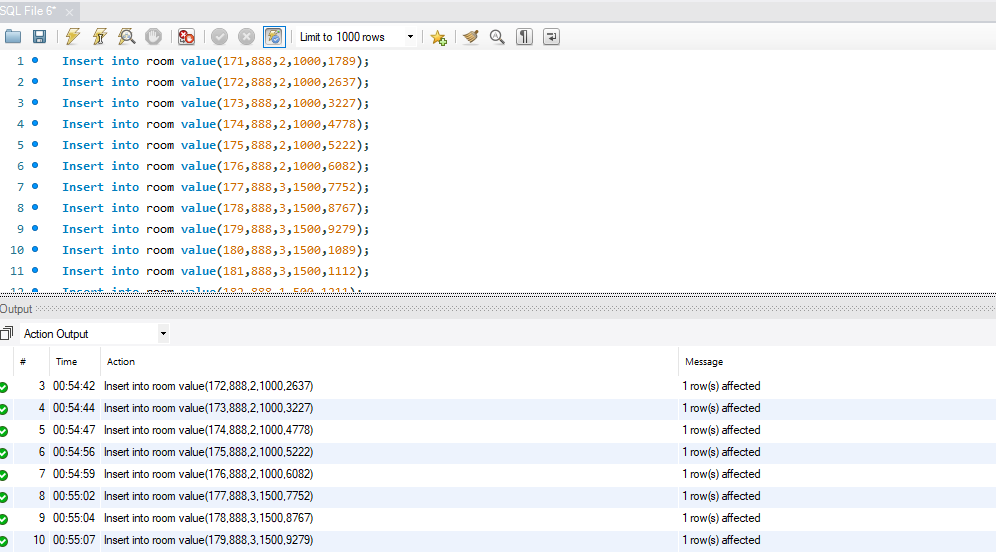
Insert into room value(181,888,3,1500,1112);

Insert into room value(182,888,1,500,1211);

Insert into room value(183,888,1,500,1397);

Insert into room value(184,888,1,500,1467);

Insert into room value(185,888,1,500,1513);



**Creating “Hotel” table:**

create table hotel

(

hotel\_id int,

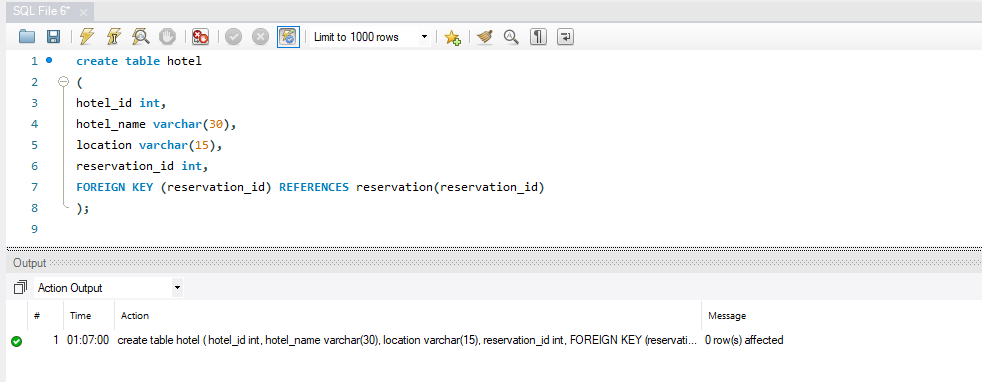
hotel\_namevarchar(30),

location varchar(15),

reservation\_id int,

FOREIGN KEY (reservation\_id) REFERENCES reservation(reservation\_id)

);



**Inserting values into “Hotel” table:**

Insert into hotel value(888,'Brown Town','Irving',1789);

Insert into hotel value(888,'Brown Town','Irving',2637);

Insert into hotel value(888,'Brown Town','Irving',3227);

Insert into hotel value(888,'Brown Town','Irving',4778);

Insert into hotel value(888,'Brown Town','Irving',5222);

Insert into hotel value(888,'Brown Town','Irving',6082);

Insert into hotel value(888,'Brown Town','Irving',7752);

Insert into hotel value(888,'Brown Town','Irving',8767);

Insert into hotel value(888,'Brown Town','Irving',9279);

Insert into hotel value(888,'Brown Town','Irving',1089);

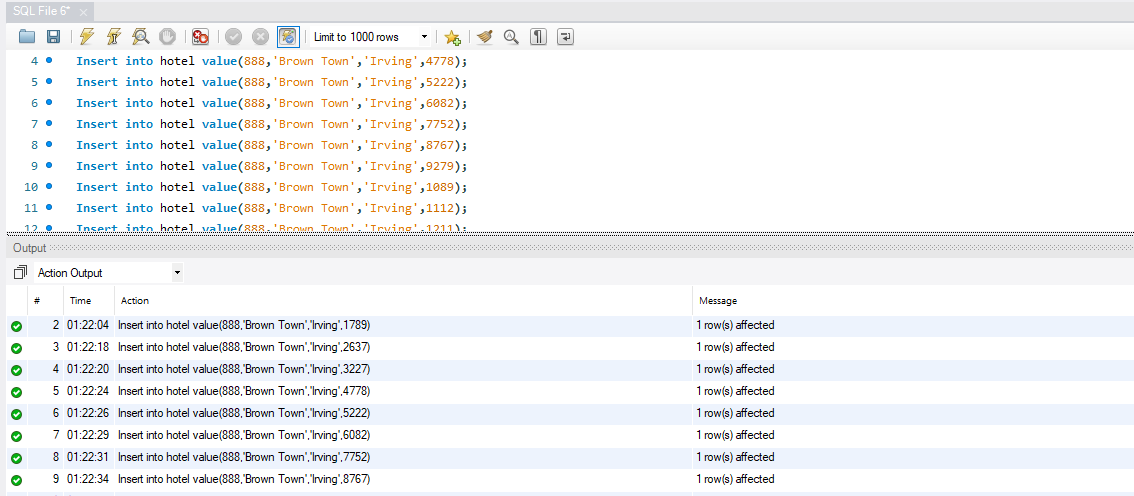
Insert into hotel value(888,'Brown Town','Irving',1112);

Insert into hotel value(888,'Brown Town','Irving',1211);

Insert into hotel value(888,'Brown Town','Irving',1397);

Insert into hotel value(888,'Brown Town','Irving',1467);

Insert into hotel value(888,'Brown Town','Irving',1513);



**Creating “Payment” table:**

create table payment

(

user\_id int,

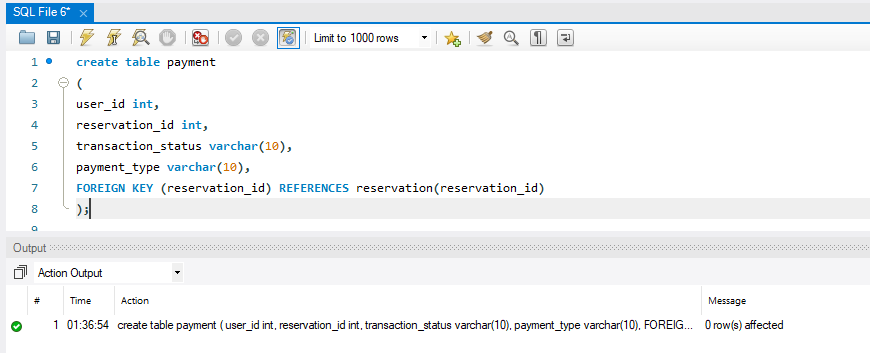
reservation\_id int,

transaction\_status varchar(10),

payment\_type varchar(10),

FOREIGN KEY (reservation\_id) REFERENCES reservation(reservation\_id)

);



**Inserting values into “Payment” table:**

Insert into payment value(1789,1001,'success','debit card');

Insert into payment value(2637,1002,'success','debit card');

Insert into payment value(3227,1003,'success','credit card');

Insert into payment value(4778,1004,'success','google pay');

Insert into payment value(5222,1005,'success','cash');

Insert into payment value(6082,1006,'fail','credit card');

Insert into payment value(7752,1007,'fail','debit card');

Insert into payment value(8767,1008,'fail','paypal');

Insert into payment value(9279,1009,'success','apple pay');

Insert into payment value(1089,1010,'success','debit card');

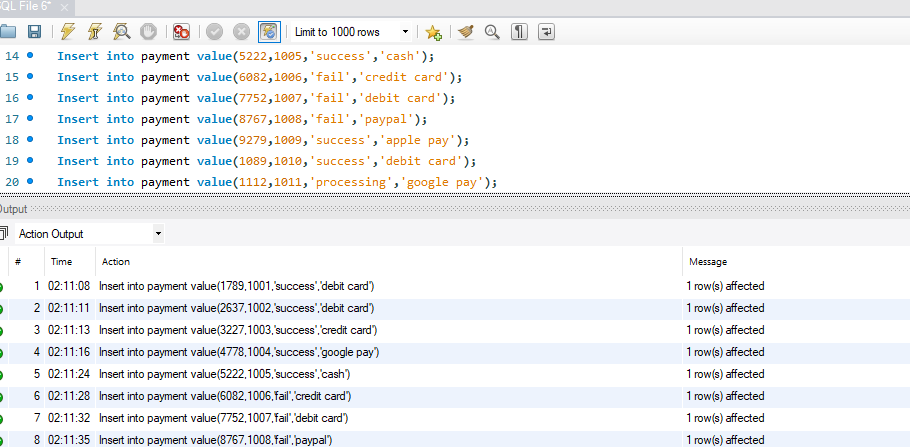
Insert into payment value(1112,1011,'processing','google pay');

Insert into payment value(1211,1012,'processing','debit card');

Insert into payment value(1397,1013,'fail','apple pay');

Insert into payment value(1467,1014,'fail','google pay');

Insert into payment value(1513,1015,'success','google pay);



**Creating “Transaction” table:**

create table transaction

(

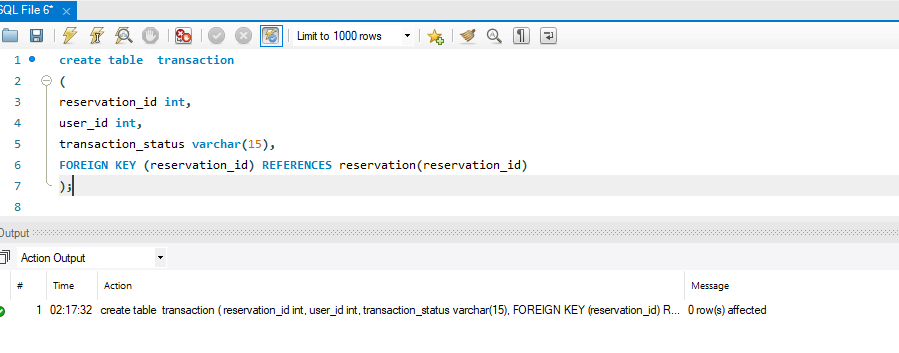
reservation\_id int,

user\_id int,

transaction\_statusvarchar(15),

FOREIGN KEY (reservation\_id) REFERENCES reservation(reservation\_id)

);



**Inserting values into “Transaction” table:**

Insert into transaction value(1789,1001,'success');

Insert into transaction value(2637,1002,'success');

Insert into transaction value(3227,1003,'success');

Insert into transaction value(4778,1004,'success');

Insert into transaction value(5222,1005,'success');

Insert into transaction value(6082,1006,'fail');

Insert into transaction value(7752,1007,'fail');

Insert into transaction value(8767,1008,'fail');

Insert into transaction value(9279,1009,'success');

Insert into transaction value(1089,1010,'success');

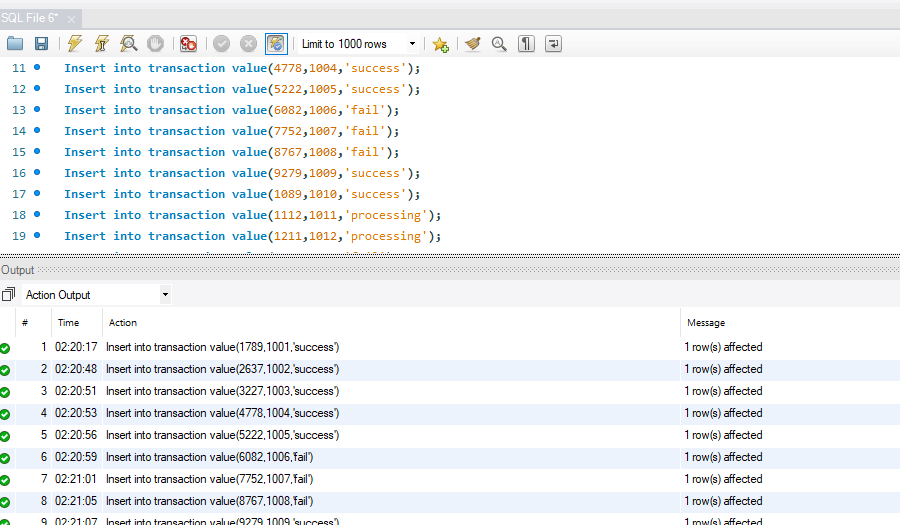
Insert into transaction value(1112,1011,'processing');

Insert into transaction value(1211,1012,'processing');

Insert into transaction value(1397,1013,'fail');

Insert into transaction value(1467,1014,'fail');

Insert into transaction value(1513,1015,'success');



**Creating “Employees” table:**

create table employees

(

employee\_id int,

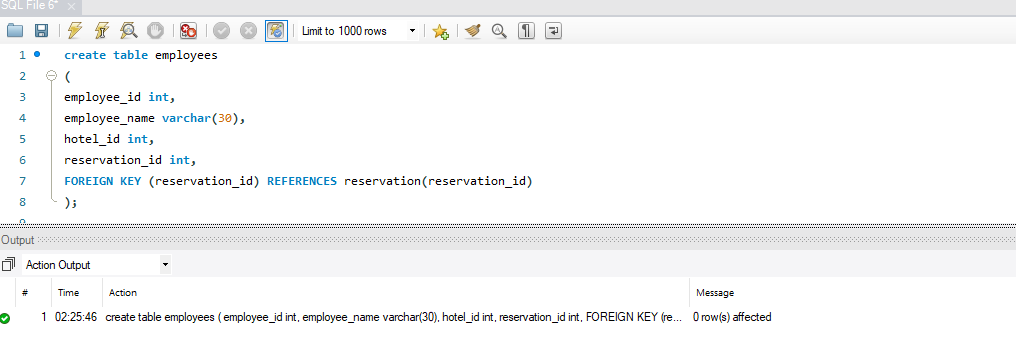
employee\_namevarchar(30),

hotel\_id int,

reservation\_id int,

FOREIGN KEY (reservation\_id) REFERENCES reservation(reservation\_id)

);



**Inserting the values into “Employees” table:**

Insert into employees value(001,'jayanth',888,1789);

Insert into employees value(002,'yashwanth',888,2637);

Insert into employees value(003,'david',888,3227);

Insert into employees value(004,'varun',888,4778);

Insert into employees value(005,'koushik',888,5222);

Insert into employees value(006,'taylor',888,6082);

Insert into employees value(007,'Caralon',888,7752);

Insert into employees value(008,'Likitha',888,8767);

Insert into employees value(009,'Kavya',888,9279);

Insert into employees value(010,'Terrisa',888,1089);

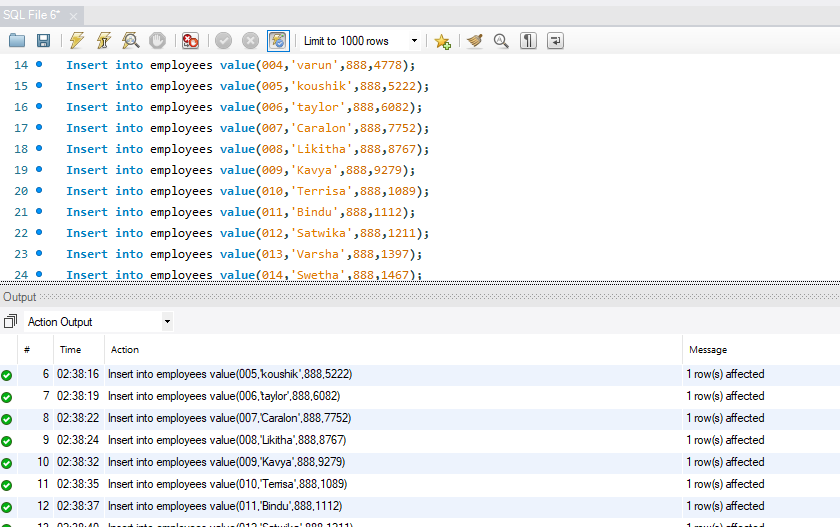
Insert into employees value(011,'Bindu',888,1112);

Insert into employees value(012,'Satwika',888,1211);

Insert into employees value(013,'Varsha',888,1397);

Insert into employees value(014,'Swetha',888,1467);

Insert into employees value(015,'Namratha',888,1513);



**Creating “ Room\_type” table:**

create table room\_type

(

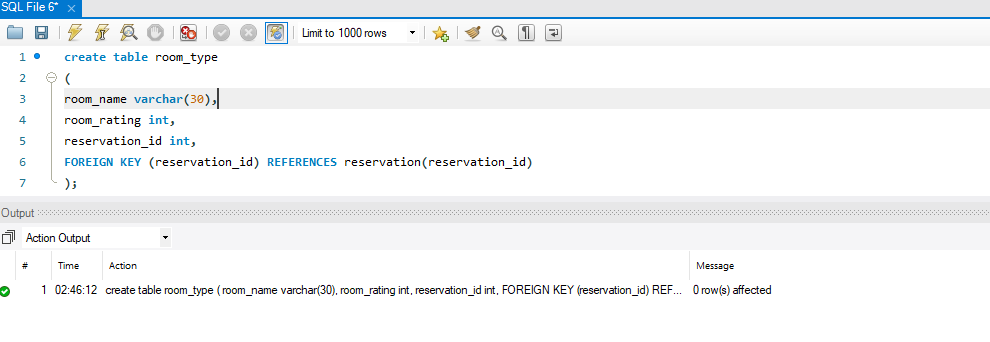
room\_namevarchar(30),

room\_rating int,

reservation\_id int,

FOREIGN KEY (reservation\_id) REFERENCES reservation(reservation\_id)

);



**Inserting the value into “Room\_type” table:**

Insert into room\_type value('deluxe',5,1789);

Insert into room\_type value('deluxe',4,2637);

Insert into room\_type value('deluxe',5,3227);

Insert into room\_type value('deluxe',4,4778);

Insert into room\_type value('vip',5,5222);

Insert into room\_type value('vip',5,6082);

Insert into room\_type value('vip',5,7752);

Insert into room\_type value('vip',5,8767);

Insert into room\_type value('deluxe',5,9279);

Insert into room\_type value('deluxe',5,1089);

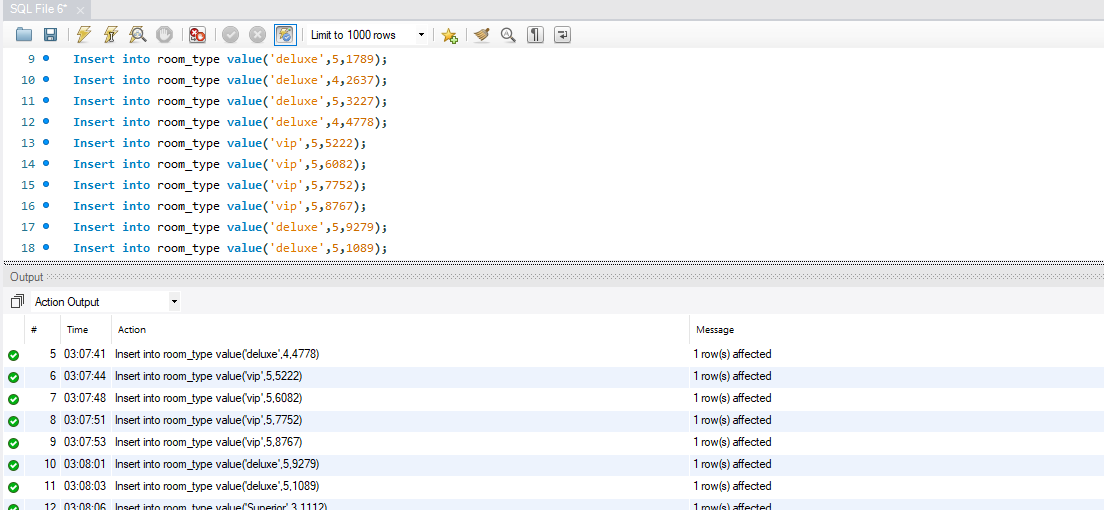
Insert into room\_type value('Superior',3,1112);

Insert into room\_type value('Superior',3,1211);

Insert into room\_type value('Superior',4,1397);

Insert into room\_type value('Superior',4,1467);

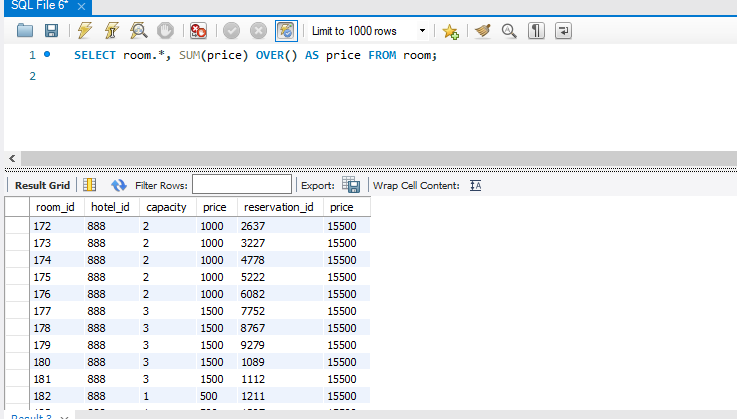
Insert into room\_type value('Superior',4,1513);



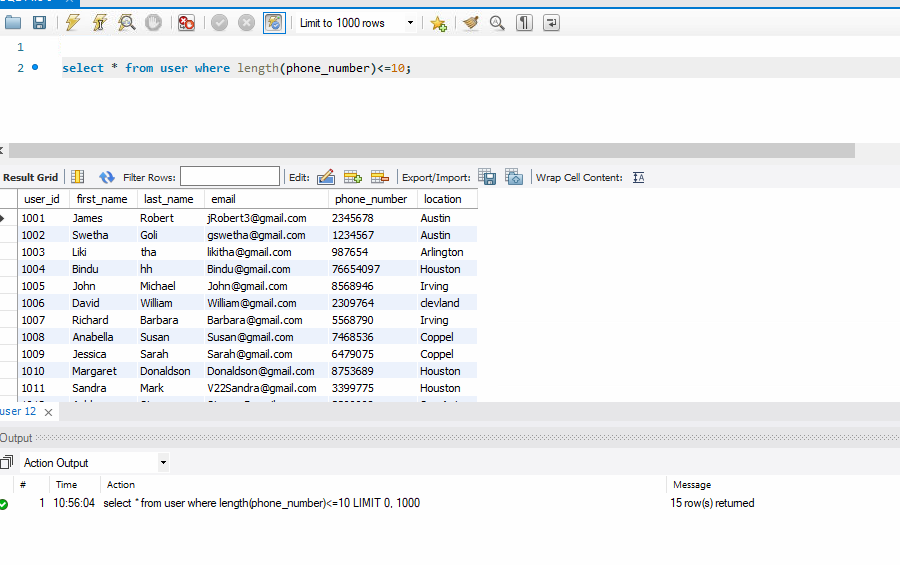
**Data Retrieval and Simple Reports**

**Select statements**

* SELECT room.\*, SUM(price) OVER() AS price FROM room;



* select \* from user where length(phone\_number)<=10;



* WITH temporaryTable(avgVal) as

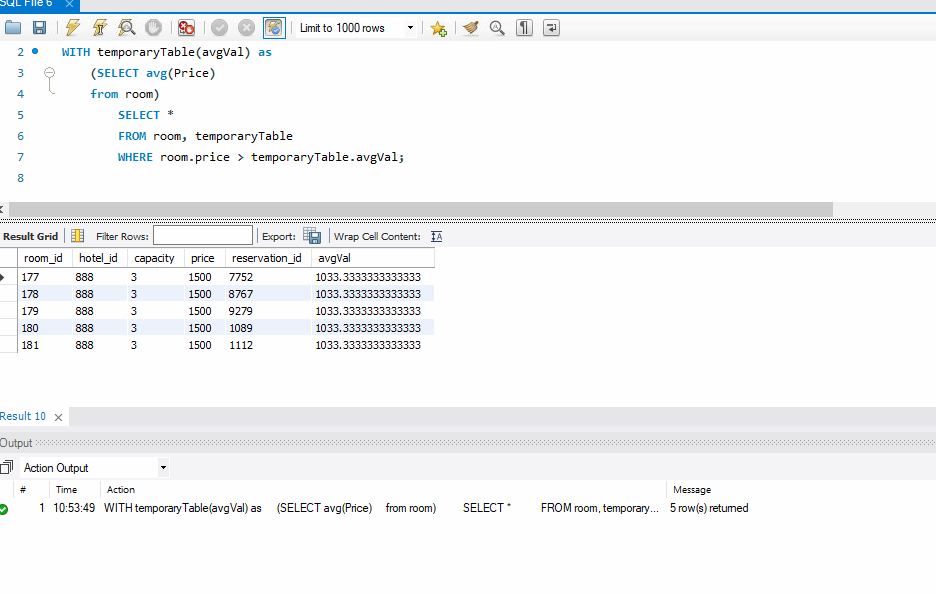
(SELECT avg(Price)

from room)

SELECT \*

FROM room, temporaryTable

WHERE room.price > temporaryTable.avgVal;



* select room\_type.\*,instr(room\_name,'a') from room\_type where instr(room\_name,'s')>0;

Graphical user interface, text, application

Description automatically generated

* select \* from user where regexp\_like(first\_name,'^S','i');

