INFO 5707 PROJECT PROPOSAL

DRIVING SCHOOL APPOINTMENT SCHEDULING SYSTEM

TEAM MEMBERS:

1. Manasa Cherukupally, Team coordinator (11604712)
2. Keerthi Boggiti (11560357)
3. Harshith Kumar Reddy Kothur (11549819)

OVERVIEW:

Driving School is a place where they teach how to drive. People willing to get a driving license usually take Driving lessons in the Driving School. To get the driving Lessons, the user should first place the request to the driving school. Admin of the Driving school will check the slots and based on the slot availability user will get the reservation to get driving lessons. Also, the user will be assigned an available instructor who will teach the person to drive.

SCOPE:

The driving school reservation system is a model that helps people make reservations for the slots in driving school. This system helps the driving school register the applicants, take requests from the applicants, schedule the driving lessons, allocate the available instructors, and select the car model as requested. The system should also allow the applicant to cancel the reservation before the scheduled date.

SPECIFIC USER REQUIREMENTS:

The system will be able to provide applicants to make a request for driving school. Applicants can make reservations for the driving lessons. The system will allocate the available instructor. Applicants can also select car models for their lessons. They will be able to cancel the reservation before their scheduled date.

TECHNICAL REQUIREMENTS:

For creating table and executing the SQL queries we will be using **MYSQL** database.

For designing the ER-Diagram as part of Design phase, we will be using **Draw.io**.

For creating the report we used **Microsoft Word**

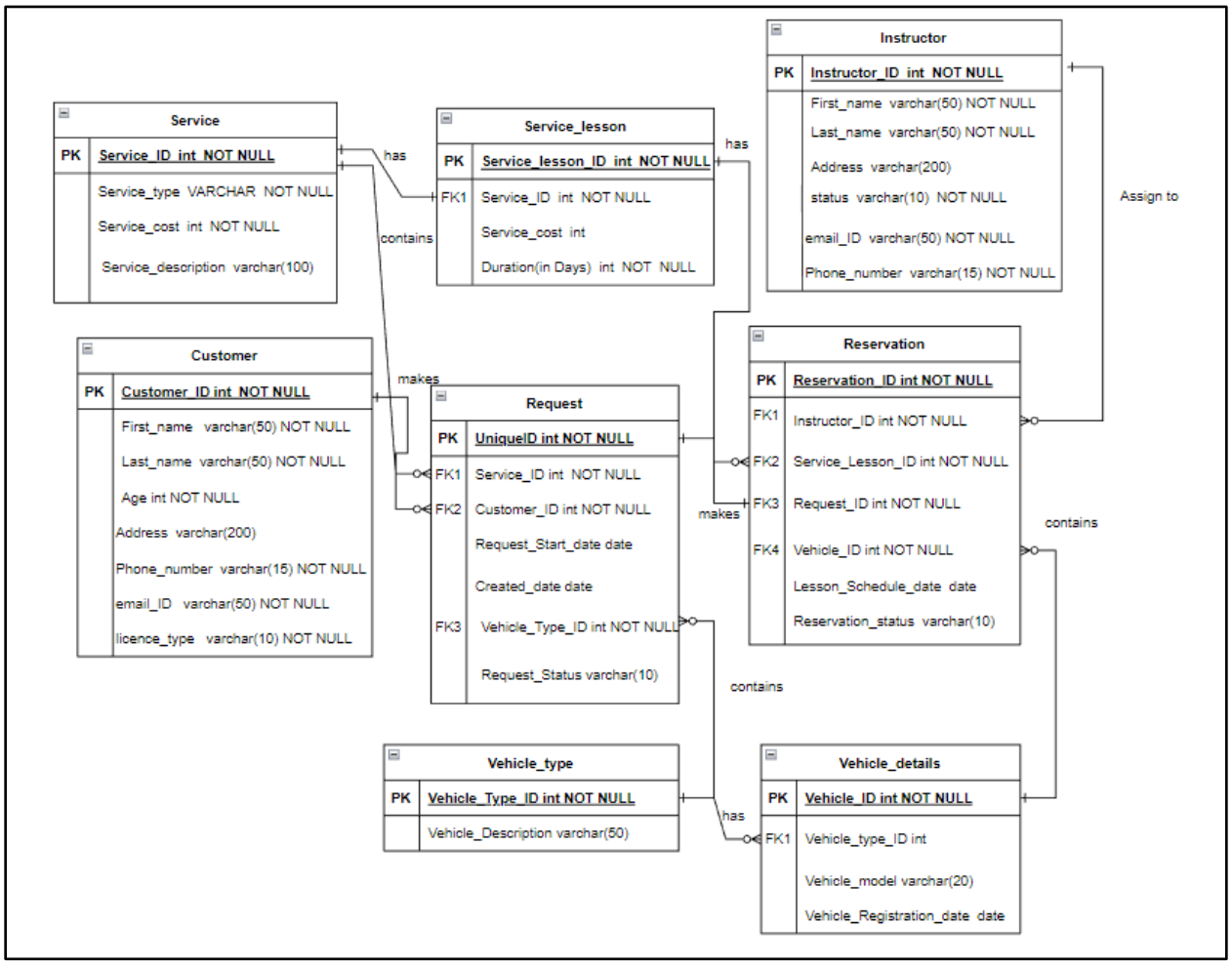
DESIGN PHASE

ER-DIAGRAM:

As part of the project design phase we have taken eight entities. To start with first and main entity is the “Customer” who will access the system to make reservations. We have “Request” entity to keep the request for specific driving lesson. There is “Reservation entity which is related with Request entity. Since there is option to choose from different vehicle models, we have “Vehicle type” and “Vehicle details” entity. There is “Instructor” entity so that available instructor is allocated. We also have “Service” entity and “Service lesson” entity for offering different services.

“Customer table” has one to many relationships with “Request table”. Request table has one to one relation with “Reservation table”. “Reservation table” has one to many relation with “Instructor table” . “Service” and “vehicle type ” tables have one to many relation with “Request table”. Reservation table has many to one relation with “Vehicle details” table.

ER-Diagram of Driving School Appointment Scheduling System:



Business Rules:

1. One customer can make many requests.
2. One request makes only one reservation.
3. Each vehicle type can be in many requests.
4. One vehicle type can have many vehicles.
5. One service lesson can have many reservations.
6. Each instructor is assigned with one or many reservations.
7. One service makes one service lesson
8. Each vehicle can be used in many reservations.

Data Dictionary:

Table Name	Attribute Name	Contents	Type	Format	Range	Required	PK or FK	FK referenced Table
Service	Service_ID	Service number	INT	99999	00001-99999	Y	PK	
	Service_type	Type of Service	VARCHAR			Y		
	Service_cost	Service's Cost	INT	99999	00001-99999	Y		
	Service_description	Brief of Service	VARCHAR (100)	XXXXX				
Customer	Customer_ID	Customer number	INT	99999	00001-99999	Y	PK	
	First_name	Customer's first name	VARCHAR (50)	XXXXX		Y		
	Last_name	Customer's first name	VARCHAR (50)	XXXXX		Y		
	Age	Customer's Age	INT	999	001 - 999	Y		
	Address	Customer's location details	VARCHAR (200)	XXXXX				
	Phone_number	Customer's Contact no.	VARCHAR (15)	XXXXX		Y		

	email_ID	Customer's email	VARCHAR (50)	XXXXX		Y		
	licence_type	Customer's type of licence	VARCHAR (10)	XXXXX		Y		
Instructor	Instructor_ID	Instructor number	INT	99999	00001-99999	Y	PK	
	First_name	Instructor's first name	VARCHAR (50)	XXXXX		Y		
	Last_name	Instructor's last name	VARCHAR (50)	XXXXX		Y		
	Address	Instructor's location details	VARCHAR (200)	XXXXX				
	status	Instructor's status	VARCHAR (10)	Active (or) inactive		Y		
	email_ID	Instructor's email	VARCHAR (50)	XXXXX		Y		
	Phone_number	Instructor's contact no.	VARCHAR (15)	XXXXX		Y		
Reservation	Reservation_ID	Reservation number	INT	99999	00001-99999	Y	PK	
	Instructor_ID	Instructor number	INT	99999	00001-99999	Y	FK	Instructor
	Service_Lesson_ID	Service Lesson number	INT	99999	00001-99999	Y	FK	Service_lesson
	Request_ID	Request number	INT	99999	00001-99999	Y	FK	Request
	Vehicle_ID	Vehicle number	INT	99999	00001-99999	Y	FK	Vehicle_details
	Lesson_Schedule_date	Lesson Schedule Date	DATE	YYYY-MM-DD				
	Reservation_status	Reservation's Status	VARCHAR (50)	XXXXX				
Vehicle_details	Vehicle_ID	Vehicle number	INT	99999	00001-99999	Y	PK	
	Vehicle_type_ID	Vehicle type number	INT	99999	00001-99999		FK	Vehicle_type
	Vehicle_model	Model of the Vehicle	VARCHAR (20)	XXXXX				
	Vehicle_Registration_date	Registration date of Vehicle	DATE	YYYY-MM-DD				

Vehicle_type	Vehicle_Type_ID	Vehicle type number	INT	99999	00001-99999	Y	PK	
	Vehicle_Description	Vehicle's brief	VARCHAR (50)	XXXXX				
Service_lesson	Service_lesson_ID	Service lesson number	INT	99999	00001 - 99999	Y	PK	
	Service_ID	Service number	INT	99999	00001 - 99999	Y	FK	Service
	Service_cost	Cost of Service	INT	99999	00001 - 99999			
	Duration (in Days)	Duration of Service lesson	INT	999	001 - 999	Y		
Request	UniqueID	Request number	INT	99999	00001-99999	Y	PK	
	Service_ID	Service number	INT	99999	00001-99999	Y	FK	Service
	Customer_ID	Customer number	INT	99999	00001-99999	Y	FK	Customer
	Request_Start_date	Request's Start date	DATE	YYYY-MM-DD				
	Created_date	Created Date of Request	DATE	YYYY-MM-DD				
	Vehicle_Type_ID	Vehicle Type number	INT	99999	00001 - 99999	Y	FK	Vehicle_type
	Request_Status	Request status	VARCHAR (10),			Y		

Implementation Phase

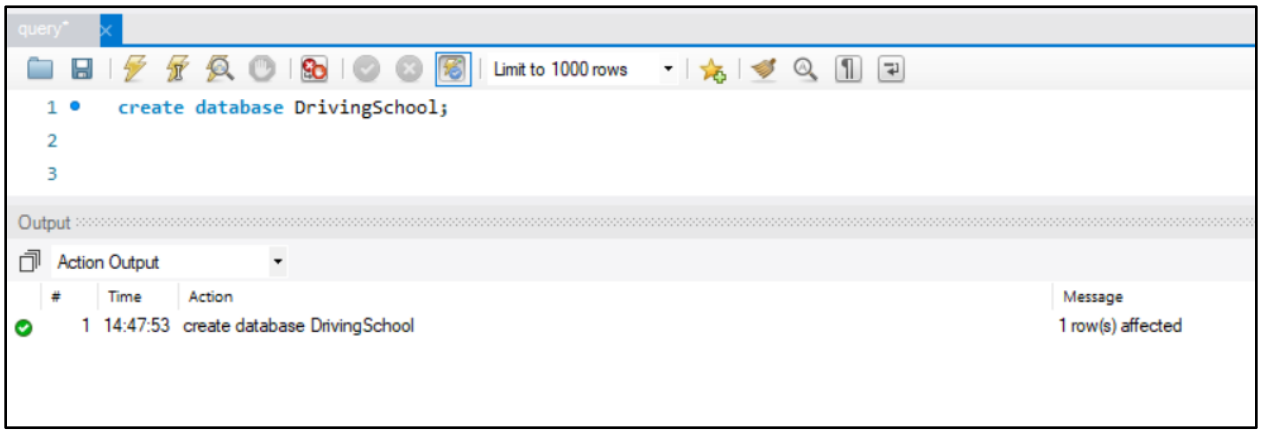
Data Entry and Update:

Database Creation:

SQL Query to create database:

Create database DrivingSchool;

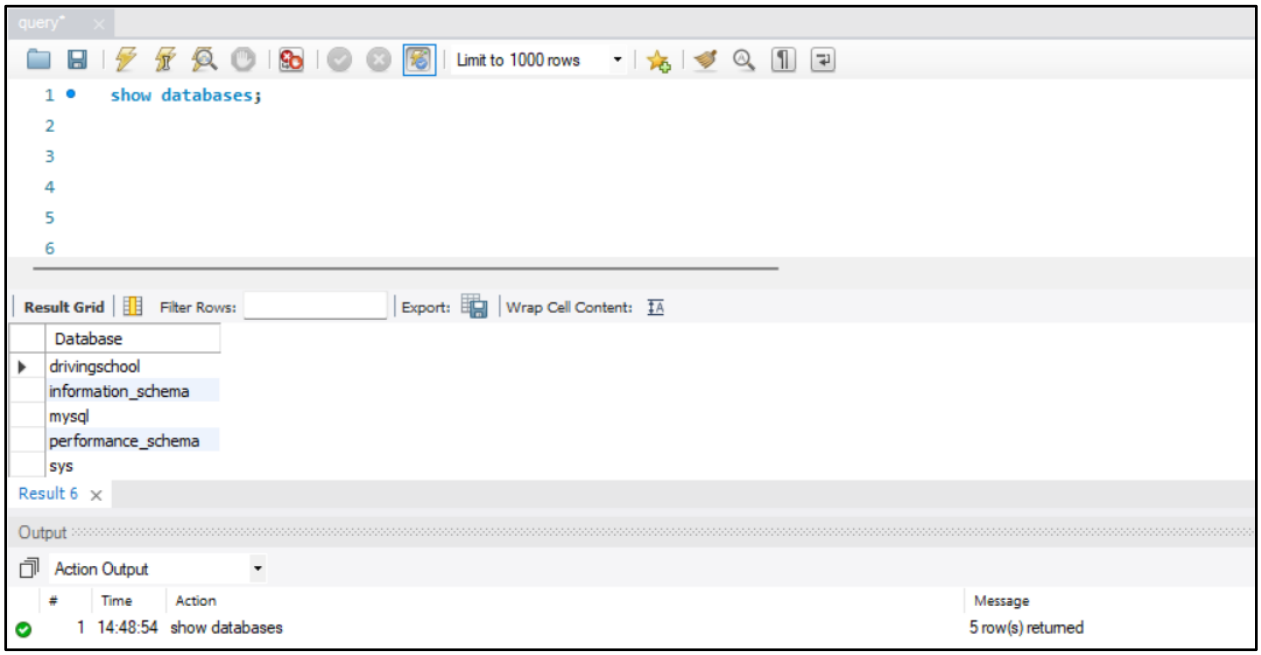
Output:



SQL Query to view databases:

Show databases;

Output:

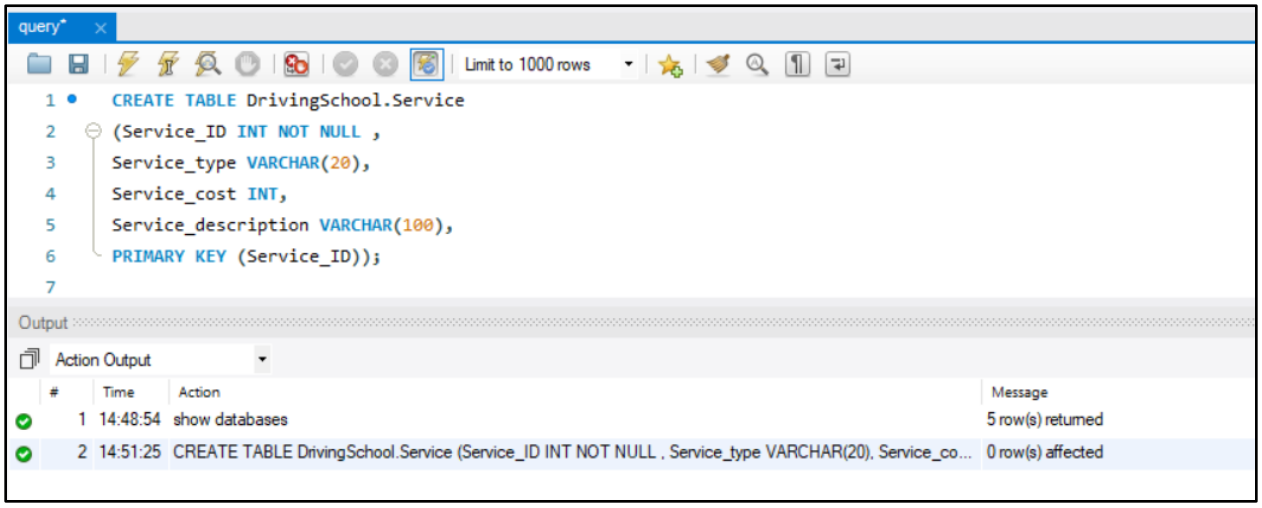


Tables Creation:

Creating Service table:

```
CREATE TABLE DrivingSchool.Service
(Service_ID INT NOT NULL ,
Service_type VARCHAR(20),
Service_cost INT,
Service_description VARCHAR(100),
PRIMARY KEY (Service_ID));
```

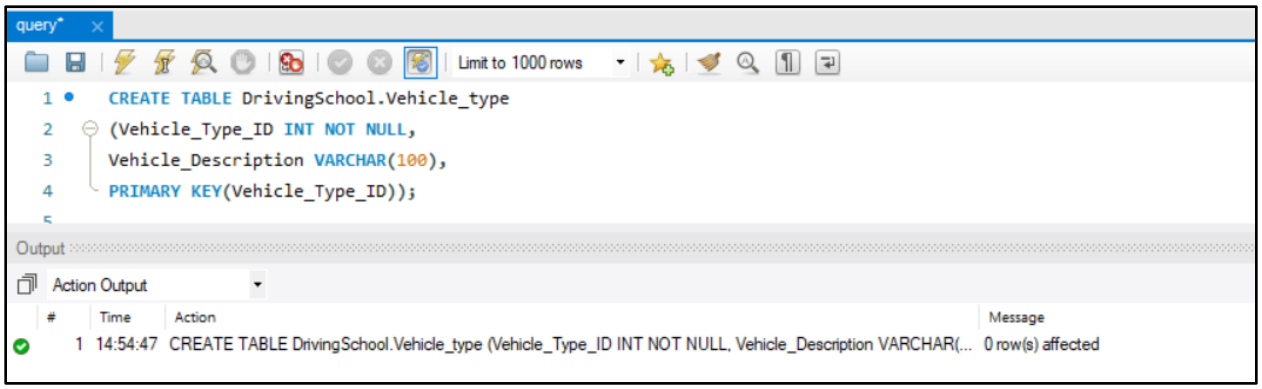
Output:



Creating Vehicle_Type table:

```
CREATE TABLE DrivingSchool.Vehicle_type
(Vehicle_Type_ID INT NOT NULL,
Vehicle_Description VARCHAR(100),
PRIMARY KEY(Vehicle_Type_ID));
```

Output:



Creating Customer table:

CREATE TABLE DrivingSchool.Customer

(Customer_ID INT NOT NULL,

First_name VARCHAR(50),

Last_name VARCHAR(50),

Age INT,

Address VARCHAR(200),

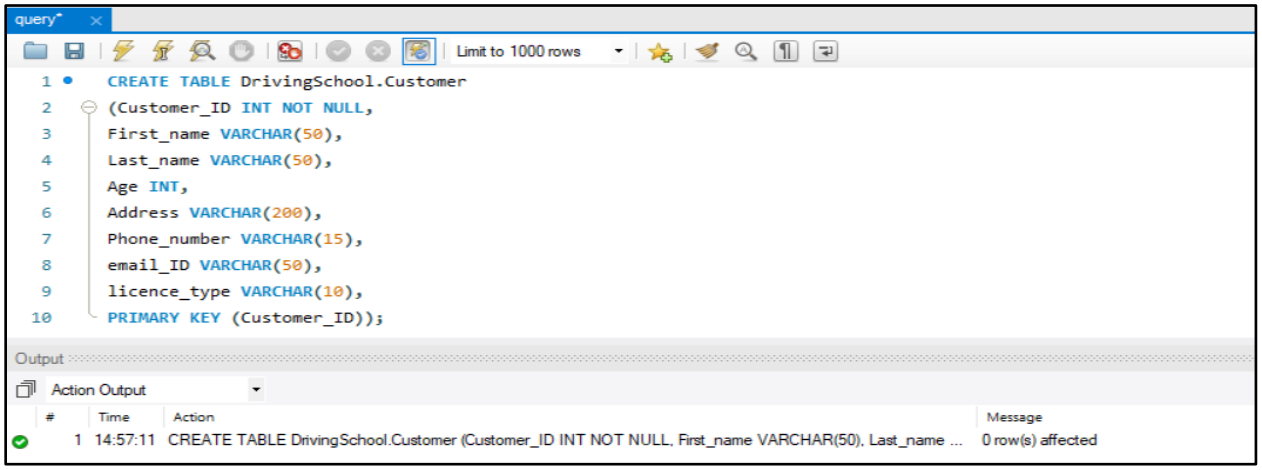
Phone_number VARCHAR(15),

email_ID VARCHAR(50),

licence_type VARCHAR(10),

PRIMARY KEY (Customer_ID));

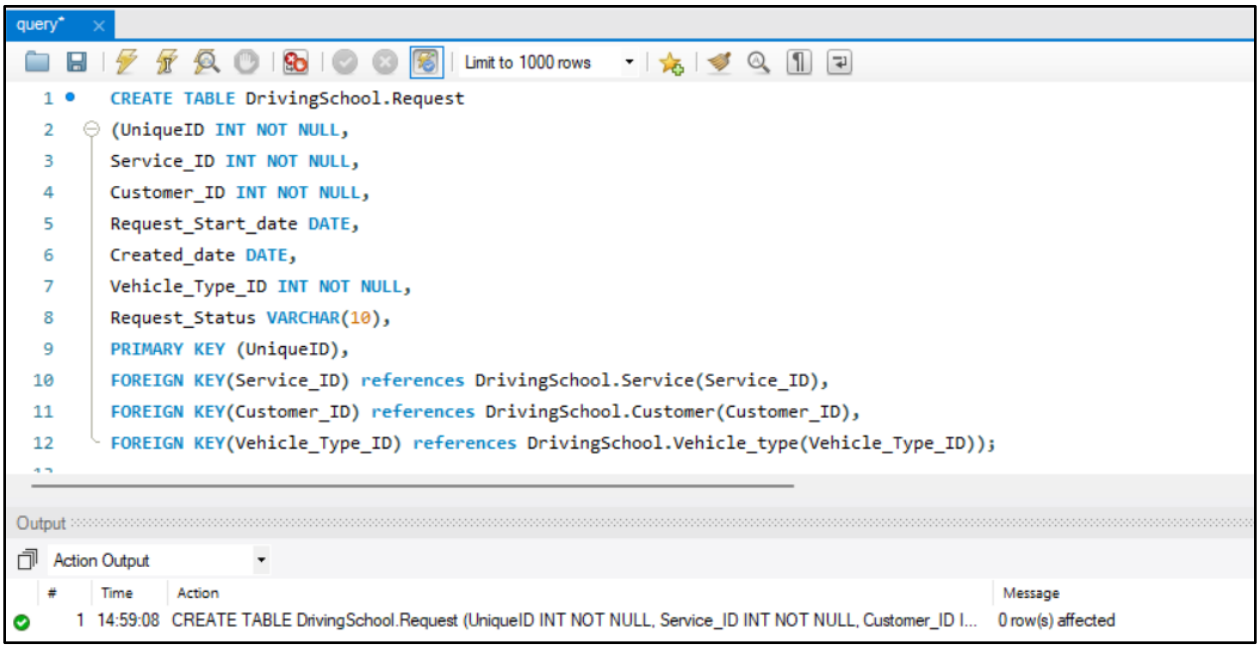
Output:



Creating Request table:

```
CREATE TABLE DrivingSchool.Request
(UniqueID INT NOT NULL,
Service_ID INT NOT NULL,
Customer_ID INT NOT NULL,
Request_Start_date DATE,
Created_date DATE,
Vehicle_Type_ID INT NOT NULL,
Request_Status VARCHAR(10),
PRIMARY KEY (UniqueID),
FOREIGN KEY(Service_ID) references DrivingSchool.Service(Service_ID),
FOREIGN KEY(Customer_ID) references DrivingSchool.Customer(Customer_ID),
FOREIGN KEY(Vehicle_Type_ID) references DrivingSchool.Vehicle_type(Vehicle_Type_ID));
```

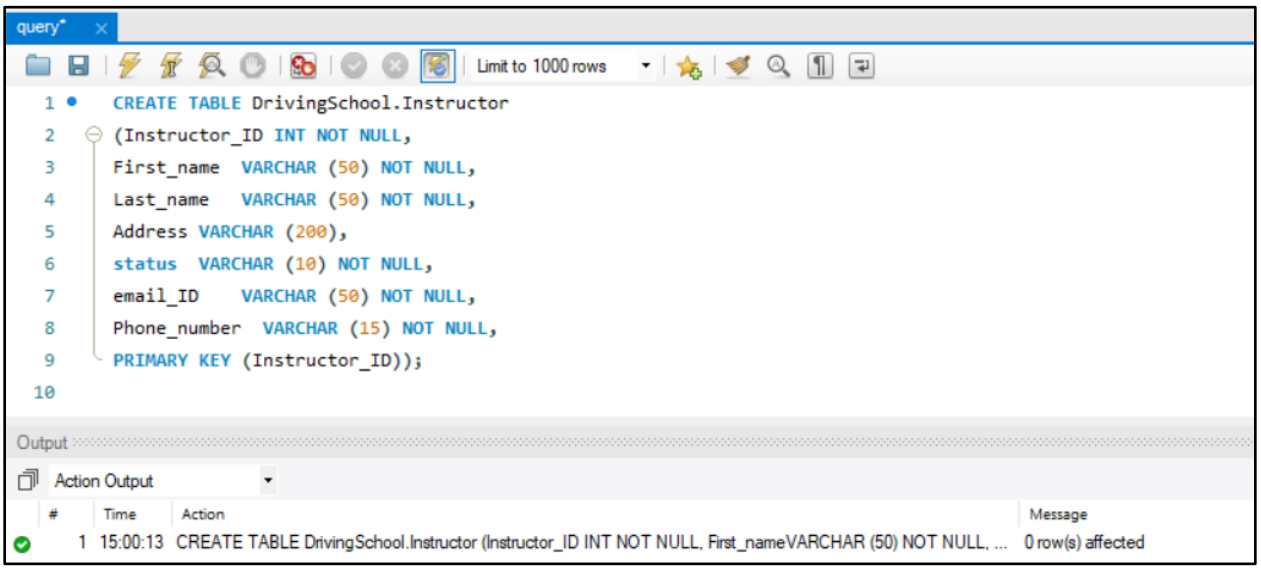
Output:



Creating Instructor table:

```
CREATE TABLE DrivingSchool.Instructor
(Instructor_ID INT NOT NULL,
First_name      VARCHAR (50) NOT NULL,
Last_name       VARCHAR (50) NOT NULL,
Address         VARCHAR (200),
status   VARCHAR (20) NOT NULL,
email_ID        VARCHAR (50) NOT NULL,
Phone_number  VARCHAR (15) NOT NULL,
PRIMARY KEY (Instructor_ID));
```

Output:



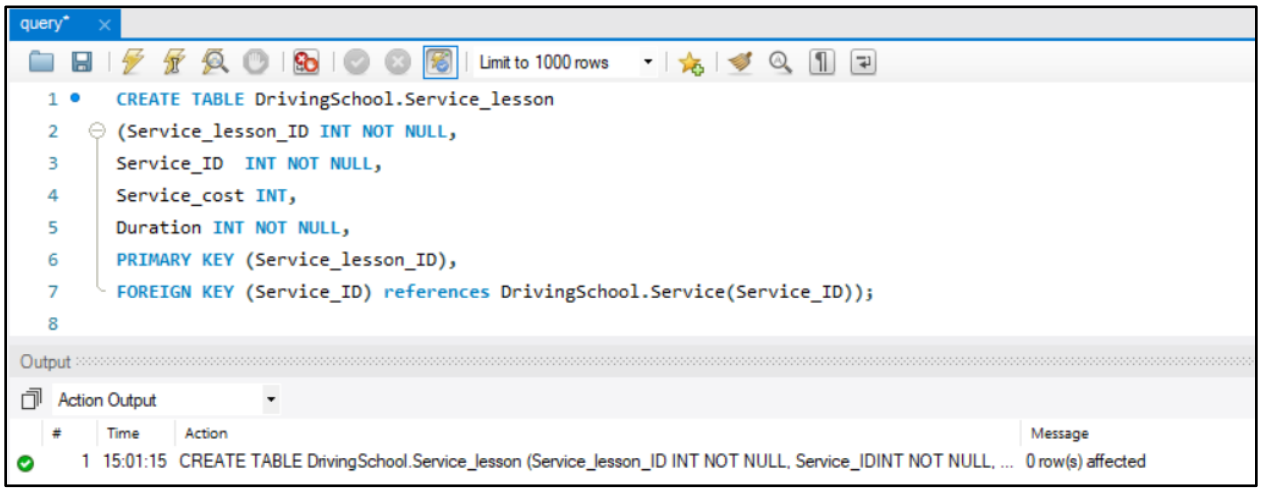
Creating Service_Lesson table:

```
CREATE TABLE DrivingSchool.Service_lesson
(Service_lesson_ID INT NOT NULL,
Service_ID      INT NOT NULL,
Service_cost INT,
Duration INT NOT NULL,
```

PRIMARY KEY (Service_lesson_ID),

FOREIGN KEY (Service_ID) references DrivingSchool.Service(Service_ID));

Output:



Creating Vehicle_Details table:

CREATE TABLE DrivingSchool.Vehicle_details

(Vehicle_ID INT NOT NULL,

Vehicle_type_ID INT,

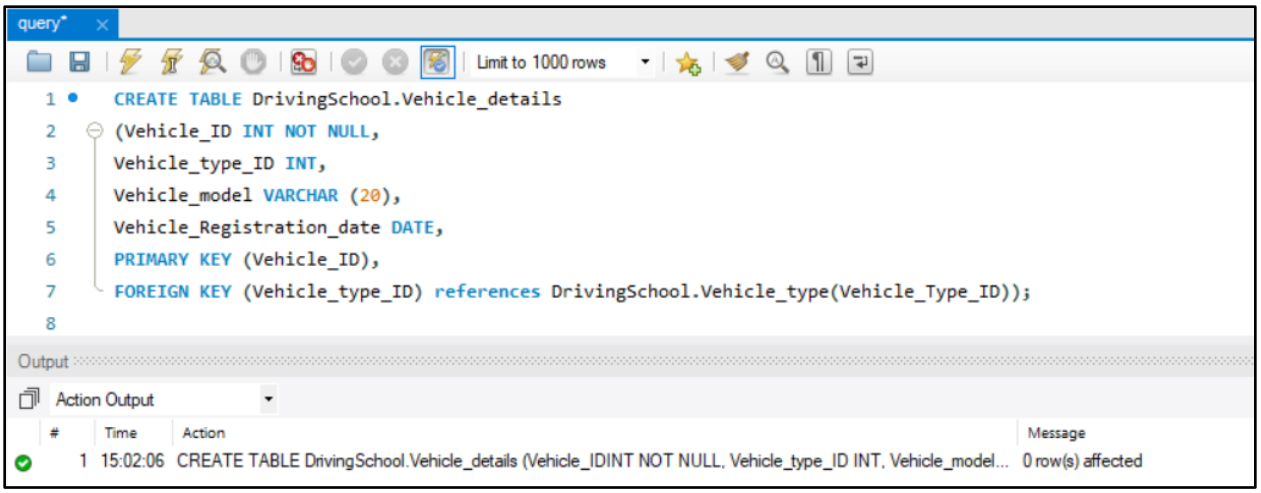
Vehicle_model VARCHAR (20),

Vehicle_Registration_date DATE,

PRIMARY KEY (Vehicle_ID),

FOREIGN KEY (Vehicle_type_ID) references DrivingSchool.Vehicle_type(Vehicle_Type_ID));

Output:



Creating Reservation Table:

CREATE TABLE DrivingSchool.Reservation

(Reservation_ID INT NOT NULL,

Instructor_ID INT NOT NULL,

Service_Lesson_ID INT NOT NULL,

Request_ID INT NOT NULL,

Vehicle_ID INT NOT NULL,

Lesson_Schedule_date DATE,

Reservation_status VARCHAR (50),

PRIMARY KEY (Reservation_ID),

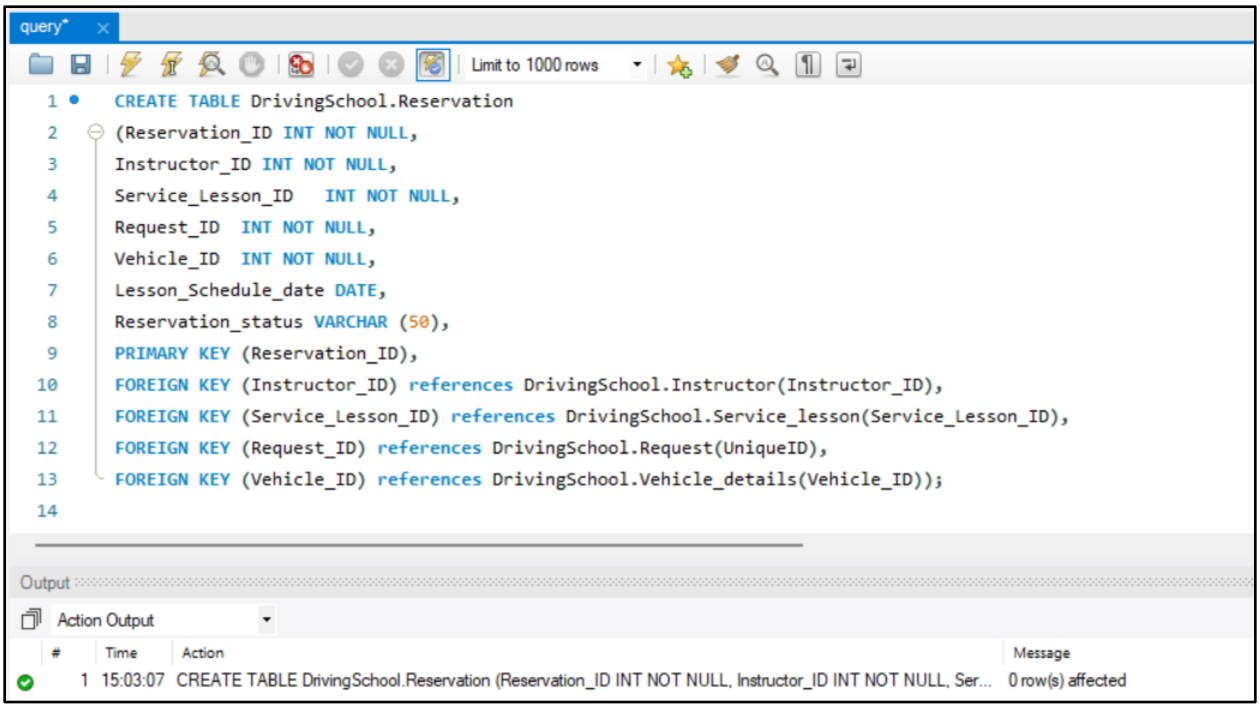
FOREIGN KEY (Instructor_ID) references DrivingSchool.Instructor(Instructor_ID),

FOREIGN KEY (Service_Lesson_ID) references DrivingSchool.Service_lesson(Service_Lesson_ID),

FOREIGN KEY (Request_ID) references DrivingSchool.Request(UniqueID),

FOREIGN KEY (Vehicle_ID) references DrivingSchool.Vehicle_details(Vehicle_ID));

Output:



Data Insertion in Tables:

Data Insertion in Service table:

INSERT INTO DrivingSchool.Service value(1,"MINOR SERVICE",50,"Teen 7X7 Driving classes");

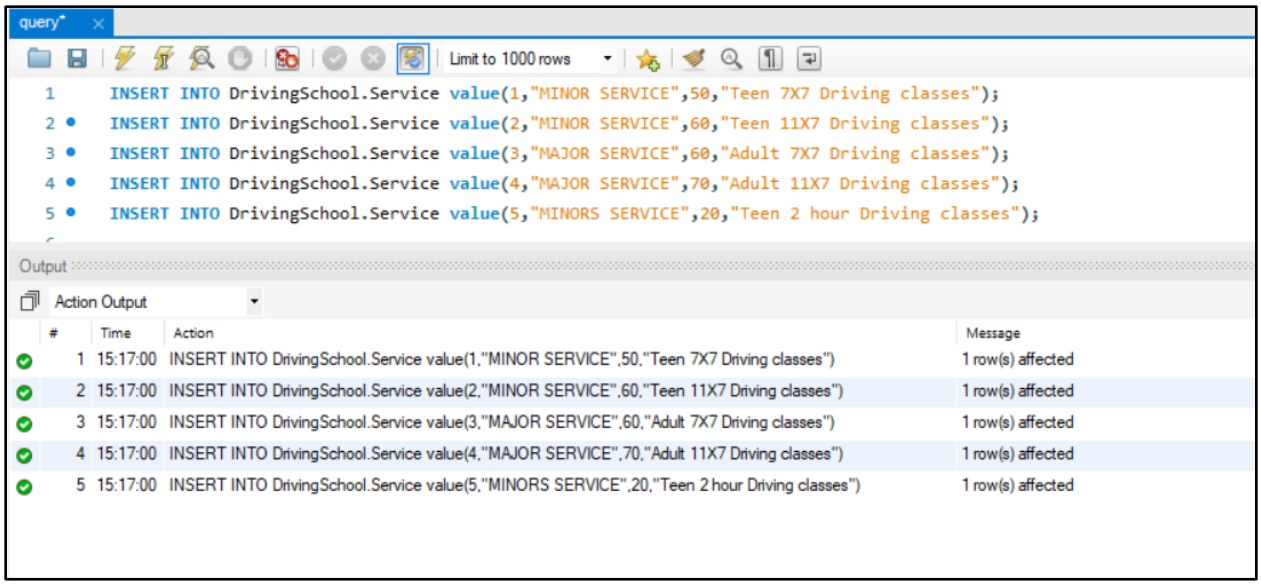
INSERT INTO DrivingSchool.Service value(2,"MINOR SERVICE",60,"Teen 11X7 Driving classes");

INSERT INTO DrivingSchool.Service value(3,"MAJOR SERVICE",60,"Adult 7X7 Driving classes");

INSERT INTO DrivingSchool.Service value(4,"MAJOR SERVICE",70,"Adult 11X7 Driving classes");

INSERT INTO DrivingSchool.Service value(5,"MINORS SERVICE",20,"Teen 2 hour Driving classes");

Output:



Data Insertion in Vehicle_Type table:

INSERT INTO DrivingSchool.Vehicle_type values(1, "Truck");

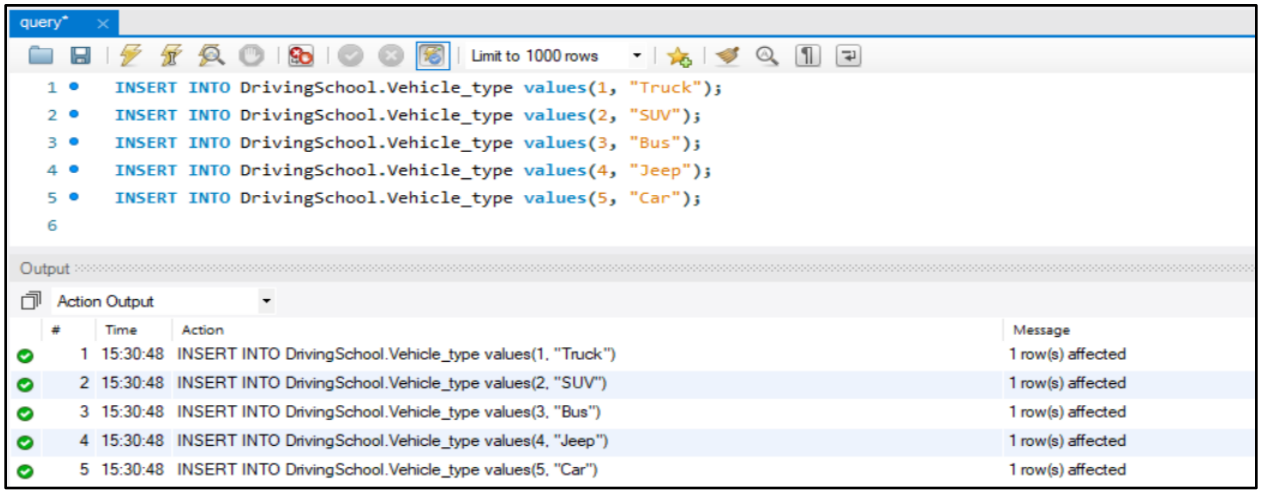
INSERT INTO DrivingSchool.Vehicle_type values(2, "SUV");

INSERT INTO DrivingSchool.Vehicle_type values(3, "Bus");

INSERT INTO DrivingSchool.Vehicle_type values(4, "Jeep");

INSERT INTO DrivingSchool.Vehicle_type values(5, "Car");

Output:



Data Insertion in Customer table:

INSERT INTO DrivingSchool.Customer values(1, "Manasa","Cherukupally",28,"3925 N Elm St,Denton",4695866122, "manasa@gmail.com", "Class C");

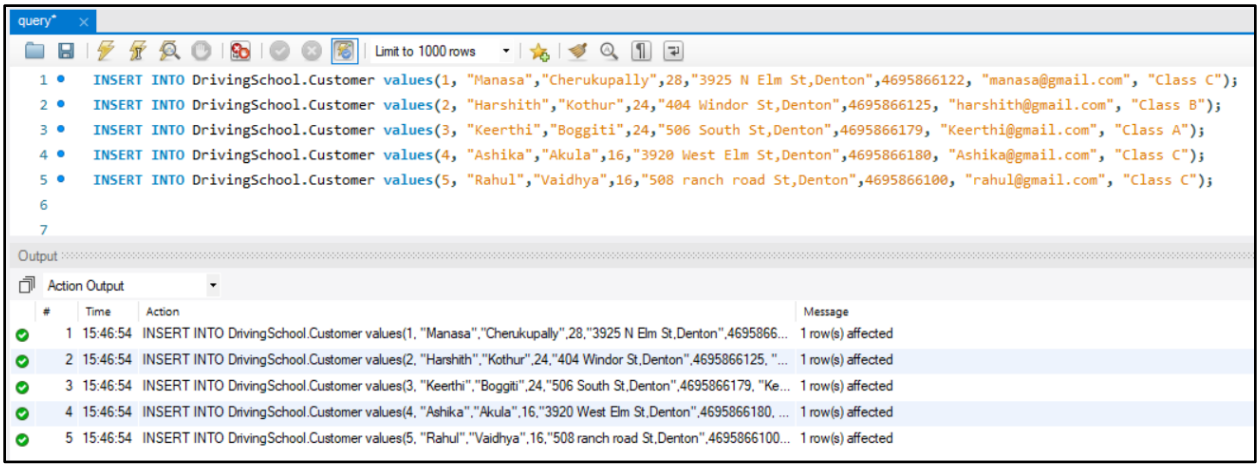
INSERT INTO DrivingSchool.Customer values(2, "Harshith","Kothur",24,"404 Windor St,Denton",4695866125, "harshith@gmail.com", "Class B");

INSERT INTO DrivingSchool.Customer values(3, "Keerthi","Boggiti",24,"506 South St,Denton",4695866179, "Keerthi@gmail.com", "Class A");

INSERT INTO DrivingSchool.Customer values(4, "Ashika","Akula",16,"3920 West Elm St,Denton",4695866180, "Ashika@gmail.com", "Class C");

INSERT INTO DrivingSchool.Customer values(5, "Rahul","Vaidhya",16,"508 ranch road St,Denton",4695866100, "rahul@gmail.com", "Class C");

Output:



Data Insertion in Request table:

INSERT INTO DrivingSchool.Request values(1,3,1,"2022-12-19","2022-12-15",5,"active");

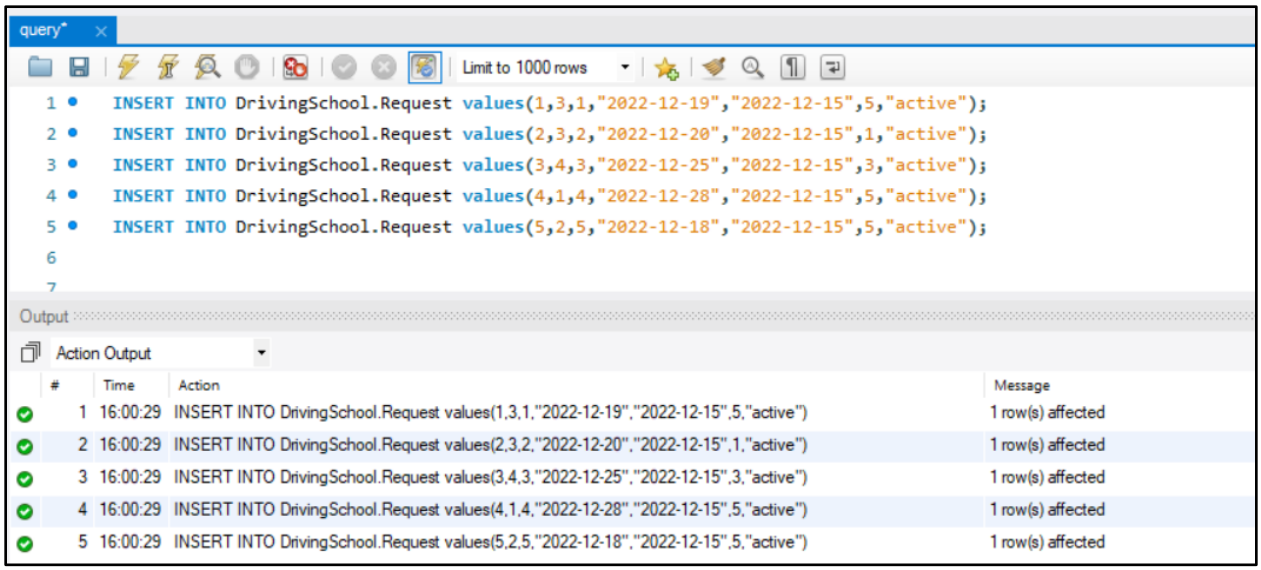
INSERT INTO DrivingSchool.Request values(2,3,2,"2022-12-20","2022-12-15",1,"active");

INSERT INTO DrivingSchool.Request values(3,4,3,"2022-12-25","2022-12-15",3,"active");

INSERT INTO DrivingSchool.Request values(4,1,4,"2022-12-28","2022-12-15",5,"active");

INSERT INTO DrivingSchool.Request values(5,2,5,"2022-12-18","2022-12-15",5,"active");

Output:



Data Insertion in Instructor table:

INSERT INTO DrivingSchool.Instructor values(1, "Prashanth","Dadi","3925 N eml St,Denton","Available","Prashanth@gmail.com","4695861234");

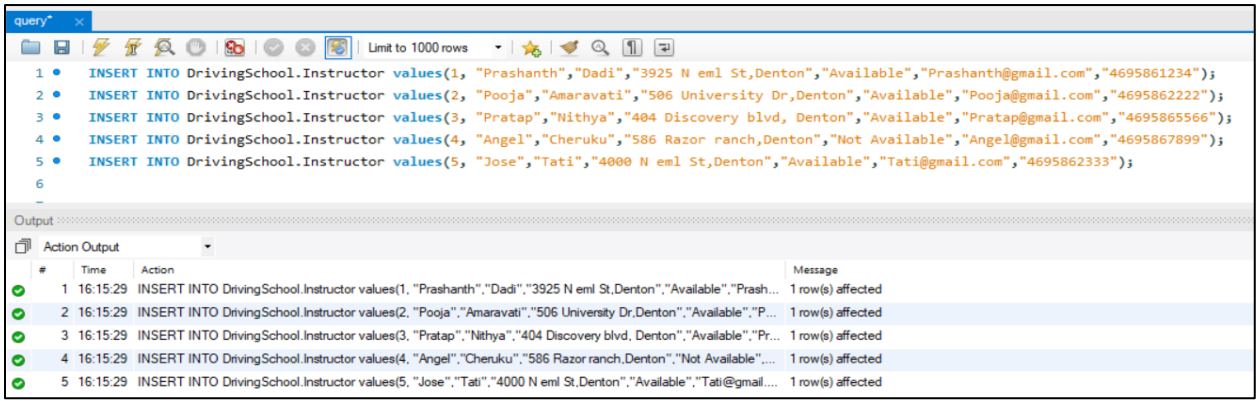
INSERT INTO DrivingSchool.Instructor values(2, "Pooja","Amaravati","506 University Dr,Denton","Available","Pooja@gmail.com","4695862222");

INSERT INTO DrivingSchool.Instructor values(3, "Pratap","Nithya","404 Discovery blvd, Denton","Available","Pratap@gmail.com","4695865566");

INSERT INTO DrivingSchool.Instructor values(4, "Angel","Cheruku","586 Razor ranch,Denton","Not Available","Angel@gmail.com","4695867899");

INSERT INTO DrivingSchool.Instructor values(5, "Jose","Tati","4000 N eml St,Denton","Available","Tati@gmail.com","4695862333");

Output:



Data Insertion in Service_Lesson table:

INSERT INTO DrivingSchool.Service_Lesson values(1,1,350,7);

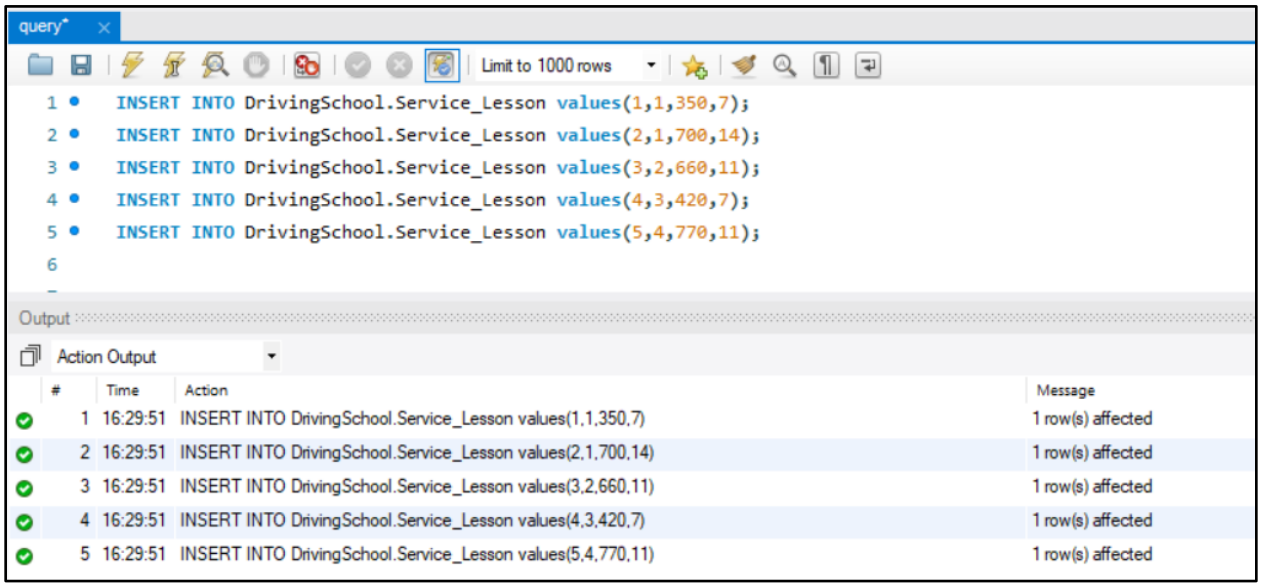
INSERT INTO DrivingSchool.Service_Lesson values(2,1,700,14);

INSERT INTO DrivingSchool.Service_Lesson values(3,2,660,11);

INSERT INTO DrivingSchool.Service_Lesson values(4,3,420,7);

INSERT INTO DrivingSchool.Service_Lesson values(5,4,770,11);

Output:



Data Insertion in Vehicle_details table:

INSERT INTO DrivingSchool.Vehicle_details values(1,5,"subaru","2018-12-1");

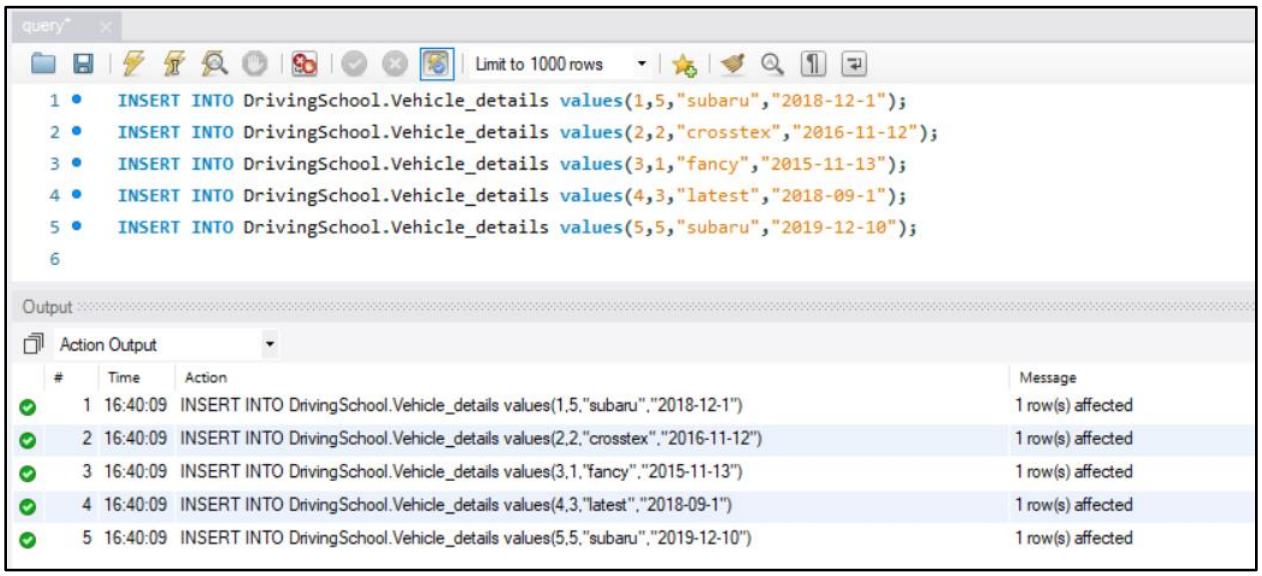
INSERT INTO DrivingSchool.Vehicle_details values(2,2,"crosstex","2016-11-12");

INSERT INTO DrivingSchool.Vehicle_details values(3,1,"fancy","2015-11-13");

INSERT INTO DrivingSchool.Vehicle_details values(4,3,"latest","2018-09-1");

INSERT INTO DrivingSchool.Vehicle_details values(5,5,"subaru","2019-12-10");

Output:



Data Insertion in Reservation table:

INSERT INTO DrivingSchool.Reservation values(1,1,3,1,5,"2022-12-19","active");

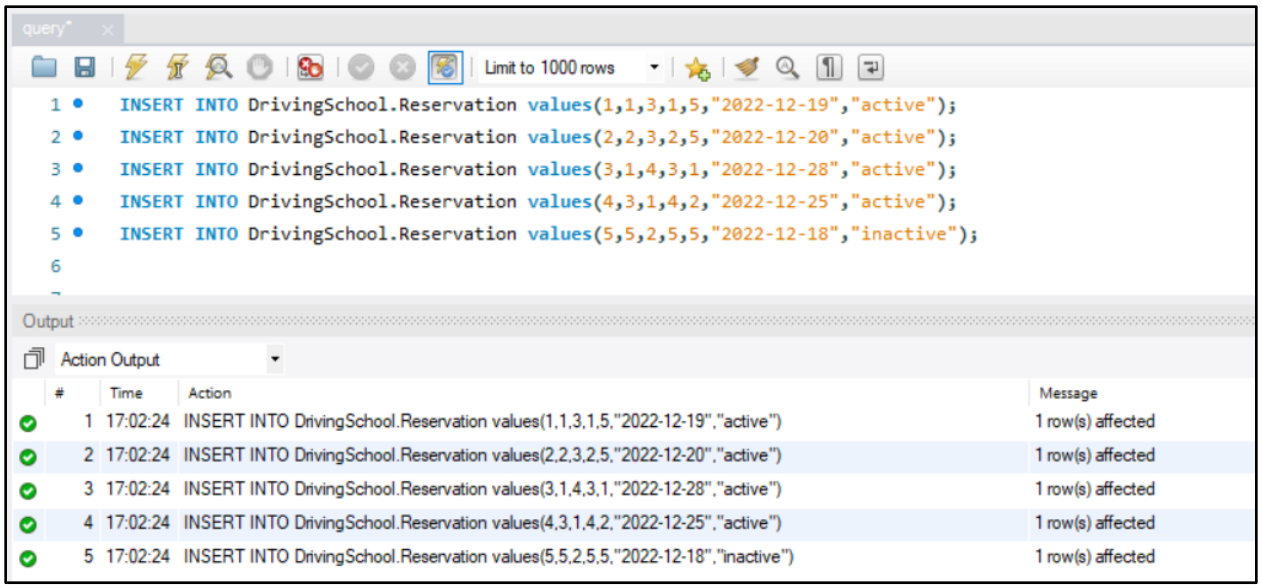
INSERT INTO DrivingSchool.Reservation values(2,2,3,2,5,"2022-12-20","active");

INSERT INTO DrivingSchool.Reservation values(3,1,4,3,1,"2022-12-28","active");

INSERT INTO DrivingSchool.Reservation values(4,3,1,4,2,"2022-12-25","active");

INSERT INTO DrivingSchool.Reservation values(5,5,2,5,5,"2022-12-18","inactive");

Output:

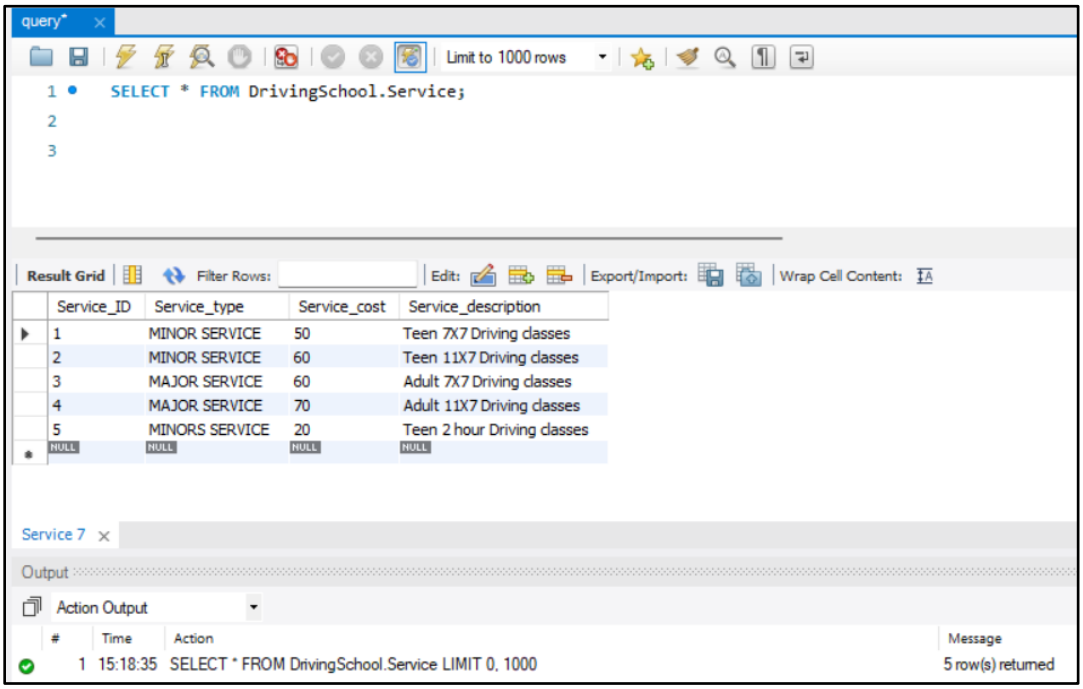


Data Selection from Tables:

Select query on Service table:

Select * from DrivingSchool.Service;

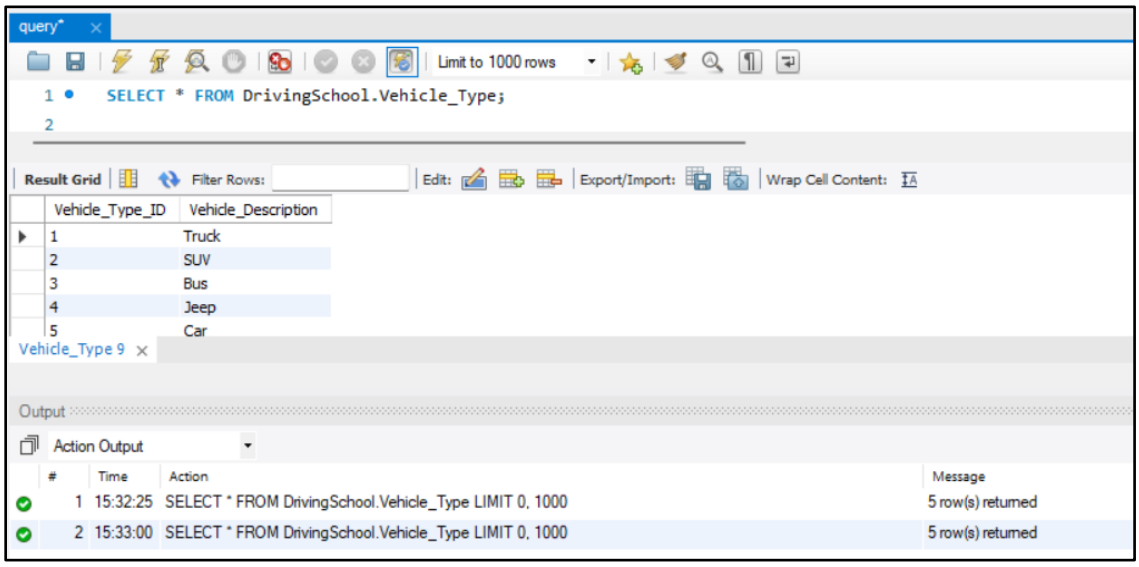
Output:



Select query on Vehicle_type table:

Select * from DrivingSchool.Vehicle_type;

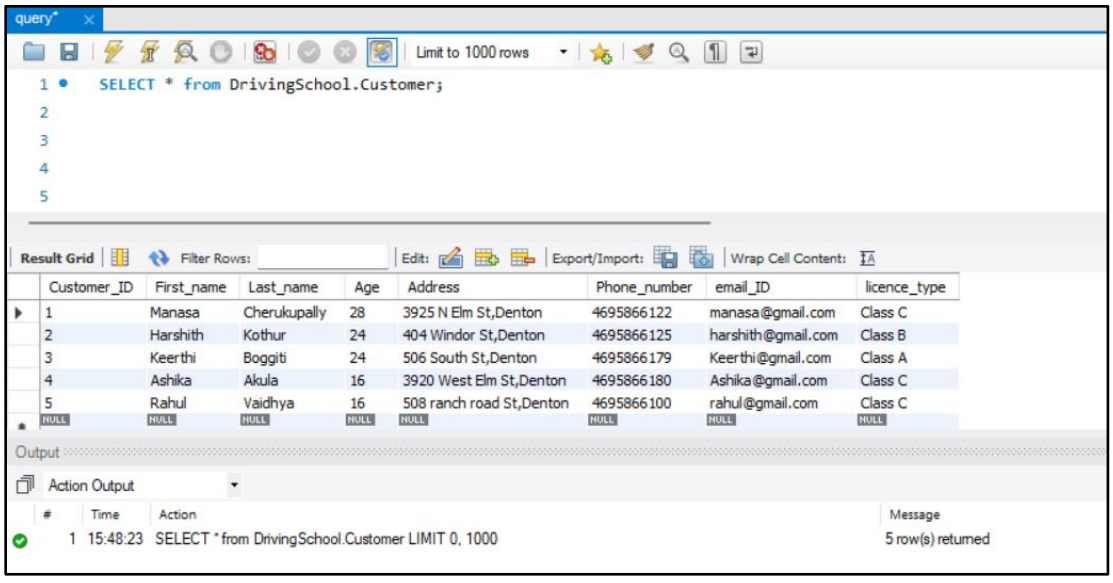
Output:



Select query on Customer table:

Select * from DrivingSchool.Customer;

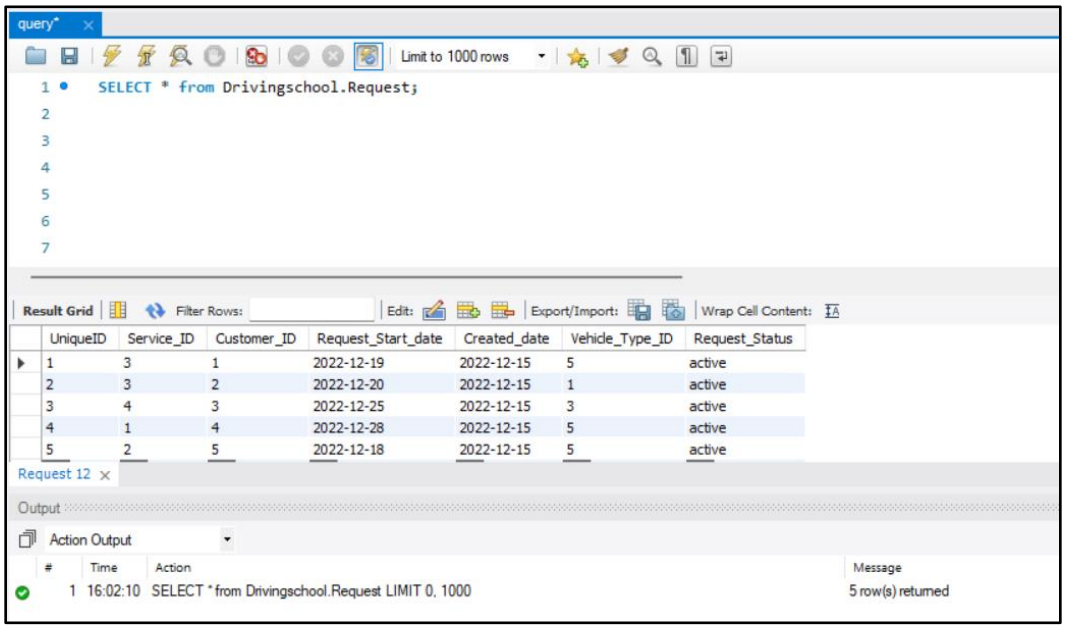
Output:



Select query on Request table:

Select * from DrivingSchool.Request;

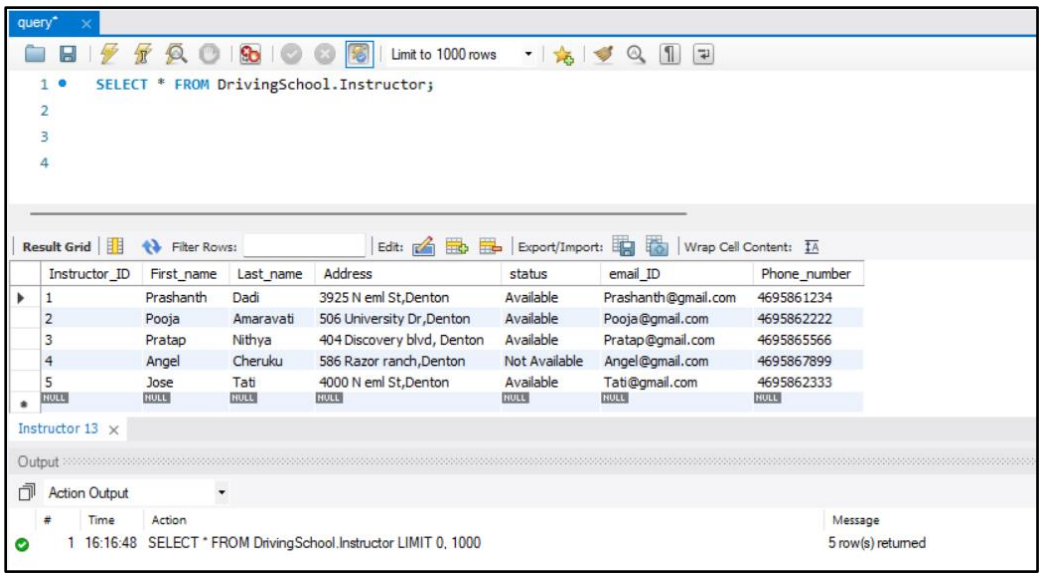
Output:



Select query on Instructor table:

Select * from DrivingSchool.Instructor;

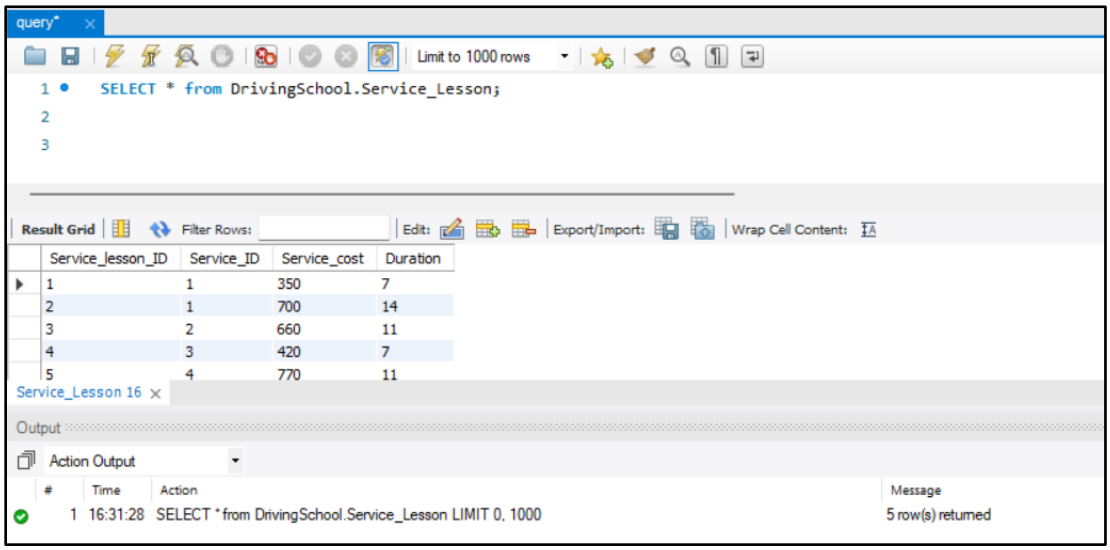
Output:



Select query on Service_lesson table:

Select * from DrivingSchool.Service_Lesson;

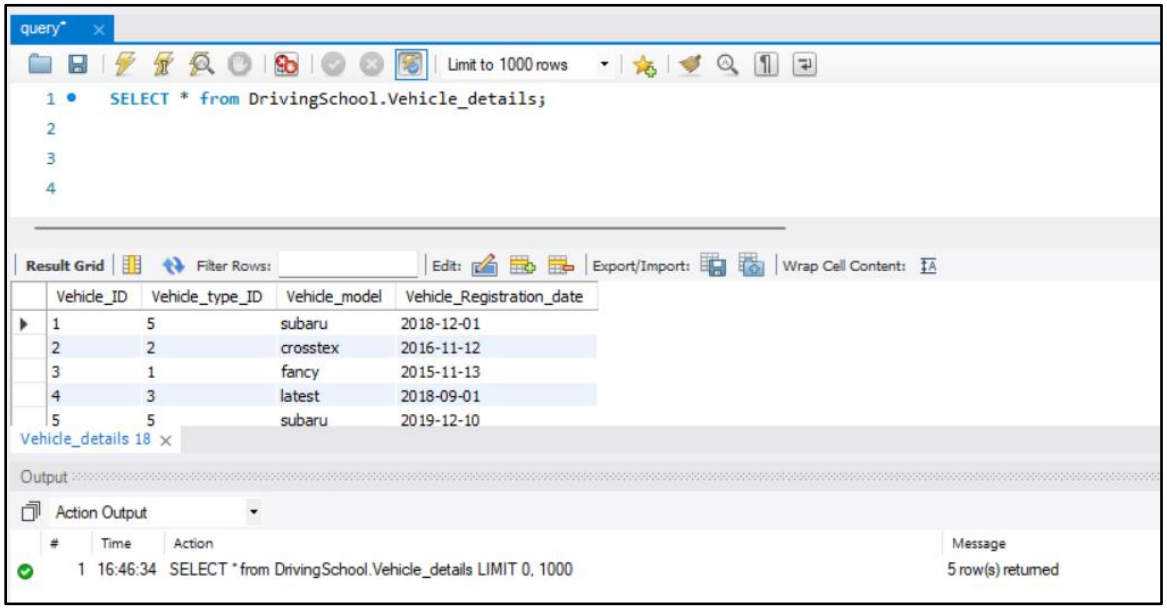
Output:



Select query on Vehicle_details table:

Select * from DrivingSchool.Vehicle_details;

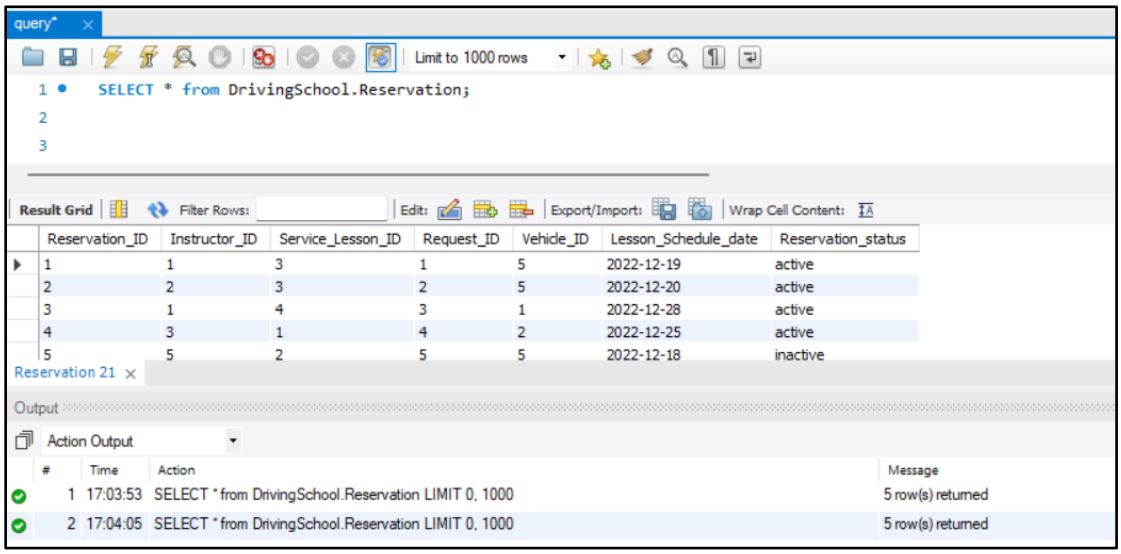
Output:



Select query on Reservation table:

Select * from DrivingSchool.Reservation;

Output:



Modifying Tables:

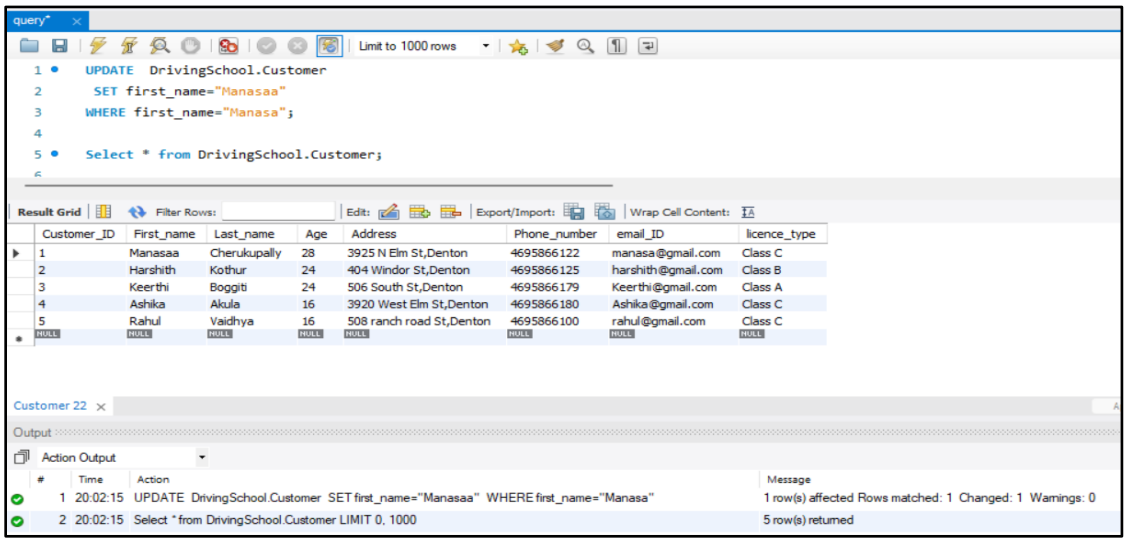
Modify first_name in Customer table:

UPDATE DrivingSchool.Customer

SET first_name=”Manasaa”

WHERE first_name=”Manasa”;

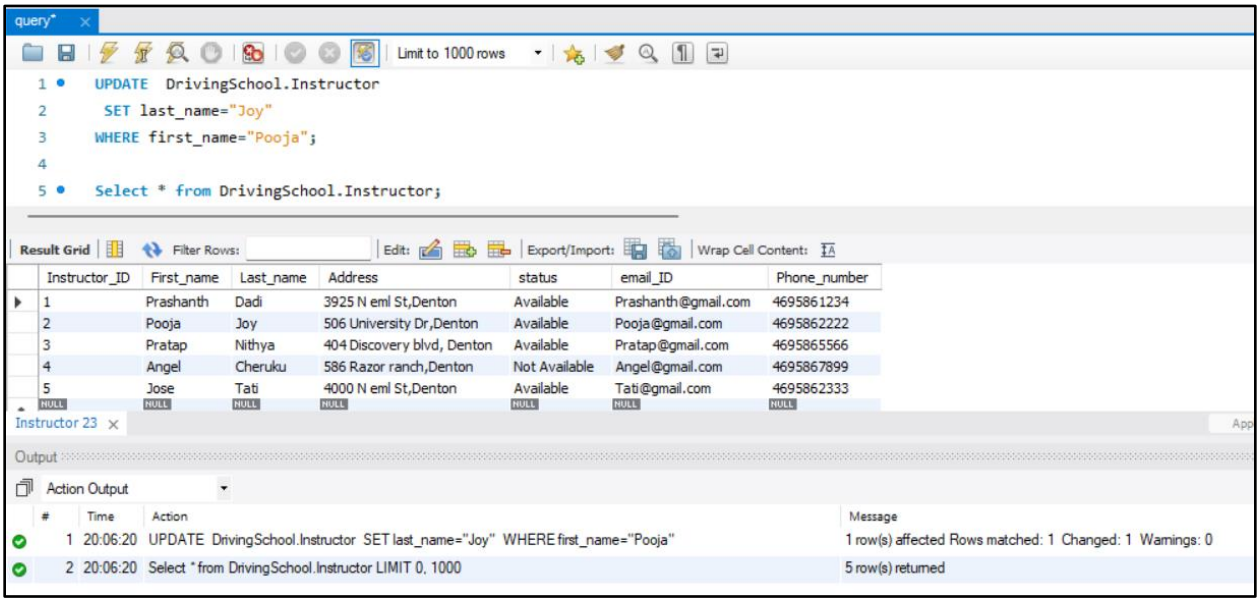
Output:



Update Last_name in Instructor table:

```
UPDATE  DrivingSchool.Instructor
 SET last_name=”Joy”
WHERE first_name=”Pooja”;
```

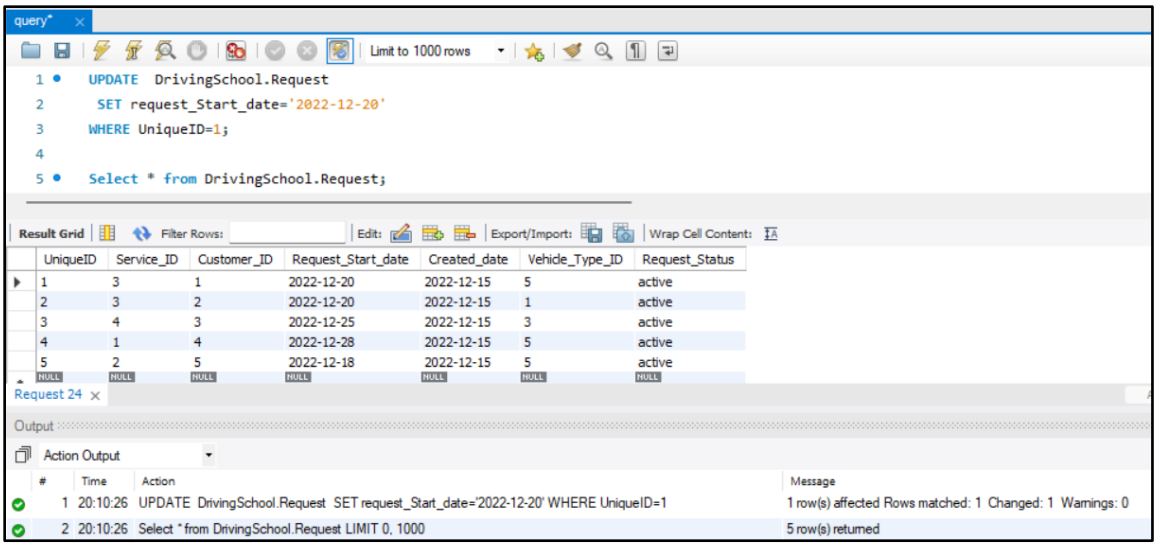
Output:



Update Request_Start_date in Request table:

```
UPDATE  DrivingSchool.Request
 SET request_Start_date='2022-12-20'
WHERE UniqueID=1;
```

Output:



Data Retrieval and Simple Reports:

1. **Display the Lesson_Schedule_date for reservation made by the customer whose name is Manasaa**

SELECT Lesson_Schedule_date FROM DrivingSchool.Reservation R

JOIN DrivingSchool.Request Re

ON R.Request_ID=Re.UniqueID

JOIN DrivingSchool.Customer C

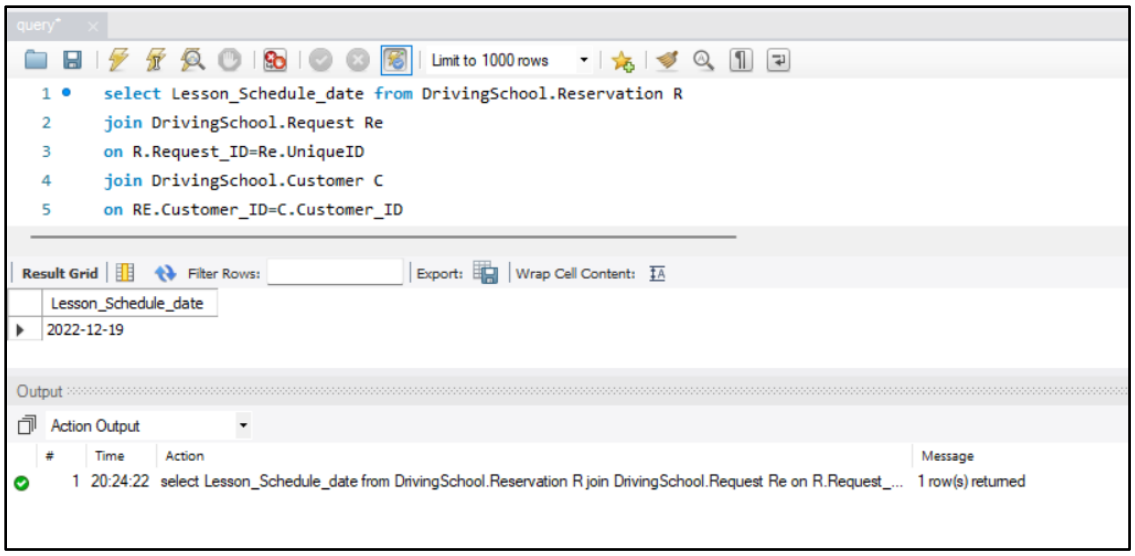
ON Re.Customer_ID=C.Customer_ID

WHERE C.First_name='Manasaa';

Answer:

Lesson_Schedule_date
2022-12-19

Output:



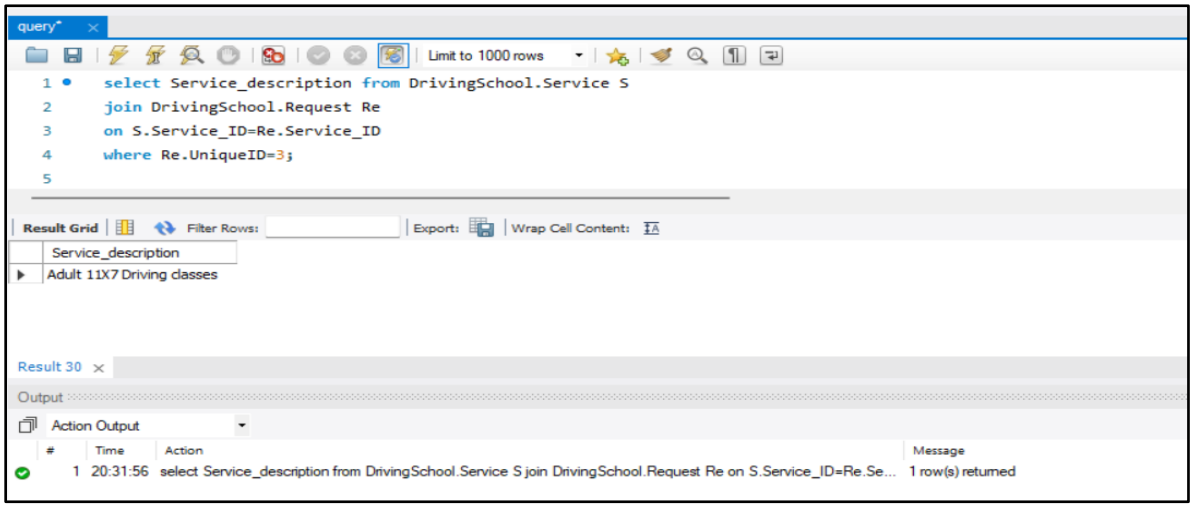
2. **Display the Service Description of the Request with UniqueID 3**

```
select Service_description from DrivingSchool.Service S
join DrivingSchool.Request Re
on S.Service_ID=Re.Service_ID
where Re.UniqueID=3;
```

Answer:

Service_Description
Adult 11X7 DrivingClasses

output:



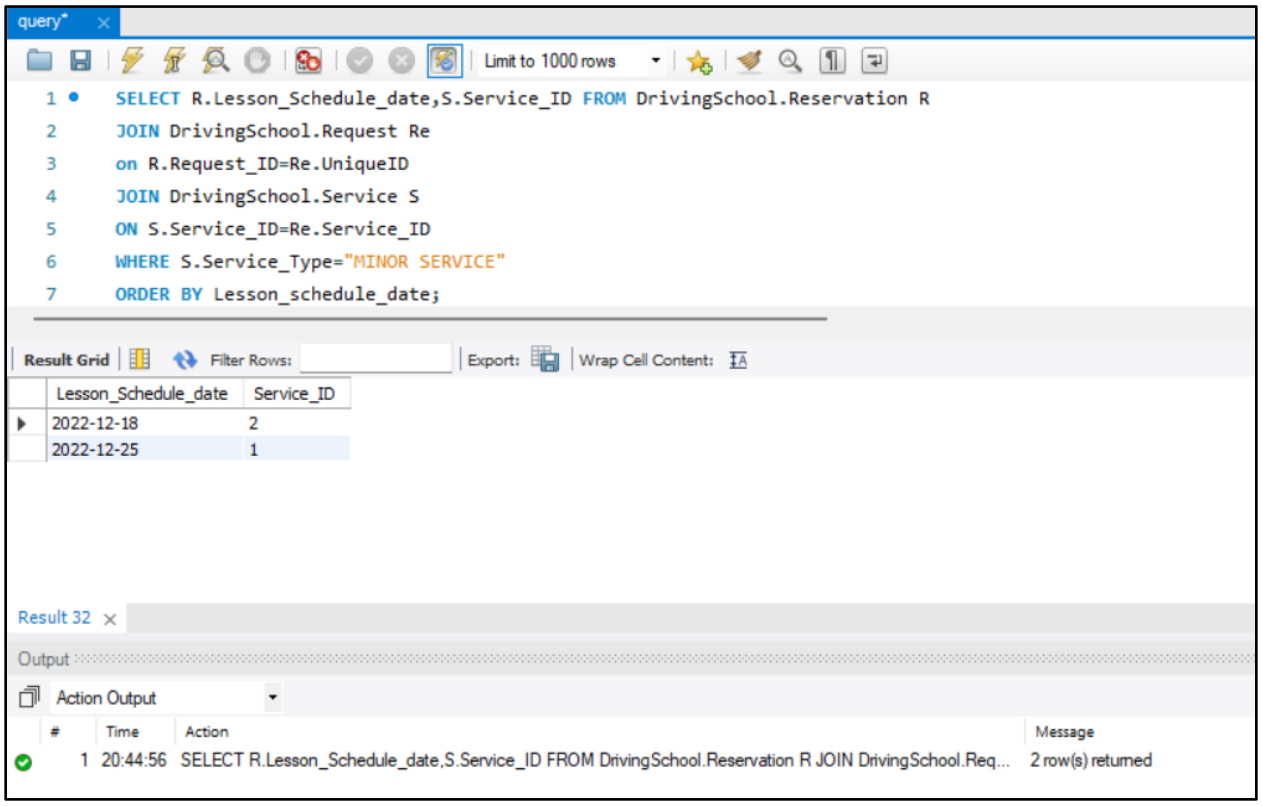
3. **Display the Lesson_Schedule_date made for services whose service_type is MINOR_SERVICES and sort them. Print Service_ID and Lesson_Schedule_date**

```
SELECT R.Lesson_Schedule_date,S.Service_ID FROM DrivingSchool.Reservation R
JOIN DrivingSchool.Request Re
on R.Request_ID=Re.UniqueID
JOIN DrivingSchool.Service S
ON S.Service_ID=Re.Service_ID
WHERE S.Service_Type="MINOR SERVICE"
ORDER BY Lesson_schedule_date;
```

Answer:

Lesson_Schedule_Date	Service_ID
2022-12-18	2
2022-12-25	1

Output:



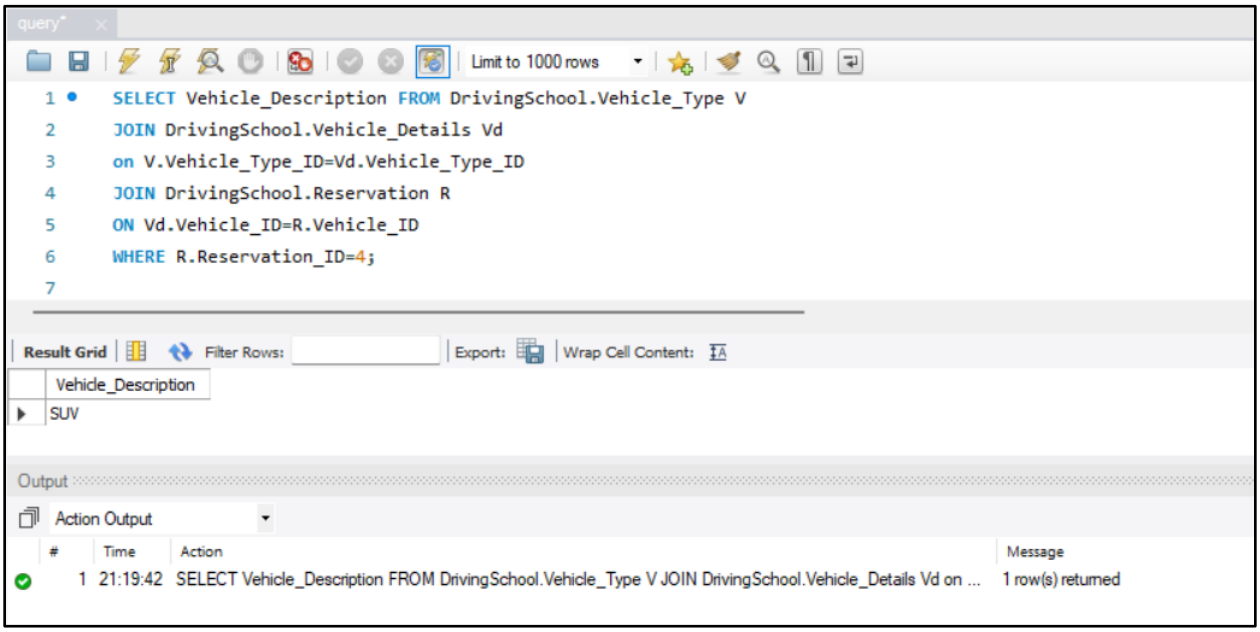
4. **Display the Vehicle_Description of the Vehicle who was reserved with Reservation_ID 4**

```
SELECT Vehicle_Description FROM DrivingSchool.Vehicle_Type V
JOIN DrivingSchool.Vehicle_Details Vd
on V.Vehicle_Type_ID=Vd.Vehicle_Type_ID
JOIN DrivingSchool.Reservation R
ON Vd.Vehicle_ID=R.Vehicle_ID
WHERE R.Reservation_ID=4;
```

Answer:

Vehicle_Description
SUV

Output:



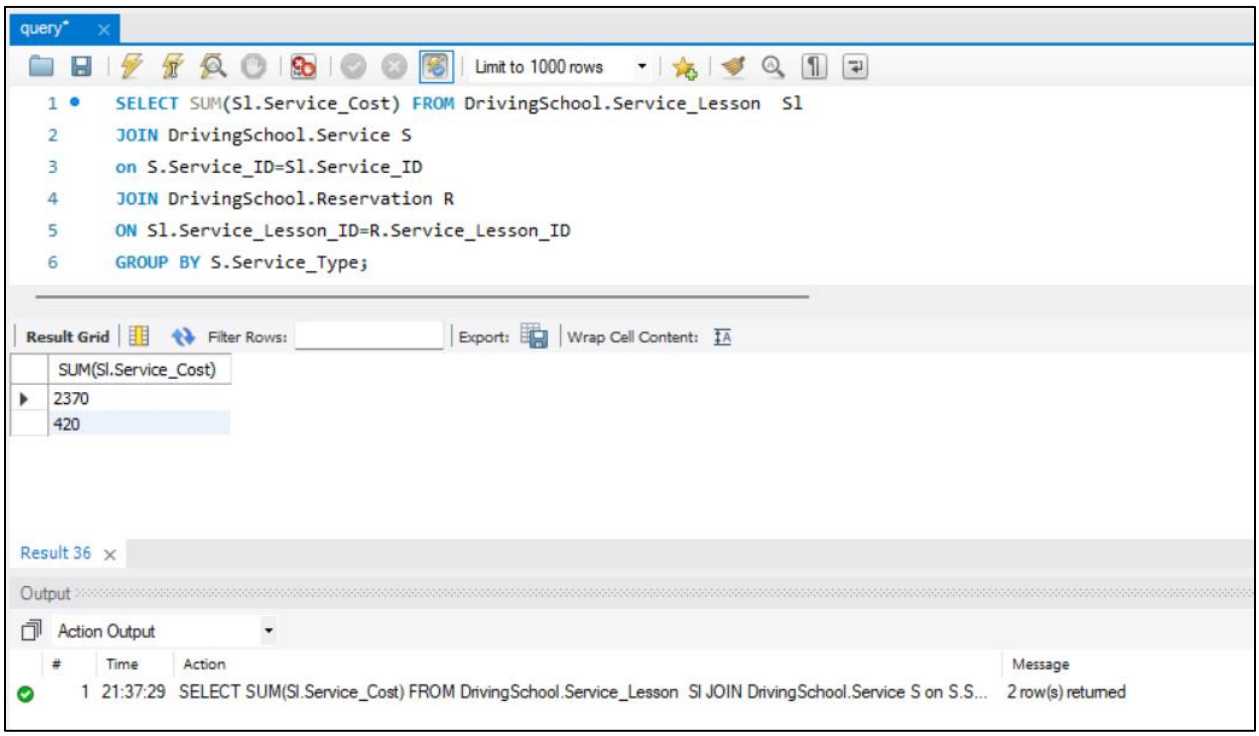
5. **Display the total Amount paid for Service_Lessons of each Service_Type for all the reservations done**

```
SELECT SUM(Sl.Service_Cost) FROM DrivingSchool.Service_Lesson  Sl
JOIN DrivingSchool.Service S
on S.Service_ID=Sl.Service_ID
JOIN DrivingSchool.Reservation R
ON Sl.Service_Lesson_ID=R.Service_Lesson_ID
GROUP BY S.Service_Type;
```

Answer:

SUM
2370
420

Output:



Conclusion:

Driving School Reservation system is modeled in a way to help the user and the administrative services of the driving school to enter and retrieve the data easily. This data model also helps to perform computation on the daily data generated by the reservation process. It improves the overall efficiency of the Driving School Reservation System.