



**AMERICAN INTERNATIONAL UNIVERSITY-BANGLADESH (AIUB)**

**DEPARTMENT OF ENGINEERING**

**INTRODUCTION TO DATABASE**

**Section: N, Group: 7**

**Project Name**

**PARKING MANAGEMENT SYSTEM**

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## **ER Diagram Case Study:**

In the present day. Many individuals own cars. A vehicle is become a must. Urbanization is an ongoing process everywhere. There are several business buildings, shopping malls, etc. People used to go to a lot of recreational areas for relaxation. Therefore, each of these locations requires a parking area where visitors may park their cars conveniently and safely. A system that keeps track of vehicle information is necessary in every parking lot to provide the facility. A system that automatically delivers data processing at a high rate of speed in a structured manner is a vehicle parking management system. Today, there is an increasing need for parking. The creation of this technology has been quite helpful in this industry.

We cordially encourage you to utilize our parking management system from this location. So, at first, there is a parking owner who has its own owner id, and address, he has his name, and also can have several phone numbers. Nonetheless, there are alternatives for the owner's address such as country, city, and street number. As a result, one owner may appoint one manager to oversee everything.

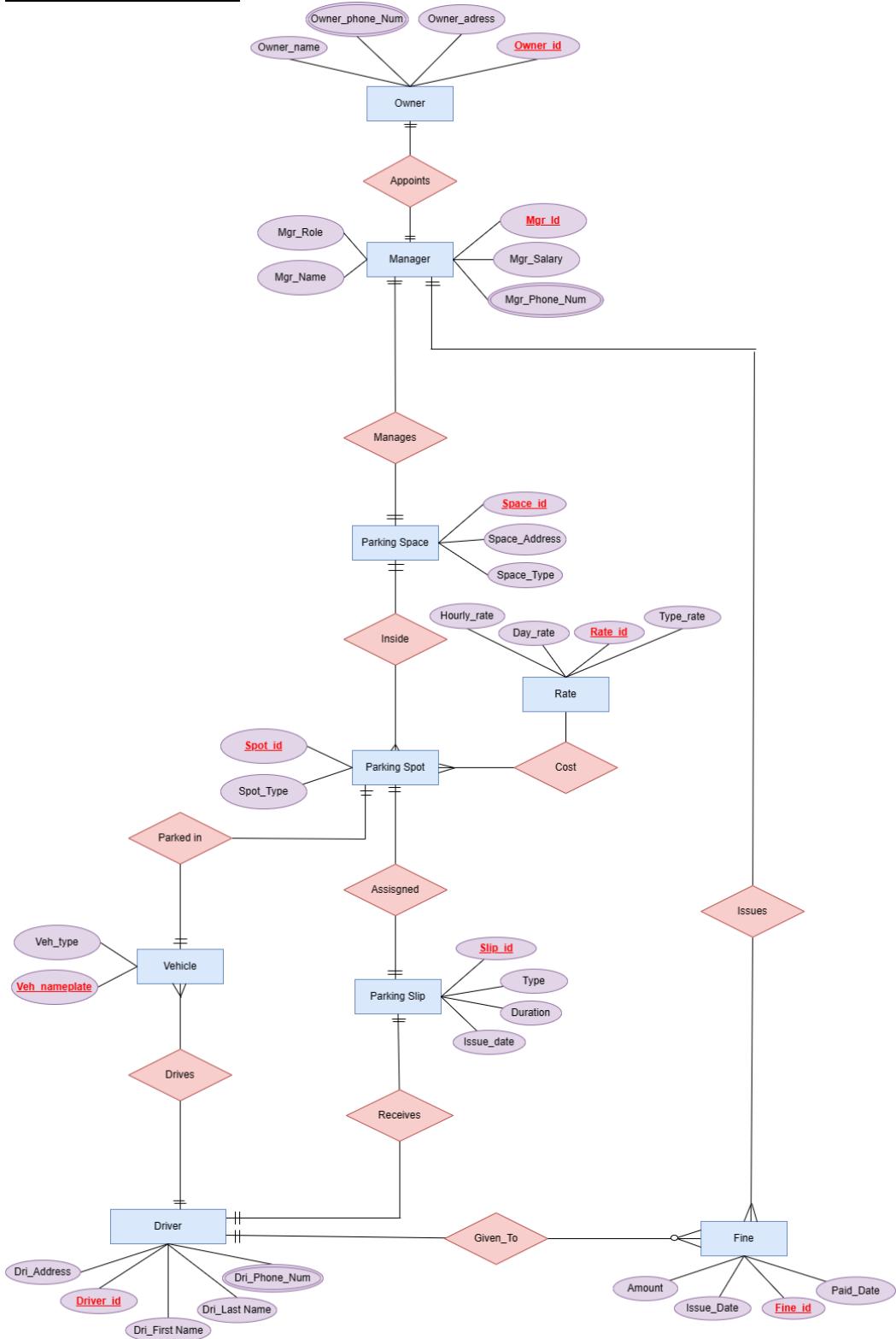
Manager also has a job to perform; he has his name and has his manager unique ID, not only that he also has a role to do, along with work he also gets a salary, not only that manager also has various phone numbers. In parking management system Managers also manages parking spaces, and each manager can manage one parking space at a time. Parking spaces have a space type as far requirements. it has a unique space id, and, finally, an address. In this case, the address includes the city, street number, and as well as county.

There is also parking spot inside the parking space, and one parking space can have many parking spots. The parking spot itself has a unique spot id and address, as well as city and street along with county information. Not only that Parking spots can also be rented at various rates such as hourly rates and daily rates, The rates have types, and a unique rate id. Vehicles are parked inside parking spaces, and each parking space may accommodate one car. There are also other entities available for vehicles, such as vehicle type and vehicle nameplate.

Therefore, Vehicles are driven by drivers, and one driver can drive many vehicles. Each driver has their own email address, not only that they have their first and last name as well. Nevertheless, they also have a unique driver id and a driver

address along with various phone numbers. There are also alternatives for the drivers address such as country, city, and street number. Nonetheless, each parking spot is assigned a parking slip, which the driver receives. Therefore, one parking slip can be received by one driver. Lastly parking slip has duration for the drivers, not only that it has its parking type and issue date and lastly it has its own unique id. Last but not the least the are Drivers who gets fines and one driver may get many fines or none. Fines have amount to be paid, it also has an issuing date and a payment rate, lastly it has a unique fine id. Therefore, Managers impose penalties, and one manager can issue many fines.

## ER Diagram:



## Normalization

### **Owner ....1.... Appoints ....1....Manager**

#### **UNF:**

Appoints ( Owner\_Phone Num, Country, City, Street\_No, Owner\_ID, Owner\_Name, Mgr\_name, Mgr\_role, Mgr\_ID, Salary, Mgr\_phone Num)

#### **1NF:**

1<sup>st</sup>: Owner\_phone\_Num, Mgr\_phone Num both are Multivalue Attribute

2<sup>nd</sup>: Owner\_Phone Num, Country, City, Street\_No, Owner\_ID, Owner\_Name, Mgr\_name, Mgr\_role, Mgr\_ID, Salary, Mgr\_phone Num

#### **2NF:**

1<sup>st</sup>: Owner\_Phone Num, Owner Name, Owner\_Address, Owner\_ID, Mgr\_ID

2<sup>nd</sup>: Mgr\_ID, Mgr\_Name, Mgr\_Role, Salary, Mgr\_phone Num

#### **3NF:**

1<sup>st</sup>: NO TRANSITIVE ATTRIBUTE

2<sup>nd</sup> : Owner\_Phone Num, Owner Name, Owner\_Address, Owner\_ID, Mgr\_ID

3<sup>rd</sup> : Mgr\_ID, Mgr\_Name, Mgr\_Role, Salary, Mgr\_phone Num

#### **Final Table:**

1<sup>st</sup>: Owner\_Phone Num, Owner Name, Owner\_Address, Owner\_ID, Mgr\_ID

2<sup>nd</sup> : Mgr\_ID, Mgr\_Name, Mgr\_Role, Salary, Mgr\_phone Num

## **Manager ....1.... Manages .....1..... Parking Space**

### **UNF:**

Manages(Mgr\_ID,Mgr\_Name,Mgr\_Role,Mgr\_Salary,Mgr\_Phone\_Num,Space\_ID,  
Street\_No, Country, City,Space\_Type)

### **1NF:**

1<sup>st</sup>: Mgr\_Phone\_Num is a multivalued attribute

2<sup>nd</sup>: Mgr\_ID,Mgr\_Name,Mgr\_Role,Mgr\_Salary,Mgr\_Phone\_Num,Space\_ID,  
Space\_Address,Space\_Type

### **2NF:**

1<sup>st</sup>: Mgr\_ID,Mgr\_Name,Mgr\_Role,Mgr\_Salary,Mgr\_Phone\_Num,Space\_ID

2<sup>nd</sup>: Space\_ID, Space\_Address,Space\_Type

### **3NF:**

1<sup>st</sup>: Mgr\_ID,Mgr\_Name,Mgr\_Role,Mgr\_Salary,Mgr\_Phone\_Num,Space\_ID

2<sup>nd</sup>: Space\_ID, Space\_Address,Space\_Type

### **Table:**

1<sup>st</sup>: Mgr\_ID,Mgr\_Name,Mgr\_Role,Mgr\_Salary,Mgr\_Phone\_Num,Space\_ID

2<sup>nd</sup>: Space\_ID, Space\_Address,Space\_Type

## **Parking Space....1....Inside .....\* ..... Parking Spot**

### **UNF:**

Inside (Space\_ID, Street\_No, Country, City, Space\_Type, Spot\_ID, Spot\_Type)

### **1NF:**

1<sup>st</sup>: No Multivalued Attribute

2<sup>nd</sup> : Space\_ID, Street\_No, Country, City, Space\_Type, Spot\_ID, Spot\_Type

### **2NF:**

1<sup>st</sup>: Space\_ID, Space\_Address, Space\_Type

2<sup>nd</sup>: Spot\_ID, Spot\_Type, Space\_ID

### **3NF:**

1<sup>st</sup>: Space\_ID, Space\_Address, Space\_Type

2<sup>nd</sup>: Spot\_ID, Spot\_Type, Space\_ID

### **Final Table:**

1<sup>st</sup>: Space\_ID, Space\_Address, Space\_Type

2<sup>nd</sup>: Spot\_ID, Spot\_Type, Space\_ID

## **Parking Spot....1.... Assigned .....1..... Parking Slip**

**UNF:**

Assigned ( Spot\_ID, Spot\_Type,Slip\_ID,Slip\_Type,Duration,Issue\_Date)

**1NF:**

1<sup>st</sup>: No Multivalue Attribute

2<sup>nd</sup>: Spot\_ID, Spot\_Type,Slip\_ID,Slip\_Type,Duration,Issue\_Date

**2NF:**

1<sup>st</sup>: Spot\_ID, Spot\_Type, Slip\_ID

2<sup>nd</sup>: Slip\_ID,Slip\_Type,Duration,Issue\_Date

**3NF:**

1<sup>st</sup>: No Transitive Attribute

2<sup>nd</sup>: Spot\_ID, Spot\_Type, Slip\_ID

3<sup>rd</sup>: Slip\_ID,Slip\_Type,Duration,Issue\_Date

**Table:**

1<sup>st</sup>: Spot\_ID, Spot\_Type, Slip\_ID

2<sup>nd</sup>: Slip\_ID,Slip\_Type,Duration,Issue\_Date

## **Parking Slip ....1.... Receive .....1..... Driver**

### **UNF:**

Receives (Slip\_ID,Slip\_Type,Duration,Issue\_Date, Dri\_First Name, Dri\_Last Name, Dri\_Phone Num, Dri\_ID, Dri\_Address)

### **1NF:**

1<sup>st</sup>: Dri\_Phone Num is a Multivalued Attribute

2<sup>nd</sup>: Slip\_ID,Slip\_Type,Duration,Issue\_Date, Dri\_First Name, Dri\_Last Name, Dri\_Phone Num, Dri\_ID, Dri\_Address

### **2NF:**

1<sup>st</sup>: Slip\_ID,Slip\_Type,Duration,Issue\_Date, Dri\_ID

2<sup>nd</sup>: Dri\_ID, Dri\_First Name, Dri\_Last Name, Dri\_Phone Num, Dri\_Address

### **3NF:**

1<sup>st</sup>: NO Transitive Attribute

2<sup>nd</sup> : Slip\_ID,Slip\_Type,Duration,Issue\_Date, Dri\_ID

3<sup>rd</sup> : Dri\_ID, Dri\_First Name, Dri\_Last Name, Dri\_Phone Num, Dri\_Address

### **Table:**

1<sup>st</sup>: Slip\_ID,Slip\_Type,Duration,Issue\_Date, Dri\_ID

2<sup>nd</sup>: Dri\_ID, Dri\_First Name, Dri\_Last Name, Dri\_Phone Num, Dri\_Address

## **Parking Spot....\* .... Cost .....\* ..... Rate**

### **UNF:**

Cost ( Spot\_ID,Spot\_Type,Rate\_type,Hourly\_Rate,Day\_Rate,Rate\_ID )

### **1NF:**

1<sup>st</sup>: No Multivalued Attribute

2<sup>nd</sup>: Spot\_ID,Spot\_Type,Rate\_type,Hourly\_Rate,Day\_Rate,Rate\_ID

### **2NF:**

1<sup>st</sup>: Spot\_ID,Spot\_Type

2<sup>nd</sup>: Rate\_type,Hourly\_Rate,Day\_Rate,Rate\_ID

3<sup>rd</sup>: Spot\_ID, Rate\_ID

### **3NF:**

1<sup>st</sup>: No Transitive Value

2<sup>nd</sup>: Spot\_ID,Spot\_Type

3<sup>rd</sup>: Rate\_type,Hourly\_Rate,Day\_Rate,Rate\_ID

4<sup>th</sup>: Spot\_ID, Rate\_ID

### **Table:**

1<sup>st</sup>: Spot\_ID,Spot\_Type

2<sup>nd</sup>: Rate\_type,Hourly\_Rate,Day\_Rate,Rate\_ID

3<sup>rd</sup>: Spot\_ID, Rate\_ID

## **Driver....\*.... Given\_To .....1..... Fine**

### **UNF:**

Given\_To ( Dri\_First Name, Dri\_Last Name, Dri\_Phone Num, Dri\_ID,  
Dri\_Address, Fine\_ID, Amount, Issue\_Date, Paid\_Date )

### **1NF:**

1<sup>st</sup>: Dri\_Phone Num is a Multivalued Attribute

2<sup>nd</sup>: Dri\_First Name, Dri\_Last Name, Dri\_Phone Num, Dri\_ID, Dri\_Address,  
Fine\_ID, Amount, Issue\_Date, Paid\_Date

### **2NF:**

1<sup>st</sup>: Dri\_First Name, Dri\_Last Name, Dri\_Phone Num, Dri\_ID, Dri\_Address,  
Fine\_ID

2<sup>nd</sup>: Fine\_ID, Amount, Issue\_Date, Paid\_Date

### **3NF:**

1<sup>st</sup>: NO Transitive Attribute

2<sup>nd</sup>: Dri\_First Name, Dri\_Last Name, Dri\_Phone Num, Dri\_ID, Dri\_Address,  
Fine\_ID

3<sup>rd</sup>: Fine\_ID, Amount, Issue\_Date, Paid\_Date

### **Table:**

1<sup>st</sup>: Dri\_First Name, Dri\_Last Name, Dri\_Phone Num, Dri\_ID, Dri\_Address,  
Fine\_ID

2<sup>nd</sup>: Fine\_ID, Amount, Issue\_Date, Paid\_Date

## **Driver....1.... Drives .....1..... Vehicle**

**UNF:** Drives ( Dri\_First Name, Dri\_Last Name, Dri\_Phone Num, Dri\_ID, Dri\_Address, Veh\_Nameplate, Veh\_Type)

**1NF:**

1<sup>st</sup>: Dri\_Phone Num is a Multivalue Attribute

2<sup>nd</sup>: Dri\_First Name, Dri\_Last Name, Dri\_Phone Num, Dri\_ID, Dri\_Address, Veh\_Nameplate, Veh\_Type

**2NF:**

1<sup>st</sup>: Dri\_First Name, Dri\_Last Name, Dri\_Phone Num, Dri\_ID, Dri\_Address, Veh\_Nameplate

2<sup>nd</sup>: Veh\_Nameplate, Veh\_Type

**3NF:**

1<sup>st</sup>: NO transitive Attribute

2<sup>nd</sup>: Dri\_First Name, Dri\_Last Name, Dri\_Phone Num, Dri\_ID, Dri\_Address, Veh\_Nameplate

3<sup>rd</sup>: Veh\_Nameplate, Veh\_Type

**Table:**

1st: Dri\_First Name, Dri\_Last Name, Dri\_Phone Num, Dri\_ID, Dri\_Address, Veh\_Nameplate

2nd: Veh\_Nameplate, Veh\_Type

## **Parking Spot ....1.... Parked in .....1 ..... Vehicle**

### **UNF:**

Parked in ( Spot\_ID, Spot\_Type, Veh\_Nameplate, Veh\_Type )

### **1NF:**

1<sup>st</sup>: No Multivalue attribute

2<sup>nd</sup>: Spot\_ID, Spot\_Type, Veh\_Nameplate, Veh\_Type

### **2NF:**

1<sup>st</sup>: Spot\_ID, Spot\_Type

2<sup>nd</sup>: Veh\_Nameplate, Veh\_Type, Spot\_ID

### **3NF:**

1<sup>st</sup>: No transitive attribute

2<sup>nd</sup>: Spot\_ID, Spot\_Type

3<sup>rd</sup>: Veh\_Nameplate, Veh\_Type, Spot\_ID

### **Table:**

1<sup>st</sup>: Spot\_ID, Spot\_Type

2<sup>nd</sup>: Veh\_Nameplate, Veh\_Type, Spot\_ID

## **Manager ....1.... Issues .....\* ..... Fine**

### **UNF:**

Issues (Mgr\_ID,Mgr\_Name,Mgr\_Role,Mgr\_Salary,Mgr\_Phone\_Num,Fine\_ID,  
Amount,Issue\_Date,Paid\_Date )

### **1NF:**

1<sup>st</sup>: Mgr\_Phone\_Num is a multivalue attribute

2<sup>nd</sup>: Mgr\_ID,Mgr\_Name,Mgr\_Role,Mgr\_Salary,Mgr\_Phone\_Num,Fine\_ID,  
Amount,Issue\_Date,Paid\_Date

### **2NF:**

1<sup>st</sup>: Mgr\_ID,Mgr\_Name,Mgr\_Role,Mgr\_Salary,Mgr\_Phone\_Num

2<sup>nd</sup>: Fine\_ID,Amount,Issue\_Date,Paid\_Date,Mgr\_ID

### **3NF:**

1<sup>st</sup>: No Transitive attribute

2<sup>nd</sup>: Mgr\_ID,Mgr\_Name,Mgr\_Role,Mgr\_Salary,Mgr\_Phone\_Num

3<sup>rd</sup>: Fine\_ID,Amount,Issue\_Date,Paid\_Date,Mgr\_ID

### **Table:**

1<sup>st</sup>: Mgr\_ID,Mgr\_Name,Mgr\_Role,Mgr\_Salary,Mgr\_Phone\_Num

2<sup>nd</sup>: Fine\_ID,Amount,Issue\_Date,Paid\_Date,Mgr\_ID

## TOTAL TABLE:

1. Owner\_Phone Num, Owner Name, Owner\_Address, Owner\_ID, Mgr\_ID
2. Mgr\_ID, Mgr\_Name, Mgr\_Role, Salary, Mgr\_Phone Num
3. Mgr\_ID, Mgr\_Name, Mgr\_Role, Mgr\_Salary, Mgr\_Phone\_Num, Space\_ID
4. Space\_ID, Space\_Address, Space\_Type
5. Space\_ID, Space\_Address, Space\_Type
6. Spot\_ID, Spot\_Type, Space\_ID
7. Spot\_ID, Spot\_Type, Slip\_ID
8. Slip\_ID, Slip\_Type, Duration, Issue\_Date
9. Slip\_ID, Slip\_Type, Duration, Issue\_Date, Dri\_ID
10. Dri\_ID, Dri\_First Name, Dri\_Last Name, Dri\_Phone Num, Dri\_Address
11. Spot\_ID, Spot\_Type
12. Rate\_type, Hourly\_Rate, Day\_Rate, Rate\_ID
13. Spot\_ID, Rate\_ID
14. Dri\_First Name, Dri\_Last Name, Dri\_Phone Num, Dri\_ID, Dri\_Address, Fine\_ID
15. Fine\_ID, Amount, Issue\_Date, Paid\_Date
16. Dri\_First Name, Dri\_Last Name, Dri\_Phone Num, Dri\_ID, Dri\_Address, Veh\_Nameplate
17. : Veh\_Nameplate, Veh\_Type
18. Spot\_ID, Spot\_Type
19. Veh\_Nameplate, Veh\_Type, Spot\_ID
20. Mgr\_ID, Mgr\_Name, Mgr\_Role, Mgr\_Salary, Mgr\_Phone\_Num
21. Fine\_ID, Amount, Issue\_Date, Paid\_Date, Mgr\_ID

## FINAL TABLE:

1. Owner\_Phone Num, Owner Name, Owner\_Address, Owner\_ID, Mgr\_ID
2. Mgr\_ID, Mgr\_Name, Mgr\_Role, Salary, Mgr\_phone Num
3. Mgr\_ID, Mgr\_Name, Mgr\_Role, Mgr\_Salary, Mgr\_Phone\_Num, Space\_ID
4. Space\_ID, Space\_Address, Space\_Type
5. Spot\_ID, Spot\_Type, Space\_ID
6. Spot\_ID, Spot\_Type, Slip\_ID
7. Slip\_ID, Slip\_Type, Duration, Issue\_Date
8. Slip\_ID, Slip\_Type, Duration, Issue\_Date, Dri\_ID
9. Dri\_ID, Dri\_First Name, Dri\_Last Name, Dri\_Phone Num, Dri\_Address
10. Spot\_ID, Spot\_Type
11. Rate\_type, Hourly\_Rate, Day\_Rate, Rate\_ID
12. Spot\_ID, Rate\_ID
13. Dri\_First Name, Dri\_Last Name, Dri\_Phone Num, Dri\_ID, Dri\_Address, Fine\_ID
14. Fine\_ID, Amount, Issue\_Date, Paid\_Date
15. Dri\_First Name, Dri\_Last Name, Dri\_Phone Num, Dri\_ID, Dri\_Address, Veh\_Nameplate
16. : Veh\_Nameplate, Veh\_Type
17. Veh\_Nameplate, Veh\_Type, Spot\_ID
18. Fine\_ID, Amount, Issue\_Date, Paid\_Date, Mgr\_ID

## Table Creation

### Manager table

```
create table Manager( MGR_ID number(10) primary key,  
                      Name Varchar2(30),  
                      Salary number(30) not null,  
                      Phone_Number number(10) not null,  
                      Role varchar2(30)  
)
```

```
desc manager
```

The screenshot shows the Oracle Database Express Edition interface. The SQL Commands window displays the creation of the Manager table and its description. The table structure is as follows:

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
MANAGER	MGR_ID	Number	-	10	0	1	-	-	-
	NAME	Varchar2	30	-	-	-	✓	-	-
	SALARY	Number	-	30	0	-	-	-	-
	PHONE_NUMBER	Number	-	10	0	-	-	-	-
	ROLE	Varchar2	30	-	-	-	✓	-	-

Below the table structure, a note indicates 1 - 5 rows.

At the bottom of the interface, the status bar shows "Language: en" and "Application Express 2.1.0.00.39 Copyright © 1999, 2006, Oracle. All rights reserved."



## PARKING SPACE

desc Parking\_Space

SQL Commands + 1

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Mail - SADMAN SA... Inbox (238 - rafiths... YouTube Resources (303 unread) - m... Facebook Bachelor of Science... IAL Books Index Messenger cplusplus.com - Th... Learn C++ - Skill u... Logout

**ORACLE Database Express Edition**

User SCOTT

Home > SQL > SQL Commands

Autocommit

```
create table Parking_Space(Space_ID number(10) primary key,
                           Space_Type varchar2(20),
                           Space_Address varchar2(20)
)
desc Parking_Space
```

Object Type TABLE Object PARKING\_SPACE

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
PARKING_SPACE	SPACE_ID	Number	-	10	0	1	-	-	-
	SPACE_TYPE	Varchar2	20	-	-	-	✓	-	-
	SPACE_ADDRESS	Varchar2	20	-	-	-	✓	-	-

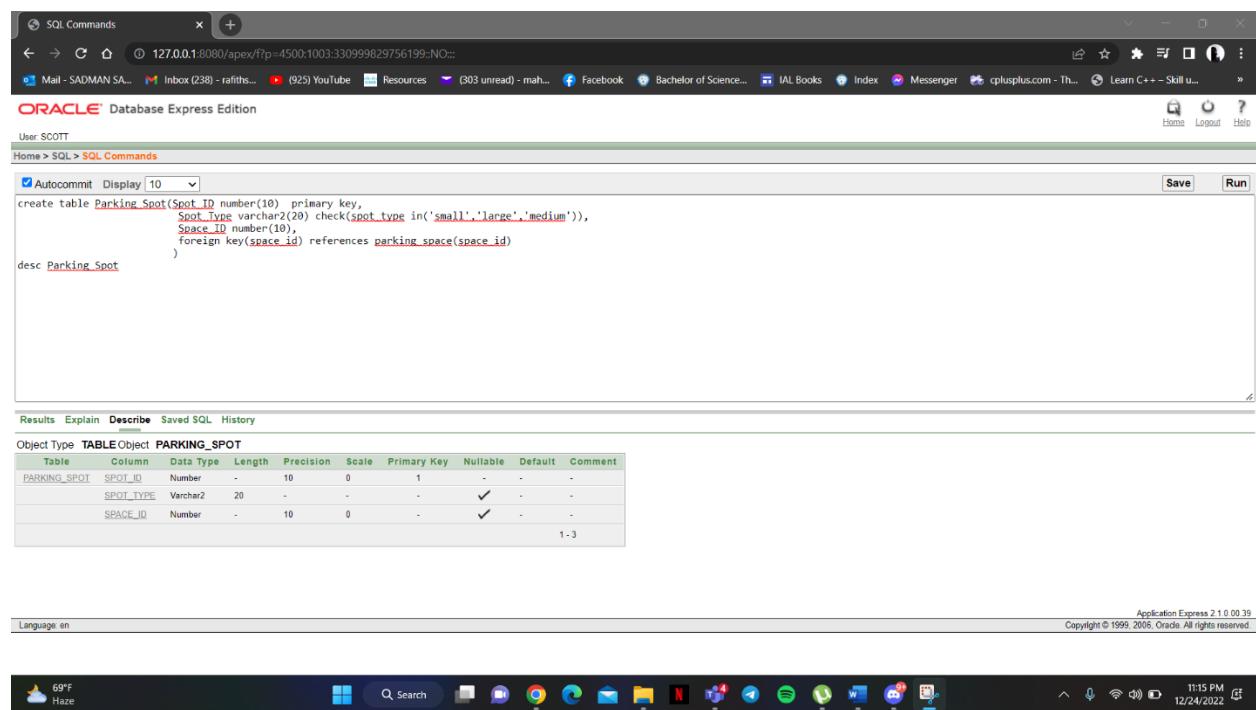
1 - 3



## PARKING SPOT

```
create table Parking_Spot(Spot_ID number(10) primary key,  
                           Spot_Type varchar2(20) check(spot_type  
                           in('small','large','medium')),  
                           Space_ID number(10),  
                           foreign key(space_id) references parking_space(space_id)  
)
```

```
desc Parking_Spot
```



The screenshot shows the Oracle Database Express Edition SQL Commands window. The SQL command to create the `PARKING_SPOT` table is entered in the text area. The table has three columns: `SPOT_ID` (number(10), primary key), `SPOT_TYPE` (varchar2(20) with a check constraint for values 'small', 'large', or 'medium'), and `SPACE_ID` (number(10)). A foreign key constraint is defined on `SPACE_ID` referencing the `space_id` column in the `parking_space` table. The `desc` command is also run to describe the `PARKING_SPOT` table. The results section shows the table structure with columns `SPOT_ID`, `SPOT_TYPE`, and `SPACE_ID`. The `SPOT_TYPE` column is of type `varchar2` with a length of 20, and the `SPACE_ID` column is of type `number` with a length of 10. Primary key and nullable status are also indicated.

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
PARKING_SPOT	SPOT_ID	Number	-	10	0	1	-	-	-
	SPOT_TYPE	Varchar2	20	-	-	-	✓	-	-
	SPACE_ID	Number	-	10	0	-	✓	-	-

## Manager2

```
create table Manager2( MGR_ID number(10) primary key,
                      Name Varchar2(30),
                      Salary number(30) not null,
                      Phone_Number number(10) not null,
                      Role varchar2(30),
                      space_id number(10),
                      foreign key(space_id) references parking_space(space_id)
                    )
```

```
desc manager2
```

The screenshot shows the Oracle Database Express Edition interface. The SQL Commands window displays the creation of the Manager2 table and its description. The table structure is as follows:

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
MANAGER2	MGR_ID	Number	-	10	0	1	-	-	-
	NAME	Varchar2	30	-	-	-	✓	-	-
	SALARY	Number	-	30	0	-	-	-	-
	PHONE_NUMBER	Number	-	10	0	-	-	-	-
	ROLE	Varchar2	30	-	-	-	✓	-	-
	SPACE_ID	Number	-	10	0	-	✓	-	-

At the bottom of the interface, the status bar shows "Application Express 2.1.0.00.39" and "Copyright © 1999, 2006, Oracle. All rights reserved."



## PARKING SLIP

```
create table Parking_Slip(Slip_ID number(10) primary key,  
                           type Varchar2(50) check(type in('small','large','medium')),  
                           Duration number(20) not null,  
                           Issue_date date  
  
)
```

```
desc Parking_Slip
```

The screenshot shows the Oracle Database Express Edition interface. In the SQL Commands window, the following SQL code is entered:

```
create table Parking_Slip(Slip_ID number(10) primary key,  
                           type Varchar2(50) check(type in('small','large','medium')),  
                           Duration number(20) not null,  
                           Issue_date date  
  
desc Parking_Slip
```

Below the code, the results of the `desc` command are displayed in a table:

Object Type	TABLE	Object	PARKING_SLIP							
PARKING_SLIP	SLIP_ID	Number	-	10	0	-	1	-	-	-
	TYPE	Varchar2	50	-	-	-	-	✓	-	-
	DURATION	Number	-	20	0	-	-	-	-	-
	ISSUE_DATE	Date	7	-	-	-	-	✓	-	-

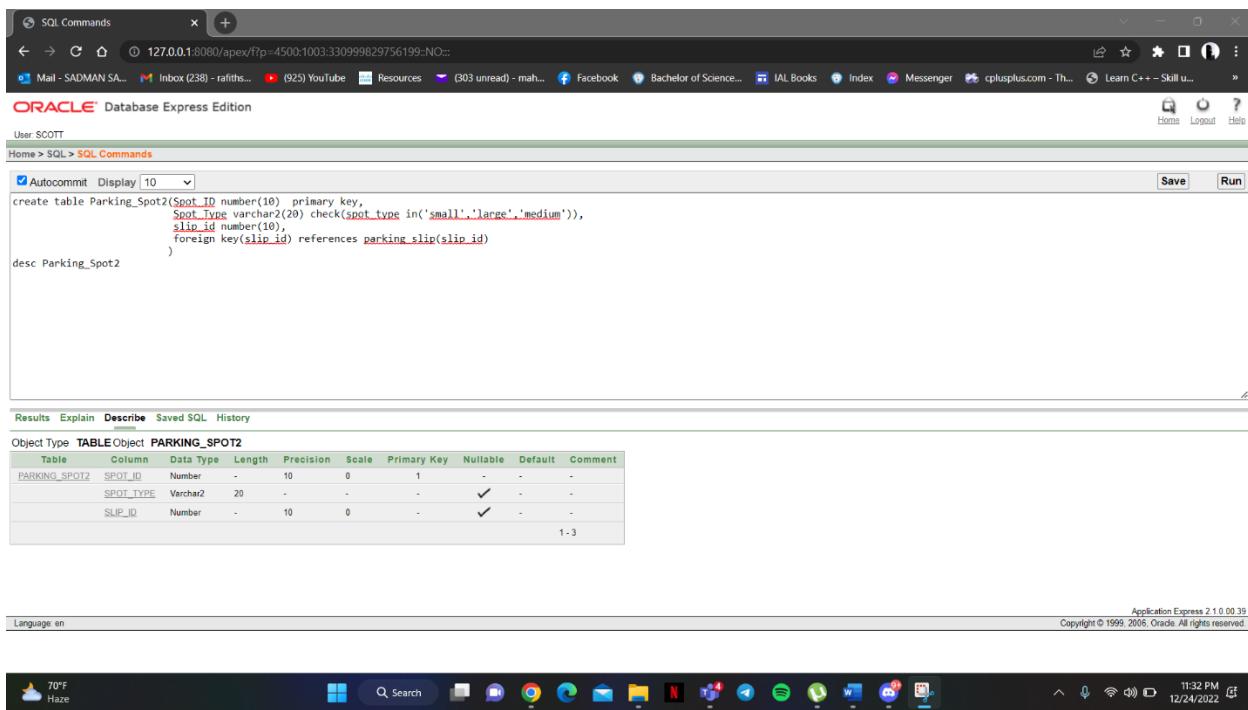
At the bottom of the interface, the status bar shows "Language: en" and "Application Express 2.1.0.00.39 Copyright © 1995, 2009, Oracle. All rights reserved."



## PARKING\_SPOT2

```
create table Parking_Spot2(Spot_ID number(10) primary key,
                           Spot_Type varchar2(20) check(spot_type
                           in('small','large','medium')),
                           slip_id number(10),
                           foreign key(slip_id) references parking_slip(slip_id)
                           )
```

```
desc Parking_Spot2
```



The screenshot shows the Oracle Database Express Edition SQL Commands window. The SQL command area contains the creation of the PARKING\_SPOT2 table and its description:

```
create table Parking_Spot2(Spot_ID number(10) primary key,
                           Spot_Type varchar2(20) check(spot_type
                           in('small','large','medium')),
                           slip_id number(10),
                           foreign key(slip_id) references parking_slip(slip_id)
                           )
desc Parking_Spot2
```

The results section shows the table structure:

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
PARKING_SPOT2	SPOT_ID	Number	-	10	0	1	-	-	-
	SPOT_TYPE	Varchar2	20	-	-	-	✓	-	-
	SLIP_ID	Number	-	10	0	-	✓	-	-

At the bottom, the status bar shows: Language: en, Application Express 21.0.0.39, Copyright © 1995, 2008, Oracle. All rights reserved.

## DRIVER

```
create table Driver(Dri_ID number(10) primary key,  
                    dri_First_name Varchar2(50),  
                    dri_Last_name Varchar2(50),  
                    dri_Phone_Num number(11) unique,  
                    dri_Email varchar2(50) unique,  
                    dri_address varchar2(50)  
)
```

```
desc Driver
```

The screenshot shows the Oracle Database Express Edition interface. The SQL Commands window displays the creation of the Driver table and its description. The table structure is as follows:

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
DRIVER	DRI_ID	Number	-	10	0	1	-	-	-
DRIVER	DRI_FIRST_NAME	Varchar2	50	-	-	-	✓	-	-
DRIVER	DRI_LAST_NAME	Varchar2	50	-	-	-	✓	-	-
DRIVER	DRI_PHONE_NUM	Number	-	11	0	-	✓	-	-
DRIVER	DRI_EMAIL	Varchar2	50	-	-	-	✓	-	-
DRIVER	DRI_ADDRESS	Varchar2	50	-	-	-	✓	-	-



## PARKING\_SLIP2

```
create table Parking_Slip2(Slip_ID number(10) primary key,
                           type Varchar2(50) check(type in('small','large','medium')),
                           Duration number(20) not null,
                           Issue_date date,
                           dri_id number(10),
                           foreign key(dri_id) references driver(dri_id)
                           )
```

```
desc Parking_Slip2
```

The screenshot shows the Oracle Database Express Edition interface. The SQL Commands window displays the creation of the PARKING\_SLIP2 table with the specified structure. Below the creation statement, the 'desc' command is run to display the table's description, which includes the table name, columns, data types, and constraints. The interface also shows the user is connected as SCOTT.

```
create table PARKING_SLIP2(Slip_ID number(10) primary key,
                           type Varchar2(50) check(type in('small','large','medium')),
                           Duration number(20) not null,
                           Issue_date date,
                           dri_id number(10),
                           foreign key(dri_id) references driver(dri_id)
                           )
desc PARKING_SLIP2
```

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
PARKING_SLIP2	Slip_ID	Number	-	10	0	1	-	-	-
	TYPE	Varchar2	50	-	-	-	✓	-	-
	DURATION	Number	-	20	0	-	-	-	-
	ISSUE_DATE	Date	7	-	-	-	✓	-	-
	DRI_ID	Number	-	10	0	-	✓	-	-



## PARKING SPOT3

```
create table Parking_Spot3(Spot_ID number(10) primary key,  
                           Spot_Type varchar2(20) check(spot_type  
                           in('small','large','medium'))  
                           )
```

```
desc Parking_Spot3
```

The screenshot shows the Oracle Database Express Edition SQL Commands window. The SQL command to create the table is entered in the text area:

```
create table Parking_Spot3(Spot_ID number(10) primary key,  
                           Spot_Type varchar2(20) check(spot_type  
                           in('small','large','medium'))  
                           )
```

The 'Run' button is highlighted. Below the command, the 'desc' command is also present. The results section shows the table structure:

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
PARKING_SPOT3	SPOT_ID	Number	-	10	0	1	-	-	-
	SPOT_TYPE	VARCHAR2	20	-	-	-	✓	-	-

The screenshot shows the Windows taskbar. The Oracle Application Express icon is visible, along with other application icons like Search, File Explorer, and Mail. The system tray shows the date and time (11:42 PM, 12/24/2022) and battery status. The status bar at the bottom right shows 'Application Express 2.1.0.00.39' and 'Copyright © 1996, 2006, Oracle. All rights reserved.'

## RATE TABLE

```
create table Rate( Rate_ID number(10) primary key,
                   rate_type Varchar2(30),
                   rate_hourly_rate number(30) not null,
                   rate_day_rate number(10)
)
```

```
desc rate
```

The screenshot shows the Oracle Database Express Edition SQL Commands interface. The SQL command window contains the following code:

```
create table Rate( Rate_ID number(10) primary key,
                   rate_type Varchar2(30),
                   rate_hourly_rate number(30) not null,
                   rate_day_rate number(10)
)
desc rate
```

Below the code, the results tab is selected, showing the table structure:

Object Type	TABLE	Object	RATE						
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
RATE	RATE_ID	Number	-	10	0	1	-	-	-
RATE	RATE_TYPE	Varchar2	30	-	-	-	✓	-	-
RATE	RATE_HOURLY_RATE	Number	-	30	0	-	-	-	-
RATE	RATE_DAY_RATE	Number	-	10	0	-	✓	-	-

At the bottom of the interface, the status bar shows "Language: en" and "Application Express 2.1.0.00.39 Copyright © 1999, 2006, Oracle. All rights reserved."

## SPOT RATE

```
create table spot_rate( Rate_ID number(10),
                        foreign key(rate_id) references rate(rate_id),
                        spot_id number(10),
                        foreign key(spot_id) references parking_spot(spot_id)

)
```

```
create table spot_rate( Rate_ID number(10),
                        foreign key(rate_id) references rate(rate_id),
                        spot_id number(10),
                        foreign key(spot_id) references parking_spot(spot_id)
)
desc spot_rate
```

Results Explain Describe Saved SQL History

Object Type TABLE Object SPOT\_RATE

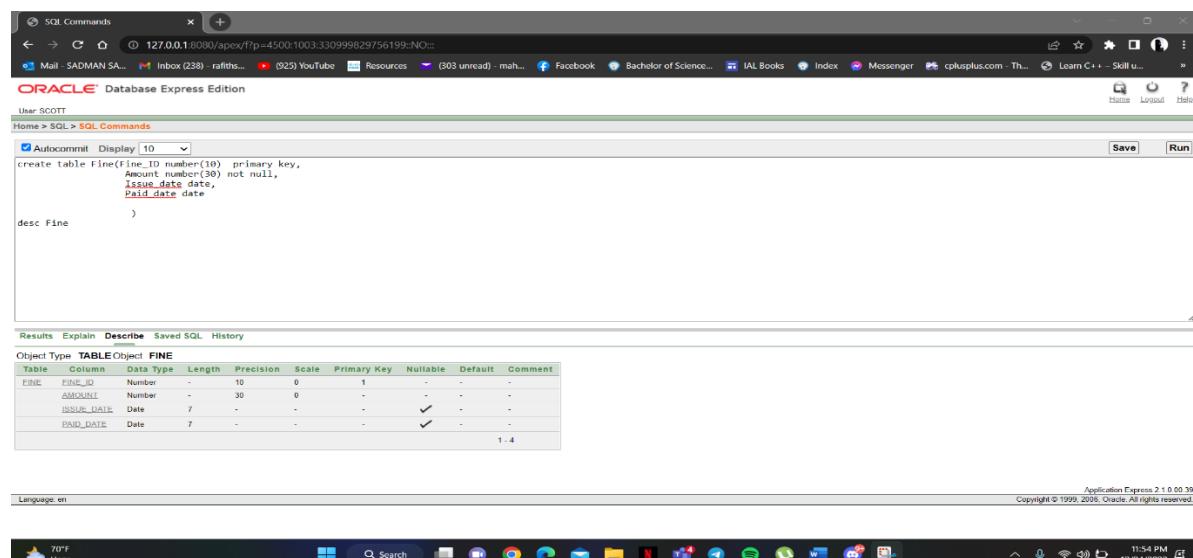
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
SPOT_RATE	RATE_ID	Number	-	10	0	-	✓	-	
SPOT_RATE	SPOT_ID	Number	-	10	0	-	✓	-	

1 - 2



## FINE TABLE

```
create table Fine(Fine_ID number(10) primary key,  
                  Amount number(30) not null,  
                  Issue_date date,  
                  Paid_date date  
)  
desc Fine
```



The screenshot shows the Oracle Database Express Edition interface. The SQL Commands window displays the creation of the FINE table with its four columns: Fine\_ID, Amount, Issue\_date, and Paid\_date. The table is defined with Fine\_ID as the primary key and Amount as a not null column. The Issue\_date and Paid\_date columns are of type date. The 'desc Fine' command is also run. Below the SQL window, the 'Result' tab is selected, showing the table structure with four columns: FINE, FINE\_ID, AMOUNT, ISSUE\_DATE, and PAYOUT\_DATE. The table has 1 row with 4 columns. The bottom status bar indicates the application version is 2.1.0.0.39, the copyright year is 1999-2008 Oracle, and the system date is 12/24/2022.

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
FINE	FINE_ID	Number	10	0	1	-	-	-	-
FINE	AMOUNT	Number	-	30	0	-	-	-	-
FINE	ISSUE_DATE	Date	7	-	-	-	✓	-	-
FINE	PAYOUT_DATE	Date	7	-	-	-	✓	-	-

## DRIVER2 TABLE

```
create table Driver2(Dri_ID number(10) primary key,
                     dri_First_name Varchar2(50),
                     dri_Last_name Varchar2(50),
                     dri_Phone_Num number(11) unique,
                     dri_Email varchar2(50) unique,
                     dri_address varchar2(50),
                     fine_id number(10),
                     foreign key(fine_id) references fine(fine_id)
)
```

```
desc Driver2
```

The screenshot shows the Oracle Database Express Edition interface. The SQL Commands window displays the creation of the DRIVER2 table with the specified columns and constraints. The table is created with Dri\_ID as the primary key and fine\_id as a foreign key referencing the fine table. The table is then described, showing the columns and their properties. The interface includes a toolbar, a menu bar, and a status bar at the bottom.

SQL Commands

127.0.0.1:8080/apex/f?p=4500:1003:33099829756199:NO::

ORACLE Database Express Edition

User SCOTT

Home > SQL > SQL Commands

Autocommit Display 10 Save Run

```
create table Driver2(Dri_ID number(10) primary key,
                     dri_First_name Varchar2(50),
                     dri_Last_name Varchar2(50),
                     dri_Phone_Num number(11) unique,
                     dri_Email varchar2(50) unique,
                     dri_address varchar2(50),
                     fine_id number(10),
                     foreign key(fine_id) references fine(fine_id)
)
desc Driver2
```

Results Explain Describe Saved SQL History

Object Type TABLE Object DRIVER2

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
DRIVER2	DRI_ID	Number	-	10	0	1	-	-	-
	DRI_FIRST_NAME	Varchar2	50	-	-	-	✓	-	-
	DRI_LAST_NAME	Varchar2	50	-	-	-	✓	-	-
	DRIPHONE_NUM	Number	-	11	0	-	✓	-	-
	DRI_EMAIL	Varchar2	50	-	-	-	✓	-	-
	DRI_ADDRESS	Varchar2	50	-	-	-	✓	-	-
	FINE_ID	Number	-	10	0	-	✓	-	-

1 - 7

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Language: en

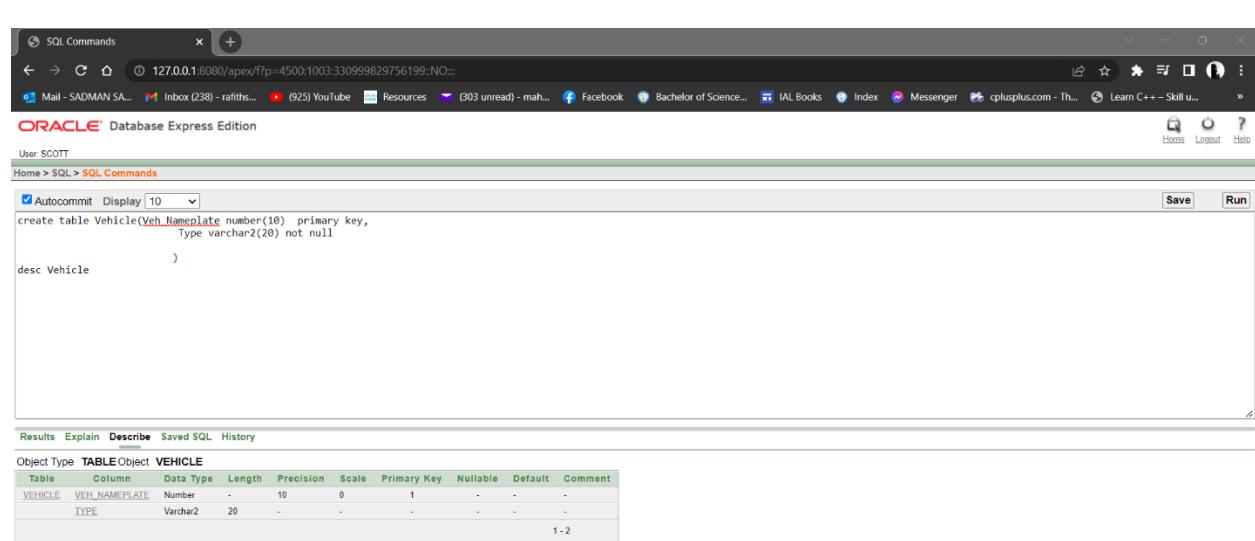
70°F Haze

Search

11:58 PM 12/24/2022

## VEHICLE

```
create table Vehicle(Veh_Nameplate number(10) primary key,  
                     Type varchar2(20) not null  
)  
desc Vehicle
```



The screenshot shows the Oracle Database Express Edition interface. The SQL Commands window displays the creation of the VEHICLE table and its description. The table has one column, VEH\_NAMEPLATE, which is a primary key of type number(10) and a column of type varchar2(20) not null. The table is described as having two columns: VEH\_NAMEPLATE and TYPE. The interface includes a toolbar with Save and Run buttons, and a status bar at the bottom.

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
VEHICLE	VEH_NAMEPLATE	Number	-	10	0	1	-	-	
	TYPE	Varchar2	20	-	-	-	-	-	



### DRIVER\_TABLE3

```
create table Driver3(Dri_ID number(10) primary key,
                     dri_First_name Varchar2(50),
                     dri_Last_name Varchar2(50),
                     dri_Phone_Num number(11) unique,
                     dri_Email varchar2(50) unique,
                     dri_address varchar2(50),
                     veh_nameplate number(10),
                     foreign key(veh_nameplate) references vehicle(veh_nameplate)
)
```

```
desc Driver3
```

The screenshot shows the Oracle Database Express Edition interface. The SQL Commands window displays the creation of the Driver3 table with its columns and constraints. The table is defined with Dri\_ID as the primary key, and the columns dri\_First\_name, dri\_Last\_name, dri\_Phone\_Num, dri\_Email, dri\_address, and veh\_nameplate. The veh\_nameplate column is defined as a number(10) and has a foreign key constraint referencing the vehicle table's veh\_nameplate column. The desc command is run to describe the table, and the results window shows the table structure with columns DRI\_ID, DRI\_FIRST\_NAME, DRI\_LAST\_NAME, DRI\_PHONE\_NUM, DRI\_EMAIL, DRI\_ADDRESS, and VEH\_NAMEPLATE. The table has 7 rows. The status bar at the bottom right indicates the application version is 2.1.0.093 and the copyright is from 1999-2006 Oracle.

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
DRIVER3	DRI_ID	Number	-	10	0	1	-	-	-
	DRI_FIRST_NAME	Varchar2	50	-	-	-	✓	-	-
	DRI_LAST_NAME	Varchar2	50	-	-	-	✓	-	-
	DRIPHONE_NUM	Number	-	11	0	-	✓	-	-
	DRI_EMAIL	Varchar2	50	-	-	-	✓	-	-
	DRI_ADDRESS	Varchar2	50	-	-	-	✓	-	-
	VEH_NAMEPLATE	Number	-	10	0	-	✓	-	-

## VEHICLE TABLE2

```
create table Vehicle2(Veh_Nameplate number(10) primary key,  
                      Type varchar2(20) not null,  
                      spot_id number(10),  
                      foreign key(spot_id) references parking_spot(spot_id)  
                      )
```

```
desc Vehicle2
```

The screenshot shows the Oracle Database Express Edition interface. The SQL Commands window contains the following SQL code:

```
create table Vehicle2(Veh_Nameplate number(10) primary key,  
                      Type varchar2(20) not null,  
                      spot_id number(10),  
                      foreign key(spot_id) references parking_spot(spot_id)  
                      )  
desc Vehicle2
```

Below the code, the Results tab is selected, showing the description of the VEHICLE2 table:

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
VEHICLE2	VEH_NAMEPLATE	Number	-	10	0	1	-	-	-
	TYPE	VARCHAR2	20	-	-	-	-	-	-
	SPOT_ID	Number	-	10	0	-	✓	-	-

The screenshot shows the Windows taskbar with various application icons. The system tray icons include a weather icon (70°F Haze), a search icon, a file icon, a browser icon, an email icon, a folder icon, a Netflix icon, a taskbar icon, a file icon, a Spotify icon, a taskbar icon, a file icon, a taskbar icon, and a taskbar icon. The system tray also shows the date and time (12/25/2022, 12:07 AM).

## FINE TABLE2

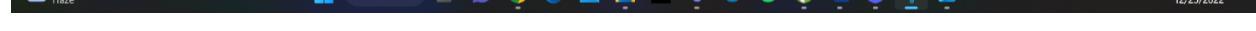
```
create table Fine2(Fine_ID number(10) primary key,
                   Amount number(30) not null,
                   Issue_date date,
                   Paid_date date,
                   MGR_ID number(10),
                   foreign key(mgr_id) references manager(mgr_id)
)
```

```
desc Fine2
```

The screenshot shows the Oracle Database Express Edition SQL Commands interface. The SQL command window displays the creation of the 'Fine2' table with its columns and constraints. Below the command window, the 'Results' tab is selected, showing the table structure with columns: FINE\_ID, AMOUNT, ISSUE\_DATE, PAID\_DATE, and MGR\_ID. The table has 5 rows and 5 columns. The bottom status bar indicates the application version and copyright information.

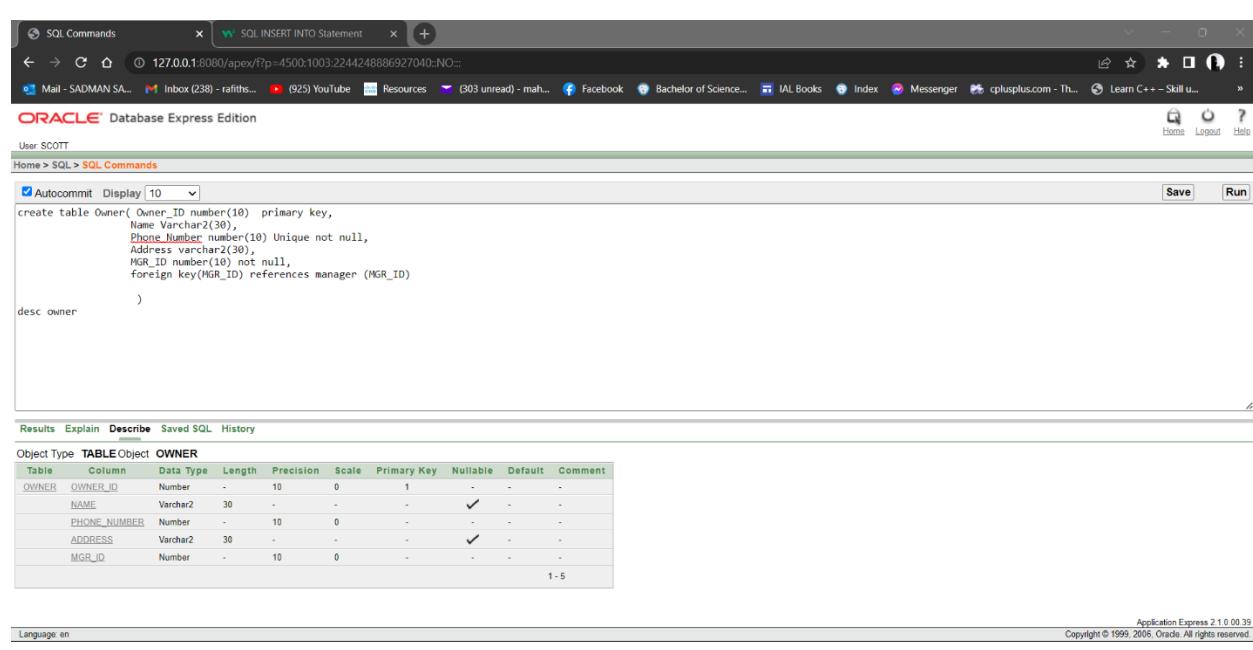
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
FINE2	FINE_ID	Number	-	10	0	1	-	-	-
	AMOUNT	Number	-	30	0	-	-	-	-
	ISSUE_DATE	Date	7	-	-	-	✓	-	-
	PAID_DATE	Date	7	-	-	-	✓	-	-
	MGR_ID	Number	-	10	0	-	✓	-	-

Application Express 2.1.0.00.39  
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## OWNER TABLE

```
create table Owner( Owner_ID number(10) primary key,  
                    Name Varchar2(30),  
                    Phone_Number number(10) Unique not null,  
                    MGR_ID number(10) not null,  
                    foreign key(MGR_ID) references manager (MGR_ID)  
)  
desc owner
```



The screenshot shows the Oracle Database Express Edition interface. In the SQL Commands window, the following SQL code is entered:

```
create table Owner( Owner_ID number(10) primary key,  
                    Name Varchar2(30),  
                    Phone_Number number(10) Unique not null,  
                    Address varchar2(30),  
                    MGR_ID number(10) not null,  
                    foreign key(MGR_ID) references manager (MGR_ID)  
)  
desc owner
```

Below the code, the 'Results' tab is selected, showing the description of the OWNER table:

Object Type	TABLE	Object	OWNER						
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
OWNER	OWNER_ID	Number	-	10	0	1	-	-	-
	NAME	Varchar2	30	-	-	-	✓	-	-
	PHONE_NUMBER	Number	-	10	0	-	-	-	-
	ADDRESS	Varchar2	30	-	-	-	✓	-	-
	MGR_ID	Number	-	10	0	-	-	-	-

At the bottom of the interface, the status bar shows: Application Express 2.1.0.0.39, Copyright © 1995, 2009, Oracle. All rights reserved.



## Data Insertion

### MANAGER TABLE

```
create sequence mgr_squ
    increment by 1
    start with 10
    maxvalue 100

insert into manager(mgr_id, name, phone_number, salary, role) values
(mgr_squ.nextval, 'Diana Lorentz', 5904235567, 42000, 'genral manager')

insert into manager(mgr_id, name, phone_number, salary, role) values
(mgr_squ.nextval, 'John Chen', 515124426, 82000, 'accounts manager')

insert into manager(mgr_id, name, phone_number, salary, role) values
(mgr_squ.nextval, 'Ismael Sciarra', 5151244369, 77000, 'staff manager')

insert into manager(mgr_id, name, phone_number, salary, role) values
(mgr_squ.nextval, 'Jose Manuel Urman', 5151244469, 78000, 'parking lot
manager')

insert into manager(mgr_id, name, phone_number, salary, role) values
(mgr_squ.nextval, 'hero alom', 5904235567, 42000, 'genral manager')

insert into manager(mgr_id, name, phone_number, salary, role) values
(mgr_squ.nextval, 'anonto jalil', 5904235567, 42000, 'genral manager')

insert into manager(mgr_id, name, phone_number, salary, role) values
(mgr_squ.nextval, 'pori moni', 5904235567, 42000, 'genral manager')

select * from manager
```

```

insert into manager(mgr_id, name, phone_number, salary, role) values (mgr_squ.nextval, 'Diana Lorentz', 5904235567, 42000, 'general manager')
insert into manager(mgr_id, name, phone_number, salary, role) values (mgr_squ.nextval, 'John Chen', 515124426, 82000, 'accounts manager')
insert into manager(mgr_id, name, phone_number, salary, role) values (mgr_squ.nextval, 'Ismael Sciarra', 5151244369, 77000, 'staff manager')
insert into manager(mgr_id, name, phone_number, salary, role) values (mgr_squ.nextval, 'Jose Manuel Urman', 5151244469, 78000, 'parking lot manager')
insert into manager(mgr_id, name, phone_number, salary, role) values (mgr_squ.nextval, 'hero alom', 5904235567, 42000, 'general manager')
insert into manager(mgr_id, name, phone_number, salary, role) values (mgr_squ.nextval, 'antonio jall', 5904235567, 42000, 'general manager')
insert into manager(mgr_id, name, phone_number, salary, role) values (mgr_squ.nextval, 'pori moni', 5904235567, 42000, 'general manager')
select * from manager

```

Results Explain Describe Saved SQL History

MGR_ID	NAME	SALARY	PHONE_NUMBER	ROLE
11	John Chen	82000	515124426	accounts manager
12	Ismael Sciarra	77000	5151244369	staff manager
13	Jose Manuel Urman	78000	5151244469	parking lot manager
30	hero alom	42000	5904235567	general manager
31	antonio jall	42000	5904235567	general manager
32	pori moni	42000	5904235567	general manager
10	Diana Lorentz	42000	5904235567	general manager

7 rows returned in 0.00 seconds [CSV Export](#)

Application Express 2.1.0.0.39  
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## PARKING SPACE

```
insert into parking_space(space_id, space_adress, space_type) values (1111, 'Bashundhara', 'Large')
```

```
insert into parking_space(space_id, space_adress, space_type) values (1112, 'jamuna', 'Large')
```

```
insert into parking_space(space_id, space_adress, space_type) values (1113, 'pink city', 'Large')
```

```
insert into parking_space(space_id, space_adress, space_type) values (1114, 'police plaza', 'Medium')
```

```
select * from parking_space
```

SQL Commands SQL UPDATE Statement

127.0.0.1:8080/apex/f?p=4500:1003:330999829756199:NO:

ORACLE Database Express Edition

User SCOTT

Home > SQL > SQL Commands

Autocommit Display[10]  Save

```

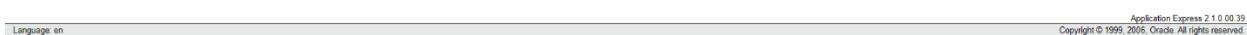
insert into parking_space(space_id, space_adress, space_type) values (1111, 'Bashundhara', 'Large')
insert into parking_space(space_id, space_adress, space_type) values (1112, 'jamuna', 'Large')
insert into parking_space(space_id, space_adress, space_type) values (1113, 'pink city', 'Large')
insert into parking_space(space_id, space_adress, space_type) values (1114, 'police plaza', 'Medium')
select * from parking_space

```

Results Explain Describe Saved SQL History

SPACE_ID	SPACE_TYPE	SPACE_ADDRESS
1111	Large	Bashundhara
1112	Large	jamuna
1113	Large	pink city
1114	Medium	police plaza

4 rows returned in 0.00 seconds [CSV Export](#)



## PARKING SPOT

```
insert into parking_spot (spot_id,spot_type,space_id) values(02,'small',1111)  
insert into parking_spot (spot_id,spot_type,space_id) values(08,'medium',1111)  
insert into parking_spot (spot_id,spot_type,space_id) values(15,'large',1111)  
insert into parking_spot (spot_id,spot_type,space_id) values(17,'large',1111)  
select * from parking_spot
```



SQL Commands

127.0.0.1:8080/apex/r?p=4500:1003:2244248886927040:NO...

Mail - SADMAN SA... Inbox (238 - rafiths... (925) YouTube Resources (303 unread) - mah... Facebook Bachelor of Science... IAL Books Index Messenger cplusplus.com - Th... Learn C++ – Skill u... Home Logout Help

ORACLE Database Express Edition

User SCOTT

Home > SQL > SQL Commands

Autocommit Display 10

```
insert into parking_spot3 (spot_id,spot_type) values(92,'small')
insert into parking_spot3 (spot_id,spot_type) values(98,'medium')
insert into parking_spot3 (spot_id,spot_type) values(15,'large')
insert into parking_spot3 (spot_id,spot_type) values(17,'large')
select * from parking_spot3
```

Results Explain Describe Saved SQL History

SPOT_ID	SPOT_TYPE
2	small
8	medium
15	large
17	large

4 rows returned in 0.00 seconds [CSV Export](#)

## MANAGER 2

```
insert into manager2(mgr_id, name, phone_number, salary, role, space_id) values  
(10, 'Diana Lorentz', 5904235567, 42000, 'genral manager', 1111)  
  
insert into manager2(mgr_id, name, phone_number, salary, role, space_id) values  
(11, 'John Chen', 515124426, 82000, 'accounts manager', 1111)  
  
insert into manager2(mgr_id, name, phone_number, salary, role, space_id) values  
(12, 'Ismael Sciarra', 5151244369, 77000, 'staff manager', 1111)  
  
insert into manager2(mgr_id, name, phone_number, salary, role, space_id) values  
(13, 'Jose Manuel Urman', 5151244469, 78000, 'parking lot manager', 1111)
```

```
insert into manager2(mgr_id, name, phone_number, salary, role, space_id) values  
(30, 'hero alom', 5904235567, 42000, 'genral manager', 1112)
```

```
insert into manager2(mgr_id, name, phone_number, salary, role, space_id) values  
(31, 'anonto jalil', 5904235567, 42000, 'genral manager', 1113)
```

```
insert into manager2(mgr_id, name, phone_number, salary, role, space_id) values  
(32, 'pori moni', 5904235567, 42000, 'genral manager', 1114)
```

```
select * from manager2
```

```
insert into manager2(mgr_id, name, phone_number, salary, role, space_id) values (10, 'Diana Lorentz', 5904235567, 42000, 'genral manager', 1111)  
insert into manager2(mgr_id, name, phone_number, salary, role, space_id) values (11, 'John Chen', 515124426, 82000, 'accounts manager', 1111)  
insert into manager2(mgr_id, name, phone_number, salary, role, space_id) values (12, 'Ismael Sciarra', 5151244369, 77000, 'staff manager', 1111)  
insert into manager2(mgr_id, name, phone_number, salary, role, space_id) values (13, 'Jose Manuel Urmán', 78000, 5151244469, 'parking lot manager', 1111)  
insert into manager2(mgr_id, name, phone_number, salary, role, space_id) values (30, 'hero alom', 5904235567, 42000, 'genral manager', 1112)  
insert into manager2(mgr_id, name, phone_number, salary, role, space_id) values (31, 'anonto jalil', 5904235567, 42000, 'genral manager', 1113)  
insert into manager2(mgr_id, name, phone_number, salary, role, space_id) values (32, 'pori moni', 5904235567, 42000, 'genral manager', 1114)
```

```
select * from manager2
```

Results Explain Describe Saved SQL History

---

MGR_ID	NAME	SALARY	PHONE_NUMBER	ROLE	SPACE_ID
12	Ismael Sciarra	77000	5151244369	staff manager	1111
13	Jose Manuel Urmán	78000	5151244469	parking lot manager	1111
30	hero alom	42000	5904235567	genral manager	1112
31	anonto jalil	42000	5904235567	genral manager	1113
32	pori moni	42000	5904235567	genral manager	1114
10	Diana Lorentz	42000	5904235567	genral manager	1111
11	John Chen	82000	515124426	accounts manager	1111

7 rows returned in 0.00 seconds [CSV Export](#)

---

Language: en Application Express 2.1.0.00.39  
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## PARKING SLIP

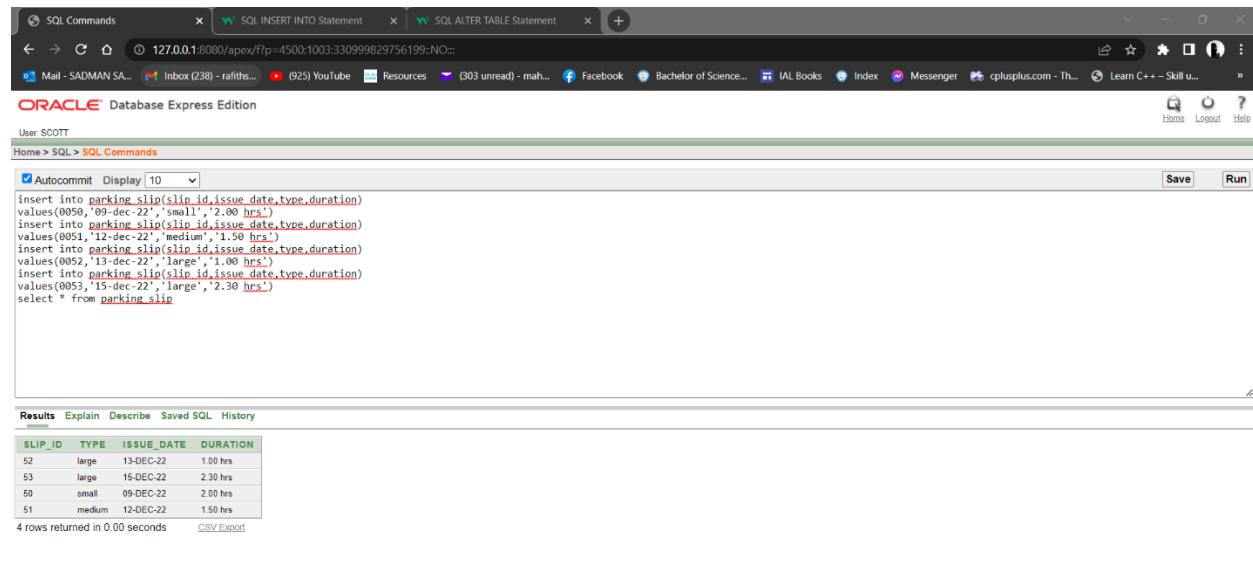
```
insert into parking_slip(slip_id,issue_date,type,duration)
values(0050,'09-dec-22','small','2.00 hrs')

insert into parking_slip(slip_id,issue_date,type,duration)
values(0051,'12-dec-22','medium','1.50 hrs')

insert into parking_slip(slip_id,issue_date,type,duration)
values(0052,'13-dec-22','large','1.00 hrs')

insert into parking_slip(slip_id,issue_date,type,duration)
values(0053,'15-dec-22','large','2.30 hrs')

select * from parking_slip
```



The screenshot shows the Oracle Database Express Edition interface. The SQL Commands tab is active, displaying the executed SQL script. The results tab shows the output of the 'select \* from parking\_slip' query, which returns 4 rows of data:

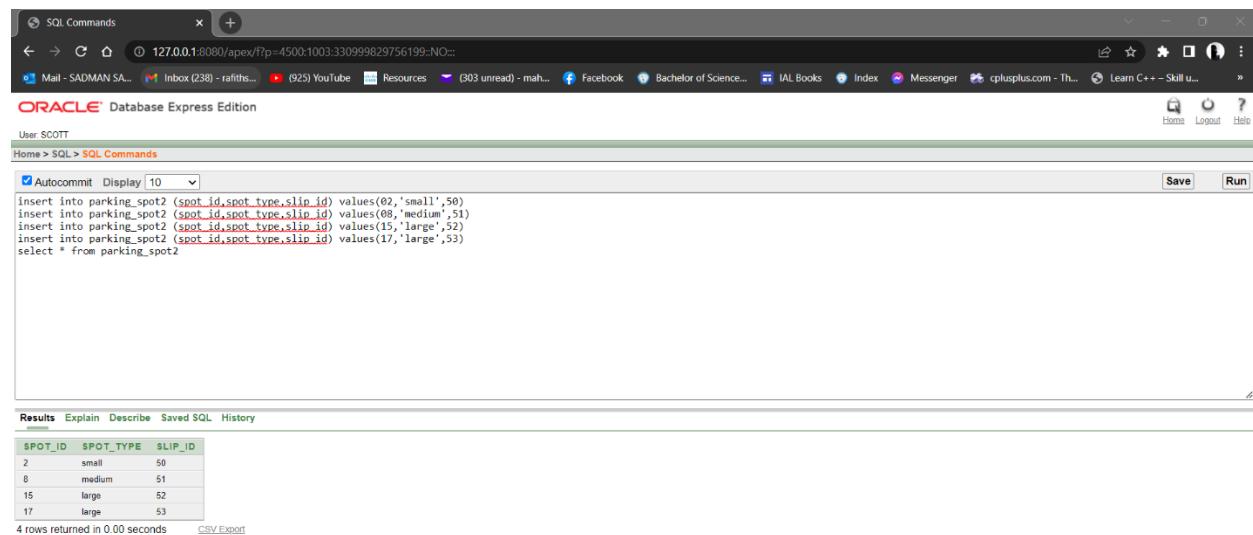
SLIP_ID	TYPE	ISSUE_DATE	DURATION
52	large	13-DEC-22	1.00 hrs
53	large	15-DEC-22	2.30 hrs
50	small	09-DEC-22	2.00 hrs
51	medium	12-DEC-22	1.50 hrs

4 rows returned in 0.00 seconds [CSV Export](#)



## PARKING SPOT2

```
insert into parking_spot2 (spot_id,spot_type,slip_id) values(02,'small',50)
insert into parking_spot2 (spot_id,spot_type,slip_id) values(08,'medium',51)
insert into parking_spot2 (spot_id,spot_type,slip_id) values(15,'large',52)
insert into parking_spot2 (spot_id,spot_type,slip_id) values(17,'large',53)
select * from parking_spot2
```



The screenshot shows the Oracle Database Express Edition interface. The SQL Commands window contains the following SQL code:

```
insert into parking_spot2 (spot_id,spot_type,slip_id) values(02,'small',50)
insert into parking_spot2 (spot_id,spot_type,slip_id) values(08,'medium',51)
insert into parking_spot2 (spot_id,spot_type,slip_id) values(15,'large',52)
insert into parking_spot2 (spot_id,spot_type,slip_id) values(17,'large',53)
select * from parking_spot2
```

The results window shows the following table output:

SPOT_ID	SPOT_TYPE	SLIP_ID
2	small	50
8	medium	51
15	large	52
17	large	53

4 rows returned in 0.00 seconds [CSV Export](#)



## DRIVER

```
insert into
driver(dri_id,dri_first_name,dri_last_name,dri_phone_num,dri_email,dri_address)values(1,'Winston','Taylor','6505079876','instonaylor@gmail.com','Bashundhara A block')

insert into
driver(dri_id,dri_first_name,dri_last_name,dri_phone_num,dri_email,dri_address)values(2,'john', 'haris','6505079450','john@gmail.com','Baridhara j block')

insert into
driver(dri_id,dri_first_name,dri_last_name,dri_phone_num,dri_email,dri_address)
```

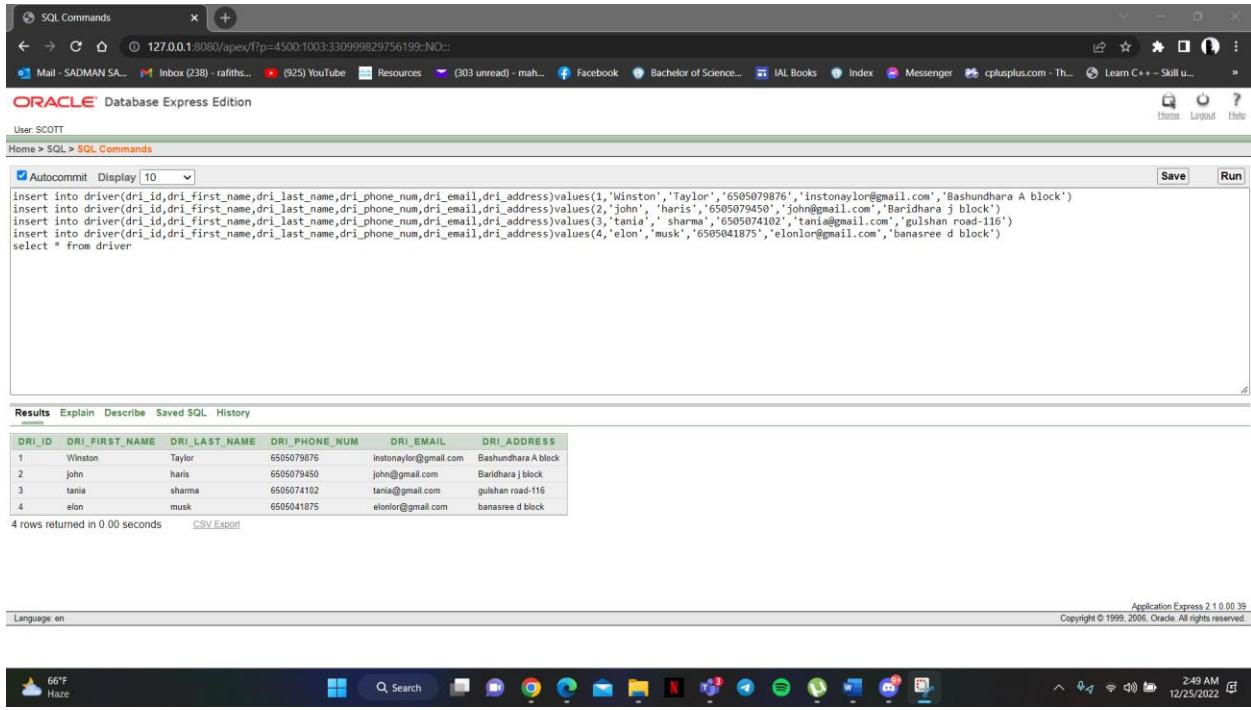
```

ss)values(3,'tania',' sharma','6505074102','tania@gmail.com','gulshan road-116')

insert into
driver(dri_id,dri_first_name,dri_last_name,dri_phone_num,dri_email,dri_address)
values(4,'elon','musk','6505041875','elonlor@gmail.com','banasree d block')

select * from driver

```



The screenshot shows the Oracle Database Express Edition SQL Commands window. The SQL code entered is:

```

insert into driver(dri_id,dri_first_name,dri_last_name,dri_phone_num,dri_email,dri_address)values(1,'Winston','Taylor','6505079876','instonaylor@gmail.com','Bashundhara A block')
insert into driver(dri_id,dri_first_name,dri_last_name,dri_phone_num,dri_email,dri_address)values(2,'john','haris','6505079450','john@gmail.com','Baridhara j block')
insert into driver(dri_id,dri_first_name,dri_last_name,dri_phone_num,dri_email,dri_address)values(3,'tania',' sharma','6505074102','tania@gmail.com','gulshan road-116')
insert into driver(dri_id,dri_first_name,dri_last_name,dri_phone_num,dri_email,dri_address)values(4,'elon','musk','6505041875','elonlor@gmail.com','banasree d block')
select * from driver

```

The results section displays the following data:

DRI_ID	DRI_FIRST_NAME	DRI_LAST_NAME	DRI_PHONE_NUM	DRI_EMAIL	DRI_ADDRESS
1	Winston	Taylor	6505079876	instonaylor@gmail.com	Bashundhara A block
2	john	haris	6505079450	john@gmail.com	Baridhara j block
3	tania	sharma	6505074102	tania@gmail.com	gulshan road-116
4	elon	musk	6505041875	elonlor@gmail.com	banasree d block

4 rows returned in 0.00 seconds [CSV Export](#)

Application Express 21.0.0.39  
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## **parking\_slip2**

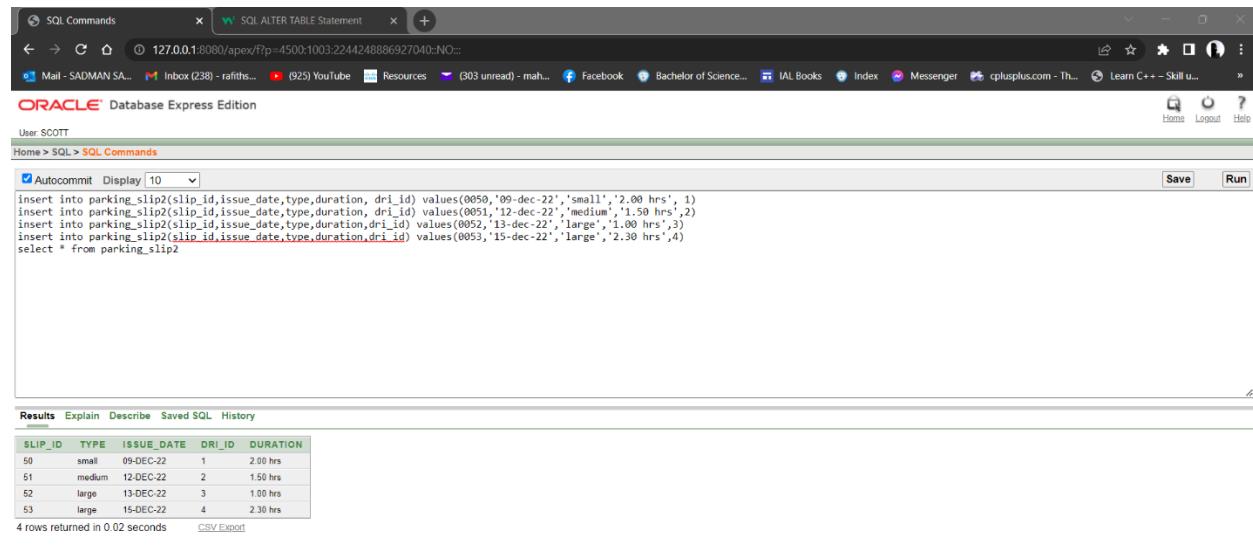
```
insert into parking_slip2(slip_id,issue_date,type,duration, dri_id)
values(0050,'09-dec-22','small','2.00 hrs', 1)
```

```
insert into parking_slip2(slip_id,issue_date,type,duration, dri_id)
values(0051,'12-dec-22','medium','1.50 hrs',2)
```

```
insert into parking_slip2(slip_id,issue_date,type,duration,dri_id)
values(0052,'13-dec-22','large','1.00 hrs',3)
```

```
insert into parking_slip2(slip_id,issue_date,type,duration,dri_id)
values(0053,'15-dec-22','large','2.30 hrs',4)
```

```
select * from parking_slip2
```



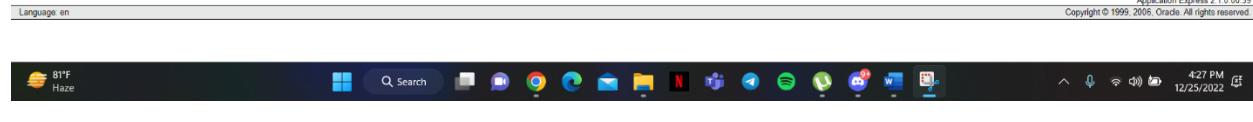
The screenshot shows the Oracle Database Express Edition SQL Commands window. The SQL code entered is:

```
insert into parking_slip2(slip_id,issue_date,type,duration, dri_id)
values(0050,'09-dec-22','small','2.00 hrs', 1)
insert into parking_slip2(slip_id,issue_date,type,duration, dri_id)
values(0051,'12-dec-22','medium','1.50 hrs',2)
insert into parking_slip2(slip_id,issue_date,type,duration,dri_id)
values(0052,'13-dec-22','large','1.00 hrs',3)
insert into parking_slip2(slip_id,issue_date,type,duration,dri_id)
values(0053,'15-dec-22','large','2.30 hrs',4)
select * from parking_slip2
```

The results section displays the following table:

SLIP_ID	TYPE	ISSUE_DATE	DRI_ID	DURATION
50	small	09-DEC-22	1	2.00 hrs
51	medium	12-DEC-22	2	1.50 hrs
52	large	13-DEC-22	3	1.00 hrs
53	large	15-DEC-22	4	2.30 hrs

4 rows returned in 0.02 seconds [CSV Export](#)



## **RATE\_TABLE**

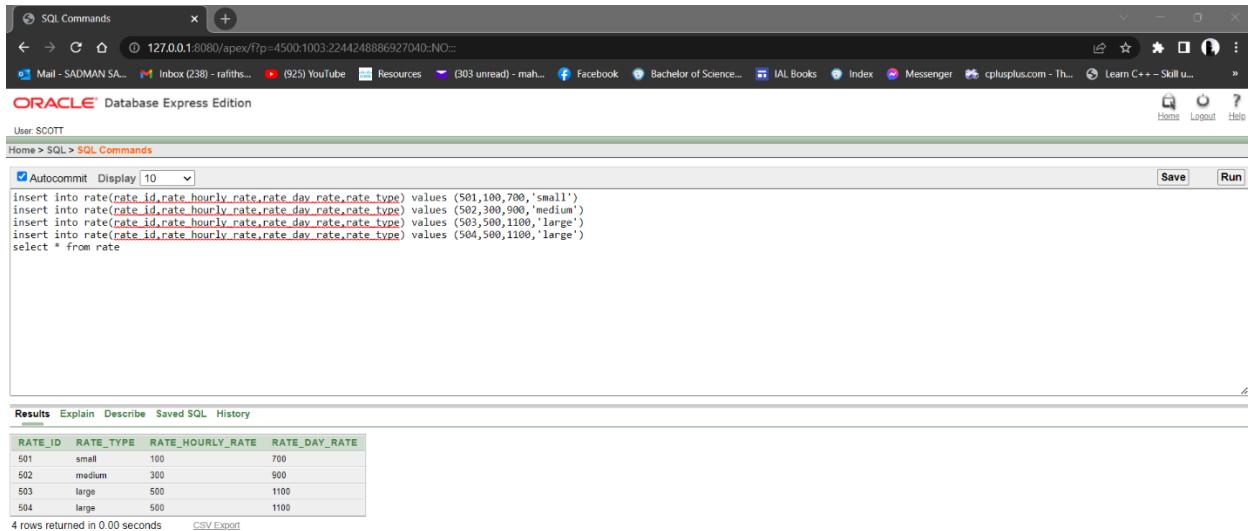
```
insert into rate(rate_id,rate_hourly_rate,rate_day_rate,rate_type) values
(501,100,700,'small')
```

```
insert into rate(rate_id,rate_hourly_rate,rate_day_rate,rate_type) values
(502,300,900,'medium')
```

```
insert into rate(rate_id,rate_hourly_rate,rate_day_rate,rate_type) values
(503,500,1100,'large')
```

```
insert into rate(rate_id,rate_hourly_rate,rate_day_rate,rate_type) values
(504,500,1100,'large')
```

```
select * from rate
```



```
SQL Commands
127.0.0.1:8080/apex/f?p=4500:1003:2244248886927040::NO:::
User SCOTT
Home > SQL > SQL Commands
Autocommit Display 10
Save Run
insert into rate(rate_id,rate_hourly_rate,rate_day_rate,rate_type) values (501,100,700,'small')
insert into rate(rate_id,rate_hourly_rate,rate_day_rate,rate_type) values (502,300,900,'medium')
insert into rate(rate_id,rate_hourly_rate,rate_day_rate,rate_type) values (503,500,1100,'large')
insert into rate(rate_id,rate_hourly_rate,rate_day_rate,rate_type) values (504,500,1100,'large')
select * from rate

Results Explain Describe Saved SQL History
RATE_ID RATE_TYPE RATE_HOURLY_RATE RATE_DAY_RATE
501 small 100 700
502 medium 300 900
503 large 500 1100
504 large 500 1100
4 rows returned in 0.00 seconds CSV Export
```



## SPOT RATE

```
insert into spot_rate(rate_id,spot_id) values (501,2)
```

```
insert into spot_rate(rate_id,spot_id) values (502,8)
```

```
insert into spot_rate(rate_id,spot_id) values (503,15)
```

```
insert into spot_rate(rate_id,spot_id) values (504,17)
```

```
select * from spot_rate
```



```
SQL Commands
127.0.0.1:8080/apex/f?p=4500:1003:2244248886927040::NO:::
User SCOTT
Home > SQL > SQL Commands
Autocommit Display 10
Save Run
insert into spot_rate(rate_id,spot_id) values (501,2)
insert into spot_rate(rate_id,spot_id) values (502,8)
insert into spot_rate(rate_id,spot_id) values (503,15)
insert into spot_rate(rate_id,spot_id) values (504,17)
select * from spot_rate

Results Explain Describe Saved SQL History
RATE_ID SPOT_ID
501 2
502 8
503 15
504 17
4 rows returned in 0.00 seconds CSV Export
```



## FINE TABLE

```
create sequence fine_squ
  increment by 5
  start with 100
  maxvalue 500
```

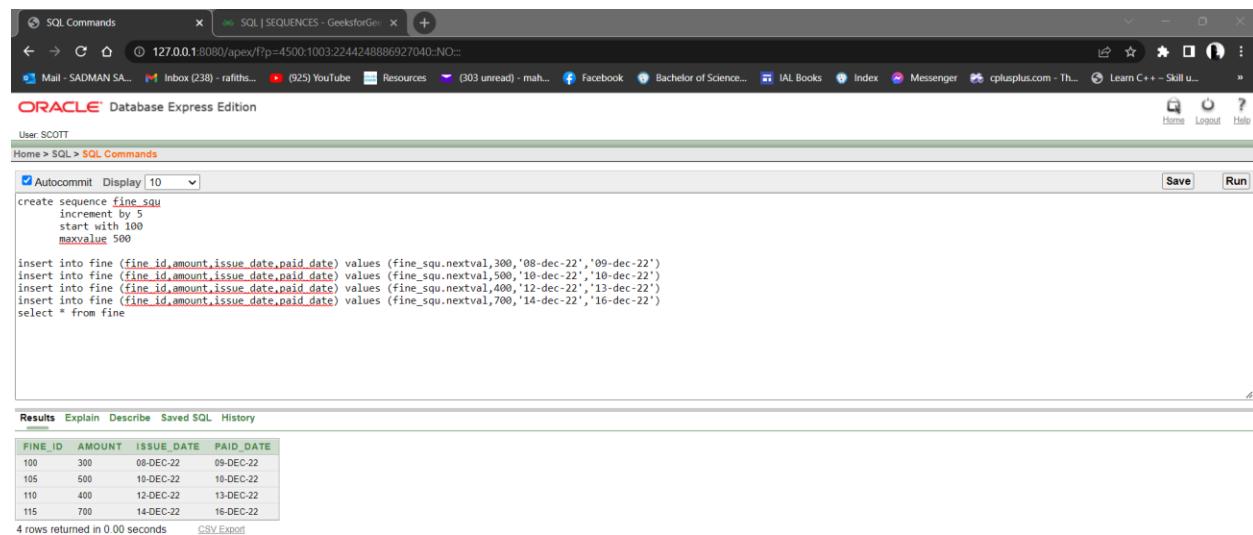
```
insert into fine (fine_id,amount,issue_date,paid_date) values
(fine_squ.nextval,300,'08-dec-22','09-dec-22')
```

```
insert into fine (fine_id,amount,issue_date,paid_date) values
(fine_squ.nextval,500,'10-dec-22','10-dec-22')
```

```
insert into fine (fine_id,amount,issue_date,paid_date) values
(fine_squ.nextval,400,'12-dec-22','13-dec-22')
```

```
insert into fine (fine_id,amount,issue_date,paid_date) values
(fine_squ.nextval,700,'14-dec-22','16-dec-22')
```

```
select * from fine
```



The screenshot shows the Oracle Database Express Edition SQL Commands window. The SQL command window contains the following code:

```
create sequence fine_squ
  increment by 5
  start with 100
  maxvalue 500

insert into fine (fine_id,amount,issue_date,paid_date) values (fine_squ.nextval,300,'08-dec-22','09-dec-22')
insert into fine (fine_id,amount,issue_date,paid_date) values (fine_squ.nextval,500,'10-dec-22','10-dec-22')
insert into fine (fine_id,amount,issue_date,paid_date) values (fine_squ.nextval,400,'12-dec-22','13-dec-22')
insert into fine (fine_id,amount,issue_date,paid_date) values (fine_squ.nextval,700,'14-dec-22','16-dec-22')
select * from fine
```

The results window shows the following data:

FINE_ID	AMOUNT	ISSUE_DATE	PAID_DATE
100	300	08-DEC-22	09-DEC-22
105	500	10-DEC-22	10-DEC-22
110	400	12-DEC-22	13-DEC-22
115	700	14-DEC-22	16-DEC-22

4 rows returned in 0.00 seconds



## DRIVER2 TABLE

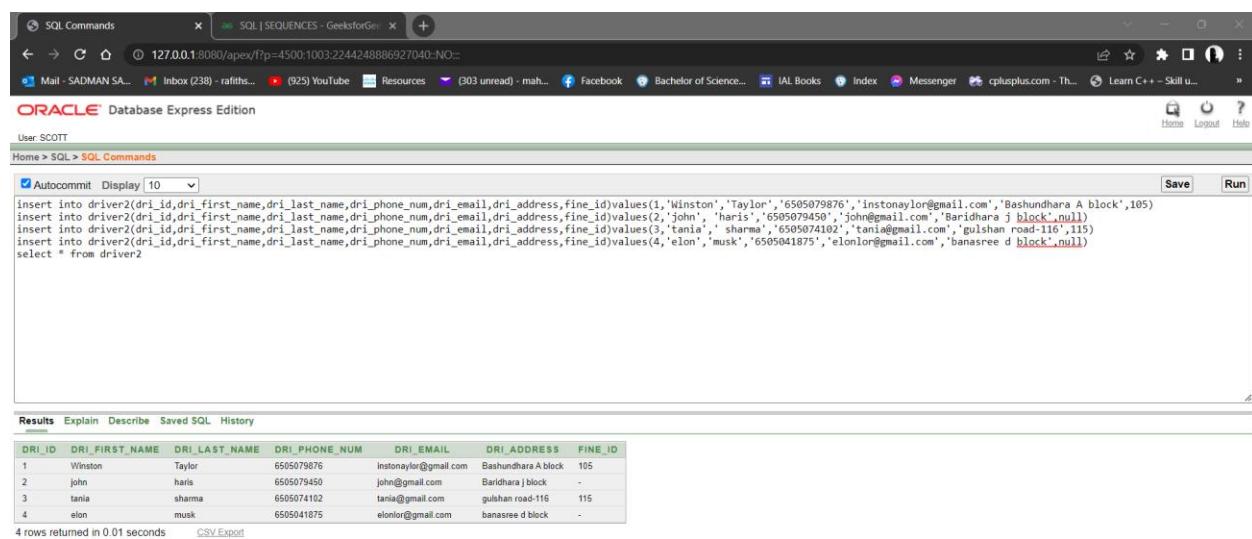
```
insert into
driver2(dri_id,dri_first_name,dri_last_name,dri_phone_num,dri_email,dri_address,fine_id)values(1,'Winston','Taylor','6505079876','instonaylor@gmail.com','
Bashundhara A block',105)

insert into
driver2(dri_id,dri_first_name,dri_last_name,dri_phone_num,dri_email,dri_address,fine_id)values(2,'john', 'haris','6505079450','john@gmail.com','Baridhara j
block',null)

insert into
driver2(dri_id,dri_first_name,dri_last_name,dri_phone_num,dri_email,dri_address,fine_id)values(3,'tania', ' sharma','6505074102','tania@gmail.com','gulshan
road-116',115)

insert into
driver2(dri_id,dri_first_name,dri_last_name,dri_phone_num,dri_email,dri_address,fine_id)values(4,'elon','musk','6505041875','elonlor@gmail.com','banasree
d block',null)

select * from driver2
```



The screenshot shows the Oracle Database Express Edition SQL Commands window. The SQL code is pasted into the command line, and the results are displayed in a table below. The table has columns: DRI\_ID, DRI\_FIRST\_NAME, DRI\_LAST\_NAME, DRI\_PHONE\_NUM, DRI\_EMAIL, DRI\_ADDRESS, and FINE\_ID. The data is as follows:

DRI_ID	DRI_FIRST_NAME	DRI_LAST_NAME	DRI_PHONE_NUM	DRI_EMAIL	DRI_ADDRESS	FINE_ID
1	Winston	Taylor	6505079876	instonaylor@gmail.com	Bashundhara A block	105
2	john	haris	6505079450	john@gmail.com	Baridhara j block	-
3	tania	sharma	6505074102	tania@gmail.com	gulshan road-116	115
4	elon	musk	6505041875	elonlor@gmail.com	banasreed block	-



## **VEHICLE**

```
insert into vehicle( veh_nameplate, type) values (556244, 'salon')
insert into vehicle( veh_nameplate, type) values (541204, 'SUV')
insert into vehicle( veh_nameplate, type) values (571023, 'sidan')
insert into vehicle( veh_nameplate, type) values (574548, 'mini-van')
select * from vehicle
```

SQL Commands + ×

127.0.0.1:8080/apex/r?p=4500:1003:2244248886927040:NO::

Mail - SADMAN SA... Inbox (238 - rafiths... YouTube Resources (303 unread) - mah... Facebook Bachelor of Science... IAL Books Index Messenger cplusplus.com - Th... Learn C++ – Skill u... Home Logout Help

ORACLE Database Express Edition

User: SCOTT

Home > SQL > SQL Commands

Autocommit

```
insert into vehicle(veh.nameplate, type) values (556244, 'salon')
insert into vehicle(veh.nameplate, type) values (541204, 'SUV')
insert into vehicle(veh.nameplate, type) values (571023, 'sidan')
insert into vehicle(veh.nameplate, type) values (574548, 'mini-van')
select * from vehicle
```

Results Explain Describe Saved SQL History

VEH_NAMEPLATE	TYPE
556244	salon
541204	SUV
571023	sidan
574548	mini-van

4 rows returned in 0.00 seconds [CSV Export](#)



### DRIVER3 TABLE

```
insert into
driver3(dri_id,dri_first_name,dri_last_name,dri_phone_num,dri_email,dri_address,veh_nameplate)values(1,'Winston','Taylor','6505079876','instonaylor@gmail.com','Bashundhara A block',556244)

insert into
driver3(dri_id,dri_first_name,dri_last_name,dri_phone_num,dri_email,dri_address,veh_nameplate)values(2,'john',
'haris','6505079450','john@gmail.com','Baridhara j block',541204)

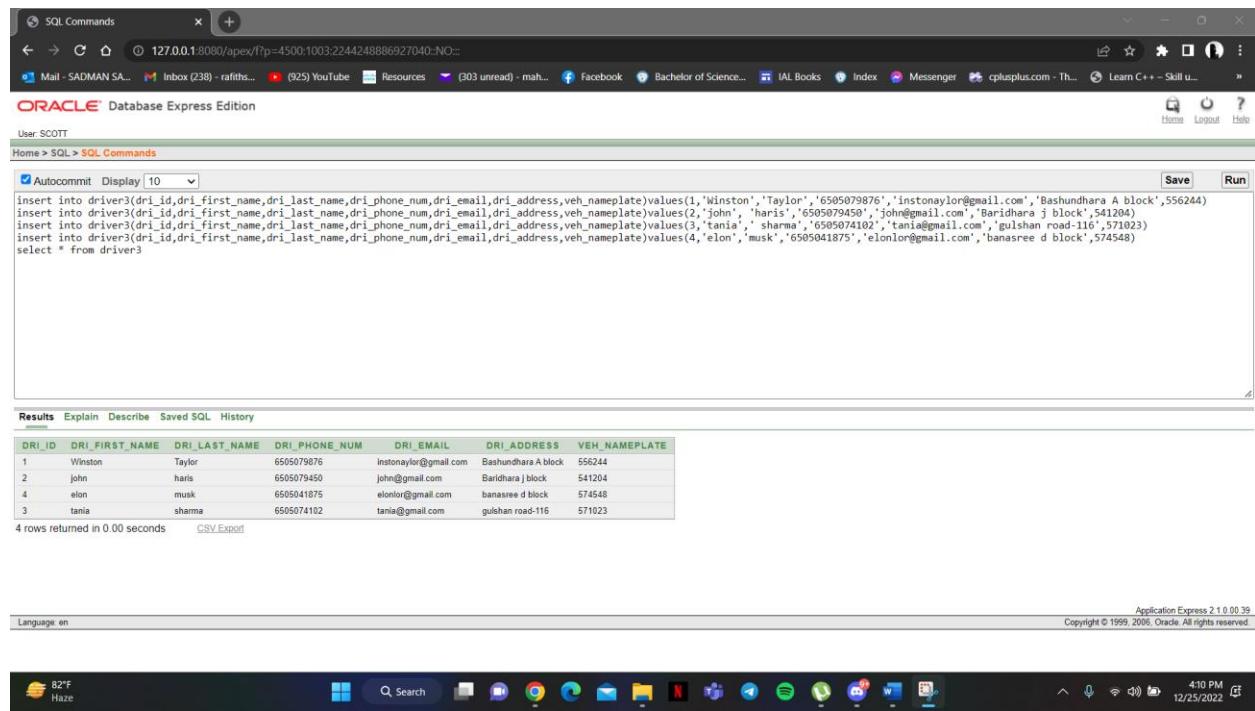
insert into
driver3(dri_id,dri_first_name,dri_last_name,dri_phone_num,dri_email,dri_address,veh_nameplate)values(3,'tania','
sharma','6505074102','tania@gmail.com','gulshan road-116',571023)
```

```

insert into
driver3(dri_id,dri_first_name,dri_last_name,dri_phone_num,dri_email,dri_address,veh_nameplate)values(4,'elon','musk','6505041875','elonlor@gmail.com','b
anasree d block',574548)

select * from driver3

```



The screenshot shows the Oracle Database Express Edition SQL Commands window. The SQL script is as follows:

```

insert into driver3(dri_id,dri_first_name,dri_last_name,dri_phone_num,dri_email,dri_address,veh_nameplate)values(1,'winston','Taylor','6505079876','instonaylor@gmail.com','Bashundhara A block',556244)
insert into driver3(dri_id,dri_first_name,dri_last_name,dri_phone_num,dri_email,dri_address,veh_nameplate)values(2,'john','haris','6505079450','john@gmail.com','Bardhara j block',541204)
insert into driver3(dri_id,dri_first_name,dri_last_name,dri_phone_num,dri_email,dri_address,veh_nameplate)values(3,'tania','sharma','6505074102','tania@gmail.com','gulshan road-116',571023)
insert into driver3(dri_id,dri_first_name,dri_last_name,dri_phone_num,dri_email,dri_address,veh_nameplate)values(4,'elon','musk','6505041875','elonlor@gmail.com','banasree d block',574548)
select * from driver3

```

The results section shows the following data:

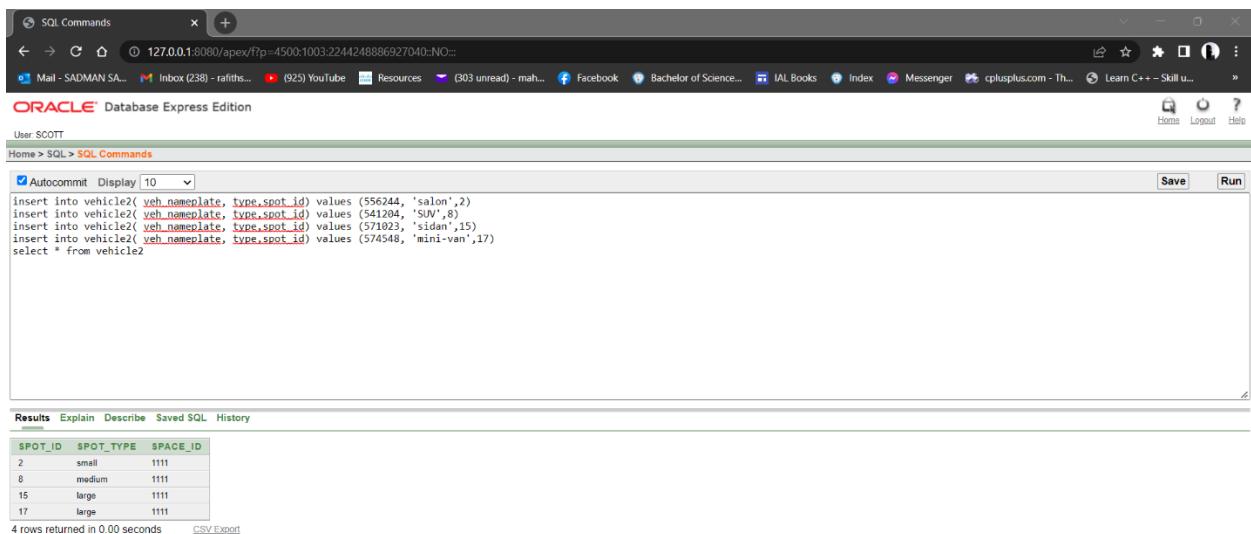
DRI_ID	DRI_FIRST_NAME	DRI_LAST_NAME	DRI_PHONE_NUM	DRI_EMAIL	DRI_ADDRESS	VEH_NAMEPLATE
1	Winston	Taylor	6505079876	instonaylor@gmail.com	Bashundhara A block	556244
2	john	haris	6505079450	john@gmail.com	Bardhara j block	541204
4	elon	musk	6505041875	elonlor@gmail.com	banasree d block	574548
3	tania	sharma	6505074102	tania@gmail.com	gulshan road-116	571023

4 rows returned in 0.00 seconds [CSV Export](#)

Application Express 2.1.0.00.39  
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## Vehicle2

```
insert into vehicle2( veh_nameplate, type,spot_id) values (556244, 'salon',2)
insert into vehicle2( veh_nameplate, type,spot_id) values (541204, 'SUV',8)
insert into vehicle2( veh_nameplate, type,spot_id) values (571023, 'sidan',15)
insert into vehicle2( veh_nameplate, type,spot_id) values (574548, 'mini-
van',17)
select * from vehicle2
```



SQL Commands

127.0.0.1:8080/apex/f?p=4500:1003:2244248886927040::NO::

ORACLE Database Express Edition

User SCOTT

Home > SQL > SQL Commands

Autocommit Display 10

Save Run

```
insert into vehicle2( veh_nameplate, type,spot_id) values (556244, 'salon',2)
insert into vehicle2( veh_nameplate, type,spot_id) values (541204, 'SUV',8)
insert into vehicle2( veh_nameplate, type,spot_id) values (571023, 'sidan',15)
insert into vehicle2( veh_nameplate, type,spot_id) values (574548, 'mini-van',17)
select * from vehicle2
```

Results Explain Describe Saved SQL History

SPOT_ID	SPOT_TYPE	SPACE_ID
2	small	1111
8	medium	1111
15	large	1111
17	large	1111

4 rows returned in 0.00 seconds CSV Export



## FINE2 TABLE

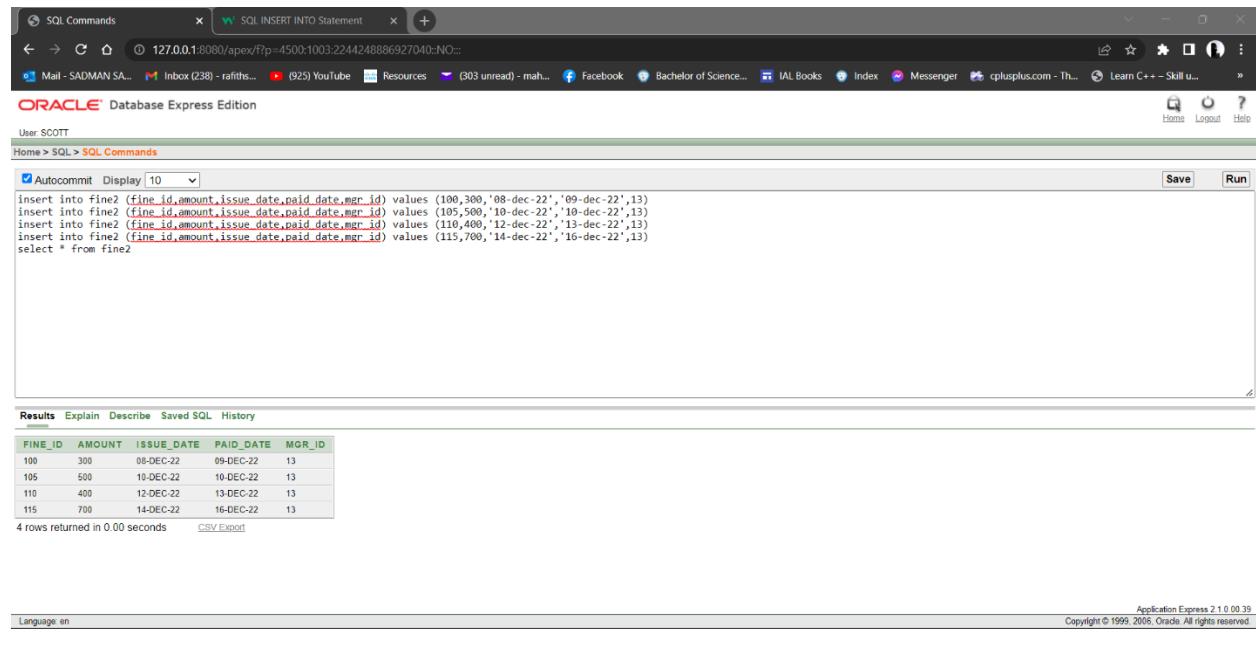
```
insert into fine2 (fine_id,amount,issue_date,paid_date,mgr_id) values  
(100,300,'08-dec-22','09-dec-22',13)
```

```
insert into fine2 (fine_id,amount,issue_date,paid_date,mgr_id) values  
(105,500,'10-dec-22','10-dec-22',13)
```

```
insert into fine2 (fine_id,amount,issue_date,paid_date,mgr_id) values  
(110,400,'12-dec-22','13-dec-22',13)
```

```
insert into fine2 (fine_id,amount,issue_date,paid_date,mgr_id) values  
(115,700,'14-dec-22','16-dec-22',13)
```

```
select * from fine2
```



```
SQL Commands SQL INSERT INTO Statement +  
127.0.0.1:8080/apex/f?p=4500:1003:2244248886927040:NO::  
Mail - SADMAN SA... Inbox (238) (925) YouTube Resources (303 unread) - mah... Facebook Bachelor of Science... IAL Books Index Messenger cplusplus.com - Th... Learn C++ - Skill u...  
ORACLE Database Express Edition  
User SCOTT  
Home > SQL > SQL Commands  
Autocommit Display 10 Save Run  
insert into fine2 (fine_id,amount,issue_date,paid_date,mgr_id) values (100,300,'08-dec-22','09-dec-22',13)  
insert into fine2 (fine_id,amount,issue_date,paid_date,mgr_id) values (105,500,'10-dec-22','10-dec-22',13)  
insert into fine2 (fine_id,amount,issue_date,paid_date,mgr_id) values (110,400,'12-dec-22','13-dec-22',13)  
insert into fine2 (fine_id,amount,issue_date,paid_date,mgr_id) values (115,700,'14-dec-22','16-dec-22',13)  
select * from fine2  
Results Explain Describe Saved SQL History  
FINE_ID AMOUNT ISSUE_DATE PAID_DATE MGR_ID  
100 300 08-DEC-22 09-DEC-22 13  
105 500 10-DEC-22 10-DEC-22 13  
110 400 12-DEC-22 13-DEC-22 13  
115 700 14-DEC-22 16-DEC-22 13  
4 rows returned in 0.00 seconds CSV Export  
Application Express 2.1.0.00.39  
Copyright © 1999, 2008, Oracle. All rights reserved.  
Language: en 4:48 PM 12/25/2022
```

## OWNER

```
create sequence owner_seq
  increment by 1
  start with 600
  maxvalue 900

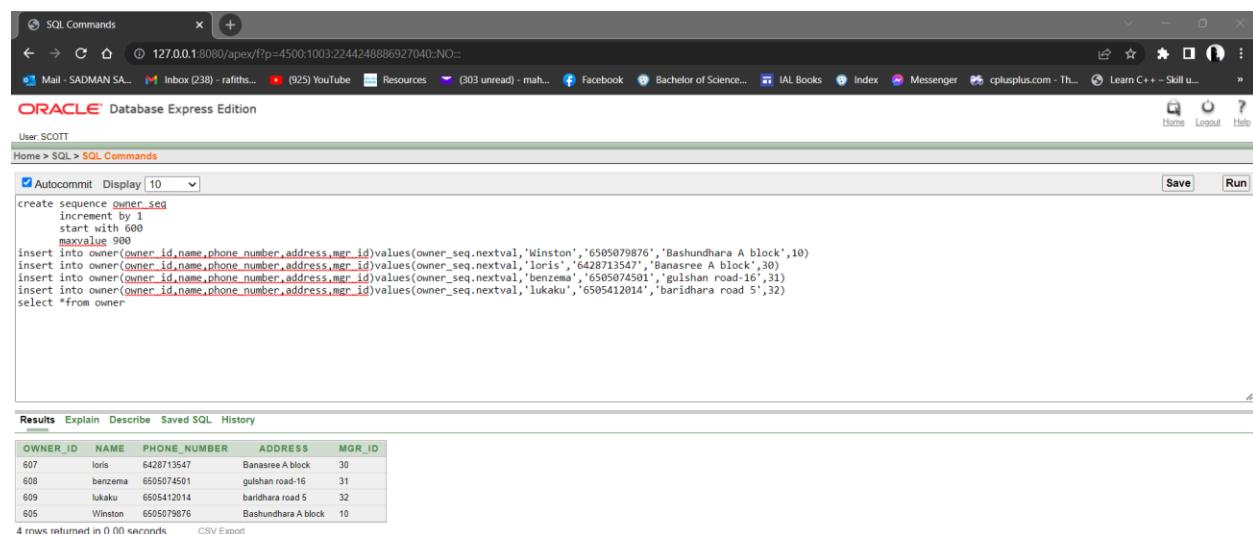
insert into
owner(owner_id,name,phone_number,address,mgr_id)values(owner_seq.nextval,'Winston','6505079876','Bashundhara A block',10)

insert into
owner(owner_id,name,phone_number,address,mgr_id)values(owner_seq.nextval,'loris','6428713547','Banasree A block',30)

insert into
owner(owner_id,name,phone_number,address,mgr_id)values(owner_seq.nextval,'benzema','6505074501','gulshan road-16',31)

insert into
owner(owner_id,name,phone_number,address,mgr_id)values(owner_seq.nextval,'lukaku','6505412014','baridhara road 5',32)

select *from owner
```



The screenshot shows the Oracle Database Express Edition SQL Commands interface. The SQL code is entered in the command window, and the results are displayed in a table below. The table contains four rows of data, each representing an owner with their ID, name, phone number, address, and manager ID.

OWNER_ID	NAME	PHONE_NUMBER	ADDRESS	MGR_ID
607	loris	6428713547	Banasree A block	30
608	benzema	6505074501	gulshan road-16	31
609	lukaku	6505412014	baridhara road 5	32
605	Winston	6505079876	Bashundhara A block	10

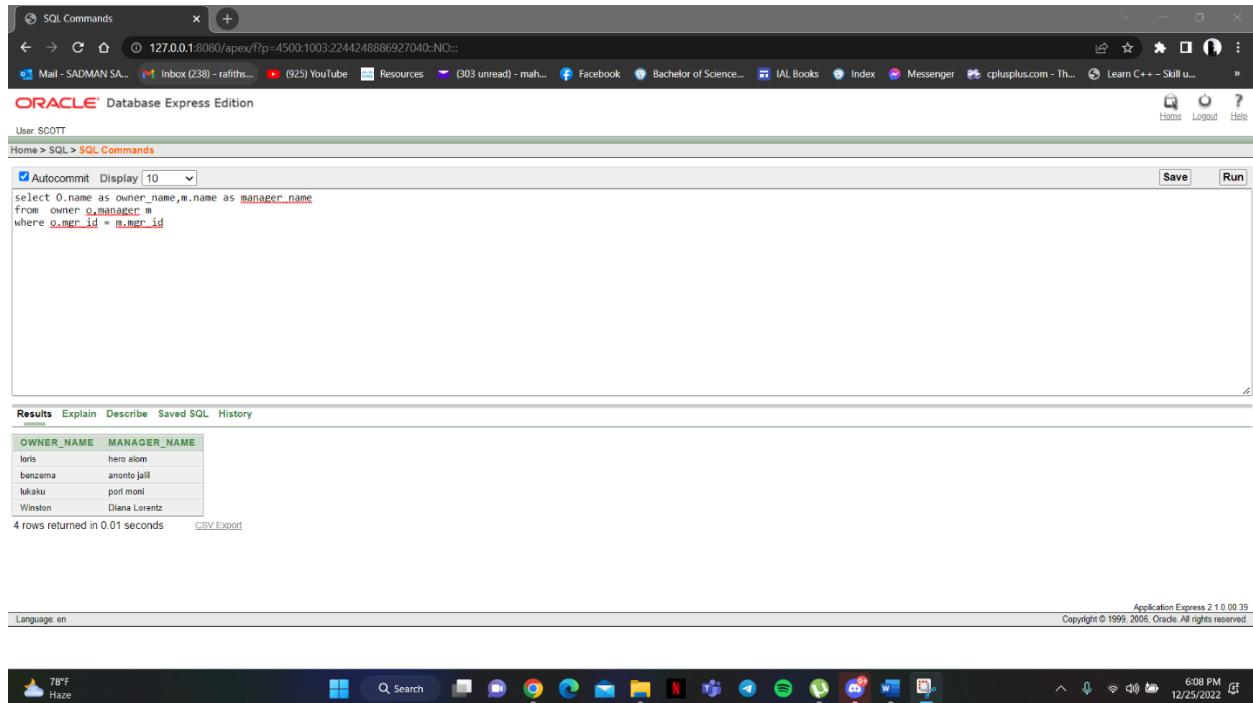
Language: en Application Express 2.1.0.00.39  
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# Query

## 1. Equijoin:

```
select O.name as owner_name,m.name as manager_name
from owner o,manager m
where o.mgr_id = m.mgr_id
```



The screenshot shows the Oracle Database Express Edition interface. The SQL Commands window displays the following SQL query:

```
select O.name as owner_name,m.name as manager_name
from owner o,manager m
where o.mgr_id = m.mgr_id
```

The Results section shows the output of the query:

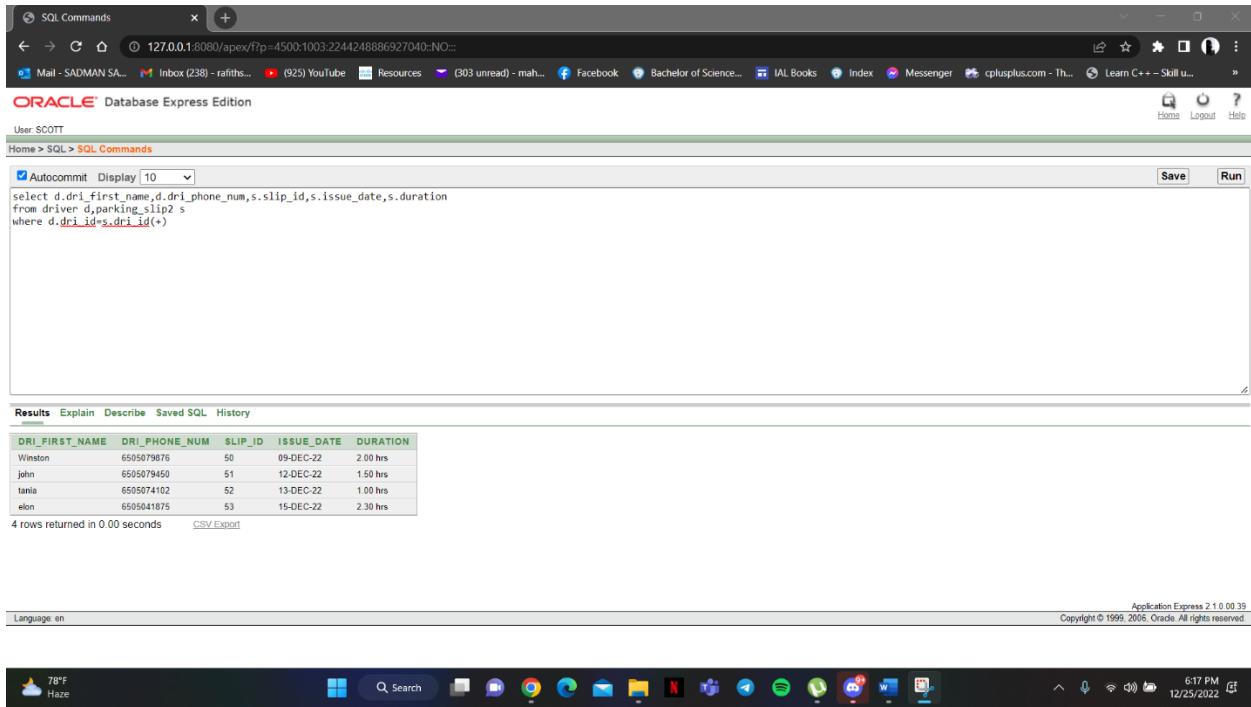
OWNER_NAME	MANAGER_NAME
loris	hero alom
benzama	amonto jail
lukaku	pori moni
Winston	Diana Lorentz

4 rows returned in 0.01 seconds

At the bottom of the screen, the Windows taskbar is visible, showing various open applications and the system clock.

## 2. OUTER-JOIN

```
select d.dri_first_name,d.dri_phone_num,s.slip_id,s.issue_date,s.duration
from driver d,parking_slip2 s
where d.dri_id=s.dri_id(+)
```



The screenshot shows the Oracle Database Express Edition SQL Commands interface. The SQL command entered is:

```
select d.dri_first_name,d.dri_phone_num,s.slip_id,s.issue_date,s.duration
from driver d,parking_slip2 s
where d.dri_id=s.dri_id(+)
```

The results table displays the following data:

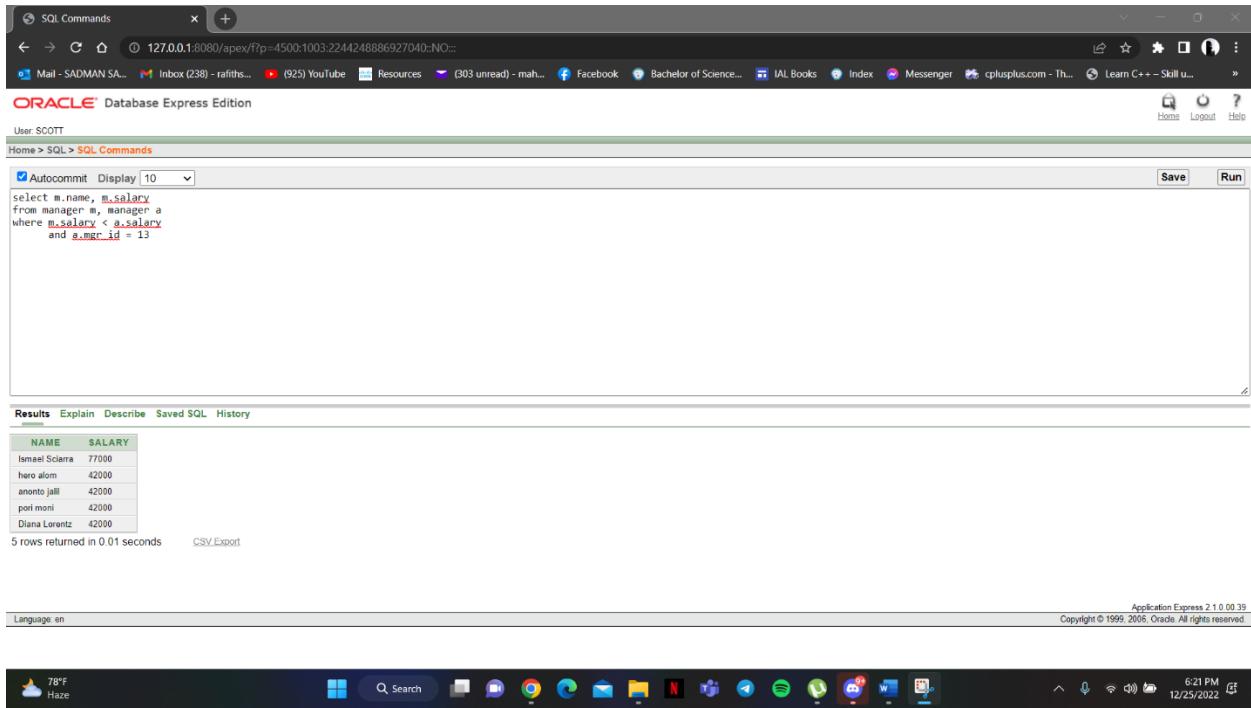
DRI_FIRST_NAME	DRI_PHONE_NUM	SLIP_ID	ISSUE_DATE	DURATION
Winston	6505079876	50	09-DEC-22	2.00 hrs
john	6505079450	51	12-DEC-22	1.50 hrs
tania	6505074102	52	13-DEC-22	1.00 hrs
elon	6505041875	53	15-DEC-22	2.30 hrs

4 rows returned in 0.00 seconds [CSV Export](#)

Application Express 2.1.0.00.39  
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### 3. SELF-JOIN

```
select m.name, m.salary  
from manager m, manager a  
where m.salary < a.salary  
and a.mgr_id = 13
```



The screenshot shows the Oracle Database Express Edition interface. The SQL Commands window displays the following query:

```
select m.name, m.salary  
from manager m, manager a  
where m.salary < a.salary  
and a.mgr_id = 13
```

The Results tab shows the output of the query:

NAME	SALARY
Ismael Scaria	77000
hero alom	42000
anonto jali	42000
peri mani	42000
Diana Lorentz	42000

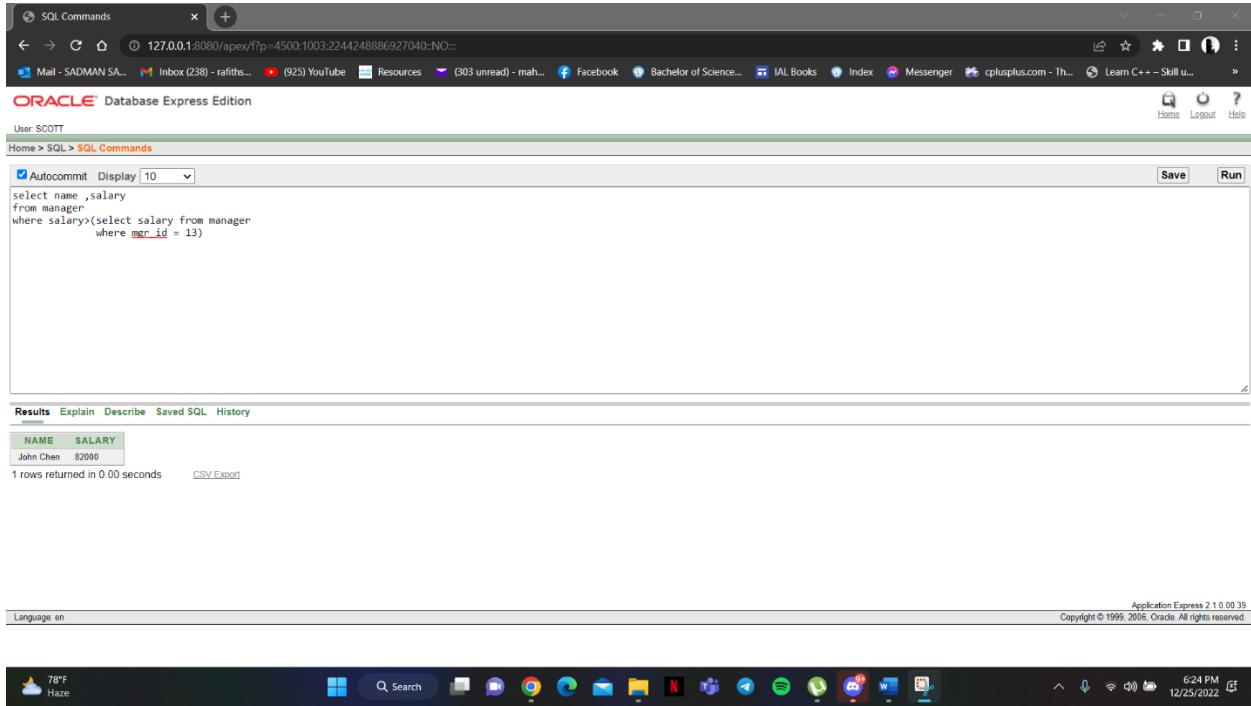
5 rows returned in 0.01 seconds

CSV Export

Application Express 21.0.0.39  
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#### 4. SUB-QUERRY (1)

```
select name ,salary  
from manager  
where salary>(select salary from manager  
where mgr_id = 13)'
```



The screenshot shows the Oracle Database Express Edition interface. The SQL Commands window displays the following SQL query:

```
select name ,salary  
from manager  
where salary>(select salary from manager  
where mgr_id = 13)
```

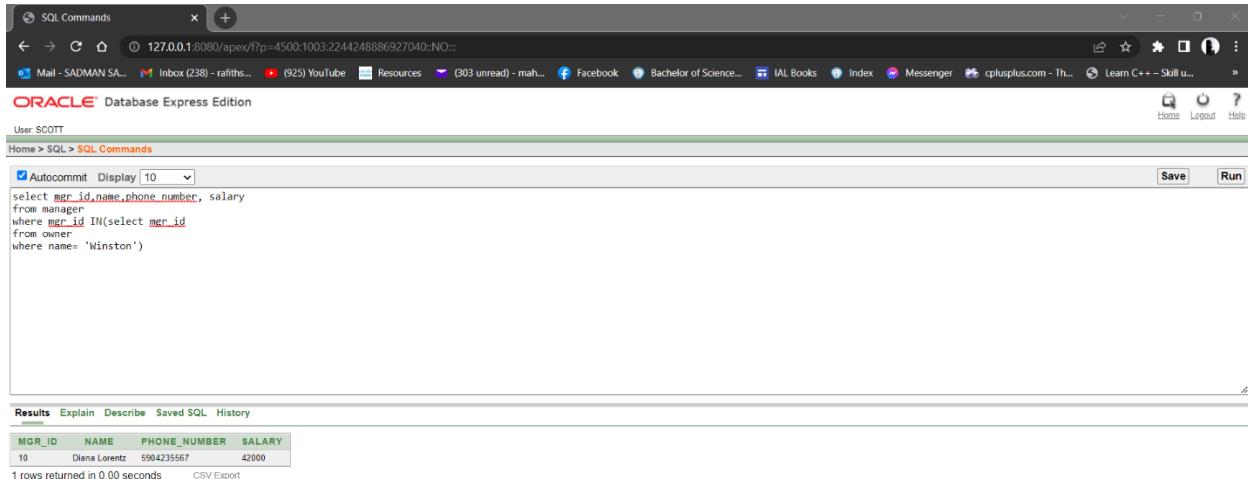
The results pane shows a single row of data:

NAME	SALARY
John Chen	82000

Below the results, it says "1 rows returned in 0.00 seconds" and there is a "CSV Export" link. The status bar at the bottom right indicates "Application Express 21.0.0.39" and "Copyright © 1995, 2005, Oracle. All rights reserved."

## 5. SUB-QUERRY (2)

```
select mgr_id, name, phone_number, salary
from manager
where mgr_id IN(select mgr_id
from owner
where name= 'Winston')
```



SQL Commands

127.0.0.1:8080/apex/f?p=4500:1003:2244248886927040:NO::

ORACLE Database Express Edition

User SCOTT

Home > SQL > SQL Commands

Autocommit Display 10

```
select mgr_id, name, phone_number, salary
from manager
where mgr_id IN(select mgr_id
from owner
where name= 'Winston')
```

Save Run

Results Explain Describe Saved SQL History

MGR_ID	NAME	PHONE_NUMBER	SALARY
10	Diana Lorentz	590423567	42000

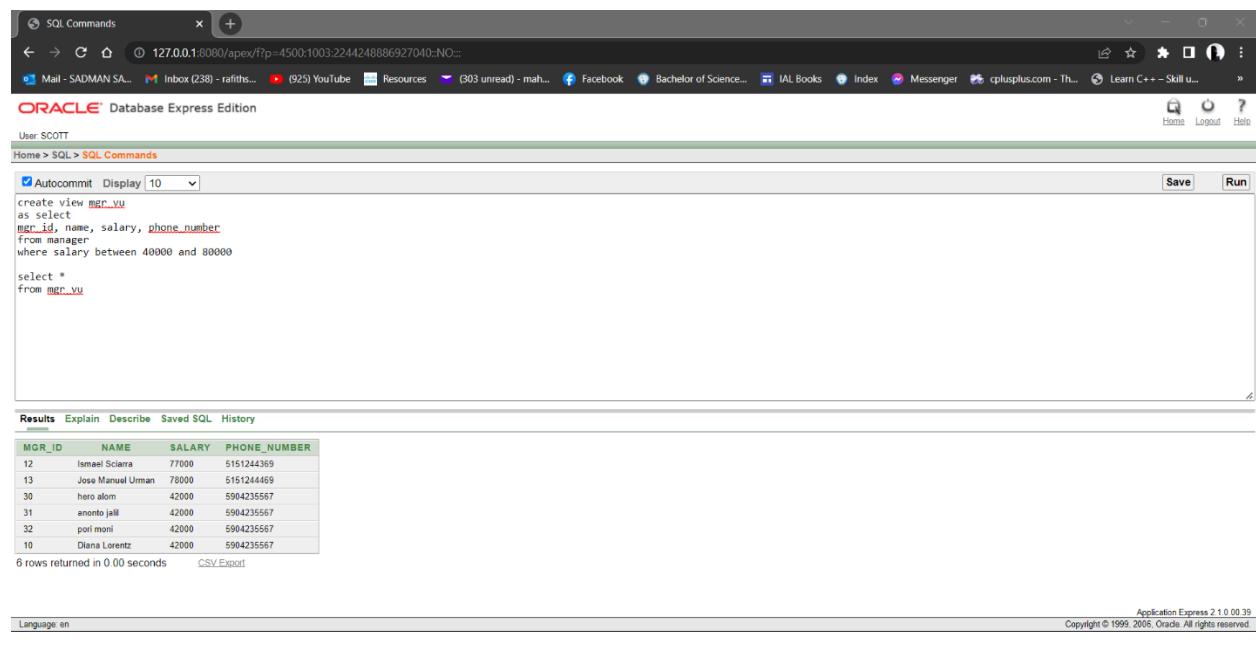
1 rows returned in 0.00 seconds CSV Export



## 6. SIMPLE VIEW

```
create view mgr_vu
as select
mgr_id, name, salary, phone_number
from manager
where salary between 40000 and 80000
```

```
select *
from mgr_vu
```



The screenshot shows the Oracle Database Express Edition SQL Commands interface. The SQL command window displays the creation of a view and its execution:

```
create view mgr_vu
as select
mgr_id, name, salary, phone_number
from manager
where salary between 40000 and 80000
select *
from mgr_vu
```

The results window shows the data returned by the query:

MGR_ID	NAME	SALARY	PHONE_NUMBER
12	Ismael Scialla	77000	5151244369
13	Jose Manuel Urman	78000	5151244469
30	hero atom	42000	5904235567
31	anonte jail	42000	5904235567
32	pori moni	42000	5904235567
10	Diana Lorentz	42000	5904235567

6 rows returned in 0.00 seconds [CSV Export](#)

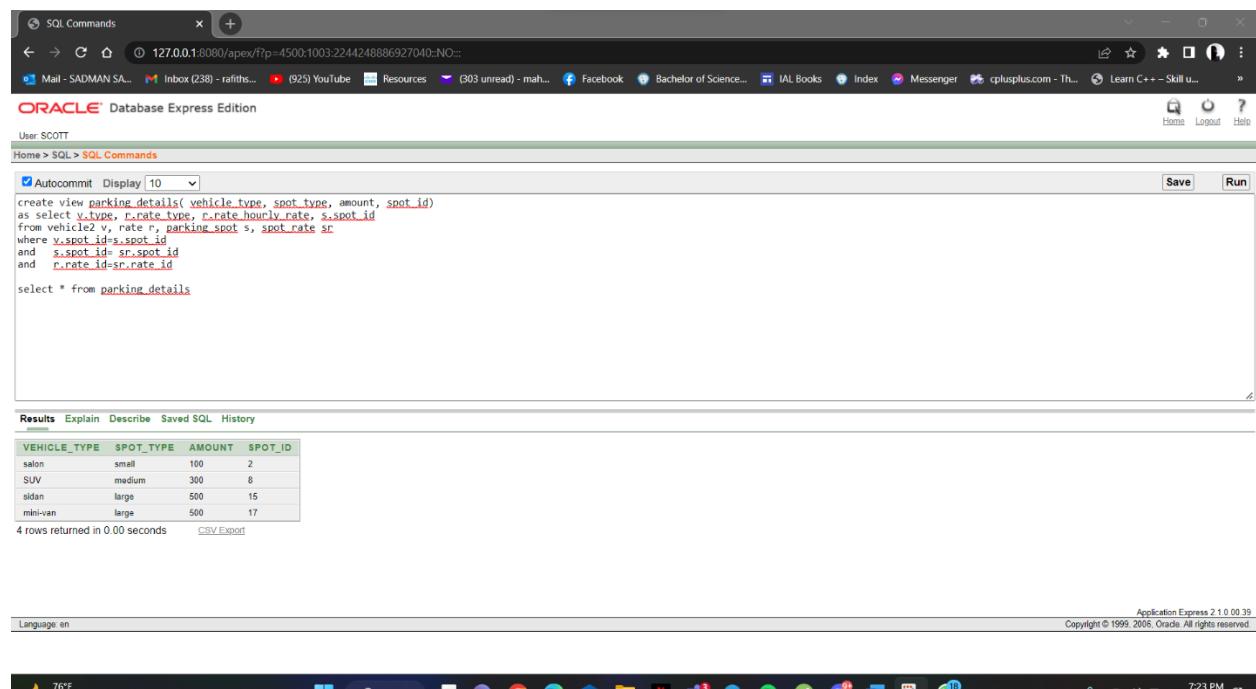
Application Express 2.1.0.00.39  
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## 7. COMPLEX VIEW

```
create view parking_details( vehicle_type, spot_type, amount, spot_id)
as select v.type, r.rate_type, r.rate_hourly_rate, s.spot_id
from vehicle2 v, rate r, parking_spot s, spot_rate sr
where v.spot_id=s.spot_id
and s.spot_id= sr.spot_id
and r.rate_id=sr.rate_id
```

```
select * from parking_details
```



The screenshot shows the Oracle Database Express Edition SQL Commands window. The SQL command to create the view is entered in the text area, and the result of the query is displayed below it. The result shows a table with four columns: VEHICLE\_TYPE, SPOT\_TYPE, AMOUNT, and SPOT\_ID. The data is as follows:

VEHICLE_TYPE	SPOT_TYPE	AMOUNT	SPOT_ID
salon	small	100	2
SUV	medium	300	8
sedan	large	500	15
mini-van	large	500	17

At the bottom of the window, it says "4 rows returned in 0.00 seconds" and "CSV Export". The status bar at the bottom of the screen shows the date and time as "12/25/2022 7:23 PM".