



AMERICAN INTERNATIONAL UNIVERSITY–BANGLADESH (AIUB)

DEPARTMENT OF ENGINEERING

INTRODUCTION TO DATABASE

Section: M, Group: 9

Project Name

PARKING SPOT MANAGEMENT SYSTEM

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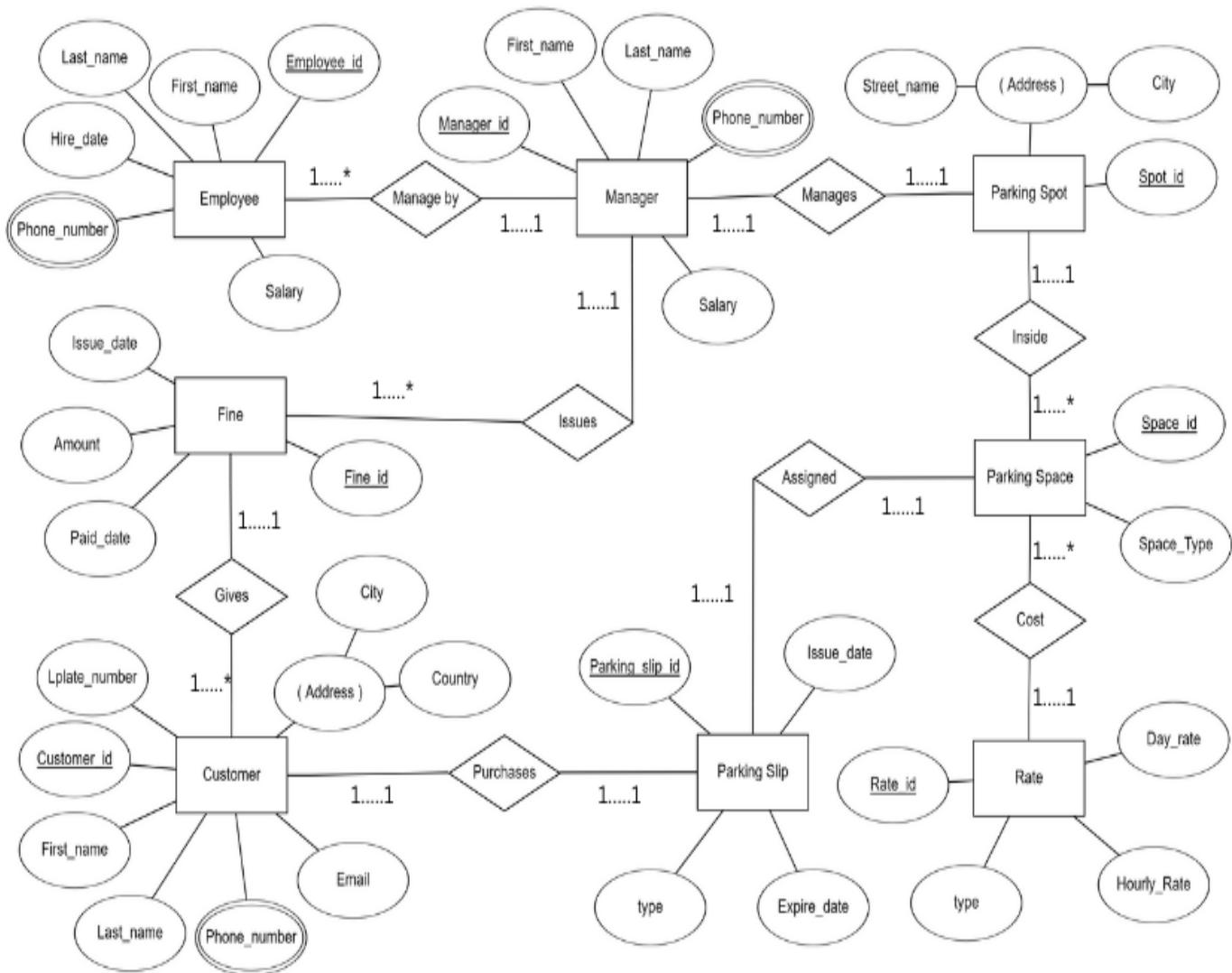
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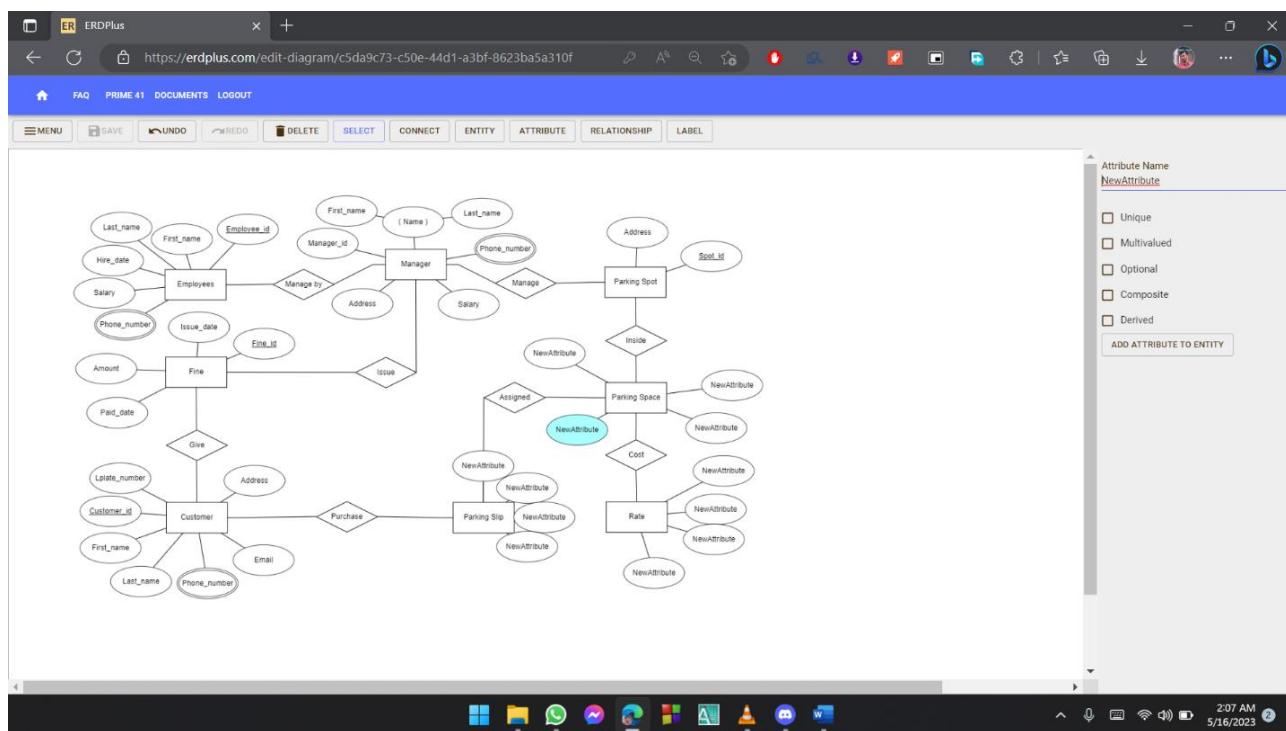
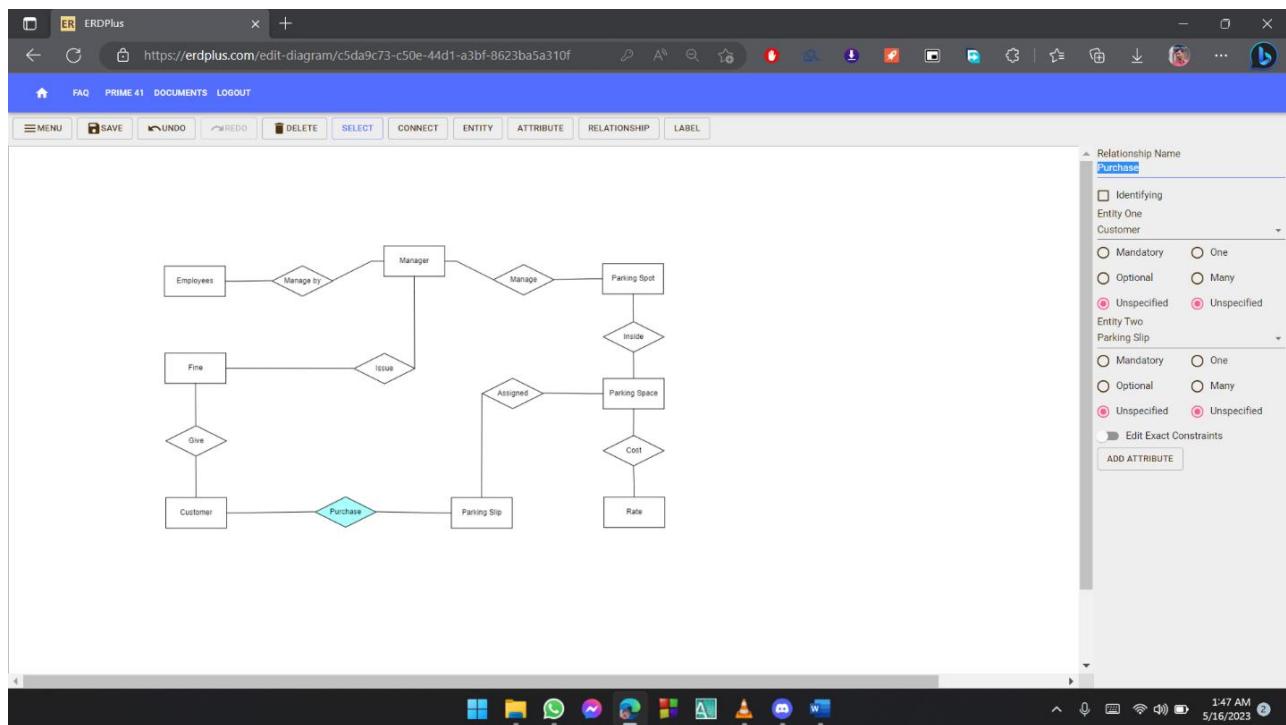
PARKING SPOT MANAGEMENT SYSTEM

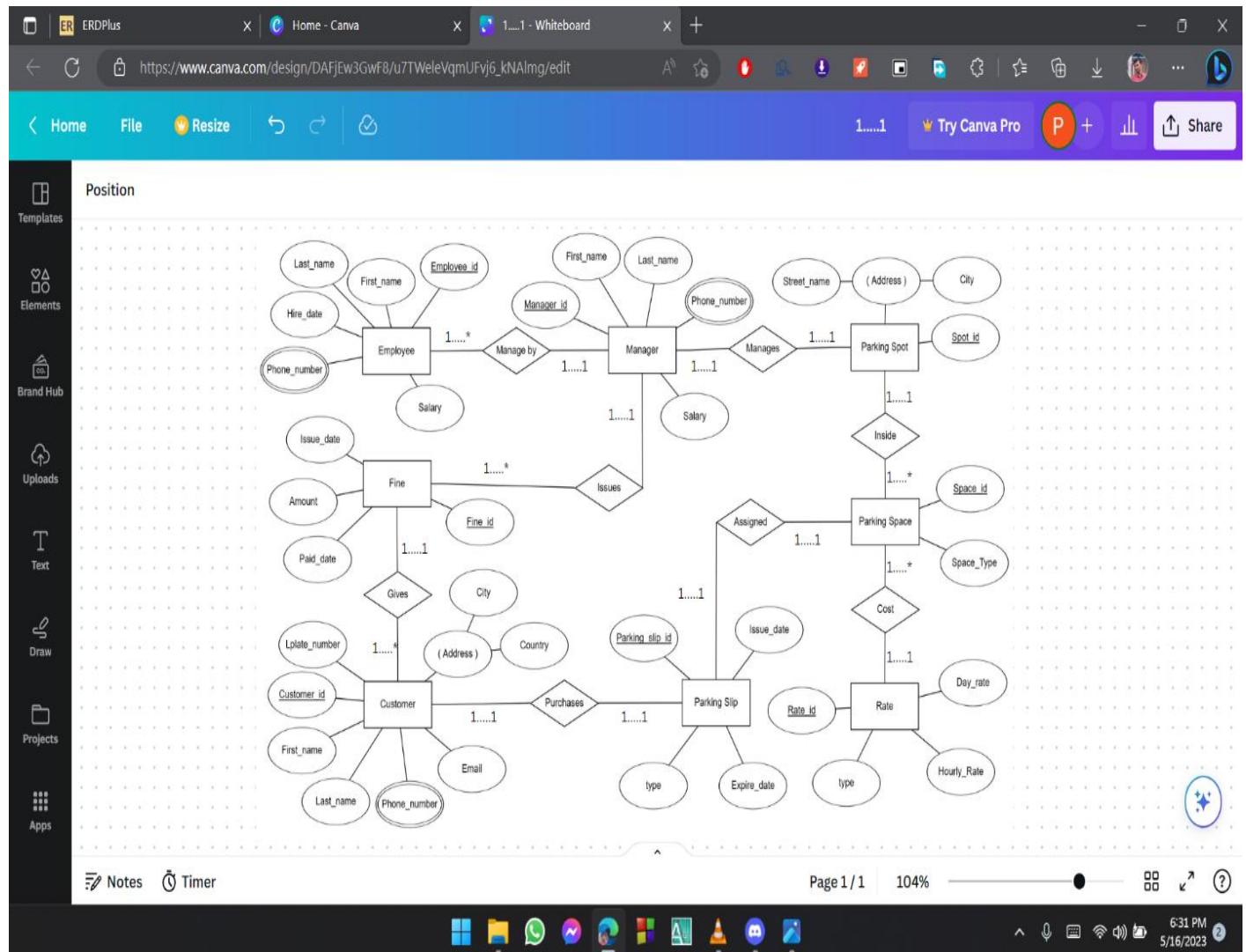
Case Study:

The parking spot management system has multiple employees who are supervised by managers, each manager overseeing one or more employees. The employees and managers are identified through unique employee and manager IDs, and their personal information such as first and last name, hire date, phone numbers, and salary are stored in the system. The managers are responsible for managing the parking spot as a whole, which is identified by a spot ID and has a own physical address. The parking spot contains several parking spaces, each with a unique space ID and type, which determines the cost rate for hiring the space on hourly or daily basis. Each space type also has a unique rate ID. Customers are assigned a parking slip upon hiring a space, which includes a slip ID, issue date, and expire date and type. The customers are identified through their own unique ID and their personal information, including first and last name, email address, phone numbers, license plate numbers, and address, is stored in the system. In order to better manage the parking spot and provide better services, there are various rules in place, and fines may be issued by the manager to customers who violate these rules. These fines include an ID, issue date, amount, and paid date.

ER Diagram:

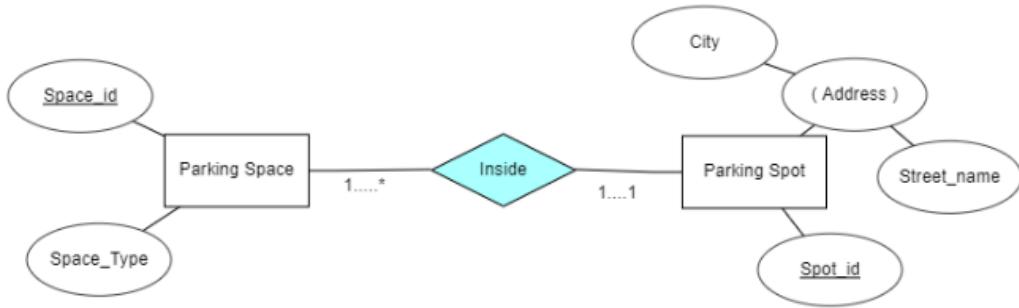






Normalization of Database:

Inside



UNF: Spot_id, Street_no, City, Space_id, Space_type.

1NF: No multivalued attribute

Spot_id, Street_no, City, Space_id, Space_type

2NF: Spot_id, Street_no, City

Space_id, Space_Type, Spot_id

3NF: Street_no, City has transitive dependency

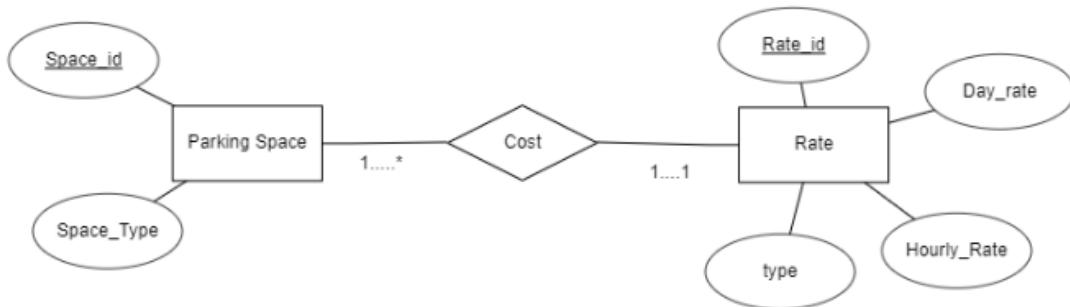
Spot_id, Street_no, City

Space_id, Space_Type, Spot_id

Table: 1. Spot_id, Street_no, City

2. Space_id, Space_Type, Spot_id

Cost



UNF: Space_id, Space_type, Rate_id, Hourly_rate, Day_Rate, Type.

1NF: No multivalued attribute

Space_id, Space_type, Rate_id, Hourly_rate, Day_Rate, Type.

2NF: Space_id, Space_Type, Rate_id

Rate_id, Hourly_rate, Day_Rate, Type.

3NF: No transitive dependency

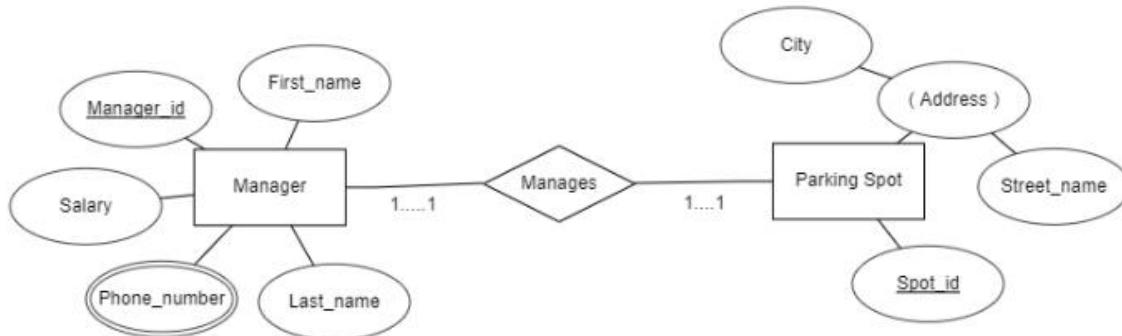
Space_id, Space_Type, Rate_id

Rate_id, Hourly_rate, Day_Rate, Type.

Table: 1.Space_id, Space_Type, Rate_id

2.Rate_id, Hourly_rate, Day_Rate, Type

Manages



UNF: Spot_id, Street_no, City, Manager_id, Phone_number,
First_name, Last_name, Salary

1NF: Phone_number multivalued attribute

Spot_id, Street_no, City, Manager_id, Phone_number,
First_name, Last_name, Salary

2NF: Spot_id, Street_no, City, Manager_id

Manager_id, First_name, Last_name, Salary

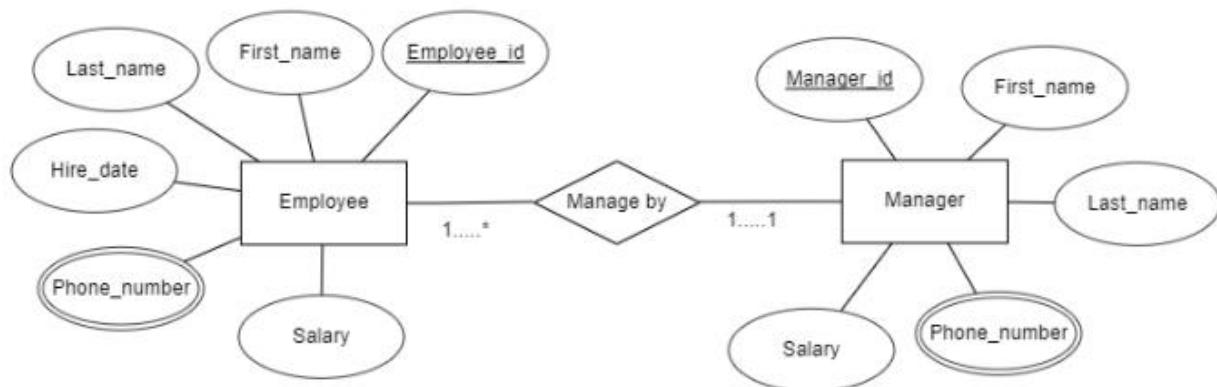
Phone_number, Manager_id

3NF: No transitive dependency

Spot_id, Street_no, City, Manager_id
Manager_id, First_name, Last_name, Salary
Phone_number, Manager_id

Table: 1.Spot_id, Street_no, City, Manager_id
2.Manager_id, First_name, Last_name, Salary
3.Phone_number, Manager_id

Manage by



UNF: Manager_id , Phone_number , First_name, Last_name, Salary,
Employee_id, First_Name , Last_Name , Hire_date, Salary,
Phone_number

1NF: Phone_number multivalued attribute in employee and manager

Manager_id , Phone_number , First_name, Last_name,
Salary, Employee_id, First_Name , Last_Name ,
Hire_date, Salary, Phone_number

2NF: 1.Manager_id, First_name, Last_name, Salary

2.Phone_number, Manager_id

3.Employee_id, First_Name, Last_Name, Hire_date, Salary,
Manager_id

4.Phone_number, Employee_id

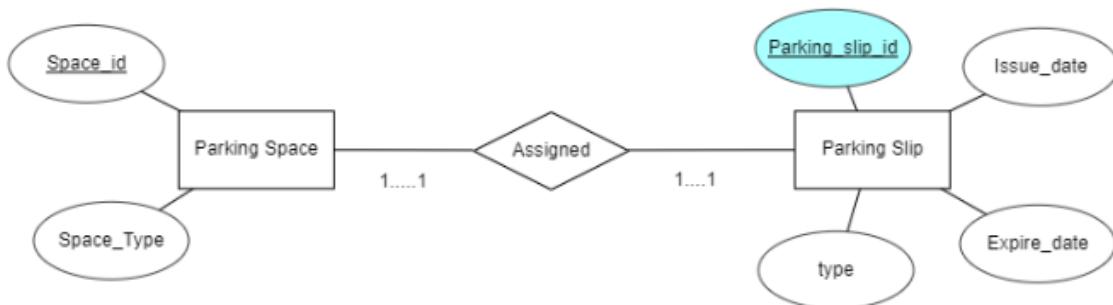
3NF: No transitive dependency

- 1.Manager_id, First_name, Last_name, Salary
- 2.Phone_number, Manager_id
- 3.Employee_id, First_Name, Last_Name, Hire_date, Salary, Manager_id
- 4.Phone_number, Employee_id

Table: 1.Manager_id, First_name, Last_name, Salary

- 2.Phone_number, Manager_id
- 3.Employee_id, First_Name, Last_Name, Hire_date, Salary, Manager_id
- 4.Phone_number, Employee_id

Assigned



UNF: Space_id, Space_Type, Parking_slip_id, Issue_date, Expire_date, Type

1NF: No multivalued attribute

1. Space_id, Space_Type, Parking_slip_id, Issue_date, Expire_date, Type

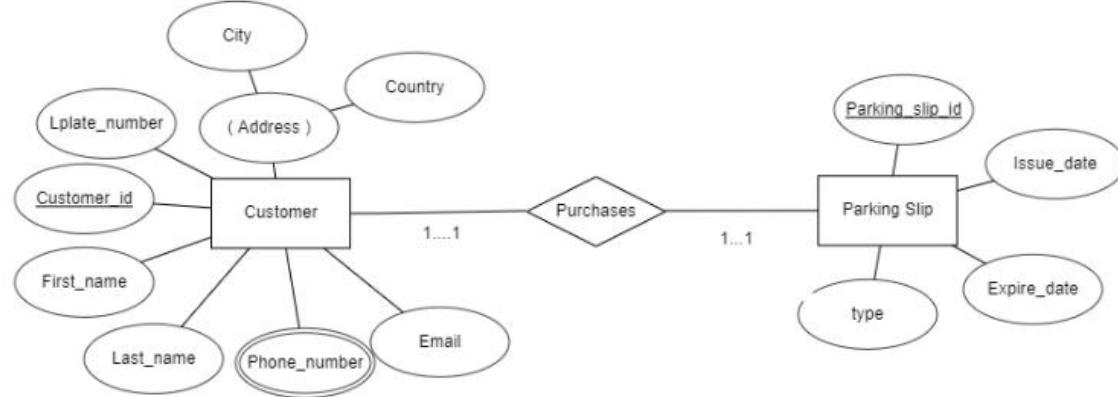
2NF: 1. Space_id, Space_Type

2. Parking_slip_id, Issue_date, Expire_date, Type, Space_id

3NF: No transitive dependency

1. Space_id, Space_Type
2. Parking_slip_id, Issue_date, Expire_date, Type, Space_id

Table: 1. Space_id, Space_type
 2. Parking_slip_id, Issue_date, Expire_date, Type, Space_id
Purchases



UNF: Customer_id, First_name, Last_name, Email, City, Country,
Phone_number, Lplate_number, Parking_slip_id, Issue_date,
Expire_date, Type

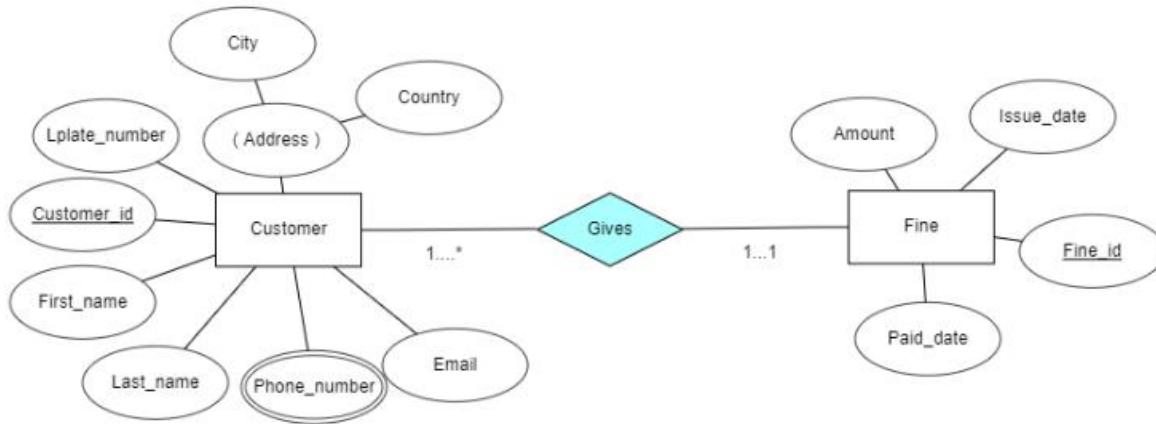
1NF: Phone_number multivalued attribute
Customer_id, First_name, Last_name, Email, City, Country,
Phone_number, Lplate_number, Parking_slip_id,
Issue_date, Expair_date, Type

2NF: 1. Customer_id, First_name, Last_name, Email, City, Country,
Lplate_number
 2. Parking_slip_id, Issue_date, Expire_date, Type, Customer_id
 3. Phone_number, Customer_id

3NF: City, Country has transitive dependency
 1. Customer_id, First_name, Last_name, Email, Lplate_number
 2. Customer_id, City, Country
 3. Parking_slip_id, Issue_date, Expair_date, Type, Customer_id
 4. Phone_number, Customer_id

Table: 1. Customer_id, First_name, Last_name, Email, Lplate_number
 2. Customer_id, city, country
 3. Parking_slip_id, Issue_date, Expair_date, Type, Customer_id
 4. Phone_number, Customer_id

Gives



UNF: Customer_id, First_name, Last_name, Email, City, Country, Phone_number, Lplate_number, Fine_id, Issue_date, Paid_date, Amount

1NF: Phone_number multivalued attribute

Customer_id, First_name, Last_name, Email, City, Country, Phone_number, Lplate_number, Fine_id, Issue_date, Paid_date, Amount

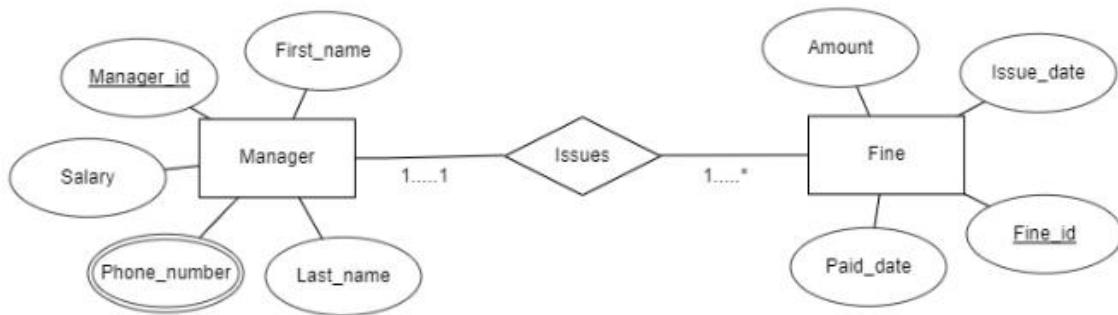
2NF: 1. Customer_id, First_name, Last_name, Email, City, Country, Lplate_number, Fine_id
 2. Fine_id, Issue_date, Paid_date, Amount
 3. Phone_number, Customer_id

3NF: City, Country has transitive dependency

1. Customer_id, First_name, Last_name, Email, Lplate_number, Fine_id
 2. Customer_id, City, Country
 3. Fine_id, Issue_date, paid_date, Amount
 4. Phone_number, Customer_id

Table: 1. Customer_id, First_name, Last_name, Email, Lplate_number, Fine_id
 2. Customer_id, City, Country
 3. Fine_id, Issue_date, Paid_date, Amount
 4. Phone_number, Customer_id

Issues



UNF: Manager_id, Phone_number, Fine_id, Issue_date,
Paid_date, Amount

1NF: Phone_number multivalued attribute
Manager_id, First_name, Last_name,
Salary, Phone_number, Fine_id, Issue_date, Paid_date, Amount

2NF: 1. Manager_id, First_name, Last_name, Salary
2. Fine_id, Issue_date, Paid_date, Amount, Manager_id
3. Phone_number, Manager_id

3NF: No transitive dependency
1. Manager_id, First_name, Last_name, Salary
2. Fine_id, Issue_date, Paid_date, Amount, Manager_id
3. Phone_number, Manager_id

Table: 1. Manager_id, First_name, Last_name, Salary
2. Fine_id, Issue_date, Paid_date, Amount, Manager_id
3. Phone_number, Manager_id

Total Table:

1. Spot_id, Street_no, City
2. Space_id, Space_Type, Spot_id
3. Space_id, Space_Type, Rate_id
4. Rate_id, Hourly_rate, Day_Rate, Type
5. Spot_id, Street_no, City, Manager_id
6. Manager_id, first_name, last_name, Salary
7. Phone_number, Manager_id

- 8.Manager_id, First_name,Last_name,Salary
 9.Phone_number, Manager_id
 10.Employee_id, First_Name , Last_Name , Hire_date, Salary,
Manager_id
 11.Phone_number, Employee_id
 12.Space_id,Space_type
 13.Parking_slip_id,Issue_date,Expire_date,Type,Space_id
 14.Customer_id,First_name,Last_name,Email,Lplate_number
 15.Customer_id,City,Country
 16.Parking_slip_id,Issue_date,Expair_date,Type,Customer_id
 17.Phone_number, Customer_id
 18.Customer_id,First_name,Last_name,Email,Lplate_number,Fine_id
 19.Customer_id, City,Country
 20.Fine_id, Issue_date,Paid_date,Amount
 21.Phone_number, Customer_id
 22.Manager_id, First_name,Last_name,Salary
 23.Fine_id,Issue_date, Paid_date,Amount,Manager_id
 24.Phone_number, Manager_id

Final Table:

- 1.Space_id, Space_Type, Spot_id
 2.Space_id, Space_Type, Rate_id
 3.Rate_id, Hourly_rate, Day_Rate,Type
 4.Spot_id, Street_no,City, Manager_id
 5.Manager_id,First_name,Last_name,Salary
 6.Phone_number, Manager_id
 7.Employee_id, First_Name , Last_Name , Hire_date, Salary,
Manager_id
 8.Phone_number, Employee_id
 9.Parking_slip_id,Issue_date,Expire_date,Type,Space_id
 10.Customer_id,City,Country
 11.Parking_slip_id,Issue_date,Expair_date,Type,Customer_id
 12.Phone_number, Customer_id
 13.Customer_id,First_name,Last_name,Email,Lplate_number,
Fine_id
 14.Fine_id,Issue_date, Paid_date,Amount,Manager_id

Table Creation And Data Insertion:

MANAGER TABLE:

```
create table manager
( manager_id number(5) constraint mid_pk primary key,
first_name varchar2(20) not null,
last_name varchar2(20) not null,
salary number(10) not null)
desc manager
drop table manager
insert into manager(manager_id,first_name,last_name,salary) values
(150,'Arifur Rahman','Shezann',5000)
insert into manager(manager_id,first_name,last_name,salary) values
(250,'Nahid Hasan','Nobil',500000)
insert into manager(manager_id,first_name,last_name,salary) values
(350,'Hedaet Shahriar','Himon',7900)
insert into manager(manager_id,first_name,last_name,salary) values
(450,'Tarin Sultana','Chaity',8200)
select * from manager
```

ORACLE Database Express Edition

User: SCOTT

Home > SQL > SQL Commands

Autocommit Display 200

```
create table manager(
    manager_id number(5) constraint mid_pk primary key,
    first_name varchar2(20) not null,
    last_name varchar2(20) not null,
    salary number(10) not null
)
desc manager
drop table manager
```

Results Explain Describe Saved SQL History

Object Type TABLE Object MANAGER

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
MANAGER	MANAGER_ID	Number	-	5	0	1	-	-	-
	FIRST_NAME	Varchar2	20	-	-	-	-	-	-
	LAST_NAME	Varchar2	20	-	-	-	-	-	-
	SALARY	Number	-	10	0	-	-	-	-

1 - 4

Application Express 2.1.0.0.39 5:07 PM 5/16/2023

ORACLE Database Express Edition

User: SCOTT

Home > SQL > SQL Commands

Autocommit Display 200

```
create table manager(
    manager_id number(5) constraint mid_pk primary key,
    first_name varchar2(20) not null,
    last_name varchar2(20) not null,
    salary number(10) not null
)
desc manager
drop table manager

insert into manager(manager_id,first_name,last_name,salary) values (150,'Arifur Rahman','Shezann',5000)
insert into manager(manager_id,first_name,last_name,salary) values (250,'Nahid Hasan','Nobil',500000)
```

Results Explain Describe Saved SQL History

MANAGER_ID	FIRST_NAME	LAST_NAME	SALARY
150	Arifur Rahman	Shezann	5000
250	Nahid Hasan	Nobil	500000
350	Hedaet Shahriar	Himon	7900
450	Tarin Sultana	Chaitly	8200

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

Application Express 2.1.0.0.39
Language: en-us Copyright © 1999, 2006, Oracle. All rights reserved. 6:24 PM 5/16/2023

M_PHONENUMBER TABLE:

```
create table m_phonenumber
( phone_number number(11) unique not null,
manager_id number(5) constraint mid_fk references manager(manager_id)
not null)

desc m_phonenumber

drop table m_phonenumber

insert into m_phonenumber(manager_id,phone_number) values (150,
01865454574)

insert into m_phonenumber(manager_id,phone_number) values (250,
01765456785)

insert into m_phonenumber(manager_id,phone_number) values (350,
01965453876)

insert into m_phonenumber(manager_id,phone_number) values (450,
01334334345)

select * from m_phonenumber
```

The screenshot shows the Oracle Database Express Edition interface. The SQL Commands window contains the SQL code for creating the M_PHONENUMBER table, describing it, and dropping it. The table has two columns: PHONE_NUMBER (number(11)) and MANAGER_ID (number(5)). The MANAGER_ID column is constrained by a foreign key constraint named mid_fk, which references the manager_id column in the manager table. The table is created with a primary key constraint on the PHONE_NUMBER column.

Results Explain Describe Saved SQL History

Object Type TABLE Object M_PHONENUMBER

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
M_PHONENUMBER	PHONE_NUMBER	Number	-	11	0	-	-	-	
M_PHONENUMBER	MANAGER_ID	Number	-	5	0	-	-	-	

Language: en-us Application Express 2.1.0.00.39
Copyright © 1999, 2006, Oracle. All rights reserved.
6:08 PM 5/16/2023

The screenshot shows the Oracle Application Express SQL Commands interface. The SQL script in the editor window is:

```
insert into m_phonenumber(manager_id,phone_number) values (150, 01865454574)
insert into m_phonenumber(manager_id,phone_number) values (250, 01765456785)
insert into m_phonenumber(manager_id,phone_number) values (350, 01965453876)
insert into m_phonenumber(manager_id,phone_number) values (450, 01334334345)

select * from m_phonenumber
```

The results window displays the following table:

PHONE_NUMBER	MANAGER_ID
1865454574	150
1765456785	250
1965453876	350
1334334345	450

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

Application Express 2.1.0.00.39
Language: en-us Copyright © 1999, 2006, Oracle. All rights reserved.

PARKINGSPOT TABLE:

```
create table parkingspot
(
    spot_id number(5) constraint spotid_pk primary key,
    street_no number(10) unique not null,
    city varchar2(20) not null,
    manager_id number(5) constraint mnid_fk references
    manager(manager_id) not null
)
desc parkingspot
drop table parkingspot
insert into parkingspot(spot_id,street_no,city,manager_id) values
(10,8,'Coxs-Bazar',150)
insert into parkingspot(spot_id,street_no,city,manager_id) values
(20,13,'Tangail',250)
insert into parkingspot(spot_id,street_no,city,manager_id) values
(30,21,'Mymensing',350)
insert into parkingspot(spot_id,street_no,city,manager_id) values
(40,3,'Joshor',450)
```

```
select * from parkingspot
```

The screenshot shows the Oracle Application Express interface. In the top navigation bar, it says "Home > SQL > SQL Commands". Below the navigation is a toolbar with "Autocommit" checked, "Display 200", "Save", and "Run" buttons. The main area contains the following SQL code:

```
create table parkingspot(
    spot_id number(5)constraint spotid_pk primary key,
    street_no number(10) unique not null,
    city varchar2(20) not null,
    manager_id number(5) constraint mnid_fk references manager(manager_id) not null
)
desc parkingspot
drop table parkingspot
```

Below the code, there are tabs for "Results", "Explain", "Describe", "Saved SQL", and "History". A "Results" tab is selected. Under "Object Type TABLE Object PARKINGSPOT", there is a table showing the columns and their properties:

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
PARKINGSPOT	SPOT_ID	Number	-	5	0	1	-	-	-
	STREET_NO	Number	-	10	0	-	-	-	-
	CITY	Varchar2	20	-	-	-	-	-	-
	MANAGER_ID	Number	-	5	0	-	-	-	-

At the bottom right of the results table, it says "1 - 4". The status bar at the bottom right of the window shows "Application Express 2.1.0.0.39", "6:38 PM", and "5/16/2023".

The screenshot shows the Oracle Application Express interface. In the top navigation bar, it says "Home > SQL > SQL Commands". Below the navigation is a toolbar with "Autocommit" checked, "Display 200", "Save", and "Run" buttons. The main area contains the following SQL code:

```
desc parkingspot
drop table parkingspot

insert into parkingspot(spot_id,street_no,city,manager_id) values (10,8,'Coxs-Bazar',150)
insert into parkingspot(spot_id,street_no,city,manager_id) values (20,13,'Tangail',250)
insert into parkingspot(spot_id,street_no,city,manager_id) values (30,21,'Mymensing',350)
insert into parkingspot(spot_id,street_no,city,manager_id) values (40,3,'Joshor',450)

select * from parkingspot
```

Below the code, there are tabs for "Results", "Explain", "Describe", "Saved SQL", and "History". A "Results" tab is selected. The results table shows the inserted data:

SPOT_ID	STREET_NO	CITY	MANAGER_ID
10	8	Coxs-Bazar	150
20	13	Tangail	250
30	21	Mymensing	350
40	3	Joshor	450

Below the table, it says "4 rows returned in 0.00 seconds" and has a "CSV Export" link. The status bar at the bottom right of the window shows "Application Express 2.1.0.0.39", "Copyright © 1999, 2006, Oracle. All rights reserved.", "6:32 PM", and "5/16/2023".

PARKINGSPACE TABLE:

```
create table parkingspace
( space_id number(5) constraint spid_pk primary key,
space_type varchar2(20) check( space_type in ('Small','Medium','Large'))
not null,
spot_id number(5) constraint spotid_fk references parkingspot(spot_id)
not null )
desc parkingspace drop table parkingspace
insert into parkingspace (space_id,space_type,spot_id)
values(1,'Large',10)
insert into parkingspace (space_id,space_type,spot_id)
values(2,'Small',10)
insert into parkingspace (space_id,space_type,spot_id)
values(3,'Large',10)
insert into parkingspace (space_id,space_type,spot_id)
values(4,'Small',40)
insert into parkingspace (space_id,space_type,spot_id)
values(5,'Medium',20)
insert into parkingspace (space_id,space_type,spot_id)
values(6,'Small',20)
insert into parkingspace (space_id,space_type,spot_id)
values(7,'Large',20)
insert into parkingspace (space_id,space_type,spot_id)
values(8,'Medium',40)
insert into parkingspace (space_id,space_type,spot_id)
values(9,'Medium',30)
insert into parkingspace (space_id,space_type,spot_id)
values(10,'Medium',30)
insert into parkingspace (space_id,space_type,spot_id)
values(11,'Large',30)
insert into parkingspace (space_id,space_type,spot_id)
values(12,'Medium',40)
select * from parkingspace
```

Autocommit Display 200

```
insert into parkingspace (space_id,space_type,spot_id) values(6,'Small',20)
insert into parkingspace (space_id,space_type,spot_id) values(7,'Large',20)
insert into parkingspace (space_id,space_type,spot_id) values(8,'Medium',40)
insert into parkingspace (space_id,space_type,spot_id) values(9,'Medium',30)
insert into parkingspace (space_id,space_type,spot_id) values(10,'Medium',30)
insert into parkingspace (space_id,space_type,spot_id) values(11,'Large',30)
insert into parkingspace (space_id,space_type,spot_id) values(12,'Medium',40)

select * from parkingspace
```

Results Explain Describe Saved SQL History

SPACE_ID	SPACE_TYPE	SPOT_ID
1	Large	10
2	Small	10
3	Large	10
4	Small	40
5	Medium	20
6	Small	20
7	Large	20
8	Medium	40
9	Medium	30
10	Medium	30
11	Large	30
12	Medium	40

7:18 PM 5/16/2023

ORACLE® Database Express Edition

User: SCOTT

Home > SQL > SQL Commands

Autocommit Display 200

```
create table parkingspace(
    space_id number(5) constraint spid_pk primary key,
    space_type varchar2(20)
        check( space_type in ('Small','Medium','Large')) not null,
    spot_id number(5)
        constraint spotid_fk references parkingspot(spot_id) not null
)
desc parkingspace
drop table parkingspace
```

Results Explain Describe Saved SQL History

Object Type TABLE Object PARKINGSPACE

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
PARKINGSPACE	SPACE_ID	Number	-	5	0	1	-	-	-
	SPACE_TYPE	Varchar2	20	-	-	-	-	-	-
	SPOT_ID	Number	-	5	0	-	-	-	-

1 - 3

Application Express 2.1.0.0.39
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Language: en-us
6:59 PM 5/16/2023

R PARKINGSPACE TABLE:

```
create table r_parkingspace
( space_id number(5) constraint sid_pk primary key,
type varchar2(20) check(type in ('Small','Medium','Large')),
rate_id number(5) constraint rid_fk references rate(rate_id))
desc r_parkingspace
drop table r_parkingspace
create sequence space_id_seq
increment by 1
start with 1
maxvalue 300
insert into r_parkingspace(space_id,type,rate_id) values
(space_id_seq.nextval,'Small',1)
insert into r_parkingspace(space_id,type,rate_id) values
(space_id_seq.nextval,'Large',2)
insert into r_parkingspace(space_id,type,rate_id) values
(space_id_seq.nextval,'Small',3)
insert into r_parkingspace(space_id,type,rate_id) values
(space_id_seq.nextval,'Small',4)
insert into r_parkingspace(space_id,type,rate_id) values
(space_id_seq.nextval,'Medium',5)
insert into r_parkingspace(space_id,type,rate_id) values
(space_id_seq.nextval,'Large',6)
insert into r_parkingspace(space_id,type,rate_id) values
(space_id_seq.nextval,'Large',7)
insert into r_parkingspace(space_id,type,rate_id) values
(space_id_seq.nextval,'Small',8)
insert into r_parkingspace(space_id,type,rate_id) values
(space_id_seq.nextval,'Medium',9)
insert into r_parkingspace(space_id,type,rate_id) values
(space_id_seq.nextval,'Medium',10)
```

```
select * from r_parkingspace
```

ORACLE Database Express Edition

User SCOTT

Home > SQL > SQL Commands

Autocommit Display 200 Save Run

```
create table r_parkingspace(
    space_id number(5) constraint sid_pk primary key,
    type varchar2(20) check(type in ('Small','Medium','Large')),
    rate_id number(5)
        constraint rid_fk references rate(rate_id)
)
desc r_parkingspace
drop table r_parkingspace

create sequence space_id_seq
    increment by 1
    start with 1
```

Results Explain Describe Saved SQL History

Object Type TABLE Object R_PARKINGSPACE

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
R_PARKINGSPACE	SPACE_ID	Number	-	5	0	1	-	-	-
	TYPE	VARCHAR2	20	-	-	-	✓	-	-
	RATE_ID	Number	-	5	0	-	✓	-	-

1 - 3

Language en-us Application Express 2.1.0.00.39 Copyright © 1999, 2006, Oracle. All rights reserved.

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User SCOTT

Home > SQL > SQL Commands

Autocommit Display 200 Save Run

```
start with 1
maxvalue 300
insert into r_parkingspace(space_id,type,rate_id) values (space_id_seq.nextval,'Small',1)
insert into r_parkingspace(space_id,type,rate_id) values (space_id_seq.nextval,'Large',2)
insert into r_parkingspace(space_id,type,rate_id) values (space_id_seq.nextval,'Small',3)
insert into r_parkingspace(space_id,type,rate_id) values (space_id_seq.nextval,'Small',4)
insert into r_parkingspace(space_id,type,rate_id) values (space_id_seq.nextval,'Medium',5)
insert into r_parkingspace(space_id,type,rate_id) values (space_id_seq.nextval,'Large',6)
insert into r_parkingspace(space_id,type,rate_id) values (space_id_seq.nextval,'Large',7)
insert into r_parkingspace(space_id,type,rate_id) values (space_id_seq.nextval,'Small',8)
insert into r_parkingspace(space_id,type,rate_id) values (space_id_seq.nextval,'Medium',9)
insert into r_parkingspace(space_id,type,rate_id) values (space_id_seq.nextval,'Medium',10)

select * from r_parkingspace
```

Results Explain Describe Saved SQL History

SPACE_ID	TYPE	RATE_ID
1	Small	1
2	Large	2
3	Small	3
4	Small	4
5	Medium	5
6	Large	7
7	Small	8
8	Medium	9
9	Medium	10

9 rows returned in 0.00 seconds CSV Export Application Express 2.1.0.00.39

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RATE TABLE:

```
create table rate  
( rate_id number(5) constraint rid_pk primary key,  
hourly_rate number(10) not null,  
day_rate number(10) not null,  
type varchar2(20) check(type in ('Small','Medium','Large')) )  
desc rate  
drop table rate  
create sequence rate_seq  
increment by 1  
start with 1  
maxvalue 200  
insert into rate(rate_id,hourly_rate,day_rate,type) values  
(rate_seq.nextval,100,700,'Small')  
insert into rate(rate_id,hourly_rate,day_rate,type) values  
(rate_seq.nextval,250,2000,'Large')  
insert into rate(rate_id,hourly_rate,day_rate,type) values  
(rate_seq.nextval,100,700,'Small')  
insert into rate(rate_id,hourly_rate,day_rate,type) values  
(rate_seq.nextval,100,700,'Small')  
insert into rate(rate_id,hourly_rate,day_rate,type) values  
(rate_seq.nextval,170,1200,'Medium')  
insert into rate(rate_id,hourly_rate,day_rate,type) values  
(rate_seq.nextval,250,2000,'Large')  
insert into rate(rate_id,hourly_rate,day_rate,type) values  
(rate_seq.nextval,250,2000,'Large')  
insert into rate(rate_id,hourly_rate,day_rate,type) values  
(rate_seq.nextval,100,700,'Small')  
insert into rate(rate_id,hourly_rate,day_rate,type) values  
(rate_seq.nextval,170,1200,'Medium')  
insert into rate(rate_id,hourly_rate,day_rate,type) values  
(rate_seq.nextval,170,1200,'Medium')
```

```
select * from rate
```

ORACLE Database Express Edition

User: SCOTT

Home > SQL > SQL Commands

Autocommit

```
create table rate(
    rate_id number(5) constraint rid_pk primary key,
    hourly_rate number(10) not null,
    day_rate number(10) not null,
    type varchar2(20) check(type in ('Small','Medium','Large'))
)

desc rate
drop table rate
```

Results Explain Describe Saved SQL History

Object Type TABLE Object RATE

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
RATE	RATE_ID	Number	-	5	0	1	-	-	
	HOURLY_RATE	Number	-	10	0	-	-	-	
	DAY_RATE	Number	-	10	0	-	-	-	
	TYPE	Varchar2	20	-	-	-	✓	-	

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23:55 PM 5/16/2023

ORACLE Database Express Edition

User: SCOTT

Home > SQL > SQL Commands

Autocommit

```
create sequence rate_seq
    increment by 1
    start with 1
    maxvalue 200
insert into rate(rate_id,hourly_rate,day_rate,type) values (rate_seq.nextval,100,700,'Small')
insert into rate(rate_id,hourly_rate,day_rate,type) values (rate_seq.nextval,250,2000,'Large')
insert into rate(rate_id,hourly_rate,day_rate,type) values (rate_seq.nextval,100,700,'Small')
insert into rate(rate_id,hourly_rate,day_rate,type) values (rate_seq.nextval,100,700,'Small')
insert into rate(rate_id,hourly_rate,day_rate,type) values (rate_seq.nextval,100,700,'Medium')
insert into rate(rate_id,hourly_rate,day_rate,type) values (rate_seq.nextval,250,2000,'Large')
insert into rate(rate_id,hourly_rate,day_rate,type) values (rate_seq.nextval,250,2000,'Large')
insert into rate(rate_id,hourly_rate,day_rate,type) values (rate_seq.nextval,100,700,'Small')
insert into rate(rate_id,hourly_rate,day_rate,type) values (rate_seq.nextval,170,1200,'Medium')
insert into rate(rate_id,hourly_rate,day_rate,type) values (rate_seq.nextval,170,1200,'Medium')

select * from rate
```

Results Explain Describe Saved SQL History

RATE_ID	HOURLY_RATE	DAY_RATE	TYPE
1	100	700	Small
2	250	2000	Large
3	100	700	Small
4	100	700	Small
5	170	1200	Medium
6	250	2000	Large
7	250	2000	Large
8	100	700	Small
9	170	1200	Medium
10	170	1200	Medium

10 rows returned in 0.00 seconds

Application Express 21.0.0.0 39
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Language: en-us

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EMPLOYEE TABLE:

```
create table employee  
(employee_id number(5) constraint employee_emid_pk primary key,  
first_name varchar2(20) not null,  
last_name varchar2(20),  
hire_date date not null,  
salary number(10) not null,  
manager_id number(5) constraint mngid_fk references  
manager(manager_id) not null)  
  
desc employee  
  
drop table employee  
  
insert into  
employee(employee_id,first_name,Last_name,hire_date,salary,manager_i  
d) values(100,'Rahim','khan','06-FEB-20',15000,150)  
  
insert into  
employee(employee_id,first_name,Last_name,hire_date,salary,manager_i  
d) values(200,'Rana ','lalam','28-MAR-21',12000,150)  
  
insert into  
employee(employee_id,first_name,Last_name,hire_date,salary,manager_i  
d) values(300,'Salman','Shihab','14-JUL-18',25000,150)  
  
insert into  
employee(employee_id,first_name,Last_name,hire_date,salary,manager_i  
d) values(400,'Badhon','Bishwas','17-JAN-08',18000,350)  
  
insert into  
employee(employee_id,first_name,Last_name,hire_date,salary,manager_i  
d) values(500,'Nahid','Khan','06-DEC-19',20000,350)  
  
insert into  
employee(employee_id,first_name,Last_name,hire_date,salary,manager_i  
d) values(600,'Jorina','Khatun','01-MAY-15',13000,350)  
  
insert into  
employee(employee_id,first_name,Last_name,hire_date,salary,manager_i  
d) values(700,'karim','Mirza','12-JUN-22',14000,450)
```

```

insert into
employee(employee_id,first_name,Last_name,hire_date,salary,manager_i
d) values(800,'Hero','Alam','15-JAN-17',10000,450)

insert into
employee(employee_id,first_name,Last_name,hire_date,salary,manager_i
d) values(900,'Chengish','Khan','17-JAN-11',17000,450)

insert into
employee(employee_id,first_name,Last_name,hire_date,salary,manager_i
d) values(1000,'Abdur','rahman','21-DEC-20',19000,250)

insert into
employee(employee_id,first_name,Last_name,hire_date,salary,manager_i
d) values(1100,'Will','Smith','10-JUN-18',29000,250)

insert into
employee(employee_id,first_name,Last_name,hire_date,salary,manager_i
d) values(1200,'Shekh','Hassina','07-FEB-03',1000,250)

```

```
select * from employee
```

The screenshot shows the Oracle Application Express (APEX) interface. In the top-left, there's a code editor window containing SQL code for creating the EMPLOYEE table and inserting data. The code is as follows:

```

create table employee(
    employee_id number(5) constraint employee_emid_pk primary key,
    first_name varchar2(20) not null,
    last_name varchar2(20),
    hire_date date not null,
    salary number(10) not null,
    manager_id number(5)
        constraint mngid_fk references manager(manager_id) not null
)
desc employee
drop table employee

```

Below the code editor, there are tabs for Results, Explain, Describe, Saved SQL, and History. The Results tab is selected. It displays the schema information for the EMPLOYEE table:

Object Type	TABLE Object	EMPLOYEE							
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
EMPLOYEE	EMPLOYEE_ID	Number	-	5	0	1	-	-	-
	FIRST_NAME	Varchar2	20	-	-	-	-	-	-
	LAST_NAME	Varchar2	20	-	-	-	✓	-	-
	HIRE_DATE	Date	7	-	-	-	-	-	-
	SALARY	Number	-	10	0	-	-	-	-
	MANAGER_ID	Number	-	5	0	-	-	-	-

At the bottom of the interface, there are status bars for Language: en-us, Application Express 2.1.0.0.39, Copyright © 1999, 2006, Oracle. All rights reserved., and system icons.

```

Autocommit Display 200
insert into employee(employee_id,first_name,last_name,hire_date,salary,manager_id) values(100,'Jorina','Khatun',01-MAY-15,15000,550)
insert into employee(employee_id,first_name,last_name,hire_date,salary,manager_id) values(200,'karim','Mirza',12-JUN-22,14000,450)
insert into employee(employee_id,first_name,last_name,hire_date,salary,manager_id) values(300,'Hero','Alam',15-JAN-17,10000,450)
insert into employee(employee_id,first_name,last_name,hire_date,salary,manager_id) values(400,'Chengish','Khan',17-JAN-11,17000,450)
insert into employee(employee_id,first_name,last_name,hire_date,salary,manager_id) values(500,'Abdur','rahman',21-DEC-20,19000,250)
insert into employee(employee_id,first_name,last_name,hire_date,salary,manager_id) values(600,'Will','Smith',10-JUN-18,29000,250)
insert into employee(employee_id,first_name,last_name,hire_date,salary,manager_id) values(1200,'Shekh','Hassina',07-FEB-03,1000,250)

select * from employee

```

Results Explain Describe Saved SQL History

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	HIRE_DATE	SALARY	MANAGER_ID
100	Rahim	khan	06-FEB-20	15000	150
200	Rana	Ialam	28-MAR-21	12000	150
300	Salman	Shihab	14-JUL-18	25000	150
400	Badhon	Bishwas	17-JAN-08	18000	350
500	Nahid	Khan	06-DEC-19	20000	350
600	Jorina	Khatun	01-MAY-15	13000	350
700	karim	Mirza	12-JUN-22	14000	450
800	Hero	Alam	15-JAN-17	10000	450
900	Chengish	Khan	17-JAN-11	17000	450
1000	Abdur	rahman	21-DEC-20	19000	250
1100	Will	Smith	10-JUN-18	29000	250
1200	Shekh	Hassina	07-FEB-03	1000	250

12 rows returned in 0.00 seconds CSV Export

E_PHONENUMBER TABLE:

```

create table e_phonenumber
(
    phone_number number(10) unique not null,
    employee_id number(5) constraint emid_fk references
    employee(employee_id) not null
)

desc e_phonenumber

drop table e_phonenumber

insert into e_phonenumber(employee_id,phone_number)
values(100,01756324896)

insert into e_phonenumber(employee_id,phone_number)
values(200,01824526126)

insert into e_phonenumber(employee_id,phone_number)
values(300,01646554852)

insert into e_phonenumber(employee_id,phone_number)
values(400,01648423541)

insert into e_phonenumber(employee_id,phone_number)
values(500,01756395463)

insert into e_phonenumber(employee_id,phone_number)
values(600,01756378521)

```

```

insert into e_phonenumber(employee_id,phone_number)
values(700,01956885776)

insert into e_phonenumber(employee_id,phone_number)
values(800,01856654823)

insert into e_phonenumber(employee_id,phone_number)
values(900,01654854228)

insert into e_phonenumber(employee_id,phone_number)
values(1000,01751234897)

insert into e_phonenumber(employee_id,phone_number)
values(1100,01562486248)

insert into e_phonenumber(employee_id,phone_number)
values(1200,01888888111)

select * from e_phonenumber

```

ORACLE Database Express Edition

User: SCOTT

Home > SQL > **SQL Commands**

Autocommit Display 200

```

create table e_phonenumber(
    phone_number number(10) unique not null,
    employee_id number(5)
        constraint emid_fk references employee(employee_id) not null
)
desc e_phonenumber
drop table e_phonenumber

insert into e_phonenumber(employee_id,phone_number) values(100,01756324896)
insert into e_phonenumber(employee_id,phone_number) values(200,01824526126)
insert into e_phonenumber(employee_id,phone_number) values(300,01646554852)

```

Results Explain Describe Saved SQL History

Object Type TABLE Object E_PHONENUMBER

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
E_PHONENUMBER	PHONE_NUMBER	Number	-	10	0	-	-	-	
	EMPLOYEE_ID	Number	-	5	0	-	-	-	

1 - 2

Language: en-us Application Express 2.1.0.0.39
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9:04 PM 5/16/2023

ORACLE Database Express Edition

User: SCOTT

Home > SQL > SQL Commands

Autocommit Display 200

```
create table e_phonenumber(
    phone_number number(10) unique not null,
    employee_id number(5)
        constraint emid_fk references employee(employee_id) not null
)
desc e_phonenumber
drop table e_phonenumber

insert into e_phonenumber(employee_id,phone_number) values(100,01756324896)
insert into e_phonenumber(employee_id,phone_number) values(200,01824526126)
insert into e_phonenumber(employee_id,phone_number) values(300,01646554852)
```

Results Explain Describe Saved SQL History

Object Type TABLE Object E_PHONENUMBER

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
E_PHONENUMBER	PHONE_NUMBER	Number	-	10	0	-	-	-	
	EMPLOYEE_ID	Number	-	5	0	-	-	-	

1 - 2

Language: en-us Application Express 2.1.0.0.39 Copyright © 1999, 2006, Oracle. All rights reserved.

9:04 PM 5/16/2023

FINE TABLE:

```
create table fine

( fine_id number(5) constraint fid_pk primary key,
issue_date date not null,
paid_date date not null,
amount number(10) not null,
manager_id number(5) constraint fmid_fk references
manager(manager_id) not null)

desc fine

drop table fine

insert into fine (fine_id,issue_date,paid_date,amount,manager_id) values
(01,'08-dec-22','09-dec-22',70,150)

insert into fine (fine_id,issue_date,paid_date,amount,manager_id) values
(02,'11-dec-22','12-dec-22',120,150)

insert into fine (fine_id,issue_date,paid_date,amount,manager_id) values
(03,'12-feb-22','18-feb-22',200,150)

insert into fine (fine_id,issue_date,paid_date,amount,manager_id) values
(04,'15-mar-21','20-mar-21',300,250)
```

```
insert into fine (fine_id,issue_date,paid_date,amount,manager_id) values  
(05,'20-jul-20','27-jul-20',250,250)
```

```
insert into fine (fine_id,issue_date,paid_date,amount,manager_id) values  
(06,'20-dec-19','22-dec-19',500,350)
```

```
insert into fine (fine_id,issue_date,paid_date,amount,manager_id) values  
(07,'10-jan-23','15-jan-23',1000,450)
```

```
insert into fine (fine_id,issue_date,paid_date,amount,manager_id) values  
(08,'08-jun-22','11-jun-22',100,250)
```

```
insert into fine (fine_id,issue_date,paid_date,amount,manager_id) values  
(09,'14-dec-17','18-dec-17',100,350)
```

```
insert into fine (fine_id,issue_date,paid_date,amount,manager_id) values  
(010,'17-dec-16','20-dec-16',100,450)
```

```
select * from fine
```

The screenshot shows the Oracle Application Express interface. In the top-left, there's a SQL editor window with the following code:

```
create table fine(  
    fine_id number(5) constraint fid_pk primary key,  
    issue_date date not null,  
    paid_date date not null,  
    amount number(10) not null,  
    manager_id number(5)  
        constraint fmid_fk references manager(manager_id) not null  
)  
desc fine  
drop table fine
```

Below the code, there are tabs for Results, Explain, Describe, Saved SQL, and History. The Results tab is selected, showing the table structure:

Object Type	TABLE	Object	FINE						
Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
FINE	FINE_ID	Number	-	5	0	1	-	-	-
	ISSUE_DATE	Date	7	-	-	-	-	-	-
	PAID_DATE	Date	7	-	-	-	-	-	-
	AMOUNT	Number	-	10	0	-	-	-	-
	MANAGER_ID	Number	-	5	0	-	-	-	-

At the bottom of the interface, there are status bars for Language: en-us, Application Express 2.1.0.0.39, Copyright © 1999, 2006, Oracle. All rights reserved., and system icons.

The screenshot shows the Oracle SQL Developer interface. In the SQL editor, there is a block of SQL code. Below the editor, the results of the query are displayed in a table. The table has columns: FINE_ID, ISSUE_DATE, PAID_DATE, AMOUNT, and MANAGER_ID. The data consists of 10 rows. At the bottom of the results window, it says "10 rows returned in 0.00 seconds".

```

insert into fine (fine_id,issue_date,paid_date,amount,manager_id) values (06,'20-dec-19','22-dec-19',500,350)
insert into fine (fine_id,issue_date,paid_date,amount,manager_id) values (07,'10-jan-23','15-jan-23',1000,450)
insert into fine (fine_id,issue_date,paid_date,amount,manager_id) values (08,'08-jun-22','11-jun-22',100,250)
insert into fine (fine_id,issue_date,paid_date,amount,manager_id) values (09,'14-dec-17','18-dec-17',100,350)
insert into fine (fine_id,issue_date,paid_date,amount,manager_id) values (010,'17-dec-16','20-dec-16',100,450)
select * from fine

13.Customer_id,First_name,Last_name,Email,Lplate_number,Fine_id// Customer table

```

FINE_ID	ISSUE_DATE	PAID_DATE	AMOUNT	MANAGER_ID
1	08-DEC-22	09-DEC-22	70	150
2	11-DEC-22	12-DEC-22	120	150
3	12-FEB-22	18-FEB-22	200	150
4	15-MAR-21	20-MAR-21	300	250
5	20-JUL-20	27-JUL-20	250	250
6	20-DEC-19	22-DEC-19	500	350
7	10-JAN-23	15-JAN-23	1000	450
8	08-JUN-22	11-JUN-22	100	250
9	14-DEC-17	18-DEC-17	100	350
10	17-DEC-16	20-DEC-16	100	450

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

CUSTOMER TABLE:

```

create table customer(
    customer_id number(5) constraint customer_cid_pk primary key,
    first_name varchar2(20) not null,
    last_name varchar2(20),
    email varchar2(50),
    lplate_number varchar2(20) unique not null,
    fine_id number(5)
        constraint customer_fid_fk references fine(fine_id) not null
)
desc customer
drop table customer

insert into
customer(customer_id,first_name,last_name,email,lplate_number,fine_id)v
alues(111,'Winston','Taylor','instonaylor@gmail.com','KA 45-2422',03)

```

```
insert into
customer(customer_id,first_name,last_name,email,lplate_number,fine_id )
values(222,'Jean','Fleur','jeanfleur@gmail.com','KA 34-3243',08)

insert into
customer(customer_id,first_name,last_name,email,lplate_number,fine_id )
values(333,'Nandita','Sarchand','nanditasarchand@gmail.com','GA 22-
1232',01)

insert into
customer(customer_id,first_name,last_name,email,lplate_number,fine_id )
values(444,'Alexis','Bull','alexisbull@gmail.com','KA 33-4332',02)

insert into
customer(customer_id,first_name,last_name,email,lplate_number,fine_id )
values(555,'Julia','Dellinger','juliadellinger@gmail.com','KA 65-4534',03)

insert into
customer(customer_id,first_name,last_name,email,lplate_number,fine_id )
values(666,'Anthony','Cabrio','anthonycabrio@gmail.com','KHA 25-
4311',04)

insert into
customer(customer_id,first_name,last_name,email,lplate_number,fine_id )
values(777,'Kelly','Chung','kellychung@gmail.com','CA 25-2432',05)

insert into customer
(customer_id,first_name,last_name,email,lplate_number,fine_id )
values(888,'Jennifer','Dilly','jenniferdilly@gmail.com','KA 53-2423',09)

insert into
customer(customer_id,first_name,last_name,email,lplate_number,fine_id )
values(999,'Timothy','Gates','timothygates@gmail.com','KA 43-2422',08)

insert into
customer(customer_id,first_name,last_name,email,lplate_number,fine_id )
values(1010,'Randall','Perkins','randallperkins@gmail.com','KA 62-
1434',07)

insert into
customer(customer_id,first_name,last_name,email,lplate_number,fine_id )
values(1111,'Sarah','Bell','sarahbell@gmail.com','KHA 51-5234',06)

insert into
customer(customer_id,first_name,last_name,email,lplate_number,fine_id )
values(1212,'Britney','Everett','britneyeverett@gmail.com','KHA 53-
6423',010)
```

select * from customer

```

create table customer(
    customer_id number(5) constraint customer_cid_pk primary key,
    first_name varchar2(20) not null,
    last_name varchar2(20),
    email varchar2(50),
    lplate_number varchar2(20) unique not null,
    fine_id number(5)
        constraint customer_fid_fk references fine(fine_id) not null
)
desc customer
drop table customer

```

Results Explain Describe Saved SQL History

Object Type TABLE Object CUSTOMER

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
CUSTOMER	CUSTOMER_ID	Number	-	5	0	1	-	-	-
	FIRST_NAME	Varchar2	20	-	-	-	-	-	-
	LAST_NAME	Varchar2	20	-	-	-	✓	-	-
	EMAIL	Varchar2	50	-	-	-	✓	-	-
	LPLATE_NUMBER	Varchar2	20	-	-	-	-	-	-
	FINE_ID	Number	-	5	0	-	-	-	-

1 - 6

Application Express 2.1.0.0.39
Language: en-us Copyright © 1999, 2006, Oracle. All rights reserved.
11:48 PM 5/16/2023

```

insert into customer(customer_id,first_name,last_name,email,lplate_number,fine_id ) values(666,'Anthony','Cabrio','anthonycabrio@gmail.com','KA 25-4311',04)
insert into customer(customer_id,first_name,last_name,email,lplate_number,fine_id ) values(777,'Kelly','Chung','kellychung@gmail.com','CA 25-2432',05)
insert into customer (customer_id,first_name,last_name,email,lplate_number,fine_id ) values(888,'Jennifer','Dilly','jenniferdilly@gmail.com','KA 53-2423',09)
insert into customer(customer_id,first_name,last_name,email,lplate_number,fine_id ) values(999,'Timothy','Gates','timothygates@gmail.com','KA 43-2422',08)
insert into customer(customer_id,first_name,last_name,email,lplate_number,fine_id ) values(1010,'Randall','Perkins','randalperkins@gmail.com','KA 62-1434',07)
insert into customer(customer_id,first_name,last_name,email,lplate_number,fine_id ) values(1111,'Sarah','Bell','sarahbell@gmail.com','KHA 51-5234',06)
insert into customer(customer_id,first_name,last_name,email,lplate_number,fine_id ) values(1212,'Britney','Everett','britneyeverett@gmail.com','KHA 53-6423',010)

select * from customer

```

Results Explain Describe Saved SQL History

CUSTOMER_ID	FIRST_NAME	LAST_NAME	EMAIL	LPLATE_NUMBER	FINE_ID
111	Winston	Taylor	instonaylor@gmail.com	KA 45-2422	3
222	Jean	Fleaur	jeanfleaur@gmail.com	KA 34-3243	8
333	Nandita	Sarchand	nanditasarchand@gmail.com	GA 22-1232	1
444	Alexis	Bull	alexisbull@gmail.com	KA 33-4332	2
555	Julia	Dellinger	juliadellinger@gmail.com	KA 65-4534	3
666	Anthony	Cabrio	anthonycabrio@gmail.com	KHA 25-4311	4
777	Kelly	Chung	kellychung@gmail.com	CA 25-2432	5
888	Jennifer	Dilly	jenniferdilly@gmail.com	KA 53-2423	9
999	Timothy	Gates	timothygates@gmail.com	KA 43-2422	8
1010	Randall	Perkins	randalperkins@gmail.com	KA 62-1434	7
1111	Sarah	Bell	sarahbell@gmail.com	KHA 51-5234	6
1212	Britney	Everett	britneyeverett@gmail.com	KHA 53-6423	10

12 rows returned in 0.01 seconds CSV Export 11:50 PM 5/16/2023

C_PHONENUMBER TABLE:

```
create table c_phonenumber
( Phone_number number(20) unique not null,
customer_id number(5) constraint cid_fk references
customer(customer_id) not null)

desc c_phonenumber

drop table c_phonenumber

insert into c_phonenumber(customer_id,phone_number )
values(111,0183164675)

insert into c_phonenumber(customer_id,phone_number )
values(222,0175424855)

insert into c_phonenumber(customer_id,phone_number )
values(333,0146546555)

insert into c_phonenumber(customer_id,phone_number )
values(444,0153215655)

insert into c_phonenumber(customer_id,phone_number )
values(555,0134849122)

insert into c_phonenumber(customer_id,phone_number )
values(666,0183164678)
insert into c_phonenumber(customer_id,phone_number )
values(888,0189454525)

insert into c_phonenumber(customer_id,phone_number )
values(999,0183164679)

insert into c_phonenumber(customer_id,phone_number )
values(1111,0178585858)
insert into c_phonenumber(customer_id,phone_number )
values(1212,0199911224)

select * from c_phonenumber
```

Home > SQL > SQL Commands

Autocommit Display 200 Save Run

```
create table c_phonenumber(
    Phone number(20) unique not null,
    customer_id number(5) constraint cid_fk references customer(customer_id) not null
)
desc c_phonenumber
drop table c_phonenumber
```

Results Explain Describe Saved SQL History

Object Type TABLE Object C_PHONENUMBER

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
C_PHONENUMBER	PHONE_NUMBER	Number	-	20	0	-	-	-	-
	CUSTOMER_ID	Number	-	5	0	-	-	-	-

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Autocommit Display 200 Save Run

```
insert into c_phonenumber(customer_id,phone_number) values(333,0146546555)
insert into c_phonenumber(customer_id,phone_number) values(444,0153215655)
insert into c_phonenumber(customer_id,phone_number) values(555,0134849122)
insert into c_phonenumber(customer_id,phone_number) values(666,0183164678)
insert into c_phonenumber(customer_id,phone_number) values(888,0189454525)
insert into c_phonenumber(customer_id,phone_number) values(999,0183164679)
insert into c_phonenumber(customer_id,phone_number) values(1111,0178585858)
insert into c_phonenumber(customer_id,phone_number) values(1212,0199911224)

select * from c_phonenumber
```

Results Explain Describe Saved SQL History

PHONE_NUMBER	CUSTOMER_ID
183164675	111
175424855	222
146546555	333
153215655	444
134849122	555
183164678	666
189454525	888
183164679	999
178585858	1111
199911224	1212

10 rows returned in 0.01 seconds [CSV Export](#)

Application Express 2.1.0.00.39
12:33 AM 5/17/2023

C_ADDRESS TABLE:

```
create table c_address
( city varchar2(20) not null,
country varchar2(20) not null,
customer_id number(5) constraint ccid_fk references
customer(customer_id) not null)

desc c_address

drop table c_address

insert into c_address(customer_id,city,country ) values(111,'Dellas','USA')

insert into c_address(customer_id,city,country )
values(222,'Amsterdam','Netherlands')

insert into c_address(customer_id,city,country ) values(333,'Texas','USA')

insert into c_address(customer_id,city,country )
values(444,'Bharmingham','Uk')

insert into c_address(customer_id,city,country ) values(555,'London','Uk')

insert into c_address(customer_id,city,country )
values(666,'California','USA')
insert into c_address(customer_id,city,country ) values(777,'San
Diego','USA')

insert into c_address(customer_id,city,country ) values(888,'San
Francisco','USA')

insert into c_address(customer_id,city,country ) values(999,'Miami','USA')

insert into c_address(customer_id,city,country )
values(1010,'Florida','USA')

insert into c_address(customer_id,city,country ) values(1111,'New
York','USA')

insert into c_address(customer_id,city,country ) values(1212,'Orange
County','USA')

select * from c_address
```

User: SCOTT

Home > SQL > SQL Commands

Autocommit Display 200 Save Run

```
create table c_address(
    city varchar2(20) not null,
    country varchar2(20) not null,
    customer_id number(5) constraint ccid_fk references customer(customer_id) not null
)
desc c_address
drop table c_address
```

Results Explain Describe Saved SQL History

Object Type TABLE Object C_ADDRESS

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
C_ADDRESS	CITY	Varchar2	20	-	-	-	-	-	-
	COUNTRY	Varchar2	20	-	-	-	-	-	-
	CUSTOMER_ID	Number	-	5	0	-	-	-	-
									1 - 3

Application Express 2.1.0.0.39 12:12 AM 5/17/2023

```
insert into c_address(customer_id,city,country) values(444,'Birmingham','UK')
insert into c_address(customer_id,city,country) values(555,'London','USA')
insert into c_address(customer_id,city,country) values(666,'California','USA')
insert into c_address(customer_id,city,country) values(777,'San Diego','USA')
insert into c_address(customer_id,city,country) values(888,'San Francisco','USA')
insert into c_address(customer_id,city,country) values(999,'Miami','USA')
insert into c_address(customer_id,city,country) values(1010,'Florida','USA')
insert into c_address(customer_id,city,country) values(1111,'New York','USA')
insert into c_address(customer_id,city,country) values(1212,'Orange County','USA')

select * from c_address
```

Results Explain Describe Saved SQL History

CITY	COUNTRY	CUSTOMER_ID
Dallas	USA	111
Amsterdam	Netherlands	222
Texas	USA	333
Birmingham	UK	444
London	USA	555
California	USA	666
San Diego	USA	777
San Francisco	USA	888
Miami	USA	999
Florida	USA	1010
New York	USA	1111
Orange County	USA	1212

12 rows returned in 0.00 seconds [CSV Export](#) 12:29 AM 5/17/2023

C PARKINGSLIP TABLE:

```
create table c_parkingslip  
(parking_slip_id number(5) constraint psid_pk primary key,  
issue_date date not null,  
expair_date date not null,  
type varchar2(30) check(type in ('small','medium','large')) not null,  
customer_id number(5)  
constraint pcid_fk references customer(customer_id) not null)  
desc c_parkingslip  
drop table c_parkingslip  
insert into c_parkingslip(parking_slip_id,issue_date,expair_date,type,  
customer_id) values(1,'09-dec-22','10-dec-22','small',111)  
insert into c_parkingslip(parking_slip_id,issue_date,expair_date,type,  
customer_id) values(2,'10-dec-22','11-dec-22','medium',222)  
insert into c_parkingslip(parking_slip_id,issue_date,expair_date,type,  
customer_id) values(3,'11-dec-22','12-dec-22','small',333)  
insert into c_parkingslip(parking_slip_id,issue_date,expair_date,type,  
customer_id) values(4,'12-dec-22','13-dec-22','small',444)  
insert into c_parkingslip(parking_slip_id,issue_date,expair_date,type,  
customer_id) values(5,'12-dec-22','14-dec-22','large',555)  
insert into c_parkingslip(parking_slip_id,issue_date,expair_date,type,  
customer_id) values(6,'13-dec-22','16-dec-22','small',666)  
insert into c_parkingslip(parking_slip_id,issue_date,expair_date,type,  
customer_id) values(7,'16-dec-22','17-dec-22','large',777)  
insert into c_parkingslip(parking_slip_id,issue_date,expair_date,type,  
customer_id) values(8,'18-dec-22','20-dec-22','large',888)  
insert into c_parkingslip(parking_slip_id,issue_date,expair_date,type,  
customer_id) values(9,'19-dec-22','21-dec-22','small',999)
```

```

insert into c_parkingslip(parking_slip_id,issue_date,expair_date,type,
customer_id) values(10,'20-dec-22','23-dec-22','medium',1010)
insert into c_parkingslip(parking_slip_id,issue_date,expair_date,type,
customer_id) values(11,'24-dec-22','26-dec-22','medium',1111)
insert into c_parkingslip(parking_slip_id,issue_date,expair_date,type,
customer_id) values(12,'27-dec-22','29-dec-22','medium',1212)
select * from c_parkingslip

```

The screenshot shows the Oracle SQL Developer interface. In the top-left, there's a navigation bar with 'HOME > SQL > SQL Commands'. Below it is a code editor window containing the following SQL code:

```

Autocommit Display 200
create table c_parkingslip(
    parking_slip_id number(5) constraint psid_pk primary key,
    issue_date date not null,
    expair_date date not null,
    type varchar2(30) check(type in ('small','medium','large')) not null,
    customer_id number(5)
        constraint pcid_fk references customer(customer_id) not null
)
desc c_parkingslip

```

Below the code editor is a toolbar with 'Save' and 'Run' buttons. Underneath the code editor, there's a tabs section with 'Results', 'Explain', 'Describe', 'Saved SQL', and 'History'. The 'Describe' tab is selected, showing the table structure:

Object Type	Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
TABLE	C_PARKINGSLIP	PARKING_SLIP_ID	Number	-	5	0	1	-	-	-
		ISSUE_DATE	Date	7	-	-	-	-	-	-
		EXPAIR_DATE	Date	7	-	-	-	-	-	-
		TYPE	Varchar2	30	-	-	-	-	-	-
		CUSTOMER_ID	Number	-	5	0	-	-	-	-

At the bottom of the SQL developer window, there's a status bar with 'Language: en-us', 'Application Express 2.1.0.00.39', and 'Copyright © 1999, 2006, Oracle. All rights reserved.'

The screenshot shows the continuation of the Oracle SQL Developer session. The code editor now contains the following SQL statements:

```

customer_id) values(1, '18-dec-22', '17-dec-22', 'large', 777)
insert into c_parkingslip(parking_slip_id,issue_date,expair_date,type,
customer_id) values(8,'18-dec-22','20-dec-22','large',888)
insert into c_parkingslip(parking_slip_id,issue_date,expair_date,type,
customer_id) values(9,'19-dec-22','21-dec-22','small',999)
insert into c_parkingslip(parking_slip_id,issue_date,expair_date,type,
customer_id) values(10,'20-dec-22','23-dec-22','medium',1010)
insert into c_parkingslip(parking_slip_id,issue_date,expair_date,type,
customer_id) values(11,'24-dec-22','26-dec-22','medium',1111)
insert into c_parkingslip(parking_slip_id,issue_date,expair_date,type,
customer_id) values(12,'27-dec-22','29-dec-22','medium',1212)
select * from c_parkingslip

```

The 'Results' tab is selected, displaying the data from the C_PARKINGSLIP table:

PARKING_SLIP_ID	ISSUE_DATE	EXPAIR_DATE	TYPE	CUSTOMER_ID
1	09-DEC-22	10-DEC-22	small	111
2	10-DEC-22	11-DEC-22	medium	222
3	11-DEC-22	12-DEC-22	small	333
4	12-DEC-22	13-DEC-22	small	444
5	12-DEC-22	14-DEC-22	large	555
6	13-DEC-22	16-DEC-22	small	666
7	16-DEC-22	17-DEC-22	large	777
8	18-DEC-22	20-DEC-22	large	888
9	19-DEC-22	21-DEC-22	small	999
10	20-DEC-22	23-DEC-22	medium	1010
11	24-DEC-22	26-DEC-22	medium	1111
12	27-DEC-22	29-DEC-22	medium	1212

At the bottom of the SQL developer window, there's a status bar with '12 rows returned in 0.00 seconds', 'CSV Export', 'Application Express 2.1.0.00.39', and '5/17/2023 10:06 AM'.

S_PARKINGSLIP TABLE:

```
create table s_parkingslip(
    parking_slip_id number(5) constraint prsid_pk primary key,
    issue_date date not null,
    expair_date date not null,
    type varchar2(30) check(type in ('small','medium','large')) not null,
    space_id number(5)
constraint prspid_fk references parkingspace(space_id) not null)
```

```
desc s_parkingslip
drop table s_parkingslip
```

```
insert into s_parkingslip(parking_slip_id,issue_date,expair_date,type,
space_id) values(1,'09-dec-22','10-dec-22','small',1)
insert into s_parkingslip(parking_slip_id,issue_date,expair_date,type,
space_id) values(2,'10-dec-22','11-dec-22','medium',2)
insert into s_parkingslip(parking_slip_id,issue_date,expair_date,type,
space_id) values(3,'11-dec-22','12-dec-22','small',3)
insert into s_parkingslip(parking_slip_id,issue_date,expair_date,type,
space_id) values(4,'12-dec-22','13-dec-22','small',4)
insert into s_parkingslip(parking_slip_id,issue_date,expair_date,type,
space_id) values(5,'12-dec-22','14-dec-22','large',5)
insert into s_parkingslip(parking_slip_id,issue_date,expair_date,type,
space_id) values(6,'13-dec-22','16-dec-22','small',6)
insert into s_parkingslip(parking_slip_id,issue_date,expair_date,type,
space_id) values(7,'16-dec-22','17-dec-22','large',7)
insert into s_parkingslip(parking_slip_id,issue_date,expair_date,type,
space_id) values(8,'18-dec-22','20-dec-22','large',8)
```

```

insert into s_parkingslip(parking_slip_id,issue_date,expair_date,type,
space_id) values(9,'19-dec-22','21-dec-22','small',9)
insert into s_parkingslip(parking_slip_id,issue_date,expair_date,type,
space_id) values(10,'20-dec-22','23-dec-22','medium',10)
insert into s_parkingslip(parking_slip_id,issue_date,expair_date,type,
space_id) values(11,'24-dec-22','26-dec-22','medium',11)
insert into s_parkingslip(parking_slip_id,issue_date,expair_date,type,
space_id) values(12,'27-dec-22','29-dec-22','medium',12)
select * from s_parkingslip

```

The screenshot shows the Oracle Application Express interface. At the top, there is a toolbar with various icons and a status bar indicating "Autocommit" is checked, "Display" is set to 200, and the current date and time (5/17/2023, 11:15 AM). Below the toolbar is a SQL editor window containing the following code:

```

create table s_parkingslip(
    parking_slip_id number(5) constraint prsid_pk primary key,
    issue_date date not null,
    expair_date date not null,
    type varchar2(30) check(type in ('small','medium','large')) not null,
    space_id number(5)
        constraint prspid_fk references parkingspace(space_id) not null
)
desc s_parkingslip

```

Below the SQL editor is a results grid titled "Object Type TABLE Object S_PARKINGSLIP". The grid displays the following table structure:

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
S_PARKINGSLIP	PARKING_SLIP_ID	Number	-	5	0	1	-	-	-
	ISSUE_DATE	Date	7	-	-	-	-	-	-
	EXPALR_DATE	Date	7	-	-	-	-	-	-
	TYPE	Varchar2	30	-	-	-	-	-	-
	SPACE_ID	Number	-	5	0	-	-	-	-

At the bottom of the results grid, it says "1 - 5". The status bar at the bottom of the application window also shows "Language: en-us" and the copyright notice "Copyright © 1999, 2006, Oracle. All rights reserved."

```

Autocommit Display | 200
Save Run
space_id) values(9,'19-dec-22','21-dec-22','small',9)
insert into s_parkingslip(parking_slip_id,issue_date,expair_date,type,
space_id) values(10,'20-dec-22','23-dec-22','medium',10)
insert into s_parkingslip(parking_slip_id,issue_date,expair_date,type,
space_id) values(11,'24-dec-22','26-dec-22','medium',11)
insert into s_parkingslip(parking_slip_id,issue_date,expair_date,type,
space_id) values(12,'27-dec-22','29-dec-22','medium',12)
select * from s_parkingslip

```

Results Explain Describe Saved SQL History

PARKING_SLIP_ID	ISSUE_DATE	EXPALIR_DATE	TYPE	SPACE_ID
1	09-DEC-22	10-DEC-22	small	1
2	10-DEC-22	11-DEC-22	medium	2
3	11-DEC-22	12-DEC-22	small	3
4	12-DEC-22	13-DEC-22	small	4
5	12-DEC-22	14-DEC-22	large	5
6	13-DEC-22	16-DEC-22	small	6
7	16-DEC-22	17-DEC-22	large	7
8	18-DEC-22	20-DEC-22	large	8
9	19-DEC-22	21-DEC-22	small	9
10	20-DEC-22	23-DEC-22	medium	10
11	24-DEC-22	26-DEC-22	medium	11
12	27-DEC-22	29-DEC-22	medium	12

```

select * from employee
select * from manager
select * from e_phonenumber
select * from m_phonenumber
select * from customer
select * from c_phonenumber
select * from c_address
select * from fine
select * from s_parkingslip
select * from s_parkingslip
select * from parkingspace
select * from r_parkingspace
select * from parkingspot
select * from rate

```

JOINNING:

Equijoin:

Display employee first name and their manager first name

```

select e.first_name as employee_name,m.first_name as manager_name
from employee e,manager m
where e.manager_id = m.manager_id

```

```

AutoCommit Display 200
select * from parkingspot
select * from rate

# Equijoin:
Display employee first name and their manager first name

select e.first_name as employee_name,m.first_name as manager_name
from employee e,manager m
where e.manager_id = m.manager_id

```

Results Explain Describe Saved SQL History

EMPLOYEE_NAME	MANAGER_NAME
Rahim	Arifur Rahman
Rana	Arifur Rahman
Salman	Arifur Rahman
Badhon	Hedaet Shahriar
Nahid	Hedaet Shahriar
Jorina	Hedaet Shahriar
karim	Tarin Sultana
Hero	Tarin Sultana
Chengish	Tarin Sultana
Abdur	Nahid Hasan
Will	Nahid Hasan
Shekh	Nahid Hasan

12 rows returned in 0.02 seconds. CSV Export 1:43 AM 5/17/2023

Outerjoin:

1. Display the first name, last name for all employee who have or have not parking any car.

Select

```
c.first_name,c.last_name,s.parking_slip_id,s.issue_date,s.expair_date
from customer c ,c_parkingslip s
where c.customer_id=s.customer_id(+)
```

```

AutoCommit Display 200
# Outer join:
1.Display the first name, last name for all employee who have or
have not parking any car.

select c.first_name,c.last_name,s.parking_slip_id,s.issue_date,s.expair_date
from customer c ,c_parkingslip s
where c.customer_id=s.customer_id(+)

```

Results Explain Describe Saved SQL History

FIRST_NAME	LAST_NAME	PARKING_SLIP_ID	ISSUE_DATE	EXPAIR_DATE
Winston	Taylor	1	09-DEC-22	10-DEC-22
Jean	Fleur	2	10-DEC-22	11-DEC-22
Nandita	Sarchand	3	11-DEC-22	12-DEC-22
Alexis	Bull	4	12-DEC-22	13-DEC-22
Julia	Dellinger	5	12-DEC-22	14-DEC-22
Anthony	Cabrio	6	13-DEC-22	16-DEC-22
Kelly	Chung	7	16-DEC-22	17-DEC-22
Jennifer	Dilly	8	18-DEC-22	20-DEC-22
Timothy	Gates	9	19-DEC-22	21-DEC-22
Randall	Perkins	10	20-DEC-22	23-DEC-22
Sarah	Bell	11	24-DEC-22	26-DEC-22
Britney	Everett	12	27-DEC-22	29-DEC-22

12 rows returned in 0.00 seconds. CSV Export 1:56 AM 5/17/2023

2. Display all the managers id, first name as manager_name who have employees under them and show the employee's first name as employee_name

```
select m.manager_id, m.first_name as manager_name ,e.first_name as employee_name  
from manager m, employee e  
where e.manager_id(+) = m.manager_id
```

The screenshot shows a SQL query being run in a database environment. The query is:

```
2. Display all the managers id, first name as manager_name who have employees under them and show the employee's first name as employee_name  
select m.manager_id, m.first_name as manager_name ,e.first_name as employee_name  
from manager m, employee e  
where e.manager_id(+) = m.manager_id
```

The results are displayed in a table:

MANAGER_ID	MANAGER_NAME	EMPLOYEE_NAME
150	Arifur Rahman	Salman
150	Arifur Rahman	Rahim
150	Arifur Rahman	Rana
250	Nahid Hasan	Abdur
250	Nahid Hasan	Will
250	Nahid Hasan	Shekh
350	Hedaet Shahriar	Nahid
350	Hedaet Shahriar	Badhon
350	Hedaet Shahriar	Jorina
450	Tarin Sultana	Hero
450	Tarin Sultana	karim
450	Tarin Sultana	Chengish

12 rows returned in 0.00 seconds

#Self-join:

Display the first and last name and salary for those employees who earn less than the employee earn whose employee_id is 500.

```
select e.first_name, e.last_name, e.salary  
from employee e,employee s  
where e.salary < s.salary and s.employee_id = 500
```

Home > SQL > SQL Commands

Autocommit Display 200 ▾

where e.manager_id = m.manager_id

Self-join:
1.Display the first and last name and salary for those employees who earn less than the employee whose employee_id is 500.

```
select e.first_name, e.last_name, e.salary
from employee e,employee s
where e.salary < s.salary
and s.employee_id = 500
```

Save Run

Results Explain Describe Saved SQL History

FIRST_NAME	LAST_NAME	SALARY
Rahim	khan	15000
Rana	lalam	12000
Badhon	Bishwas	18000
Jorina	Khatun	13000
karim	Mirza	14000
Hero	Alam	10000
Chengish	Khan	17000
Abdur	rahman	19000
Shekh	Hassina	1000

9 rows returned in 0.00 seconds CSV Export

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SUBQUERY:

1.Display the first name and salary for all employee who earn more than employee id 1200

```
select first_name ,salary
from employee
```

```
where salary > (select salary from employee where employee_id = 1200)
```

```
# Subquery:
1.Display the first name and salary for all employee who earn more than employee id 1200

select first_name ,salary from employee
where salary > (select salary from employee
where employee_id = 1200)
```

Results Explain Describe Saved SQL History

FIRST_NAME	SALARY
Rahim	15000
Rana	12000
Salman	25000
Badhon	18000
Nahid	20000
Jorina	13000
karim	14000
Hero	10000
Chengish	17000
Abdur	19000
Will	29000

11 rows returned in 0.00 seconds CSV Export

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2:19 AM

2. Display the last name and hire date for all employee who was hired after employee number 200

```
select first_name ,hire_date  
from employee  
where hire_date<  
      (select hire_date from employee where employee_id = 200)
```

The screenshot shows a SQL query editor interface. At the top, there are buttons for 'Autocommit' (checked), 'Display' (set to 200), 'Save', and 'Run'. Below the buttons, the query is displayed:

```
2.Display the last name and hire date for all employee who was hired after employee number 200  
select first_name ,hire_date from employee  
where hire_date < (select hire_date from employee  
where employee_id = 200)
```

Below the query, there is a 'Results' tab selected, followed by 'Explain', 'Describe', 'Saved SQL', and 'History'. The results are presented in a table:

FIRST_NAME	HIRE_DATE
Rahim	06-FEB-20
Salman	14-JUL-18
Badhon	17-JAN-08
Nahid	06-DEC-19
Jorina	01-MAY-15
Hero	15-JAN-17
Chengish	17-JAN-11
Abdur	21-DEC-20
Will	10-JUN-18
Shekh	07-FEB-03

At the bottom left, it says '10 rows returned in 0.00 seconds'. On the right, there is a 'CSV Export' button. The bottom of the screen shows a Windows taskbar with various icons and the system tray.

3. Display the first name and last name all employee whose manager's last name is Nobil

```
select first_name, last_name  
from employee  
where manager_id in (select manager_id from manager where  
last_name='Nobil')
```

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Autocommit Display 200 Save Run

```
3.Display the first name and last name all employee whose manager's last name is Nobil

select first_name, last_name
from employee
where manager_id in(select manager_id
from manager where last_name='Nobil')
```

Results Explain Describe Saved SQL History

FIRST_NAME	LAST_NAME
Abdur	rahman
Will	Smith
Shekh	Hassina

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

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VIEW:

[#simple view:](#)

```
create view empview
as select employee_id, first_name, salary from employee where
manager_id= 250; select * from empview
```

Home > SQL > SQL Commands

Autocommit Display 200 Save Run

```
#simple view:
create view empview
as select employee_id, first_name, salary
from employee where manager_id= 250;
select * from empview
```

Results Explain Describe Saved SQL History

EMPLOYEE_ID	FIRST_NAME	SALARY
1000	Abdur	19000
1100	Will	29000
1200	Shekh	1000

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

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#complex view:

```
create view slip_details
(customer_name,issue_date,expair_date,spot_id,space_id,space_type,s
pot_address)
as select
c.first_name,pc.issue_date,pc.expair_date,sp.spot_id,s.space_id,
s.space_type,sp.city
from customer c,c_parkingslip pc,s_parkingslip ps,
parkingspace s,parkingspot sp
where c.customer_id = pc.customer_id and s.space_id = ps.space_id
and s.spot_id=sp.spot_id
```

User SCOTT

Home > SQL > SQL Commands

Autocommit Display 200

```
#complex view:
create view slip_details  (customer_name,issue_date,expair_date,spot_id,space_id,space_type,spot_address)
as select c.first_name,pc.issue_date,pc.expair_date,sp.spot_id,s.space_id,s.space_type,sp.city
from customer c,c_parkingslip pc,s_parkingslip ps,parkingspace s,parkingspot sp
where c.customer_id = pc.customer_id and s.space_id = ps.space_id
and s.spot_id=sp.spot_id

select * from slip_details

#simple view:
create view empview
as select employee_id, first_name, salary
from employee where manager_id= 250;
select * from empview
```

Results Explain Describe Saved SQL History

CUSTOMER_NAME	ISSUE_DATE	EXPARI_DATE	SPOT_ID	SPACE_ID	SPACE_TYPE	SPOT_ADDRESS
Britney	27-DEC-22	29-DEC-22	10	1	Large	Coxs-Bazar
Sarah	24-DEC-22	26-DEC-22	10	1	Large	Coxs-Bazar
Randall	20-DEC-22	23-DEC-22	10	1	Large	Coxs-Bazar
Timothy	19-DEC-22	21-DEC-22	10	1	Large	Coxs-Bazar
Jennifer	18-DEC-22	20-DEC-22	10	1	Large	Coxs-Bazar
Kelly	16-DEC-22	17-DEC-22	10	1	Large	Coxs-Bazar
Anthony	13-DEC-22	16-DEC-22	10	1	Large	Coxs-Bazar
Julia	12-DEC-22	14-DEC-22	10	1	Large	Coxs-Bazar
Alexis	12-DEC-22	13-DEC-22	10	1	Large	Coxs-Bazar
Nandita	11-DEC-22	12-DEC-22	10	1	Large	Coxs-Bazar
Jean	10-DEC-22	11-DEC-22	10	1	Large	Coxs-Bazar

ADD CONSTRAINT:

Add unique constraint in customer table with the email column
Alter table customer add constraint cuq unique (email);

The screenshot shows the Oracle Database Express Edition interface. The user is SCOTT. The SQL Commands window contains the following text:

```
Autocommit Display 200
Add constraint:
1.Add unique constraint in customer table with the email column
alter table customer add constraint cuq unique (email);
```

The 'Run' button is highlighted. Below the window, the status bar shows "Table altered." and "0.00 seconds".

The screenshot shows the Oracle Database Express Edition Object Browser interface. The user is SCOTT. The Object Browser window displays the CUSTOMER table constraints. The table has three unique constraints:

Index Name	Uniqueness	Columns	Status	Index Type	Temporary	Partitioned	Function Status	Join Index
CUQ	UNIQUE	EMAIL	VALID	NORMAL	N	NO	-	NO
CUSTOMER_CID_PK	UNIQUE	CUSTOMER_ID	VALID	NORMAL	N	NO	-	NO
SYS_C005776	UNIQUE	LPLATE_NUMBER	VALID	NORMAL	N	NO	-	NO

The status bar at the bottom shows "Application Express 2.1.0.0.39" and "Copyright © 1999, 2006, Oracle. All rights reserved."