4.Normalization:

Order:(C\_Id,Name, Gender, Address, Email, Phone\_Number, P\_Id ,

Product\_Name, Price,Meterial, Amount\_in\_Inventory )

1NF:Phone\_Number Multivalued attribute

2NF:C\_Id,Name, Gender, Address, Email, Phone\_Number

P\_Id , Product\_Name, Price,Meterial, Amount\_in\_Inventory

3NF:No transitive dependency

C\_Id,Name, Gender, Address, Email, Phone\_Number

P\_Id , Product\_Name, Price,Meterial, Amount\_in\_Inventory

Tables from Order:

1.C\_Id,Name, Gender, Address, Email, Phone\_Number

2.C\_Id,Phone Number-Composite PK

3.P\_Id , Product\_Name, Price,Meterial, Amount\_in\_Inventory

4.O\_Id,C\_Id,P\_Id

Provide: (S\_Id,Name,Address,Join\_date,Phone\_Number, P\_Id ,

Product\_Name, Price,Meterial, Amount\_in\_Inventory)

1NF:Phone\_Number Multivalued attribute

2NF:S\_Id,Name,Address,Join\_date,Phone\_Number

P\_Id , Product\_Name, Price,Meterial, Amount\_in\_Inventory

3NF:No transitive dependency

S\_Id,Name,Address,Join\_date,Phone\_Number

P\_Id , Product\_Name, Price,Meterial, Amount\_in\_Inventory

Tables from Provide:

5.S\_Id,Name,Address,Join\_date,Phone\_Number

6.S\_Id,Phone\_Number-Composite PK

7.P\_Id , Product\_Name, Price,Meterial, Amount\_in\_Inventory

8.Pr\_Id,S\_Id,P\_Id

Pay:(C\_Id,Name, Gender, Address, Email, Phone\_Number,B\_Id,

Total\_Bill,Transaction\_Date,Bill\_Type)

1NF:Phone\_Number Multivalued attribute

2NF:C\_Id,Name, Gender, Address, Email, Phone\_Number

B\_Id, Total\_Bill,Transaction\_Date,Bill\_Type

3NF:No transitive dependency

C\_Id,Name, Gender, Address, Email, Phone\_Number

B\_Id, Total\_Bill,Transaction\_Date,Bill\_Type

Tables from Pay:

9.C\_Id,Name, Gender, Address, Email, Phone\_Number

10.C\_Id,Phone\_Number-Composite PK

11.B\_Id, Total\_Bill,Transaction\_Date,Bill\_Type,C\_Id

Receive:( B\_Id,Total\_Bill,Transaction\_Date,Bill\_Type,Cashier\_Id,

Name,Gender,Address,Phone\_Number,)

1NF:Phone\_Number Multivalued attribute

2NF:B\_Id, Total\_Bill,Transaction\_Date,Bill\_Type

Cashier\_Id,Name,Gender,Address,Phone\_Number

3NF:No transitive dependency

B\_Id, Total\_Bill,Transaction\_Date,Bill\_Type,Cashier\_Id

Cashier\_Id,Name,Gender,Address,Phone\_Number

Tables from Receive:

12.B\_Id, Total\_Bill,Transaction\_Date,Bill\_Type,Cashier\_Id

13.Cashier\_Id,Name,Gender,Address,Phone\_Number

14.Cashier\_Id,Phone\_Number-Composite PK

Total Tables:

1.C\_Id,Name, Gender, Address, Email, Phone\_Number

2.C\_Id,Phone Number-Composite PK

3.P\_Id , Product\_Name, Price,Meterial, Amount\_in\_Inventory

4.O\_Id,C\_Id,P\_Id

5.S\_Id,Name,Address,Join\_date,Phone\_Number

6.S\_Id,Phone\_Number-Composite PK

7.P\_Id , Product\_Name, Price,Meterial, Amount\_in\_Inventory

8.Pr\_Id,S\_Id,P\_Id

9.C\_Id,Name, Gender, Address, Email, Phone\_Number

10.C\_Id,Phone\_Number-Composite PK

11.B\_Id, Total\_Bill,Transaction\_Date,Bill\_Type,C\_Id

12.B\_Id, Total\_Bill,Transaction\_Date,Bill\_Type,Cashier\_Id

13.Cashier\_Id,Name,Gender,Address,Phone\_Number

14.Cashier\_Id,Phone\_Number-Composite PK

Tables after Normalization:

1.C\_Id,Name, Gender, Address, Email, Phone\_Number

2.P\_Id , Product\_Name, Price,Meterial, Amount\_in\_Inventory

3.O\_Id,C\_Id,P\_Id

4.S\_Id,Name,Address,Join\_date,Phone\_Number

5.Pr\_Id,S\_Id,P\_Id

6.B\_Id, Total\_Bill,Transaction\_Date,Bill\_Type,C\_Id

7.B\_Id, Total\_Bill,Transaction\_Date,Bill\_Type,Cashier\_Id

8.Cashier\_Id,Name,Gender,Address,Phone\_Number

Table 1:

create table Customer(

C\_Id number(20),

Name varchar2(30),

Gender varchar2(10),

Address varchar2(40),

Email varchar2(20),

Phone\_Number number(20))

alter table Customer add constraint Customer\_pk primary key(C\_Id)

alter table Customer modify (Name not null)

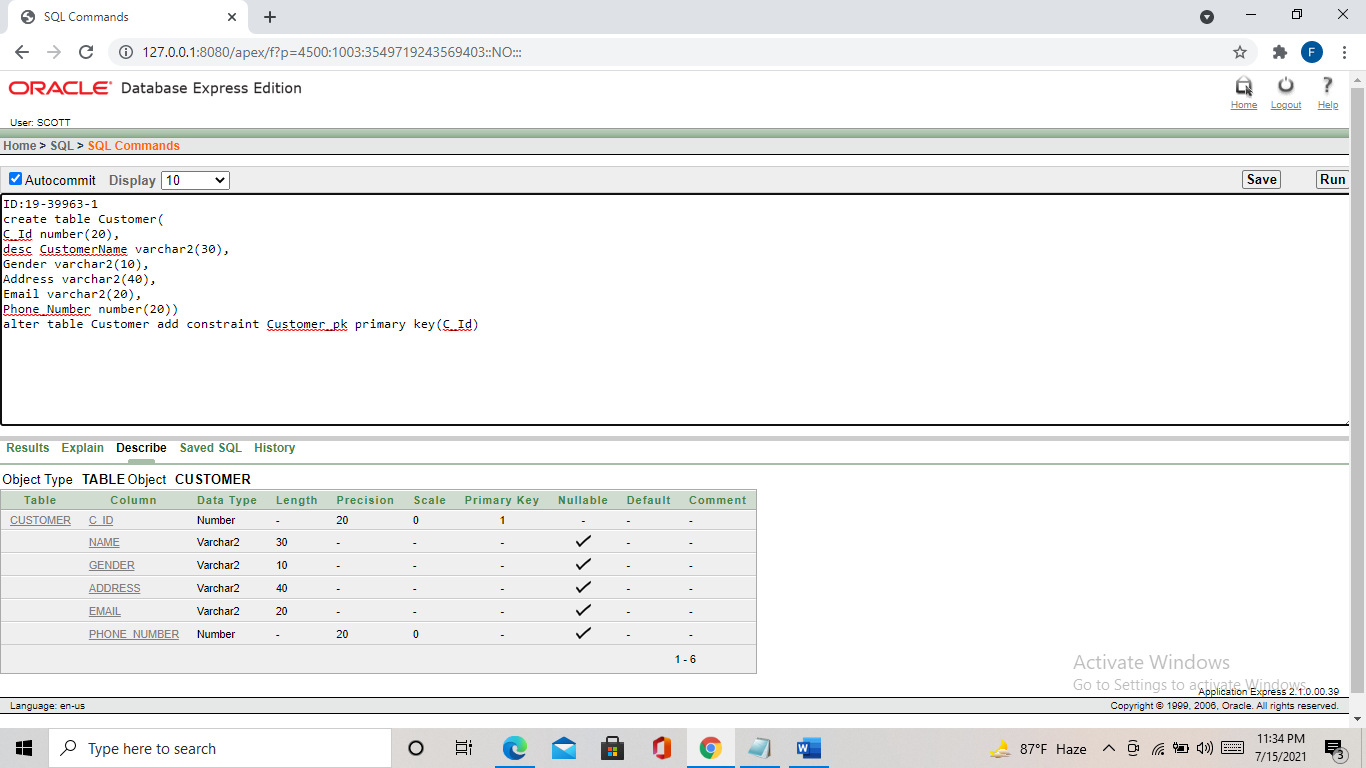
alter table Customer add constraint cust\_pk unique(email)

desc Customer

select \*

from all\_constraints

where table\_name='CUSTOMER'



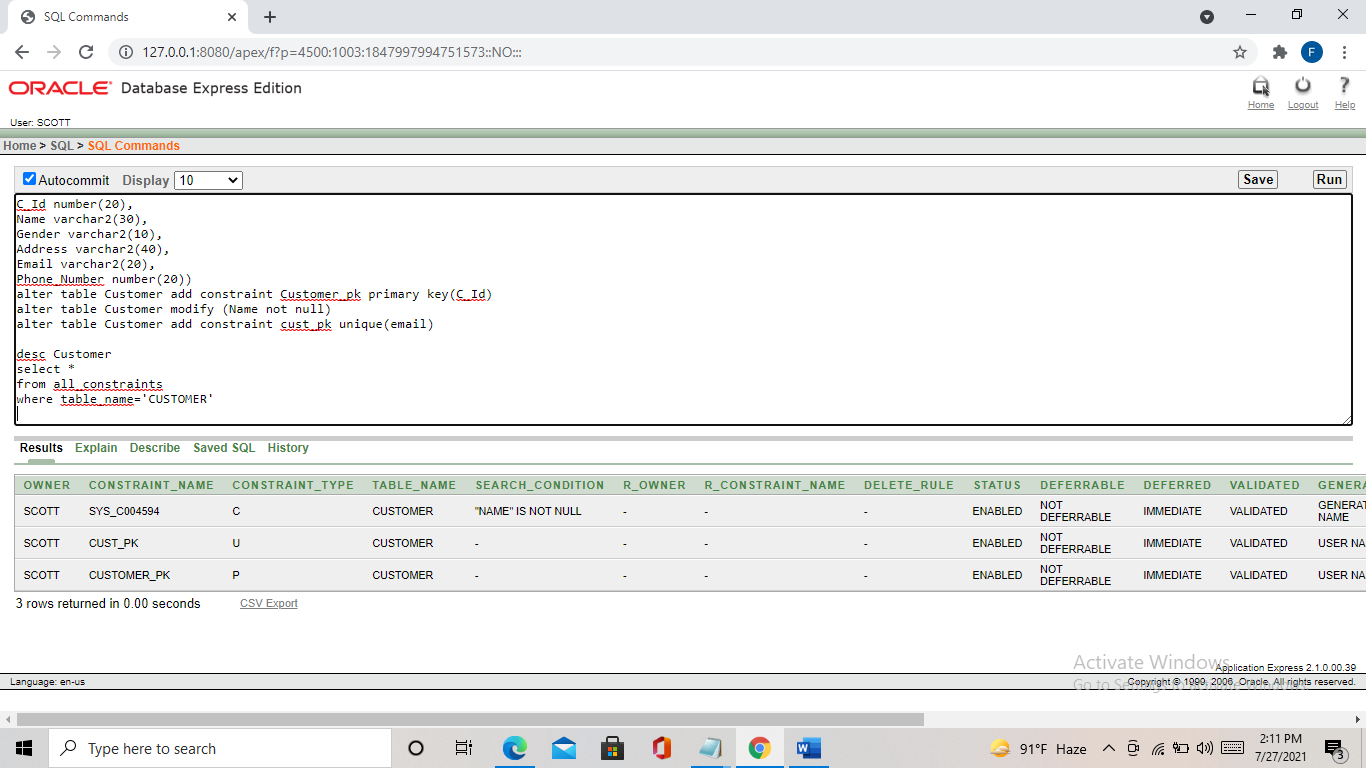


Table 2:

create table Product(

P\_Id number(20),

Product\_Name varchar2(30),

Price number(10),

Meterial varchar2(30),

Amount\_in\_Inventory number(20))

alter table Product add constraint Product\_pk primary key(P\_Id)

desc Product

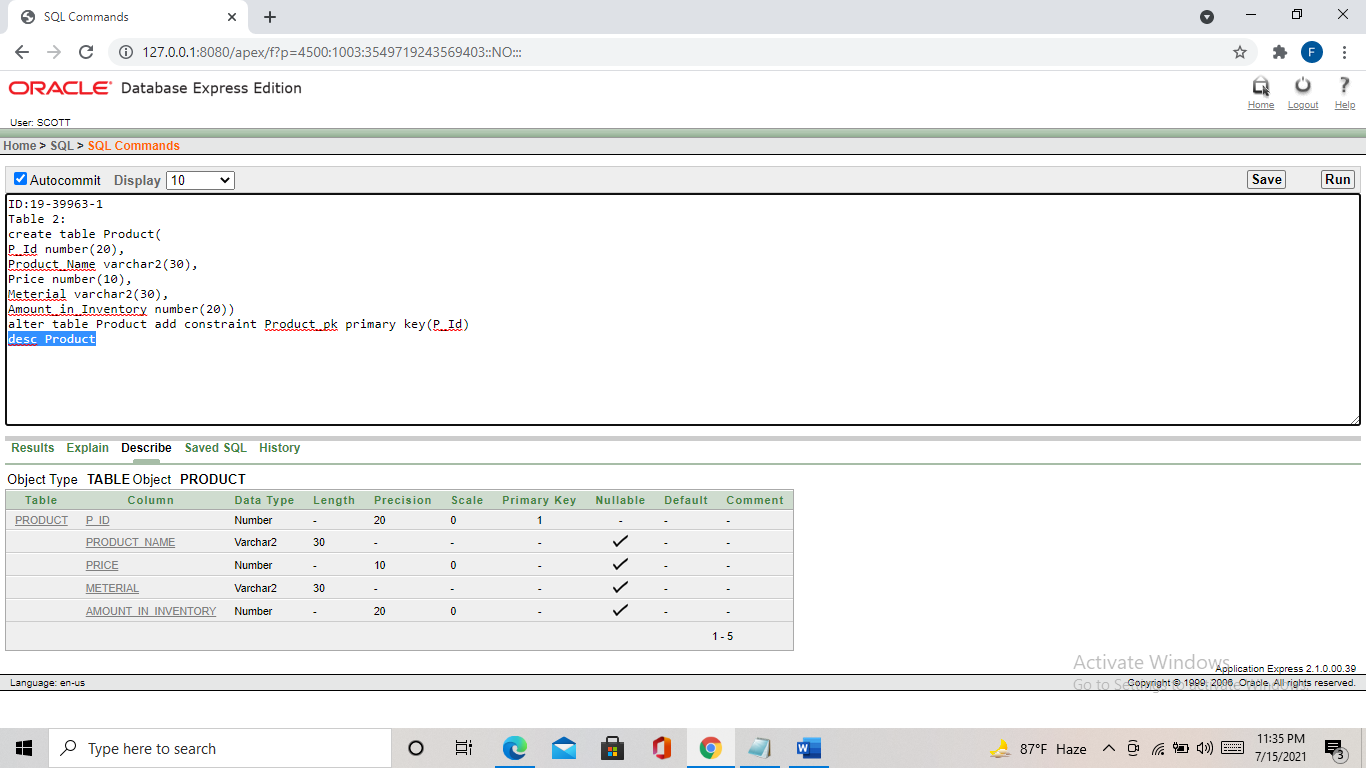


Table 3:

create table Ordeer(

O\_Id number(20),

C\_Id number(20),

P\_Id number(20))

alter table Ordeer add constraint Ordeer\_pk primary key(O\_Id)

alter table Ordeer add constraint O\_fk foreign key(C\_Id) references customer(C\_Id)

alter table Ordeer add constraint Or\_fk foreign key(P\_Id) references product(P\_Id)

desc Ordeer

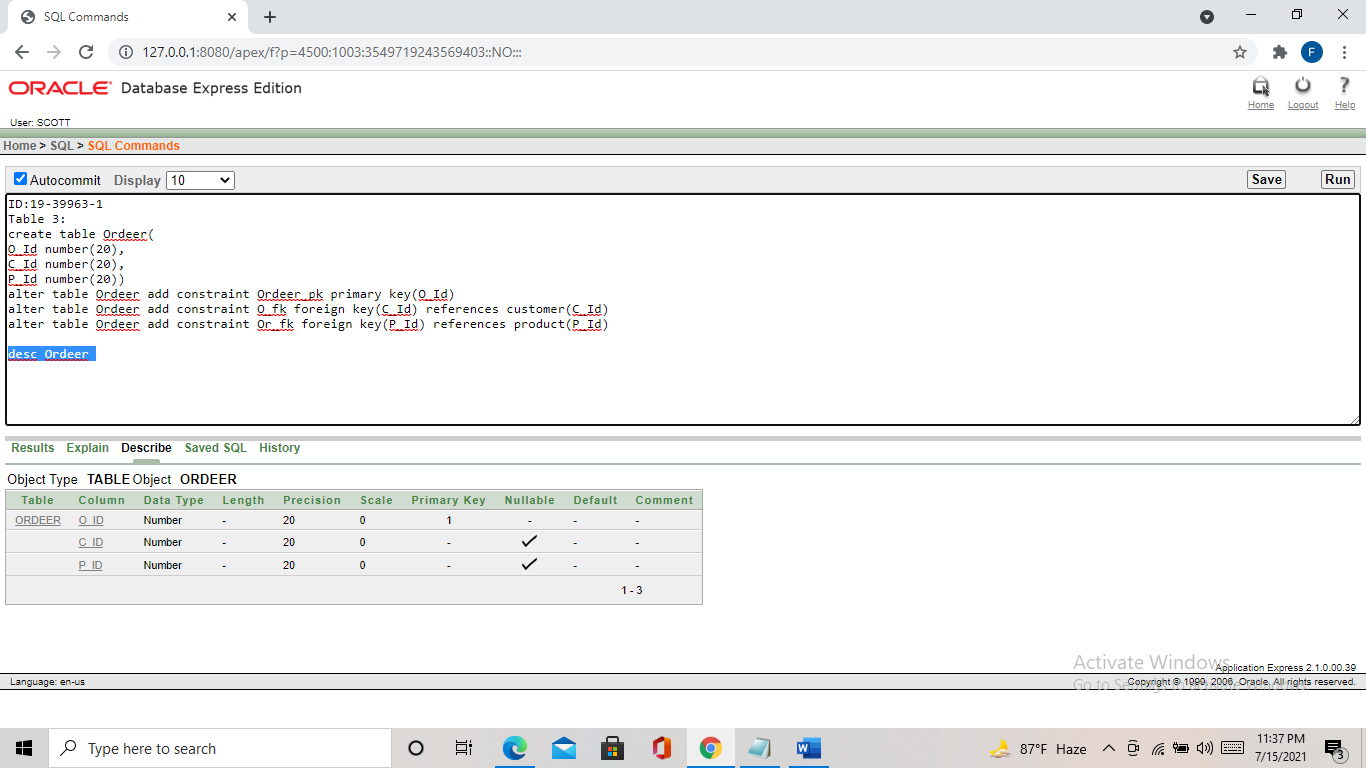


Table 4:

create table salesman(

S\_Id number(20),

Name varchar(30),

Address varchar(40),

Join\_Date date,

Phone\_Number number(15))

alter table salesman add constraint salesman\_pk primary key(S\_Id)

create sequence s\_seq

start with 10

increment by 1

maxvalue 1000

nocycle

nocache

desc salesman

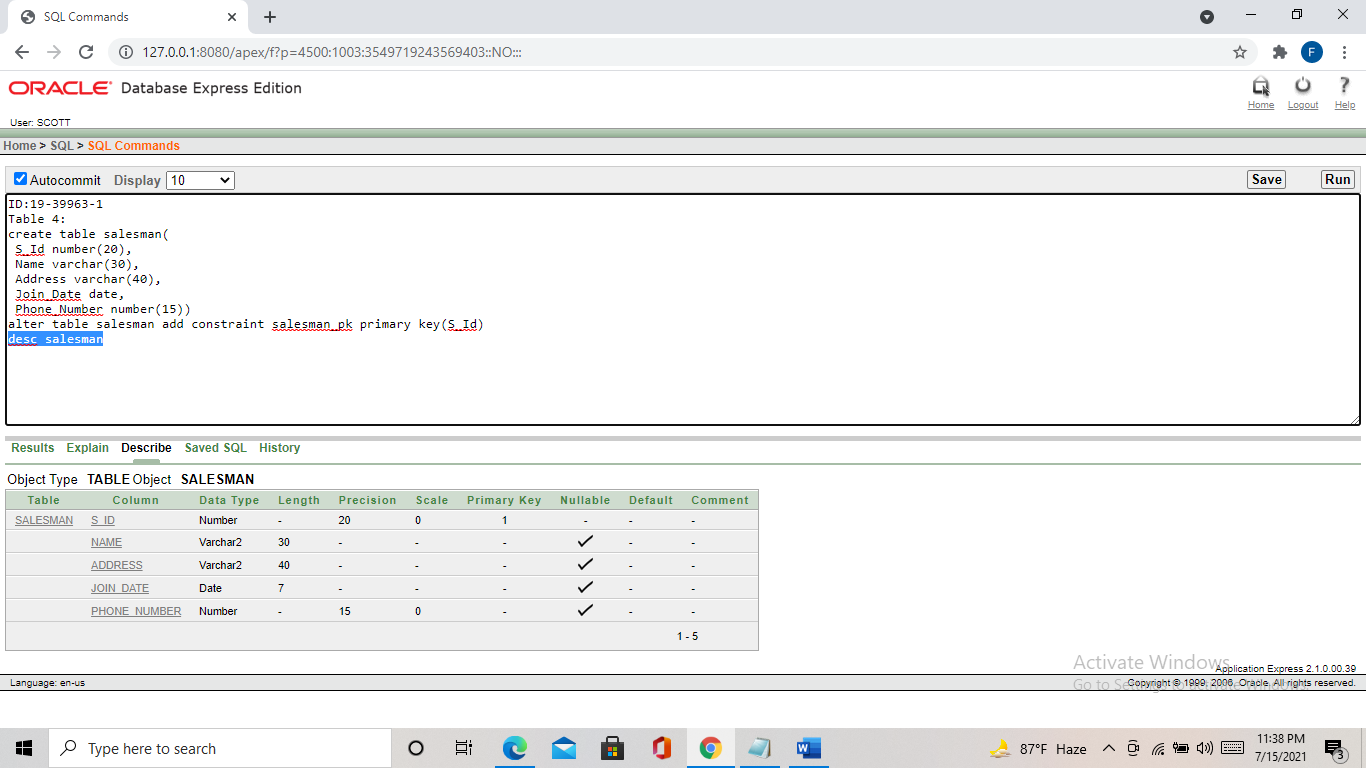


Table 5:

Create table Provide (

Pr\_Id number(20),

S\_Id number(20),

P\_Id number(20))

alter table Provide add constraint P\_pk primary key(Pr\_Id)

alter table Provide add constraint P\_fk foreign key(S\_Id) references salesman(S\_Id)

alter table Provide add constraint Pv\_fk foreign key(P\_Id) references Product(P\_Id)

desc Provide

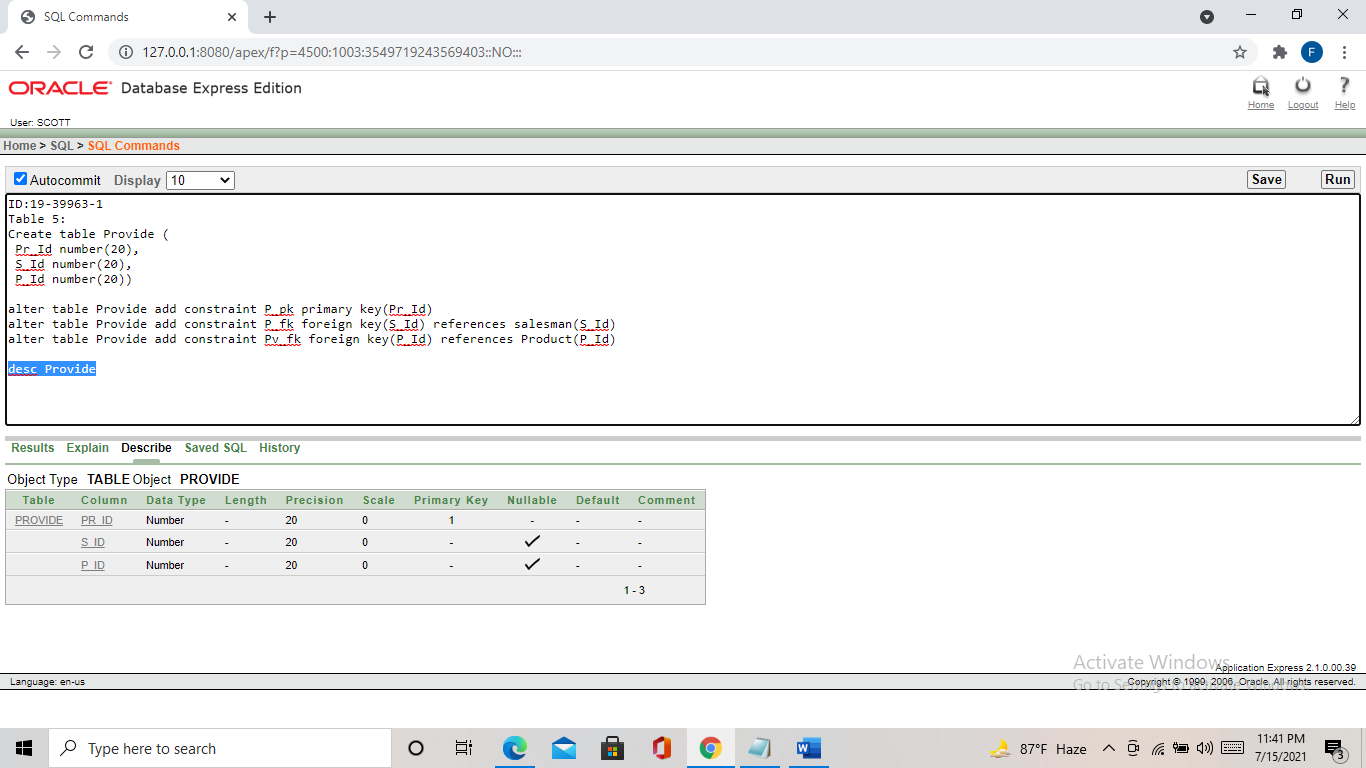


Table 6:

Create table Bill (

B\_Id number(20),

Total\_Bill decimal(7,6),

Transaction\_Date Date,

Bill\_Type decimal(7,6),

C\_Id number(20))

alter table Bill add constraint Bill\_pk primary key(B\_Id)

alter table Bill add constraint B\_fk foreign key(C\_Id) references customer(C\_Id)

desc Bill

drop table Bill

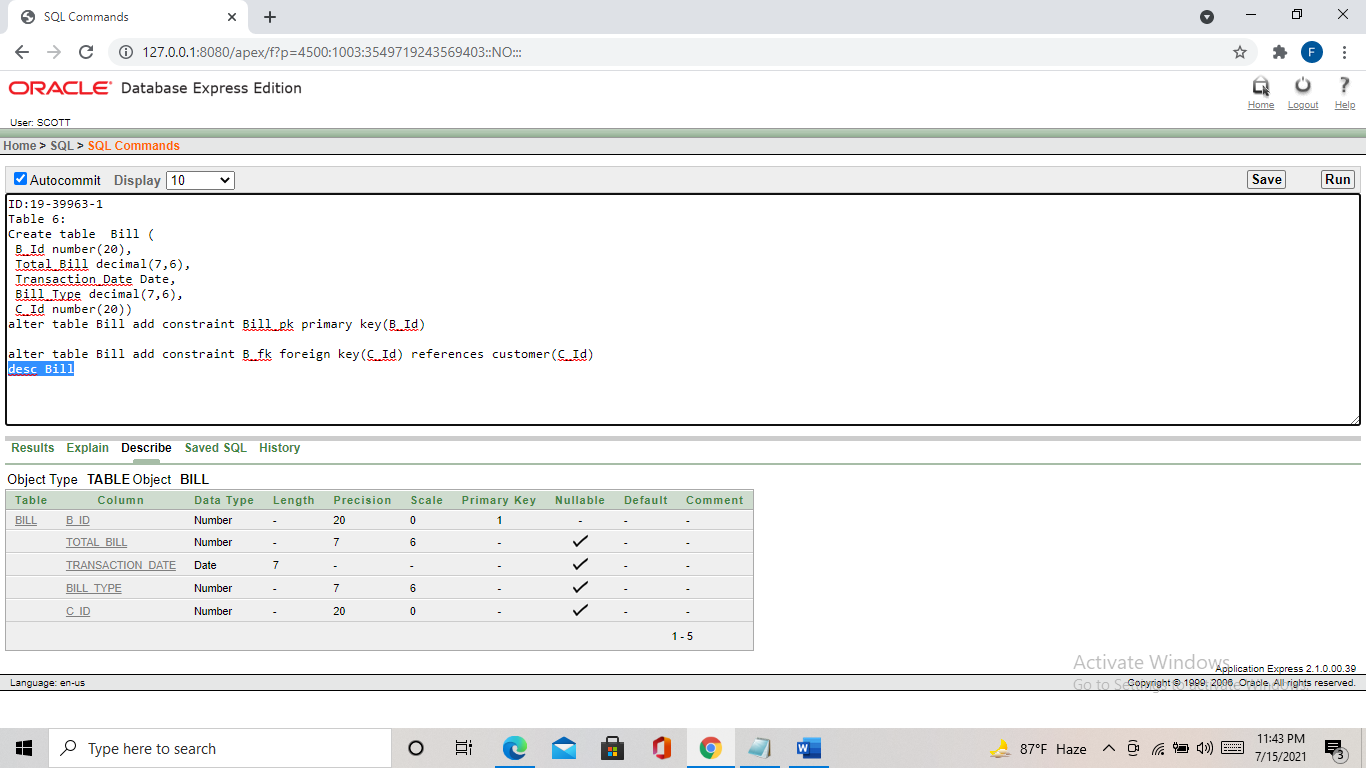


Table 7:

Create table Bill\_Received (

B\_Id number(20),

Total\_Bill decimal(7,6),

Transaction\_Date Date,

Bill\_Type decimal(7,6),

Cashier\_Id number(20))

alter table Bill\_Received add constraint BR\_pk primary key(B\_Id)

alter table Bill\_Received add constraint C\_fk foreign key(Cashier\_Id ) references Cashier (Cashier\_Id )

desc Bill\_Received

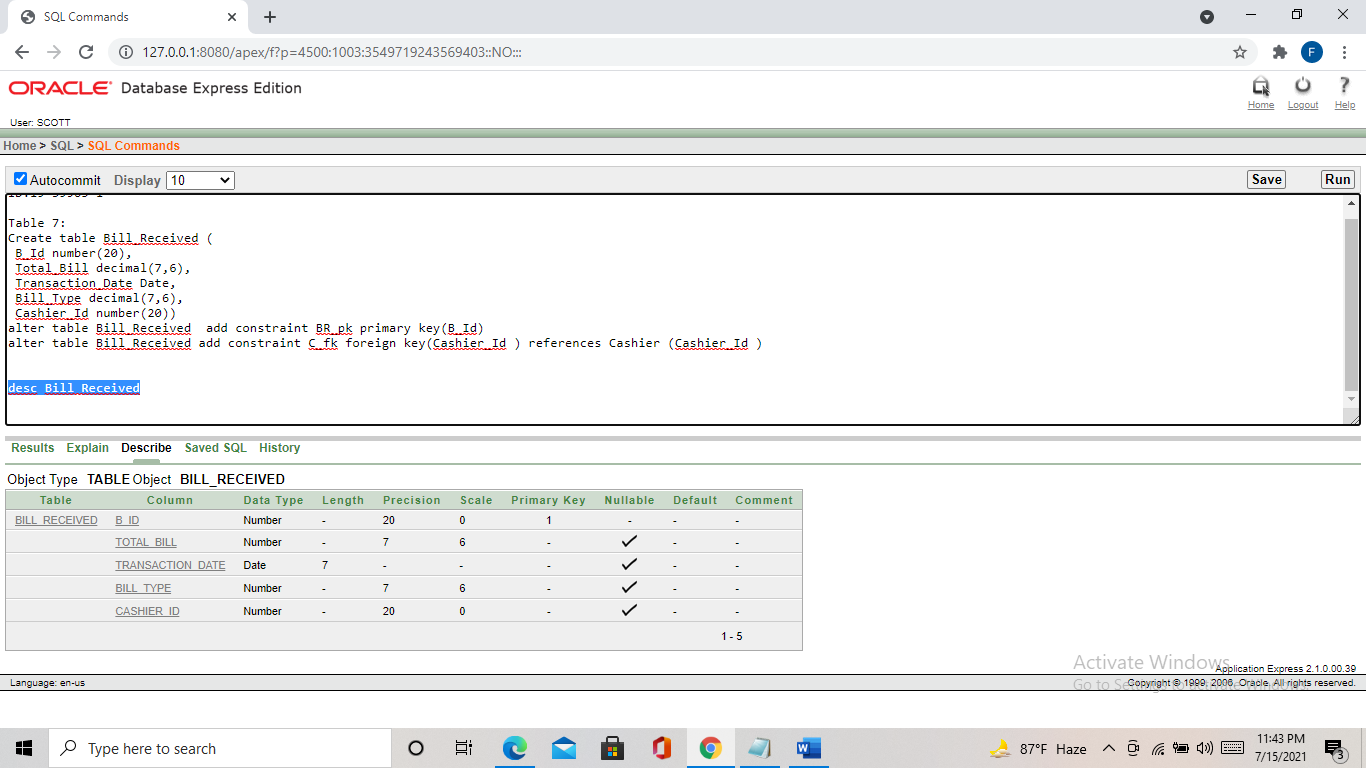


Table 8:

Create table Cashier (

Cashier\_Id number(20),

Name varchar(30),

Gender varchar(10),

Address varchar(40),

Phone\_Number number(15))

alter table Cashier add constraint Cashier\_pk primary key(Cashier\_Id )

desc Cashier

