**CSE2004 – Database Management Systems Registration Number :**

**Name :**

**Slot :**

**Mobile Number :**

**8**

**1**

**44935349**

**RDBMS used : Oracle**

**Cycle Sheet No. : 02**

# Creating Tables

Create table Doctor(

doc\_id varchar(20) primary key, doc\_name varchar(30) not null, d\_gender char(1),

constraint ck\_d\_gender check(d\_gender = 'M' or d\_gender = 'F' or d\_gender = 'T'),

d\_dob date not null, specialist varchar(25), qualification varchar(15), d\_Contact number(20),

d\_Address varchar(50) not null, d\_dept\_no varchar(20)

);

create table Department( dept\_no varchar(20) primary key, dept\_name varchar(30) not null, room\_no varchar(10),

floor number(5), hod varchar(20),

constraint fk\_hod foreign key(hod) references Doctor(doc\_id), estd\_date date

);

create table Staff(

staff\_id varchar(15) primary key, staff\_name varchar(25) not null, category varchar(20), designation varchar(15) not null, s\_dob date not null,

s\_contact number(15), s\_address varchar(50), s\_dept\_no varchar(10),

constraint fk\_s\_dept\_no foreign key(s\_dept\_no) references Department(dept\_no)

);

create table Patient(

pat\_id varchar(20) primary key, pat\_name varchar(30) not null, p\_dob date not null,

p\_gender varchar(10) not null,

constraint ck\_p\_gender check(p\_gender = 'M'or p\_gender = 'F' or p\_gender

='T'),

p\_contact number(20), p\_address varchar(50) not null

);

create table In\_Patient( ip\_id varchar(20),

doa date not null, primary key(ip\_id,doa), bed\_no varchar(10),

start\_time date, end\_time date,

constraint fk\_ip\_id foreign key (ip\_id) references Patient(pat\_id)

);

create table Appointment( app\_id varchar(20) primary key, a\_pat\_id varchar(20),

constraint fk\_a\_pat\_id foreign key(a\_pat\_id) references Patient(pat\_id), a\_doc\_id varchar(20),

constraint fk\_a\_doc\_id foreign key(a\_doc\_id) references Doctor(doc\_id), nurse\_id varchar(20),

constraint fk\_nurse\_id foreign key(nurse\_id) references Staff(staff\_id), consult\_room\_no number(20),

a\_date date not null, a\_time varchar(10) not null

);

create table Prescription( pres\_id varchar(15) primary key, p\_app\_id varchar(20),

constraint fk\_p\_app\_id foreign key(p\_app\_id) references Appointment(app\_id),

pres\_date date not null, pres\_time varchar(10), diagnosis\_details varchar(20)

);

create table In\_Patient\_Prescription( in\_pat\_id varchar(20) not null,

ip\_pres\_id varchar(20) not null, primary key(in\_pat\_id,ip\_pres\_id),

constraint fk\_pres\_id foreign key(ip\_pres\_id) references Prescription(pres\_id), constraint fk\_in\_pat\_id foreign key(in\_pat\_id) references Patient(pat\_id)

);

create table Prescribed\_Medicines( m\_pres\_id varchar(25) ,

constraint fk\_m\_pres\_id foreign key (m\_pres\_id) references Prescription(pres\_id),

medicine\_name varchar(40) not null, primary key(m\_pres\_id,medicine\_name), dosage varchar(20),

brand varchar(10)

);

create table Hospital\_Bill( inv\_no number(20), inv\_date date not null,

primary key(inv\_no,inv\_date), i\_pat\_id varchar(20),

constraint fk\_i\_pat\_id foreign key(i\_pat\_id) references Patient(pat\_id), bill\_amount number(25),

payment\_type varchar(25) not null, discount number(20)

);

create table Lab\_Tests(

test\_id varchar(20) primary key,

L\_pat\_id varchar(20),

constraint fk\_L\_pat\_id foreign key(L\_pat\_id) references Patient(pat\_id), lab\_date date,

lab\_time varchar(10)

);

create table test\_types(

tt\_id varchar(20) primary key, description varchar(30), low\_value number(25), high\_value number(25), test\_method varchar(25), technician varchar(20),

constraint fk\_technician foreign key(technician) references Staff(staff\_id)

);

create table Test\_Results( r\_test\_id varchar(20) ,

constraint fk\_r\_test\_id foreign key (r\_test\_id) references Lab\_Tests(test\_id), r\_test\_type\_id varchar(20),

constraint fk\_r\_test\_type\_id foreign key(r\_test\_type\_id) references test\_types(tt\_id),

primary key(r\_test\_id,r\_test\_type\_id), results varchar(20) not null

);

# Inserting Values

insert into Doctor values('D108','PRADEEP KUMAR','M','20-SEPTEMBER- 1985','CARDIOLOGIST','MBBS',9926519823,'1,BAREILLY','D101');

insert into Doctor values('D105','MAHENDRA GANGWAR','M','12-FEBRUARY- 1980','NEUROLOGIST','BAMS',9254376189,'15,LUCKNOW','D103');

insert into Doctor values('D101','MAHIPAL JOSHI','F','21-AUGUST- 1989','NEPHROLOGIST','MD',976124512,'51,KANPUR','D101');

insert into Doctor values('D107','AMAN SINGH','M','01-JANUARY- 1992','ONCOLOGIST','MD',8449268172,'95,AGRA','D190');

insert into Doctor values('D104','PAWAN GANGWAR','M','21-DECEMBER- 1991','GENERALMEDICINE','MD',8912678219,'102,PUNE','D101');

insert into Doctor values('D102','TANU GANGWAR','F','25-JUNE- 1990','CARDIOLOGIST','MBBS',9363981256,'530,DELHI','D100');

insert into Doctor values('D106','Raghavan','M','03-FEBRUARY- 1994','NEPHROLOGIST','MDS',9897268266,'17,MATHURA','D101');

insert into Doctor values('D103','RIYA PATEL','F','25-APRIL- 1984','CARDIOLOGIST','MD',7904226737,'121,GWALIOR','D005');

insert into Department values('D101','CARDIOLOGY','A-111',7,'D108','20- MARCH-2012');

insert into Department values('D103','NEUROLOGY','A-120',5,'D101','10- JANUARY-2011');

insert into Department values('D190','ONCOLOGY','A-005',9,'D105','19- DECEMBER-2019');

insert into Department values('D100','CARDIOLOGY','C-050',7,'D106','21-APRIL- 2019');

insert into Department values('D005','GM','D-110',7,'D104','31-DECEMBER- 2011');

insert into Staff values('S0001','KIRTI','nurse','staff nurse','18-AUGUST- 1998',9421862561,'BAREILLY','D101');

insert into Staff values('S0002','SWATI GANGWAR','nurse','staff nurse','05- SEPTEMBER-1999',9721765571,'LUCKNOW','D103');

insert into Staff values('S0003','SHIVANI MAURYA','nurse','staff nurse','10- JUNE-1995',9421862561,'AGRA','D005');

insert into Staff values('S0004','VIRAT SINGH','lab technician','technician','15- APRIL-1997',978945121,'MATHURA','D190');

insert into Staff values('S0005','ROHIT KASHYAP','lab technician','technician','18-DECEMBER-1998',978951124,'PILIBHIT','D190');

insert into Staff values('S0006','DEEPANSHU GANGWAR','cashier','staff cashier','11-DECEMBER-1994',9421862561,'MUMBAI','D101');

insert into Staff values('S0008','MANOJ KUMAR','ward boy','ward boy','29- AUGUST-1992',9787862561,'DELHI','D103');

insert into Staff values('S0009','YASH JAISWAL','security','staff security','06- DECEMBER-1996',9421862561,'GURGAON','D005');

insert into Patient values('P101','SAKSHAM PATEL','06-JULY- 2000','M',9218357319,'52,BAREILLY');

insert into Patient values('P220','TANUJ','09-OCTOBER- 1978','F',7841454511,'132,MUMBAI');

insert into Patient values('P103','Steve ','20-DECEMBER- 1975','M',9751254454,'08,DELHI');

insert into Patient values('P104','Mani','15-JUNE- 1995','M',944587122,'62,JHANSI');

insert into Patient values('P105','FARIA NOORI','19-DECEMBER- 2014','F',9878987890,'12,GWALIOR');

insert into Patient values('P106','Gayle','25-MARCH- 1990','M',944548412,'102,MATHURA');

insert into Patient values('P107','MANSI JAISWAL','07-JUNE- 1994','F',9785458412,'190,BAREILLY');

insert into Patient values('P108','Karthik','21-AUGUST- 1979','M',944548412,'06,KANPUR');

insert into In\_Patient values('P101', '11-MARCH-2017','B101','11-MARCH- 2017','18-MARCH-2017');

insert into In\_Patient values('P220', '10-JANUARY-2020' ,'B012','10-JANUARY- 2020','30-JANUARY-2020');

insert into In\_Patient values('P104', '28-FEBRUARY-2020' ,'B101','28- FEBRUARY-2020','15-MARCH-2020');

insert into In\_Patient values('P105', '30-MARCH-2017','B015','30-MARCH- 2017','09-APRIL-2017');

insert into In\_Patient values('P106', '30-DECEMBER-2019','B001','30- DECEMBER-2019','15-JANUARY-2020');

insert into In\_Patient values('P107','30-MARCH-2020','B019','30-MARCH- 2020','17-APRIL-2020');

insert into In\_Patient values('P103','29-MAY-2020','B101','29-MAY-2020','12- JUNE-2020');

insert into In\_Patient values('P108','30-NOVEMBER-2019','B14','30- NOVEMBER-2019','30-DEC-2019');

insert into Appointment values('A101','P101','D101','S0001',103,'12-MARCH- 2017','13:00');

insert into Appointment values('A102','P220','D102','S0002',111,'11-JANUARY- 2020','12:00');

insert into Appointment values('A103','P103','D103','S0003',100,'01-JANUARY- 2020','17:00');

insert into Appointment values('A104','P104','D104','S0004',005,'18- FEBRUARY-2020','11:00');

insert into Appointment values('A105','P105','D105','S0005',120,'25-AUGUST- 2019','08:00');

insert into Appointment values('A106','P106','D106','S0006',111,'01-MAY- 2020','09:30');

insert into Appointment values('A107','P107','D107','S0008',111,'01-MAY- 2020','10:15');

insert into Appointment values('A108','P108','D108','S0009',105,'01-MAY- 2020','11:20');

insert into Prescription values('PR00001','A101', '12-MARCH-2017'

,'13:30','COUGH');

insert into Prescription values('PR00002','A102', '11-JANUARY-2020'

,'13:00','NEURAL ATTACK');

insert into Prescription values('PR00003','A103','02-JANUARY- 2020','14:00','BILATERAL PNEUMONIA');

insert into Prescription values('PR00004','A104','18-FEBRUARY- 2020','16:00','COUGH');

insert into Prescription values('PR00005','A105','25-AUGUST- 2019','08:30','CARDIAC ARREST');

insert into Prescription values('PR00006','A106','01-MAY- 2020','10:15','ACCIDENT');

insert into Prescription values('PR00007','A107','01-MAY- 2020','11:25','COUGH');

insert into Prescription values('PR00008','A108','01-MAY- 2020','12:30','CARDIAC ARREST');

insert into In\_Patient\_Prescription values('P101','PR00001'); insert into In\_Patient\_Prescription values('P220','PR00002'); insert into In\_Patient\_Prescription values('P103','PR00003'); insert into In\_Patient\_Prescription values('P104','PR00004'); insert into In\_Patient\_Prescription values('P105','PR00005'); insert into In\_Patient\_Prescription values('P106','PR00006'); insert into In\_Patient\_Prescription values('P107','PR00007'); insert into In\_Patient\_Prescription values('P108','PR00008');

insert into Prescribed\_Medicines values('PR00001','AMOXICILLIN','TWICE A DAY','Ranbaxy');

insert into Prescribed\_Medicines values('PR00002','AMANTADINE','ONCE A DAY','DEF');

insert into Prescribed\_Medicines values('PR00003','MACROLIDE','ONCE A DAY','Ranbaxy');

insert into Prescribed\_Medicines values('PR00004','AMOXICILLIN','THRICE A DAY','XYZ');

insert into Prescribed\_Medicines values('PR00005','LIDOCAINE','TWICE A DAY','JKL');

insert into Prescribed\_Medicines values('PR00006','TYLENOL','ONCE A DAY','MNO');

insert into Prescribed\_Medicines values('PR00007','AMOXICILLIN','THRICE A DAY','PQR');

insert into Prescribed\_Medicines values('PR00008','LIDOCAINE','TWICE A DAY','Ranbaxy');

insert into Hospital\_Bill values(1020,'18-MARCH- 2017','P101',10000,'CASH',12);

insert into Hospital\_Bill values(1021,'30-JANUARY-2020','P220',200000,'CREDIT CARD',15);

insert into Hospital\_Bill values(1022,'30-MAY-2020','P103',11000,'DEBIT CARD',20);

insert into Hospital\_Bill values(1023,'28-FEBRUARY-2020','P104',15000,'DEBIT CARD',13);

insert into Hospital\_Bill values(1024,'30-JANUARY-2020','P105',20000,'CREDIT CARD',05);

insert into Hospital\_Bill values(1025,'09-APRIL-2017','P106',7000,'CASH',22); insert into Hospital\_Bill values(1026,'17-APRIL-2020','P107',3500,'CASH',18);

insert into Hospital\_Bill values(1027,'12-JUNE-2020','P108',42000,'DEBIT CARD',10);

insert into Hospital\_Bill values(1028,'05-JUNE-2020','P103',2000,'DEBIT CARD',21);

insert into Hospital\_Bill values(1029,'09-JUNE-2020','P103',15000,'DEBIT CARD',20);

insert into Lab\_Tests values('T0001','P101','13-MARCH-2017','11:00'); insert into Lab\_Tests values('T0002','P220','12-JANUARY-2020','09:00'); insert into Lab\_Tests values('T0003','P103','03-JANUARY-2020','10:00'); insert into Lab\_Tests values('T0004','P104','19-FEBRUARY-2020','09:30'); insert into Lab\_Tests values('T0005','P105','26-AUGUST-2019','16:00'); insert into Lab\_Tests values('T0006','P106','02-MAY-2020','17:00'); insert into Lab\_Tests values('T0007','P107','03-MAY-2020','13:00'); insert into Lab\_Tests values('T0008','P108','03-MAY-2020','14:00');

insert into test\_types values('TT0001','URINE TEST',26,74,'LAB','S0001'); insert into test\_types values('TT0002','CT',15,20,'LAB','S0002');

insert into test\_types values('TT0003','Blood Sugar Level',18,28,'LAB','S0003'); insert into test\_types values('TT0004','XRAY TEST',38,52,'LAB','S0001');

insert into test\_types values('TT0005','CT TEST',12.5,14.2,'LAB','S0005'); insert into test\_types values('TT0006','URINE TEST',12,22,'LAB','S0001'); insert into test\_types values('TT0007','XRAY',19,29,'LAB','S0009');

insert into test\_types values('TT0008','Blood Glucose Level',2,10,'LAB','S0008');

insert into Test\_Results values('T0001','TT0001','POSITIVE'); insert into Test\_Results values('T0002','TT0002','NEGATIVE'); insert into Test\_Results values('T0003','TT0003','NEGATIVE'); insert into Test\_Results values('T0004','TT0004','POSITIVE'); insert into Test\_Results values('T0005','TT0005','NEGATIVE'); insert into Test\_Results values('T0006','TT0006','NEGATIVE'); insert into Test\_Results values('T0007','TT0007','POSITIVE'); insert into Test\_Results values('T0008','TT0008','NEGATIVE');

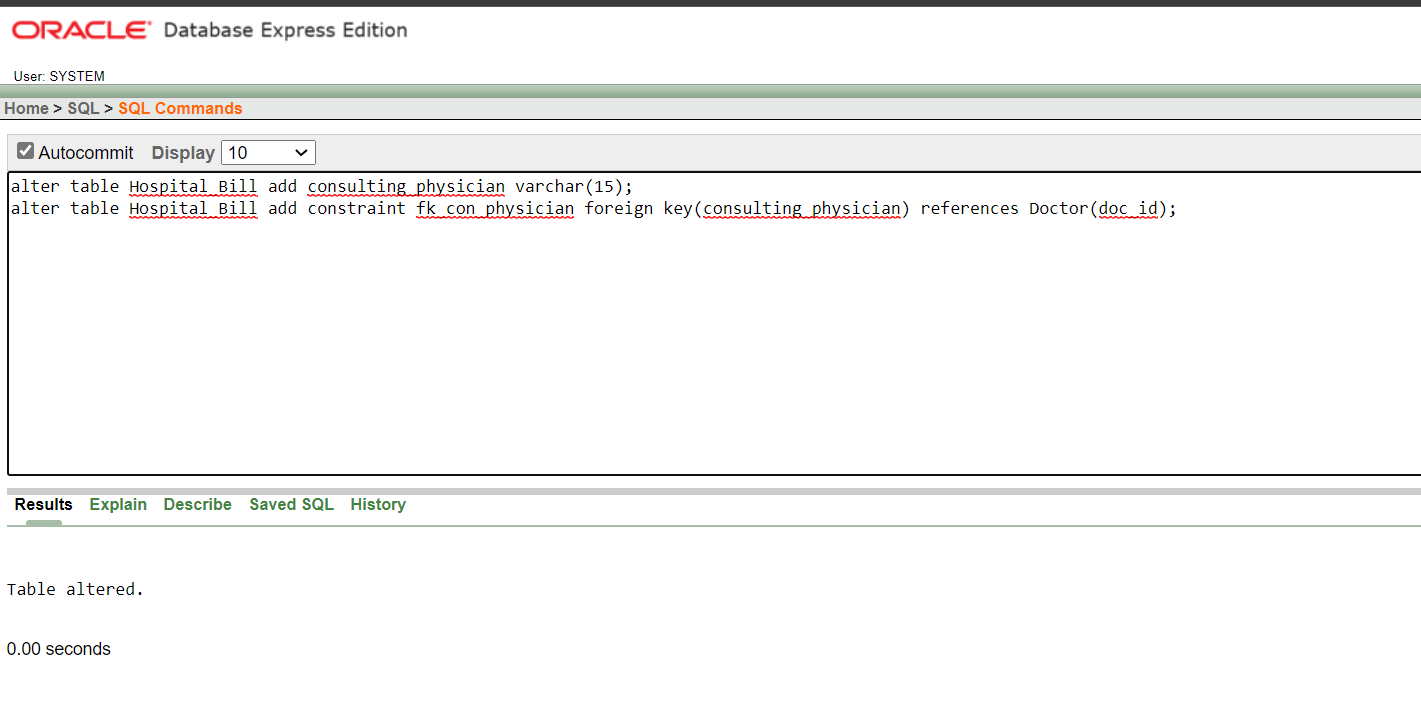
I executed the alter queries at the end because for join the address of patient is asked and in alter query it is asked to remove address attributes.

# DDL statements (ALTER, CONSTRAINT etc)

## Modify Hospital\_Bill by adding an attribute consulting\_physician and add foreign key constraint for that attribute. Use constraint name for foreign key constraint.

alter table Hospital\_Bill add consulting\_physician varchar(15);

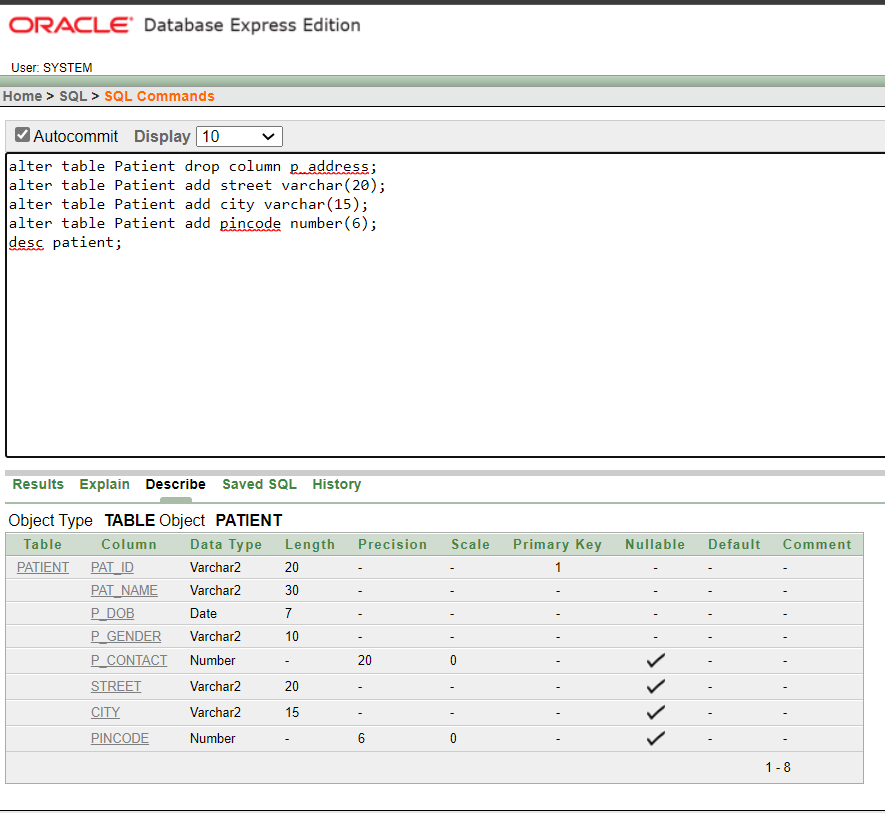
alter table Hospital\_Bill add constraint fk\_con\_physician foreign key(consulting\_physician) references Doctor(doc\_id);



## In Patient table, replace address with three attributes namely street, city and pincode.

alter table Patient drop column p\_address

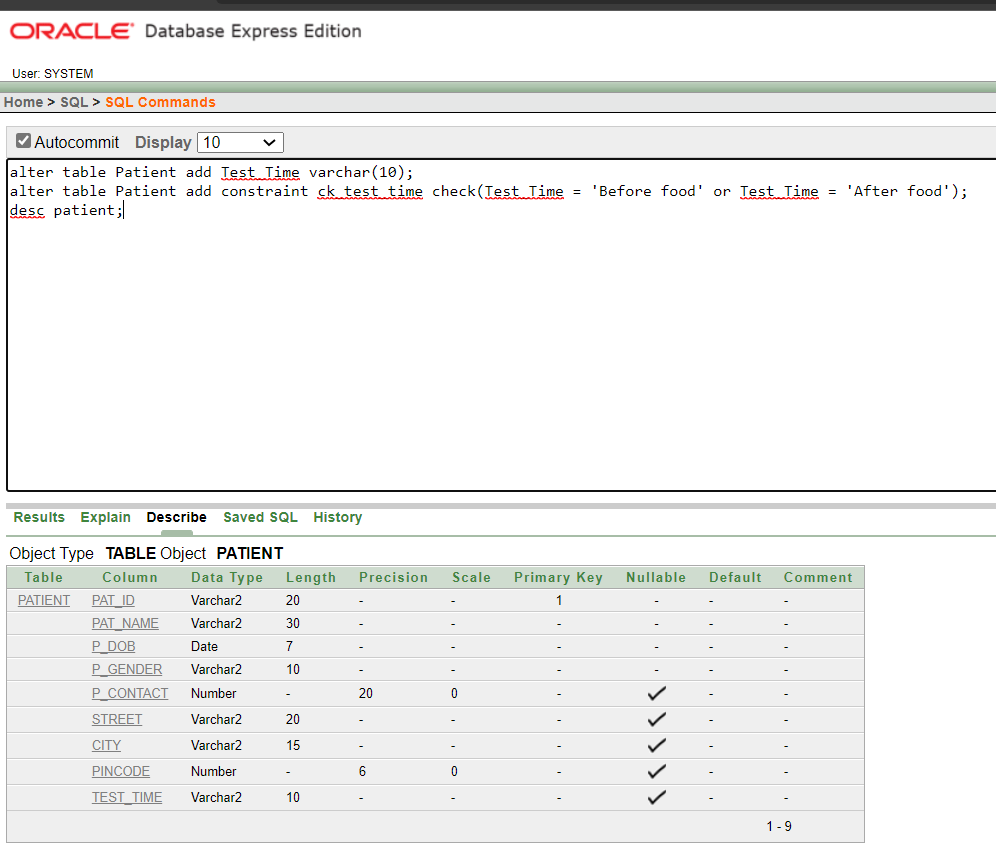
alter table Patient add street varchar(20); alter table Patient add city varchar(15); alter table Patient add pincode number(6);



## Add an attribute Test\_Time which can accept only two values “Before food” and “After food” with proper constraint name.

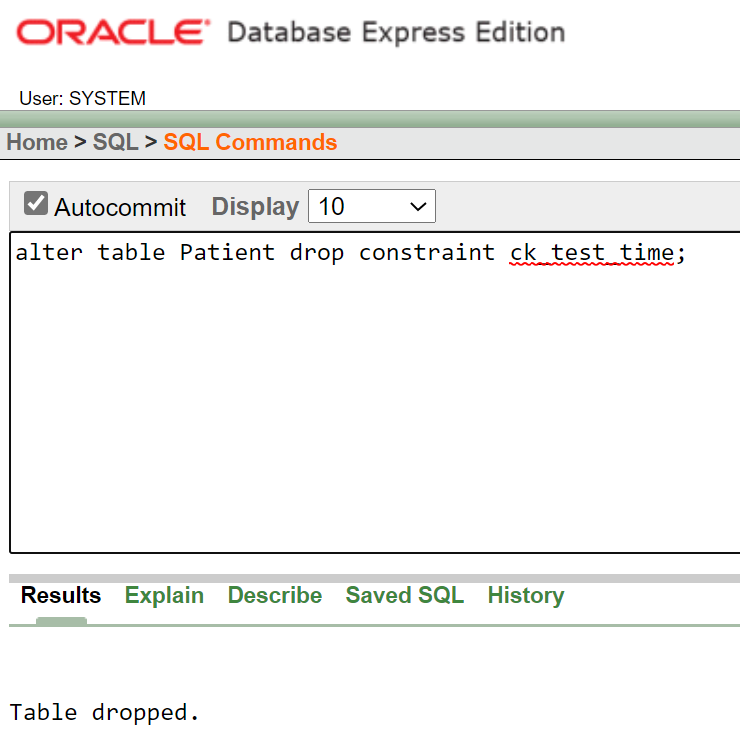
alter table Patient add Test\_Time varchar(10);

alter table Patient add constraint ck\_test\_time check(Test\_Time = 'Before food' or Test\_Time = 'After food');



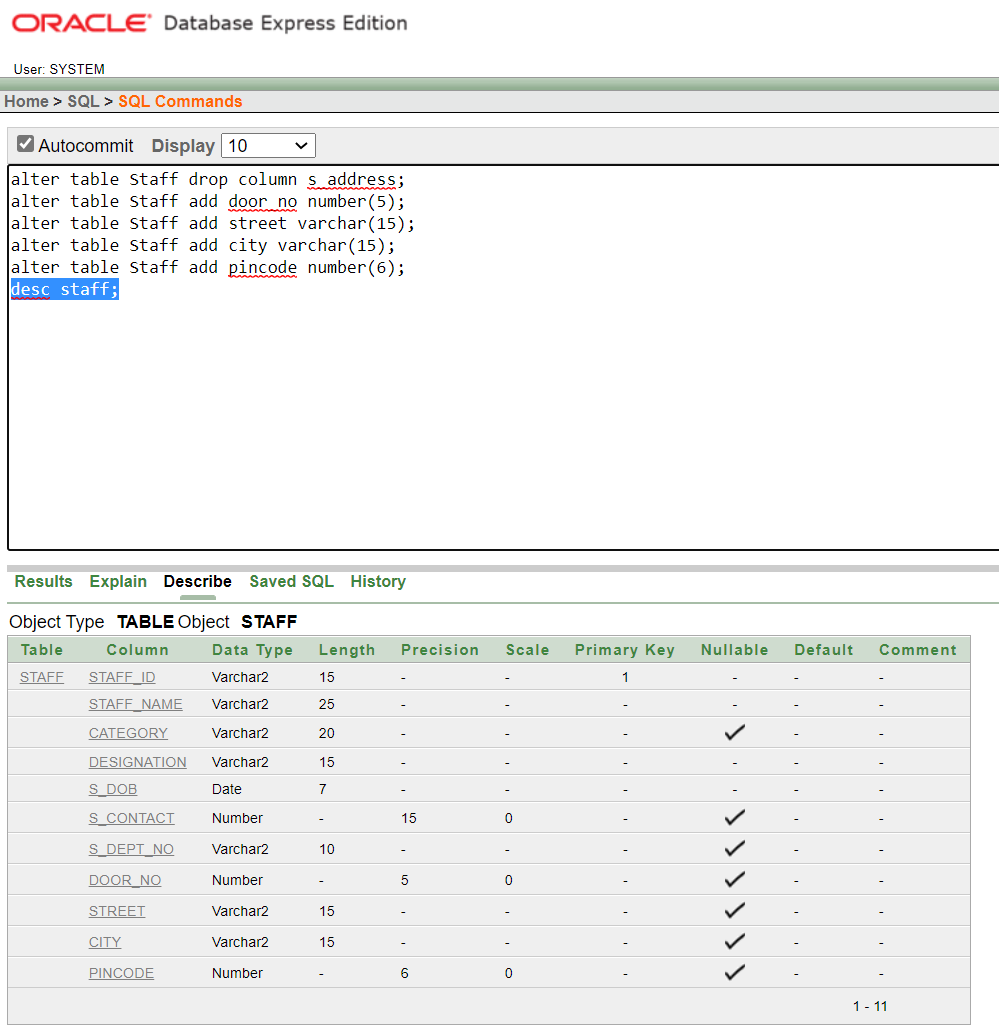
## Remove the constraint only from test\_time attribute.

alter table Patient drop constraint ck\_test\_time;



## Drop address attribute from staff table and add attributes door\_no, street, city, and pincode.

alter table Staff drop column s\_address; alter table Staff add door\_no number(5); alter table Staff add street varchar(15); alter table Staff add city varchar(15); alter table Staff add pincode number(6);

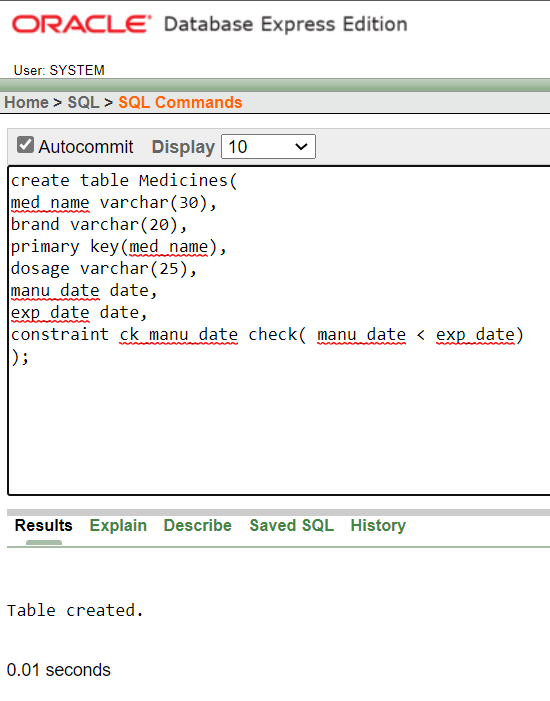


## Create a table Medicines with schema medicines=(med\_name, brand, dosage, manu\_date, exp\_date). Ensure that manu\_date should not be later than exp\_date. Create an appropriate constraint to ensure this.

create table Medicines( med\_name varchar(30), brand varchar(20), primary key(med\_name), dosage varchar(25), manu\_date date, exp\_date date,

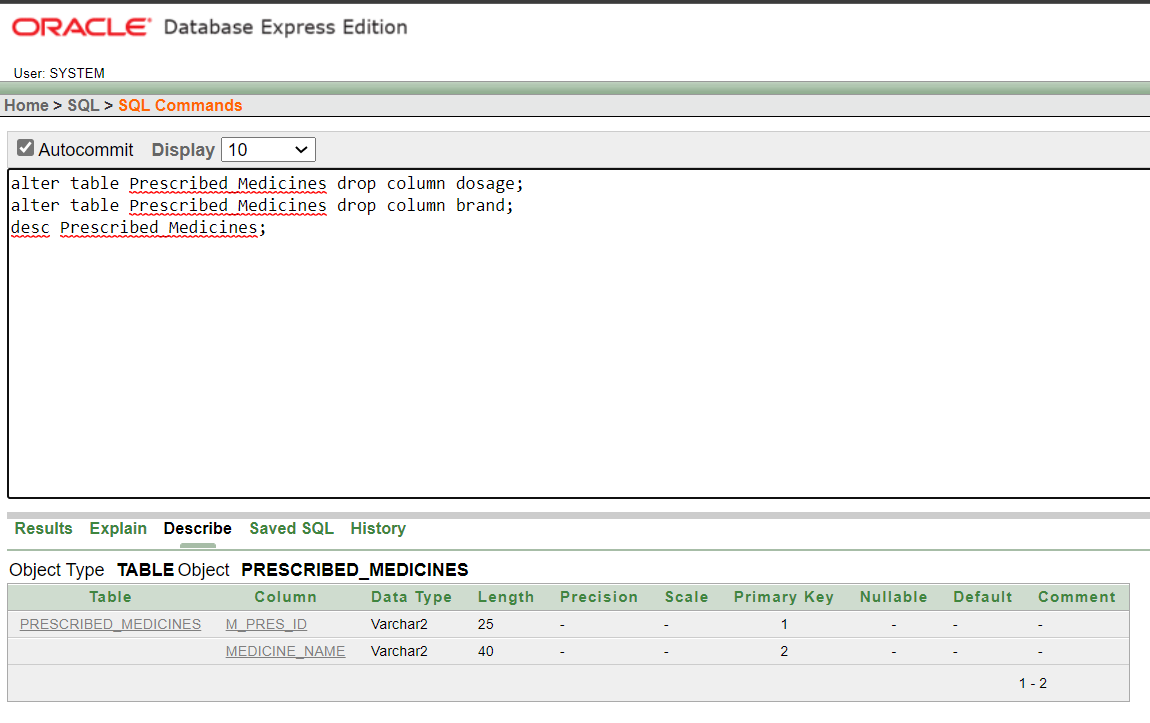
constraint ck\_manu\_date check( manu\_date < exp\_date)

);

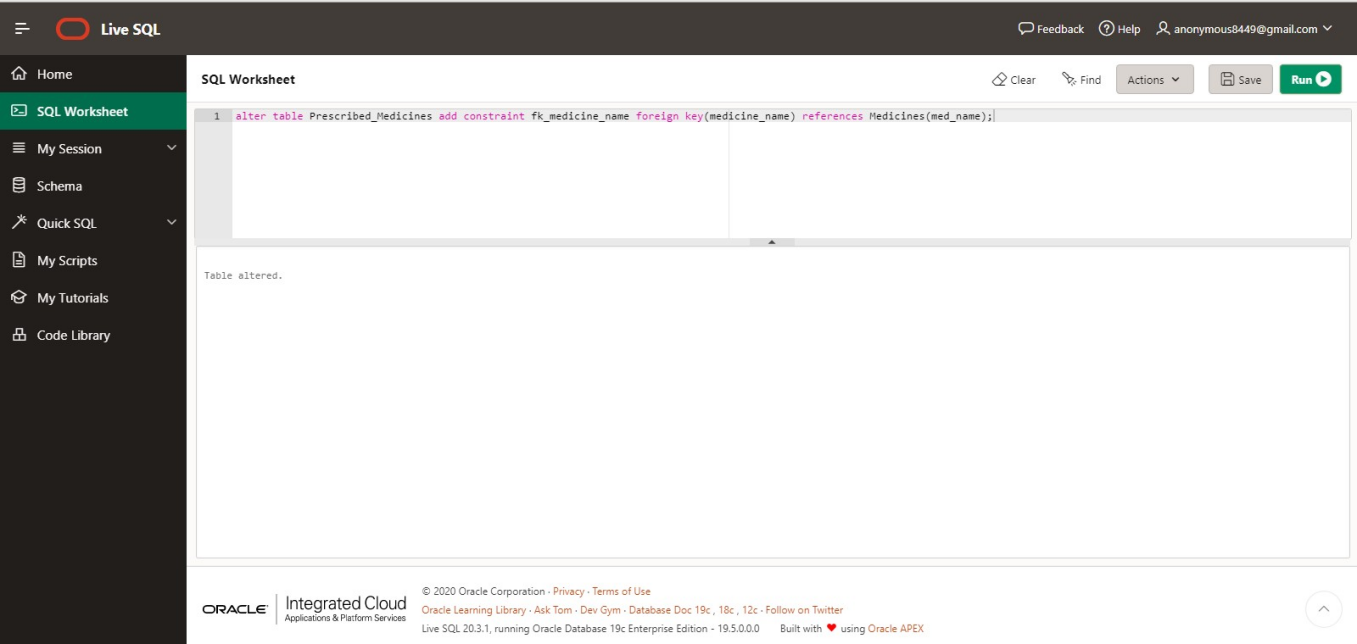


## Remove the attributes dosage and brand from Prescribed\_Medicines and alter the medicine\_name attribute as a foreign key referencing the new table Medicines.

alter table Prescribed\_Medicines drop column dosage; alter table Prescribed\_Medicines drop column brand;



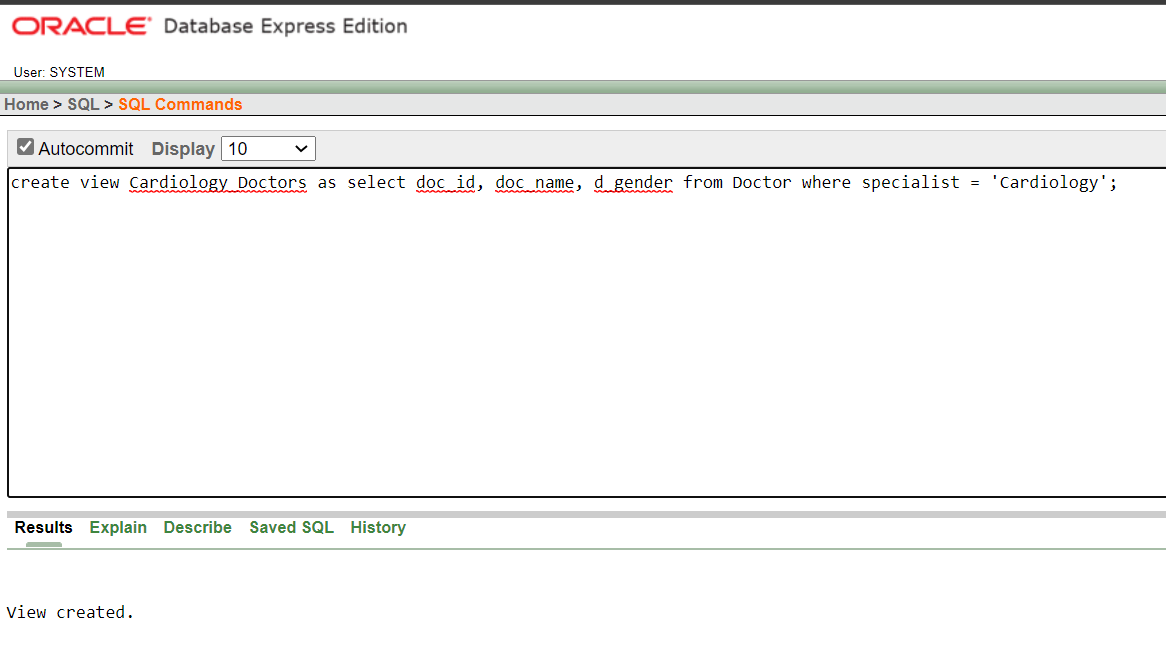
alter table Prescribed\_Medicines add constraint fk\_medicine\_name foreign key(medicine\_name) references Medicines(med\_name);



## Create a view for doctors who are specialized in ‘Cardiology’ from

**Doctor table with attributes doc\_id, doc\_name and gender.**

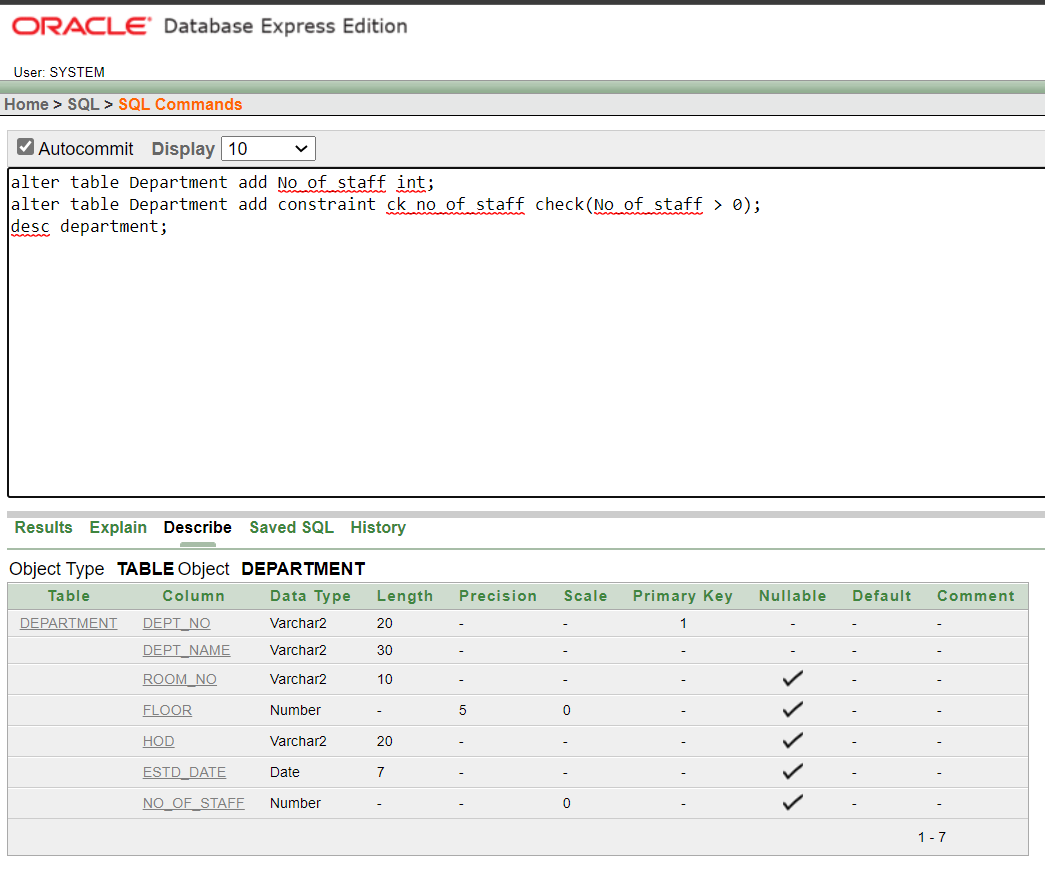
create view Cardiology\_Doctors as select doc\_id, doc\_name, d\_gender from Doctor where specialist = 'Cardiology';



## Add an attribute No\_of\_staff in Department table and create a constraint with constraint name to make sure the number is >0

alter table Department add No\_of\_staff int;

alter table Department add constraint ck\_no\_of\_staff check(No\_of\_staff > 0);

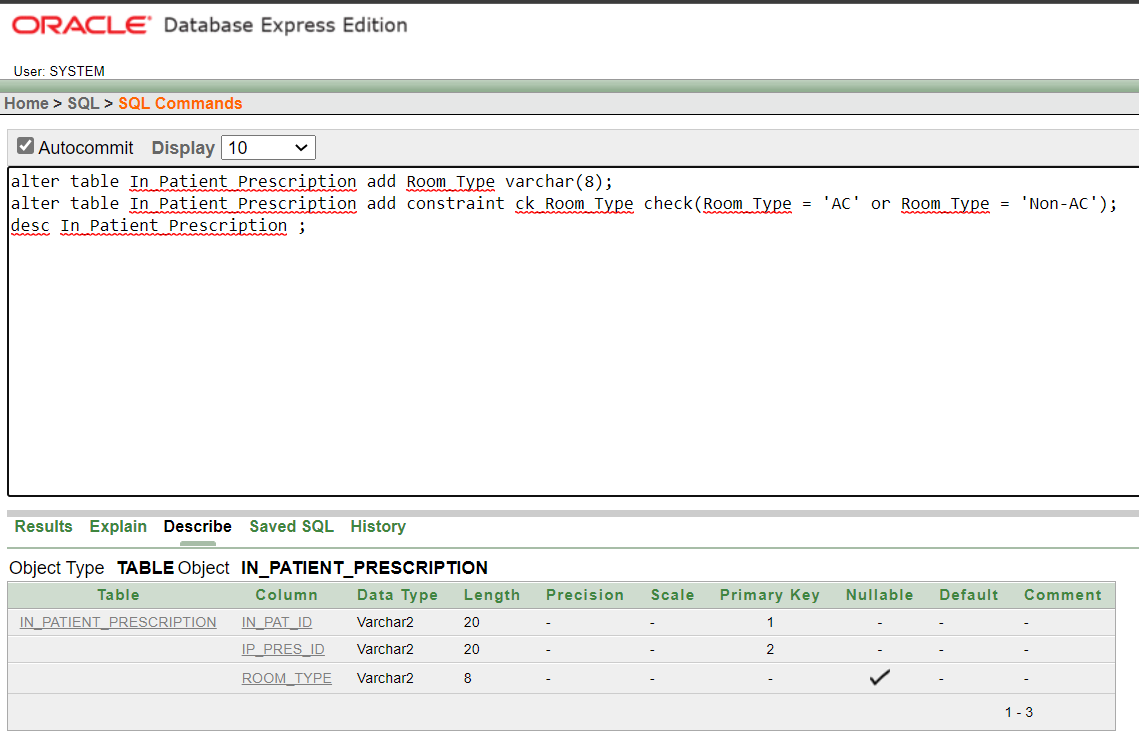


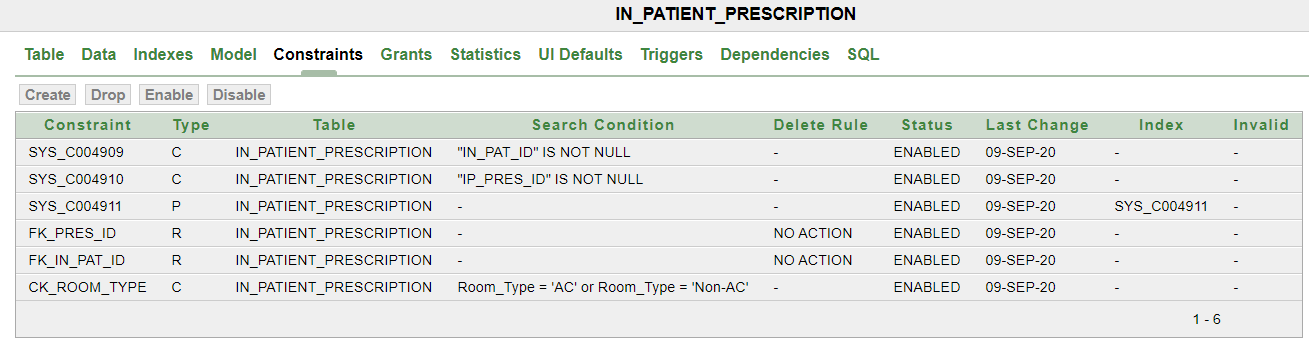
## Add an attribute with In\_Patient\_prescription to store the Room\_Type

**which can store the values “AC” and “Non-AC”.**

alter table In\_Patient\_Prescription add Room\_Type varchar(8);

alter table In\_Patient\_Prescription add constraint ck\_Room\_Type check(Room\_Type = 'AC' or Room\_Type = 'Non-AC');





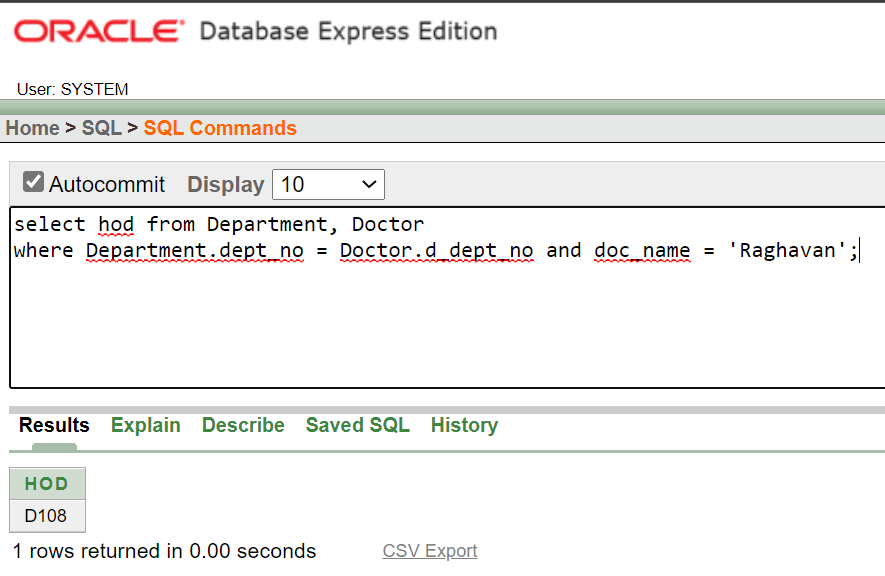
# SQL queries with JOIN operation

## Find the HOD of doctor ‘Raghavan’ (Hint: you need to join the tables

**DOCTOR and DEPARTMENT).**

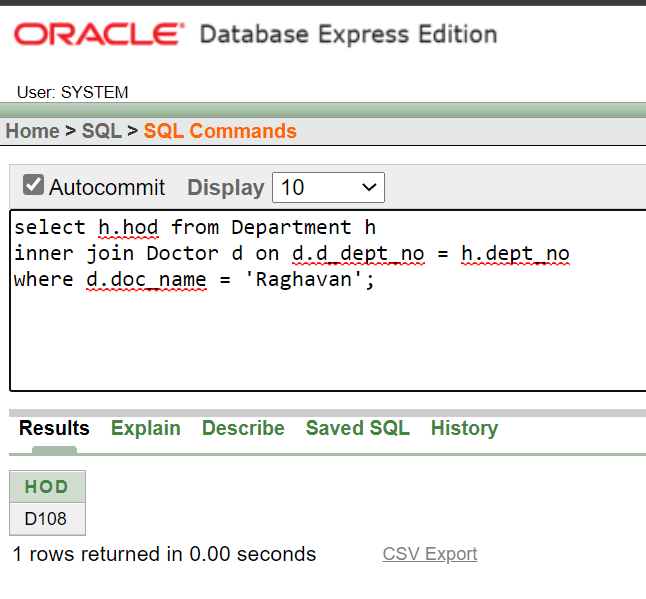
**Using cartesian Product**

select hod from Department, Doctor where Department.dept\_no = Doctor.d\_dept\_no and doc\_name = 'Raghavan';



## Using Inner Join

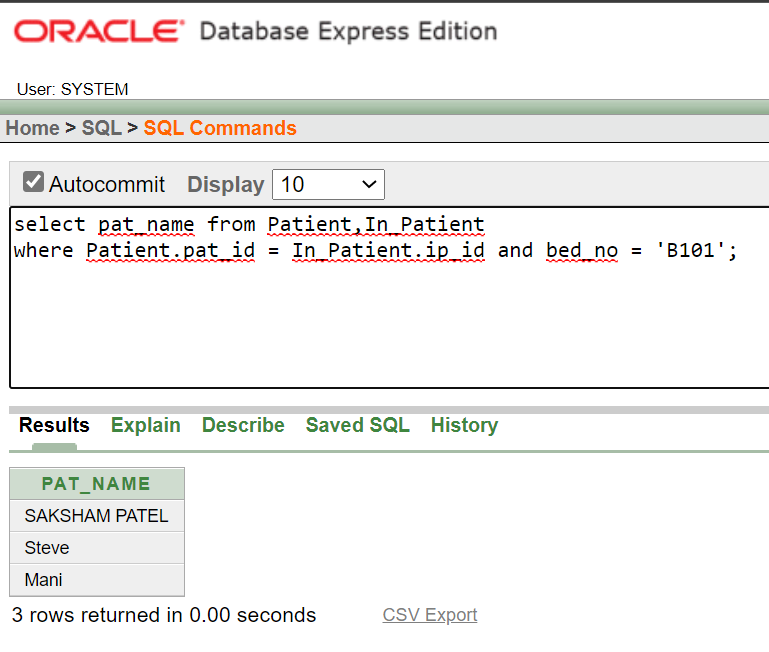
select h.hod from Department h inner join Doctor d on d.d\_dept\_no = h.dept\_no where d.doc\_name = 'Raghavan';



## Find the list of all patients who were admitted in bed number ‘B101’.

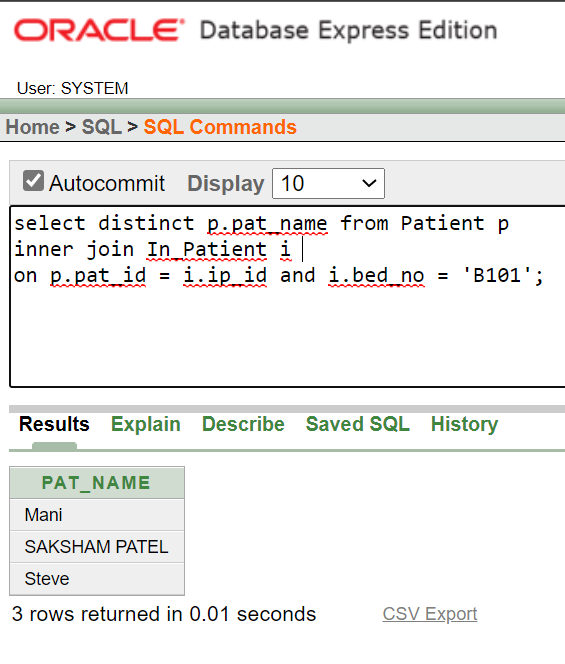
**Using Cartesian Product**

select pat\_name from Patient,In\_Patient where Patient.pat\_id = In\_Patient.ip\_id and bed\_no = 'B101';



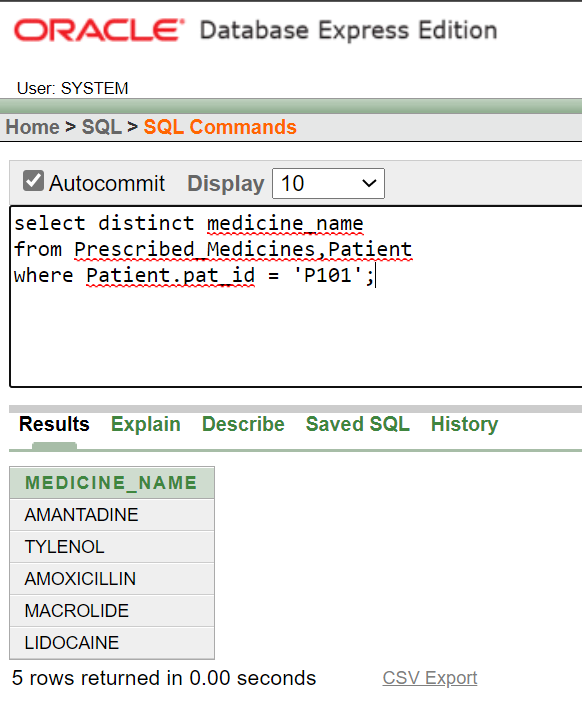
## Using Inner Join

select distinct p.pat\_name from Patient p inner join In\_Patient i on p.pat\_id = i.ip\_id and i.bed\_no = 'B101';



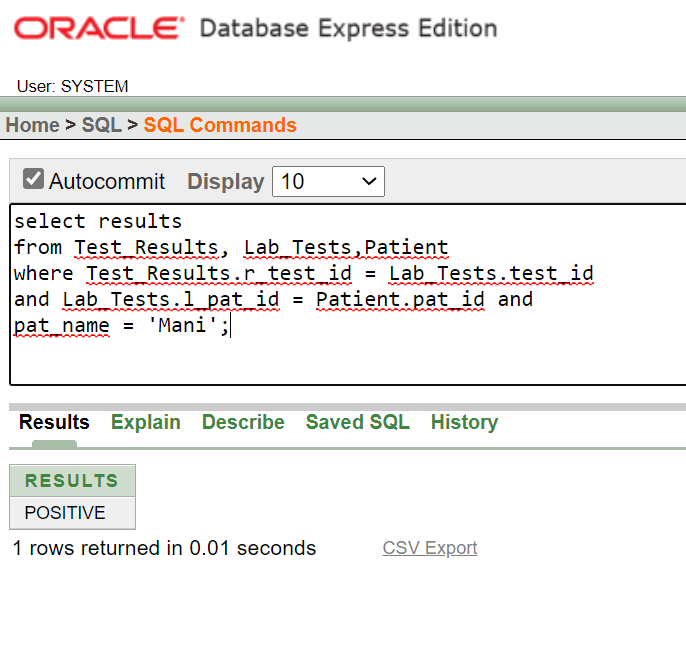
## Display all the prescribed medicines of patient with Pat\_ID ‘P101’.

select distinct medicine\_name from Prescribed\_Medicines,Patient where Patient.pat\_id = 'P101';



## Display the test results of patient ‘Mani’.

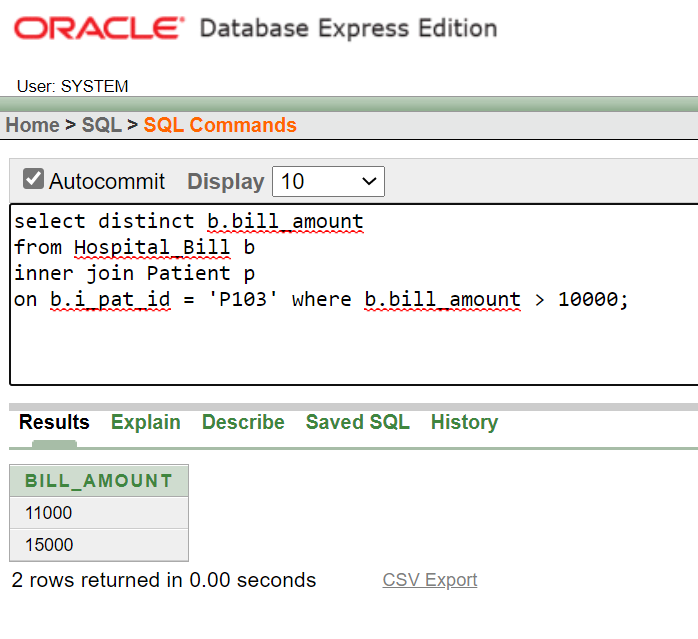
select results from Test\_Results, Lab\_Tests,Patient where Test\_Results.r\_test\_id = Lab\_Tests.test\_id and Lab\_Tests.l\_pat\_id = Patient.pat\_id and pat\_name = 'Mani';



## Display all bills of bill amount more than 10000 rupees and paid by the

**patient ‘Steve’.**

select distinct b.bill\_amount from Hospital\_Bill b inner join Patient p on b.i\_pat\_id = 'P103' where b.bill\_amount > 10000;



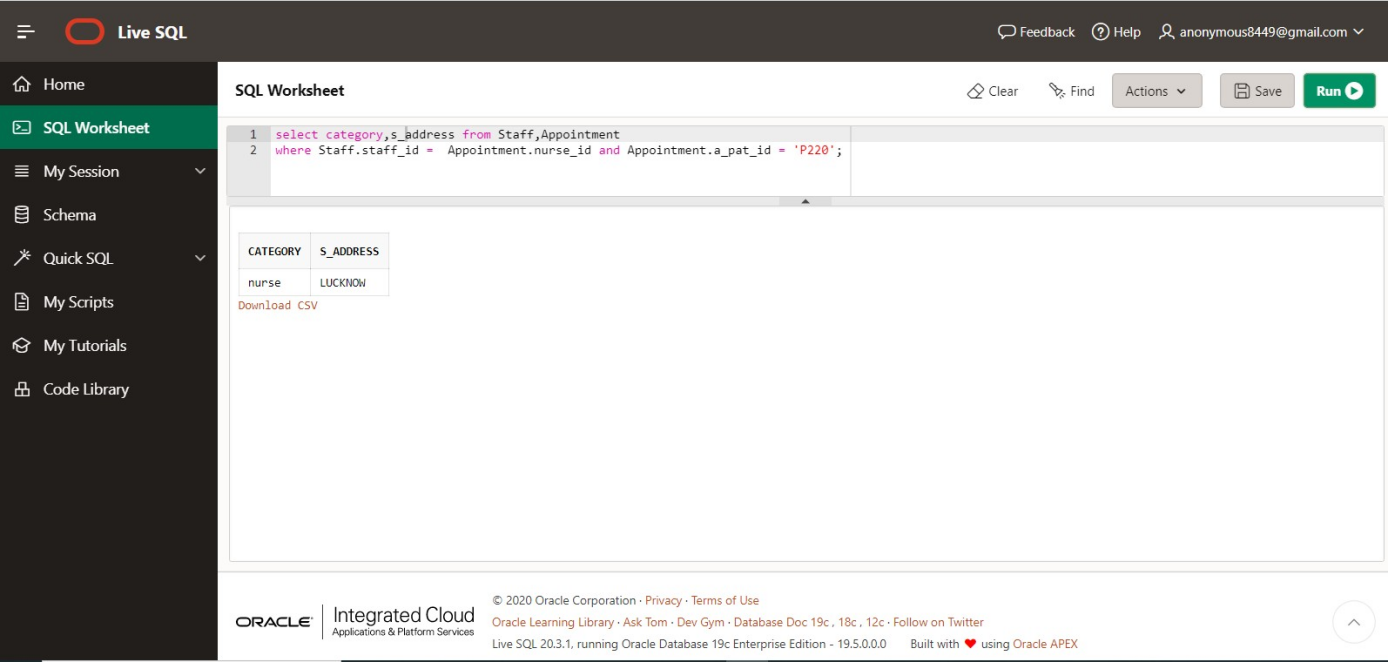
## Find the category and address of the nurse who attended the patient

**with pat\_no ‘P220’.**

**Using Cartesian Product**

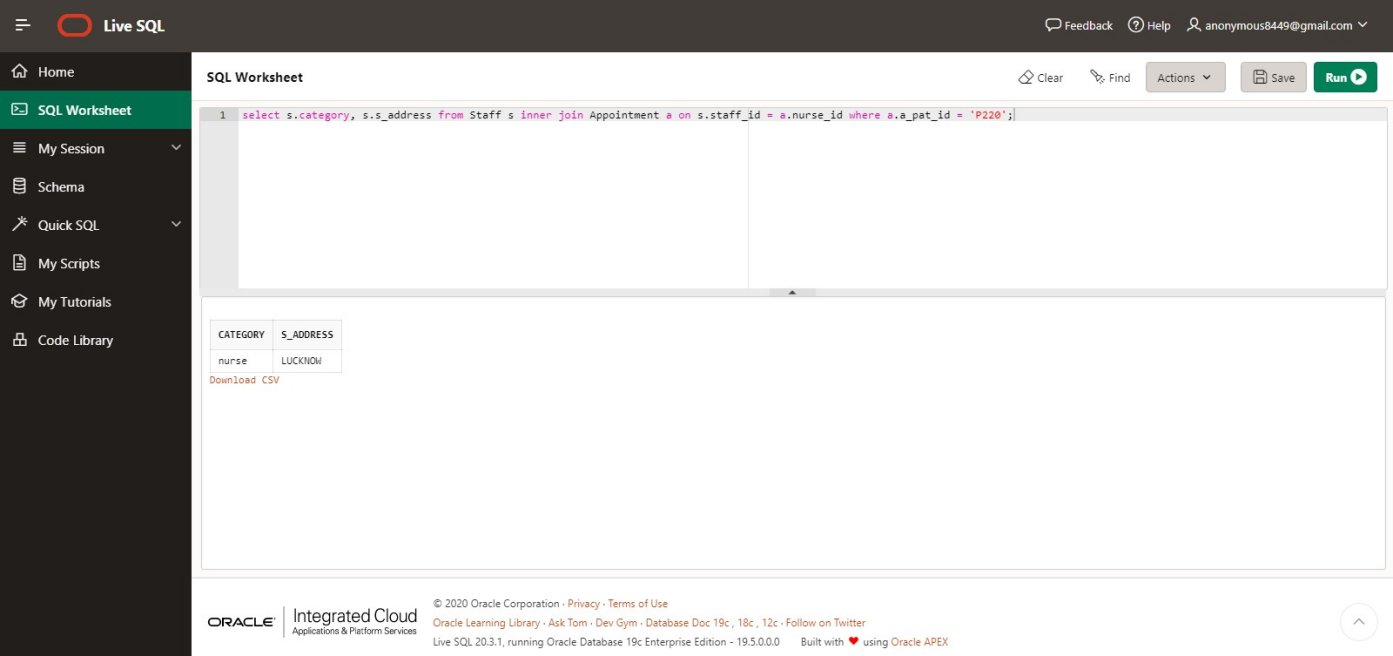
select category,s\_address from Staff,Appointment

where Staff.staff\_id = Appointment.nurse\_id and Appointment.a\_pat\_id = 'P220';



## Using Inner Join

select s.category, s.s\_address from Staff s inner join Appointment a on s.staff\_id = a.nurse\_id where a.a\_pat\_id = 'P220';

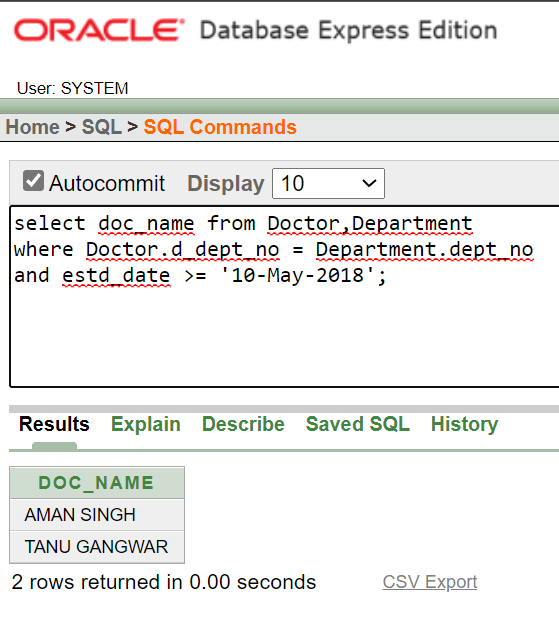


## Find the list of doctors who worked in the department which is started

**on or after ’10-May-2018’.**

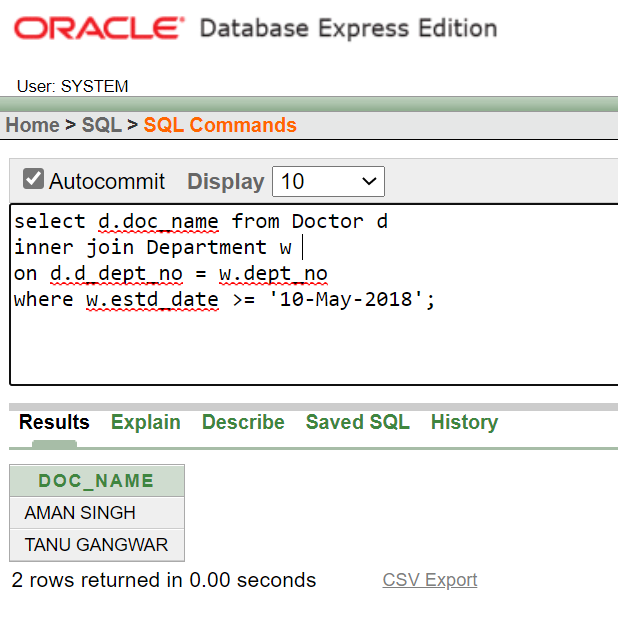
**Using Cartesian Product**

select doc\_name from Doctor,Department where Doctor.d\_dept\_no = Department.dept\_no and estd\_date >= '10-May-2018';



## Using Inner Join

select d.doc\_name from Doctor d inner join Department w on d.d\_dept\_no = w.dept\_no where w.estd\_date >= '10-May-2018';

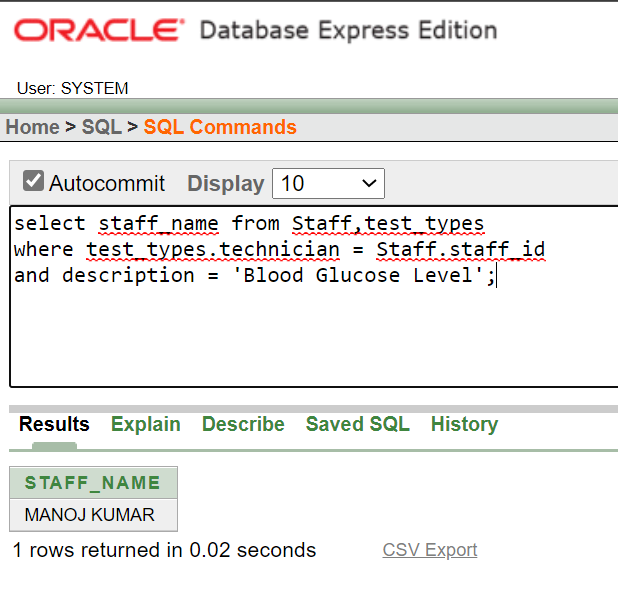


## Get the name of technicians who tests blood glucose level.

**Using Cartesian Product**

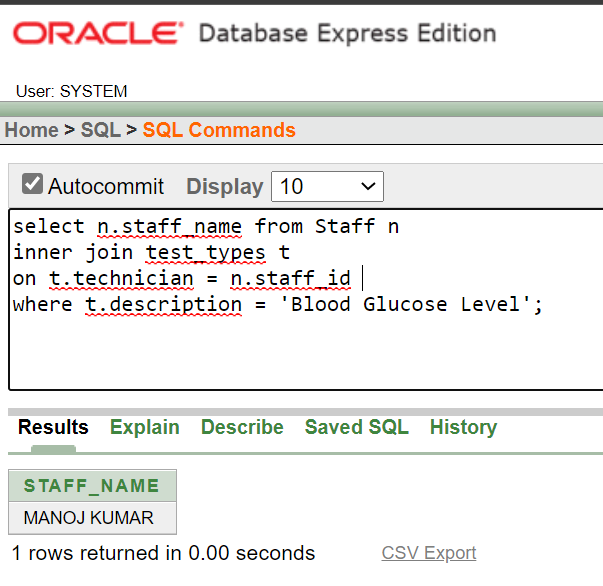
select staff\_name from Staff,test\_types

where test\_types.technician = Staff.staff\_id and description = 'Blood Glucose Level';



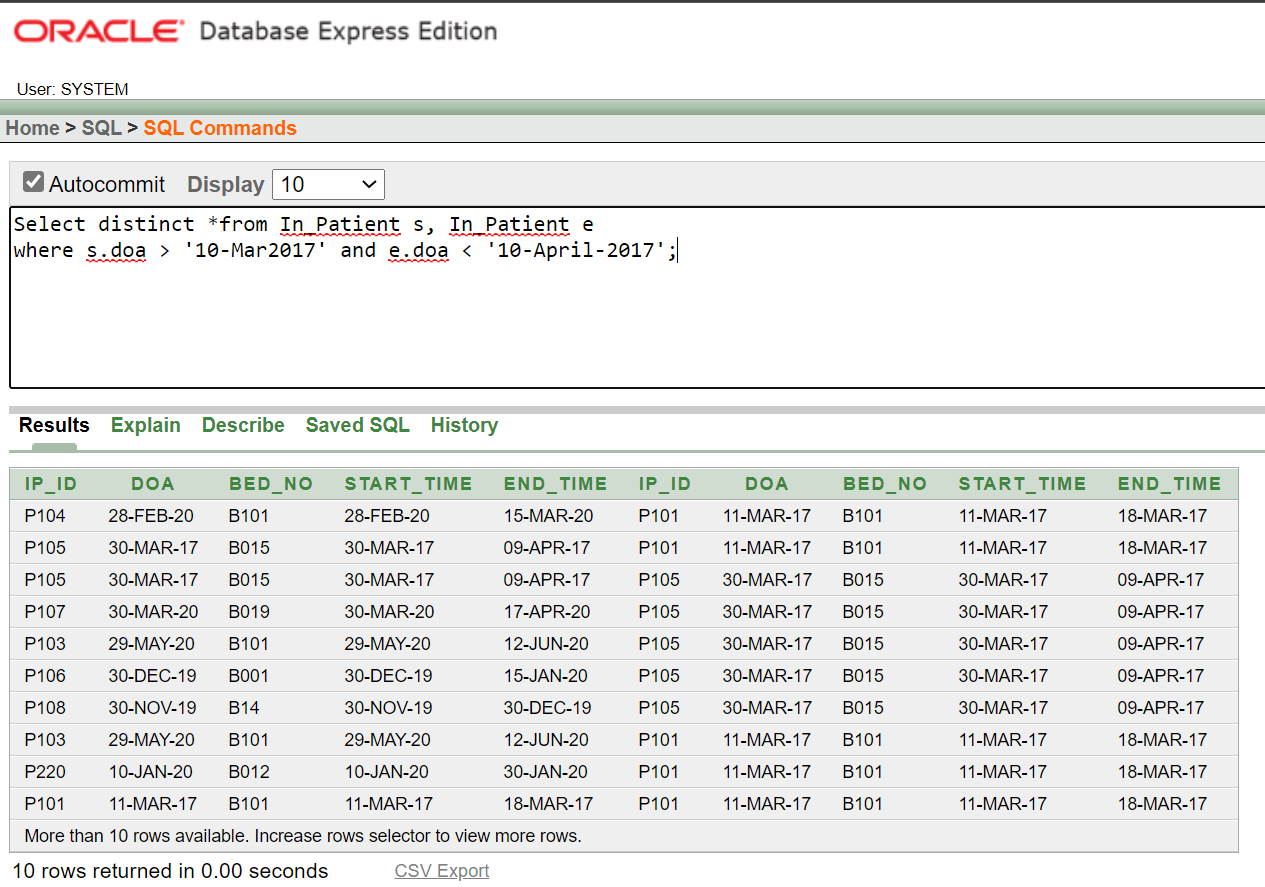
## Using Inner Join

select n.staff\_name from Staff n inner join test\_types t on t.technician = n.staff\_id where t.description = 'Blood Glucose Level';



## Display the details of all patients who were hospitalized between ’10- Mar2017’ and ’10-Apr-2017’.

Select distinct \*from In\_Patient s, In\_Patient e where s.doa > '10-Mar2017' and e.doa < '10-April-2017';

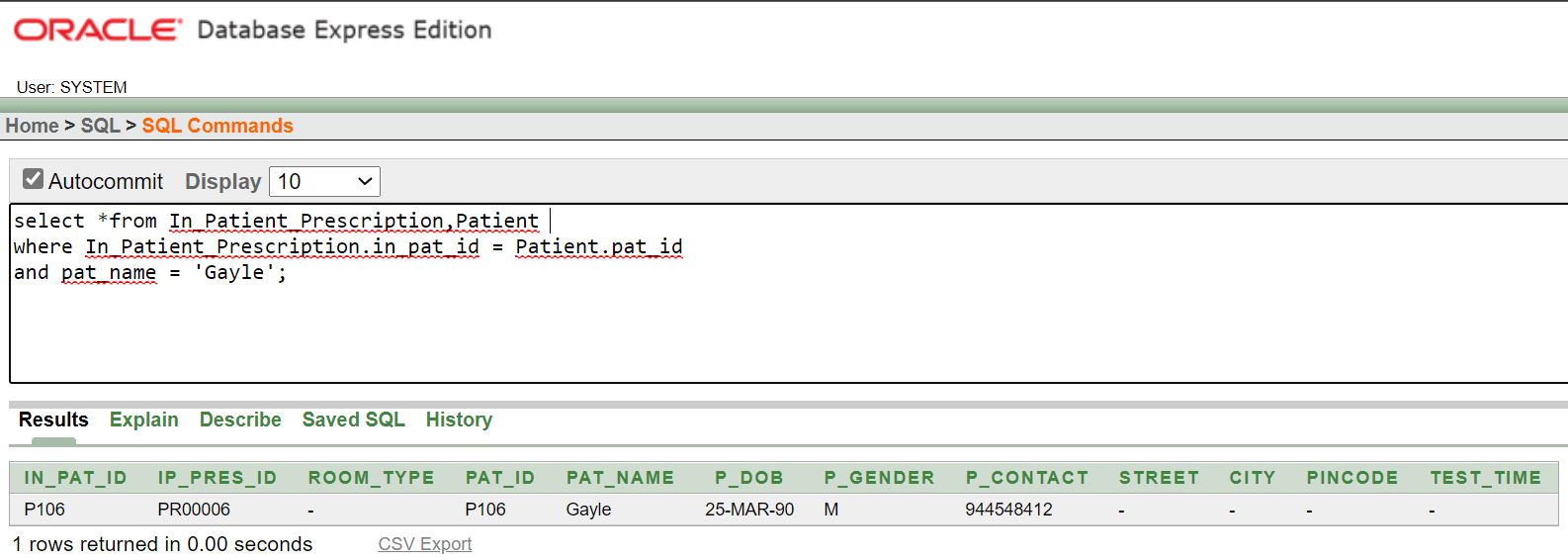


## Display the in-patient prescription of the patient whose name is

**‘Gayle’.**

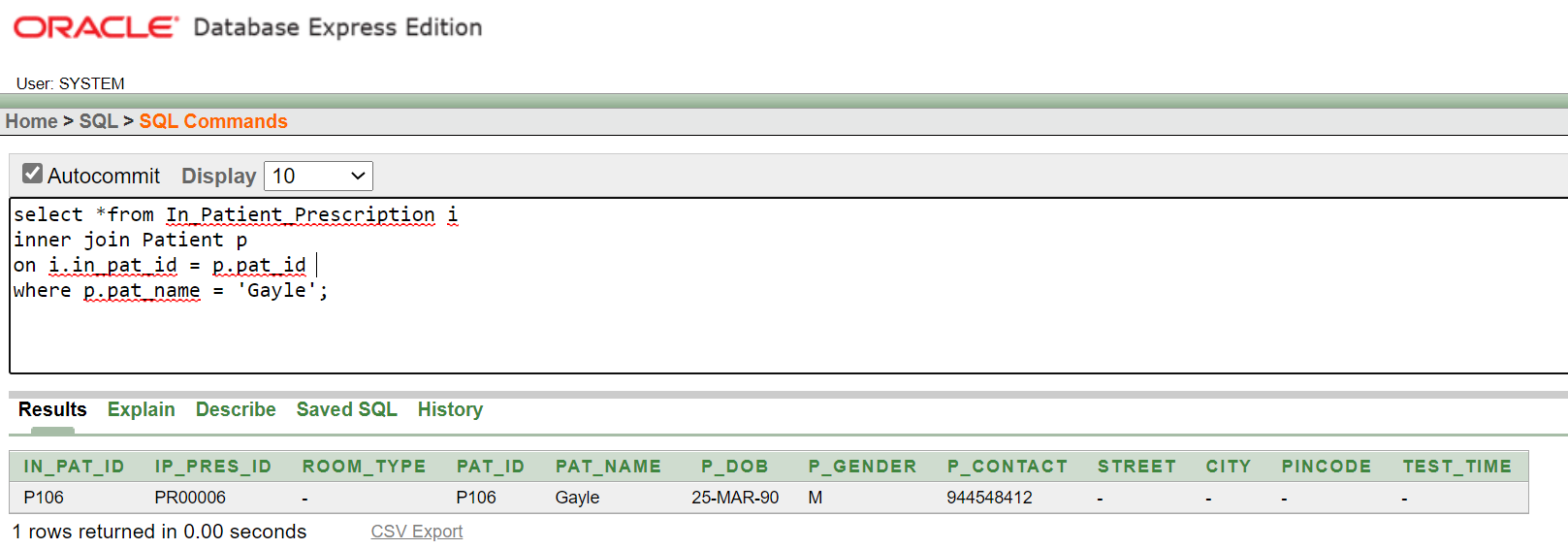
**Using Cartesian Product**

select \*from In\_Patient\_Prescription,Patient where In\_Patient\_Prescription.in\_pat\_id = Patient.pat\_id and pat\_name = 'Gayle';



## Using Inner Join

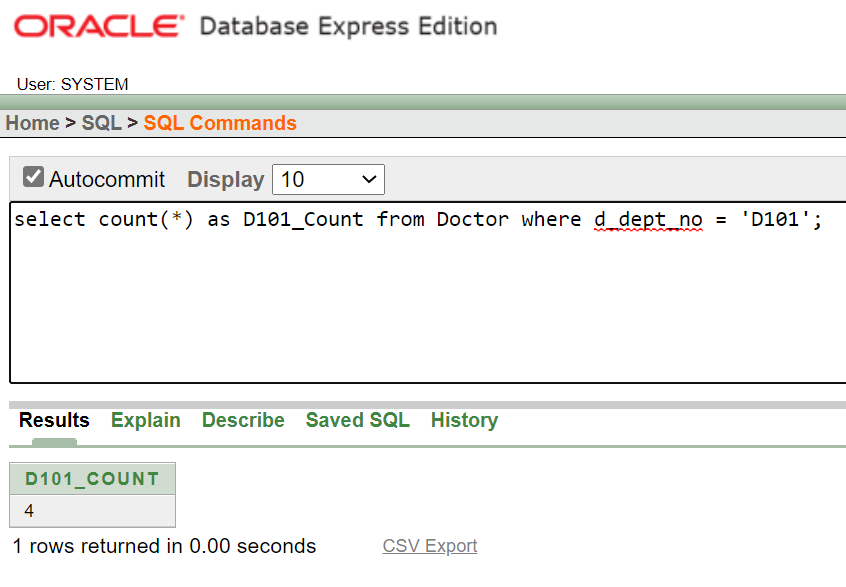
select \*from In\_Patient\_Prescription i inner join Patient p on i.in\_pat\_id = p.pat\_id where p.pat\_name = 'Gayle';



# SQL queries with AGGREGATE and CHAR functions

## Find the number of doctors who are working in the department ‘D101’

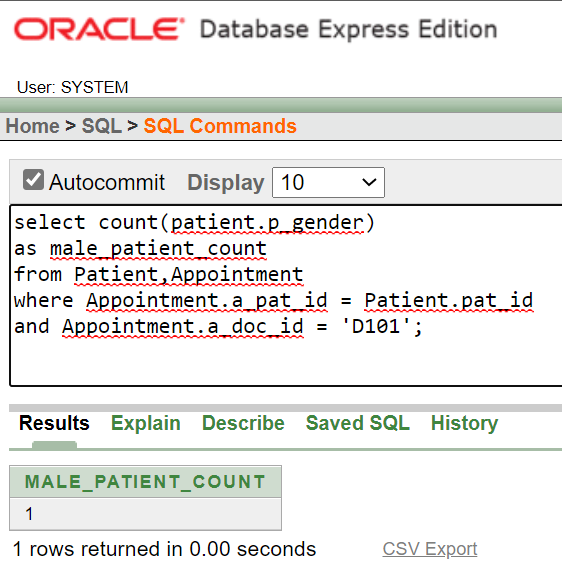
select count(\*) as D101\_Count from Doctor where d\_dept\_no = 'D101';



## Count the number of male patients who are treated by the doctor with

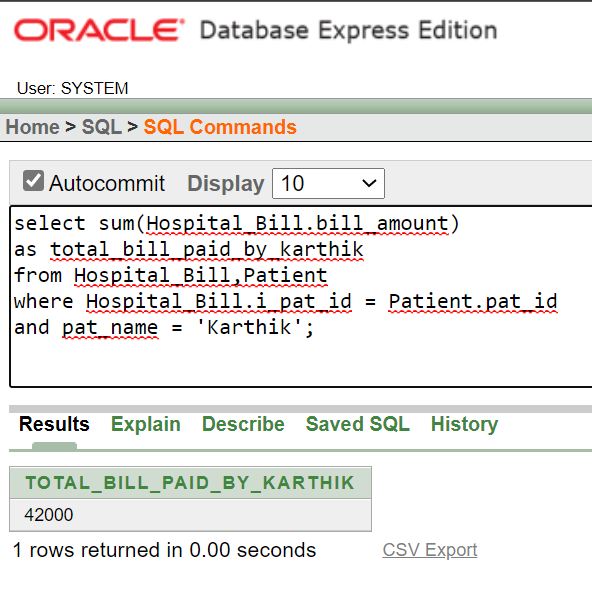
**doctor id ‘D101’**

select count(patient.p\_gender) as male\_patient\_count from Patient,Appointment where Appointment.a\_pat\_id = Patient.pat\_id and Appointment.a\_doc\_id = 'D101';



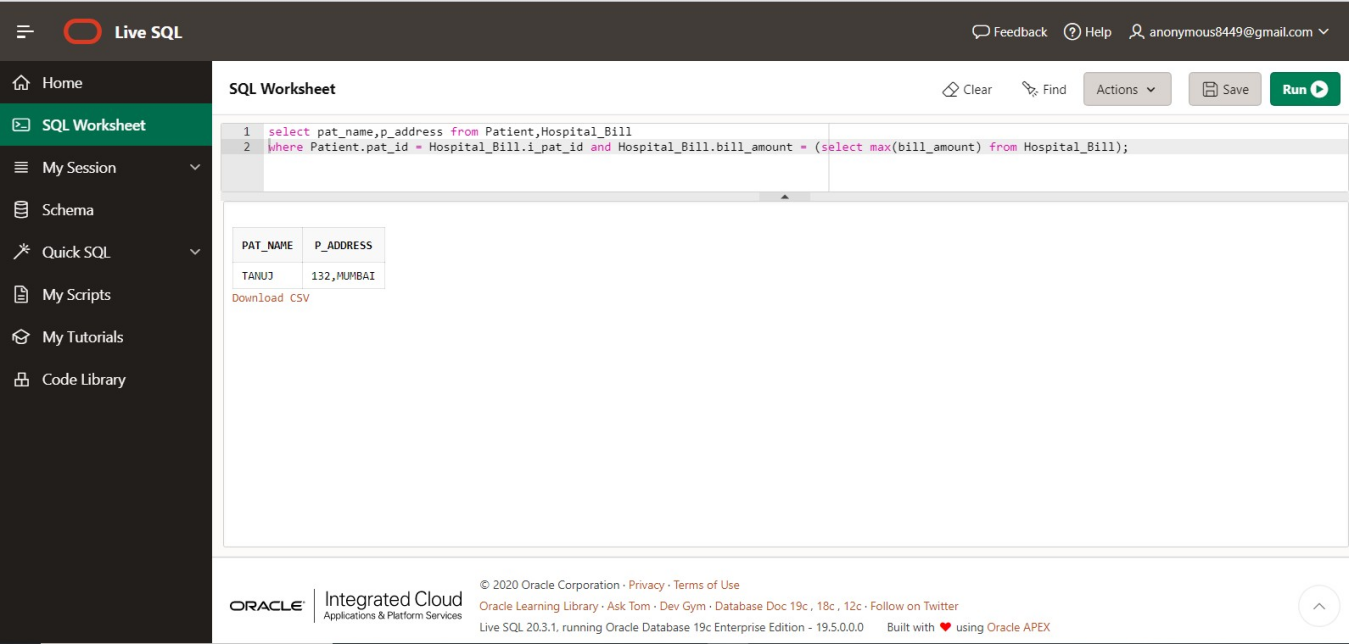
## Find the total bill paid by the patient ‘Karthik’.

select sum(Hospital\_Bill.bill\_amount) as total\_bill\_paid\_by\_karthik from Hospital\_Bill,Patient where Hospital\_Bill.i\_pat\_id = Patient.pat\_id and pat\_name = 'Karthik';



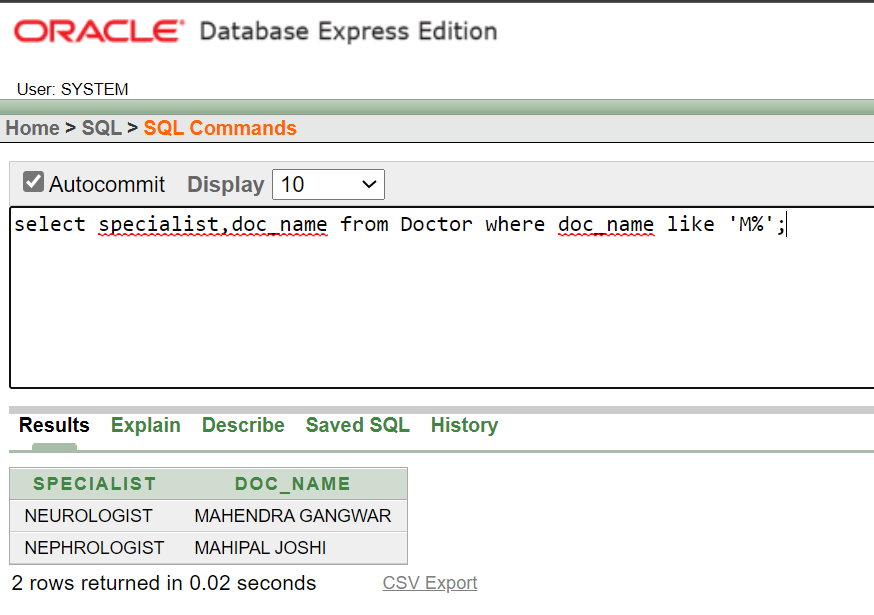
## Find the name and address of the patient who paid the highest bill of all patients.

select pat\_name,p\_address from Patient,Hospital\_Bill where Patient.pat\_id = Hospital\_Bill.i\_pat\_id and Hospital\_Bill.bill\_amount = (select max(bill\_amount) from Hospital\_Bill);



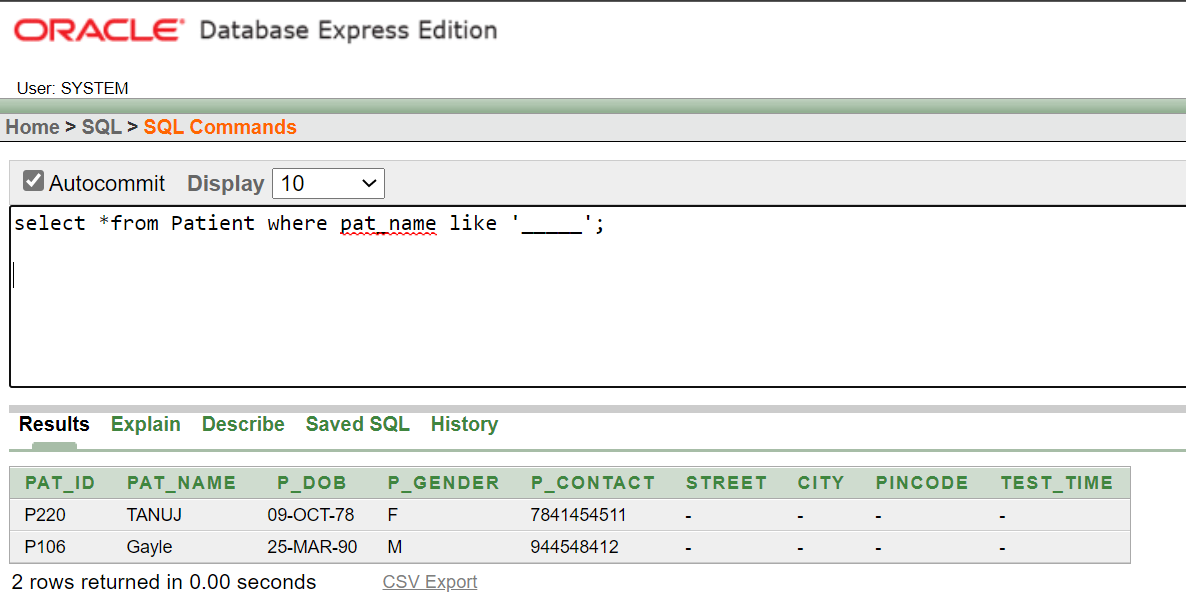
## Get the specialization of doctors whose name start with the letter ‘M’.

select specialist,doc\_name from Doctor where doc\_name like 'M%';



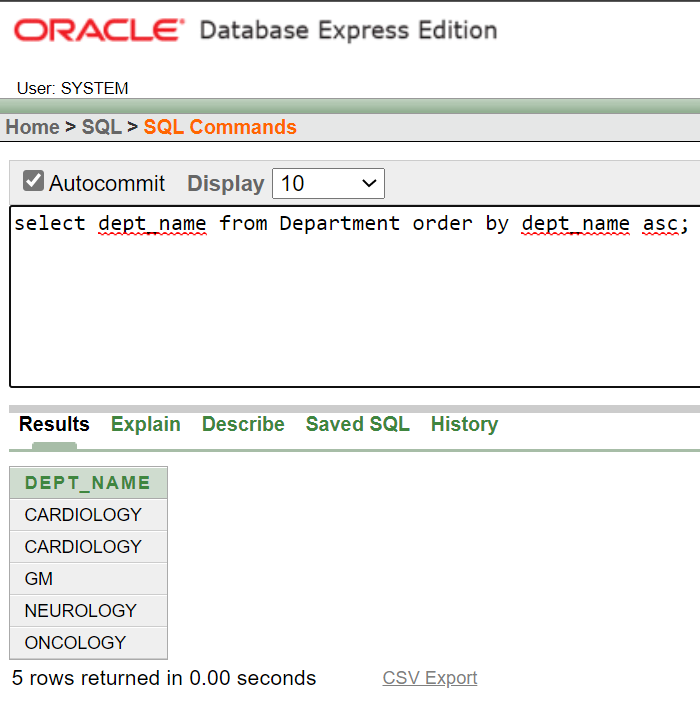
## Find the all the patients details whose name is exactly 5 characters long.

select \*from Patient where pat\_name like ' ';



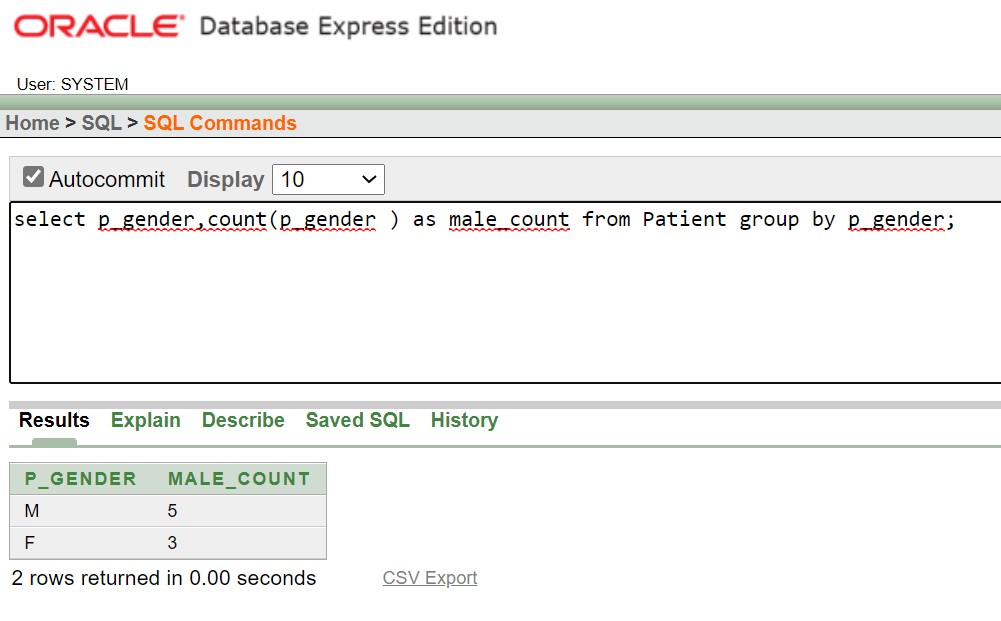
## Display the department names in ascending order.

select dept\_name from Department order by dept\_name asc;



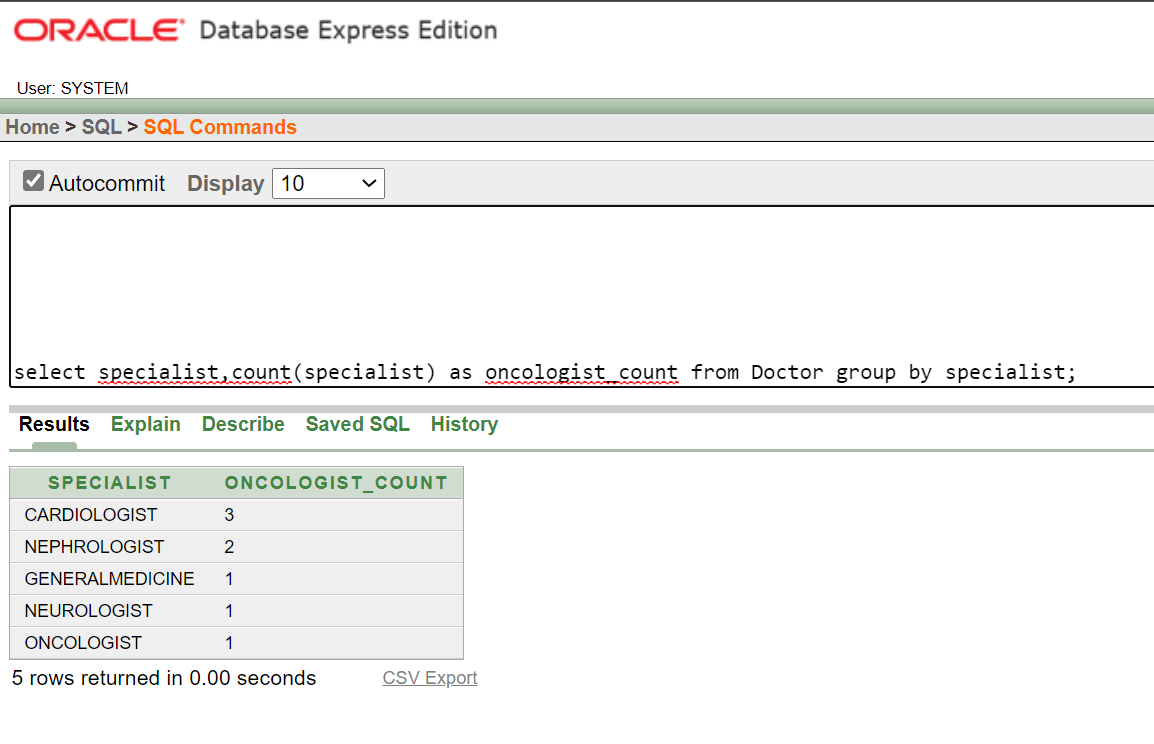
## Get the gender wise count of patients.

select count(p\_gender ) as male\_count from Patient where p\_gender = 'M'; select count(p\_gender) as female\_count from Patient where p\_gender = 'F'; select count(p\_gender) as third\_gender from Patient where p\_gender = 'T';



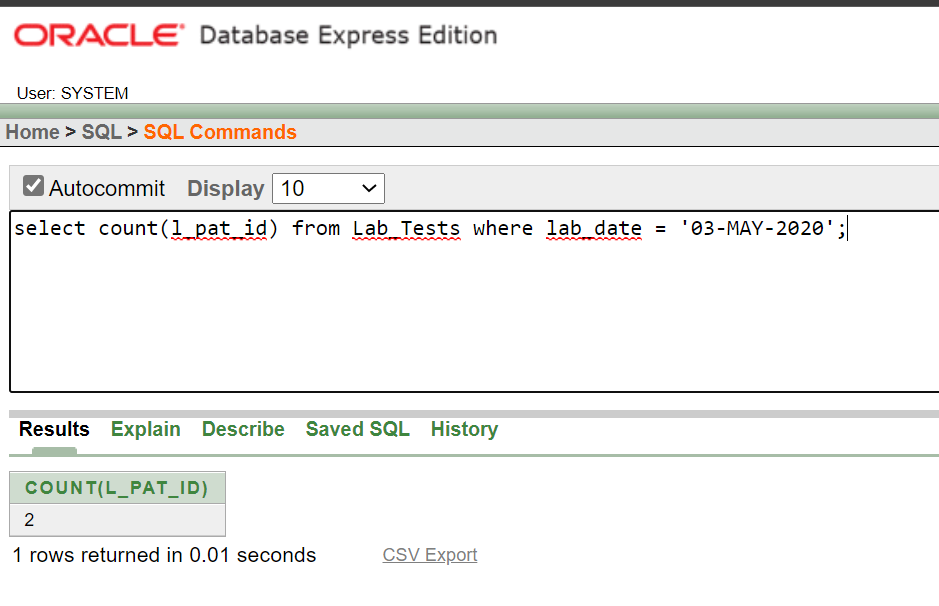
## Get the count of doctors for each specialization.

select specialist,count(specialist) as oncologist\_count from Doctor group by specialist;



## Get the total number tests conducted in any particular date.

select count(l\_pat\_id) from Lab\_Tests where lab\_date = '03-MAY-2020';



# SQL queries - Nested subqueries

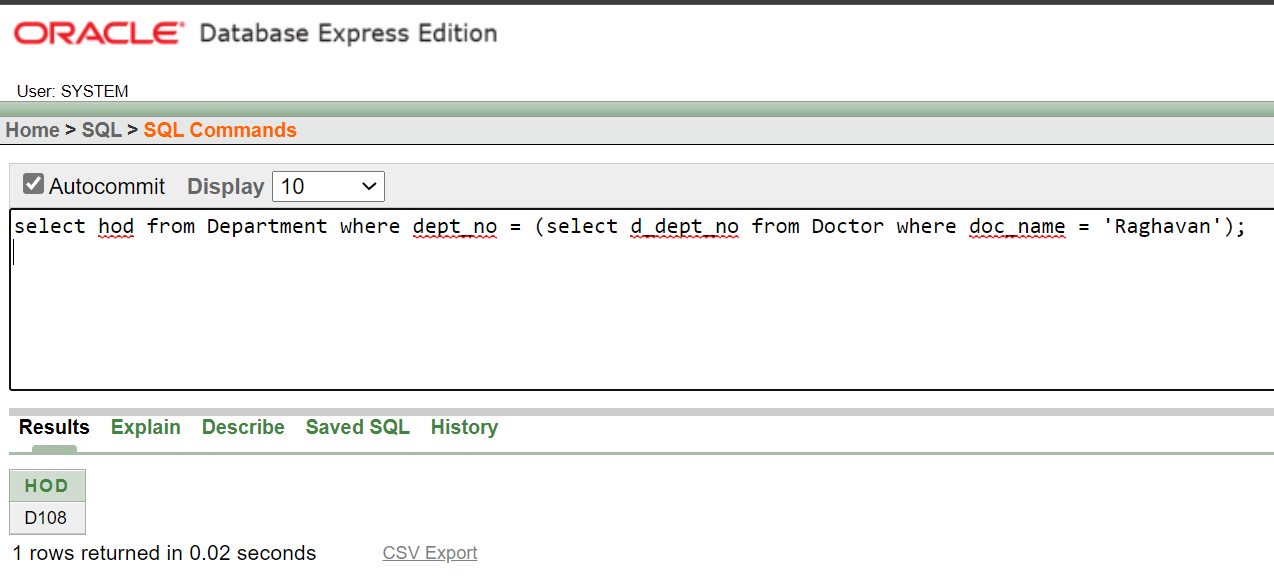
## Q.1. . All of the queries in “SQL queries with JOIN operation” section can be

**tried with subqueries concept.**

1. **Find the HOD of doctor ‘Raghavan’ (Hint: you need to join the tables**

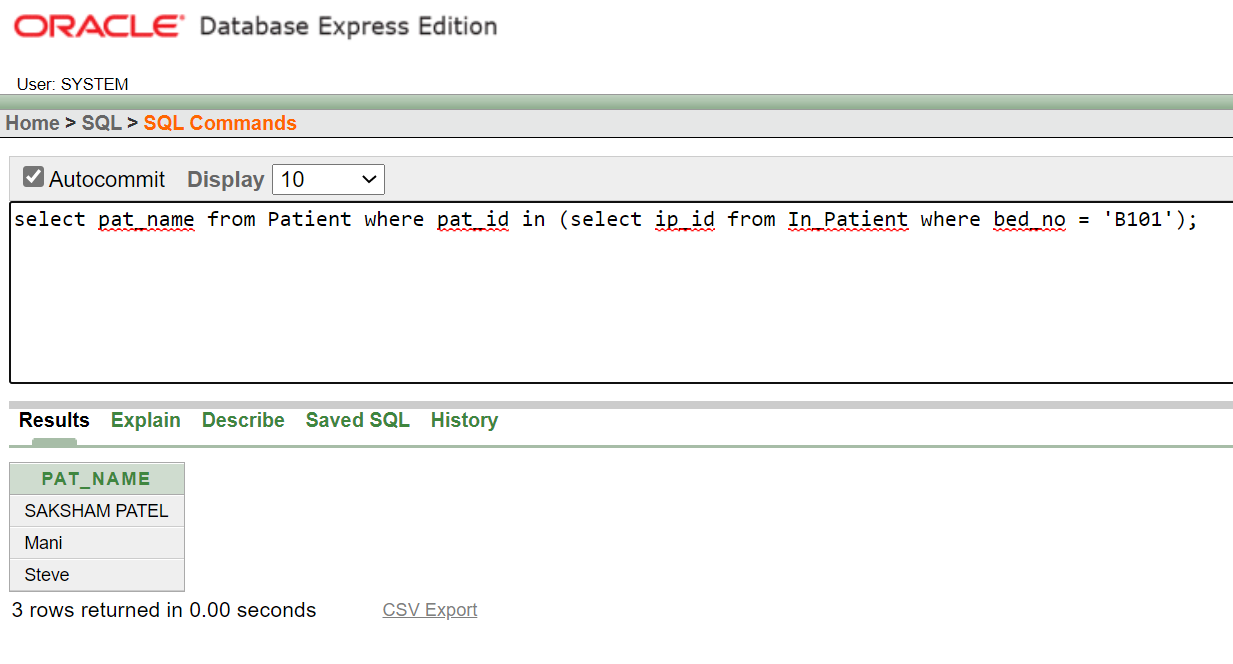
**DOCTOR and DEPARTMENT)**

select hod from Department where dept\_no = (select d\_dept\_no from Doctor where doc\_name = 'Raghavan');



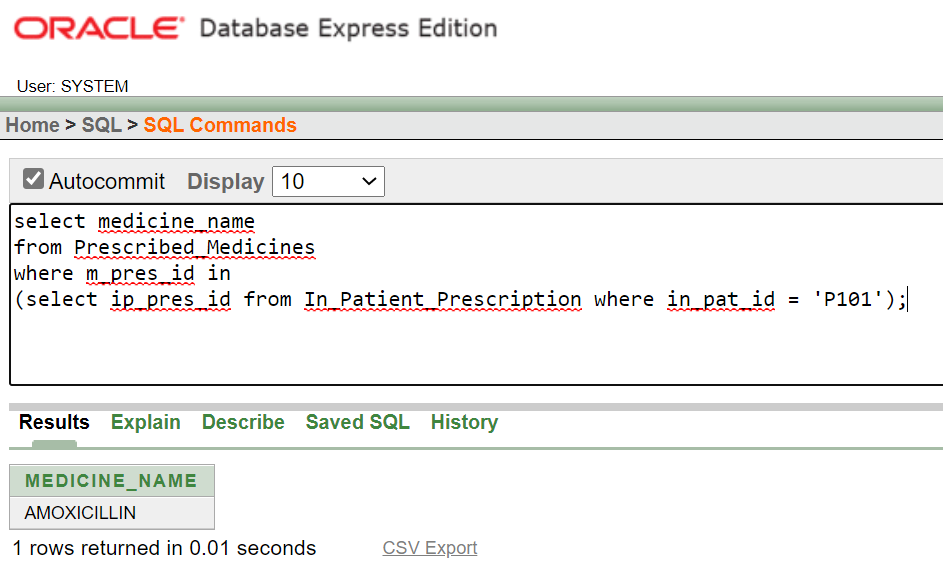
## Find the list of all patients who were admitted in bed number ‘B101’.

select pat\_name from Patient where pat\_id in (select ip\_id from In\_Patient where bed\_no = 'B101');



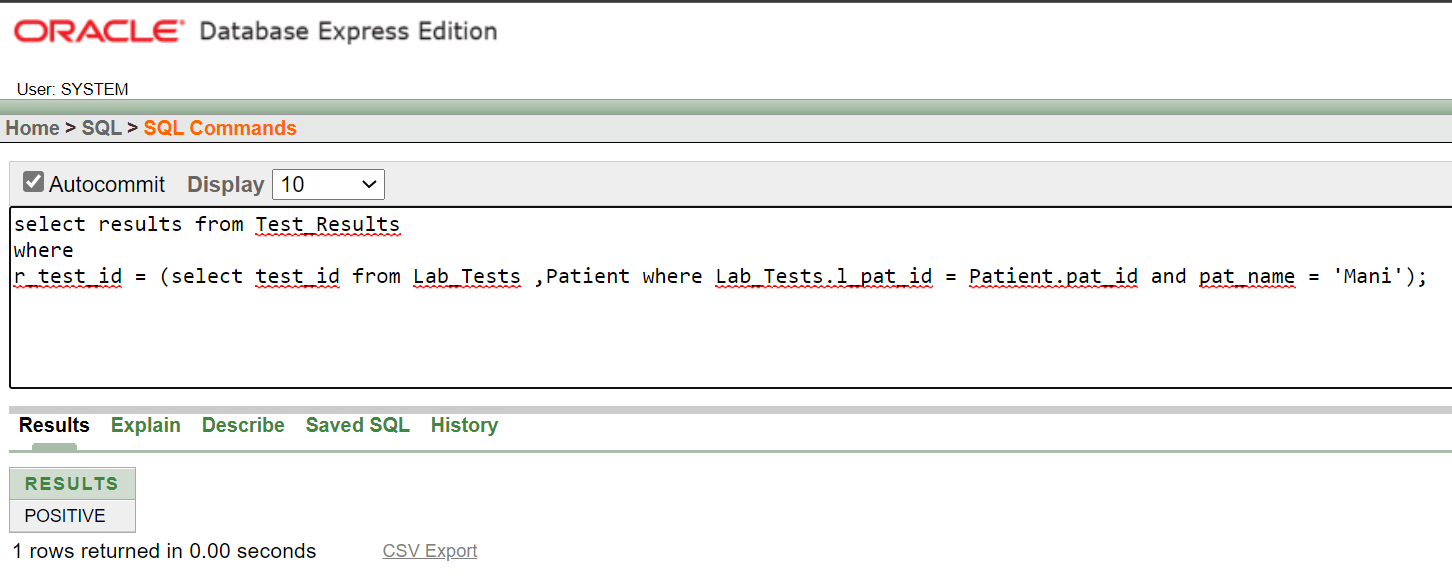
## Display all the prescribed medicines of patient with Pat\_ID ‘P101’.

select medicine\_name from Prescribed\_Medicines where m\_pres\_id in (select ip\_pres\_id from In\_Patient\_Prescription where in\_pat\_id = 'P101');



## Display the test results of patient ‘Mani’.

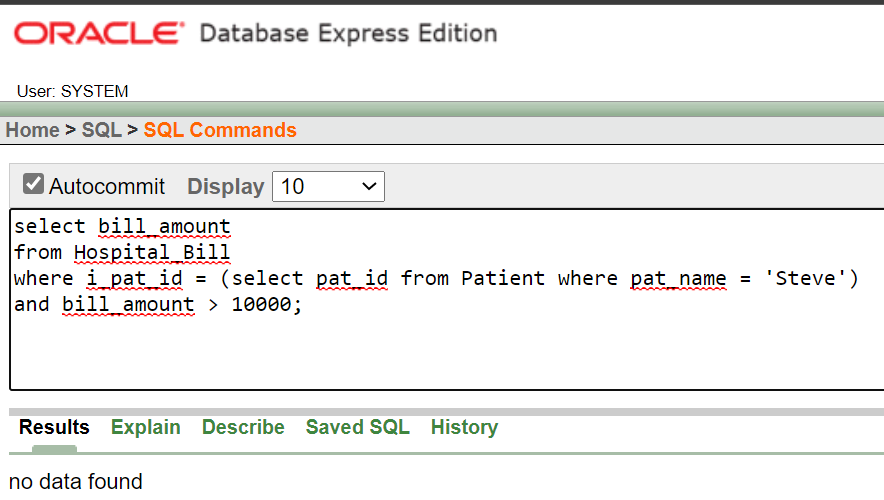
select results from Test\_Results where r\_test\_id = (select test\_id from Lab\_Tests ,Patient where Lab\_Tests.l\_pat\_id = Patient.pat\_id and pat\_name = 'Mani');



## Display all bills of bill amount more than 10000 rupees and paid by the

**patient ‘Steve’.**

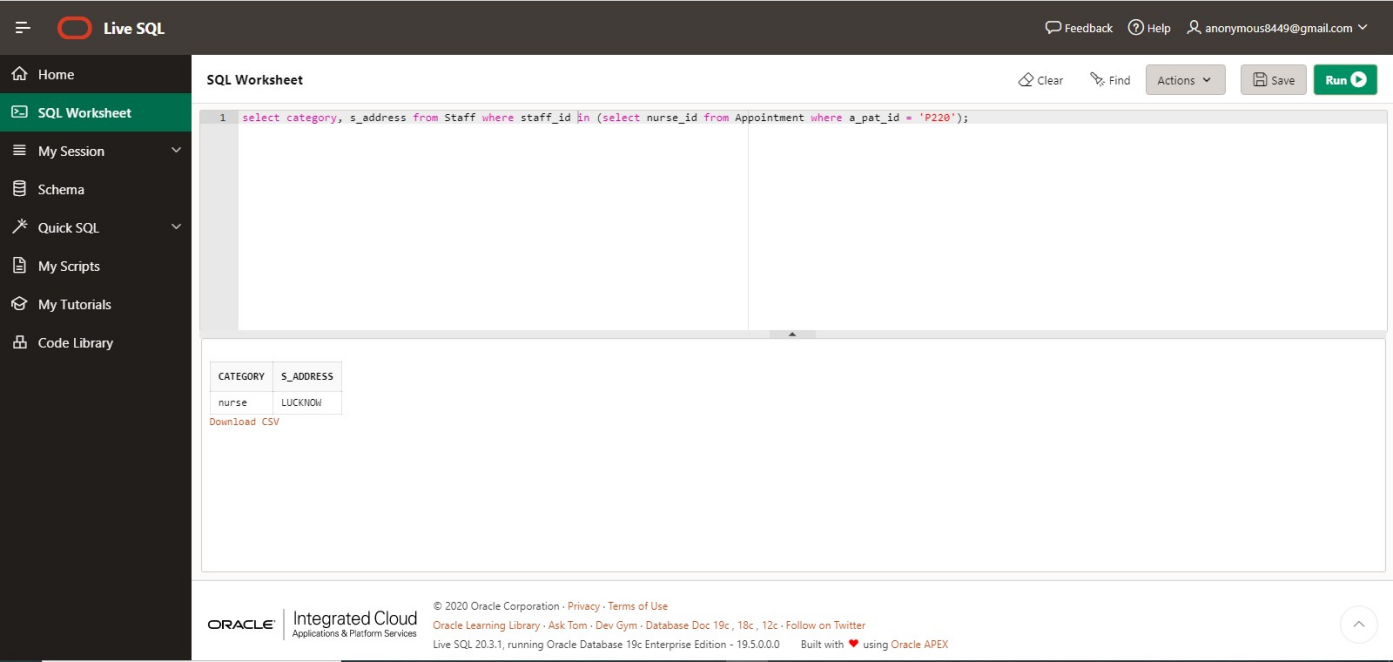
select bill\_amount from Hospital\_Bill where i\_pat\_id = (select pat\_id from Patient where pat\_name = 'Steve') and bill\_amount > 10000;



## Find the category and address of the nurse who attended the patient

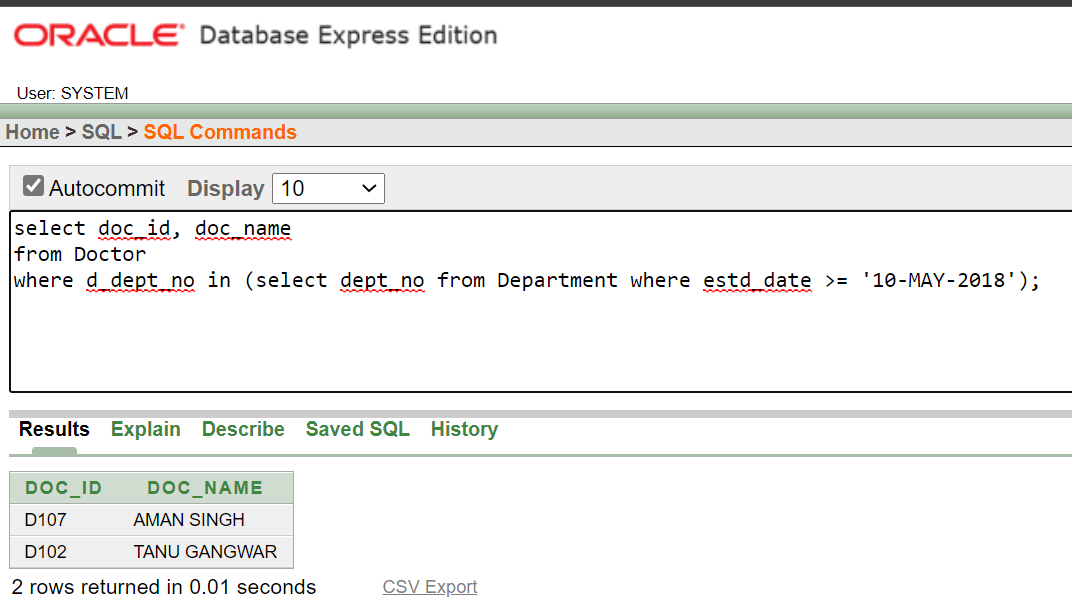
**with pat\_no ‘P220’.**

select category, s\_address from Staff where staff\_id in (select nurse\_id from Appointment where a\_pat\_id = 'P220');



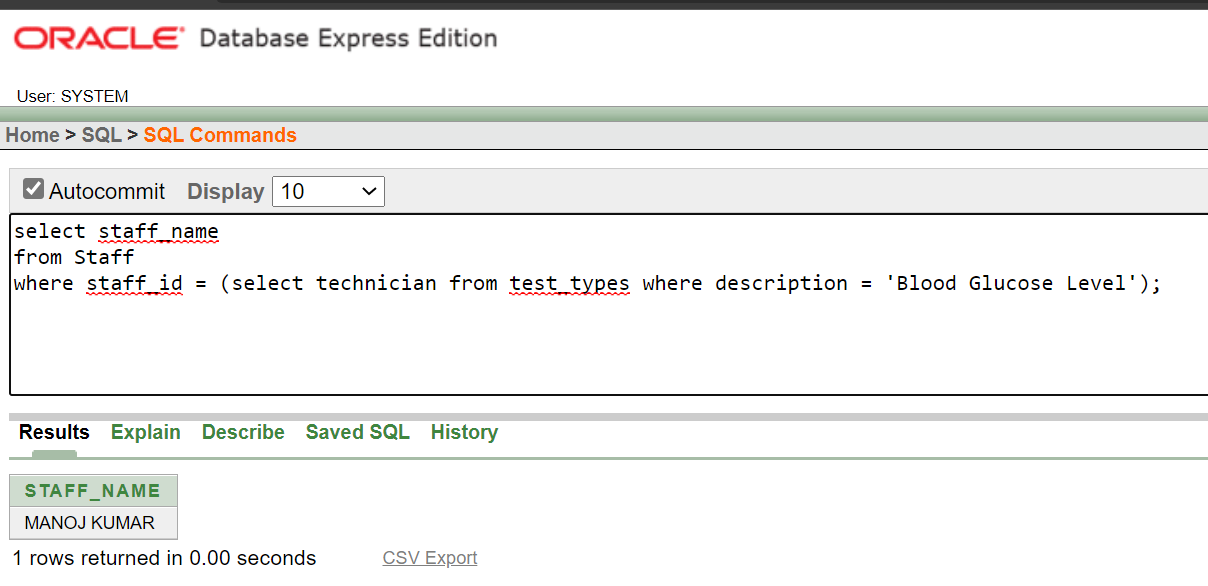
## Find the list of doctors who worked in the department which is started on or after ’10-May-2018’.

select doc\_id, doc\_name from Doctor where d\_dept\_no in (select dept\_no from Department where estd\_date >= '10-MAY-2018');



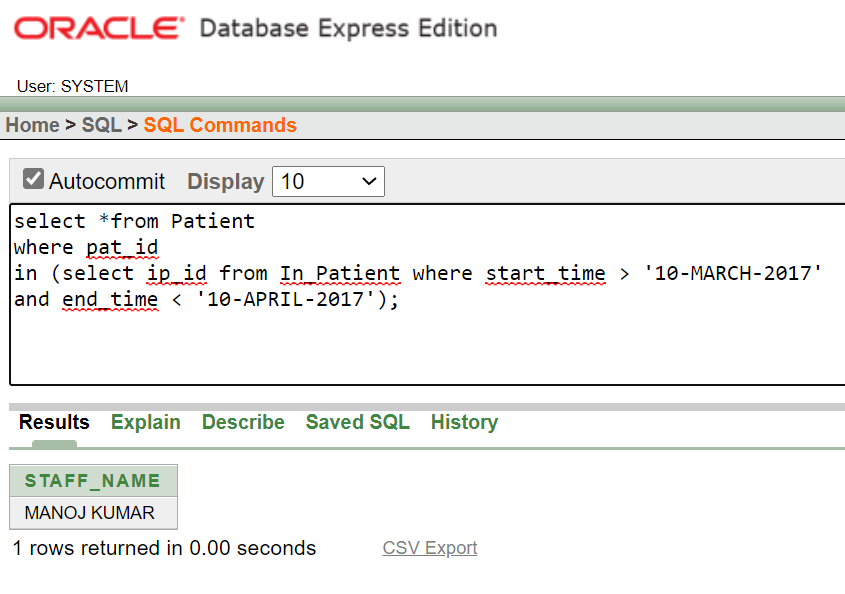
## Get the name of technicians who tests blood glucose level.

select staff\_name from Staff where staff\_id = (select technician from test\_types where description = 'Blood Glucose Level');



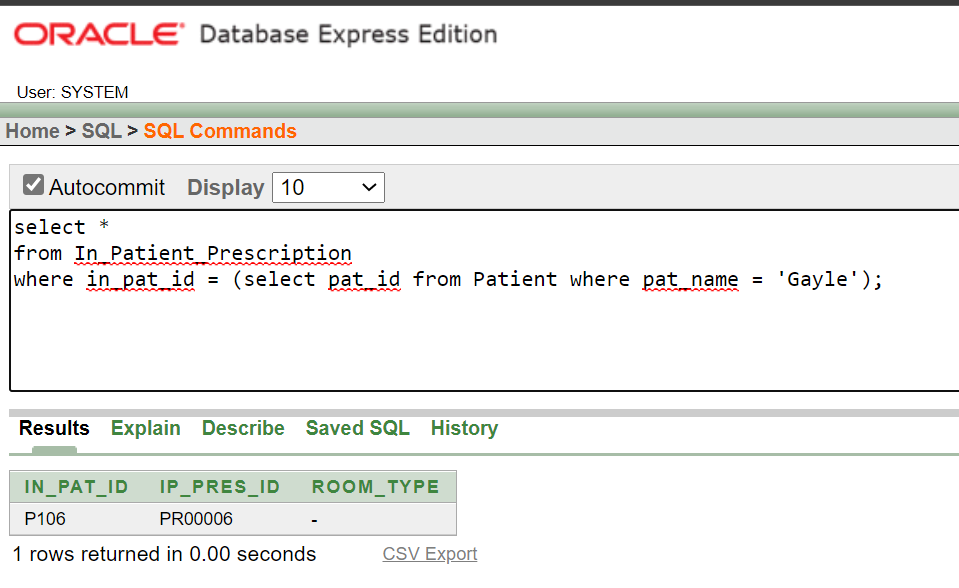
## (i). Display the details of all patients who were hospitalized between ’10- Mar2017’ and ’10-Apr-2017’

select \*from Patient where pat\_id in (select ip\_id from In\_Patient where start\_time > '10-MARCH-2017' and end\_time < '10-APRIL-2017');



## (j). Display the in-patient prescription of the patient whose name is ‘Gayle’.

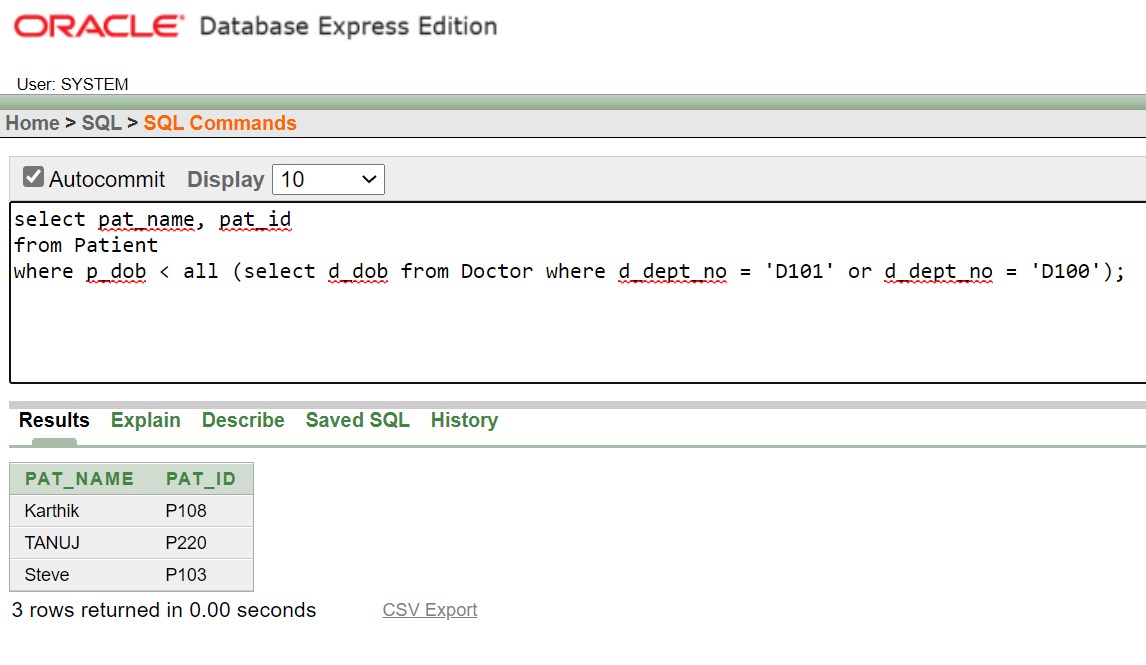
select \*from In\_Patient\_Prescription where in\_pat\_id = (select pat\_id from Patient where pat\_name = 'Gayle');



## Find the name and id of all patients who are older than all the doctors in

**the entire ‘cardiology’ department. Use subqueries and ALL operator.**

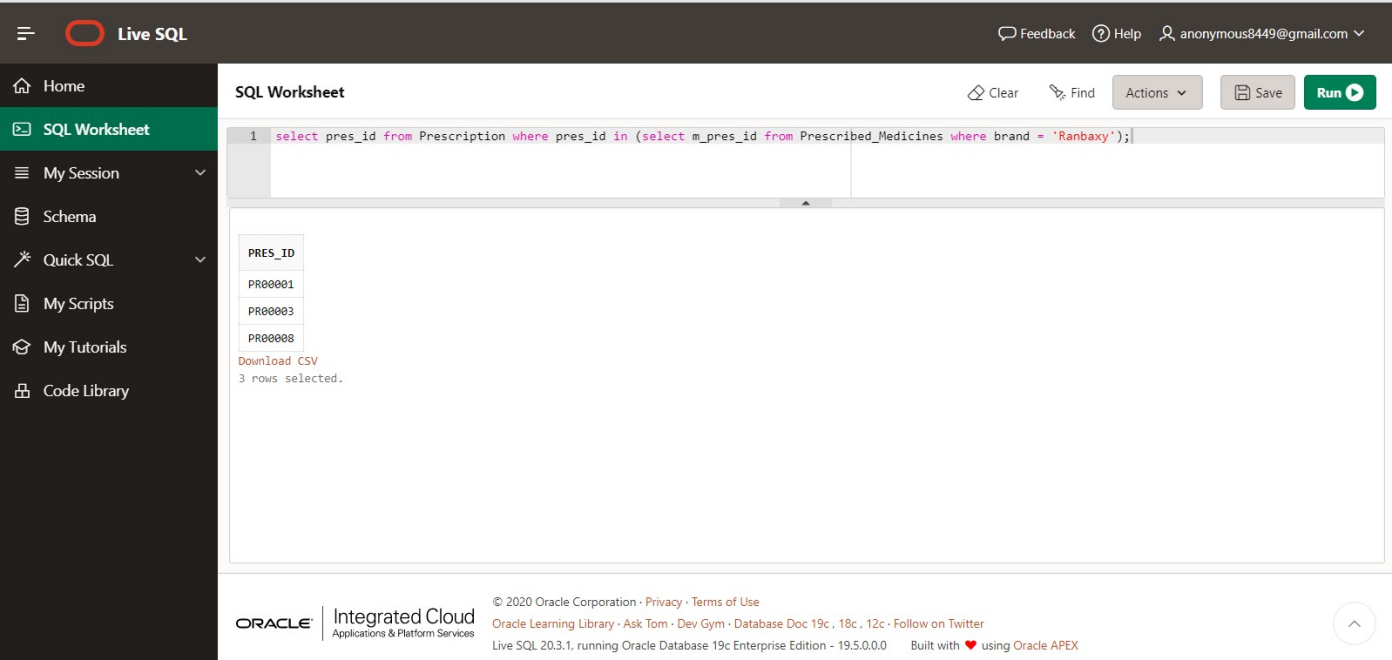
select pat\_name, pat\_id from Patient where p\_dob < all(select d\_dob from Doctor where d\_dept\_no = 'D101' or d\_dept\_no = 'D100');



## Find the prescription ids of all prescription that included a medicine

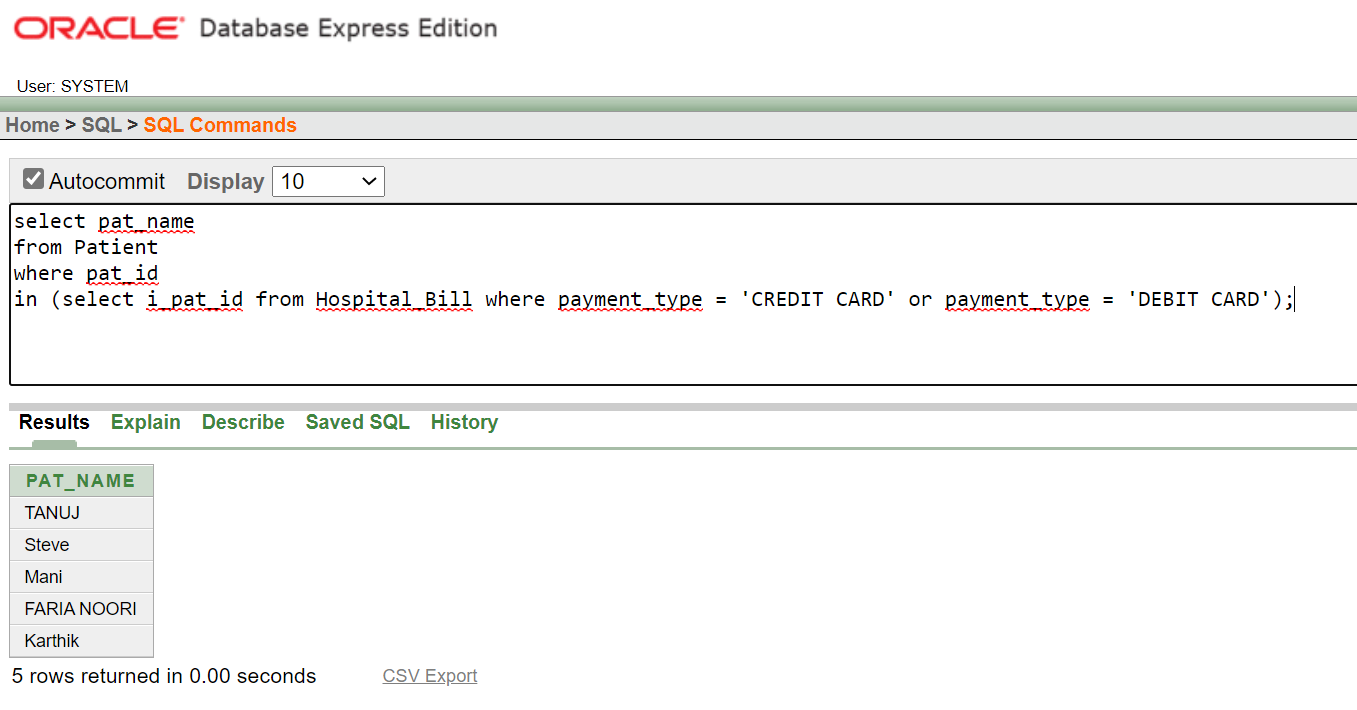
**from the brand ‘Ranbaxy’ using nested subqueries.**

select pres\_id from Prescription where pres\_id in (select m\_pres\_id from Prescribed\_Medicines where brand = 'Ranbaxy');



## Find the list of patients who paid their bill through either ‘credit card’ or ‘debit card’ using subquery.

select pat\_name from Patient where pat\_id in (select i\_pat\_id from Hospital\_Bill where payment\_type = 'CREDIT CARD' or payment\_type = 'DEBIT CARD');



# SQL queries using other functions

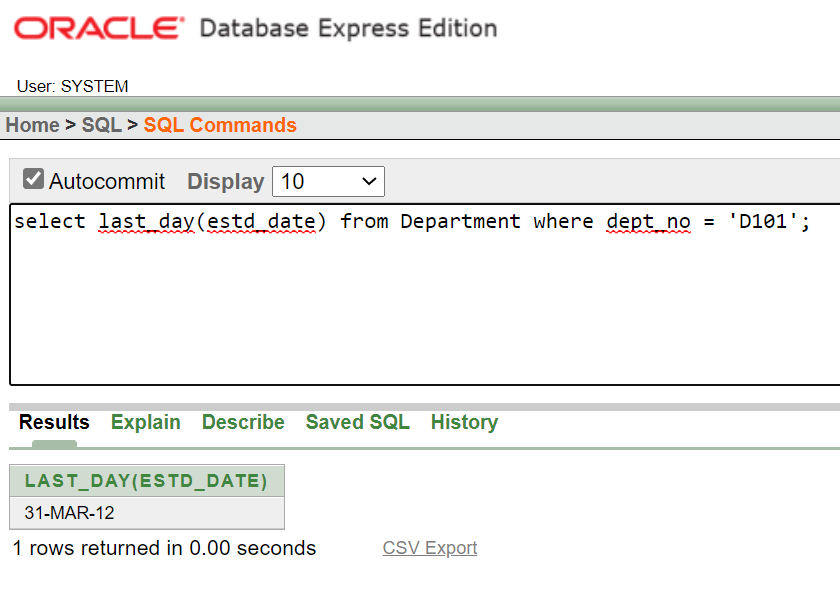
## Practice queries using DATE, NUMERIC, and CHARACTER functions. Refer DBMS\_Lab\_Reference\_Material.pdf file. Try to upload at least two queries from each function category.

**DATE FUNCTION QUERIES**

* 1. **Find the last date of month from the established date for a department**

**with department number ‘D101’;**

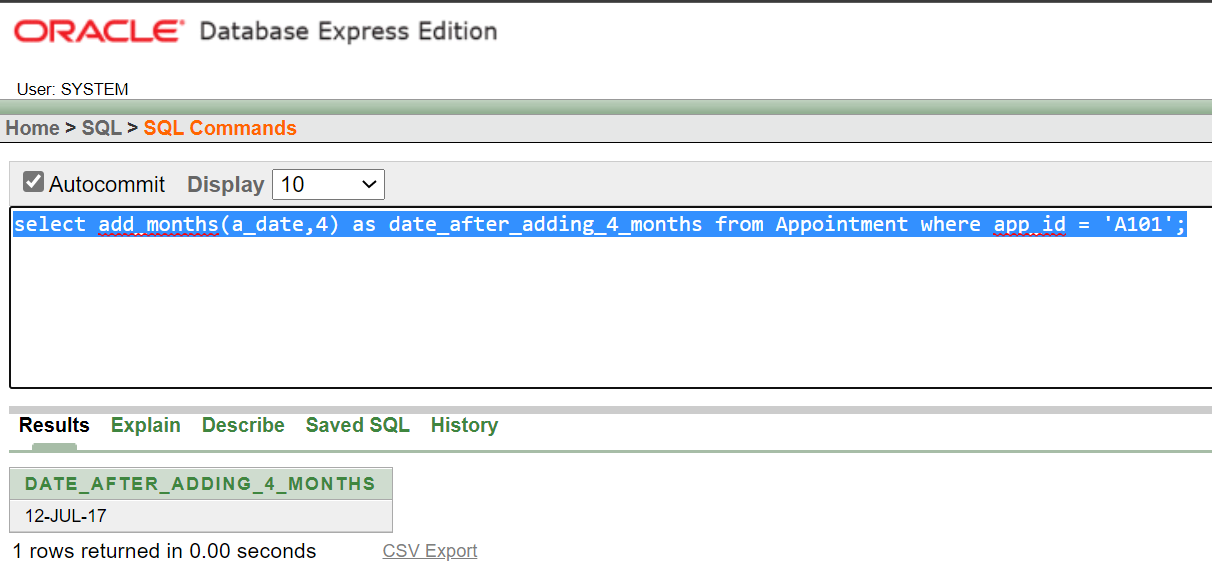
select last\_day(estd\_date) from Department where dept\_no = 'D101';



## Find the date after adding 4 months in the date with appointment id

**‘A101’.**

select add\_months(a\_date,4) as date\_after\_adding\_4\_months from Appointment where app\_id = 'A101';

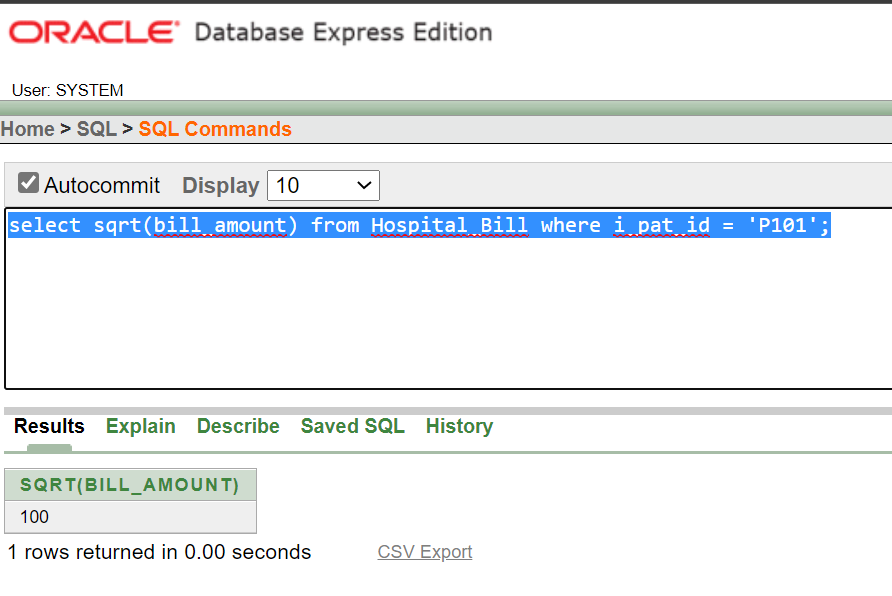


## NUMERIC FUNCTION QUERIERS

* 1. **Find the Square Root of Bill Amount of patient having patient id as**

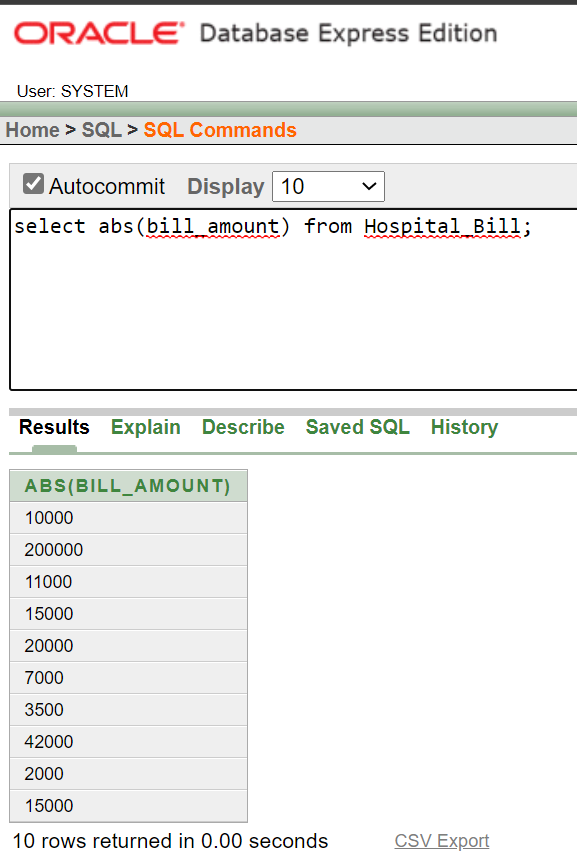
**‘P101’.**

select sqrt(bill\_amount) from Hospital\_Bill where i\_pat\_id = 'P101';



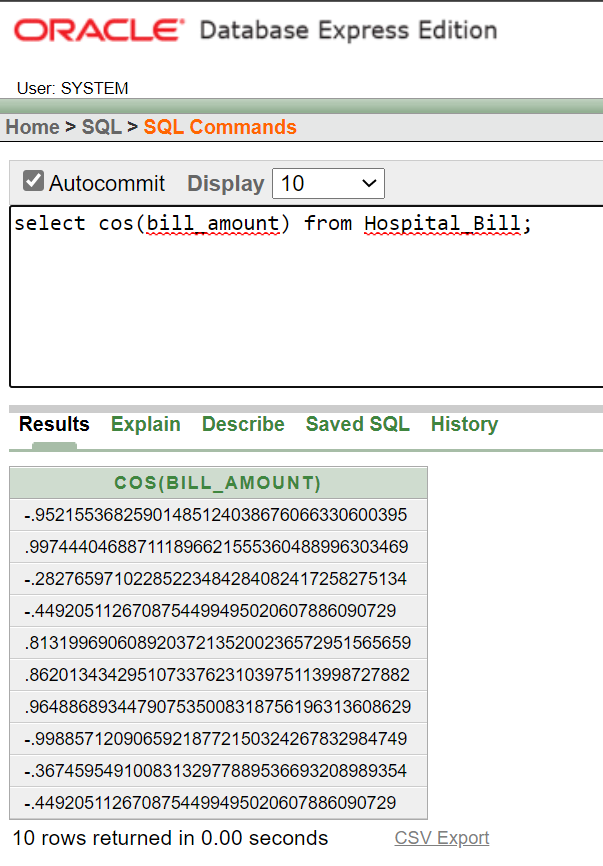
## Find the Absolute Value of Bill Amount of patients.

select abs(bill\_amount) from Hospital\_Bill;



## Find the cos of all bill amounts.

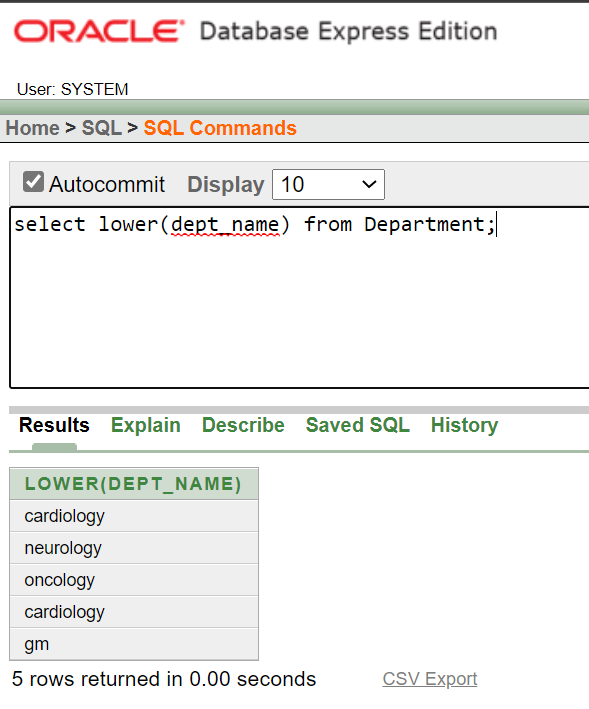
select cos(bill\_amount) from Hospital\_Bill;



## CHARACTER FUNCTIONS QUERIES

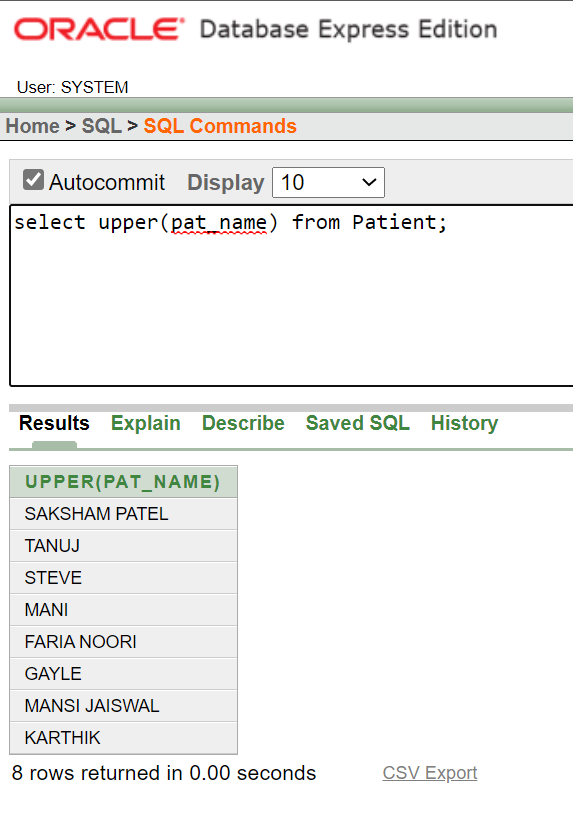
* 1. **Display the Department name in Lower Letters.**

select lower(dept\_name) from Department;



## Display the patient name in Upper Letters.

select upper(pat\_name) from Patient;



## Concanate the string ‘ GANGWAR’ in the patient having name ‘SAKSHAM PATEL’.

select concat('SAKSHAM PATEL',' GANGWAR') from Patient where pat\_name = 'SAKSHAM PATEL';

