

database management systems

Cycle Sheet – 3

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Name: **VIBHU KUMAR SINGH**

Reg. No: **19BCE0215**

Teacher: **Nancy Victor**

**Creating Tables:**

Doctor:

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)

)



Department:

create table Department(

dept\_no varchar(20) primary key,

dept\_name varchar(30) not null,

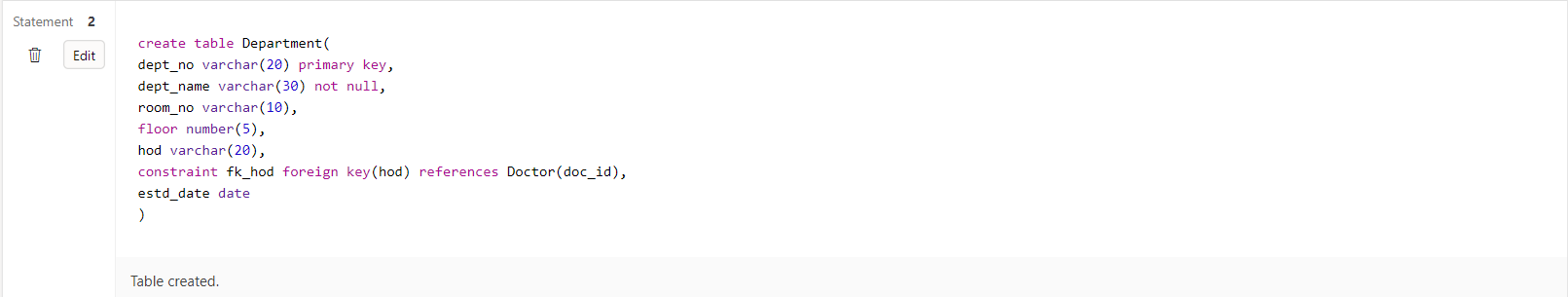
room\_no varchar(10),

floor number(5),

hod varchar(20),

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

estd\_date date

) 

Staff:

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,

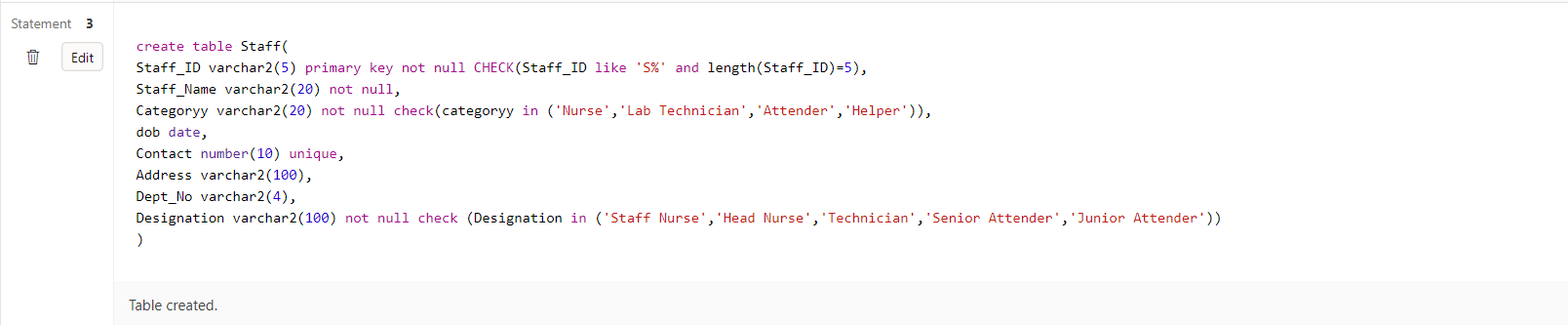
s\_contact number(15),

s\_address varchar(50),

s\_dept\_no varchar(10),

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

)



Patient:

create table Patient(

pat\_id varchar(20) primary key,

pat\_name varchar(30) not null,

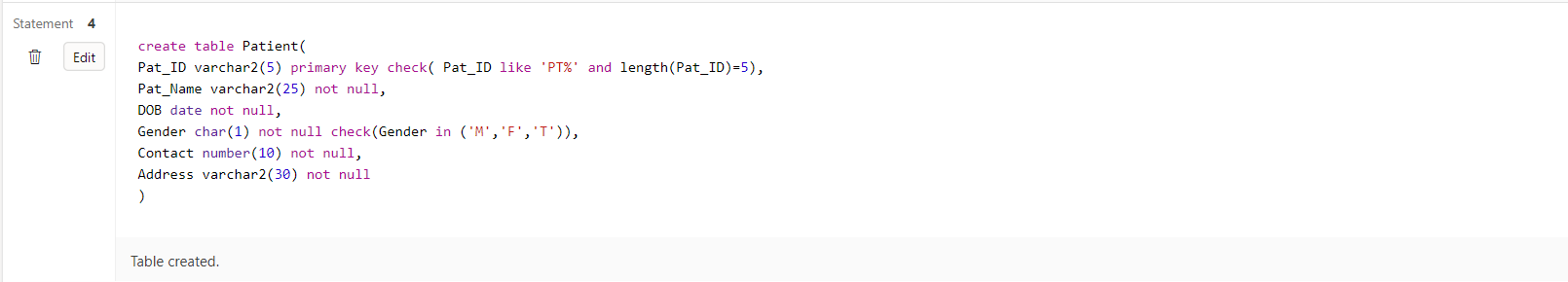
p\_dob date not null,

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

)

In\_Patient:

create table In\_Patient(

ip\_id varchar(20),

doa date not null,

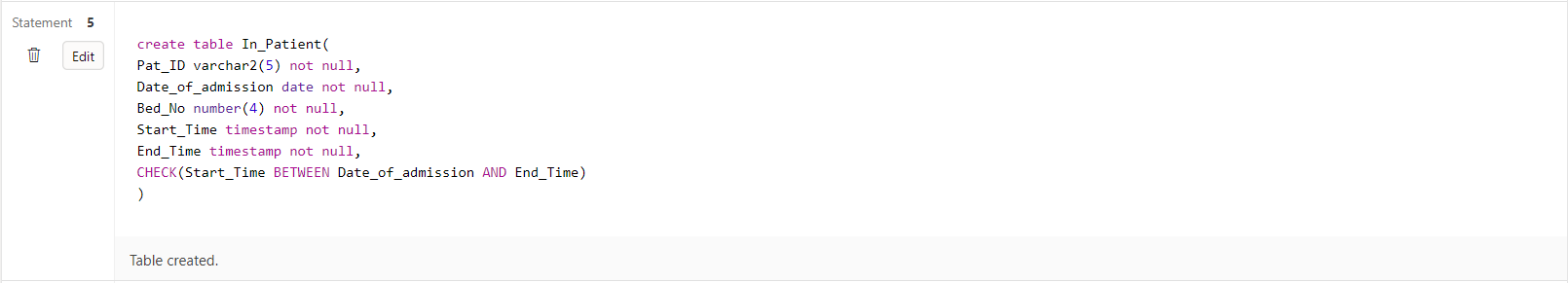
primary key(ip\_id,doa),

bed\_no varchar(10),

start\_time date,

end\_time date,

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

)

In\_Patient\_Prescription:

create table In\_Patient\_Prescription(

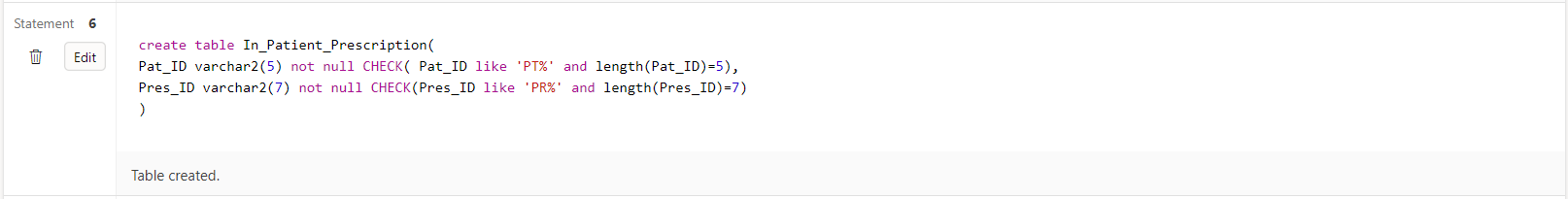
in\_pat\_id varchar(20) not null,

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)

)

Appointment:

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),

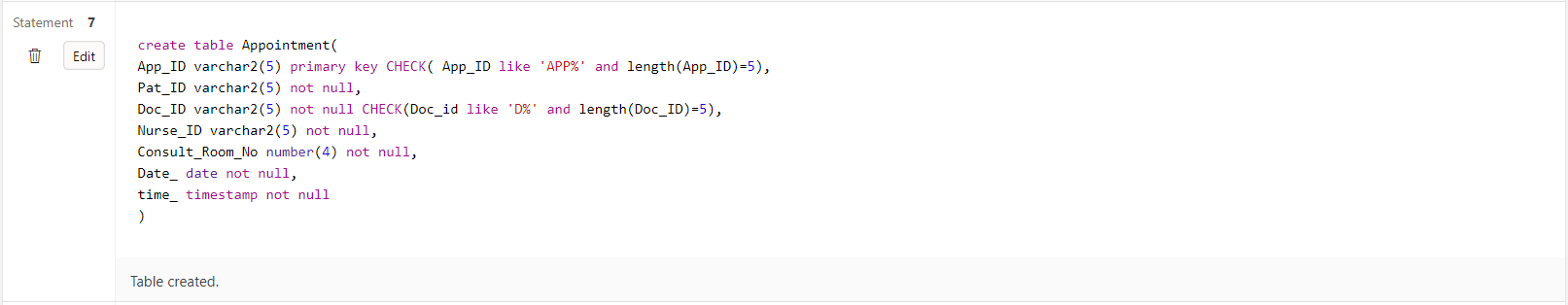
constraint fk\_nurse\_id foreign key(nurse\_id) references Staff(staff\_id),

consult\_room\_no number(20),

a\_date date not null,

a\_time varchar(10) not null

)



Prescription:

create table Prescription(

pres\_id varchar(15) primary key,

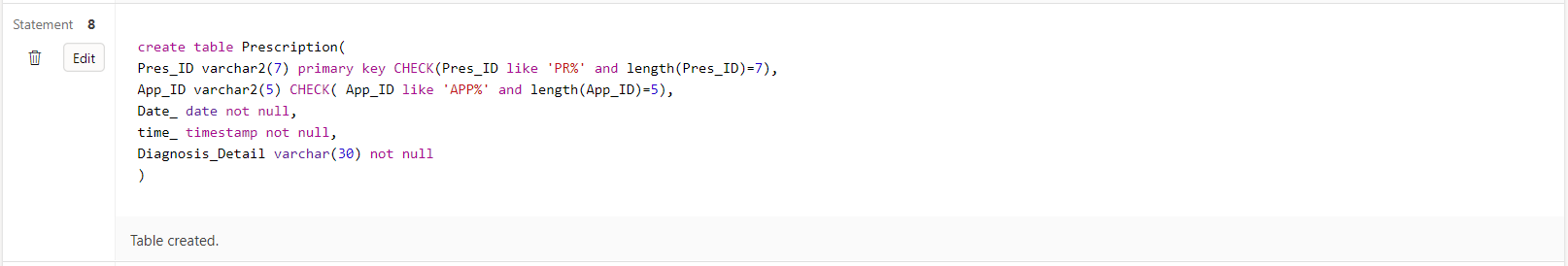
p\_app\_id varchar(20),

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)

)

Prescribed\_Medicines:

create table Prescribed\_Medicines(

m\_pres\_id varchar(25) ,

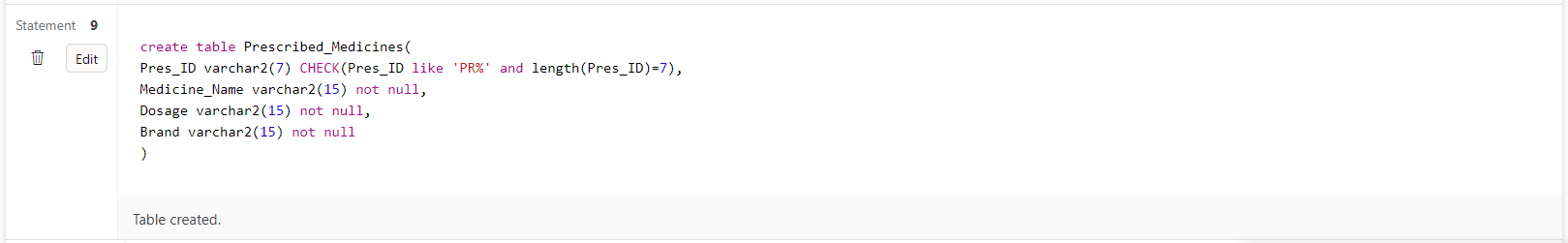
constraint fk\_m\_pres\_id foreign key (m\_pres\_id) references Prescription(pres\_id),

medicine\_name varchar(40) not null,

primary key(m\_pres\_id,medicine\_name),

dosage varchar(20),

brand varchar(10)

)

Hospital\_Bill:

create table Hospital\_Bill(

inv\_no number(20),

inv\_date date not null,

primary key(inv\_no,inv\_date),

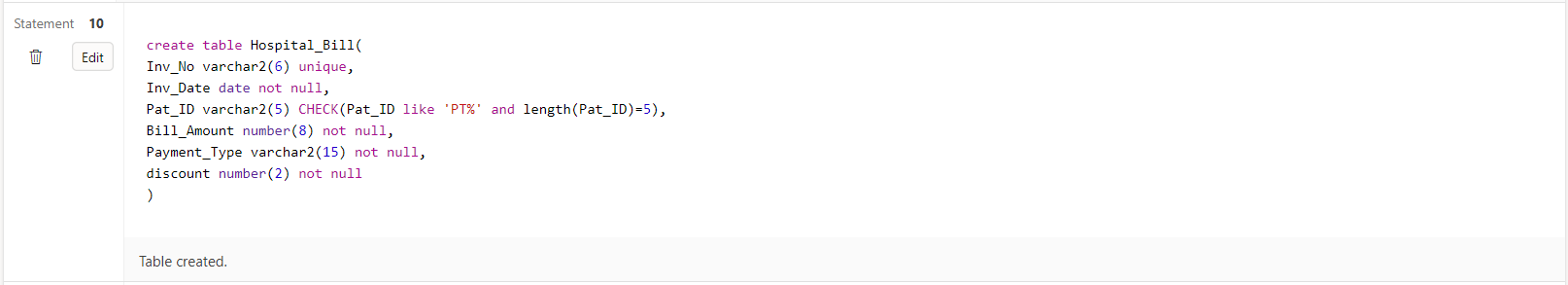
i\_pat\_id varchar(20),

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)

)

Lab\_Tests:

create table Lab\_Tests(

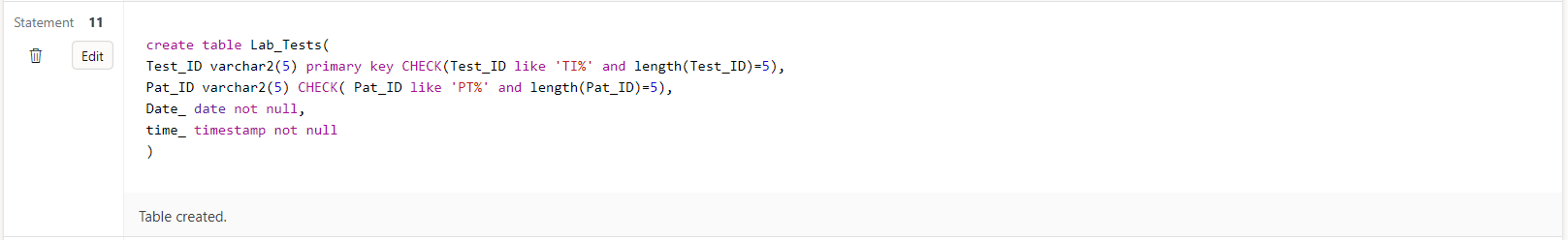
test\_id varchar(20) primary key,

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)

)

Test\_Results:

create table Test\_Results(

r\_test\_id varchar(20) ,

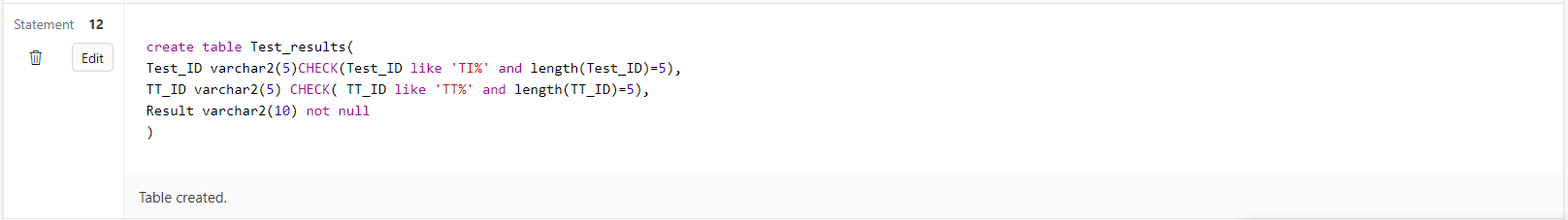
constraint fk\_r\_test\_id foreign key (r\_test\_id) references Lab\_Tests(test\_id),

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

)

Test\_Types:

create table test\_types(

tt\_id varchar(20) primary key,

description varchar(30),

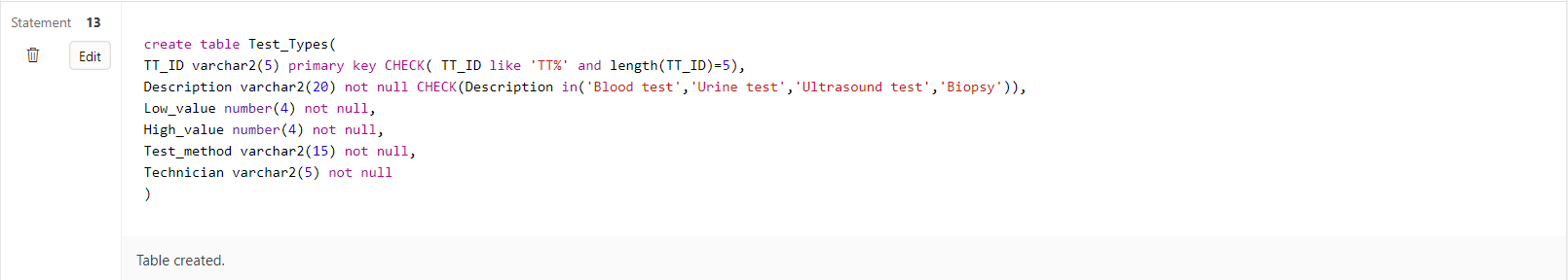
low\_value number(25),

high\_value number(25),

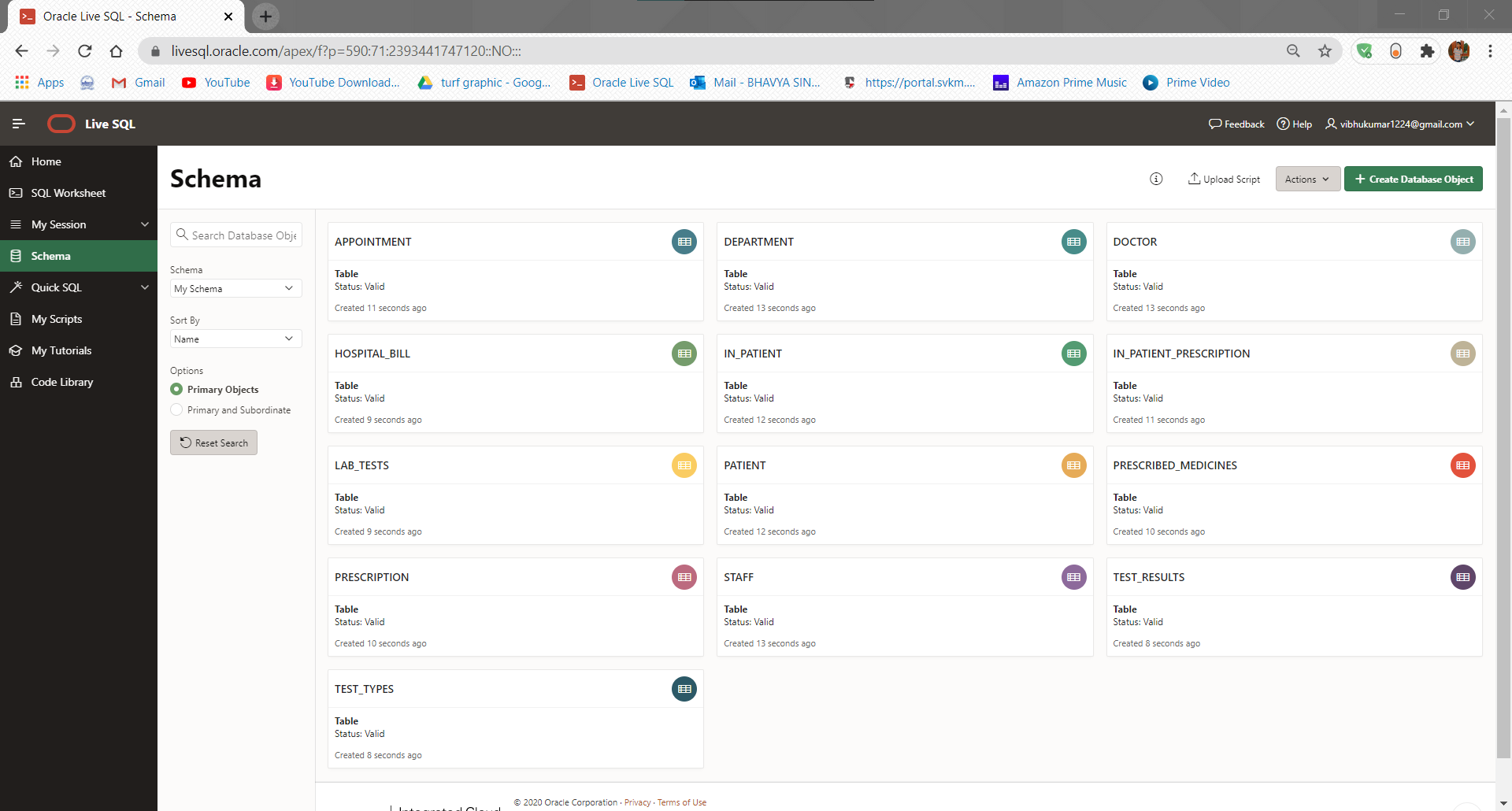
test\_method varchar(25),

technician varchar(20),

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

)

**SCHEMA:**



**Inserting Values:**

Doctor:

insert into Doctor values('D108','Vibhu Kumar','M','20-SEPTEMBER

1985','CARDIOLOGIST','MBBS',9926519823,'1,BAREILLY','D101');

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

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

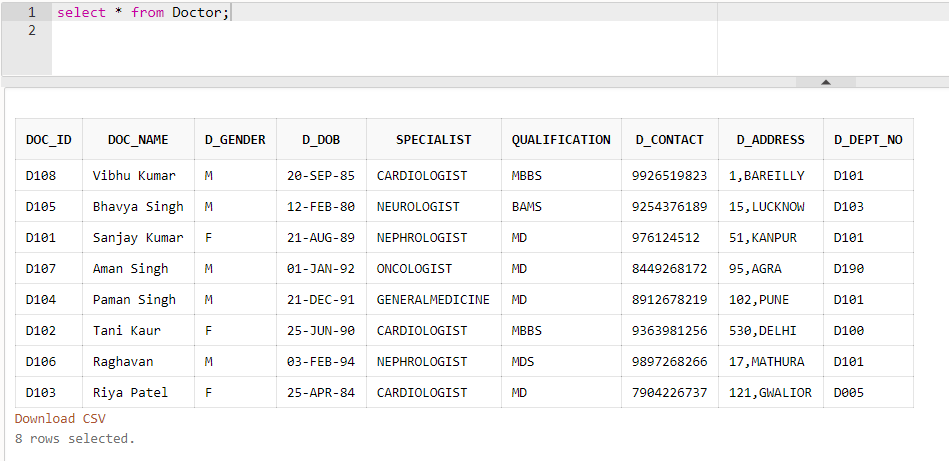
insert into Doctor values('D107','Aman Singh','M','01-JANUARY-1992','ONCOLOGIST','MD',8449268172,'95,AGRA','D190');

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

insert into Doctor values('D102','Tani Kaur','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');



Department:

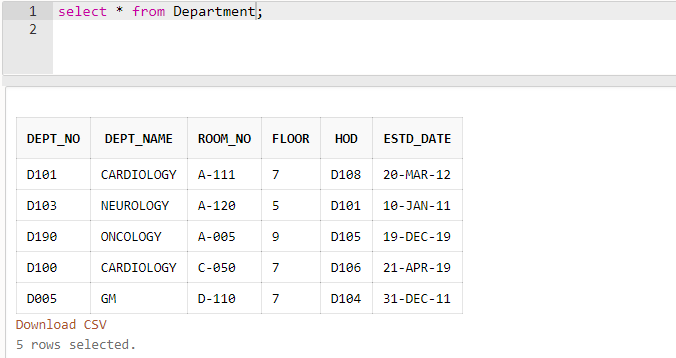
insert into Department values('D101','CARDIOLOGY','A-111',7,'D108','20-MARCH-2012');

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');



Staff:

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');

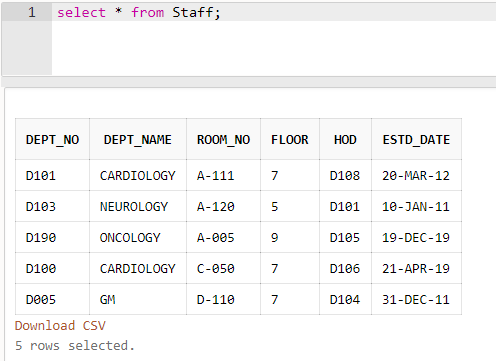
insert into Staff values('S0004','Virat Singh','lab technician','technician','15-APRIL-1997',978945121,'MATHURA','D190');

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

insert into Staff values('S0006','Deepanshu Gupta','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');



Patient:

insert into Patient values('P101','Vibhu Kumar','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');

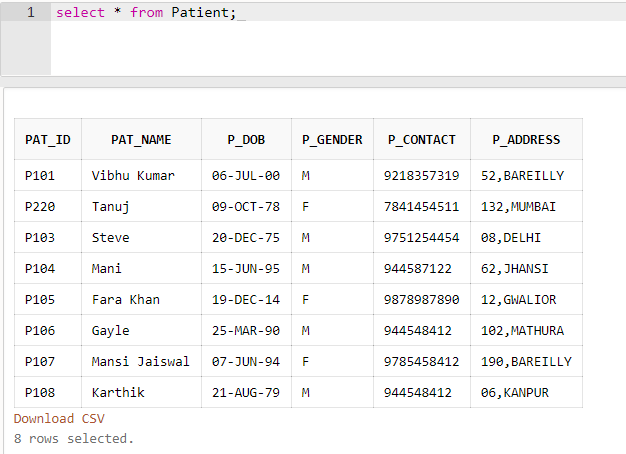
insert into Patient values('P104','Mani','15-JUNE-1995','M',944587122,'62,JHANSI');

insert into Patient values('P105','Fara Khan','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');



In\_Patient:

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');

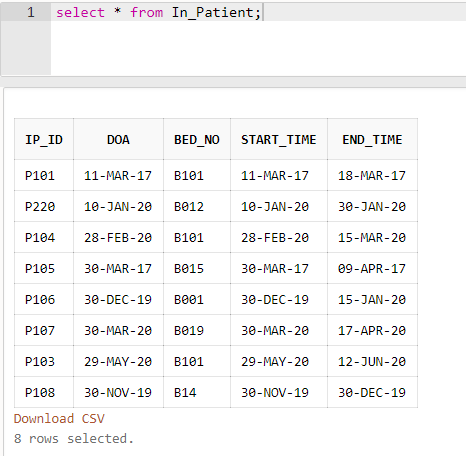
insert into In\_Patient values('P105', '30-MARCH-2017','B015','30-MARCH-2017','09-APRIL-2017');

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');



Appointment:

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');

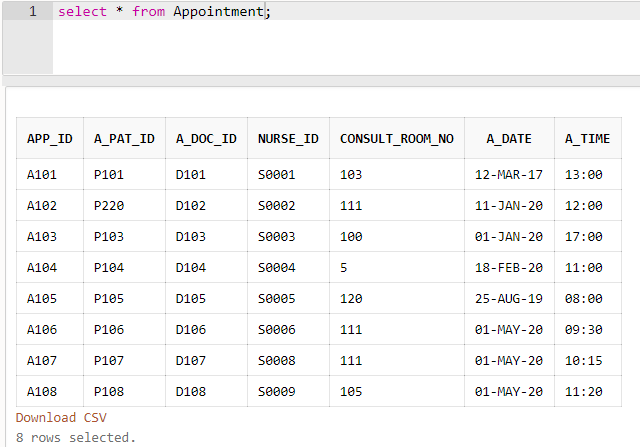
insert into Appointment values('A104','P104','D104','S0004',005,'18-FEBRUARY-2020','11:00');

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');



Precription:

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');

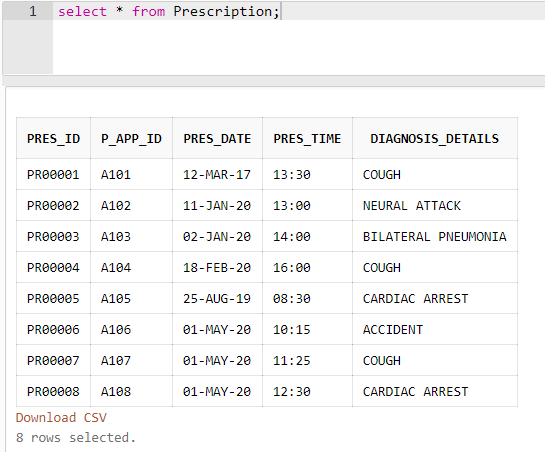
insert into Prescription values('PR00004','A104','18-FEBRUARY-2020','16:00','COUGH');

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');



In\_Patient\_Prescription:

insert into In\_Patient\_Prescription values('P101','PR00001');

insert into In\_Patient\_Prescription values('P220','PR00002');

insert into In\_Patient\_Prescription values('P103','PR00003');

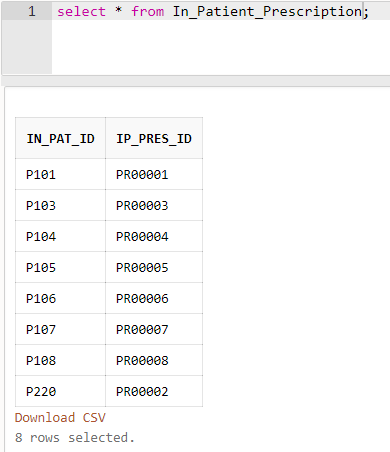
insert into In\_Patient\_Prescription values('P104','PR00004');

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');



Prescribed\_Medicines:

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');

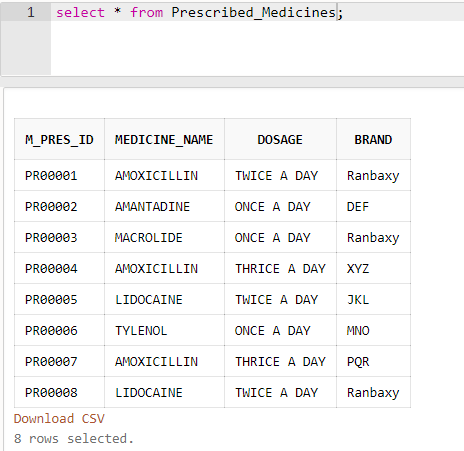
insert into Prescribed\_Medicines values('PR00005','LIDOCAINE','TWICE A DAY','JKL');

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);



Hospital\_Bill:

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);

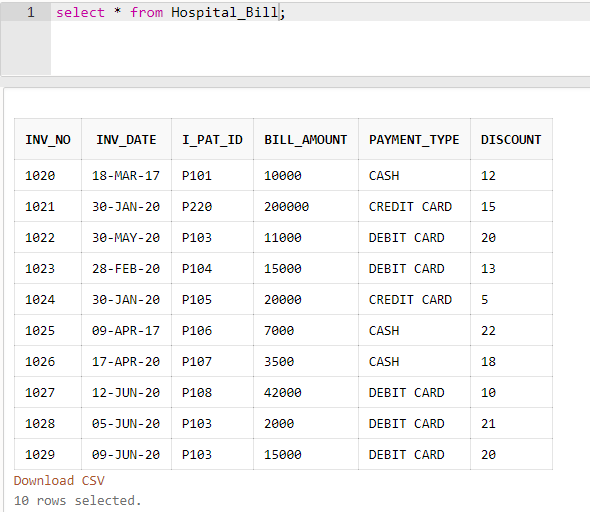
insert into Hospital\_Bill values(1025,'09-APRIL-2017','P106',7000,'CASH',22);

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);



Lab\_Tests:

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');

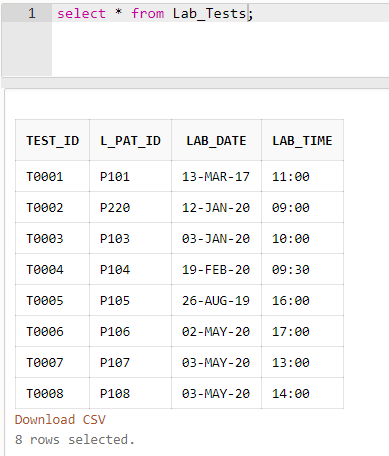
insert into Lab\_Tests values('T0004','P104','19-FEBRUARY-2020','09:30');

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');



Test\_Types:

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');

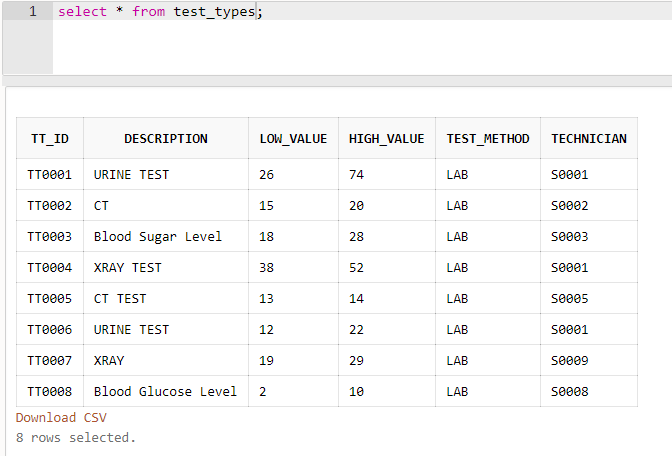
insert into test\_types values('TT0004','XRAY TEST',38,52,'LAB','S0001');

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');



Test\_Results:

insert into Test\_Results values('T0001','TT0001','POSITIVE');

insert into Test\_Results values('T0002','TT0002','NEGATIVE');

insert into Test\_Results values('T0003','TT0003','NEGATIVE');

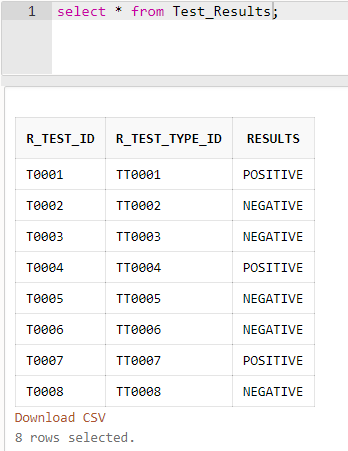
insert into Test\_Results values('T0004','TT0004','POSITIVE');

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');



**Questions:**

**Q1.Write a PL/SQL program to implement a simple calculator.**

**A1.**

declare

a number :=10;

b number :=2;

c number;

begin

c:=a+b;

dbms\_output.put\_line('a+b = ');

dbms\_output.put\_line(c);

c:= a-b;

dbms\_output.put\_line('a-b = ');

dbms\_output.put\_line(c);

c:= a\*b;

dbms\_output.put\_line('a\*b = ');

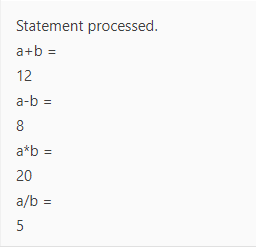
dbms\_output.put\_line(c);

c:= a/b;

dbms\_output.put\_line('a/b = ');

dbms\_output.put\_line(c);

end;



**Q2.Write a PL/SQL program to practice reading the record from a table into local variables using different data types and %TYPE and display the same using locally declared variables.**

**A2.**

declare

d\_name Department.dept\_name%type;

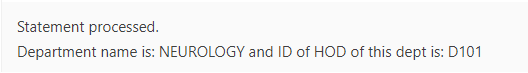
hod\_id Department.hod%type;

begin

select dept\_name,hod into d\_name,hod\_id from Department where dept\_name = 'NEUROLOGY';

dbms\_output.put\_line('Department name is: '|| d\_name || ' and ID of HOD of this dept is: ' ||hod\_id);

end;



**Q3.Write a PL/SQL program to find the number of doctors in a given department with a given qualification (read values for department and qualification from user during runtime). If number is more than the number of doctors in that department with other qualifications then display ‘Well qualified’ else ‘Qualified’.**

**A3.**

set serveroutput on;

DECLARE

x int;

y int;

dept doctor.dept\_no%type;

qual doctor.qualification%type;

BEGIN

dept:='&dept';

qual='&qual';

SELECT COUNT (Doc\_id) into x from Doctor where Dept\_no=dept and Qualification=qual;

SELECT COUNT (Doc\_id) into y from Doctor where Dept\_no=dept and Qualification=qual;

DBMS\_OUTPUT.PUT\_LINE('Total no of Doctors in given department with given qualification are'||x);

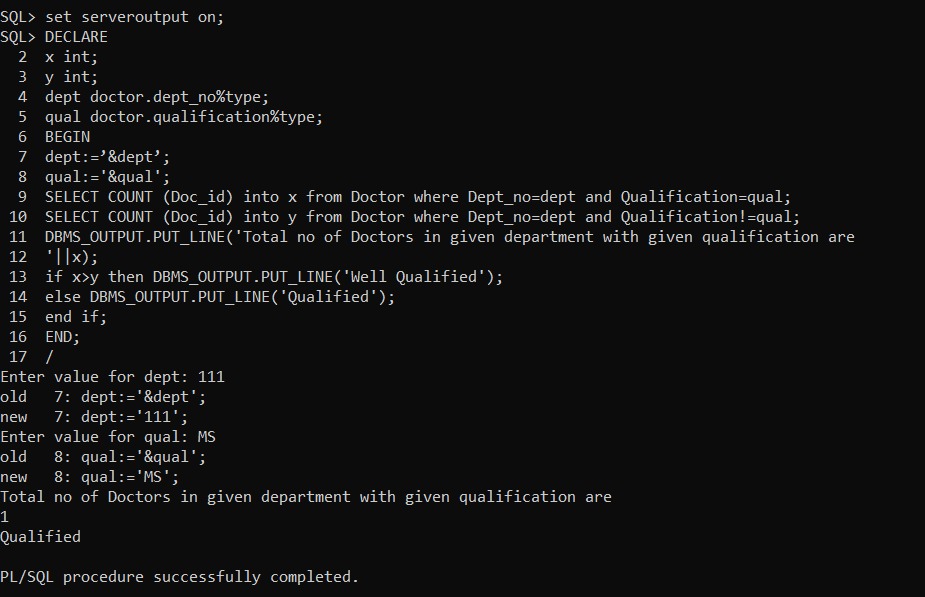
if x>y then DBMS\_OUTPUR.PUT\_LINE('Well Qualified');

else DBMS\_OUTPUR.PUT\_LINE('Qualified');

end if;

END;

/

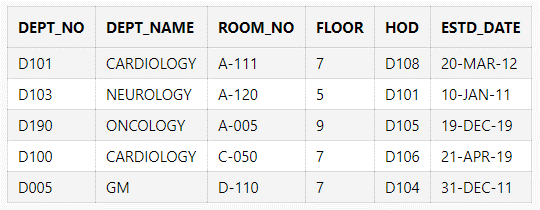


**Q4.Write a PL/SQL program to insert records into any of the tables in your database.**

**A4.**

--before insertion

select\* from Department



begin

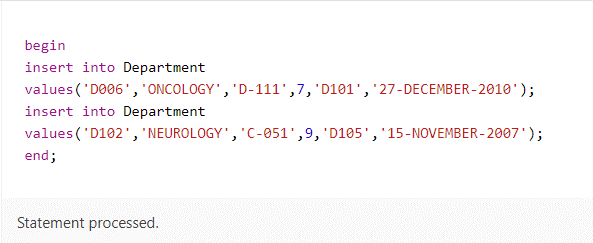
insert into Department

values('D006','ONCOLOGY','D-111',7,'D101','27-DECEMBER-2010');

insert into Department

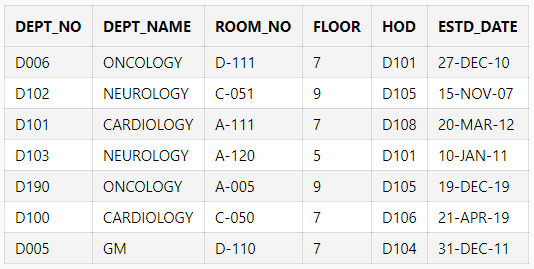
values('D102','NEUROLOGY','C-051',9,'D105','15-NOVEMBER-2007');

end;



--after insertion

select\* from Department



**Q5.Create a function to find the factorial of a given number.**

**A5.**

create or replace function factorial(x number) return number is

fact number:=1;

begin

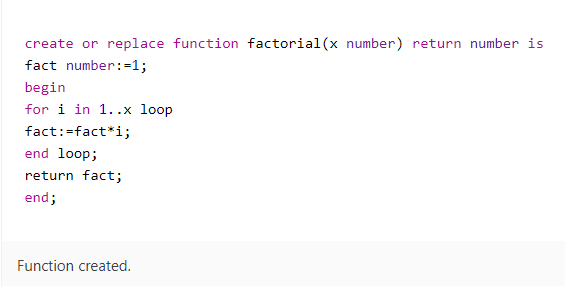
for i in 1..x loop

fact:=fact\*i;

end loop;

return fact;

end;



declare

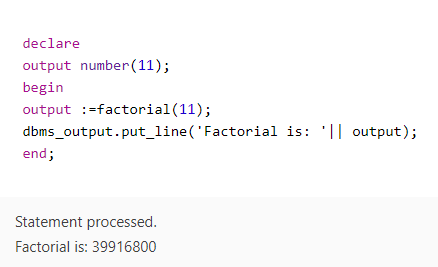
output number(11);

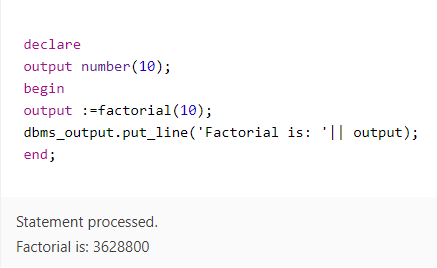
begin

output :=factorial(11);

dbms\_output.put\_line('Factorial is: '|| output);

end;





**Q6.Create a function DOC\_COUNT to find the number of doctors in the given department. Use the department name as the input parameter for the function.**

**A6.**

create or replace function doct\_count(dt\_name varchar2) return number is

doc\_c number;

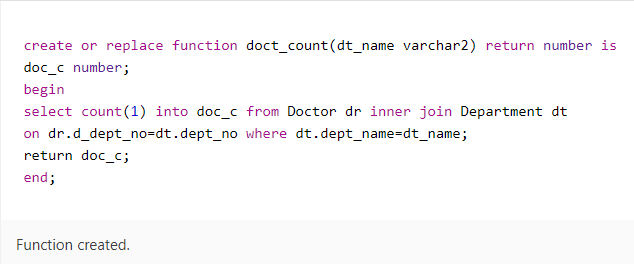
begin

select count(1) into doc\_c from Doctor dr inner join Department dt

on dr.d\_dept\_no=dt.dept\_no where dt.dept\_name=dt\_name;

return doc\_c;

end;



declare

num\_ number;

begin

num\_:=doct\_count('GM');

dbms\_output.put\_line('Number of general medine practioners: '|| num\_);

end;

