Database Management Systems

Cycle Sheet – 3

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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)
)
```

Statement 1

🗑 Edit
```
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)
)
```

Table created.

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
)
```

Statement 2

🗑 Edit
```
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
)
```

Table created.

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)
)
```

Statement 3

🗑 Edit
```
create table Staff(
Staff_ID varchar2(5) primary key not null CHECK(Staff_ID like 'S%' and length(Staff_ID)=5),
Staff_Name varchar2(20) not null,
Categoryy varchar2(20) not null check(categoryy in ('Nurse','Lab Technician','Attender','Helper')),
dob date,
Contact number(10) unique,
Address varchar2(100),
Dept_No varchar2(4),
Designation varchar2(100) not null check (Designation in ('Staff Nurse','Head Nurse','Technician','Senior Attender','Junior Attender'))
)
```

Table created.

Patient:

```sql
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
)
```

Statement 4

🗑 Edit

```sql
create table Patient(
Pat_ID varchar2(5) primary key check( Pat_ID like 'PT%' and length(Pat_ID)=5),
Pat_Name varchar2(25) not null,
DOB date not null,
Gender char(1) not null check(Gender in ('M','F','T')),
Contact number(10) not null,
Address varchar2(30) not null
)
```

Table created.

In_Patient:

```sql
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)
)
```

Statement 5

🗑 Edit

```sql
create table In_Patient(
Pat_ID varchar2(5) not null,
Date_of_admission date not null,
Bed_No number(4) not null,
Start_Time timestamp not null,
End_Time timestamp not null,
CHECK(Start_Time BETWEEN Date_of_admission AND End_Time)
)
```

Table created.

In_Patient_Prescription:

```sql
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)
)
```

Statement 6

🗑 Edit

```sql
create table In_Patient_Prescription(
Pat_ID varchar2(5) not null CHECK( Pat_ID like 'PT%' and length(Pat_ID)=5),
Pres_ID varchar2(7) not null CHECK(Pres_ID like 'PR%' and length(Pres_ID)=7)
)
```

Table created.

Appointment:

```sql
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 Appointment(
App_ID varchar2(5) primary key CHECK( App_ID like 'APP%' and length(App_ID)=5),
Pat_ID varchar2(5) not null,
Doc_ID varchar2(5) not null CHECK(Doc_id like 'D%' and length(Doc_ID)=5),
Nurse_ID varchar2(5) not null,
Consult_Room_No number(4) not null,
Date_ date not null,
time_ timestamp not null
)
```

Table created.

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)
)
```

```
create table Prescription(
Pres_ID varchar2(7) primary key CHECK(Pres_ID like 'PR%' and length(Pres_ID)=7),
App_ID varchar2(5) CHECK( App_ID like 'APP%' and length(App_ID)=5),
Date_ date not null,
time_ timestamp not null,
Diagnosis_Detail varchar(30) not null
)
```

Table created.

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)
)
```

```
create table Prescribed_Medicines(
Pres_ID varchar2(7) CHECK(Pres_ID like 'PR%' and length(Pres_ID)=7),
Medicine_Name varchar2(15) not null,
Dosage varchar2(15) not null,
Brand varchar2(15) not null
)
```

Table created.

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)
)
```

```
create table Hospital_Bill(
Inv_No varchar2(6) unique,
Inv_Date date not null,
Pat_ID varchar2(5) CHECK(Pat_ID like 'PT%' and length(Pat_ID)=5),
Bill_Amount number(8) not null,
Payment_Type varchar2(15) not null,
discount number(2) not null
)
```

Table created.

Lab_Tests:

```sql
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)
)
```

Statement 11

🗑 Edit

```sql
create table Lab_Tests(
Test_ID varchar2(5) primary key CHECK(Test_ID like 'TI%' and length(Test_ID)=5),
Pat_ID varchar2(5) CHECK( Pat_ID like 'PT%' and length(Pat_ID)=5),
Date_ date not null,
time_ timestamp not null
)
```
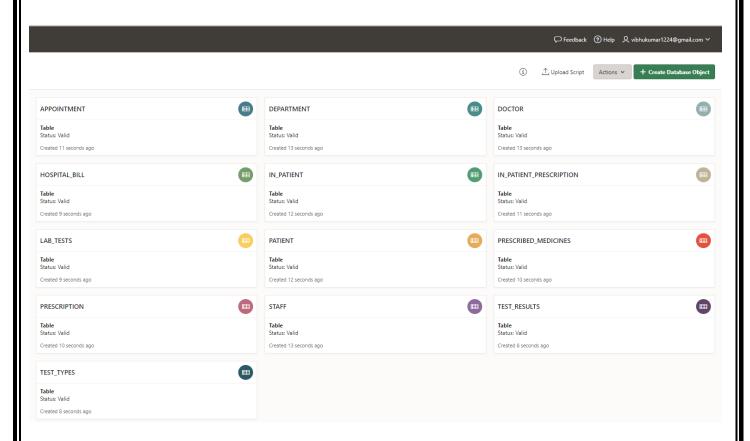
Table created.

Test_Results:

```sql
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
)
```

Statement 12

🗑 Edit

```sql
create table Test_results(
Test_ID varchar2(5)CHECK(Test_ID like 'TI%' and length(Test_ID)=5),
TT_ID varchar2(5) CHECK( TT_ID like 'TT%' and length(TT_ID)=5),
Result varchar2(10) not null
)
```

Table created.

Test_Types:

```sql
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)
)
```

Statement 13

🗑 Edit

```sql
create table Test_Types(
TT_ID varchar2(5) primary key CHECK( TT_ID like 'TT%' and length(TT_ID)=5),
Description varchar2(20) not null CHECK(Description in('Blood test','Urine test','Ultrasound test','Biopsy')),
Low_value number(4) not null,
High_value number(4) not null,
Test_method varchar2(15) not null,
Technician varchar2(5) not null
)
```

Table created.

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');
```

```
1  select * from Doctor;
2
```

DOC_ID	DOC_NAME	D_GENDER	D_DOB	SPECIALIST	QUALIFICATION	D_CONTACT	D_ADDRESS	D_DEPT_NO
D108	Vibhu Kumar	M	20-SEP-85	CARDIOLOGIST	MBBS	9926519823	1,BAREILLY	D101
D105	Bhavya Singh	M	12-FEB-80	NEUROLOGIST	BAMS	9254376189	15,LUCKNOW	D103
D101	Sanjay Kumar	F	21-AUG-89	NEPHROLOGIST	MD	976124512	51,KANPUR	D101
D107	Aman Singh	M	01-JAN-92	ONCOLOGIST	MD	8449268172	95,AGRA	D190
D104	Paman Singh	M	21-DEC-91	GENERALMEDICINE	MD	8912678219	102,PUNE	D101
D102	Tani Kaur	F	25-JUN-90	CARDIOLOGIST	MBBS	9363981256	530,DELHI	D100
D106	Raghavan	M	03-FEB-94	NEPHROLOGIST	MDS	9897268266	17,MATHURA	D101
D103	Riya Patel	F	25-APR-84	CARDIOLOGIST	MD	7904226737	121,GWALIOR	D005

Download CSV
8 rows selected.

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');
```

```
1   select * from Department;
2
```

DEPT_NO	DEPT_NAME	ROOM_NO	FLOOR	HOD	ESTD_DATE
D101	CARDIOLOGY	A-111	7	D108	20-MAR-12
D103	NEUROLOGY	A-120	5	D101	10-JAN-11
D190	ONCOLOGY	A-005	9	D105	19-DEC-19
D100	CARDIOLOGY	C-050	7	D106	21-APR-19
D005	GM	D-110	7	D104	31-DEC-11

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5 rows selected.

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');
```

```
1   select * from Staff;
```

DEPT_NO	DEPT_NAME	ROOM_NO	FLOOR	HOD	ESTD_DATE
D101	CARDIOLOGY	A-111	7	D108	20-MAR-12
D103	NEUROLOGY	A-120	5	D101	10-JAN-11
D190	ONCOLOGY	A-005	9	D105	19-DEC-19
D100	CARDIOLOGY	C-050	7	D106	21-APR-19
D005	GM	D-110	7	D104	31-DEC-11

Download CSV

5 rows selected.

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');
```

```
1    select * from Patient;_
```

PAT_ID	PAT_NAME	P_DOB	P_GENDER	P_CONTACT	P_ADDRESS
P101	Vibhu Kumar	06-JUL-00	M	9218357319	52,BAREILLY
P220	Tanuj	09-OCT-78	F	7841454511	132,MUMBAI
P103	Steve	20-DEC-75	M	9751254454	08,DELHI
P104	Mani	15-JUN-95	M	944587122	62,JHANSI
P105	Fara Khan	19-DEC-14	F	9878987890	12,GWALIOR
P106	Gayle	25-MAR-90	M	944548412	102,MATHURA
P107	Mansi Jaiswal	07-JUN-94	F	9785458412	190,BAREILLY
P108	Karthik	21-AUG-79	M	944548412	06,KANPUR

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8 rows selected.

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');
```

```
1    select * from In_Patient;
```

IP_ID	DOA	BED_NO	START_TIME	END_TIME
P101	11-MAR-17	B101	11-MAR-17	18-MAR-17
P220	10-JAN-20	B012	10-JAN-20	30-JAN-20
P104	28-FEB-20	B101	28-FEB-20	15-MAR-20
P105	30-MAR-17	B015	30-MAR-17	09-APR-17
P106	30-DEC-19	B001	30-DEC-19	15-JAN-20
P107	30-MAR-20	B019	30-MAR-20	17-APR-20
P103	29-MAY-20	B101	29-MAY-20	12-JUN-20
P108	30-NOV-19	B14	30-NOV-19	30-DEC-19

Download CSV

8 rows selected.

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');
```

```
1    select * from Appointment;
```

APP_ID	A_PAT_ID	A_DOC_ID	NURSE_ID	CONSULT_ROOM_NO	A_DATE	A_TIME
A101	P101	D101	S0001	103	12-MAR-17	13:00
A102	P220	D102	S0002	111	11-JAN-20	12:00
A103	P103	D103	S0003	100	01-JAN-20	17:00
A104	P104	D104	S0004	5	18-FEB-20	11:00
A105	P105	D105	S0005	120	25-AUG-19	08:00
A106	P106	D106	S0006	111	01-MAY-20	09:30
A107	P107	D107	S0008	111	01-MAY-20	10:15
A108	P108	D108	S0009	105	01-MAY-20	11:20

Download CSV

8 rows selected.

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');
```

```
1    select * from Prescription;
```

PRES_ID	P_APP_ID	PRES_DATE	PRES_TIME	DIAGNOSIS_DETAILS
PR00001	A101	12-MAR-17	13:30	COUGH
PR00002	A102	11-JAN-20	13:00	NEURAL ATTACK
PR00003	A103	02-JAN-20	14:00	BILATERAL PNEUMONIA
PR00004	A104	18-FEB-20	16:00	COUGH
PR00005	A105	25-AUG-19	08:30	CARDIAC ARREST
PR00006	A106	01-MAY-20	10:15	ACCIDENT
PR00007	A107	01-MAY-20	11:25	COUGH
PR00008	A108	01-MAY-20	12:30	CARDIAC ARREST

Download CSV

8 rows selected.

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');
```

```
1    select * from In_Patient_Prescription;
```

IN_PAT_ID	IP_PRES_ID
P101	PR00001
P103	PR00003
P104	PR00004
P105	PR00005
P106	PR00006
P107	PR00007
P108	PR00008
P220	PR00002

Download CSV

8 rows selected.

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);
```

```
1    select * from Prescribed_Medicines;
```

M_PRES_ID	MEDICINE_NAME	DOSAGE	BRAND
PR00001	AMOXICILLIN	TWICE A DAY	Ranbaxy
PR00002	AMANTADINE	ONCE A DAY	DEF
PR00003	MACROLIDE	ONCE A DAY	Ranbaxy
PR00004	AMOXICILLIN	THRICE A DAY	XYZ
PR00005	LIDOCAINE	TWICE A DAY	JKL
PR00006	TYLENOL	ONCE A DAY	MNO
PR00007	AMOXICILLIN	THRICE A DAY	PQR
PR00008	LIDOCAINE	TWICE A DAY	Ranbaxy

Download CSV

8 rows selected.

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);
```

```
1    select * from Hospital_Bill;
```

INV_NO	INV_DATE	I_PAT_ID	BILL_AMOUNT	PAYMENT_TYPE	DISCOUNT
1020	18-MAR-17	P101	10000	CASH	12
1021	30-JAN-20	P220	200000	CREDIT CARD	15
1022	30-MAY-20	P103	11000	DEBIT CARD	20
1023	28-FEB-20	P104	15000	DEBIT CARD	13
1024	30-JAN-20	P105	20000	CREDIT CARD	5
1025	09-APR-17	P106	7000	CASH	22
1026	17-APR-20	P107	3500	CASH	18
1027	12-JUN-20	P108	42000	DEBIT CARD	10
1028	05-JUN-20	P103	2000	DEBIT CARD	21
1029	09-JUN-20	P103	15000	DEBIT CARD	20

Download CSV

10 rows selected.

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');
```

```
1    select * from Lab_Tests;
```

TEST_ID	L_PAT_ID	LAB_DATE	LAB_TIME
T0001	P101	13-MAR-17	11:00
T0002	P220	12-JAN-20	09:00
T0003	P103	03-JAN-20	10:00
T0004	P104	19-FEB-20	09:30
T0005	P105	26-AUG-19	16:00
T0006	P106	02-MAY-20	17:00
T0007	P107	03-MAY-20	13:00
T0008	P108	03-MAY-20	14:00

Download CSV

8 rows selected.

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');
```

```
1    select * from test_types;
```

TT_ID	DESCRIPTION	LOW_VALUE	HIGH_VALUE	TEST_METHOD	TECHNICIAN
TT0001	URINE TEST	26	74	LAB	S0001
TT0002	CT	15	20	LAB	S0002
TT0003	Blood Sugar Level	18	28	LAB	S0003
TT0004	XRAY TEST	38	52	LAB	S0001
TT0005	CT TEST	13	14	LAB	S0005
TT0006	URINE TEST	12	22	LAB	S0001
TT0007	XRAY	19	29	LAB	S0009
TT0008	Blood Glucose Level	2	10	LAB	S0008

Download CSV

8 rows selected.

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');
```

```
1    select * from Test_Results;
```

R_TEST_ID	R_TEST_TYPE_ID	RESULTS
T0001	TT0001	POSITIVE
T0002	TT0002	NEGATIVE
T0003	TT0003	NEGATIVE
T0004	TT0004	POSITIVE
T0005	TT0005	NEGATIVE
T0006	TT0006	NEGATIVE
T0007	TT0007	POSITIVE
T0008	TT0008	NEGATIVE

Download CSV

8 rows selected.

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;
```

```
Statement processed.
a+b =
12
a-b =
8
a*b =
20
a/b =
5
```

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;
```

```
Statement processed.
Department name is: NEUROLOGY and ID of HOD of this dept is: D101
```

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;
/
```

```
SQL> set serveroutput on;
SQL> DECLARE
  2  x int;
  3  y int;
  4  dept doctor.dept_no%type;
  5  qual doctor.qualification%type;
  6  BEGIN
  7  dept:='&dept';
  8  qual:='&qual';
  9  SELECT COUNT (Doc_id) into x from Doctor where Dept_no=dept and Qualification=qual;
 10  SELECT COUNT (Doc_id) into y from Doctor where Dept_no=dept and Qualification!=qual;
 11  DBMS_OUTPUT.PUT_LINE('Total no of Doctors in given department with given qualification are
 12  '||x);
 13  if x>y then DBMS_OUTPUT.PUT_LINE('Well Qualified');
 14  else DBMS_OUTPUT.PUT_LINE('Qualified');
 15  end if;
 16  END;
 17  /
Enter value for dept: 111
old   7: dept:='&dept';
new   7: dept:='111';
Enter value for qual: MS
old   8: qual:='&qual';
new   8: qual:='MS';
Total no of Doctors in given department with given qualification are
1
Qualified

PL/SQL procedure successfully completed.
```

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

A4.

```
--before insertion
select* from Department
```

DEPT_NO	DEPT_NAME	ROOM_NO	FLOOR	HOD	ESTD_DATE
D101	CARDIOLOGY	A-111	7	D108	20-MAR-12
D103	NEUROLOGY	A-120	5	D101	10-JAN-11
D190	ONCOLOGY	A-005	9	D105	19-DEC-19
D100	CARDIOLOGY	C-050	7	D106	21-APR-19
D005	GM	D-110	7	D104	31-DEC-11

```
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;
```

```
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;
```

Statement processed.

```
--after insertion
select* from Department
```

DEPT_NO	DEPT_NAME	ROOM_NO	FLOOR	HOD	ESTD_DATE
D006	ONCOLOGY	D-111	7	D101	27-DEC-10
D102	NEUROLOGY	C-051	9	D105	15-NOV-07
D101	CARDIOLOGY	A-111	7	D108	20-MAR-12
D103	NEUROLOGY	A-120	5	D101	10-JAN-11
D190	ONCOLOGY	A-005	9	D105	19-DEC-19
D100	CARDIOLOGY	C-050	7	D106	21-APR-19
D005	GM	D-110	7	D104	31-DEC-11

Q5. Create a function to find the factorial of a given number.
A5.

```sql
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;
```

```sql
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;
```

Function created.

```sql
declare
output number(11);
begin
output :=factorial(11);
dbms_output.put_line('Factorial is: '|| output);
end;
```

```sql
declare
output number(11);
begin
output :=factorial(11);
dbms_output.put_line('Factorial is: '|| output);
end;
```

Statement processed.
Factorial is: 39916800

```sql
declare
output number(10);
begin
output :=factorial(10);
dbms_output.put_line('Factorial is: '|| output);
end;
```

Statement processed.
Factorial is: 3628800

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;
```