HOSPITAL MANAGEMENT SYSTEM

Project by
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- **PROJECT NAME: HOSPITAL MANAGEMENT SYSTEM**

- **Introduction :**

Our DBMS project is based on Hospital management.

It provides data like patient details, doctor details, billing details, medication details, test reports ,pharmacy store details of various hospitals.

All the useful information about all the hospitals can be found using thisproject.

The patient is assigned a unique patient id that helps access all theirrecords.

Similarly doctors are assigned a unique doctor id by which theirinformation can be stored in the database.

❖ Data Requirements:

Entity types

1)HOSPITAL

Every hospital has attributes,

1. **Hospital id which is unique and not null.**
2. Hospital name which stores name of hospital and is not null.
3. Address stores address of hospital which is not null.

2)Doc tor

Every doctor has attributes,

1. **Doctor id which is unique and not null.**
2. Name is a composite attribute of first name, second name and last name ofdoctor.
3. Address stores address of doctor.
4. Phone no.stores phone number of doctor.
5. Speciality stores speciality of doctor and is not null .
6. Paid_amount stores salary of doctor and is not null.
7. Email stores email of doctor.

3)SUPERINTENDENT

Every visit detail has attributes,

1. U_id which is unique and not null.
2. Name is a composite attribute of first name, second name and last name ofsuperintendent.
3. Address stores address of superintendent .
4. Contact no. stores phone number of superintendent.
5. Email stores email of superintendent.

4)MEDICINE

Medicine has attributes,

1. Medicine_name which is unique and not null.
2. Cost stores cost of medicine.
3. Stock gives stock of medicine.
4. Company name gives name of company who developed medicine which isnot null.

5)PATIENT

Patient has attributes,

1. Name is a composite attribute of first name, second name and last name of doctor which should not be null.
2. Address stores address of patient which should not be null.
3. Phone no. has phone no of patient.
4. DOB for patient date of birth.
5. Gender for storing character ‘m’ for male, ‘f’ for female.
6. Patient_id which is unique and not null.
7. Blood group which should not be null.
8. Emergency phone number should not be null.
9. Emergency name should not be null.
10. Last_visit is derived attribute which can be derived from visit date and visit time attribute of visits relationship type.

6) BILL

Bill has attributes,

1. Bill_id which is unique and not null .
2. Patient id has data type varchar and it is a foreign key here which is a primary key in patient entity .
3. Total fees stores total bill to be paid by patient.
4. Due date is the last date to pay the bill.
5. Paid date has the date of last payment.
6. Paid_amount is the amount paid by patient.
7. Added_time is the time at which the bill was issued.
8. Due_amount is the derived attribute which is derived from paid amount and total fees.

Relationship types:

1) Doctor works in hospital (1:N)

A doctor can work in only one hospital and one hospital can have many doctors.

It is not necessary that doctor has to work in a hospital

but hospital should have atleast one doctor.

TOTAL PARTICIPATION OF HOSPITAL AND PARTIAL PARTICIPATION OF DOCTOR.

2) Superintendent supervises hospital (1:1)

A hospital can have exactly 1 superintendent and a superintendent should work in exactly 1 hospital.

TOTAL PARTICIPATION OF SUPERINTENDENT AND TOTAL PARTICIPATION OF HOSPITAL.

3) Patient visits hospital (M:N)

A patient can visit many hospitals and one hospital can be visited by many patients.TOTAL PARTICIPATION OF PATIENT AND PARTIAL PARTICIPATION OF HOSPITAL.

4) Doctor performs tests on patient (M:N)

A doctor may or may not do tests on many patients and a many doctors can performtests on a patient
PARTIAL PARTICIPATION OF PATIENT AND PARTIAL PARTICIPATION OF DOCTOR.

5) Patient pays bill (1:1)

A patient has to may exactly 1 bill and exactly 1 bill is paid by patient. TOTAL PARTICIPATION OF PATIENT AND TOTAL PARTICIPATION OF BILL.

6) Hospital generates bill (1:M)

Hospital can generate many bills but a particular bill is generated by only onehospital.
TOTAL PARTICIPATION OF BILL AND PARTIAL PARTICIPATION OF HOSPITAL.

❖ FUNCTIONAL REQUIREMENTS

1) REMOVAL OF OLD DATA:

- Delete Doctor Data Who Is Not Working In Any Hospital
  I.E Hospital_Id=Null

- Delete Patient Data Who Has Not Visited The HospitalFrom Past 2 Years

- After Updating The Paid_Amount In Bill If The Full Amount Is Paid Then That Bill Data Gets Deleted From Bill Table

- If no pharmacy sells a medicine then that medicine has tobe deleted

2) MODIFICATION OF DATA:

1) Patient with patient id 105 paid 1000 RS amount for thetreatment he received so update that amount in his bill details.

2) Add a new column to bill table which has due amount andupdate it.

3) Give a discount of 100 RS in total fees to all patients havingblood group of O-

4) Put a penalty on bills of a hospital whose due date is passedsystem date.

5) After deleting the paid_amount in bill if the full amount is paid then that bill data gets deleted from bill table and gets stored in paid_bill table.

6) When License no of pharmacy is changed then it needs tobe updated in other tables i.e sells and

3) RETRIEVAL OF DATA:

1) Give hospital name and url . If url is null then show notpresent

2) Give hospital id,name and email of superitendents . Ifemail is not given then show null.

3) Retrive medicine name and pharmacy selling in it withcost in increasing order

4) Find doctor names who has average costs of tests on his /her patients >900

5) Find patient names who pays higher than the averageamount that patients pay to a hospital

6) Retrive Pharmacy Name And License No Of PharmacyWhich Sells both two kind of medicines.

7) Find Doctors who work in a particular hospital

8) Retrive Hospital_Id And Cases Of Corona With CoronaCases>particular number.

9) Find Hospitals Located at given location

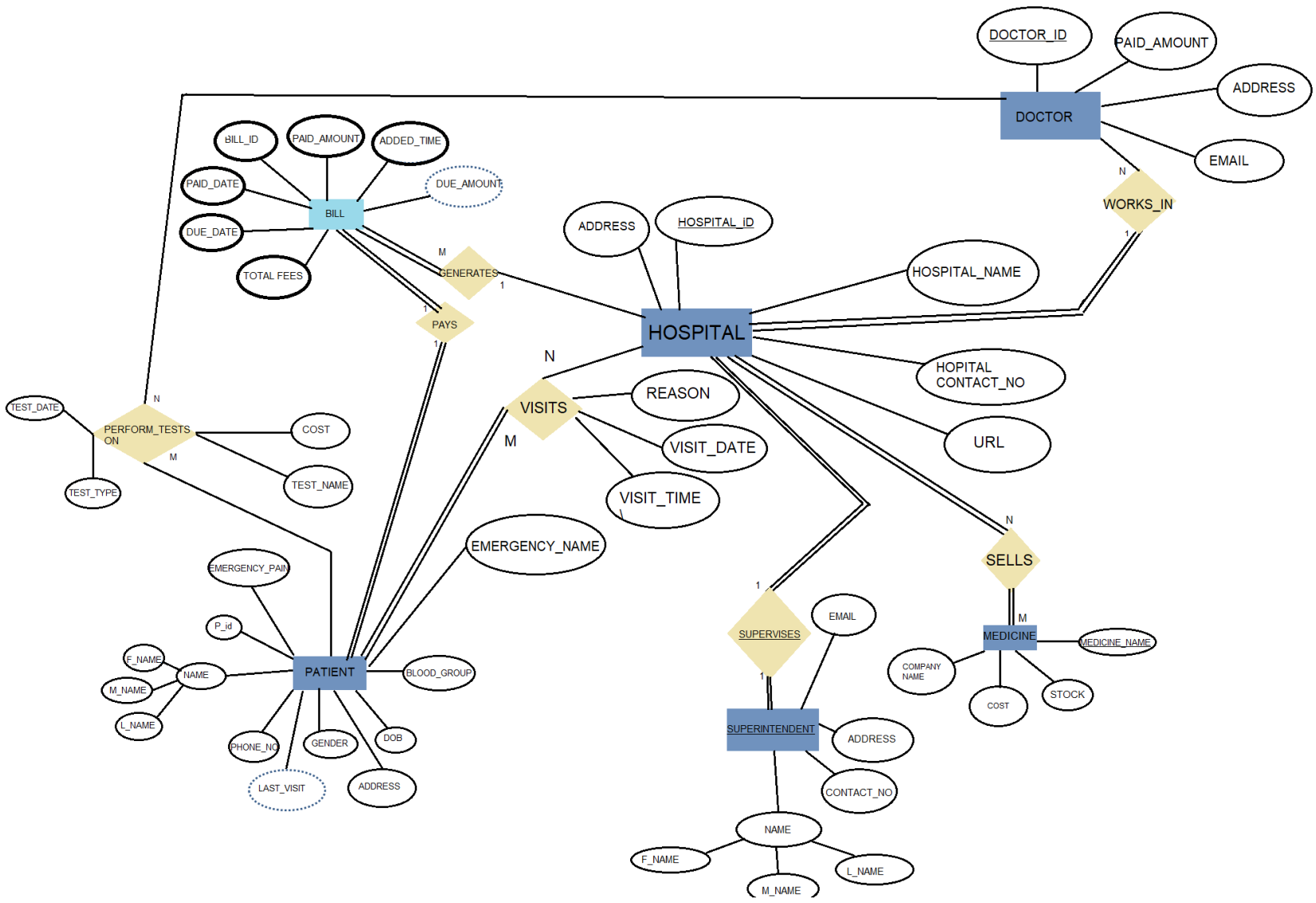
10) Find patient name who has done a particular test.

11) Find patient name and contact no whose bill due date isa given date.

12) Find number of patients visited at a hospital on aparticular date.

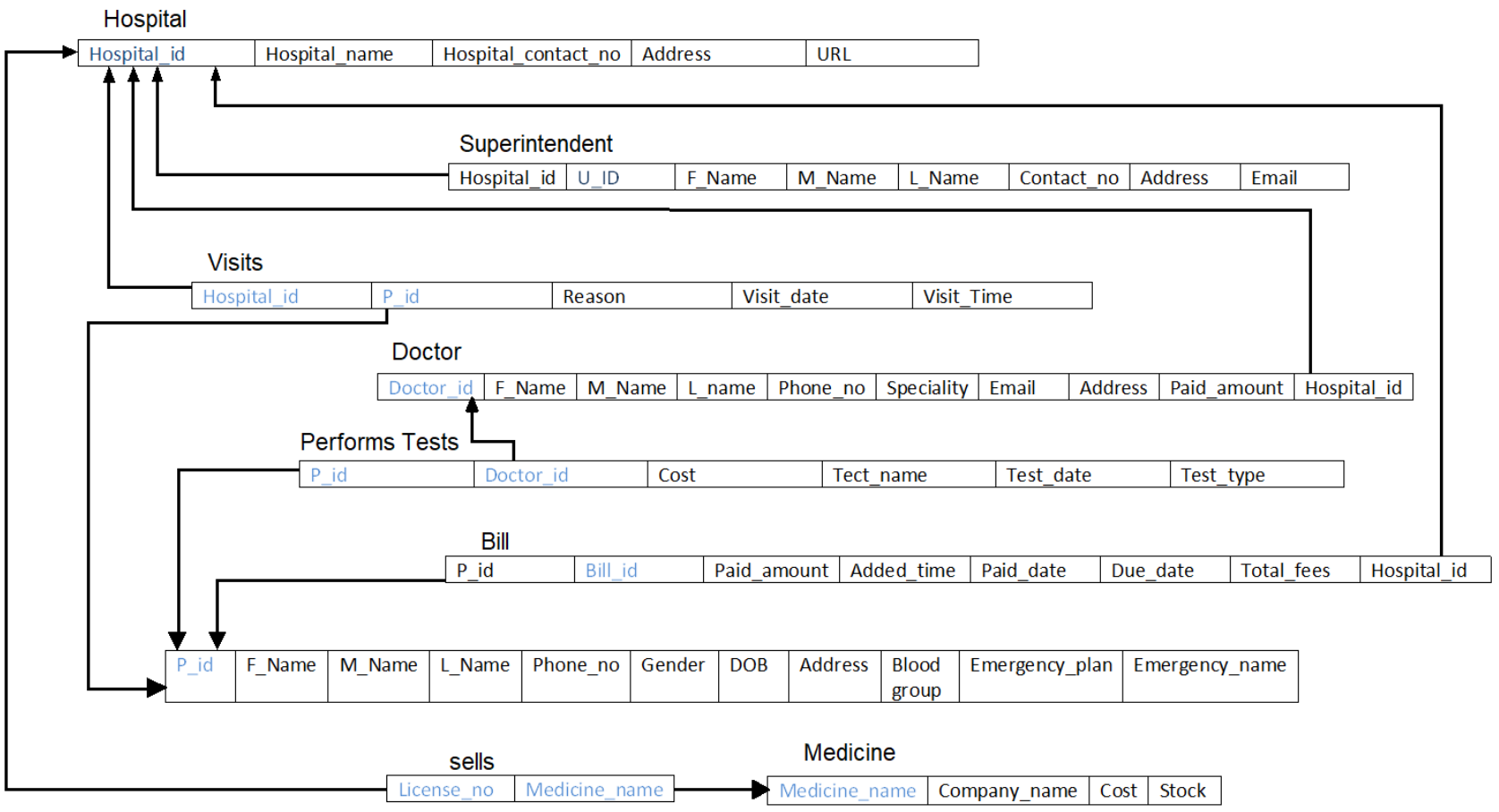
13) Get percentage of pharmacies who sell a particularmedicine

❖ ER-DIAGRAM


DOCTOR_ID
PAID_AMOUNT
ADDRESS
DOCTOR
EMAIL
N
WORKS_IN
1
BILL_ID
PAID_AMOUNT
ADDED_TIME
PAID_DATE
DUE_AMOUNT
BILL
DUE_DATE
TOTAL FEES
M
GENERATES
1
1
PAYS
1
ADDRESS
HOSPITAL_ID
HOSPITAL_NAME
HOSPITAL
HOPITAL CONTACT_NO
URL
N
VISITS
M
REASON
VISIT_DATE
VISIT_TIME
TEST_DATE
N
PERFORM_TESTS ON
M
COST
TEST_NAME
TEST_TYPE
EMERGENCY_NAME
N
SELLS
EMERGENCY_PAIN
1
SUPERVISES
1
EMAIL
M
MEDICINE
MEDICINE_NAME
COMPANY NAME
COST
STOCK
P_id
F_NAME
NAME
M_NAME
L_NAME
PATIENT
BLOOD_GROUP
PHONE_NO
GENDER
DOB
LAST_VISIT
ADDRESS
SUPERINTENDENT
ADDRESS
CONTACT_NO
NAME
F_NAME
L_NAME
M_NAME

RELATIONAL DATABASE SCHEMA DIAGRAM

4. Convert the ER/EER diagram into a relational database schema diagram.



5. (a) Implement the relational database schema incorporating appropriate (based on data requirements) integrity constraints. Each integrity constraintshould be assigned a name.

CREATING TABLES

1. Hospital Table

➢ create table hospital(
2 hospital_id varchar2(10) not null constraint hospital_pk primary key,
3 hospital_name varchar2(30) not null,
4 hospital_contact_no number(10) not null,
5 address varchar2(50) not null,
6 url varchar(20)
);
7);

```
SQL> create table hospital(
  2  hospital_id varchar2(10) not null constraint hospital_pk primary key,
  3  hospital_name varchar2(30) not null,
  4  hospital_contact_no number(10) not null,
  5  address varchar2(50) not null,
  6  url varchar(20)
  7  );

Table created.
```

Desc hospital;

```
SQL> desc hospital;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 HOSPITAL_ID                               NOT NULL VARCHAR2(10)
 HOSPITAL_NAME                             NOT NULL VARCHAR2(30)
 HOSPITAL_CONTACT_NO                       NOT NULL NUMBER(10)
 ADDRESS                                   NOT NULL VARCHAR2(50)
 URL                                                VARCHAR2(20)
```

2. Superitendent Table

```
create table superitendent(
2  u_id number(3) not null constraints superintendent_pk primary key,
3  hospital_id varchar2(10) not null,
4  firstname varchar2(20) not null,
5  middlename varchar2(20) not null,
6  lastname varchar2(20) not null,
7  contact_no number(10) not null,
8  address varchar2(50) not null,
9  email varchar(20) not null
10  );
```

```
SQL> create table superitendent(
  2  u_id number(3) not null constraints superintendent_pk primary key,
  3  hospital_id varchar2(10) not null,
  4  firstname varchar2(20) not null,
  5  middlename varchar2(20) not null,
  6  lastname varchar2(20) not null,
  7  contact_no number(10) not null,
  8  address varchar2(50) not null,
  9  email varchar(20) not null
 10  );

Table created.
```

- **Desc Superitendent;**

```
SQL> desc superitendent;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 U_ID                                      NOT NULL NUMBER(3)
 HOSPITAL_ID                               NOT NULL VARCHAR2(10)
 FIRSTNAME                                 NOT NULL VARCHAR2(20)
 MIDDLENAME                                NOT NULL VARCHAR2(20)
 LASTNAME                                  NOT NULL VARCHAR2(20)
 CONTACT_NO                                NOT NULL NUMBER(10)
 ADDRESS                                   NOT NULL VARCHAR2(50)
 EMAIL                                     NOT NULL VARCHAR2(20)
```

➢ DOCTOR TABLE

```
create table doctor(
  2  doctor_id number(3) not null constraint doctor_pk  primary key,
  3  f_name varchar2(20) not null,
  4  m_name varchar2(20) not null,
  5  l_name varchar2(20) not null,
  6  phone_no number(10) not null,
  7  speciality varchar2(20) not null,
  8  email varchar2(20),
  9  address varchar2(20),
 10  paid_amount number(5),
 11  hospital_id varchar2(10) not null
 12  );
```

```
SQL> create table doctor(
  2  doctor_id number(3) not null constraint doctor_pk  primary key,
  3  f_name varchar2(20) not null,
  4  m_name varchar2(20) not null,
  5  l_name varchar2(20) not null,
  6  phone_no number(10) not null,
  7  speciality varchar2(20) not null,
  8  email varchar2(20),
  9  address varchar2(20),
 10  paid_amount number(5),
 11  hospital_id varchar2(10) not null
 12  );

Table created.
```

➢ Desc Doctor-

```
SQL> Desc doctor;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 DOCTOR_ID                                 NOT NULL NUMBER(3)
 F_NAME                                    NOT NULL VARCHAR2(20)
 M_NAME                                    NOT NULL VARCHAR2(20)
 L_NAME                                    NOT NULL VARCHAR2(20)
 PHONE_NO                                  NOT NULL NUMBER(10)
 SPECIALITY                                NOT NULL VARCHAR2(20)
 EMAIL                                              VARCHAR2(20)
 ADDRESS                                            VARCHAR2(20)
 PAID_AMOUNT                                        NUMBER(5)
 HOSPITAL_ID                               NOT NULL VARCHAR2(10)
```

➢ VISITS TABLE-

```
create table visits(
  2  hospital_id varchar2(10) not null,
  3  p_id number(10) not null,
  4  reason varchar2(50),
  5  visit_date date,
  6  visit_time timestamp(0),
  7  constraint hospitalid_pid_pk PRIMARY KEY (hospital_id,p_id)
  8  );
```

```
SQL> create table visits(
  2  hospital_id varchar2(10) not null,
  3  p_id number(10) not null,
  4  reason varchar2(50),
  5  visit_date date,
  6  visit_time timestamp(0),
  7  constraint hospitalid_pid_pk PRIMARY KEY (hospital_id,p_id)
  8  );

Table created.
```

➢ Desc visits-

```
SQL> Desc visits;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 HOSPITAL_ID                               NOT NULL VARCHAR2(10)
 P_ID                                      NOT NULL NUMBER(10)
 REASON                                             VARCHAR2(50)
 VISIT_DATE                                         DATE
 VISIT_TIME                                         TIMESTAMP(0)
```

➢ Performs Tests Table

I. create table perform_tests(
   1) p_id number(10) not null,
   2) doctor_id number(3) not null,
   3) hospital_id varchar2(10) not null,
   4) cost number(10) not null,
   5) test_name varchar(20) not null,
   6) test_date date,
   7) test_type varchar2(10) not null,
   8) constraint ptests_hid_pid_pk primary key(hospital_id,p_id)
   9));

```
SQL> create table perform_tests( p_id number(10) not null,doctor_id number(3) not null,hospital_id varchar2(10) not null,cost number(10) not null,test_name varchar(20) not null,test_date date,test_type varchar2(
10) not null,constraint ptests_hid_pid_pk primary key(hospital_id,p_id));

Table created.
```

➢ Desc Perform Test-

```
SQL> desc perform_tests;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 P_ID                                      NOT NULL NUMBER(10)
 DOCTOR_ID                                 NOT NULL NUMBER(3)
 HOSPITAL_ID                               NOT NULL VARCHAR2(10)
 COST                                      NOT NULL NUMBER(10)
 TEST_NAME                                 NOT NULL VARCHAR2(20)
 TEST_DATE                                          DATE
 TEST_TYPE                                 NOT NULL VARCHAR2(10)
```

➢ Patient table-

```
create table patient(
  2  patient_id number(10) constraint patient_pk primary key,
  3  patient_first_name varchar2(20) not null,
  4  patient_last_name varchar2(20)
  5  ,
  6  patient_middle_name varchar2(20),
  7  phone_number number(10),
  8  gender char(1),
  9  DOB date,
 10  address varchar2(100),
 11  blood_group varchar2(3),
 12  emergency_phone_no number(10) not null,
 13  emergency_name char(20) not null
 14  );
```

```
SQL> create table patient(
  2  patient_id number(10) constraint patient_pk primary key,
  3  patient_first_name varchar2(20) not null,
  4  patient_last_name varchar2(20)
  5  ,
  6  patient_middle_name varchar2(20),
  7  phone_number number(10),
  8  gender char(1),
  9  DOB date,
 10  address varchar2(100),
 11  blood_group varchar2(3),
 12  emergency_phone_no number(10) not null,
 13  emergency_name char(20) not null
 14  );

Table created.
```

➢ Desc Patient-

```
SQL> desc patient;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 PATIENT_ID                                NOT NULL NUMBER(10)
 PATIENT_FIRST_NAME                        NOT NULL VARCHAR2(20)
 PATIENT_LAST_NAME                                  VARCHAR2(20)
 PATIENT_MIDDLE_NAME                                VARCHAR2(20)
 PHONE_NUMBER                                       NUMBER(10)
 GENDER                                             CHAR(1)
 DOB                                                DATE
 ADDRESS                                            VARCHAR2(100)
 BLOOD_GROUP                                        VARCHAR2(3)
 EMERGENCY_PHONE_NO                        NOT NULL NUMBER(10)
 EMERGENCY_NAME                            NOT NULL CHAR(20)
```

➢ **Bill table-**

```
create table bill(
 2  bill_id        number(10) constraint bill_pk primary key,
 3  paid_amount    number(10),
 4  added_time     timestamp(0),
 5  paid_date      date,
 6  due_date       date not null,
 7  total_fees     number(10) not null,
 8  patient_id     number(10) not null,
 9  hospital_id     varchar2(10) not null
10  );
```

```
SQL> create table bill(
  2  bill_id          number(10) constraint bill_pk primary key,
  3  paid_amount      number(10),
  4  added_time       timestamp(0),
  5  paid_date        date,
  6  due_date         date not null,
  7  total_fees       number(10) not null,
  8  patient_id       number(10) not null,
  9  hospital_id       varchar2(10) not null
 10  );

Table created.
```

➢ **Desc bill table-**

```
SQL> Desc bill;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 BILL_ID                                   NOT NULL NUMBER(10)
 PAID_AMOUNT                                        NUMBER(10)
 ADDED_TIME                                         TIMESTAMP(0)
 PAID_DATE                                          DATE
 DUE_DATE                                  NOT NULL DATE
 TOTAL_FEES                                NOT NULL NUMBER(10)
 PATIENT_ID                                NOT NULL NUMBER(10)
 HOSPITAL_ID                               NOT NULL VARCHAR2(10)
```

➢ **Sells table-**

```
create table sells(
 2  medicine_name    varchar2(20),
 3  license_no       number(10),
 4  constraint sells_pk primary key (medicine_name, license_no)
 5  );
```

```
SQL> create table sells(
  2  medicine_name     varchar2(20),
  3  license_no        number(10),
  4  constraint sells_pk primary key (medicine_name, license_no)
  5  );

Table created.
```

➢ **Desc sells table-**

```
SQL> Desc sells;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 MEDICINE_NAME                             NOT NULL VARCHAR2(20)
 LICENSE_NO                                NOT NULL NUMBER(10)
```

- **Medicine table-**

```
create table medicine(
  2  medicine_name   varchar2(20) constraint med_name_pk
primary key,
  3  company_name    char(2) not null,
  4  cost            number(10) not null,
  5  stock           number(10)
  6  );
```

```
SQL> create table medicine(
  2  medicine_name   varchar2(20) constraint med_name_pk primary key,
  3  company_name    char(2) not null,
  4  cost            number(10) not null,
  5  stock           number(10)
  6  );

Table created.
```

- **Desc medicine table-**

```
SQL> Desc medicine;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 MEDICINE_NAME                             NOT NULL VARCHAR2(20)
 COMPANY_NAME                              NOT NULL CHAR(2)
 COST                                      NOT NULL NUMBER(10)
 STOCK                                              NUMBER(10)
```

Foreign Keys Constraints

Referencing to Hospital Table – 5 constraints

alter table doctor add constraint doctor_hospitalid_fk foreign key(hospital_id) references hospital;
alter table visits add constraint visits_hospitalid_fk foreign key(hospital_id) references hospital;
alter table bill add constraint bill_hospitalid_fk foreign key(hospital_id) references hospital;

```
SQL> alter table doctor add constraint doctor_hospitalid_fk foreign key(hospital_id) references hospital;

Table altered.

SQL> alter table visits add constraint visits_hospitalid_fk foreign key(hospital_id) references hospital;

Table altered.

SQL> alter table bill add constraint bill_hospitalid_fk foreign key(hospital_id) references hospital;

Table altered.
```

Referencing to Doctor Table-1 constraint

alter table perform_tests add constraint performs_tests_doctor_id_fk foreign key(doctor_id) references doctor;

```
SQL> alter table perform_tests add constraint performs_tests_doctor_id_fk foreign key(doctor_id) references doctor;

Table altered.
```

Referencing to Patient Table- 3 constraints

alter table bill add constraint bill_p_id_fk foreign key(patient_id) references patient;
alter table perform_tests add constraint performs_test_p_id_fk foreign key(p_id) references patient;
alter table visits add constraint visits_p_id_fk foreign key(p_id) references patient;

```
SQL> alter table bill add constraint bill_p_id_fk foreign key(patient_id) references patient;

Table altered.

SQL> alter table perform_tests add constraint performs_test_p_id_fk foreign key(p_id) references patient;

Table altered.

SQL> alter table visits add constraint visits_p_id_fk foreign key(p_id) references patient;

Table altered.
```

Referencing to Medicine Table- 1 constraint

alter table sells add constraint sells_medicine_name_fk foreign key (medicine_name) references medicine;

```
SQL> alter table sells add constraint sells_medicine_name_fk foreign key (medicine_name) references medicine;

Table altered.
```

5 (b) Enter necessary sample data (at least two rows into each table) into the tables and display the content of each table.

Inserting Values

1.HOSPITAL VALUES

insert into hospital values ('AMD1','SHALBY HOSPITAL',6355411418,'Ahmedabad,Gujarat,India','www.shalbyamd.com');
insert into hospital values ('SUR1','AMBANI HOSPITAL',7355411418,'Surat,Gujarat,India','www.ambanisurat.com');
insert into hospital values ('AMD2','NARAYANI HOSPITAL',9355411418,'Ahmedabad,Gujarat,India','www.narayaniamd.com');
insert into hospital values ('AMD4','Sai HOSPITAL',46910650170,'Ahmedabad',null);
insert into hospital values ('SUR5','Appolo HOSPITAL',519289518,'Surat',null);

```
SQL> insert into hospital values ('AMD1','SHALBY HOSPITAL',6355411418,'Ahmedabad,Gujarat,India','www.shalbyamd.com');

1 row created.

SQL> insert into hospital values ('SUR1','AMBANI HOSPITAL',7355411418,'Surat,Gujarat,India','www.ambanisurat.com');

1 row created.

SQL> insert into hospital values ('AMD2','NARAYANI HOSPITAL',9355411418,'Ahmedabad,Gujarat,India','www.narayaniamd.com');

1 row created.
```

```
SQL> insert into hospital values ('AMD4','Sai HOSPITAL',4691060,'Ahmedabad',null);

1 row created.

SQL> insert into hospital values ('SUR5','Appolo HOSPITAL',519289518,'Surat',null);

1 row created.
```

Select * from hospital;

```
SQL> Select * from hospital;

HOSPITAL_I HOSPITAL_NAME                HOSPITAL_CONTACT_NO ADDRESS                                           URL
---------- ---------------------------- ------------------- ------------------------------------------------- --------------------
AMD1       SHALBY HOSPITAL                      6355411418 Ahmedabad,Gujarat,India                           www.shalbyamd.com
SUR1       AMBANI HOSPITAL                      7355411418 Surat,Gujarat,India                               www.ambanisurat.com
AMD2       NARAYANI HOSPITAL                    9355411418 Ahmedabad,Gujarat,India                           www.narayaniamd.com

SQL
```

SUPERITENDENT VALUES-

```
insert into superitendent
values(111,'AMD2','DEEP','RAJESH','GADHIYA',9785411418,'Ahemdabad,Gujara
t,India','deep@gmail.com');
insert into superitendent
values(112,'AMD1','AAYUSH','UPESH','PATEL',6485411418,'Ahemdabad,Gujara
t,India','auc@gmail.com');
insert into superitendent
values(113,'SUR1','JEVIN','MUKESH','VEKARIA',7785411418,'Surat,Gujarat,Indi
a','jevin@gmail.com');
```

```
SQL> insert into superitendent values(111,'AMD2','DEEP','RAJESH','GADHIYA',9785411418,'Ahemdabad,Gujarat,India','deep@gmail.com');

1 row created.

SQL> insert into superitendent values(112,'AMD1','AAYUSH','UPESH','PATEL',6485411418,'Ahemdabad,Gujarat,India','auc@gmail.com');

1 row created.

SQL> insert into superitendent values(113,'SUR1','JEVIN','MUKESH','VEKARIA',7785411418,'Surat,Gujarat,India','jevin@gmail.com');

1 row created.
```

- **select * from superitendent;**

```
SQL> select * from superitendent;

     U_ID HOSPITAL_I FIRSTNAME          MIDDLENAME          LASTNAME            CONTACT_NO ADDRESS                                          EMAIL
--------- --------- ------------------ ------------------- ------------------- ---------- -------------------------------------------------- --------------------
      111 AMD2      DEEP               RAJESH              GADHIYA             9785411418 Ahemdabad,Gujarat,India                            deep@gmail.com
      112 AMD1      AAYUSH             UPESH               PATEL               6485411418 Ahemdabad,Gujarat,India                            auc@gmail.com
      113 SUR1      JEVIN              MUKESH              VEKARIA             7785411418 Surat,Gujarat,India                                jevin@gmail.com
```

➢ DOCTOR VALUES-

```
insert into doctor
values(123,'SURESH','MUKESH','PATEL',9992223450,'Dermatology','suresh@mail.com','Naroda,Ahemdabad,Gujarat,India',5000,'AMD1');
insert into doctor
values(113,'RAMESH','MUKESH','SINGH',9702223450,'Dermatology','rahesh@mail.com','Naroda,Ahemdabad,Gujarat,India',1000,'AMD1');
insert into doctor
values(114,'PROMIT','RAJ','REVAR',8702223450,'Neurology','promit@mail.com','Naroda,Ahemdabad,Gujarat,India',1200,'AMD1');
insert into doctor
values(115,'DEEPIKA','MAHESH','PADUKONE',9902223450,'Cardiology','deepika@mail.com','Naroda,Ahemdabad,Gujarat,India',7000,'AMD1');
insert into doctor
values(111,'SHAUNAK','RAKESH','DAVE',9792223450,'Pediatrics','shaunak@mail.com','Surat,Ahemdabad,Gujarat,India',5900,'SUR1');
insert into doctor
values(121,'JAINAM','MANI','DESAI',8902223450,'Surgeon','jainam@mail.com','Surat,Gujarat,India,',6700,'SUR1');
insert into doctor
values(123,'TOMAR','RAJ','SINGH',8702223450,'Neurology','promit@mail.com','Surat,Ahemdabad,Gujarat,India',9800,'SUR1');
insert into doctor
values(124,'HEMANG','MAHESH','PALIWAL',9902223450,'Cardiology','deepika@mail.com','Surat,Ahemdabad,Gujarat,India',800,'SUR1');
insert into doctor
values(211,'DHRUVIL','RAMESH','DAVE',9792223450,'Pediatrics','shaunak@mail.com','Surat,Ahemdabad,Gujarat,India',5900,'SUR1');
insert into doctor values(131,'NAWAZ','MUKESH','KHAN',9992223450,'Internal
medicine','nawaz@mail.com','Gandinagar,Ahemdabad,Gujarat,India',5700,'AMD2');
insert into doctor
values(132,'AZEEM','ULLHA','KHAN',9702223450,'Psychiatry','azeem@mail.com','Gandinagar,Ahemdabad,Gujarat,India',8900,'AMD2');
insert into doctor
values(134,'KUNJ','RAJ','PATEL',8792223450,'Neurology','kunj@mail.com','Gandhinagar,Ahemdabad,Gujarat,India',5600,'AMD2');
insert into doctor
values(135,'BHARAT','MAHESH','PADUKONE',9902223450,'Cardiology','bharat@mail.com','Gandhinagae,Ahemdabad,Gujarat,India',7700,'AMD2');
```

```
SQL> insert into doctor values(123,'SURESH','MUKESH','PATEL',9992223450,'Dermatology','suresh@mail.com','Ahemdabad',5000,'AMD1');

1 row created.

SQL> insert into doctor values(113,'RAMESH','MUKESH','SINGH',9702223450,'Dermatology','rahesh@mail.com','Ahemdabad',1000,'AMD1');

1 row created.

SQL> insert into doctor values(114,'PROMIT','RAJ','REVAR',8702223450,'Neurology','promit@mail.com','Ahemdabad',1200,'AMD1');

1 row created.

SQL> insert into doctor values(115,'DEEPIKA','MAHESH','PADUKONE',9902223450,'Cardiology','deepika@mail.com','Ahemdabad',7000,'AMD1');

1 row created.

SQL> insert into doctor values(111,'SHAUNAK','RAKESH','DAVE',9792223450,'Pediatrics','shaunak@mail.com','Surat',5900,'SUR1');

1 row created.

SQL> insert into doctor values(121,'JAINAM','MANI','DESAI',8902223450,'Surgeon','jainam@mail.com','Surat,Gujarat,India,',6700,'SUR1');

1 row created.
```

```
SQL> insert into doctor values(124,'HEMANG','MAHESH','PALIWAL',9902223450,'Cardiology','deepika@mail.com','Surat',800,'SUR1');

1 row created.

SQL> insert into doctor values(211,'DHRUVIL','RAMESH','DAVE',9792223450,'Pediatrics','shaunak@mail.com','Surat',5900,'SUR1');

1 row created.

SQL> insert into doctor values(131,'NAWAZ','MUKESH','KHAN',9992223450,'Internal medicine','nawaz@mail.com','Gandinagar',5700,'AMD2');

1 row created.

SQL> insert into doctor values(132,'AZEEM','ULLHA','KHAN',9702223450,'Psychiatry','azeem@mail.com','Ahemdabad',8900,'AMD2');

1 row created.

SQL> insert into doctor values(134,'KUNJ','RAJ','PATEL',8792223450,'Neurology','kunj@mail.com','Ahemdabad',5600,'AMD2');

1 row created.

SQL> insert into doctor values(135,'BHARAT','MAHESH','PADUKONE',9902223450,'Cardiology','bharat@mail.com','Ahemdabad',7700,'AMD2');

1 row created.
```

➢ select * from doctor;

```
SQL> select * from doctor;

 DOCTOR_ID F_NAME               M_NAME               L_NAME                PHONE_NO SPECIALITY          EMAIL
             ADDRESS              PAID_AMOUNT HOSPITAL_I
---------- -------------------- -------------------- -------------------- ---------- -------------------- -------------------- -------------------- ---------- ----------
       121 JAINAM               MANI                 DESAI                8902223450 Surgeon              jainam@mail.com      Surat,Gujarat,India,           6700 SUR1
       123 SURESH               MUKESH               PATEL                9992223450 Dermatology          suresh@mail.com      Ahemdabad               5000 AMD1
       113 RAMESH               MUKESH               SINGH                9702223450 Dermatology          rahesh@mail.com      Ahemdabad               1000 AMD1
       114 PROMIT               RAJ                  REVAR                8702223450 Neurology            promit@mail.com      Ahemdabad               1200 AMD1
       115 DEEPIKA              MAHESH               PADUKONE             9902223450 Cardiology           deepika@mail.com     Ahemdabad               7000 AMD1
       111 SHAUNAK              RAKESH               DAVE                 9792223450 Pediatrics           shaunak@mail.com     Surat                          5900 SUR1
       211 DHRUVIL              RAMESH               DAVE                 9792223450 Pediatrics           shaunak@mail.com     Surat                          5900 SUR1
       131 NAWAZ                MUKESH               KHAN                 9992223450 Internal medicine    nawaz@mail.com       Gandinagar              5700 AMD2
       132 AZEEM                ULLHA                KHAN                 9702223450 Psychiatry           azeem@mail.com       Gandinagar              8900 AMD2
       134 KUNJ                 RAJ                  PATEL                8792223450 Neurology            kunj@mail.com        Ahemdabad               5600 AMD2
       135 BHARAT               MAHESH               PADUKONE             9902223450 Cardiology           bharat@mail.com      Gandhinnagar                   7700 AMD2

11 rows selected.
```

➢ PATIENT VALUES-

```
insert into patient values (102,'dinda','bharatbhai','pavalia',4756348752,'M',
to_date('05/02/2020','dd/mm/yyyy'),'chennai,tamilnadu','AB+',7465492341,'ashok');
insert into patient values (103,'shubh','umeshbhai','savalia',7548576935,'M',
to_date('30/04/2020','dd/mm/yyyy'),'amritsar,punjab','O+',4756382934,'sonali');
insert into patient values (104,'khushi','navanitbhai','talaviya',5739427495,'F',
to_date('09/04/2020','dd/mm/yyyy'),'surat,gujarat','O+',8657435698,'diti');
insert into patient values (105,'diti','ritesh','vekaria',6748395769,'F',
to_date('16/04/2020','dd/mm/yyyy'),'surat,gujarat','AB+',8437569103,'hetsi');
insert into patient values (106,'abhay','dilipbhai','parmar',5764835693,'M',
to_date('08/10/2020','dd/mm/yyyy'),'Banglore,karnataka','B-',1234546784,'gajraj');
insert into patient values (107,'charvee','pragnesh','saraiya',5764835786,'M',
to_date('2/4/2020','dd/mm/yyyy'),'surat','A+',1234546784,'dinu');
insert into patient values (108,'shobhit','palliwal','abc',5764835669,'M',
to_date('12/10/2020','dd/mm/yyyy'),'bhopal','0-',1234546784,'pinu');
insert into patient values (109,'ankon','Nandi','xyz',5764835609,'M',
to_date('10/10/2020','dd/mm/yyyy'),'Hyderabad','B+',1234546784,'jinu');
```

```
SQL> insert into patient values (102,'dinda','bharatbhai','pavalia',4756348752,'M', to_date('05/02/2020','dd/mm/yyyy'),'chennai,tamilnadu','AB+',7465492341,'ashok');

1 row created.

SQL> insert into patient values (103,'shubh','umeshbhai','savalia',7548576935,'M', to_date('30/04/2020','dd/mm/yyyy'),'amritsar,punjab','O+',4756382934,'sonali');

1 row created.

SQL> insert into patient values (104,'khushi','navanitbhai','talaviya',5739427495,'F', to_date('09/04/2020','dd/mm/yyyy'),'surat,gujarat','O+',8657435698,'diti');

1 row created.

SQL> insert into patient values (105,'diti','ritesh','vekaria',6748395769,'F', to_date('16/04/2020','dd/mm/yyyy'),'surat,gujarat','AB+',8437569103,'hetsi');

1 row created.

SQL> insert into patient values (106,'abhay','dilipbhai','parmar',5764835693,'M', to_date('08/10/2020','dd/mm/yyyy'),'Banglore,karnataka','B-',1234546784,'gajraj');

1 row created.

SQL> insert into patient values (107,'charvee','pragnesh','saraiya',5764835786,'M', to_date('2/4/2020','dd/mm/yyyy'),'surat','A+',1234546784,'dinu');

1 row created.

SQL> insert into patient values (108,'shobhit','palliwal','abc',5764835669,'M', to_date('12/10/2020','dd/mm/yyyy'),'bhopal','0-',1234546784,'pinu');

1 row created.

SQL> insert into patient values (109,'ankon','Nandi','xyz',5764835609,'M', to_date('10/10/2020','dd/mm/yyyy'),'Hyderabad','B+',1234546784,'jinu');

1 row created.
```

select * from patient;

```
SQL> select * from patient;

PATIENT_ID PATIENT_FIRST_NAME   PATIENT_LAST_NAME    PATIENT_MIDDLE_NAME  PHONE_NUMBER G DOB       ADDRESS                                                                                                BLO EMERGEN
CY_PHONE_NO EMERGENCY_NAME
---------- -------------------- -------------------- -------------------- ------------ - --------- ------------------------------------------------------------------------------------------------------ --- -------
----------- --------------------
       102 dinda                bharatbhai           pavalia                4756348752 M 05-FEB-20 chennai,tamilnadu                                                                              AB+
 7465492341 ashok
       103 shubh                umeshbhai            savalia                7548576935 M 30-APR-20 amritsar,punjab                                                                                O+
 4756382934 sonali
       104 khushi               navanitbhai          talaviya               5739427495 F 09-APR-20 surat,gujarat                                                                                  O+
 8657435698 diti
       105 diti                 ritesh               vekaria                6748395769 F 16-APR-20 surat,gujarat                                                                                  AB+
 8437569103 hetsi
       106 abhay                dilipbhai            parmar                 5764835693 M 08-OCT-20 Banglore,karnataka                                                                             B-
 1234546784 gajraj
       107 charvee              pragnesh             saraiya                5764835786 M 02-APR-20 surat                                                                                          A+
 1234546784 dinu
       108 shobhit              palliwal             abc                    5764835669 M 12-OCT-20 bhopal                                                                                         0-
 1234546784 pinu
       109 ankon                Nandi                xyz                    5764835609 M 10-OCT-20 Hyderabad                                                                                      B+
 1234546784 jinu

8 rows selected.
```

➢ MEDICINE VALUES-

```
insert into medicine values('Lexapro','Lupin Limited',4000,20);
insert into medicine values('Clonazepam','Cipla Limited',2000,98);
insert into medicine values('Otezla','Cadila Ltd',7200,25);
insert into medicine values('Januvia','AuroPharma',1000,77);
insert into medicine values('Entresto','Sun Limited',450,82);
insert into medicine values('Ativan','Cipla Limited',2100,17);
insert into medicine values('Crocin','Lupin Limited',100,200);
```

```
SQL> insert into medicine values('Lexapro','Lupin Limited',4000,20);

1 row created.

SQL> insert into medicine values('Clonazepam','Cipla Limited',2000,98);

1 row created.

SQL> insert into medicine values('Otezla','Cadila Ltd',7200,25);

1 row created.

SQL> insert into medicine values('Januvia','AuroPharma',1000,77);

1 row created.

SQL> insert into medicine values('Entresto','Sun Limited',450,82);

1 row created.

SQL> insert into medicine values('Ativan','Cipla Limited',2100,17);

1 row created.

SQL> insert into medicine values('Crocin','Lupin Limited',100,200);

1 row created.
```

select * from medicine;

```
SQL> select * from medicine;

MEDICINE_NAME        COMPANY_NAME                                          COST      STOCK
-------------------- -------------------------------------------------- ---------- ----------
Lexapro              Lupin Limited                                            4000         20
Clonazepam           Cipla Limited                                            2000         98
Otezla               Cadila Ltd                                               7200         25
Januvia              AuroPharma                                               1000         77
Entresto             Sun Limited                                               450         82
Ativan               Cipla Limited                                            2100         17
Crocin               Lupin Limited                                             100        200

7 rows selected.
```

➢ **SELLS VALUES-**

insert into sells values('Crocin',12345);
insert into sells values('Ativan',12345);
insert into sells values('Otezla',12345);
insert into sells values('Januvia',12345);
insert into sells values('Crocin',123456);
insert into sells values('Lexapro',123456);
insert into sells values('Entresto',123456);
insert into sells values('Ativan',123456);
insert into sells values('Otezla',123456);
insert into sells values('Clonazepam',1234567);
insert into sells values('Januvia',1234567);
insert into sells values('Ativan',1234567);

```
SQL> insert into sells values('Crocin',12345);

1 row created.

SQL> insert into sells values('Ativan',12345);

1 row created.

SQL> insert into sells values('Otezla',12345);

1 row created.

SQL> insert into sells values('Januvia',12345);

1 row created.

SQL> insert into sells values('Crocin',123456);

1 row created.

SQL> insert into sells values('Lexapro',123456);

1 row created.

SQL> insert into sells values('Entresto',123456);

1 row created.

SQL> insert into sells values('Ativan',123456);

1 row created.

SQL> insert into sells values('Otezla',123456);

1 row created.
```

```
SQL> insert into sells values('Clonazepam',1234567);

1 row created.

SQL> insert into sells values('Januvia',1234567);

1 row created.

SQL> insert into sells values('Ativan',1234567);

1 row created.
```

- **select * from sells;**

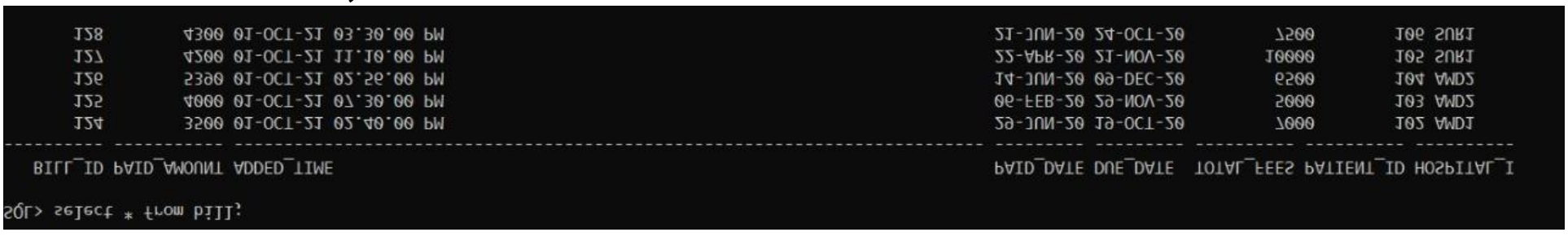
```
SQL> select * from sells;

MEDICINE_NAME        LICENSE_NO
-------------------- ----------
Crocin                    12345
Ativan                    12345
Otezla                    12345
Januvia                   12345
Crocin                   123456
Lexapro                  123456
Entresto                 123456
Ativan                   123456
Otezla                   123456
Clonazepam              1234567
Januvia                 1234567

MEDICINE_NAME        LICENSE_NO
-------------------- ----------
Ativan                  1234567

12 rows selected.
```

- **BILL VALUES-**

insert into bill values(123,3000,to_timestamp('10:30','hh24:mi'),to_date('09-07-2020','dd-mm-yyyy'),to_date('29-10-2020','dd-mm-yyyy'),5000,101,'AMD1');
insert into bill values(124,3500,to_timestamp('14:40','hh24:mi'),to_date('29-06-2020','dd-mm-yyyy'),to_date('19-10-2020','dd-mm-yyyy'),7000,102,'AMD1');
insert into bill values(125,4000,to_timestamp('19:30','hh24:mi'),to_date('06-02-2020','dd-mm-yyyy'),to_date('29-11-2020','dd-mm-yyyy'),5000,103,'AMD2');
insert into bill values(126,5390,to_timestamp('14:56','hh24:mi'),to_date('14-06-2020','dd-mm-yyyy'),to_date('09-12-2020','dd-mm-yyyy'),6500,104,'AMD2');
insert into bill values(127,4200,to_timestamp('23:10','hh24:mi'),to_date('22-04-2020','dd-mm-yyyy'),to_date('21-11-2020','dd-mm-yyyy'),10000,105,'SUR1');
insert into bill values(128,4300,to_timestamp('15:30','hh24:mi'),to_date('21-06-2020','dd-mm-yyyy'),to_date('24-10-2020','dd-mm-yyyy'),7500,106,'SUR1');

```
SQL> insert into bill values(124,3500,to_timestamp('14:40','hh24:mi'),to_date('29-06-2020','dd-mm-yyyy'),to_date('19-10-2020','dd-mm-yyyy'),7000,102,'AMD1');

1 row created.

SQL> insert into bill values(125,4000,to_timestamp('19:30','hh24:mi'),to_date('06-02-2020','dd-mm-yyyy'),to_date('29-11-2020','dd-mm-yyyy'),5000,103,'AMD2');

1 row created.

SQL> insert into bill values(126,5390,to_timestamp('14:56','hh24:mi'),to_date('14-06-2020','dd-mm-yyyy'),to_date('09-12-2020','dd-mm-yyyy'),6500,104,'AMD2');

1 row created.

SQL> insert into bill values(127,4200,to_timestamp('23:10','hh24:mi'),to_date('22-04-2020','dd-mm-yyyy'),to_date('21-11-2020','dd-mm-yyyy'),10000,105,'SUR1');

1 row created.

SQL> insert into bill values(128,4300,to_timestamp('15:30','hh24:mi'),to_date('21-06-2020','dd-mm-yyyy'),to_date('24-10-2020','dd-mm-yyyy'),7500,106,'SUR1');

1 row created.
```

select * from bill;



VISIT VALUES-

```
insert into visits values('AMD1',101,'high fever',to_date('09-07-2020','dd-mm-yyyy'),to_timestamp('10:40','hh24:mi'));
insert into visits values('AMD1',102,'vomiting',to_date('30-06-2020','dd-mm-yyyy'),to_timestamp('11:30','hh24:mi'));
insert into visits values('AMD2',103,'chicken pox',to_date('06-02-2020','dd-mm-yyyy'),to_timestamp('20:30','hh24:mi'));
insert into visits values('AMD2',104,'corona',to_date('18-06-2020','dd-mm-yyyy'),to_timestamp('16:00','hh24:mi'));
insert into visits values('SUR1',105,'brain damage',to_date('23-04-2020','dd-mm-yyyy'),to_timestamp('23:50','hh24:mi'));
insert into visits values('SUR1',106,'food poison',to_date('21-06-2020','dd-mm-yyyy'),to_timestamp('19:00','hh24:mi'));
```

```
SQL> insert into visits values('AMD1',102,'vomiting',to_date('30-06-2020','dd-mm-yyyy'),to_timestamp('11:30','hh24:mi'));

1 row created.

SQL> insert into visits values('AMD2',103,'chicken pox',to_date('06-02-2020','dd-mm-yyyy'),to_timestamp('20:30','hh24:mi'));

1 row created.

SQL> insert into visits values('AMD2',104,'corona',to_date('18-06-2020','dd-mm-yyyy'),to_timestamp('16:00','hh24:mi'));

1 row created.

SQL> insert into visits values('SUR1',105,'brain damage',to_date('23-04-2020','dd-mm-yyyy'),to_timestamp('23:50','hh24:mi'));

1 row created.

SQL> insert into visits values('SUR1',106,'food poison',to_date('21-06-2020','dd-mm-yyyy'),to_timestamp('19:00','hh24:mi'));

1 row created.
```

- **select * from visits;**

```
SQL> select * from visits;

HOSPITAL_I       P_ID REASON                                             VISIT_DAT VISIT_TIME
---------- ---------- -------------------------------------------------- --------- ---------------------------------------------------------------
AMD1              102 vomiting                                           30-JUN-20 01-OCT-21 11.30.00 AM
AMD2              103 chicken pox                                        06-FEB-20 01-OCT-21 08.30.00 PM
AMD2              104 corona                                             18-JUN-20 01-OCT-21 04.00.00 PM
SUR1              105 brain damage                                       23-APR-20 01-OCT-21 11.50.00 PM
SUR1              106 food poison                                        21-JUN-20 01-OCT-21 07.00.00 PM
SUR1              102 corona                                             06-FEB-20 01-OCT-21 10.30.00 PM
AMD1              105 corona                                             06-FEB-20 01-OCT-21 10.30.00 PM

7 rows selected.
```

➢ PERFORM TEST VALUES-

```
insert into perform_tests values(101,114,'AMD1',500,'COVID TEST',to_date('09-07-2020','dd-mm-yyyy'),'Antibody');
insert into perform_tests values(103,131,'AMD2',550,'POLIO TEST',to_date('09-07-2020','dd-mm-yyyy'),'Antibody');
insert into perform_tests values(105,223,'AMD1',9000,'MRI SCAN',to_date('09-07-2020','dd-mm-yyyy'),'Full MRI');
insert into perform_tests values(106,121,'AMD1',780,'BLOOD TEST',to_date('21-06-2020','dd-mm-yyyy'),'CBC TEST');
insert into perform_tests values(104,131,'AMD2',3000,'FULL BODY',to_date('18-06-2020','dd-mm-yyyy'),'Full MRI');
insert into perform_tests values(102,115,'AMD1',750,'FULL BODY',to_date('1-07-2020','dd-mm-yyyy'),'Full MRI');
```

```
SQL> insert into perform_tests values(105,114,'AMD1',9000,'MRI SCAN',to_date('09-07-2020','dd-mm-yyyy'),'Full MRI
);

1 row created.
```

select * from perform_tests;

```
SQL> select * from perform_tests;

      P_ID  DOCTOR_ID HOSPITAL_I       COST TEST_NAME           TEST_DATE TEST_TYPE
---------- ---------- ---------- ---------- -------------------- --------- ----------
       103        131 AMD2              550 POLIO TEST           09-JUL-20 Antibody
       106        121 AMD1              780 BLOOD TEST           21-JUN-20 CBC TEST
       104        131 AMD2             3000 FULL BODY            18-JUN-20 Full MRI
       102        115 AMD1              750 FULL BODY            01-JUL-20 Full MRI
       105        114 AMD1             9000 MRI SCAN             09-JUL-20 Full MRI
```

- **Write down the necessary SQL statements for implementation of functional requirements through SQL select, delete and update statement.**

1. **RETRIEVAL OF DATA:**
2. **1.Give hospital name and url . If url is null then show not present (nvl function):**

select hospital_name,nvl(url,'NOT PRESENT') "URL" from hospital;

```
SQL> select hospital_name,nvl(url,'NOT PRESENT') "URL" from hospital;

HOSPITAL_NAME                  URL
------------------------------ --------------------
SHALBY HOSPITAL                www.shalbyamd.com
AMBANI HOSPITAL                www.ambanisurat.com
NARAYANI HOSPITAL              www.narayaniamd.com
Sai HOSPITAL                   NOT PRESENT
Appolo HOSPITAL                NOT PRESENT
```

2.Give hospital id,name and email of superitendents . If email is not given then put null (nullif function):

Select hospital_id,firstname,middlename,nullif(email,'Null') "Email" from superitendent;

```
SQL> Select hospital_id,firstname,middlename,nullif(email,'Null') "Email" from superitendent;

HOSPITAL_I FIRSTNAME           MIDDLENAME           Email
---------- -------------------- -------------------- --------------------
SUR1       akshay               virat                NOT GIVEN
SUR1       aryan                sanjay               NOT GIVEN
```

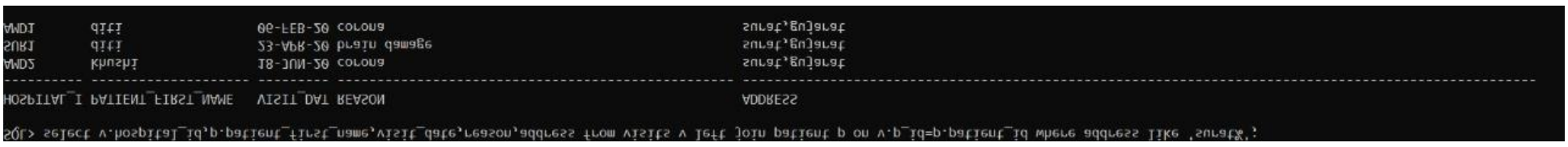
⇨ **Find the name of patient from visits table and there visit reason from surat city(JOIN QUERY)-**

select v.hospital_id,p.patient_first_name,visit_date,reason,address from visits v inner join patient p on v.p_id=p.patient_id where address like 'surat%';

```
SQL> select v.hospital_id,p.patient_first_name,visit_date,reason,address from visits v inner join patient p on v.p_id=p.patient_id where address like 'surat%';

HOSPITAL_I PATIENT_FIRST_NAME   VISIT_DAT REASON                                             ADDRESS
---------- -------------------- --------- -------------------------------------------------- ----------------------------------------------------------------------------------------------------
AMD2       khushi               18-JUN-20 corona                                             surat,gujarat
SUR1       diti                 23-APR-20 brain damage                                       surat,gujarat
AMD1       diti                 06-FEB-20 corona                                             surat,gujarat
```

⇨ **Find the name of patient from visits table and there visit reason from surat city(LEFT JOIN QUERY)-**

select v.hospital_id,p.patient_first_name,visit_date,reason,address from visits v left join patient p on v.p_id=p.patient_id where address like 'surat%';



⇨ **Find hospital id, patient name, reason, address from patient table using left join-**

```
SQL> select v.hospital_id,p.patient_first_name,visit_date,reason,address from patient p left join visits v on v.p_id=p.patient_id ;

HOSPITAL_I PATIENT_FIRST_NAME   VISIT_DAT REASON                                             ADDRESS
---------- -------------------- --------- -------------------------------------------------- --------------------------------------------------
AMD1       dinda                30-JUN-20 vomiting                                           chennai,tamilnadu
AMD2       shubh                06-FEB-20 chicken pox                                        amritsar,punjab
AMD2       khushi               18-JUN-20 corona                                             surat,gujarat
SUR1       diti                 23-APR-20 brain damage                                       surat,gujarat
SUR1       abhay                21-JUN-20 food poison                                        Banglore,karnataka
SUR1       dinda                06-FEB-20 corona                                             chennai,tamilnadu
AMD1       diti                 06-FEB-20 corona                                             surat,gujarat
           ankon                                                                             Hyderabad
           shobhit                                                                           bhopal
           charvee                                                                           surat

10 rows selected.
```

4.Find doctor names who has average costs of tests on his patients >900 (uncorrelated nested query)

select f_name,m_name,l_name from doctor where doctor_id in(select doctor_id from perform_tests group by doctor_id having avg(cost)>900);

```
SQL> select f_name,m_name,l_name from doctor where doctor_id in(select doctor_id from perform_tests group by doctor_id having avg(cost)>900);

F_NAME               M_NAME               L_NAME
-------------------- -------------------- --------------------
PROMIT               RAJ                  REVAR
NAWAZ                MUKESH               KHAN
```

DELETION OF DATA-

⇨ **delete from bill where paid_amount=total_fees;**

```
SQL> delete from bill where paid_amount=total_fees;

0 rows deleted.
```

```
SQL> select * from bill;

   BILL_ID PAID_AMOUNT ADDED_TIME                                                          PAID_DATE DUE_DATE  TOTAL_FEES PATIENT_ID HOSPITAL_I
---------- ----------- ------------------------------------------------------------------- --------- --------- ---------- ---------- ----------
       124        3500 01-OCT-21 02.40.00 PM                                               29-JUN-20 19-OCT-20       7000        102 AMD1
       125        4000 01-OCT-21 07.30.00 PM                                               06-FEB-20 29-NOV-20       5000        103 AMD2
       126        5390 01-OCT-21 02.56.00 PM                                               14-JUN-20 09-DEC-20       6500        104 AMD2
       127        4200 01-OCT-21 11.10.00 PM                                               22-APR-20 21-NOV-20      10000        105 SUR1
       128        4300 01-OCT-21 03.30.00 PM                                               21-JUN-20 24-OCT-20       7500        106 SUR1
```

⇨ **UPDATION OF DATA-**

Q- Patient with patient id 105 paid 1000 RS amount for the treatment he received so update that amount in his bill details.

Update bill set paid_amount=paid_amount+1000 where patient_id=105;

```
SQL> Update bill set paid_amount=paid_amount+1000 where patient_id=105;

1 row updated.
```

```
   BILL_ID PAID_AMOUNT ADDED_TIME                                                          PAID_DATE DUE_DATE  TOTAL_FEES PATIENT_ID HOSPITAL_I
---------- ----------- ------------------------------------------------------------------- --------- --------- ---------- ---------- ----------
       124        3500 01-OCT-21 02.40.00 PM                                               29-JUN-20 19-OCT-20       7000        102 AMD1
       125        4000 01-OCT-21 07.30.00 PM                                               06-FEB-20 29-NOV-20       5000        103 AMD2
       126        5390 01-OCT-21 02.56.00 PM                                               14-JUN-20 09-DEC-20       6500        104 AMD2
       127        5200 01-OCT-21 11.10.00 PM                                               22-APR-20 21-NOV-20      10000        105 SUR1
       128        4300 01-OCT-21 03.30.00 PM                                               21-JUN-20 24-OCT-20       7500        106 SUR1
```

Q- Add a new column to bill table which has due amount and update it

alter table bill add due_amount number(10);
update bill set due_amount=total_fees-paid_amount;

```
SQL> alter table bill add due_amount number(10);

Table altered.

SQL> update bill set due_amount=total_fees-paid_amount;

5 rows updated.
```

```
  BILL_ID PAID_AMOUNT ADDED_TIME                                                                PAID_DATE DUE_DATE  TOTAL_FEES PATIENT_ID HOSPITAL_I DUE_AMOUNT
---------- ----------- ------------------------------------------------------------------------ --------- --------- ---------- ---------- ---------- ----------
       124        3500 01-OCT-21 02.40.00 PM                                                    29-JUN-20 19-OCT-20       7000        102 AMD1             3500
       125        4000 01-OCT-21 07.30.00 PM                                                    06-FEB-20 29-NOV-20       5000        103 AMD2             1000
       126        5390 01-OCT-21 02.56.00 PM                                                    14-JUN-20 09-DEC-20       6500        104 AMD2             1110
       127        5200 01-OCT-21 11.10.00 PM                                                    22-APR-20 21-NOV-20      10000        105 SUR1             4800
       128        4300 01-OCT-21 03.30.00 PM                                                    21-JUN-20 24-OCT-20       7500        106 SUR1             3200
```

Q- Give a discount of 100 RS in total fees to all patients having blood group of O+

select * from patient where blood_group='O+';

```
SQL> select * from patient where blood_group='O+';

PATIENT_ID PATIENT_FIRST_NAME   PATIENT_LAST_NAME    PATIENT_MIDDLE_NAME  PHONE_NUMBER G DOB       ADDRESS                                                                                                BLO EMERG
CY_PHONE_NO EMERGENCY_NAME
---------- -------------------- -------------------- -------------------- ------------ - --------- ------------------------------------------------------------------------------------------------------ --- -----
----------
       103 shubh                umeshbhai            savalia              7548576935 M 30-APR-20 amritsar,punjab                                                                                        O+
4756382934 sonali
       104 khushi               navanitbhai          talaviya             5739427495 F 09-APR-20 surat,gujarat                                                                                          O+
8657435698 diti
```

NORMALISATION:

This database is already in 2 NF form.