DBMS Report

Submitted By:

NAME - Amaan Aijaz

REGISTRATION NO. - RA1811003010520

SUBJECT NAME- Database Management System

SUBJECT CODE - 18CSC303J

BRANCH - Computer Science And Engineering

FACULTY NAME - Ms.M.Thenmozhi

Hospital Management System

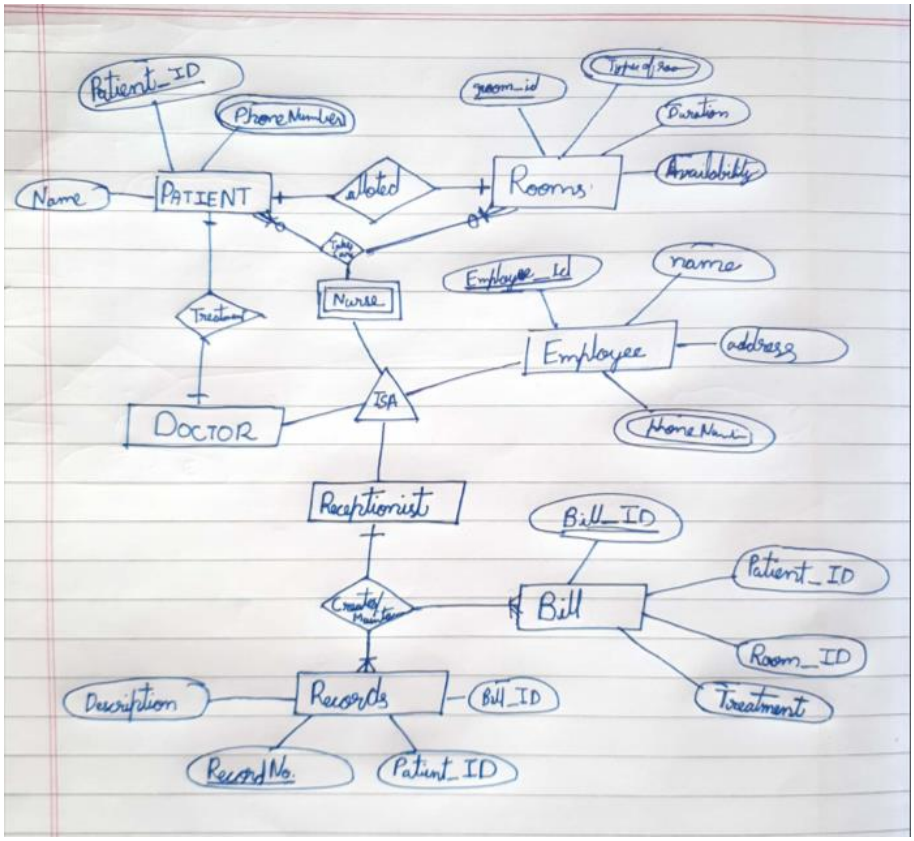
Abstract:

The hospital management system will provide services to the hospital staff. The database will store the data of the in and out patients, patients' medical history, special medication provided (if any) etc. Personal details of in-patients like family, address, phone number and other contact details will be recorded. It will also provide data on hospital's present infrastructure like, available beds, wards, equipments etc. Staff records like available doctors, nurses, ward-boys will also be maintained. The doctors could be trainees, permanent, visiting or any kind of specialist. Their personal records, professional experience will also be maintained. List of appointments for the out patients will be recorded. Finances of the hospitals like salaries of employees, cost of medicines, equipments and other stuff will also be recorded. This will help generating a bill and keep a track of the revenue generated and other finances of the hospital.

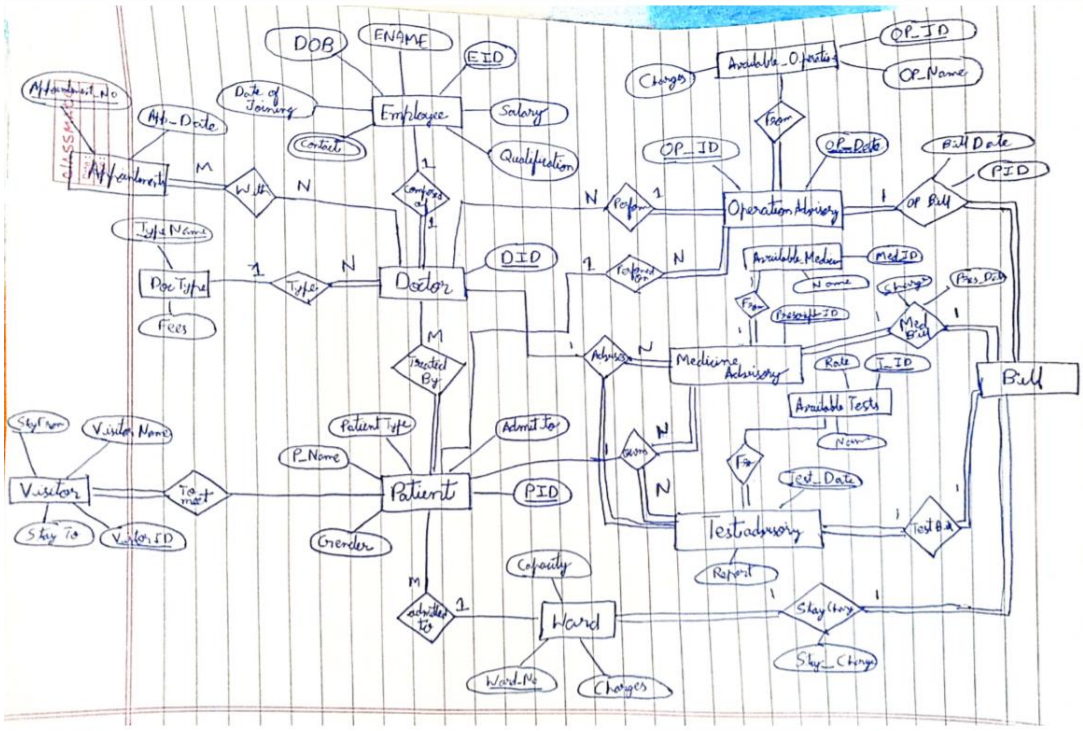
Amaan Aijaz (520)

Entity Relationship Diagrams

Initially, at the start of the semester, the following ER Diagram was made: -



But, as time progressed, and normalization techniques were learned and more sites were referenced, the following ER Diagram seemed a better approach



The above ER Diagram represents a system that is upto 3NF.

Amaan Aijaz (520)

FUNCTIONAL DEPENDENCIES

1) Employee:

EID → Ename
EID → DOB
EID → DOJ
EID → Salary
EID → Qualification

2) Contact:

EID → Contact

3) Doctor_Type:

Type_name → Fee

4) Stay_charges:

(PID, Ward_No) → Stay_charges

(PID , Ward_No) → Bill_No

5) Appointment_With:

Appointment_No → DID

6) Appointment:

Appointment_No → Appointment_Date

7) Doctor:

DID → EID
DID → Type
DID → Operation_AdvisoryID

8) Ward:

Ward_Number → Ward_Capacity
Ward_Number → Charges

9) Available_Medicine:

Medicine_ID → M_Rate

Medicine_ID → M_Name

10) Available_Tests:

TID → T_Rate

TID → T_Name

11) Available_Operations:

OP-ID → OP_Name
OP_ID → OP_Rate

12) Patient:

PID → Patient_Type
PID → P_Name
PID → Ward_No
PID → Gender
PID → Admit_Form
PID → Admit_To
PID → Age

13) Visitors:

Visitor-ID → Visitor_Name
Visitor-ID → Stay_To
Visitor-ID → Stay_From

14) Reports:

(Report_Date, PID, DID) →Remarks
(Report_Date, PID, DID)→ Operation_AdvisoryID

15) Test_Bill:

(Test_Date, PID) → Test_Amount
(Test_Date, PID) → Bill_no

16) Medicine_Bill:

(Prescription_Date, PID) → Medicine_Amount (Prescription_Date, PID) → Bill_No

17) Bill:

Bill_No → Bill_Date
Bill_No → Amount

18) Test_Advisory:

{Test_Date, TID, PID} -> DID
{Test_Date, TID, PID} -> Test_Report

19) Medicine_Advisory:

{Prescription_Date, MID, PID} -> DID

{Prescription_Date, MID, PID} ->
Med_Qty

20) Operations_Advisory:

{Operations_AdvisoryID} -> PID

{Operations_AdvisoryID} -> OID

{Operations_AdvisoryID} -> Ops_Date

21) Operation_Bill:

{Operations_AdvisoryID} -> PID

{Operations_AdvisoryID} -> Bill_No
{Operations_AdvisoryID} ->
Operations_Bill_Date

The above mentioned Functional Dependencies were formulated based on the Entity Relationship Diagram in the previous section.

Table Creation and Overview

1) Employee:

```
SQL> create table Employee(
  2  EID int primary key,
  3  EName varchar(50) NOT NULL,
  4  DOB Date NOT NULL,
  5  DOJ Date NOT NULL,
  6  Salary int NOT NULL,
  7  Qualification varchar(50) NOT NULL);

Table created.

SQL> INSERT INTO Employee Values (4401, 'Ramesh' , TO_DATE('04/16/1990','MM/DD/YYYY'),TO_DATE('04/16/2007','MM/DD/YYYY'),25000, 'MBBS');

1 row created.

SQL> INSERT INTO Employee Values (4402, 'Suresh' , TO_DATE('04/16/1980','MM/DD/YYYY'),TO_DATE('04/16/2002','MM/DD/YYYY'),
  2  26000, 'MBBS');

1 row created.

SQL> INSERT INTO Employee Values (4403, 'Kamlesh' , TO_DATE('04/16/1982','MM/DD/YYYY'),TO_DATE('04/16/2004','MM/DD/YYYY'),35000, 'MBBS');

1 row created.

SQL> INSERT INTO Employee Values (4404, 'Jayesh' , TO_DATE('04/16/1984','MM/DD/YYYY'),TO_DATE('04/16/2005','MM/DD/YYYY'),
  2  245000, 'MBBS');

1 row created.

SQL> INSERT INTO Employee Values (4405, 'Deepesh' , TO_DATE('04/16/1989','MM/DD/YYYY'),TO_DATE('04/16/2003','MM/DD/YYYY'),
  2  245000, 'MBBS');

1 row created.

SQL> INSERT INTO Employee Values (4406, 'Yogesh' , TO_DATE('04/16/1988','MM/DD/YYYY'),TO_DATE('04/16/2001','MM/DD/YYYY'),
  2  255000, 'MBBS');

1 row created.

SQL> INSERT INTO Employee Values (4407, 'Hardik' , TO_DATE('04/16/1981','MM/DD/YYYY'),TO_DATE('04/16/2005','MM/DD/YYYY'),
  2  256000, 'MBBS');
```

```
       EID ENAME                                              DOB
---------- -------------------------------------------------- ---------
DOJ           SALARY QUALIFICATION
--------- ---------- --------------------------------------------------
      4401 Ramesh                                             16-APR-90
16-APR-07      25000 MBBS

      4402 Suresh                                             16-APR-80
16-APR-02      26000 MBBS

      4403 Kamlesh                                            16-APR-82
16-APR-04      35000 MBBS


       EID ENAME                                              DOB
---------- -------------------------------------------------- ---------
DOJ           SALARY QUALIFICATION
--------- ---------- --------------------------------------------------
      4404 Jayesh                                             16-APR-84
16-APR-05     245000 MBBS

      4405 Deepesh                                            16-APR-89
16-APR-03     245000 MBBS

      4406 Yogesh                                             16-APR-88
16-APR-01     255000 MBBS


       EID ENAME                                              DOB
---------- -------------------------------------------------- ---------
DOJ           SALARY QUALIFICATION
--------- ---------- --------------------------------------------------
      4407 Hardik                                             16-APR-81
16-APR-05     256000 MBBS

      4408 Rameshwar                                          16-APR-84
16-APR-03      65000 MBBS

      4409 Mayank                                             16-APR-86
16-APR-05      15000 MBBS


       EID ENAME                                              DOB
---------- -------------------------------------------------- ---------
DOJ           SALARY QUALIFICATION
--------- ---------- --------------------------------------------------
      4410 Anil                                               16-APR-83
16-APR-05     215000 MBBS
```

2) Contact:

```
SQL> create table Contact(
  2  EID int primary key,
  3  Contact varchar(11),
  4  FOREIGN KEY(EID) references Employee(EID));

Table created.

SQL> INSERT INTO Contact Values (4401, '9936278346');

1 row created.

SQL> INSERT INTO Contact Values (4402, '7728278346');

1 row created.

SQL> INSERT INTO Contact Values (4403, '9936278346');

1 row created.

SQL> INSERT INTO Contact Values (4404, '9087264518');

1 row created.

SQL> INSERT INTO Contact Values (4405, '9947261831');

1 row created.

SQL> INSERT INTO Contact Values (4406, '9837183261');

1 row created.

SQL> INSERT INTO Contact Values (4407, '8037282327');

1 row created.

SQL> INSERT INTO Contact Values (4408, '8712930182');

1 row created.

SQL> INSERT INTO Contact Values (4409, '7618293627');

1 row created.

SQL> INSERT INTO Contact Values (4410, '9998373614');

1 row created.

SQL>
```

```
SQL> select * from Contact;

       EID CONTACT
---------- -----------
      4401 9936278346
      4402 7728278346
      4403 9936278346
      4404 9087264518
      4405 9947261831
      4406 9837183261
      4407 8037282327
      4408 8712930182
      4409 7618293627
      4410 9998373614

10 rows selected.

SQL>
```

3) Doctor:

```
SQL> create table Doctor(
  2  EID int NOT NULL,
  3  DID int primary key,
  4  D_type varchar(10),
  5  Operation_AdvisoryID int NOT NULL,
  6  FOREIGN KEY(EID) references Employee(EID),
  7  FOREIGN KEY(D_type) references Doctor_Type(D_type),
  8  FOREIGN KEY(Operation_AdvisoryID) references Operations_Advisory(Operations_AdvisoryID)
  9  );

Table created.

SQL> INSERT INTO Doctor Values (4401, 8001, 'DType01', 8901);

1 row created.

SQL> INSERT INTO Doctor Values (4402, 8002, 'DType02', 8902);

1 row created.

SQL> INSERT INTO Doctor Values (4403, 8003, 'DType03', 8903);

1 row created.
```

```
SQL> select * from Doctor;

       EID        DID D_TYPE     OPERATION_ADVISORYID
---------- ---------- ---------- --------------------
      4401       8001 DType01                    8901
      4402       8002 DType02                    8902
      4403       8003 DType03                    8903
      4404       8004 DType02                    8904
      4405       8005 DType05                    8905
      4406       8006 DType02                    8906
      4407       8007 DType07                    8907
      4408       8008 DType08                    8908
      4409       8009 DType09                    8909
      4410       8010 DType10                    8910

10 rows selected.
```

4) Doctor_Type:

```
SQL> create table Doctor_Type(
  2  D_type varchar(10) primary key,
  3  Fee int NOT NULL);

Table created.

SQL> INSERT INTO Doctor_type Values ('DType01', 200);

1 row created.

SQL> INSERT INTO Doctor_type Values ('DType02', 200);

1 row created.

SQL> INSERT INTO Doctor_type Values ('DType03', 300);

1 row created.

SQL> INSERT INTO Doctor_type Values ('DType04', 2000);

1 row created.

SQL> INSERT INTO Doctor_type Values ('DType05', 200);

1 row created.

SQL> INSERT INTO Doctor_type Values ('DType06', 255);

1 row created.
```

```
SQL> select * from Doctor_type;

D_TYPE            FEE
---------- ----------
DType01           200
DType02           200
DType03           300
DType04          2000
DType05           200
DType06           255
DType07           250
DType08           650
DType09           150
DType10           215

10 rows selected.
```

6) Appointment:

```
SQL> create table Appointment(
  2  Appointment_No int primary key,
  3  Appointment_Date Date NOT NULL
  4  );

Table created.

SQL> INSERT INTO Appointment Values (3301, TO_DATE('03/23/2014','MM/DD/YYYY'));

1 row created.

SQL> INSERT INTO Appointment Values (3302, TO_DATE('04/14/2014','MM/DD/YYYY'));

1 row created.

SQL> INSERT INTO Appointment Values (3303, TO_DATE('05/16/2014','MM/DD/YYYY'));

1 row created.
```

```
SQL> select * from Appointment;

APPOINTMENT_NO APPOINTME
-------------- ---------
          3301 23-MAR-14
          3302 14-APR-14
          3303 16-MAY-14
          3304 12-FEB-14
          3305 16-AUG-14
          3306 06-DEC-15
          3307 03-NOV-15
          3308 12-FEB-15
          3309 27-OCT-15
          3310 18-SEP-15

10 rows selected.
```

7) Appointment_With:

```
SQL> create table Appointment_with(
  2  Appointment_No int primary key,
  3  DID int NOT NULL,
  4  FOREIGN KEY(DID) references Doctor(DID),
  5  FOREIGN KEY(Appointment_No) references Appointment(Appointment_No)
  6  );

Table created.

SQL> INSERT INTO Appointment_with Values (3301, 8001);

1 row created.

SQL> INSERT INTO Appointment_with Values (3302, 8002);\
  2
SQL> INSERT INTO Appointment_with Values (3302, 8002);

1 row created.
```

```
SQL> select * from Appointment_with;

APPOINTMENT_NO        DID
-------------- ----------
          3301       8001
          3302       8002
          3303       8002
          3304       8001
          3305       8002
          3306       8003
          3307       8004
          3308       8005
          3309       8001
          3310       8005

10 rows selected.
```

8) Patient:

```
SQL> create table Patient(
  2  patient_Type varchar(5) NOT NULL,
  3  P_Name varchar(15) NOT NULL,
  4  Ward_No int NOT NULL,
  5  Gender char NOT NULL,
  6  Admit_From Date,
  7  Admit_To Date,
  8  PID int primary key,
  9  Age int NOT NULL,
 10  FOREIGN KEY(Ward_No) references Ward(Ward_Number));

Table created.

SQL> INSERT INTO patient Values ('In', 'Rahul', 1001,'M', TO_DATE('04/14/2015','MM/DD/YYYY') , TO_DATE('05/14/2015','MM/DD/YYYY') , 3001, 20 );

1 row created.

SQL> INSERT INTO patient Values ('In', 'Sankit', 1002,'M', TO_DATE('07/14/2016','MM/DD/YYYY') , TO_DATE('07/14/2016','MM/DD/YYYY') , 3002, 24 );

1 row created.

SQL> INSERT INTO patient Values ('In', 'Lokesh', 1003,'M', TO_DATE('04/14/2013','MM/DD/YYYY') , TO_DATE('05/14/2013','MM/DD/YYYY') , 3003, 14);

1 row created.

SQL> INSERT INTO patient Values ('In', 'Chirag', 1004,'M', TO_DATE('01/14/2017','MM/DD/YYYY') , TO_DATE('01/14/2017','MM/DD/YYYY') , 3004, 18 );
```

```
SQL> select * from patient;

PATIE P_NAME            WARD_NO G ADMIT_FRO ADMIT_TO         PID        AGE
----- --------------- ---------- - --------- --------- ---------- ----------
In    Rahul               1001 M 14-APR-15 14-MAY-15       3001         20
In    Sankit              1002 M 14-JUL-16 14-JUL-16       3002         24
In    Lokesh              1003 M 14-APR-13 14-MAY-13       3003         14
In    Chirag              1004 M 14-JAN-17 14-JAN-17       3004         18
In    Sreeraj             1005 M 11-DEC-05 11-DEC-05       3005         30
In    Ruzvelt             1006 M 10-APR-12 14-APR-12       3006         50
In    Shubham             1006 M 23-APR-95 24-MAY-95       3007          9
In    Srinivas            1005 M 14-JAN-15 14-JAN-15       3008         10
Out   Ramesh              1004 M 01-JAN-15 02-JAN-16       3009         24
Out   Udit                1003 M 14-JUL-16 14-AUG-16       3010         49
Out   Rita                1002 F 15-APR-13 20-APR-13       3011         48

PATIE P_NAME            WARD_NO G ADMIT_FRO ADMIT_TO         PID        AGE
----- --------------- ---------- - --------- --------- ---------- ----------
Out   Chauhan             1001 M 14-JAN-17 14-JAN-17       3012         15
Out   Bobby               1001 M 11-DEC-05 14-DEC-05       3013         53
In    Palak               1001 F 10-APR-12 14-MAY-12       3014         54
In    Namrata             1001 F 23-APR-95 14-MAY-95       3015         65
In    Debdutta            1001 M 22-APR-16 23-MAY-16       3016         24
In    Sapna               1002 F 14-APR-15 14-APR-15       3017         22
In    Achintya            1002 M 14-JUL-15 14-AUG-15       3018         67
In    Rahman              1001 M 14-APR-15 01-MAY-15       3019         69
In    Yesudas             1001 M 30-DEC-15 14-FEB-16       3020         59

20 rows selected.
```

Treated_By:

```
SQL> create table Treated_By(
  2  PID int,
  3  DID int,
  4  FOREIGN KEY(DID) references Doctor(DID),
  5  FOREIGN KEY(PID) references Patient(PID),
  6  PRIMARY KEY(PID, DID)
  7  );

Table created.

SQL> INSERT INTO Treated_by Values (3001, 8001);

1 row created.

SQL> INSERT INTO Treated_by Values (3002, 8002);

1 row created.
```

```
SQL> select * from Treated_by;

       PID        DID
---------- ----------
      3001       8001
      3002       8002
      3003       8003
      3004       8004
      3005       8005
      3006       8006
      3007       8007
      3008       8008
      3009       8009
      3010       8010
      3011       8009

       PID        DID
---------- ----------
      3012       8001
      3013       8004
      3014       8001
      3015       8005
      3016       8001
      3017       8001
      3018       8002
      3019       8007
      3020       8008

20 rows selected.
```

9) Visitors:

```
SQL> create table Visitor(
  2  Stay_From Date NOT NULL,
  3  Stay_To Date NOT NULL,
  4  Visitor_Name varchar(15) NOT NULL,
  5  VisitorID int primary key
  6  );

Table created.

SQL> INSERT INTO Visitor Values (TO_DATE('04/14/2015','MM/DD/YYYY') , TO_DATE('04/14/2015','MM/DD/YYYY') , 'Subhash', 2301 );

1 row created.

SQL> INSERT INTO Visitor Values (TO_DATE('07/14/2015','MM/DD/YYYY') , TO_DATE('07/14/2016','MM/DD/YYYY') , 'Prakash', 2302 );

1 row created.
```

```
SQL>
SQL> select * from Visitor;

STAY_FROM STAY_TO   VISITOR_NAME     VISITORID
--------- --------- --------------- ----------
14-APR-15 14-APR-15 Subhash               2301
14-JUL-15 14-JUL-16 Prakash               2302
14-APR-13 14-APR-13 Shayam                2303
14-JAN-17 14-JAN-17 Ram                   2304
11-DEC-05 11-DEC-05 Ganshyam              2305
10-APR-12 14-APR-12 Vidwan                2306
23-APR-95 23-APR-95 Palak                 2307
14-JAN-15 14-JAN-15 Sneha                 2308
14-JUL-16 14-JUL-16 Mayank                2309
15-APR-13 20-APR-13 Yogesh                2310

10 rows selected.
```

To_Meet:

```
SQL> create table to_meet(
  2  VisitorID int,
  3  PID int NOT NULL,
  4  FOREIGN KEY(PID) references Patient(PID),
  5  FOREIGN KEY(VisitorID) references Visitor(VisitorID),
  6  PRIMARY KEY(PID, VisitorID)
  7  );

Table created.

SQL> INSERT into to_meet Values (2301,3001);

1 row created.

SQL> INSERT into to_meet Values (2302,3002);

1 row created.
```

```
SQL> select * from to_meet;

 VISITORID        PID
---------- ----------
      2301       3001
      2302       3002
      2303       3003
      2301       3017
      2304       3004
      2305       3005
      2306       3006
      2307       3007
      2308       3008
      2309       3009
      2310       3010

11 rows selected.
```

10) Ward:

```
SQL> create table Ward(
  2  Ward_Capacity int NOT NULL,
  3  Ward_Number int primary key,
  4  Charges int NOT NULL
  5  );
create table Ward(
             *
ERROR at line 1:
ORA-00955: name is already used by an existing object


SQL> select * from ward;

WARD_CAPACITY WARD_NUMBER    CHARGES
------------- ----------- ----------
           30        1001        500
            9        1002        700
            8        1003        800
            7        1004        500
            6        1005        600
            5        1006        900

6 rows selected.
```

11) Stay_charges:

```
SQL> create table Stay_Charges(
  2  PID int NOT NULL,
  3  Stay_Charge int NOT NULL,
  4  Ward_No int NOT NULL,
  5  Bill_No int NOT NULL,
  6  FOREIGN KEY(Bill_No) references Bill(Bill_No)
  7  );

Table created.

SQL> INSERT into Stay_Charges Values (3001, 15000, 1001, 21001);

1 row created.

SQL> INSERT into Stay_Charges Values (3002, 500, 1001, 21002);

1 row created.
```

```
SQL> select * from Stay_Charges;

       PID STAY_CHARGE    WARD_NO    BILL_NO
---------- ----------- ---------- ----------
      3001       15000       1001      21001
      3002         500       1001      21002
      3004         700       1002      21003
      3006        2400       1003      21004
      3007       24800       1003      21005
      3009        1000       1004      21006
      3003       18000       1005      21007
      3005         900       1006      21008
      3019        2500       1001      21015
      3020         700       1002      21016

10 rows selected.
```

12) Operations_Advisory:

```
SQL> create table Operations_Advisory(
  2  Ops_Date Date,
  3  PID int NOT NULL,
  4  OID int NOT NULL,
  5  Operations_AdvisoryID int primary key,
  6  FOREIGN KEY(PID) references Patient(PID)
  7  );

Table created.

SQL>
SQL> INSERT INTO Operations_Advisory Values (TO_DATE('04/16/2015','MM/DD/YYYY'), 3001, 9901, 8901);

1 row created.

SQL> INSERT INTO Operations_Advisory Values (TO_DATE('07/14/2016','MM/DD/YYYY'), 3002, 9902, 8902);

1 row created.

SQL> INSERT INTO Operations_Advisory Values (TO_DATE('04/19/2013','MM/DD/YYYY'), 3003, 9903, 8903);

1 row created.
```

```
SQL> select * from Operations_Advisory;

OPS_DATE         PID        OID OPERATIONS_ADVISORYID
--------- ---------- ---------- --------------------
16-APR-15       3001       9901                 8901
14-JUL-16       3002       9902                 8902
19-APR-13       3003       9903                 8903
14-JAN-17       3004       9904                 8904
11-DEC-05       3005       9905                 8905
23-APR-95       3006       9906                 8906
14-JAN-15       3011       9907                 8907
14-DEC-15       3012       9908                 8908
14-JUL-15       3016       9909                 8909
14-JAN-15       3017       9910                 8910

10 rows selected.
```

13) Available_Operations:

```
SQL> create table Available_Operation(
  2  OP_ID int primary key,
  3  OP_Rate int NOT NULL,
  4  OP_Name varchar(10) NOT NULL
  5  );

Table created.

SQL> INSERT INTO Available_Operation Values (9901, 50, 'op1');

1 row created.

SQL> INSERT INTO Available_Operation Values (9902, 55, 'op2');

1 row created.

SQL> INSERT INTO Available_Operation Values (9903, 60, 'op3');

1 row created.

SQL> INSERT INTO Available_Operation Values (9904, 65, 'op4');

1 row created.
```

```
SQL> select * from Available_Operation;

     OP_ID    OP_RATE OP_NAME
---------- ---------- ----------
      9901         50 op1
      9902         55 op2
      9903         60 op3
      9904         65 op4
      9905         70 op5
      9906         75 op6
      9907         80 op7
      9908         85 op8
      9909         90 op9
      9910         95 op10

10 rows selected.
```

14) Operation_Bill:

```
SQL> create table Operation_Bill(
  2  Operation_Bill_Date Date NOT NULL,
  3  Operation_AdvisoryID int NOT NULL,
  4  PID int NOT NULL,
  5  Bill_No int NOT NULL,
  6  FOREIGN KEY(Operation_AdvisoryID) references Operations_Advisory(Operations_AdvisoryID),
  7  FOREIGN KEY(Bill_No) references Bill(Bill_No),
  8  PRIMARY KEY(Operation_AdvisoryID)
  9  );

Table created.

SQL> INSERT into Operation_Bill Values (TO_DATE('04/16/2015','MM/DD/YYYY'), 8901, 3001, 21001);

1 row created.

SQL> INSERT into Operation_Bill Values (TO_DATE('07/14/2016','MM/DD/YYYY'), 8902, 3002, 21002);

1 row created.
```

```
SQL> select * from Operation_Bill;

OPERATION OPERATION_ADVISORYID        PID    BILL_NO
--------- ------------------- ---------- ----------
16-APR-15                8901       3001      21001
14-JUL-16                8902       3002      21002
19-APR-13                8903       3003      21007
14-JAN-17                8904       3004      21003
11-DEC-05                8905       3005      21008
23-APR-95                8906       3006      21004
14-JAN-15                8907       3011      21009
14-DEC-15                8908       3012      21010
14-JUL-15                8909       3016      21013
14-JAN-15                8910       3017      21014

10 rows selected.
```

15) Medicines_Advisory:

```
SQL> create table Medicine_Advisory(
  2  Med_Qty int,
  3  PID int NOT NULL,
  4  DID int NOT NULL,
  5  Med_ID int NOT NULL,
  6  Prescription_Date DATE NOT NULL unique,
  7  FOREIGN KEY(PID) references Patient(PID),
  8  FOREIGN KEY(DID) references Doctor(DID),
  9  FOREIGN KEY(Med_ID) references Available_Medicine(Medicine_ID),
 10  PRIMARY KEY(PID, Med_ID, Prescription_Date)
 11  );

Table created.

SQL> INSERT INTO Medicine_Advisory Values (1, 3001, 8001, 6601, TO_DATE('04/16/2015','MM/DD/YYYY'));

1 row created.

SQL> INSERT INTO Medicine_Advisory Values (2, 3002, 8002, 6602, TO_DATE('07/14/2016','MM/DD/YYYY'));

1 row created.
```

```
SQL> select * from Medicine_Advisory;

   MED_QTY        PID        DID     MED_ID PRESCRIPT
---------- ---------- ---------- ---------- ---------
         1       3001       8001       6601 16-APR-15
         2       3002       8002       6602 14-JUL-16
         2       3003       8003       6603 14-APR-13
         3       3004       8004       6604 14-JAN-17
         5       3005       8005       6605 16-FEB-17
         2       3006       8006       6606 23-APR-16
         4       3008       8007       6607 12-JUL-15
         3       3010       8008       6608 02-JAN-95
         3       3011       8008       6602 12-JAN-17
         3       3012       8006       6602 19-FEB-16
         3       3013       8006       6601 08-AUG-17

   MED_QTY        PID        DID     MED_ID PRESCRIPT
---------- ---------- ---------- ---------- ---------
         3       3014       8006       6601 12-JUN-17

12 rows selected.
```

16) Available_Medicines:

```
SQL> create table Available_Medicine(
  2  Medicine_ID int primary key,
  3  M_Rate int NOT NULL,
  4  M_Name varchar(10) NOT NULL
  5  );

Table created.

SQL> INSERT INTO Available_Medicine Values (6601, 50, 'med1');

1 row created.

SQL> INSERT INTO Available_Medicine Values (6602, 45, 'med2');

1 row created.

SQL> INSERT INTO Available_Medicine Values (6603, 44, 'med3');

1 row created.

SQL> INSERT INTO Available_Medicine Values (6604, 34, 'med4');

1 row created.
```

```
SQL> select * from Available_Medicine;

MEDICINE_ID     M_RATE M_NAME
----------- ---------- ----------
       6601         50 med1
       6602         45 med2
       6603         44 med3
       6604         34 med4
       6605         23 med5
       6606         56 med6
       6607         52 med7
       6608         12 med8
       6609          4 med9
       6610          6 med10

10 rows selected.
```

17) Medicines_Bill:

```
SQL> create table Medicine_Bill(
  2  Prescription_Date Date NOT NULL,
  3  PID int NOT NULL,
  4  Medicine_Amount int NOT NULL,
  5  Bill_No int NOT NULL,
  6  FOREIGN KEY(Bill_No) references Bill(Bill_No),
  7  FOREIGN KEY(Prescription_Date) references Medicine_Advisory(Prescription_Date),
  8  PRIMARY KEY(Prescription_Date, PID)
  9  );

Table created.

SQL> INSERT into Medicine_Bill Values (TO_DATE('04/16/2015','MM/DD/YYYY'), 3001, 50, 21001);

1 row created.

SQL> INSERT into Medicine_Bill Values (TO_DATE('07/14/2016','MM/DD/YYYY'), 3002, 90, 21002);

1 row created.
```

```
SQL> select * from Medicine_Bill;

PRESCRIPT        PID MEDICINE_AMOUNT    BILL_NO
--------- ---------- --------------- ----------
16-APR-15       3001              50      21001
14-JUL-16       3002              90      21002
14-APR-13       3003              88      21007
14-JAN-17       3004             102      21003
16-FEB-17       3005             115      21008
12-JAN-17       3011             135      21009
19-FEB-16       3012             135      21010
08-AUG-17       3013             150      21011
12-JUN-17       3014             150      21012

9 rows selected.
```

18) Test_Advisory:

```
SQL> create table Test_Advisory(
  2  Test_Date Date NOT NULL unique,
  3  PID int NOT NULL,
  4  DID int NOT NULL,
  5  TID int NOT NULL,
  6  Test_Report varchar(10) NOT NULL,
  7  FOREIGN KEY(DID) references Doctor(DID),
  8  FOREIGN KEY(PID) references Patient(PID),
  9  FOREIGN KEY(TID) references Available_Test(T_ID),
 10  PRIMARY KEY(Test_Date, PID, TID)
 11  );

Table created.

SQL> INSERT INTO Test_Advisory Values (TO_DATE('04/16/2015','MM/DD/YYYY'), 3001, 8001, 5601, 'Report1');

1 row created.

SQL> INSERT INTO Test_Advisory Values (TO_DATE('07/14/2016','MM/DD/YYYY'), 3002, 8002, 5601, 'Report2');

1 row created.

SQL> INSERT INTO Test_Advisory Values (TO_DATE('04/14/2013','MM/DD/YYYY'), 3001, 8003, 5603, 'Report3');

1 row created.
```

```
SQL> select * from Test_Advisory;

TEST_DATE        PID        DID        TID TEST_REPOR
--------- ---------- ---------- ---------- ----------
16-APR-15       3001       8001       5601 Report1
14-JUL-16       3002       8002       5601 Report2
14-APR-13       3001       8003       5603 Report3
14-JAN-17       3004       8004       5604 Report4
11-DEC-05       3002       8005       5605 Report5
23-APR-95       3006       8006       5603 Report6
14-JAN-15       3007       8007       5607 Report7
14-DEC-15       3004       8008       5608 Report8
14-JUL-15       3009       8009       5609 Report9
14-FEB-15       3009       8010       5610 Report10

10 rows selected.
```

19) Available_Tests:

```
SQL> create table Available_Test(
  2  T_ID int primary key,
  3  T_Rate int NOT NULL,
  4  T_Name varchar(10) NOT NULL
  5  );

Table created.

SQL> INSERT INTO Available_Test Values (5601, 50, 'test1');

1 row created.

SQL> INSERT INTO Available_Test Values (5602, 55, 'test2');

1 row created.

SQL> INSERT INTO Available_Test Values (5603, 60, 'test3');

1 row created.
```

```
SQL> select * from Available_Test;

      T_ID     T_RATE T_NAME
---------- ---------- ----------
      5601         50 test1
      5602         55 test2
      5603         60 test3
      5604         65 test4
      5605         70 test5
      5606         75 test6
      5607         80 test7
      5608         85 test8
      5609         90 test9
      5610         95 test10

10 rows selected.
```

20) Tests_Bill:

```
SQL> create table Test_Bill(
  2  Test_Date Date NOT NULL,
  3  PID int NOT NULL,
  4  Test_Amount int NOT NULL,
  5  Bill_No int NOT NULL,
  6  FOREIGN KEY(Test_Date) references Test_Advisory(Test_Date),
  7  FOREIGN KEY(Bill_No) references Bill(Bill_No)
  8  );

Table created.

SQL> INSERT into Test_Bill Values (TO_DATE('04/16/2015','MM/DD/YYYY'), 3001, 110, 21001);

1 row created.

SQL> INSERT into Test_Bill Values (TO_DATE('07/14/2016','MM/DD/YYYY'), 3002, 120, 21002);

1 row created.
```

```
SQL> select * from Test_Bill;

TEST_DATE         PID TEST_AMOUNT    BILL_NO
--------- ---------- ----------- ----------
16-APR-15       3001         110      21001
14-JUL-16       3002         120      21002
14-JAN-17       3004         150      21003
23-APR-95       3006          60      21004
14-JAN-15       3007          80      21005
14-JUL-15       3009         185      21006

6 rows selected.
```

21) Reports:

```
SQL> create table Reports(
  2  Remarks varchar(20),
  3  Report_date Date,
  4  DID int NOT NULL,
  5  PID int NOT NULL,
  6  Operation_AdvisoryID int,
  7  FOREIGN KEY(PID) references Patient(PID),
  8  FOREIGN KEY(DID) references Doctor(DID),
  9  FOREIGN KEY(Operation_AdvisoryID) references Operations_Advisory(Operations_AdvisoryID),
 10  PRIMARY KEY(Report_date, DID, PID)
 11  );

Table created.

SQL> INSERT into Reports Values ('Regular check',TO_DATE('04/18/2015','MM/DD/YYYY'), 8001, 3001, 8901);

1 row created.
```

```
SQL>
SQL> select * from Reports;

REMARKS              REPORT_DA        DID        PID OPERATION_ADVISORYID
-------------------- --------- ---------- ---------- --------------------
Regular check        18-APR-15       8001       3001                 8901
Low Diet             16-JUL-16       8002       3002                 8902
Regular check        16-APR-13       8003       3003                 8902
Routine visit        16-JAN-17       8004       3004                 8903
Routine visit        12-DEC-05       8005       3005                 8904
Regular check        25-APR-95       8006       3006                 8905
Low Diet             16-JAN-15       8007       3007                 8906
Low Diet             16-DEC-15       8008       3008                 8907
Regular Test         02-AUG-15       8009       3009                 8908
Regular Test         01-FEB-15       8010       3010                 8909

10 rows selected.
```

21) Bills:

```
SQL> create table Bill(
  2  Bill_No int primary key,
  3  Bill_Date Date NOT NULL,
  4  Amount int NOT NULL
  5  );

Table created.

SQL> INSERT into Bill Values (21001, TO_DATE('05/14/2015','MM/DD/YYYY'), 15210);

1 row created.

SQL> INSERT into Bill Values (21002, TO_DATE('07/14/2016','MM/DD/YYYY'), 765);

1 row created.
```

```
SQL> select * from Bill;

   BILL_NO BILL_DATE     AMOUNT
---------- --------- ----------
     21001 14-MAY-15      15210
     21002 14-JUL-16        765
     21003 14-JAN-17       1017
     21004 14-APR-12       2475
     21005 24-MAY-95      24880
     21006 02-JAN-16       1185
     21007 14-MAY-13      18148
     21008 11-DEC-05       1085
     21009 20-APR-13        215
     21010 14-JAN-17        220
     21011 14-DEC-05        150

   BILL_NO BILL_DATE     AMOUNT
---------- --------- ----------
     21012 14-MAY-12        150
     21013 23-MAY-15         90
     21014 14-APR-15         95
     21015 01-MAY-15       2500
     21016 14-FEB-16        700

16 rows selected.
```

Queries performed on DataBase

Q1)Find list of all patient who is treated by doctor whose did is 8001 in year 2015

Query:

Select * from Patient join treated_by on (Patient.pid=treated_by.pid) where treated_by.did=8001 and patient.admit_from>=Date '2015-01-01' and patient.admit_to<= Date '2015-12-31';

```
SQL> Select * from Patient join treated_by on (Patient.pid=treated_by.pid) where treated_by.did=8001
  2  and patient.admit_from>=Date '2015-01-01' and patient.admit_to<= Date '2015-12-31';

PATIE P_NAME            WARD_NO G ADMIT_FRO ADMIT_TO         PID        AGE
----- --------------- ---------- - --------- --------- ---------- ----------
       PID        DID
---------- ----------
In    Rahul               1001 M 14-APR-15 14-MAY-15       3001         20
      3001       8001

In    Sapna               1002 F 14-APR-15 14-APR-15       3017         22
      3017       8001
```

Q2)Find name of patient who is treated by doctor whose employee id is 4401;

Query:

Select patient_name from patient join treated_by on (Patient.pid=treated_by.pid) where treated_by.did=(select did from doctor join employee on (doctor.eid=employee.eid) where doctor.eid=4401);

```
SQL> Select p_name from patient join treated_by on (Patient.pid=treated_by.pid) where
  2      treated_by.did=(select did from doctor join employee on (doctor.eid=employee.eid) where
  3      doctor.eid=4401 );

P_NAME
---------------
Rahul
Chauhan
Palak
Debdutta
Sapna
```

Q3) Find name of the visitor coming for meeting patient 3001 or 3002

Query:

Select Visitor_name from visitor natural join to_meet natural join patient where pid=3001 or pid=3002;

```
SQL> Select Visitor_name from visitor natural join to_meet natural join patient where pid=3001 or pid=3002;

VISITOR_NAME
---------------
Subhash
Prakash
```

Q4)Find the appointment date, contact and eid of the doctor who is appointed to meet with appointment_no 3301?

Query:

Select c1.eid, c4.appointment_date, c1.contact From contact c1 inner join doctor c2 on (c1.eid=c2.eid) inner join appointment_with c3 on (c2.did=c3.did) inner join appointment c4 on (c3.appointment_no=c4.appointment_no) where c4.appointment_no=3301;

```
SQL> Select c1.eid, c4.appointment_date, c1.contact
  2  From contact c1 inner join doctor c2 on (c1.eid=c2.eid)
  3  inner join appointment_with c3 on (c2.did=c3.did)
  4  inner join appointment c4 on (c3.appointment_no=c4.appointment_no)
  5  where c4.appointment_no=3301;

       EID APPOINTME CONTACT
---------- --------- -----------
      4401 23-MAR-14 9936278346
```

Q5) list the name, id of out patient and details of medicine with bill_no and total amount to be paid?

Query:

Select p1.p_name,p2.med_qty ,p1.pid , p2.med_id , p3.bill_no , p4.amount From patient p1 inner join medicine_advisory p2 on (p1.pid=p2.pid) inner join medicine_bill p3 on (p2.pid=p3.pid) inner join bill p4 on(p3.bill_no=p4.bill_no) where p1.patient_type='Out';

```
SQL> Select p1.p_name,p2.med_qty ,p1.pid , p2.med_id , p3.bill_no , p4.amount From patient p1
  2  inner join medicine_advisory p2 on (p1.pid=p2.pid)
  3  inner join medicine_bill p3 on (p2.pid=p3.pid)
  4  inner join bill p4 on(p3.bill_no=p4.bill_no)
  5  where p1.patient_type='Out';

P_NAME            MED_QTY        PID     MED_ID    BILL_NO     AMOUNT
--------------- ---------- ---------- ---------- ---------- ----------
Rita                     3       3011       6602      21009        215
Chauhan                  3       3012       6602      21010        220
Bobby                    3       3013       6601      21011        150
```

Q6)List all the details of employee doctors with salary above 25,00,000

Query:

SELECT * FROM (Employee e JOIN Doctor d ON e.EID=d.eid) WHERE e.Salary > 2500000;

```
SQL> SELECT * FROM (Employee e JOIN Doctor d ON e.EID=d.eid) WHERE e.Salary > 250000;

       EID ENAME                                              DOB
---------- -------------------------------------------------- ---------
DOJ           SALARY QUALIFICATION
--------- ---------- --------------------------------------------------
       EID        DID D_TYPE     OPERATION_ADVISORYID
---------- ---------- ---------- --------------------
      4406 Yogesh                                            16-APR-88
16-APR-01     255000 MBBS
      4406       8006 DType02                    8906

      4407 Hardik                                            16-APR-81
16-APR-05     256000 MBBS
      4407       8007 DType07                    8907
```

Q7)List all patients in ward number 1002 sorted by increasing age

Query:

SELECT * FROM Patient WHERE Ward_Number=1002 ORDER BY age;

```
SQL> SELECT * FROM Patient WHERE Ward_No=1002 ORDER BY age ;

PATIE P_NAME             WARD_NO G ADMIT_FRO ADMIT_TO         PID        AGE
----- --------------- ---------- - --------- --------- ---------- ----------
In    Sapna                1002 F 14-APR-15 14-APR-15       3017         22
In    Sankit               1002 M 14-JUL-16 14-JUL-16       3002         24
Out   Rita                 1002 F 15-APR-13 20-APR-13       3011         48
In    Achintya             1002 M 14-JUL-15 14-AUG-15       3018         67
```

Q8)List all the patients being treated by doctor with ID 8001

Query:

SELECT * FROM (Patient p JOIN Treated_By t on p.PID=t.PID) WHERE t.DID=8001;

```
SQL> SELECT * FROM (Patient p JOIN Treated_By t on p.PID=t.PID) WHERE t.DID=8001;

PATIE P_NAME             WARD_NO G ADMIT_FRO ADMIT_TO         PID        AGE
----- --------------- ---------- - --------- --------- ---------- ----------
       PID        DID
---------- ----------
In    Rahul                1001 M 14-APR-15 14-MAY-15       3001         20
      3001       8001

Out   Chauhan              1001 M 14-JAN-17 14-JAN-17       3012         15
      3012       8001

In    Palak                1001 F 10-APR-12 14-MAY-12       3014         54
      3014       8001


PATIE P_NAME             WARD_NO G ADMIT_FRO ADMIT_TO         PID        AGE
----- --------------- ---------- - --------- --------- ---------- ----------
       PID        DID
---------- ----------
In    Debdutta             1001 M 22-APR-16 23-MAY-16       3016         24
      3016       8001

In    Sapna                1002 F 14-APR-15 14-APR-15       3017         22
      3017       8001
```

Q9)Give the count of number of Operations performed by Doctor 3001 on Patient 9901.

Query:

SELECT COUNT(*) FROM Operations_Advisory where PID=3001 AND OID=9901;

```
SQL> SELECT COUNT(*) FROM Operations_Advisory where PID=3001 AND OID=9901;

  COUNT(*)
----------
         1
```

Q10)Give reports of patients treated by doctor - DID(8001)

Query:

Select * from Reports where DID = 8001;

```
SQL> Select * from Reports
  2  where DID = 8001;

REMARKS              REPORT_DA        DID        PID OPERATION_ADVISORYID
-------------------- --------- ---------- ---------- --------------------
Regular check        18-APR-15       8001       3001                 8901
```

Q11)Give the details of the Visitor-"Subhash" and PaitentID assigned to him

Query:

select * from Visitor natural join (select * from to_meet where PID = 3001)

where visitor_name = 'Subhash';

```
SQL> select * from Visitor natural join ( select * from to_meet where PID = 3001 )
  2  where visitor_name = 'Subhash';

 VISITORID STAY_FROM STAY_TO   VISITOR_NAME           PID
---------- --------- --------- --------------- ----------
      2301 14-APR-15 14-APR-15 Subhash               3001
```

Q12)List all the types of doctors and the count of each type.

SELECT Doctor.D_Type, count(*) FROM (Doctor_Type JOIN Doctor on Doctor_Type.D_Type = Doctor.D_Type) GROUP BY Doctor.D_Type;

```
SQL> SELECT Doctor.D_Type, count(*) FROM (Doctor_Type JOIN Doctor on Doctor_Type.D_Type =
  2  Doctor.D_Type) GROUP BY Doctor.D_Type;

D_TYPE       COUNT(*)
---------- ----------
DType05             1
DType07             1
DType01             1
DType09             1
DType03             1
DType08             1
DType10             1
DType02             3
```