



**University of Bahrain**  
**College of Information Technology**  
**Department of Computer Science**  
**ITCS285 Project**  
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## **Hospital Data Management System**

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### **SEC 03**

### **GROUP 03**

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## Problem Description/Scenario:

We have been tasked to design a database for a hospital. Each doctor is identified by an ID number. The name, gender, number, and salary of each doctor will be stored. The date of the treatment of each patient will be stored. Doctors can treat many patients.

Each patient has a unique ID. The name, age, and gender of the patient will be stored in the database. The patients may have guardians, for each guardian the name and number will be recorded. Each patient will have a record, this record is identified by a unique ID. For each patient, the number, address, discharge date, and admitted date will be recorded. Each nurse is identified by an ID and the name, number, and salary will be recorded. The nurses will work in the hospital rooms, and each room has a unique ID number, and type.

A room will be assigned to each patient, and the date assigned will record. The patients have to pay for the treatment. The patient can choose the method of paying, and for each payment operation there will be an identifier, and the date of payment will be recorded.

## ER Diagram for Hospital Data Management System

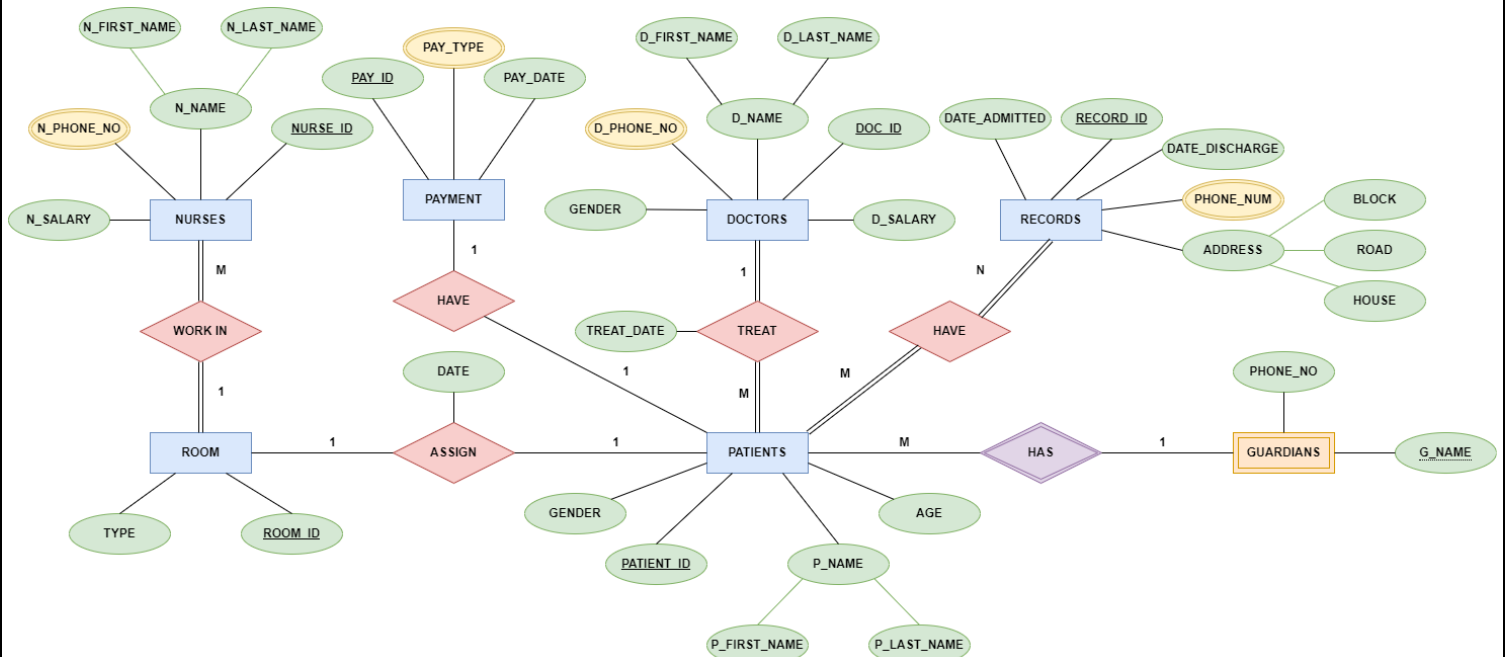


Figure (1) ER diagram

## **Relational Schema:**

- NURSES ( NURSER\_ID, N\_FIRST\_NAME, N\_LAST\_NAME, ROOM\_ID ,SALARY)
- PAYMENT ( PAY\_ID, PAY\_DATE)
- DOCTORS ( DOC\_ID, D\_FIRST\_NAME, D\_LAST\_NAME, GENDER , SALARY)
- ROOM ( ROOM\_ID, TYPE, PATI\_ID, ASSIGN\_DATE )
- PATIENTS ( PATIENT\_ID, GENDER, P\_FIRST\_NAME, P\_LAST\_NAME, AGE, PAY\_ID, DOC\_ID, G\_NAME, TREAT\_DATE )
- RECORDS ( RECORD\_ID, DATE\_ADMITTED, DATE\_DISCHARGE, BLOCK, ROAD, HOUSE)
- GUARDIANS ( PID, G\_NAME, PHONE\_NO)
- HAVE ( RECORD\_ID, PATIENT\_ID)
- NPHONE ( NURSER\_ID, N\_PHONE\_NO )
- PTYPE ( PAY\_ID, PAY\_TYPE)
- DPHONE ( DOC\_ID, D\_PHONE\_NO )
- RPHONE ( RECORD\_ID, PHONE\_NUM)

## **Database creation:**

```
CREATE TABLE NURSES (  
  NURSE_ID INTEGER PRIMARY KEY,  
  N_FIRST_NAME VARCHAR2(30) ,  
  N_LAST_NAME VARCHAR2(30) ,  
  ROOM_ID INTEGER ,  
  SALARY INTEGER ,  
  CONSTRAINT FK_ROOM FOREIGN KEY (ROOM_ID) references ROOM (ROOM_ID) );
```

```
CREATE TABLE NURSES (  
  NURSE_ID INTEGER PRIMARY KEY,  
  N_FIRST_NAME VARCHAR2(30) ,  
  N_LAST_NAME VARCHAR2(30) ,  
  ROOM_ID INTEGER ,  
  SALARY INTEGER ,  
  CONSTRAINT FK_ROOM FOREIGN KEY (ROOM_ID) REFERENCES ROOM (ROOM_ID)  
);
```

Figure (2) Nurse table creation

```
CREATE TABLE PAYMENT(  
  PAY_ID INTEGER PRIMARY KEY ,  
  PAY_DATE VARCHAR2(20) );
```

```
CREATE TABLE PAYMENT(  
  PAY_ID INTEGER PRIMARY KEY ,  
  PAY_DATE VARCHAR2(20)  
);
```

Figure (3) payment table creation

```
CREATE TABLE DOCTORS (  
  DOC_ID INTEGER PRIMARY KEY,  
  D_FIRST_NAME VARCHAR2(30) ,  
  D_LAST_NAME VARCHAR2(30),  
  GENDER char(1) ,  
  SALARY INTEGER );
```

```
CREATE TABLE DOCTORS (  
  DOC_ID INTEGER PRIMARY KEY,  
  D_FIRST_NAME VARCHAR2(30) ,  
  D_LAST_NAME VARCHAR2(30),  
  GENDER CHAR(1) ,  
  SALARY INTEGER  
);
```

Figure (4) Doctors table creation

```
CREATE TABLE ROOM (  
  ROOM_ID INTEGER PRIMARY KEY ,  
  TYPE VARCHAR2(30) ,  
  PATI_ID INTEGER,  
  ASSIGN_DATE VARCHAR2(20),  
  CONSTRAINT FK_PATIENTS FOREIGN KEY (PATI_ID) references PATIENTS (PATIENT_ID) );
```

```

CREATE TABLE ROOM (
  ROOM_ID INTEGER PRIMARY KEY ,
  TYPE VARCHAR2(30) ,
  PATI_ID INTEGER,
  ASSIGN_DATE VARCHAR2(20),
  CONSTRAINT FK_PATIENTS FOREIGN KEY (PATI_ID) REFERENCES PATIENTS (PATIENT_ID)
);

```

Figure (5) Room table creation

```

CREATE TABLE PATIENTS(
  PATIENT_ID INTEGER PRIMARY KEY ,
  GENDER char(1) ,
  P_FIRST_NAME VARCHAR2(30) ,
  P_LAST_NAME VARCHAR2(30) ,
  AGE INTEGER ,
  PAY_ID INTEGER,
  DOC_ID INTEGER ,
  G_NAME VARCHAR2(30) ,
  TREAT_DATE VARCHAR2(5) ,
  CONSTRAINT FK_PAYMENT FOREIGN KEY (PAY_ID) references PAYMENT (PAY_ID),
  CONSTRAINT FK_DOCTORS FOREIGN KEY (DOC_ID) references DOCTORS (DOC_ID),
  CONSTRAINT FK_GURDIANS FOREIGN KEY(G_NAME) references GURDIANS (G_NAME) );

```

```

CREATE TABLE PATIENTS(
  PATIENT_ID INTEGER PRIMARY KEY ,
  GENDER CHAR(1) ,
  P_FIRST_NAME VARCHAR2(30) ,
  P_LAST_NAME VARCHAR2(30) ,
  AGE INTEGER ,
  PAY_ID INTEGER,
  DOC_ID INTEGER ,
  G_NAME VARCHAR2(30) ,
  TREAT_DATE VARCHAR2(5) ,
  CONSTRAINT FK_PAYMENT FOREIGN KEY (PAY_ID) REFERENCES PAYMENT (PAY_ID),
  CONSTRAINT FK_DOCTORS FOREIGN KEY (DOC_ID) REFERENCES DOCTORS (DOC_ID),
  CONSTRAINT FK_GURDIANS FOREIGN KEY(G_NAME) REFERENCES GURDIANS (G_NAME)
);

```

Figure (6) patients table creation

```
CREATE TABLE RECORDS (  
    RECORD_ID INTEGER PRIMARY KEY,  
    DATE_ADMITTED VARCHAR2(20) ,  
    DATE_DISCHARGE VARCHAR2(20) ,  
    HOUSE INTEGER,  
    ROAD INTEGER ,  
    BLOCK INTEGER );
```

```
CREATE TABLE RECORDS (  
    RECORD_ID INTEGER PRIMARY KEY,  
    DATE_ADMITTED VARCHAR2(20) ,  
    DATE_DISCHARGE VARCHAR2(20) ,  
    HOUSE INTEGER,  
    ROAD INTEGER ,  
    BLOCK INTEGER  
);
```

Figure (7) Records table creation

```
CREATE TABLE GURDIANS (  
    G_NAME VARCHAR2(50) ,  
    PID INTEGER,  
    PHONE_NO VARCHAR2(8) ,  
    CONSTRAINT FK_PATIENT FOREIGN KEY (PID) REFERENCES PATIENTS (PATIENT_ID) ,  
    CONSTRAINT PK_GUARDIAN PRIMARY KEY (PID , G_NAME) );
```

```
CREATE TABLE GURDIANS (  
    G_NAME VARCHAR2(50) ,  
    PID INTEGER,  
    PHONE_NO VARCHAR2(8) ,  
    CONSTRAINT FK_PATIENT FOREIGN KEY (PID) REFERENCES PATIENTS (PATIENT_ID) ,  
    CONSTRAINT PK_GUARDIAN PRIMARY KEY (PID , G_NAME)  
);
```

Figure (8) Guardians table creation

```

CREATE TABLE HAVE (
  PATIENT_ID INTEGER ,
  RECORD_ID INTEGER ,
  CONSTRAINT FK_RECORDS FOREIGN KEY (RECORD_ID) references RECORDS (RECORD_ID),
  CONSTRAINT FK_PATI FOREIGN KEY (PATIENT_ID) references PATIENTS (PATIENT_ID) ,
  CONSTRAINT PK_HAVE PRIMARY KEY (PATIENT_ID , RECORD_ID) );

```

```

CREATE TABLE HAVE (
  PATIENT_ID INTEGER ,
  RECORD_ID INTEGER ,
  CONSTRAINT FK_RECORDS FOREIGN KEY (RECORD_ID) REFERENCES RECORDS (RECORD_ID),
  CONSTRAINT FK_PATI FOREIGN KEY (PATIENT_ID) REFERENCES PATIENTS (PATIENT_ID) ,
  CONSTRAINT PK_HAVE PRIMARY KEY (PATIENT_ID , RECORD_ID)
);

```

Figure (9) Have table creation

```

CREATE TABLE NPHONE (
  N_PHONE_NO VARCHAR2(8) ,
  NURSE_ID INTEGER ,
  CONSTRAINT FK_NURSES FOREIGN KEY (NURSE_ID) references NURSES (NURSE_ID),
  CONSTRAINT PK_NURSES PRIMARY KEY (N_PHONE_NO , NURSE_ID) );

```

```

CREATE TABLE NPHONE (
  N_PHONE_NO VARCHAR2(8) ,
  NURSE_ID INTEGER ,
  CONSTRAINT FK_NURSES FOREIGN KEY (NURSE_ID) REFERENCES NURSES (NURSE_ID),
  CONSTRAINT PK_NURSES PRIMARY KEY (N_PHONE_NO , NURSE_ID)
);

```

Figure (10) Nphone table creation

```

CREATE TABLE PTYPE(
  PAY_ID INTEGER ,
  PAY_TYPE VARCHAR2(20) ,
  CONSTRAINT FK_PAY FOREIGN KEY (PAY_ID) references PAYMENT (PAY_ID) ,
  CONSTRAINT PK_TYPE PRIMARY KEY (PAY_ID , PAY_TYPE) );

```

```

CREATE TABLE PTYPE(
  PAY_ID INTEGER ,
  PAY_TYPE VARCHAR2(20) ,
  CONSTRAINT FK_PAY FOREIGN KEY (PAY_ID) REFERENCES PAYMENT (PAY_ID) ,
  CONSTRAINT PK_TYPE PRIMARY KEY (PAY_ID , PAY_TYPE)
);

```

Figure (11) Ptype table creation

```

CREATE TABLE DPHONE (
  DOC_ID INTEGER ,
  PHONE_NO VARCHAR2(8) ,
  CONSTRAINT FK_DOC_NUM FOREIGN KEY (DOC_ID) references DOCTORS (DOC_ID),
  CONSTRAINT PK_DPHONE PRIMARY KEY (DOC_ID , PHONE_NO) );

```

```

CREATE TABLE DPHONE (
  DOC_ID INTEGER ,
  PHONE_NO VARCHAR2(8) ,
  CONSTRAINT FK_DOC_NUM FOREIGN KEY (DOC_ID) REFERENCES DOCTORS (DOC_ID),
  CONSTRAINT PK_DPHONE PRIMARY KEY (DOC_ID , PHONE_NO)
);

```

Figure (12) Dphone table creation

```

CREATE TABLE RPHONE (
  RECORD_ID INTEGER ,
  PHONE_NUM VARCHAR2(8) ,
  CONSTRAINT FK_REC_NUM FOREIGN KEY (RECORD_ID) references RECORDS (RECORD_ID) ,
  CONSTRAINT PK_RPHONE PRIMARY KEY (RECORD_ID , PHONE_NUM) );

```

```

CREATE TABLE RPHONE (
  RECORD_ID INTEGER ,
  PHONE_NUM VARCHAR2(8) ,
  CONSTRAINT FK_REC_NUM FOREIGN KEY (RECORD_ID) REFERENCES RECORDS (RECORD_ID) ,
  CONSTRAINT PK_RPHONE PRIMARY KEY (RECORD_ID , PHONE_NUM)
);

```

Figure (13) Rphone table creation



```

INSERT INTO NURSES VALUES (11232 , 'FATEMA' , 'MOHAMED' , 5 , 780);
INSERT INTO NURSES VALUES (21334 , 'MONA' , 'ALI' , 3 , 780);
INSERT INTO NURSES VALUES (33442 , 'MARIAM' , 'MOSA' , 4 , 780);
INSERT INTO NURSES VALUES (11223 , 'FATEMA' , 'JASSIM' , 8 , 800);
INSERT INTO NURSES VALUES (66546 , 'NOOR' , 'SALMAN' , 3 , 650);
INSERT INTO NURSES VALUES (44563 , 'FATEMA' , 'ALI' , 5 , 900);
INSERT INTO NURSES VALUES (77860 , 'LAILA' , 'HASAN' , 10 , 820);
INSERT INTO NURSES VALUES (44564 , 'JAMELA' , 'ALI' , 3 , 830);
INSERT INTO NURSES VALUES (78006 , 'MARAM' , 'JAMEEL' , 5 , 950);
INSERT INTO NURSES VALUES (55665 , 'ALI' , 'MOHAMED' , 3 , 800);
INSERT INTO NURSES VALUES (11993 , 'JAWAD' , 'SALMAN' , 8 , 800);
INSERT INTO NURSES VALUES (44573 , 'AHMED' , 'MOSA' , 1 , 800);

```

```

INSERT INTO NURSES VALUES (11232 , 'FATEMA' , 'MOHAMED' , 5 , 780);
INSERT INTO NURSES VALUES (21334 , 'MONA' , 'ALI' , 3 , 780);
INSERT INTO NURSES VALUES (33442 , 'MARIAM' , 'MOSA' , 4 , 780);
INSERT INTO NURSES VALUES (11223 , 'FATEMA' , 'JASSIM' , 8 , 800);
INSERT INTO NURSES VALUES (66546 , 'NOOR' , 'SALMAN' , 3 , 650);
INSERT INTO NURSES VALUES (44563 , 'FATEMA' , 'ALI' , 5 , 900);
INSERT INTO NURSES VALUES (77860 , 'LAILA' , 'HASAN' , 10 , 820);
INSERT INTO NURSES VALUES (44564 , 'JAMELA' , 'ALI' , 3 , 830);
INSERT INTO NURSES VALUES (78006 , 'MARAM' , 'JAMEEL' , 5 , 950);
INSERT INTO NURSES VALUES (55665 , 'ALI' , 'MOHAMED' , 3 , 800);
INSERT INTO NURSES VALUES (11993 , 'JAWAD' , 'SALMAN' , 8 , 800);
INSERT INTO NURSES VALUES (44573 , 'AHMED' , 'MOSA' , 1 , 800);

```

Figure (14) Insertion of values into Nurses table

```

INSERT INTO PAYMENT VALUES (33124 , '17/5/2022');
INSERT INTO PAYMENT VALUES (44556 , '15/5/2022');
INSERT INTO PAYMENT VALUES (34678 , '9/5/2022' );
INSERT INTO PAYMENT VALUES (99805 , '22/5/2022');
INSERT INTO PAYMENT VALUES (12442 , '23/5/2022');
INSERT INTO PAYMENT VALUES (44456 , '22/5/2022');
INSERT INTO PAYMENT VALUES (09868 , '29/5/2022');
INSERT INTO PAYMENT VALUES (33952 , '17/5/2022');
INSERT INTO PAYMENT VALUES (44847 , '24/5/2022');
INSERT INTO PAYMENT VALUES (86836 , '30/5/2022');
INSERT INTO PAYMENT VALUES (16635 , '1/6/2022' );
INSERT INTO PAYMENT VALUES (99829 , '1/6/2022' );

```

```

INSERT INTO PAYMENT VALUES (33124 , '17/5/2022' );
INSERT INTO PAYMENT VALUES (44556 , '15/5/2022' );
INSERT INTO PAYMENT VALUES (34678 , '9/5/2022' );
INSERT INTO PAYMENT VALUES (99805 , '22/5/2022' );
INSERT INTO PAYMENT VALUES (12442 , '23/5/2022' );
INSERT INTO PAYMENT VALUES (44456 , '22/5/2022' );
INSERT INTO PAYMENT VALUES (09868 , '29/5/2022' );
INSERT INTO PAYMENT VALUES (33952 , '17/5/2022' );
INSERT INTO PAYMENT VALUES (44847 , '24/5/2022' );
INSERT INTO PAYMENT VALUES (86836 , '30/5/2022' );
INSERT INTO PAYMENT VALUES (16635 , '1/6/2022' );
INSERT INTO PAYMENT VALUES (99829 , '1/6/2022' );

```

Figure (15) Insertion of values into Payment table

```

INSERT INTO DOCTORS VALUES (3392483 , 'ALI' , 'MOHAMED' , 'M' , 1500);
INSERT INTO DOCTORS VALUES (2224266 , 'REHAM' , 'JAWAD' , 'F' , 1220);
INSERT INTO DOCTORS VALUES (1133633 , 'NOOR' , 'MOHAMED' , 'M' , 1300);
INSERT INTO DOCTORS VALUES (3339592 , 'FATEMA' , 'SALMAN' , 'F' , 1200);
INSERT INTO DOCTORS VALUES (2225533 , 'MOHAMED' , 'JAMEEL' , 'M' , 1700);
INSERT INTO DOCTORS VALUES (0098173 , 'NOOR' , 'MOHAMED' , 'M' , 1440);
INSERT INTO DOCTORS VALUES (1115456 , 'JASSIM' , 'ABDULA' , 'M' , 1770);
INSERT INTO DOCTORS VALUES (0099828 , 'NAHED' , 'QASSIM' , 'F' , 2000);
INSERT INTO DOCTORS VALUES (9866829 , 'HASAN' , 'AHMED' , 'M' , 2020);
INSERT INTO DOCTORS VALUES (2243252 , 'AHMED' , 'MOHAMED' , 'M' , 1770);
INSERT INTO DOCTORS VALUES (1111423 , 'JUMANA' , 'MARWAN' , 'F' , 1700);
INSERT INTO DOCTORS VALUES (9987243 , 'QASSIM' , 'ALI' , 'M' , 1440);

```

```

INSERT INTO DOCTORS VALUES (3392483 , 'ALI' , 'MOHAMED' , 'M' , 1500);
INSERT INTO DOCTORS VALUES (2224266 , 'REHAM' , 'JAWAD' , 'F' , 1220);
INSERT INTO DOCTORS VALUES (1133633 , 'NOOR' , 'MOHAMED' , 'M' , 1300);
INSERT INTO DOCTORS VALUES (3339592 , 'FATEMA' , 'SALMAN' , 'F' , 1200);
INSERT INTO DOCTORS VALUES (2225533 , 'MOHAMED' , 'JAMEEL' , 'M' , 1700);
INSERT INTO DOCTORS VALUES (0098173 , 'NOOR' , 'MOHAMED' , 'M' , 1440);
INSERT INTO DOCTORS VALUES (1115456 , 'JASSIM' , 'ABDULA' , 'M' , 1770);
INSERT INTO DOCTORS VALUES (0099828 , 'NAHED' , 'QASSIM' , 'F' , 2000);
INSERT INTO DOCTORS VALUES (9866829 , 'HASAN' , 'AHMED' , 'M' , 2020);
INSERT INTO DOCTORS VALUES (2243252 , 'AHMED' , 'MOHAMED' , 'M' , 1770);
INSERT INTO DOCTORS VALUES (1111423 , 'JUMANA' , 'MARWAN' , 'F' , 1700);
INSERT INTO DOCTORS VALUES (9987243 , 'QASSIM' , 'ALI' , 'M' , 1440);

```

Figure (16) Insertion of values into Doctors table

```

INSERT INTO ROOM VALUES (5 , 'DELUXE'      , 44313443 , '14/5/2022');
INSERT INTO ROOM VALUES (7 , 'PREMIUM DELUXE' , 22335510 , '21/5/2022');
INSERT INTO ROOM VALUES (3 , 'TWIN SHARING' , 33551289 , '11/5/2022');
INSERT INTO ROOM VALUES (9 , 'TWIN SHARING' , 11112225 , '15/5/2022');
INSERT INTO ROOM VALUES (15 , 'DELUXE'      , 00986869 , '17/5/2022');
INSERT INTO ROOM VALUES (10 , 'PREMIUM DELUXE' , 11223331 , '27/5/2022');
INSERT INTO ROOM VALUES (1 , 'DELUXE'      , 11336387 , '15/5/2022');
INSERT INTO ROOM VALUES (14 , 'TWIN SHARING' , 11537856 , '12/5/2022');
INSERT INTO ROOM VALUES (22 , 'TWIN SHARING' , 11225374 , '12/5/2022');
INSERT INTO ROOM VALUES (6 , 'SUIT'        , 44313445 , '7/4/2022' );
INSERT INTO ROOM VALUES (11 , 'TWIN SHARING' , 98077917 , '14/4/2022');
INSERT INTO ROOM VALUES (2 , 'DELUXE'      , 11224425 , '30/5/2022');

```

```

INSERT INTO ROOM VALUES (5 , 'DELUXE'      , 44313443 , '14/5/2022');
INSERT INTO ROOM VALUES (7 , 'PREMIUM DELUXE' , 22335510 , '21/5/2022');
INSERT INTO ROOM VALUES (3 , 'TWIN SHARING' , 33551289 , '11/5/2022');
INSERT INTO ROOM VALUES (9 , 'TWIN SHARING' , 11112225 , '15/5/2022');
INSERT INTO ROOM VALUES (15 , 'DELUXE'      , 00986869 , '17/5/2022');
INSERT INTO ROOM VALUES (10 , 'PREMIUM DELUXE' , 11223331 , '27/5/2022');
INSERT INTO ROOM VALUES (1 , 'DELUXE'      , 11336387 , '15/5/2022');
INSERT INTO ROOM VALUES (14 , 'TWIN SHARING' , 11537856 , '12/5/2022');
INSERT INTO ROOM VALUES (22 , 'TWIN SHARING' , 11225374 , '12/5/2022');
INSERT INTO ROOM VALUES (6 , 'SUIT'        , 44313445 , '7/4/2022' );
INSERT INTO ROOM VALUES (11 , 'TWIN SHARING' , 98077917 , '14/4/2022');
INSERT INTO ROOM VALUES (2 , 'DELUXE'      , 11224425 , '30/5/2022');

```

Figure (17) Insertion of values into Room table

```

INSERT INTO PATIENTS VALUES (44313443 , 'M' , 'ALI' , 'MOHAMED' , 22 , 33124 ,3392483 , 'MOHAMED HASAN' , '15/5/2022');

INSERT INTO PATIENTS VALUES (22335510 , 'F' , 'FATEMA' , 'ALI' , 15 , 44556 ,2224266 , 'ALI ABDULA' , '14/5/2022');

INSERT INTO PATIENTS VALUES (33551289 , 'F' , 'REHAM' , 'MOHAMED' , 34 , 34678 ,3392483 , 'MOHAMED ABDULA' , '9/5/2022' );

INSERT INTO PATIENTS VALUES (11112225 , 'M' , 'ABDULA' , 'JAMEEL' , 24 , 99805 ,0098173 , 'JAMEEL MOHAMED' , '21/5/2022');

INSERT INTO PATIENTS VALUES (00986869 , 'M' , 'JASSIM' , 'MOHAMED' , 21 , 12442 ,0099828 , 'MOHAMED JASSIM' , '20/5/2022');

INSERT INTO PATIENTS VALUES (11223331 , 'F' , 'MONA' , 'QASSIM' , 19 , 44456 ,1111423 , 'QASSIM ABDULA' , '20/5/2022');

INSERT INTO PATIENTS VALUES (11336387 , 'F' , 'LAILA' , 'JUMA' , 34 , 09868 ,1115456 , 'JUMA HASAN' , '2/5/2022' );

INSERT INTO PATIENTS VALUES (11537856 , 'M' , 'ABDULA' , 'ALI' , 22 , 33952 ,3392483 , 'QASSIM ALI' , '20/5/2022');

INSERT INTO PATIENTS VALUES (11225374 , 'M' , 'JAWAD' , 'QASSIM' , 44 , 44847 ,9987243 , 'MOHAMED ABDULA' , '24/5/2022');

INSERT INTO PATIENTS VALUES (44313445 , 'F' , 'ZAINAB' , 'MOHAMED' , 32 , 86836 ,0098173 , 'MOHAMED SALMAN' , '29/5/2022');

INSERT INTO PATIENTS VALUES (98077917 , 'M' , 'SALMAN' , 'AHMED' , 55 , 16635 ,3392483 , 'MOHAMED ABDULA' , '28/5/2022');

INSERT INTO PATIENTS VALUES (11224425 , 'F' , 'NOOR' , 'ALI' , 18 , 99829 ,0099828 , 'ALI QASSIM' , '13/5/2022');

```

```

INSERT INTO PATIENTS VALUES (44313443 , 'M' , 'ALI' , 'MOHAMED' , 22 , 33124 ,3392483 , 'MOHAMED HASAN' , '15/5/2022');
INSERT INTO PATIENTS VALUES (22335510 , 'F' , 'FATEMA' , 'ALI' , 15 , 44556 ,2224266 , 'ALI ABDULA' , '14/5/2022');
INSERT INTO PATIENTS VALUES (33551289 , 'F' , 'REHAM' , 'MOHAMED' , 34 , 34678 ,3392483 , 'MOHAMED ABDULA' , '9/5/2022' );
INSERT INTO PATIENTS VALUES (11112225 , 'M' , 'ABDULA' , 'JAMEEL' , 24 , 99805 ,0098173 , 'JAMEEL MOHAMED' , '21/5/2022');
INSERT INTO PATIENTS VALUES (00986869 , 'M' , 'JASSIM' , 'MOHAMED' , 21 , 12442 ,0099828 , 'MOHAMED JASSIM' , '20/5/2022');
INSERT INTO PATIENTS VALUES (11223331 , 'F' , 'MONA' , 'QASSIM' , 19 , 44456 ,1111423 , 'QASSIM ABDULA' , '20/5/2022');
INSERT INTO PATIENTS VALUES (11336387 , 'F' , 'LAILA' , 'JUMA' , 34 , 09868 ,1115456 , 'JUMA HASAN' , '2/5/2022' );
INSERT INTO PATIENTS VALUES (11537856 , 'M' , 'ABDULA' , 'ALI' , 22 , 33952 ,3392483 , 'QASSIM ALI' , '20/5/2022');
INSERT INTO PATIENTS VALUES (11225374 , 'M' , 'JAWAD' , 'QASSIM' , 44 , 44847 ,9987243 , 'MOHAMED ABDULA' , '24/5/2022');
INSERT INTO PATIENTS VALUES (44313445 , 'F' , 'ZAINAB' , 'MOHAMED' , 32 , 86836 ,0098173 , 'MOHAMED SALMAN' , '29/5/2022');
INSERT INTO PATIENTS VALUES (98077917 , 'M' , 'SALMAN' , 'AHMED' , 55 , 16635 ,3392483 , 'MOHAMED ABDULA' , '28/5/2022');
INSERT INTO PATIENTS VALUES (11224425 , 'F' , 'NOOR' , 'ALI' , 18 , 99829 ,0099828 , 'ALI QASSIM' , '13/5/2022');

```

Figure (18) Insertion of values into patient's table

```

INSERT INTO RECORDS VALUES (4453643 , '17/4/2022' , '22/4/2022' , 2054 , 432 , 300 );
INSERT INTO RECORDS VALUES (5564773 , '25/5/2022' , '27/5/2022' , 112 , 12 , 600 );
INSERT INTO RECORDS VALUES (6677845 , '14/5/2022' , '22/5/2022' , 234 , 99 , 100 );
INSERT INTO RECORDS VALUES (7783352 , '22/5/2022' , '29/5/2022' , 223 , 113 , 601 );
INSERT INTO RECORDS VALUES (1121444 , '1/5/2022' , '17/5/2022' , 132 , 4 , 99 );
INSERT INTO RECORDS VALUES (8864774 , '3/5/2022' , '9/5/2022' , 45 , 3 , 5 );
INSERT INTO RECORDS VALUES (6675845 , '14/5/2022' , '22/5/2022' , 848 , 88 , 117 );
INSERT INTO RECORDS VALUES (5674453 , '19/5/2022' , '30/5/2022' , 3554 , 23 , 440 );
INSERT INTO RECORDS VALUES (4565652 , '2/4/2022' , '19/4/2022' , 4565 , 33 , 222 );
INSERT INTO RECORDS VALUES (3847584 , '1/6/2022' , '9/6/2022' , 556 , 224 , 606 );
INSERT INTO RECORDS VALUES (8347584 , '5/5/2022' , '15/5/2022' , 200 , 111 , 202 );
INSERT INTO RECORDS VALUES (3848574 , '14/5/2022' , '21/5/2022' , 2000 , 321 , 606 );

```

```

INSERT INTO RECORDS VALUES (4453643 , '17/4/2022' , '22/4/2022' , 2054 , 432 , 300 );
INSERT INTO RECORDS VALUES (5564773 , '25/5/2022' , '27/5/2022' , 112 , 12 , 600 );
INSERT INTO RECORDS VALUES (6677845 , '14/5/2022' , '22/5/2022' , 234 , 99 , 100 );
INSERT INTO RECORDS VALUES (7783352 , '22/5/2022' , '29/5/2022' , 223 , 113 , 601 );
INSERT INTO RECORDS VALUES (1121444 , '1/5/2022' , '17/5/2022' , 132 , 4 , 99 );
INSERT INTO RECORDS VALUES (8864774 , '3/5/2022' , '9/5/2022' , 45 , 3 , 5 );
INSERT INTO RECORDS VALUES (6675845 , '14/5/2022' , '22/5/2022' , 848 , 88 , 117 );
INSERT INTO RECORDS VALUES (5674453 , '19/5/2022' , '30/5/2022' , 3554 , 23 , 440 );
INSERT INTO RECORDS VALUES (4565652 , '2/4/2022' , '19/4/2022' , 4565 , 33 , 222 );
INSERT INTO RECORDS VALUES (3847584 , '1/6/2022' , '9/6/2022' , 556 , 224 , 606 );
INSERT INTO RECORDS VALUES (8347584 , '5/5/2022' , '15/5/2022' , 200 , 111 , 202 );
INSERT INTO RECORDS VALUES (3848574 , '14/5/2022' , '21/5/2022' , 2000 , 321 , 606 );

```

Figure (19) Insertion of values into Records table

```

INSERT INTO GURDIANS VALUES ('MOHAMED HASAN' , 44313443 , '66773484' );
INSERT INTO GURDIANS VALUES ('ABDULA ALI' , 22335510 , '66238748' );
INSERT INTO GURDIANS VALUES ('MOHAMED ABDULA' , 33551289 , '39293742' );
INSERT INTO GURDIANS VALUES ('JAMEEL MOHAMED' , 11112225 , '66723632' );
INSERT INTO GURDIANS VALUES ('MOHAMED JASSIM' , 00986869 , '37287382' );
INSERT INTO GURDIANS VALUES ('QASSIM ABDULA' , 11223331 , '66836748' );
INSERT INTO GURDIANS VALUES ('JUMA HASAN' , 11336387 , '39238648' );
INSERT INTO GURDIANS VALUES ('QASSIM ALI' , 11537856 , '37837482' );
INSERT INTO GURDIANS VALUES ('MOHAMED SALEEM' , 11225374 , '39283643' );
INSERT INTO GURDIANS VALUES ('MOHAMED SALMAN' , 44313445 , '65236746' );
INSERT INTO GURDIANS VALUES ('MOHAMED JAMEEL' , 98077917 , '66273647' );
INSERT INTO GURDIANS VALUES ('ALI QASSIM' , 11224425 , '39283643' );

```

```

INSERT INTO GURDIANS VALUES ('MOHAMED HASAN' , 44313443 , '66773484' );
INSERT INTO GURDIANS VALUES ('ABDULA ALI' , 22335510 , '66238748' );
INSERT INTO GURDIANS VALUES ('MOHAMED ABDULA' , 33551289 , '39293742' );
INSERT INTO GURDIANS VALUES ('JAMEEL MOHAMED' , 11112225 , '66723632' );
INSERT INTO GURDIANS VALUES ('MOHAMED JASSIM' , 00986869 , '37287382' );
INSERT INTO GURDIANS VALUES ('QASSIM ABDULA' , 11223331 , '66836748' );
INSERT INTO GURDIANS VALUES ('JUMA HASAN' , 11336387 , '39238648' );
INSERT INTO GURDIANS VALUES ('QASSIM ALI' , 11537856 , '37837482' );
INSERT INTO GURDIANS VALUES ('MOHAMED SALEEM' , 11225374 , '39283643' );
INSERT INTO GURDIANS VALUES ('MOHAMED SALMAN' , 44313445 , '65236746' );
INSERT INTO GURDIANS VALUES ('MOHAMED JAMEEL' , 98077917 , '66273647' );
INSERT INTO GURDIANS VALUES ('ALI QASSIM' , 11224425 , '39283643' );

```

Figure (20) Insertion of values into Guardians table

```

INSERT INTO HAVE VALUES (44313443 , 4453643);
INSERT INTO HAVE VALUES (22335510 , 5564773);
INSERT INTO HAVE VALUES (33551289 , 6677845);
INSERT INTO HAVE VALUES (11112225 , 7783352);
INSERT INTO HAVE VALUES (00986869 , 1121444);
INSERT INTO HAVE VALUES (11223331 , 8864774);
INSERT INTO HAVE VALUES (11336387 , 6675845);
INSERT INTO HAVE VALUES (11537856 , 5674453);
INSERT INTO HAVE VALUES (11225374 , 4565652);
INSERT INTO HAVE VALUES (44313445 , 3847584);
INSERT INTO HAVE VALUES (98077917 , 8347584);
INSERT INTO HAVE VALUES (11224425 , 3848574);

```

```

INSERT INTO HAVE VALUES (44313443 , 4453643);
INSERT INTO HAVE VALUES (22335510 , 5564773);
INSERT INTO HAVE VALUES (33551289 , 6677845);
INSERT INTO HAVE VALUES (11112225 , 7783352);
INSERT INTO HAVE VALUES (00986869 , 1121444);
INSERT INTO HAVE VALUES (11223331 , 8864774);
INSERT INTO HAVE VALUES (11336387 , 6675845);
INSERT INTO HAVE VALUES (11537856 , 5674453);
INSERT INTO HAVE VALUES (11225374 , 4565652);
INSERT INTO HAVE VALUES (44313445 , 3847584);
INSERT INTO HAVE VALUES (98077917 , 8347584);
INSERT INTO HAVE VALUES (11224425 , 3848574);

```

Figure (21) Insertion of values into Have table

```
INSERT INTO NPHONE VALUES (11232 , 38485743);
INSERT INTO NPHONE VALUES (21334 , 39773463);
INSERT INTO NPHONE VALUES (33442 , 37645267);
INSERT INTO NPHONE VALUES (11223 , 66736729);
INSERT INTO NPHONE VALUES (66546 , 66758893);
INSERT INTO NPHONE VALUES (44563 , 66300012);
INSERT INTO NPHONE VALUES (77860 , 66820062);
INSERT INTO NPHONE VALUES (44564 , 39775281);
INSERT INTO NPHONE VALUES (78006 , 39728817);
INSERT INTO NPHONE VALUES (55665 , 66172200);
INSERT INTO NPHONE VALUES (11993 , 66661128);
INSERT INTO NPHONE VALUES (44573 , 66779922);
```

```
INSERT INTO NPHONE VALUES (11232 , 38485743);
INSERT INTO NPHONE VALUES (21334 , 39773463);
INSERT INTO NPHONE VALUES (33442 , 37645267);
INSERT INTO NPHONE VALUES (11223 , 66736729);
INSERT INTO NPHONE VALUES (66546 , 66758893);
INSERT INTO NPHONE VALUES (44563 , 66300012);
INSERT INTO NPHONE VALUES (77860 , 66820062);
INSERT INTO NPHONE VALUES (44564 , 39775281);
INSERT INTO NPHONE VALUES (78006 , 39728817);
INSERT INTO NPHONE VALUES (55665 , 66172200);
INSERT INTO NPHONE VALUES (11993 , 66661128);
INSERT INTO NPHONE VALUES (44573 , 66779922);
```

Figure (22) Insertion of values into Nphone table

```
INSERT INTO PTYPE VALUES (33124 , 'CASH' );
INSERT INTO PTYPE VALUES (44556 , 'BENEFIT PAY');
INSERT INTO PTYPE VALUES (34678 , 'BENEFIT PAY');
INSERT INTO PTYPE VALUES (99805 , 'CASH' );
INSERT INTO PTYPE VALUES (12442 , 'BENEFIT PAY');
INSERT INTO PTYPE VALUES (44456 , 'BENEFIT PAY');
INSERT INTO PTYPE VALUES (09868 , 'VISA' );
INSERT INTO PTYPE VALUES (33952 , 'MASTERCARD' );
INSERT INTO PTYPE VALUES (44847 , 'CASH' );
INSERT INTO PTYPE VALUES (86836 , 'MASTERCARD' );
INSERT INTO PTYPE VALUES (16635 , 'VISA' );
INSERT INTO PTYPE VALUES (99829 , 'MASTERCARD' );
```



```

INSERT INTO PTYPE VALUES (33124 , 'CASH' );
INSERT INTO PTYPE VALUES (44556 , 'BENEFIT PAY');
INSERT INTO PTYPE VALUES (34678 , 'BENEFIT PAY');
INSERT INTO PTYPE VALUES (99805 , 'CASH' );
INSERT INTO PTYPE VALUES (12442 , 'BENEFIT PAY');
INSERT INTO PTYPE VALUES (44456 , 'BENEFIT PAY');
INSERT INTO PTYPE VALUES (09868 , 'VISA' );
INSERT INTO PTYPE VALUES (33952 , 'MASTERCARD' );
INSERT INTO PTYPE VALUES (44847 , 'CASH' );
INSERT INTO PTYPE VALUES (86836 , 'MASTERCARD' );
INSERT INTO PTYPE VALUES (16635 , 'VISA' );
INSERT INTO PTYPE VALUES (99829 , 'MASTERCARD' );

```

Figure (23) Insertion of values into Ptype table

```

INSERT INTO DPHONE VALUES (3392483 , '66993088' );
INSERT INTO DPHONE VALUES (2224266 , '66998337' );
INSERT INTO DPHONE VALUES (1133633 , '39127367' );
INSERT INTO DPHONE VALUES (3339592 , '66237498' );
INSERT INTO DPHONE VALUES (2225533 , '37812738' );
INSERT INTO DPHONE VALUES (0098173 , '39138273' );
INSERT INTO DPHONE VALUES (1115456 , '39128743' );
INSERT INTO DPHONE VALUES (0099828 , '66237483' );
INSERT INTO DPHONE VALUES (9866829 , '66368472' );
INSERT INTO DPHONE VALUES (2243252 , '39238643' );
INSERT INTO DPHONE VALUES (1111423 , '66723643' );
INSERT INTO DPHONE VALUES (9987243 , '39238743' );

```

```

INSERT INTO DPHONE VALUES (3392483 , '66993088' );
INSERT INTO DPHONE VALUES (2224266 , '66998337' );
INSERT INTO DPHONE VALUES (1133633 , '39127367' );
INSERT INTO DPHONE VALUES (3339592 , '66237498' );
INSERT INTO DPHONE VALUES (2225533 , '37812738' );
INSERT INTO DPHONE VALUES (0098173 , '39138273' );
INSERT INTO DPHONE VALUES (1115456 , '39128743' );
INSERT INTO DPHONE VALUES (0099828 , '66237483' );
INSERT INTO DPHONE VALUES (9866829 , '66368472' );
INSERT INTO DPHONE VALUES (2243252 , '39238643' );
INSERT INTO DPHONE VALUES (1111423 , '66723643' );
INSERT INTO DPHONE VALUES (9987243 , '39238743' );

```

Figure (24) Insertion of values into Dphone table



```
INSERT INTO RPHONE VALUES (4453643 , 39933214 );  
INSERT INTO RPHONE VALUES (5564773 , 66847284 );  
INSERT INTO RPHONE VALUES (6677845 , 66938313 );  
INSERT INTO RPHONE VALUES (7783352 , 66923792 );  
INSERT INTO RPHONE VALUES (1121444 , 66748827 );  
INSERT INTO RPHONE VALUES (8864774 , 36557729 );  
INSERT INTO RPHONE VALUES (6675845 , 66778342 );  
INSERT INTO RPHONE VALUES (5674453 , 66982574 );  
INSERT INTO RPHONE VALUES (4565652 , 66747204 );  
INSERT INTO RPHONE VALUES (3847584 , 39934875 );  
INSERT INTO RPHONE VALUES (8347584 , 66993873 );  
INSERT INTO RPHONE VALUES (3848574 , 66747343 );
```

```
INSERT INTO RPHONE VALUES (4453643 , 39933214 );  
INSERT INTO RPHONE VALUES (5564773 , 66847284 );  
INSERT INTO RPHONE VALUES (6677845 , 66938313 );  
INSERT INTO RPHONE VALUES (7783352 , 66923792 );  
INSERT INTO RPHONE VALUES (1121444 , 66748827 );  
INSERT INTO RPHONE VALUES (8864774 , 36557729 );  
INSERT INTO RPHONE VALUES (6675845 , 66778342 );  
INSERT INTO RPHONE VALUES (5674453 , 66982574 );  
INSERT INTO RPHONE VALUES (4565652 , 66747204 );  
INSERT INTO RPHONE VALUES (3847584 , 39934875 );  
INSERT INTO RPHONE VALUES (8347584 , 66993873 );  
INSERT INTO RPHONE VALUES (3848574 , 66747343 );
```

Figure (25) Insertion of values into Rphone table

### Queries:

1. To find the information of the doctors whose gender is male.

```
SELECT DOC_ID,D_FIRST_NAME,D_LAST_NAME  
FROM DOCTORS  
WHERE GENDER = 'M';
```

```

301
302
303 SELECT DOC_ID,D_FIRST_NAME,D_LAST_NAME
304 FROM DOCTORS
305 WHERE GENDER = 'M';
306

```

DOC_ID	D_FIRST_NAME	D_LAST_NAME
98173	NOOR	MOHAMED
1115456	JASSIM	ABDULA
1133633	NOOR	MOHAMED
2225533	MOHAMED	JAMEEL
2243252	AHMED	MOHAMED
3392483	ALI	MOHAMED
9866829	HASAN	AHMED
9987243	QASSIM	ALI

Figure (26) query -1

- To find the information of NURSES whose SALARY is HIGHER THAN 800.

```

SELECT NURSE_ID,N_FIRST_NAME,N_LAST_NAME
FROM NURSES
WHERE SALARY >800;

```

```

3 SELECT NURSE_ID,N_FIRST_NAME,N_LAST_NAME
4 FROM NURSES
5 WHERE SALARY >800;
6

```

NURSE_ID	N_FIRST_NAME	N_LAST_NAME
44563	FATEMA	ALI
44564	JAMELA	ALI
77860	LAILA	HASAN
78006	MARAM	JAMEEL

Figure (27) query -2

- To find all patient's information from oldest to youngest

```

SELECT *
FROM PATIENTS
ORDER BY AGE DESC;

```

```

3 SELECT *
4 FROM PATIENTS
5 ORDER BY AGE DESC;
6

```

PATIENT_ID	GENDER	P_FIRST_...	P_LAST_...	AGE	PAY_ID	DOC_ID	G_NAME
98077917	M	SALMAN	AHMED	55	16635	3392483	MOHAMED ABDULA
11225374	M	JAWAD	QASSIM	44	44847	9987243	MOHAMED ABDULA
11336387	F	LAILA	JUMA	34	9868	1115456	JUMA HASAN
33551289	F	REHAM	MOHAMED	34	34678	3392483	MOHAMED ABDULA
44313445	F	ZAINAB	MOHAMED	32	86836	98173	MOHAMED SALMAN
11112225	M	ABDULA	JAMEEL	24	99805	98173	JAMEEL MOHAMED
11537856	M	ABDULA	ALI	22	33952	3392483	QASSIM ALI
44313443	M	ALI	MOHAMED	22	33124	3392483	MOHAMED HASAN
986869	M	JASSIM	MOHAMED	21	12442	99828	MOHAMED JASSIM
11223331	F	MONA	QASSIM	19	44456	1111423	QASSIM ABDULA
11224425	F	NOOR	ALI	18	99829	99828	ALI QASSIM
22335510	F	FATEMA	ALI	15	44556	2224266	ALI ABDULA

Figure (28) query -3

4. To find the most used payment method.

```

SELECT PAY_TYPE, COUNT(PAY_ID) AS 'MOST USED PAYMENT'
FROM PTYPE
GROUP BY PAY_TYPE;

```

```

1 SELECT PAY_TYPE, COUNT(PAY_ID) AS 'MOST USED PAYMENT'
2 FROM PTYPE
3 GROUP BY PAY_TYPE;
4

```

PAY_TYPE	MOST USED PAYMENT
BENEFIT PAY	4
CASH	3
MASTERCARD	3
VISA	2

Figure (29) query -4

5. To find the information of the patients whose treatment date between 1/5/2022 and 20/5/2022

```

SELECT PATIENT_ID,P_FIRST_NAME,P_LAST_NAME,AGE,GENDER
FROM PATIENTS
WHERE TREAT_DATE BETWEEN '1/5/2022' AND '20/5/2022';

```

```

1 SELECT PATIENT_ID,P_FIRST_NAME,P_LAST_NAME,AGE,GENDER
2 FROM PATIENTS
3 WHERE TREAT_DATE BETWEEN '1/5/2022' AND '20/5/2022';
4

```

PATIENT_ID	P_FIRST_NAME	P_LAST_NAME	AGE	GENDER
986669	JASSIM	MOHAMED	21	M
11223331	MONA	QASSIM	19	F
11224425	NOOR	ALI	18	F
11336387	LAILA	JUMA	34	F
11537856	ABDULA	ALI	22	M
22335510	FATEMA	ALI	15	F
44313443	ALI	MOHAMED	22	M

Figure (30) query -5

6. To show the patient's name with their doctors.

```

SELECT p_first_name || ' ' || p_last_name AS 'PATIENTS',d_first_name || ' ' || d_last_name AS 'DOCTOR'
FROM PATIENTS,DOCTORS
WHERE PATIENTS.doc_id = DOCTORS.doc_id;

```

```

1 SELECT p_first_name || ' ' || p_last_name AS 'PATIENTS',d_first_name || ' ' || d_last_name AS 'DOCTOR'
2 FROM PATIENTS,DOCTORS
3 WHERE PATIENTS.doc_id = DOCTORS.doc_id;
4

```

PATIENTS	DOCTOR
JASSIM MOHAMED	NAHED QASSIM
ABDULA JAMEEL	NOOR MOHAMED
MONA QASSIM	JUMANA MARWAN
NOOR ALI	NAHED QASSIM
JAWAD QASSIM	QASSIM ALI
LAILA JUMA	JASSIM ABDULA
ABDULA ALI	ALI MOHAMED
FATEMA ALI	REHAM JAWAD
REHAM MOHAMED	ALI MOHAMED
ALI MOHAMED	ALI MOHAMED
ZAINAB MOHAMED	NOOR MOHAMED
SALMAN AHMED	ALI MOHAMED

Figure (31) query -6

7. To find the IDs and treatment dates of the patients who paid within 29/5/2022 and 5/6/2022

```

SELECT PATIENT_ID , TREAT_DATE
FROM PAYMENT AS PY , PATIENTS AS PA
WHERE PY.PAY_ID = PA.PAY_ID AND PY.PAY_DATE between '29/5/2022' AND '5/6/2022' ;

```

```

1 SELECT PATIENT_ID , TREAT_DATE
2 FROM PAYMENT AS PY , PATIENTS AS PA
3 WHERE PY.PAY_ID = PA.PAY_ID AND PY.PAY_DATE BETWEEN '29/5/2022' AND '5/6/2022' ;
4

```

PATIENT_ID	TREAT_DATE
11336387	2/5/2022
44313445	29/5/2022

Figure (32) query -7

8. To find the nurse id for the nurses who work in room 3

```

SELECT NURSE_ID
FROM NURSES
WHERE ROOM_ID = 3 ;

```

```

1 SELECT NURSE_ID
2 FROM NURSES
3 WHERE ROOM_ID = 3 ;
4

```

NURSE_ID
21334
44564
55665
66546

Figure (33) query -8

9. To find the ID and the doctor's name who has the max salary.

```

SELECT DOC_ID , D_FIRST_NAME , D_LAST_NAME , MAX (SALARY)
FROM DOCTORS;

```

```

1 SELECT DOC_ID , D_FIRST_NAME , D_LAST_NAME , MAX (SALARY)
2 FROM DOCTORS;
3
4

```

DOC_ID	D_FIRST_NAME	D_LAST_NAME	MAX (SALARY)
9866829	HASAN	AHMED	2020

Figure (34) query -9

10. To find the average salary of doctors and their names.

```
SELECT doc_id,d_first_name, d_last_name,salary
FROM DOCTORS
where salary > (SELECT avg(salary) from DOCTORS);
```

```
1 SELECT doc_id,d_first_name, d_last_name,salary
2 FROM DOCTORS
3 WHERE salary > (SELECT avg(salary) FROM DOCTORS);
4
```

DOC_ID	D_FIRST_NAME	D_LAST_NAME	SALARY
99828	NAHED	QASSIM	2000
1111423	JUMANA	MARWAN	1700
1115456	JASSIM	ABDULA	1770
2225533	MOHAMED	JAMEEL	1700
2243252	AHMED	MOHAMED	1770
9866829	HASAN	AHMED	2020

Figure (35) query -10

11. To find the ids of the doctors that have more than one patient.

```
select doc_id, count(patient_id) as patientCount
from (select distinct doc_id, patient_id from PATIENTS) as a
group by doc_id
```

```
1 SELECT doc_id, COUNT(patient_id) AS patientCount
2 FROM (SELECT DISTINCT doc_id, patient_id FROM PATIENTS) AS a
3 GROUP BY doc_id
4 HAVING COUNT(patient_id)>1;
5
```

doc_id	patientCount
98173	2
99828	2
3392483	4

Figure (36) query -11