



HOSPITAL DATA BASE

INTRODUCTION



In this project, we'll be discussing the hospital database, which is quite extensive. Therefore, we've extracted some key points from it.

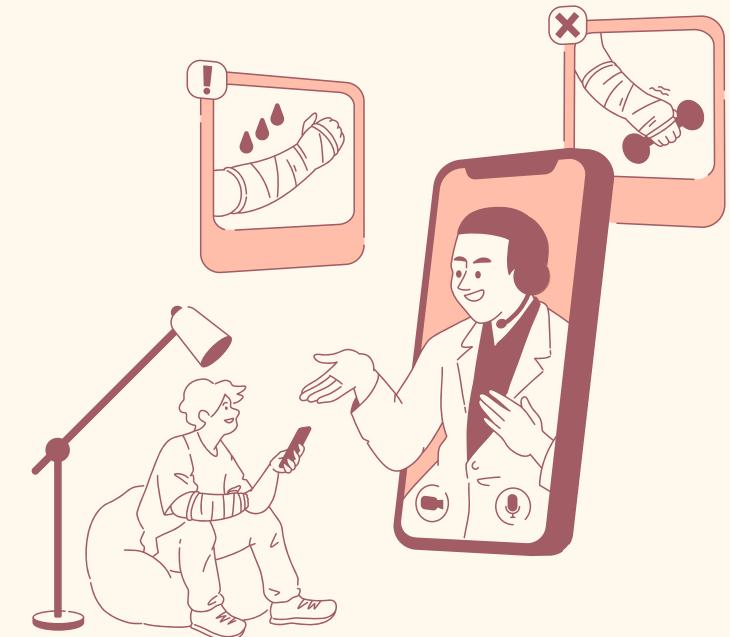
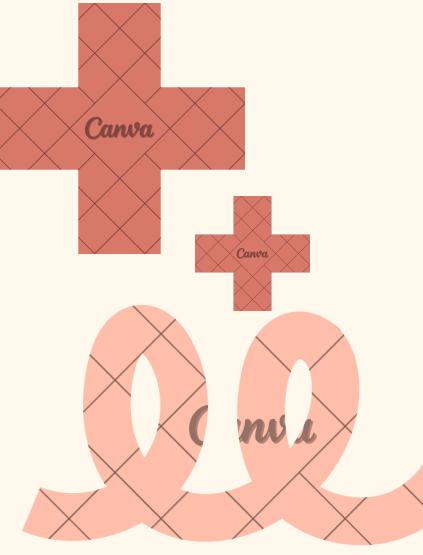
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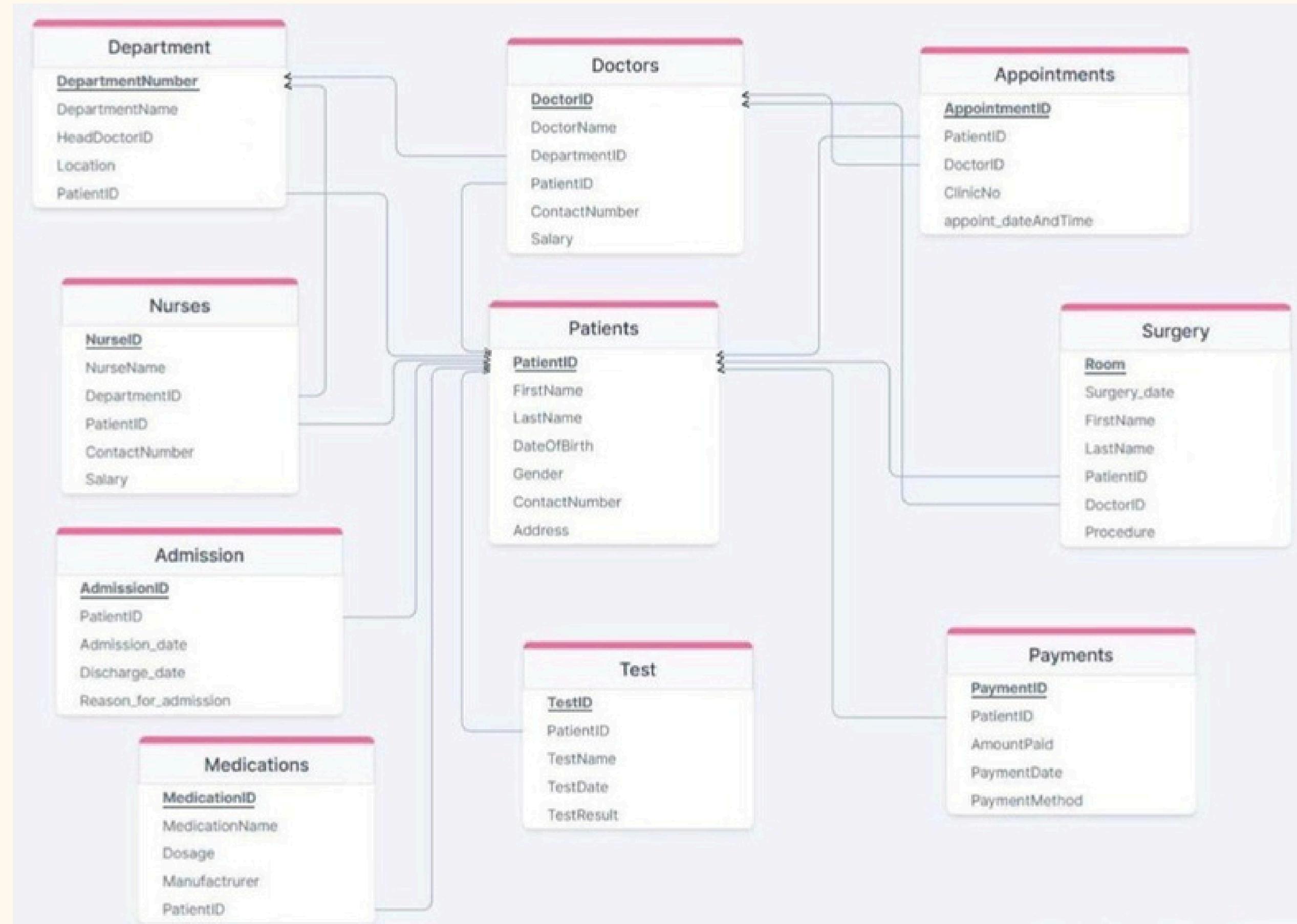
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- 2- Schema.....
- 3- DDL-Table's.....
- 4- DML-Table's.....
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ENTITIES:

- Patients
- Payments
- Tests
- Admission
- Department
- Medications
- Nurses
- Appointments
- Surgery
- Doctors



SCHEMA :



DDL - TABLES :

```
CREATE TABLE Patients (
    PatientID VARCHAR(20),
    FirstName VARCHAR(255) NOT NULL,
    LastName VARCHAR(255) NOT NULL,
    DateOfBirth DATE,
    Gender VARCHAR(10),
    ContactNumber VARCHAR(15) NOT NULL,
    Address VARCHAR(255),
    PRIMARY KEY (PatientID) );
```

```
CREATE TABLE Payments (
    PaymentID VARCHAR(20),
    PatientID VARCHAR(20),
    AmountPaid DECIMAL(10,2),
    PaymentDate DATE,
    PaymentMethod VARCHAR(255),
    FOREIGN KEY (PatientID) REFERENCES
    Patients(PatientID),
    PRIMARY KEY (PaymentID) );
```

```
CREATE TABLE Test (
    TestID VARCHAR(20),
    PatientID VARCHAR(20),
    TestName VARCHAR(255),
    TestDate DATE,
    TestResult VARCHAR(255),
    FOREIGN KEY (PatientID) REFERENCES
    Patients(PatientID),
    PRIMARY KEY (TestID) );
```

```
CREATE TABLE Admission (
    AdmissionID VARCHAR(20),
    PatientID VARCHAR(20),
    Admission_date DATE,
    Discharge_date DATE,
    Reason_for_admission VARCHAR(255),
    PRIMARY KEY (AdmissionID),
    FOREIGN KEY (PatientID) REFERENCES
    Patients(PatientID) );
```

DDL - TABLES :

```
create table Department(  
DepartmentNumber char(4),  
DepartmentName varchar(50) not null,  
HeadDoctorID char(20) not null,  
Location varchar(70),  
PatientID varchar(20),  
constraint pkDepNumber primary  
key(DepartmentNumber),  
constraint fkPatientID foreign key(PatientID)  
references Patients(PatientID);
```

```
create table Medications(  
MedicationID varchar(20),  
MedicationName varchar(50) not null,  
Dosage varchar(50),  
Manufacturer varchar(50),  
patientID varchar(20),  
primary key(medicationID),  
foreign key (patientID) references  
Patients(PatientID));
```

```
Create table Doctors(  
DoctorID varchar(20) PRIMARY KEY ,  
DoctorName varchar(20) NOT NULL,  
DepartmentID char(4) ,  
PatientID varchar(20),  
ContactNumber varchar(20),  
Salary numeric(8,2) ,  
FOREIGN KEY(DepartmentID) references Department  
(DepartmentNumber),  
FOREIGN KEY(PatientID) references patients(patientID) );
```

```
Create table Nurses(  
NurseID varchar(20) PRIMARY KEY ,  
NurseName varchar(20) NOT NULL,  
DepartmentID char(4),  
PatientID varchar(20),  
ContactNumber varchar(20),  
Salary numeric(8,2),  
FOREIGN KEY(DepartmentID) references Department  
(DepartmentNumber),  
FOREIGN KEY(PatientID) references patients(patientID)  
);
```

DDL - TABLES :

```
CREATE TABLE Appointments (
    Appointment_num VARCHAR(5),
    PatientID VARCHAR(20),
    DoctorID VARCHAR(20),
    DepartmentNumber char(4),
    ClinicNo VARCHAR(5),
    appointment_dateAndTime timestamp,
    PRIMARY KEY (Appointment_num),
    FOREIGN KEY (PatientID) REFERENCES
    Patients(PatientID),
    FOREIGN KEY (DoctorID) REFERENCES
    Doctors(DoctorID),
    FOREIGN KEY (DepartmentNumber) REFERENCES
    department(DepartmentNumber) );
```

```
CREATE TABLE Surgery (
    Room INT primary key,
    Surgery_date date ,
    FirstName VARCHAR(255),
    LastName VARCHAR(255),
    PatientID VARCHAR(20),
    DoctorID VARCHAR(20),
    Procedure VARCHAR(255),
    FOREIGN KEY (PatientID) REFERENCES Patients(PatientID),
    FOREIGN KEY (DoctorID) REFERENCES Doctors(DoctorID)
);
```

DML - TABLES : PATIENTS

INSERT INTO Patients **VALUES** ('1020037100', 'Sara', 'Abdullah', TO_DATE('1999-10-20', 'YYYY-MM-DD'), 'Female', '0504235193', '123 Elm St');

INSERT INTO Patients **VALUES** ('1030012680', 'Nora', 'Ahmed', TO_DATE('2001-05-15', 'YYYY-MM-DD'), 'Female', '0557888323', '456 Elm St');

INSERT INTO Patients **VALUES** ('1127001152', 'Ahmed', 'Mahmoud', TO_DATE('1990-03-25', 'YYYY-MM-DD'), 'Male', '0503255636', '789 Oak St');

INSERT INTO Patients **VALUES** ('1004781111', 'Yousef', 'Khaled', TO_DATE('1985-12-05', 'YYYY-MM-DD'), 'Male', '0553789273', '321 Pine St');

INSERT INTO Patients **VALUES** ('1110420011', 'Maryam', 'Ali', TO_DATE('1982-08-15', 'YYYY-MM-DD'), 'Female', '0557839271', '654 Maple St');

INSERT INTO Patients **VALUES** ('1028112080', 'Sara', 'Hassan', TO_DATE('1976-09-28', 'YYYY-MM-DD'), 'Female', '0501125212', '987 Cedar St');

INSERT INTO Patients **VALUES** ('1001002661', 'Abdullah', 'Ali', TO_DATE('1988-04-30', 'YYYY-MM-DD'), 'Male', '0504478646', '456 Birch St');

INSERT INTO Patients **VALUES** ('1044284970', 'Fatima', 'Khaled', TO_DATE('1992-11-10', 'YYYY-MM-DD'), 'Female', '0553242568', '753 Oak St');

INSERT INTO Patients **VALUES** ('1005628000', 'Mohammed', 'Noor', TO_DATE('1995-06-20', 'YYYY-MM-DD'), 'Male', '0506664142', '852 Pine St');

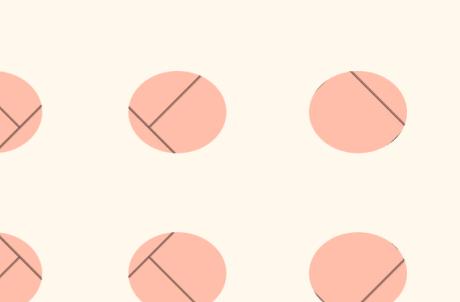
INSERT INTO Patients **VALUES** ('1064430100', 'Leen', 'Mohammed', TO_DATE('1983-07-15', 'YYYY-MM-DD'), 'Female', '0513235678', '159 Elm St');



DML - TABLES :

PATIENTS

PATIENTID	FIRSTNAME	LASTNAME	DATEOFBIRTH	GENDER	CONTACTNUMBER	ADDRESS
1020037100	Sara	Abdullah	10/20/1999	Female	0504235193	123 Elm St
1004781111	Yousef	Khaled	12/05/1985	Male	0553789273	321 Pine St
1028112080	Sara	Hassan	09/28/1976	Female	0501125212	987 Cedar St
1001002661	Abdullah	Ali	04/30/1988	Male	0504478646	456 Birch St
1044284970	Fatima	Khaled	11/10/1992	Female	0553242568	753 Oak St
1005628000	Mohammed	Noor	06/20/1995	Male	0506664142	852 Pine St
1064430100	Leen	Mohammed	07/15/1983	Female	0513235678	159 Elm St
1030012680	Nora	Ahmed	05/15/2001	Female	0557888323	456 Elm St
1127001152	Ahmed	Mahmoud	03/25/1990	Male	0503255636	789 Oak St
1110420011	Maryam	Ali	08/15/1982	Female	0557839271	654 Maple St

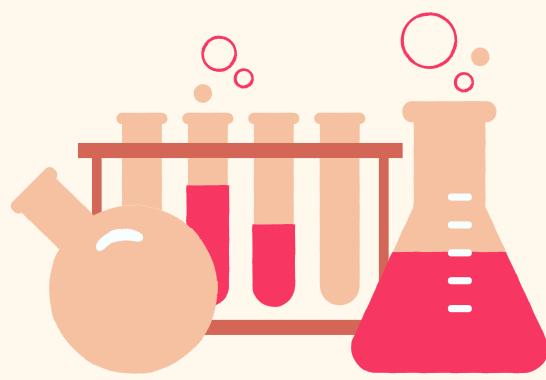


DML - TABLES : PAYMENTS

```
INSERT INTO Payments VALUES (6001, 1020037100, 150.00, TO_DATE('2024-02-16', 'YYYY-MM-DD'), 'credit card');
INSERT INTO Payments VALUES (6002, 1030012680, 100.00, TO_DATE('2024-02-17', 'YYYY-MM-DD'), 'cash');
INSERT INTO Payments VALUES (6003, 1127001152, 236.00, TO_DATE('2024-02-17', 'YYYY-MM-DD'), 'insurance');
INSERT INTO Payments VALUES (6004, 1004781111, 300.00, TO_DATE('2024-02-20', 'YYYY-MM-DD'), 'cash');
INSERT INTO Payments VALUES (6005, 1110420011, 110.00, TO_DATE('2024-02-20', 'YYYY-MM-DD'), 'credit card');
INSERT INTO Payments VALUES (6006, 1028112080, 458.00, TO_DATE('2024-02-20', 'YYYY-MM-DD'), 'credit card');
INSERT INTO Payments VALUES (6007, 1001002661, 400.00, TO_DATE('2024-02-21', 'YYYY-MM-DD'), 'debit card');
INSERT INTO Payments VALUES (6008, 1044284970, 233.00, TO_DATE('2024-02-21', 'YYYY-MM-DD'), 'cash');
INSERT INTO Payments VALUES (6009, 1005628000, 114.00, TO_DATE('2024-02-22', 'YYYY-MM-DD'), 'insurance');
INSERT INTO Payments VALUES (6010, 1064430100, 500.00, TO_DATE('2024-02-22', 'YYYY-MM-DD'), 'debit card');
```

PAYMENTID	PATIENTID	AMOUNTPAID	PAYMENTDATE	PAYMENTMETHOD
6005	1110420011	110	02/20/2024	credit card
6001	1020037100	150	02/16/2024	credit card
6002	1030012680	100	02/17/2024	cash
6006	1028112080	458	02/20/2024	credit card
6007	1001002661	400	02/21/2024	debit card
6008	1044284970	233	02/21/2024	cash
6003	1127001152	236	02/17/2024	insurance
6004	1004781111	300	02/20/2024	cash
6009	1005628000	114	02/22/2024	insurance
6010	1064430100	500	02/22/2024	debit card





DML - TABLES :

TEST

```
INSERT INTO Test VALUES ('T001', '1020037100', 'Blood test', TO_DATE('2024-01-05', 'YYYY-MM-DD'), 'Normal');  
INSERT INTO Test VALUES ('T002', '1030012680', 'X-ray', TO_DATE('2024-01-10', 'YYYY-MM-DD'), 'Negative');  
INSERT INTO Test VALUES ('T003', '1127001152', 'MRI', TO_DATE('2024-02-01', 'YYYY-MM-DD'), 'Positive');  
INSERT INTO Test VALUES ('T004', '1004781111', 'Ultrasound', TO_DATE('2024-02-15', 'YYYY-MM-DD'), 'Abnormal');  
INSERT INTO Test VALUES ('T005', '1110420011', 'CT scan', TO_DATE('2024-03-02', 'YYYY-MM-DD'), 'Normal');  
INSERT INTO Test VALUES ('T006', '1028112080', 'EKG', TO_DATE('2024-03-15', 'YYYY-MM-DD'), 'Normal');
```

TESTID	PATIENTID	TESTNAME	TESTDATE	TESTRESULT
T005	1110420011	CT scan	03/02/2024	Normal
T006	1028112080	EKG	03/15/2024	Normal
T001	1020037100	Blood test	01/05/2024	Normal
T002	1030012680	X-ray	01/10/2024	Negative
T003	1127001152	MRI	02/01/2024	Positive
T004	1004781111	Ultrasound	02/15/2024	Abnormal



DML - TABLES :

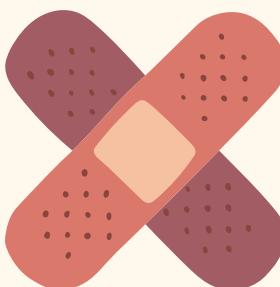
ADMISSION

```
INSERT INTO Admission VALUES ('7015', '1020037100', DATE '2024-01-05', DATE '2024-01-10', 'Pneumonia');
INSERT INTO Admission VALUES ('7016', '1030012680', DATE '2024-01-12', DATE '2024-01-20', 'Fractured leg');
INSERT INTO Admission VALUES ('7017', '1127001152', DATE '2024-02-01', DATE '2024-02-05', 'Appendicitis');
INSERT INTO Admission VALUES ('7018', '1004781111', DATE '2024-02-15', DATE '2024-02-20', 'Gastric ulcer');
INSERT INTO Admission VALUES ('7019', '1110420011', DATE '2024-03-02', DATE '2024-03-10', 'Influenza');
INSERT INTO Admission VALUES ('7020', '1028112080', DATE '2024-03-15', DATE '2024-03-20', 'Bronchitis');
```

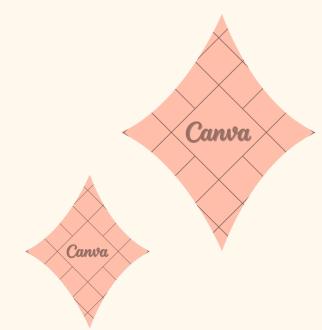
ADMISSIONID	PATIENTID	ADMISSION_DATE	DISCHARGE_DATE	REASON_FOR_ADMISSION
7017	1127001152	02/01/2024	02/05/2024	Appendicitis
7015	1020037100	01/05/2024	01/10/2024	Pneumonia
7016	1030012680	01/12/2024	01/20/2024	Fractured leg
7018	1004781111	02/15/2024	02/20/2024	Gastric ulcer
7019	1110420011	03/02/2024	03/10/2024	Influenza
7020	1028112080	03/15/2024	03/20/2024	Bronchitis

DML - TABLES : DEPARTMENT

INSERT INTO Department **VALUES**('1014','General Surgery','1000000001','Second floor','1020037100');
INSERT INTO Department **VALUES**('1302','Laboratory','1000000002','Third floor','1030012680');
INSERT INTO Department **VALUES**('0245','Ear, Nose and Throat ENT','1000000003','First floor','1127001152');
INSERT INTO Department **VALUES**('2115','Obstetrics and Gynecology','1000000004','Second floor','1004781111');
INSERT INTO Department **VALUES**('2034','Radiology and Imaging','1000000005','Third floor','1110420011');
INSERT INTO Department **VALUES**('0039','Oral and Dental Clinic','1000000006','First floor','1028112080');
INSERT INTO Department **VALUES**('0108','Pediatrics and Neonatology','1000000007','First floor','1001002661');
INSERT INTO Department **VALUES**('2001','Intensive Care Unit ICU','1000000008','First floor','1044284970');
INSERT INTO Department **VALUES**('1184','Clinical Nutrition','1000000009','Second floor','1005628000');
INSERT INTO Department **VALUES**('2312','Physical Therapy','1000000010','Third floor','1064430100');



DEPARTMENTNUMBER	DEPARTMENTNAME	HEADDOCTORID	LOCATION	PATIENTID
0245	Ear, Nose and Throat ENT	1000000003	First floor	1127001152
2115	Obstetrics and Gynecology	1000000004	Second floor	1004781111
2034	Radiology and Imaging	1000000005	Third floor	1110420011
0039	Oral and Dental Clinic	1000000006	First floor	1028112080
0108	Pediatrics and Neonatology	1000000007	First floor	1001002661
2001	Intensive Care Unit ICU	1000000008	First floor	1044284970
1184	Clinical Nutrition	1000000009	Second floor	1005628000
2312	Physical Therapy	1000000010	Third floor	1064430100
1014	General Surgery	1000000001	Second floor	1020037100
1302	Laboratory	1000000002	Third floor	1030012680



DML- TABLES :

DOCTORS

```
INSERT INTO Doctors values('1000000001','Ali saleh','1014','1020037100','0552038006',25000);
INSERT INTO Doctors values('1000000002','Amal majed','1302','1030012680','0500469990',11000);
INSERT INTO Doctors values('1000000003','Khaled Abdullah','0245','1127001152','0554880892',16000);
INSERT INTO Doctors values('1000000004','Rakan Ali','2115','1004781111','0553216776',20000);
INSERT INTO Doctors values('1000000005','Norah Turki','2034','1110420011','0551552141',10500);
INSERT INTO Doctors values('1000000006','Reema Abdullah','0039','1028112080','0554332895',15000);
INSERT INTO Doctors values('1000000007','Ahmed Yaser','0108','1001002661','054236778',13500);
INSERT INTO Doctors values('1000000008','Nawaf Ali','2001','1044284970','0500874321',17000);
INSERT INTO Doctors values('1000000009','Salman Omar','1184','1005628000','0551454231',13000);
INSERT INTO Doctors values('1000000010','Mazen khaled','2312','1064430100','0557684213',10000);
```

DOCTORID	DOCTORNAME	DEPARTMENTID	PATIENTID	CONTACTNUMBER	SALARY
1000000003	Khaled Abdullah	0245	1127001152	0554880892	16000
1000000004	Rakan Ali	2115	1004781111	0553216776	20000
1000000005	Norah Turki	2034	1110420011	0551552141	10500
1000000006	Reema Abdullah	0039	1028112080	0554332895	15000
1000000009	Salman Omar	1184	1005628000	0551454231	13000
1000000001	Ali saleh	1014	1020037100	0552038006	25000
1000000002	Amal majed	1302	1030012680	0500469990	11000
1000000010	Mazen khaled	2312	1064430100	0557684213	10000
1000000007	Ahmed Yaser	0108	1001002661	054236778	13500
1000000008	Nawaf Ali	2001	1044284970	0500874321	17000

DML- TABLES : MEDICATIONS

```
INSERT INTO Medications VALUES ('M001', 'Paracetamol', '500mg', 'Generic', '1020037100');
INSERT INTO Medications VALUES('M002', 'Amoxicillin', '250mg', 'Generic', '1030012680');
INSERT INTO Medications VALUES('M003', 'Ibuprofen', '200mg', 'Generic', '1127001152');
INSERT INTO Medications VALUES('M004', 'Loratadine', '10mg', 'Generic', '1004781111');
INSERT INTO Medications VALUES('M005', 'Omeprazole', '20mg', 'Generic', '1110420011');
INSERT INTO Medications VALUES('M006', 'Salbutamol', '100mcg', 'Generic', '1028112080');
INSERT INTO Medications VALUES('M007', 'Atorvastatin', '40mg', 'Generic', '1001002661');
INSERT INTO Medications VALUES('M008', 'Metformin', '500mg', 'Generic', '1044284970');
INSERT INTO Medications VALUES('M009', 'Levothyroxine', '50mcg', 'Generic', '1005628000');
INSERT INTO Medications VALUES('M010', 'Aspirin', '81mg', 'Generic', '1064430100');
```

MEDICATIONID	MEDICATIONNAME	DOSAGE	MANUFACTURER	PATIENTID
M003	Ibuprofen	200mg	Generic	1127001152
M004	Loratadine	10mg	Generic	1004781111
M001	Paracetamol	500mg	Generic	1020037100
M002	Amoxicillin	250mg	Generic	1030012680
M005	Omeprazole	20mg	Generic	1110420011
M006	Salbutamol	100mcg	Generic	1028112080
M007	Atorvastatin	40mg	Generic	1001002661
M008	Metformin	500mg	Generic	1044284970
M009	Levothyroxine	50mcg	Generic	1005628000
M010	Aspirin	81mg	Generic	1064430100

DML- TABLES :

NURSES

```
INSERT INTO Nurses Values ('10000000011','Reema', '1014', '1020037100', '0501112222' , 10000.00 );
INSERT INTO Nurses Values ( '10000000022' , 'Alaa', '1302', '1030012680' , '0552038006' , 10000.00 );
INSERT INTO Nurses Values ( '10000000033' , 'Layan' , '0245' , '1127001152' , '0502038006' , 10500.00 );
INSERT INTO Nurses Values ( '10000000044' , 'Maha' , '2115' , '1004781111' , '0501058009' , 10500.00 );
INSERT INTO Nurses Values ( '10000000055' , 'Tala' , '2034' , '1110420011' , '0551058000' , 12000.00 );
INSERT INTO Nurses Values ( '10000000066' , 'Abeer' , '0039' , '1028112080' , '0551078005' , 12000.00 );
INSERT INTO Nurses Values ( '10000000077' , 'Aryam' , '0108' , '1001002661' , '0577078005' , 11000.00 );
INSERT INTO Nurses Values ( '10000000088' , 'Amani' , '2001' , '1044284970' , '0577078015' , 11050.00 );
INSERT INTO Nurses Values ( '10000000099' , 'Njoud' , '1184' , '1005628000' , '0507048015' , 11050.00 );
INSERT INTO Nurses Values ( '10000000010' , 'Danah' , '2312' , '1064430100' , '0507049019' , 11000.00 );
```

NURSEID	NURSENAME	DEPARTMENTID	PATIENTID	CONTACTNUMBER	SALARY
10000000011	Reema	1014	1020037100	0501112222	10000
10000000022	Alaa	1302	1030012680	0552038006	10000
10000000033	Layan	0245	1127001152	0502038006	10500
10000000044	Maha	2115	1004781111	0501058009	10500
10000000055	Tala	2034	1110420011	0551058000	12000
10000000066	Abeer	0039	1028112080	0551078005	12000
10000000077	Aryam	0108	1001002661	0577078005	11000
10000000088	Amani	2001	1044284970	0577078015	11050
10000000099	Njoud	1184	1005628000	0507048015	11050
10000000010	Danah	2312	1064430100	0507049019	11000

DML- TABLES : APPOINTMENTS

```
INSERT INTO Appointments VALUES ('11111', '1001002661', '1000000007', '0108', 'PN011', TIMESTAMP '2024-03-13 10:00:00');  
INSERT INTO Appointments VALUES ('22222', '1110420011', '1000000005', '2034', 'RI01', TIMESTAMP '2024-06-23 11:50:00');  
INSERT INTO Appointments VALUES ('33333', '1030012680', '1000000002', '1302', 'LAB02', TIMESTAMP '2024-03-10 08:30:00');  
INSERT INTO Appointments VALUES ('44444', '1064430100', '1000000010', '2312', 'PHT05', TIMESTAMP '2024-10-09 15:00:00');  
INSERT INTO Appointments VALUES ('55555', '1028112080', '1000000006', '0039', 'DEN02', TIMESTAMP '2024-07-01 12:50:00');  
INSERT INTO Appointments VALUES ('66666', '1020037100', '1000000001', '1014', 'GN01', TIMESTAMP '2024-03-15 16:30:00');
```

APPOINTMENT_NUM	PATIENTID	DOCTORID	DEPARTMENTNUMBER	CLINICNO	APPOINTMENT_DATEANDTIME
33333	1030012680	1000000002	1302	LAB02	10-MAR-24 08.30.00.000000 AM
44444	1064430100	1000000010	2312	PHT05	09-OCT-24 03.00.00.000000 PM
55555	1028112080	1000000006	0039	DEN02	01-JUL-24 12.50.00.000000 PM
66666	1020037100	1000000001	1014	GN01	15-MAR-24 04.30.00.000000 PM
11111	1001002661	1000000007	0108	PN011	13-MAR-24 10.00.00.000000 AM
22222	1110420011	1000000005	2034	RI01	23-JUN-24 11.50.00.000000 AM

DML- TABLES :

SURGERY

```
INSERT INTO Surgery VALUES(1, DATE '2024-05-15','Sara','Abduallah','1020037100' , '1000000001' , 'maxillofacial');
INSERT INTO Surgery VALUES(2, DATE '2024-05-16' , 'Ahmed' , 'Mahmoud' , '1127001152' , '1000000003' , 'Otolaryngology' );
INSERT INTO Surgery VALUES(3, DATE '2024-05-17' , 'Yousef' , 'Khaled' , '1004781111' , '1000000004' , Null );
INSERT INTO Surgery VALUES(4, DATE '2024-05-18' , 'Maryam' , 'Ali' , '1110420011' , '1000000005' , 'Laparoscopy' );
INSERT INTO Surgery VALUES(5, DATE '2024-05-19' , 'sara' , 'Hassan' , '1028112080' , '1000000006' , 'Dental Restoration' );
INSERT INTO Surgery VALUES(6, DATE '2024-05-20' , 'Abdullah' , 'Ali' , '1001002661' , '1000000007' , 'siamese Twins' );
```

ROOM	SURGERY_DATE	FIRSTNAME	LASTNAME	PATIENTID	DOCTORID	PROCEDURE
2	05/16/2024	Ahmed	Mahmoud	1127001152	1000000003	Otolaryngology
4	05/18/2024	Maryam	Ali	1110420011	1000000005	Laparoscopy
5	05/19/2024	sara	Hassan	1028112080	1000000006	Dental Restoration
6	05/20/2024	Abdullah	Ali	1001002661	1000000007	siamese Twins
1	05/15/2024	Sara	Abduallah	1020037100	1000000001	maxillofacial
3	05/17/2024	Yousef	Khaled	1004781111	1000000004	-

VIEWS - DDL & QUERIES - DML





VIEWS

```
CREATE VIEW FemalePatients_s
AS
SELECT *
FROM Patients
WHERE Gender = 'Female' AND
FirstName LIKE 'S%'
WITH CHECK OPTION;
```

```
CREATE VIEW PatientInfo AS
SELECT PatientID, FirstName, LastName,
ContactNumber
FROM Patients;
SELECT * FROM PatientInfo;
```

PATIENTID	FIRSTNAME	LASTNAME	CONTACTNUMBER
1020037100	Sara	Abdullah	0504235193
1030012680	Nora	Ahmed	0557888323
1127001152	Ahmed	Mahmoud	0503255636
1004781111	Yousef	Khaled	0553789273
1110420011	Maryam	Ali	0557839271
1028112080	Sara	Hassan	0501125212
1001002661	Abdullah	Ali	0504478646
1044284970	Fatima	Khaled	0553242568
1005628000	Mohammed	Noor	0506664142
1064430100	Leen	Mohammed	0513235678

PATIENTID	FIRSTNAME	LASTNAME	DATEOFBIRTH	GENDER	CONTACTNUMBER	ADDRESS
1020037100	Sara	Abdullah	10/20/1999	Female	0504235193	123 Elm St
1028112080	Sara	Hassan	09/28/1976	Female	0501125212	987 Cedar St

VIEWS



CREATE VIEW PaymentDetailsWithPatientInfo AS

SELECT p.PaymentID, p.PatientID, p.AmountPaid, p.PaymentDate, p.PaymentMethod,
pt.FirstName, pt.DateOfBirth, pt.Gender
FROM Payments p

JOIN Patients pt ON p.PatientID = pt.PatientID

WHERE p.AmountPaid >= 0

With check option ;

PAYMENTID	PATIENTID	AMOUNTPAID	PAYMENTDATE	PAYMENTMETHOD	FIRSTNAME	DATEOFBIRTH	GENDER
6001	1020037100	150	02/16/2024	credit card	Sara	10/20/1999	Female
6002	1030012680	100	02/17/2024	cash	Nora	05/15/2001	Female
6005	1110420011	110	02/20/2024	credit card	Maryam	08/15/1982	Female
6009	1005628000	114	02/22/2024	insurance	Mohammed	06/20/1995	Male
6003	1127001152	236	02/17/2024	insurance	Ahmed	03/25/1990	Male
6004	1004781111	300	02/20/2024	cash	Yousef	12/05/1985	Male
6006	1028112080	458	02/20/2024	credit card	Sara	09/28/1976	Female
6007	1001002661	400	02/21/2024	debit card	Abdullah	04/30/1988	Male
6008	1044284970	233	02/21/2024	cash	Fatima	11/10/1992	Female
6010	1064430100	500	02/22/2024	debit card	Leen	07/15/1983	Female

SELECT * FROM
PaymentDetails
WithPatientInfo;

VIEWS



```
CREATE VIEW HighPaymentPatients AS  
SELECT P.PatientID, P.FirstName, P.LastName, P.DateOfBirth, P.Gender, P.ContactNumber, P.Address,  
SUM(Py.AmountPaid) AS TotalPayments  
FROM Patients P  
JOIN Payments Py ON P.PatientID = Py.PatientID  
GROUP BY P.PatientID, P.FirstName, P.LastName, P.DateOfBirth, P.Gender, P.ContactNumber, P.Address  
HAVING SUM(Py.AmountPaid) > 150;
```

select *
from
HighPaymentPa
tients

	PATIENTID	FIRSTNAME	LASTNAME	DATEOFBIRTH	GENDER	CONTACTNUMBER	ADDRESS	TOTALPAYMENTS
	1004781111	Yousef	Khaled	12/05/1985	Male	0553789273	321 Pine St	300
	1127001152	Ahmed	Mahmoud	03/25/1990	Male	0503255636	789 Oak St	236
	1028112080	Sara	Hassan	09/28/1976	Female	0501125212	987 Cedar St	458
	1001002661	Abdullah	All	04/30/1988	Male	0504478646	456 Birch St	400
	1044284970	Fatima	Khaled	11/10/1992	Female	0553242568	753 Oak St	233
	1064430100	Leen	Mohammed	07/15/1983	Female	0513235678	159 Elm St	500

VIEWS

CREATE VIEW HighSalaryDoctors AS

SELECT

D.DoctorID, D.DoctorName, D.DepartmentID,
D.ContactNumber AS DoctorContactNumber,
D.Salary AS DoctorSalary, P.PatientID,
P.FirstName AS PatientFirstName,
P.LastName AS PatientLastName,
P.DateOfBirth AS PatientDateOfBirth,
P.ContactNumber AS PatientContactNumber

FROM Doctors D

JOIN Patients P ON D.PatientID = P.PatientID

WHERE D.Salary > 13000;

DOCTORID	DOCTORNAME	DEPARTMENTID	DOCTORCONTACTNUMBER	DOCTORSALARY	PATIENTID	PATIENTFIRSTNAME	PATIENTLASTNAME	PATIENTDATEOFBIRTH	PATIENTCONTACTNUMBER
1000000003	Khaled Abdullah	0245	0554880892	16000	1127001152	Ahmed	Mahmoud	03/25/1990	0503255636
1000000004	Rakan Ali	2115	0553216776	20000	1004781111	Yousef	Khaled	12/05/1985	0553789273
1000000006	Reema Abdullah	0039	0554332895	15000	1028112080	Sara	Hassan	09/28/1976	0501125212
1000000007	Ahmed Yaser	0108	054236778	13500	1001002661	Abdullah	Ali	04/30/1988	0504478646
1000000008	Nawaf Ali	2001	0500874321	17000	1044284970	Fatima	Khaled	11/10/1992	0553242568
1000000001	Ali salih	1014	0552038006	25000	1020037100	Sara	Abdullah	10/20/1999	0504235193

QUERIES

find maximum salary of doctors in each department :

```
SELECT Department.DepartmentName,  
       MAX(Doctors.Salary) AS  
             Maximum_Salary  
        FROM Doctors  
INNER JOIN Department ON  
      Doctors.DepartmentID =  
Department.DepartmentNumber  
        GROUP BY  
Department.DepartmentName;
```

DEPARTMENTNAME	MAXIMUM_SALARY
Oral and Dental Clinic	15000
Ear, Nose and Throat ENT	16000
Physical Therapy	10200
Pediatrics and Neonatology	13500
Laboratory	11220
Clinical Nutrition	13000
General Surgery	25000
Intensive Care Unit ICU	17000
Dermatology	20000
Radiology and Imaging	10710

QUERIES

Find test done in February and march :

```
SELECT *  
FROM Test  
WHERE EXTRACT(MONTH FROM  
TestDate) IN (2, 3);
```

TestID	PatientID	TestName	TestDate	TestResult
T006	1028112080	EKG	03/15/2024	Normal
T003	1127001152	MRI	02/01/2024	Positive
T004	1004781111	Ultrasound	02/15/2024	Abnormal
T005	1110420011	CT scan	03/02/2024	Normal

Calculate the sum of nurses salary:

```
select sum(salary)Sum_Nurses_Salary  
from Nurses ;
```

SUM_NURSES_SALARY

add joining date to the nurs table

**ALTER TABLE Nurses
ADD JoiningDate DATE;**

Table altered.

JOINING DATE

QUERIES

Find the names of doctors with higher salaries than the doctor in department '0108'.

SELECT DoctorName :

FROM Doctors

WHERE Salary > ALL (

SELECT Salary

FROM Doctors

WHERE DepartmentID = '0108'

);

DOCTORNAME
Reema Abdullah
Khaled Abdullah
Nawaf Ali
Rakan Ali
Ali saleh

QUERIES

Find the number of departments in first floor :

```
SELECT COUNT(*)  
      Number_Dept_FirstFloor  
   FROM Department  
 WHERE Location LIKE '%First  
        floor%';
```

NUMBER_DEPT_FIRSTFLOOR
4

Find the number of patients for each gender:

```
SELECT COUNT(PatientID)  
      AS Total_Patients, Gender  
   FROM Patients  
GROUP BY Gender;
```

TOTAL_PATIENTS	GENDER
4	Male
6	Female

QUERIES

Find doctors with their annual salary:

```
SELECT DoctorName, Salary * 12  
      "Annual Salary"  
   FROM Doctors;
```

DOCTORNAME	Annual Salary
Ali saleh	300000
Amal majed	134640
Khaled Abdullah	192000
Rakan Ali	240000
Norah Turki	131090.4
Reema Abdullah	180000
Ahmed Yaser	162000
Nawaf Ali	204000
Salman Omar	156000
Mazen Khaled	124848

Increase the salary of doctors whose current salary is less than or equal to 11000 by 2%:

```
UPDATE Doctors  
SET Salary = Salary *  
      1.02  
WHERE Salary <=  
      11000;
```

```
SELECT SALARY  
  FROM DOCTORS;
```

SALARY
25000
11220
20000
16000
10710
15000
13500
17000
13000
10200

QUERIES



Find the total number of appointments made for each doctor:

```
SELECT DoctorID, COUNT(*) AS  
      TotalAppointments  
   FROM Appointments  
GROUP BY DoctorID;
```

DOCTORID	TOTALAPPOINTMENTS
1000000002	1
1000000006	1
1000000007	1
1000000005	1
1000000010	1
1000000001	1

list all patients along with their medications

```
SELECT p.PatientID, p.FirstName, p.LastName,  
      m.MedicationName  
   FROM Patients p  
LEFT JOIN Medications m ON p.PatientID = m.PatientID;
```

PATIENTID	FIRSTNAME	LASTNAME	MEDICATIONNAME
1001002661	Abdullah	Ali	Atorvastatin
1004781111	Yousef	Khaled	Loratadine
1005628000	Mohammed	Noor	Levothyroxine
1020037100	Sara	Abdullah	Paracetamol
1028112080	Sara	Hassan	Salbutamol
1030012680	Nora	Ahmed	Amoxicillin
1044284970	Fatima	Khaled	Metformin
1064430100	Leen	Mohammed	Aspirin
1110420011	Maryam	Ali	Omeprazole
1127001152	Ahmed	Mahmoud	Ibuprofen

QUERIES

list all doctors and their corresponding department names:

```
SELECT d.DoctorID,  
d.DoctorName,  
de.DepartmentName  
FROM Doctors d  
JOIN Department de ON  
d.DepartmentID =  
de.DepartmentNumber;
```

DOCTORID	DOCTORNAME	DEPARTMENTNAME
1000000006	Reema Abdullah	Oral and Dental Clinic
1000000007	Ahmed Yaser	Pediatrics and Neonatology
1000000003	Khaled Abdullah	Ear, Nose and Throat ENT
1000000001	Ali saleh	General Surgery
1000000009	Salman Omar	Clinical Nutrition
1000000002	Amal majed	Laboratory
1000000008	Nawaf Ali	Intensive Care Unit ICU
1000000005	Norah Turki	Radiology and Imaging
1000000004	Rakan Ali	Obstetrics and Gynecology
1000000010	Mazen khaled	Physical Therapy

QUERIES

retrieve the oldest male
and female patients

```
SELECT *  
FROM Patients  
WHERE (DateOfBirth, Gender) IN  
( SELECT MIN(DateOfBirth), Gender  
FROM Patients  
GROUP BY Gender);
```

Retrieve the department name, location,
and the number of patients in
each department located on the second floor

```
SELECT d.DepartmentName, d.Location,  
COUNT(d.PatientID) AS NumberOfPatients  
FROM Department d  
WHERE d.Location LIKE '%Second floor%'  
GROUP BY d.DepartmentName, d.Location;
```

DEPARTMENTNAME	LOCATION	NUMBEROFPATIENTS
Obstetrics and Gynecology	Second floor	1
Clinical Nutrition	Second floor	0
General Surgery	Second floor	0

PATIENTID	FIRSTNAME	LASTNAME	DATEOFBIRTH	GENDER	CONTACTNUMBER	ADDRESS
1004781111	Yousef	Khaled	12/05/1985	Male	0553789273	321 Pine St
1028112080	Sara	Hassan	09/28/1976	Female	0501125212	987 Cedar St

QUERIES

Find the lowest salary of nurses with her name , Make sure that the minimum salary is not less than 10 thousand :

```
SELECT MIN(Salary) AS
```

```
Minimum_Salary ,NurseName
```

```
FROM Nurses
```

```
GROUP BY NurseName
```

```
HAVING MIN(Salary) <= 10000.00;
```

MINIMUM_SALARY	NURSENNAME
10000	Alaa
10000	Reema

Find me the names of the female patients and there date of birth , descending order

```
SELECT FirstName, DateOfBirth  
      FROM Patients
```

```
      WHERE Gender = 'Female'
```

```
      ORDER BY DateOfBirth desc;
```

FIRSTNAME	DATEOFBIRTH
Nora	05/15/2001
Sara	10/20/1999
Fatima	11/10/1992
Leen	07/15/1983
Maryam	08/15/1982
Sara	09/28/1976

QUERIES



Find names of
doctors and nurses
for patients treated
by together:

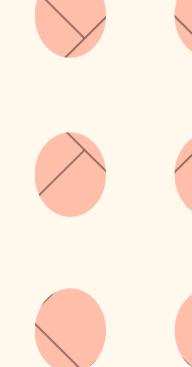
```
select DoctorName  
      NurseName  
  from Doctors D ,  
    Nurses N  
 where  
D.PatientID =  
N.PatientID :  
      
```

DOCTORNAME	NURSENAM
Khaled Abdullah	Layan
Reema Abdullah	Abeer
Ahmed Yaser	Aryam
Ali saleh	Reema
Amal majed	Alaa
Rakan Ali	Maha
Norah Turki	Tala
Nawaf Ali	Amani
Salman Omar	Njoud
Mazen khaled	Danah

find average amount paid of payments
in each payment method

```
SELECT AVG(AmountPaid ) AS AVG_paid  
      ,PaymentMethod  
   FROM Payments  
GROUP BY PaymentMethod ;
```

QUERIES



Find PatientIDs of Payments with AmountPaid greater than that of some AmountPaid in cash.

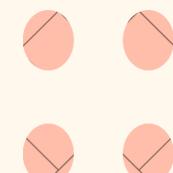
```
select PatientID  
from Payments  
where AmountPaid >  
    some (select  
        AmountPaid  
    from Payments  
    where PaymentMethod=  
        'cash');
```

PATIENTID
1064430100
1028112080
1001002661
1004781111
1127001152
1044284970
1020037100
1005628000
1110420011

The patient is sent to the dermatology department instead of obstetrics and gynecology

```
UPDATE Department  
SET DepartmentName = 'Dermatology'  
WHERE PatientID = '1004781111';  
Select DepartmentName from Department;
```

DEPARTMENTNAME
General Surgery
Laboratory
Ear, Nose and Throat ENT
Dermatology
Radiology and Imaging
Oral and Dental Clinic
Pediatrics and Neonatology
Intensive Care Unit ICU
Clinical Nutrition
Physical Therapy



QUERIES



Delete the Surgery that have room 1 and Procedure is maxillofacial:

delete from Surgery

where Room = '1' and Procedure='maxillofacial';

Select *

from Surgery ;

ROOM	SURGERY_DATE	FIRSTNAME	LASTNAME	PATIENTID	DOCTORID	PROCEDURE
2	05/16/2024	Ahmed	Mahmoud	1127001152	1000000003	Otolaryngology
3	05/17/2024	Yousef	Khaled	1004781111	1000000004	-
4	05/18/2024	Maryam	Ali	1110420011	1000000005	Laparoscopy
5	05/19/2024	sara	Hassan	1028112080	1000000006	Dental Restoration
6	05/20/2024	Abdullah	Ali	1001002661	1000000007	siamese Twins

Add a new nurse

insert into Nurses (NurseID, NurseName) Values

('1000000011', 'hanouf');

```
SELECT NurseID,NurseName  
FROM Nurses  
WHERE NurseID= '1000000011' and NurseName like 'h%';
```

NURSEID	NURSENNAME
1000000011	hanouf

QUERIES



Retrieve all patients born between January 1, 1980, and December 31, 1990:

```
SELECT * FROM Patients  
WHERE DateOfBirth  
BETWEEN DATE '1980-01-01'  
AND DATE '1990-12-31';
```

Join the Test and Admission tables using a full outer join:

```
SELECT *  
FROM Test FULL OUTER JOIN Admission  
ON Test.PatientID = Admission.PatientID;
```

TESTID	PATIENTID	TESTNAME	TESTDATE	TESTRESULT	ADMISSIONID	PATIENTID	ADMISSION_DATE	DISCHARGE_DATE	REASON_FOR_ADMISSION
T001	1020037100	Blood test	01/05/2024	Normal	7015	1020037100	01/05/2024	01/10/2024	Pneumonia
T002	1030012680	X-ray	01/10/2024	Negative	7016	1030012680	01/12/2024	01/20/2024	Fractured leg
T003	1127001152	MRI	02/01/2024	Positive	7017	1127001152	02/01/2024	02/05/2024	Appendicitis
T004	1004781111	Ultrasound	02/15/2024	Abnormal	7018	1004781111	02/15/2024	02/20/2024	Gastric ulcer
T005	1110420011	CT scan	03/02/2024	Normal	7019	1110420011	03/02/2024	03/10/2024	Influenza
T006	1028112080	EKG	03/15/2024	Normal	-	-	-	-	-

PATIENTID	FIRSTNAME	LASTNAME	DATEOFBIRTH	GENDER	CONTACTNUMBER	ADDRESS
1127001152	Ahmed	Mahmoud	03/25/1990	Male	0503255636	789 Oak St
1004781111	Yousef	Khaled	12/05/1985	Male	0553789273	321 Pine St
1110420011	Maryam	Ali	08/15/1982	Female	0557839271	654 Maple St
1001002661	Abdullah	Ali	04/30/1988	Male	0504478646	456 Birch St
1064430100	Leen	Mohammed	07/15/1983	Female	0513235678	159 Elm St

QUERIES

Select distinct PatientIDs from Patients table:

```
SELECT DISTINCT PatientID  
FROM Patients;
```

PATIENTID
1001002661
1004781111
1005628000
1020037100
1028112080
1030012680
1044284970
1064430100
1110420011
1127001152

Set the value of ContactNumber in Patient table to 'Not available' if it's NULL:

```
UPDATE Patients  
SET ContactNumber = 'Not  
available'  
WHERE ContactNumber IS NULL;
```

0 row(s) updated.

Find patients who have both appointments and admissions.

```
SELECT PatientID  
FROM Appointments  
INTERSECT  
SELECT PatientID  
FROM Admission;
```

PATIENTID
1020037100
1030012680
1110420011

QUERIES

Select patients who have appointments scheduled after '2024-06-01' and have made payments:

```
SELECT DISTINCT Patients.*  
FROM Patients
```

```
INNER JOIN Appointments ON Patients.PatientID =  
    Appointments.PatientID
```

```
INNER JOIN Payments ON Patients.PatientID =  
    Payments.PatientID
```

```
WHERE Appointments.appointment_dateAndTime >  
    TIMESTAMP '2024-06-01 00:00:00';
```

PATIENTID	FIRSTNAME	LASTNAME	DATEOFBIRTH	GENDER	CONTACTNUMBER	ADDRESS
1028112080	Sara	Hassan	09/28/1976	Female	0501125212	987 Cedar St
1110420011	Maryam	Ali	08/15/1982	Female	0557839271	654 Maple St
1064430100	Leen	Mohammed	07/15/1983	Female	0513235678	159 Elm St

Select appointments scheduled for patients with the last name 'Ali':

```
SELECT *  
FROM Appointments  
WHERE PatientID IN (SELECT PatientID  
FROM Patients WHERE LastName = 'Ali');
```

APPOINTMENT_NUM	PATIENTID	DOCTORID	DEPARTMENTNUMBER	CLINICNO	APPOINTMENT_DATEANDTIME
11111	1001002661	1000000007	0108	PN011	13-MAR-24 10.00.00.000000 AM
22222	1110420011	1000000005	2034	RI01	23-JUN-24 11.50.00.000000 AM

QUERIES



List all medications prescribed to patients along with their dosages

```
SELECT p.FirstName, p.LastName, m.MedicationName, m.Dosage  
      FROM Patients p
```

```
JOIN Medications m ON p.PatientID = m.PatientID;
```

FIRSTNAME	LASTNAME	MEDICATIONNAME	DOSAGE
Sara	Abdullah	Paracetamol	500mg
Nora	Ahmed	Amoxicillin	250mg
Ahmed	Mahmoud	Ibuprofen	200mg
Yousef	Khaled	Loratadine	10mg
Maryam	Ali	Omeprazole	20mg
Sara	Hassan	Salbutamol	100mcg
Abdullah	Ali	Atorvastatin	40mg
Fatima	Khaled	Metformin	500mg
Mohammed	Noor	Levothyroxine	50mcg
Leen	Mohammed	Aspirin	81mg

QUERIES



Delete all appointments scheduled after september 30, 2024:

DELETE FROM Appointments

**WHERE appointment_dateAndTime > TIMESTAMP '2024-9-30
00:00:00';**

select * from Appointments;

APPOINTMENT_NUM	PATIENTID	DOCTORID	DEPARTMENTNUMBER	CLINICNO	APPOINTMENT_DATEANDTIME
11111	1001002661	1000000007	0108	PN011	13-MAR-24 10.00.00.000000 AM
22222	1110420011	1000000005	2034	RI01	23-JUN-24 11.50.00.000000 AM
33333	1030012680	1000000002	1302	LAB02	10-MAR-24 08.30.00.000000 AM
55555	1028112080	1000000006	0039	DEN02	01-JUL-24 12.50.00.000000 PM
66666	1020037100	1000000001	1014	GN01	15-MAR-24 04.30.00.000000 PM



QUERIES



Retrieve all details of surgeries along with the associated patient details:

```
SELECT *
  FROM Surgery
NATURAL RIGHT JOIN Patients;
```

FIRSTNAME	LASTNAME	PATIENTID	ROOM	SURGERY_DATE	DOCTORID	PROCEDURE	DATEOFBIRTH	GENDER	CONTACTNUMBER	ADDRESS
Ahmed	Mahmoud	1127001152	2	05/16/2024	1000000003	Otolaryngology	03/25/1990	Male	0503255636	789 Oak St
Yousef	Khaled	1004781111	3	05/17/2024	1000000004	-	12/05/1985	Male	0553789273	321 Pine St
Maryam	Ali	1110420011	4	05/18/2024	1000000005	Laparoscopy	08/15/1982	Female	0557839271	654 Maple St
Abdullah	Ali	1001002661	6	05/20/2024	1000000007	Siamese Twins	04/30/1988	Male	0504478646	456 Birch St
Sara	Abdullah	1020037100	-	-	-	-	10/20/1999	Female	0504235193	123 Elm St
Leen	Mohammed	1064430100	-	-	-	-	07/15/1983	Female	0513235678	159 Elm St
Fatima	Khaled	1044284970	-	-	-	-	11/10/1992	Female	0553242568	753 Oak St
Nora	Ahmed	1030012680	-	-	-	-	05/15/2001	Female	0557888323	456 Elm St
Mohammed	Noor	1005628000	-	-	-	-	06/20/1995	Male	0506664142	852 Pine St
Sara	Hassan	1028112080	-	-	-	-	09/28/1976	Female	0501125212	987 Cedar St

QUERIES



Retrieve all patients who were admitted for “Appendicitis”:

```
SELECT *  
FROM Patients p  
JOIN Admission a ON p.PatientID = a.PatientID  
WHERE a.Reason_for_admission = 'Appendicitis';
```

PATIENTID	FIRSTNAME	LASTNAME	DATEOFBIRTH	GENDER	CONTACTNUMBER	ADDRESS	ADMISSIONID	PATIENTID	ADMISSION_DATE	DISCHARGE_DATE	REASON_FOR_ADMISSION
1127001152	Ahmed	Mahmoud	03/25/1990	Male	0503255636	789 Oak St	7017	1127001152	02/01/2024	02/05/2024	Appendicitis

find the patients who were born before the year 1990:
SELECT * FROM Patients WHERE DateOfBirth < DATE '1990-01-01';

PATIENTID	FIRSTNAME	LASTNAME	DATEOFBIRTH	GENDER	CONTACTNUMBER	ADDRESS
1110420011	Maryam	Ali	08/15/1982	Female	0557839271	654 Maple St
1001002661	Abdullah	Ali	04/30/1988	Male	0504478646	456 Birch St
1064430100	Leen	Mohammed	07/15/1983	Female	0513235678	159 Elm St
1004781111	Yousef	Khaled	12/05/1985	Male	0553789273	321 Pine St
1028112080	Sara	Hassan	09/28/1976	Female	0501125212	987 Cedar St

QUERIES

counts the number of surgeries performed for each procedure:

```
SELECT Procedure, COUNT(*) AS TotalSurgeries  
      FROM Surgery  
     GROUP BY Procedure;
```

PROCEDURE	TOTALSURGERIES
-	1
Otolaryngology	1
Laparoscopy	1
Dental Restoration	1
maxillofacial	1
siamese Twins	1

find all patients who have both undergone a test and been admitted to the hospital.

```
SELECT PatientID FROM Test  
INTERSECT  
SELECT PatientID FROM Admission;
```

PATIENTID
1004781111
1020037100
1028112080
1030012680
1110420011
1127001152

QUERIES

What are the distinct reasons for patient admissions recorded?

```
SELECT DISTINCT Reason_for_admission  
FROM Admission;
```

REASON_FOR_ADMISSION
Pneumonia
Gastric ulcer
Appendicitis
Bronchitis
Fractured leg
Influenza

find all doctors who are also patients:

```
SELECT * FROM Doctors WHERE DoctorID IN  
(SELECT PatientID FROM Patients);
```

no data found

Are there any tests with no recorded results

```
SELECT *  
FROM Test  
WHERE TestResult IS NULL;
```

no data found

QUERIES

Find the uppercase version of the DoctorName column from the Doctors table and ordering the results alphabetically by the DoctorName:

```
select Upper(DoctorName) from Doctors  
order by DoctorName;
```

UPPER(DOCTORNAME)
AHMED YASER
ALI SALEH
AMAL MAJED
KHALED ABDULLAH
MAZEN KHALED
NAWAF ALI
NORAH TURKI
RAKAN ALI
REEMA ABDULLAH
SALMAN OMAR

Combine the first names of patients and doctors without eliminating duplicates

```
SELECT FirstName  
FROM Patients  
UNION ALL  
SELECT  
DoctorName FROM  
Doctors;
```

FIRSTNAME
Sara
Nora
Maryam
Abdullah
Fatima
Leen
Ahmed
Yousef
Sara
Mohammed
Rakan Ali
Norah Turki
Mazen khaled
Ali saleh
Amal majed
Khaled Abdullah
Reema Abdullah
Ahmed Yaser
Nawaf Ali
Salman Omar

QUERIES

find the names of patients along with their total payments made?

```
SELECT p.FirstName, p.LastName,  
SUM(pm.AmountPaid) AS TotalPaid  
FROM Patients p
```

```
JOIN Payments pm ON p.PatientID = pm.PatientID  
GROUP BY p.FirstName, p.LastName;
```

FIRSTNAME	LASTNAME	TOTALPAID
Sara	Abdullah	150
Ahmed	Mahmoud	236
Leen	Mohammed	500
Nora	Ahmed	100
Fatima	Khaled	233
Yousef	Khaled	300
Sara	Hassan	458
Abdullah	Ali	400
Mohammed	Noor	114
Maryam	Ali	110

-find the names of patients who has paid between 100 to 200

```
SELECT DISTINCT p.FirstName, p.LastName ,  
pm.AmountPaid FROM Patients p  
JOIN Payments pm ON p.PatientID=pm.PatientID  
WHERE pm.AmountPaid BETWEEN 100 AND 200;
```

FIRSTNAME	LASTNAME	AMOUNTPAID
Nora	Ahmed	100
Mohammed	Noor	114
Sara	Abdullah	150
Maryam	Ali	110

combine a list of patients whose first names start with 'S' or whose last names start with 'A'? Display their IDs and first names

```
SELECT PatientID, FirstName, LastName  
FROM Patients  
WHERE FirstName LIKE 'S%'  
UNION  
SELECT PatientID, FirstName, LastName  
FROM Patients  
WHERE LastName LIKE 'A%';
```

PATIENTID	FIRSTNAME	LASTNAME
1001002661	Abdullah	Ali
1020037100	Sara	Abdullah
1028112080	Sara	Hassan
1030012680	Nora	Ahmed
1110420011	Maryam	Ali

QUERIES



Which patients haven't undergone any surgeries:

```
SELECT *  
FROM Patients  
WHERE PatientID NOT IN  
(SELECT DISTINCT  
PatientID FROM Surgery);
```

Find a list of patients whose last names start with the letter 'A'?

```
SELECT lastName  
FROM Patients
```

```
WHERE LastName LIKE 'A%';
```

LASTNAME
Abdullah
Ahmed
Ali
Ali

PATIENTID	FIRSTNAME	LASTNAME	DATEOFBIRTH	GENDER	CONTACTNUMBER	ADDRESS
1064430100	Leen	Mohammed	07/15/1983	Female	0513235678	159 Elm St
1044284970	Fatima	Khaled	11/10/1992	Female	0553242568	753 Oak St
1005628000	Mohammed	Noor	06/20/1995	Male	0506664142	852 Pine St
1030012680	Nora	Ahmed	05/15/2001	Female	0557888323	456 Elm St

QUERIES

find all patients names sorted alphabetically by their last names?

```
SELECT *  
FROM Patients  
ORDER BY LastName ASC;
```

PATIENTID	FIRSTNAME	LASTNAME	DATEOFBIRTH	GENDER	CONTACTNUMBER	ADDRESS
1020037100	Sara	Abdullah	10/20/1999	Female	0504235193	123 Elm St
1030012680	Nora	Ahmed	05/15/2001	Female	0557888323	456 Elm St
1110420011	Maryam	Ali	08/15/1982	Female	0557839271	654 Maple St
1001002661	Abdullah	Ali	04/30/1988	Male	0504478646	456 Birch St
1028112080	Sara	Hassan	09/28/1976	Female	0501125212	987 Cedar St
1044284970	Fatima	Khaled	11/10/1992	Female	0553242568	753 Oak St
1004781111	Yousef	Khaled	12/05/1985	Male	0553789273	321 Pine St
1127001152	Ahmed	Mahmoud	03/25/1990	Male	0503255636	789 Oak St
1064430100	Leen	Mohammed	07/15/1983	Female	0513235678	159 Elm St
1005628000	Mohammed	Noor	06/20/1995	Male	0506664142	852 Pine St

QUERIES

find all the patients who have not undergone any tests in the context of healthcare management and patient care?

```
SELECT * FROM Patients  
WHERE PatientID NOT IN (SELECT DISTINCT PatientID FROM  
Test);
```

PATIENTID	FIRSTNAME	LASTNAME	DATEOFBIRTH	GENDER	CONTACTNUMBER	ADDRESS
1020037100	Sara	Abdullah	10/20/1999	Female	0504235193	123 Elm St
1064430100	Leen	Mohammed	07/15/1983	Female	0513235678	159 Elm St
1028112080	Sara	Hassan	09/28/1976	Female	0501125212	987 Cedar St
1110420011	Maryam	Ali	08/15/1982	Female	0557839271	654 Maple St
1004781111	Yousef	Khaled	12/05/1985	Male	0553789273	321 Pine St
1127001152	Ahmed	Mahmoud	03/25/1990	Male	0503255636	789 Oak St
1044284970	Fatima	Khaled	11/10/1992	Female	0553242568	753 Oak St
1001002661	Abdullah	Ali	04/30/1988	Male	0504478646	456 Birch St
1005628000	Mohammed	Noor	06/20/1995	Male	0506664142	852 Pine St
1030012680	Nora	Ahmed	05/15/2001	Female	0557888323	456 Elm St

QUERIES

find categorize patients into age groups such as 'Young', 'Middle-aged', or 'Senior' based on their date of birth

SELECT

PatientID, FirstName, LastName, DateOfBirth, CASE

WHEN EXTRACT(YEAR FROM CURRENT_DATE) - EXTRACT(YEAR FROM DateOfBirth) < 30 THEN 'Young'

WHEN EXTRACT(YEAR FROM CURRENT_DATE) - EXTRACT(YEAR FROM DateOfBirth) >= 30 AND

EXTRACT(YEAR FROM CURRENT_DATE) - EXTRACT(YEAR FROM DateOfBirth) < 60 THEN 'Middle-aged' ELSE

'Senior' END AS AgeCategory FROM Patients;

PATIENTID	FIRSTNAME	LASTNAME	DATEOFBIRTH	AGECATEGORY
1020037100	Sara	Abdullah	10/20/1999	Young
1030012680	Nora	Ahmed	05/15/2001	Young
1110420011	Maryam	Ali	08/15/1982	Middle-aged
1005628000	Mohammed	Noor	06/20/1995	Young
1127001152	Ahmed	Mahmoud	03/25/1990	Middle-aged
1004781111	Yousef	Khaled	12/05/1985	Middle-aged
1028112080	Sara	Hassan	09/28/1976	Middle-aged
1001002661	Abdullah	Ali	04/30/1988	Middle-aged
1044284970	Fatima	Khaled	11/10/1992	Middle-aged
1064430100	Leen	Mohammed	07/15/1983	Middle-aged

QUERIES



find a list of patients along with their admission IDs, including those who haven't been admitted yet

```
SELECT Patients.PatientID, Patients.FirstName,  
Patients.LastName, Admission.AdmissionID  
FROM Patients
```

```
LEFT OUTER JOIN Admission ON Patients.PatientID =  
Admission.PatientID;
```

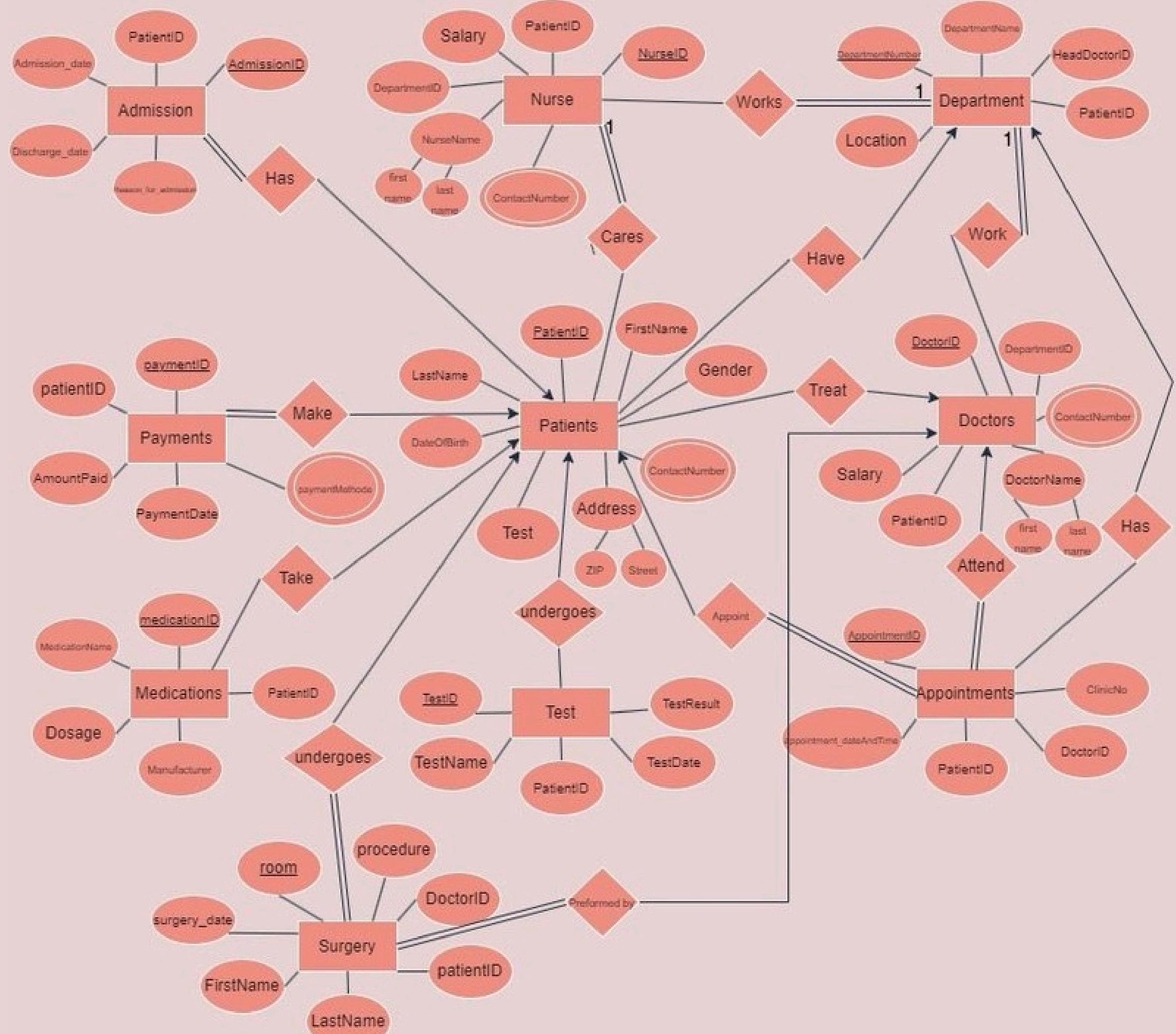
PATIENTID	FIRSTNAME	LASTNAME	ADMISSIONID
1004781111	Yousef	Khaled	7018
1020037100	Sara	Abdullah	7015
1030012680	Nora	Ahmed	7016
1127001152	Ahmed	Mahmoud	7017
1110420011	Maryam	Ali	7019
1028112080	Sara	Hassan	7020
1064430100	Leen	Mohammed	-
1044284970	Fatima	Khaled	-
1001002661	Abdullah	Ali	-
1005628000	Mohammed	Noor	-

Find the MAX amount of paid for each method:

```
SELECT PaymentMethod, MAX  
(AmountPaid) AS MAXAmountPaid  
FROM Payments  
GROUP BY PaymentMethod;
```

PAYMENTMETHOD	MAXAMOUNTPAID
cash	300
credit card	458
insurance	236
debit card	500

ER Model:



NORMALIZATION:

- DepartmentManager table
- Patients table
- Surgery table

DepartmentManager Table:

<u>DepartmentNo</u>	<u>MangerNo</u>	<u>DepartmentName</u>	<u>MangerName</u>	<u>DoctorID</u>	<u>DoctorName</u>	<u>Loccation</u>	<u>Budget</u>
1014	1111111	General Surger	Ghaida	1000000001	Ali	Second floor,First floor	300000
1302	2222222	Laboratory'	Anwar	1000000002	Amal	Third floor	200000
0245	3333333	Ear, Nose and Throat ENT	Hassan	1000000003	Khaled	First floor	100000
2115	4444444	Obstetrics and ' Gynecology	Amer	1000000004	Rakan	Second floor	25000
2034	5555555	'Radiology and Imaging	Karam	1000000005	Norah	Third floor	15000
0039	6666666	Oral and Dental Clinic'	Ziad	1000000006	Reema	First floor	100000
0108	7777777	'Pediatrics and Neonatology	Fahad	1000000007	Ahmed	First floor	15000
2001	8888888	'Intensive Care Unit ICU'	Osama	1000000008	Nawaf	First floor	100000
1184	9999999	'Clinical Nutrition	Adam	1000000009	Salman	Second floor	150000
2312	0101010	'Physical Therapy'	Fatemah	1000000010	Mazen	Third floor	70000

DepartmentManager Table(1NF):

<u>DepartmentNo</u>	<u>MangerNo</u>	DepartmentName	MangerName	DoctorID	DoctorName	Loccation	Budget
1014	1111111	General Surger	Ghaida	1000000001	Ali	Second floor	300000
1302	2222222	Laboratory'	Anwar	1000000002	Amal	Third floor	200000
0245	3333333	Ear, Nose and Throat ENT	Hassan	1000000003	Khaled	First floor	100000
2115	4444444	Obstetrics and ' Gynecology	Amer	1000000004	Rakan	Second floor	25000
2034	5555555	'Radiology and Imaging	Karam	1000000005	Norah	Third floor	15000
0039	6666666	Oral and Dental Clinic',	Ziad	1000000006	Reema	First floor	100000
0108	7777777	'Pediatrics and Neonatology	Fahad	1000000007	Ahmed	First floor	15000
2001	8888888	'Intensive Care Unit ICU'	Osama	1000000008	Nawaf	First floor	100000
1184	9999999	'Clinical Nutrition	Adam	1000000009	Salman	Second floor	150000
2312	0101010	'Physical Therapy'	Fatemah	1000000010	Mazen	Third floor	70000
1014	1111111	General Surger	Ghaida	1000000001	Ali	First floor	300000

DepartmentBudget Table(2NF):

<u>DepartmentNo</u>	<u>MangerNo</u>	Budget
1014	1111111	300000
1302	2222222	200000
0245	3333333	100000
2115	4444444	25000
2034	555555	15000
0039	6666666	100000
0108	7777777	15000
2001	8888888	100000
1184	9999999	150000
2312	0101010	70000

Manger Table(2NF):

<u>MangerNo</u>	MangerName
1111111	Ghaida
2222222	Anwar
3333333	Hassan
4444444	Amer
555555	Karam
6666666	Ziad
7777777	Fahad
8888888	Osama
9999999	Adam
0101010	Fatemah

DepartmentDoctor Table(2NF):

<u>DepartmentNo</u>	<u>DepartmentName</u>	<u>DoctorID</u>	<u>DoctorName</u>	<u>Loccation</u>
1014	General Surger	1000000001	Ali	Second floor
1302	Laboratory'	1000000002	Amal	Third floor
0245	Ear, Nose and Throat ENT	1000000003	Khaled	First floor
2115	Obstetrics and ' Gynecology	1000000004	Rakan	Second floor
2034	',Radiology and Imaging	1000000005	Norah	Third floor
0039	Oral and Dental Clinic',	1000000006	Reema	First floor
0108	'Pediatrics and Neonatology	1000000007	Ahmed	First floor
2001	'Intensive Care Unit ICU'	1000000008	Nawaf	First floor
1184	'Clinical Nutrition	1000000009	Salman	Second floor
2312	'Physical Therapy'	1000000010	Mazen	Third floor
1014	General Surger	1000000001	Ali	First floor

DepartmentBudget Table(3NF):

<u>DepartmentNo</u>	<u>MangerNo</u>	Budget
1014	1111111	300000
1302	2222222	200000
0245	3333333	100000
2115	4444444	25000
2034	555555	15000
0039	6666666	100000
0108	7777777	15000
2001	8888888	100000
1184	9999999	150000
2312	0101010	70000

<u>MangerNo</u>	MangerName
1111111	Ghaida
2222222	Anwar
3333333	Hassan
4444444	Amer
555555	Karam
6666666	Ziad
7777777	Fahad
8888888	Osama
9999999	Adam
0101010	Fatemah

Manger Table(3NF):

<u>DepartmentNo</u>	DepartmentName	DoctorID	Loccation
1014	General Surger	1000000001	Second floor
1302	Laboratory'	1000000002	Third floor
0245	Ear, Nose and Throat ENT	1000000003	First floor
2115	Obstetrics and ' Gynecology	1000000004	Second floor
2034	',Radiology and Imaging	1000000005	Third floor
0039	Oral and Dental Clinic',	1000000006	First floor
0108	'Pediatrics and Neonatology	1000000007	First floor
2001	'Intensive Care Unit ICU'	1000000008	First floor
1184	'Clinical Nutrition	1000000009	Second floor
2312	'Physical Therapy'	1000000010	Third floor
1014	General Surger	1000000001	First floor

Department Table(3NF):

DoctorID	DoctorName
1000000001	Ali
1000000002	Amal
1000000003	Khaled
1000000004	Rakan
1000000005	Norah
1000000006	Reema
1000000007	Ahmed
1000000008	Nawaf
1000000009	Salman
1000000010	Mazen

Doctor Table(3NF):

Patients table:

PatientID	Name	DateOfBirth	Gender	ContactNumber	Address	Age groups
1020037100	Maryam Ali	1999-10-20	Female	0504235193, 0565678901	123 Elm St	middle aged
1030012680	Sara Abdullah	2001-05-15	Female	0557888323	456 Elm St	Teenager
1127001152	Ahmed Mohammed	1990-03-25	Male	0503255636	789 Oak St	Middle aged
1004781111	Abdullah Ali	1985-12-05	Male	0553789273	321 Pine St	Middle aged
1110420011	Yousef Khaled	1982-08-15	Male	0557839271	654 Maple St	Adult
1028112080	Sara Ahmed	1976-09-28	Female	0501125212	987 Cedar St	Adult
1001002661	Abdullah Ali	1988-04-30	Male	0504478646, 0552345678	456 Birch St	Adult
1044284970	Nora Mohammed	1992-11-10	Female	0553242568	753 Oak St	Middle aged
1005628000	Ahmed Khaled	1995-06-20	Male	0506664142	852 Pine St	Middle aged
1064430100	Norah Ahmed	1983-07-15	Female	0513235678, 0501234567	159 Elm St	Adult

Patients table(1NF):

PatientID	Name	DateOfBirth	Gender	ContactNumber	Address	Age groups
1020037100	Maryam Ali	1999-10-20	Female	0504235193	123 Elm St	middle aged
1020037100	Maryam Ali	1999-10-20	Female	0565678901	123 Elm St	Middle aged
1030012680	Sara Abdullah	2001-05-15	Female	0557888323	456 Elm St	teenager
1127001152	Ahmed Mohammed	1990-03-25	Male	0503255636	789 Oak St	Middle aged
1004781111	Abdullah Ali	1985-12-05	Male	0553789273	321 Pine St	Adult
1110420011	Yousef Khaled	1982-08-15	Male	0557839271	654 Maple St	Adult
1028112080	Sara Ahmed	1976-09-28	Female	0501125212	987 Cedar St	Adult
1001002661	Abdullah Ali	1988-04-30	Male	0504478646	456 Birch St	Middle aged
1001002661	Abdullah Ali	1988-04-30	Male	0552345678	456 Birch St	Middle aged
1044284970	Nora Mohammed	1992-11-10	Female	0553242568	753 Oak St	Adult
1005628000	Ahmed Khaled	1995-06-20	Male	0506664142	852 Pine St	Middle aged
1064430100	Norah Ahmed	1983-07-15	Female	0513235678	159 Elm St	middle aged
1064430100	Norah Ahmed	1983-07-15	Female	0501234567	159 Elm St	Adult

patientsRegistry (2NF):

PatientID	Name	Gender
1020037100	Maryam Ali	Female
1030012680	Sara Abdullah	Female
1127001152	Ahmed Mohammed	Male
1004781111	Abdullah Ali	Male
1110420011	Yousef Khaled	Male
1028112080	Sara Ahmed	Female
1001002661	Abdullah Ali	Male
1044284970	Nora Mohammed	Female
1005628000	Ahmed Khaled	Male
1064430100	Norah Ahmed	Female

PatientID	DateOfBirth	ContactNumber	Address	Age groups
1020037100	1999-10-20	0504235193	123 Elm St	middle aged
1020037100	1999-10-20	0565678901	123 Elm St	Middle aged
1030012680	2001-05-15	0557888323	456 Elm St	Teenager
1127001152	1990-03-25	0503255636	789 Oak St	Middle aged
1004781111	1985-12-05	0553789273	321 Pine St	Adult
1110420011	1982-08-15	0557839271	654 Maple St	Adult
1028112080	1976-09-28	0501125212	987 Cedar St	Adult
1001002661	1988-04-30	0504478646	456 Birch St	Adult
1001002661	1988-04-30	0552345678	456 Birch St	adult
1044284970	1992-11-10	0553242568	753 Oak St	Middle aged
1005628000	1995-06-20	0506664142	852 Pine St	Middle aged
1064430100	1983-07-15	0513235678	159 Elm St	Adult
1064430100	1983-07-15	0501234567	159 Elm St	Adult

PatientsDetails (2NF):

PatientsContactDetails (3NF):

PatientID	DateOfBirth	ContactNumber	Address
1020037100	1999-10-20	0504235193	123 Elm St
1030012680	2001-05-15	0557888323	123 Elm St
1127001152	1990-03-25	0503255636	456 Elm St
1004781111	1985-12-05	0553789273	789 Oak St
1110420011	1982-08-15	0557839271	321 Pine St
1028112080	1976-09-28	0501125212	654 Maple St
1001002661	1988-04-30	0504478646	987 Cedar St
1044284970	1992-11-10	0552345678	456 Birch St
1005628000	1995-06-20	0506664142	456 Birch St
1064430100	1983-07-15	0513235678	753 Oak St

PatientGender (3NF):

PatientID	Name	Gender
1020037100	Maryam Ali	Female
1030012680	Sara Abdullah	Female
1127001152	Ahmed Mohammed	Male
1004781111	Abdullah Ali	Male
1110420011	Yousef Khaled	Male
1028112080	Sara Ahmed	Female
1001002661	Abdullah Ali	Male
1044284970	Nora Mohammed	Female
1005628000	Ahmed Khaled	Male
1064430100	Norah Ahmed	Female

PatientsAge (3NF):

DateOfBirth	Age groups
1999-10-20	middle aged
2001-05-15	Teenager
1990-03-25	Middle aged
1985-12-05	Adult
1982-08-15	Adult
1976-09-28	Adult
1988-04-30	Adult
1992-11-10	Middle aged
1995-06-20	Middle aged
1983-07-15	Adult

Surgery table:

Room	PaitentID	FullName	DoctorI D	DoctorName	Procedure	Surgery_date
1	111042	Maryam Ali	100067	Noura Mohammed	Laparoscopy	05/06/2025
2	102003	Sara Abdullah	100005	Yousef Abdullah	Maxillofacial	08/06/2024
3	112700	Ahmed Mohammed	100642	Sara Ahmed	Heart catheterization	05/07/2024 , 05/08/2024
4	100100	Abdullah Ali	120098	Abdullah Rabiah	Siamese twins	11/07/2024
5	100478	yousef Khaled	134000	Ali Omar	Lasik eye	20/07/2024 , 01/08/2024
6	102811	Sara Ahmed	157407	Hala Khalid	Dental restoration	06/08/2024

Surgery table (1NF):

Room	PaitentID	FullName	DoctorI D	DoctorName	Procedure	Surgery_date
1	111042	Maryam Ali	100067	Noura Mohammed	Laparoscopy	05/06/2025
2	102003	Sara Abdullah	100005	Yousef Abdullah	Maxillofacial	08/06/2024
3	112700	Ahmed Mohammed	100642	Sara Ahmed	Heart catheterization	05/07/2024
3	112700	Ahmed Mohammed	100642	Sara Ahmed	Heart catheterization	05/08/2024
4	100100	Abdullah Ali	120098	Abdullah Rabiah	Siamese twins	11/07/2024
5	100478	yousef Khaled	134000	Ali Omar	Lasik eye	20/07/2024
5	100478	yousef Khaled	134000	Ali Omar	Lasik eye	01/08/2024
6	102811	Sara Ahmed	157407	Hala Khalid	Dental restoration	06/08/2024

Surgery appointment table(2NF):

Room	PaitentID	Surgery_date
1	111042	05/06/2025
2	102003	08/06/2024
3	112700	05/07/2024
3	112700	05/08/2024
4	100100	11/07/2024
5	100478	20/07/2024
5	100478	01/08/2024
6	102811	06/08/2024

Doctor Room table(2NF):

Room	Procedure	DoctorID	DoctorName
1	Laparoscopy	100067	Noura Mohammed
2	Maxillofacial	100005	Yousef Abdullah
3	Heart catheterization	100642	Sara Ahmed
4	Siamese twins	120098	Abdullah Rabiah
5	Lasik eye	134000	Ali Omar
6	Dental restoration	157407	Hala Khalid

Patient information table(2NF):

PaitentID	FullName
111042	Maryam Ali
102003	Sara Abdullah
112700	Ahmed Mohammed
100100	Abdullah Ali
100478	Yousef Khalid
102811	Sara Ahmed

Surgery appointment table(3NF):

<u>Room</u>	<u>PaitentID</u>	<u>Surgery_date</u>
1	111042	05/06/2025
2	102003	08/06/2024
3	112700	05/07/2024
3	112700	05/08/2024
4	100100	11/07/2024
5	100478	20/07/2024
5	100478	01/08/2024
6	102811	06/08/2024

Patient information table(3NF):

<u>PaitentID</u>	<u>FullName</u>
111042	Maryam Ali
102003	Sara Abdullah
112700	Ahmed Mohammed
100100	Abdullah Ali
100478	Yousef Khalid
102811	Sara Ahmed

Surgery room table(3NF):

Room	Procedure
1	Laparoscopy
2	Maxillofacial
3	Heart catheterization
4	Siamese twins
5	Lasik eye
6	Dental restororation

Doctor table(3NF):

DoctorID	DoctorName
100067	Noura Mohammed
100005	Yousef Abdullah
100642	Sara Ahmed
120098	Abdullah Rabiah
1340000	Ali Omar
157407	Hala Khalid

THANK YOU