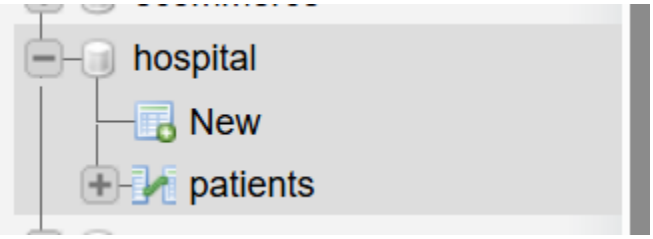
Name:Dharti Ramavat

Assignment-1

Database: -




```
CREATE TABLE patients (
    patient_id INT AUTO_INCREMENT PRIMARY KEY,
    name VARCHAR(100) NOT NULL,
    dob DATE NOT NULL,
    gender ENUM('Male', 'Female', 'Other')
);


INSERT INTO patients (patient_id, name, dob, gender)
VALUES
(1, 'Amit Sharma', '1990-05-12', 'Male'),
(2, 'Riya Patel', '1995-08-23', 'Female'),
(3, 'Rahul Verma', '1988-11-02', 'Male'),
(4, 'Sneha Gupta', '1992-03-15', 'Female'),
(5, 'Ankit Singh', '1985-07-28', 'Male'),
(6, 'Neha Joshi', '1998-01-19', 'Female'),
(7, 'Vikram Mehta', '1979-09-05', 'Male'),
(8, 'Pooja Nair', '1993-12-10', 'Female'),
```

```
(9, 'Suresh Rao', '1982-04-22', 'Male'),
(10, 'Kavita Iyer', '1987-06-30', 'Female');
CREATE TABLE doctors (
    doctor_id INT PRIMARY KEY,
    name VARCHAR(100) NOT NULL,
    department VARCHAR(100) NOT NULL
);

INSERT INTO doctors (doctor_id, name, department)
VALUES
(1, 'Dr. Amit Sharma', 'Cardiology'),
(2, 'Dr. Riya Patel', 'Neurology'),
(3, 'Dr. Rahul Verma', 'Orthopedics'),
(4, 'Dr. Sneha Gupta', 'Pediatrics'),
(5, 'Dr. Ankit Singh', 'Dermatology'),
(6, 'Dr. Neha Joshi', 'Gynecology'),
(7, 'Dr. Vikram Mehta', 'General Medicine'),
(8, 'Dr. Pooja Nair', 'ENT'),
(9, 'Dr. Suresh Rao', 'Urology'),
(10, 'Dr. Kavita Iyer', 'Oncology');

CREATE TABLE appointments (
    app_id INT PRIMARY KEY,
    patient_id INT NOT NULL,
    doctor_id INT NOT NULL,
    app_date DATE NOT NULL,
```

```
    FOREIGN KEY (patient_id) REFERENCES patients(patient_id),
    FOREIGN KEY (doctor_id) REFERENCES doctors(doctor_id)
);

INSERT INTO appointments (app_id, patient_id, doctor_id, app_date)
VALUES
(1, 1, 1, '2024-01-10'),
(2, 2, 3, '2024-01-12'),
(3, 3, 2, '2024-01-15'),
(4, 4, 4, '2024-01-18'),
(5, 5, 5, '2024-01-20'),
(6, 6, 6, '2024-01-22'),
(7, 7, 7, '2024-01-25'),
(8, 8, 8, '2024-01-27'),
(9, 9, 9, '2024-01-28'),
(10, 10, 10, '2024-01-30');
INSERT INTO appointments VALUES
(11, 1, 1, '2024-01-10'),
(12, 1, 1, '2024-02-15'),
(13, 1, 1, '2024-03-20');

CREATE TABLE prescriptions (
    pres_id INT AUTO_INCREMENT PRIMARY KEY,
    app_id INT NOT NULL,
    medicine VARCHAR(100) NOT NULL,
    dosage_mg INT NOT NULL,
```

```
    FOREIGN KEY (app_id) REFERENCES appointments(app_id)
);

INSERT INTO prescriptions (pres_id, app_id, medicine, dosage_mg)
VALUES
(1, 1, 'Paracetamol', 500),
(2, 2, 'Amoxicillin', 250),
(3, 3, 'Ibuprofen', 400),
(4, 4, 'Cough Syrup', 10),
(5, 5, 'Cetirizine', 10),
(6, 6, 'Metformin', 500),
(7, 7, 'Azithromycin', 500),
(8, 8, 'Vitamin D', 1000),
(9, 9, 'Insulin', 30),
(10, 10, 'Omeprazole', 20);

INSERT INTO appointments (app_id, patient_id, doctor_id, app_date)
VALUES
(21, 1, 1, '2025-02-10'),
(22, 2, 2, '2025-02-12'),
(23, 3, 3, '2025-02-15'),
(24, 4, 4, '2025-02-18'),
(25, 5, 5, '2025-02-20');
```

1) Find doctors with the most appointments in the last 30 days.

```
SELECT
   d.doctor_id,
   d.name AS doctor_name,
   d.department,
   COUNT(a.app_id) AS total_appointments
FROM doctors d
JOIN appointments a
   ON d.doctor_id = a.doctor_id
WHERE a.app_date >= CURDATE()
GROUP BY d.doctor_id, d.name, d.department
ORDER BY total_appointments DESC;
```

+ Options

doctor_id	doctor_name	department	total_appointments ▼ 1
10	Dr. Kavita Iyer	Oncology	1
1	Dr. Amit Sharma	Cardiology	1
6	Dr. Neha Joshi	Gynecology	1
3	Dr. Rahul Verma	Orthopedics	1
7	Dr. Vikram Mehta	General Medicine	1
2	Dr. Riya Patel	Neurology	1
8	Dr. Pooja Nair	ENT	1
4	Dr. Sneha Gupta	Pediatrics	1
9	Dr. Suresh Rao	Urology	1
5	Dr. Ankit Singh	Dermatology	1

2) Count patients per department.

```
SELECT
    d.department,
    COUNT(DISTINCT a.patient_id) AS total_patients
FROM doctors d
JOIN appointments a
    ON d.doctor_id = a.doctor_id
GROUP BY d.department
ORDER BY total_patients DESC;
```

+ Options

department	total_patients 1
General Medicine	1
Cardiology	1
Pediatrics	1
Neurology	1
ENT	1
Orthopedics	1
Gynecology	1
Dermatology	1
Urology	1
Oncology	1

3) Identify the most prescribed medicine overall.

```
SELECT
   medicine,
   COUNT(*) AS prescription_count
FROM prescriptions
GROUP BY medicine
ORDER BY prescription_count DESC
LIMIT 3;
```

+ Options

medicine	prescription_count ▾ 1
Cough Syrup	1
Paracetamol	1
Insulin	1

4) List patients who visited more than 2 departments.

```
INSERT INTO doctors VALUES
(101, 'Dr A', 'Cardiology'),
(102, 'Dr B', 'Neurology'),
(103, 'Dr C', 'Orthopedics');

INSERT INTO patients VALUES
(201, 'Test Patient', '1990-01-01', 'Male');

INSERT INTO appointments VALUES
(301, 201, 101, '2024-01-10'),
```

(302, 201, 102, '2024-02-15'),

(303, 201, 103, '2024-03-20');

```
SELECT a.patient_id, p.name
FROM appointments a
JOIN doctors d ON a.doctor_id = d.doctor_id
JOIN patients p ON a.patient_id = p.patient_id
GROUP BY a.patient_id, p.name
HAVING COUNT(DISTINCT d.department) > 2;
```

patient_id	name
201	Test Patient

5) Calculate the average number of appointments per patient.

```
SELECT patient_id, COUNT(*) AS total_appointments
FROM appointments
GROUP BY patient_id;
```

patient_id	total_appointments
1	4
2	1
3	1
4	1
5	1
6	1
7	1
8	1
9	1
10	1
201	3

6) List doctors who have prescribed more than 5 different medicines.

```
SELECT
   AVG(app_count) AS avg_appointments_per_patient
FROM (
   SELECT
      patient_id,
      COUNT(app_id) AS app_count
   FROM appointments
   GROUP BY patient_id
) ;
```

avg_appointments_per_patient
1.0000

7) Find the top 3 most commonly prescribed dosages for "Paracetamol".

```
SELECT
   dosage_mg,
   COUNT(*) AS prescription_count
FROM prescriptions
WHERE medicine = 'Paracetamol'
GROUP BY dosage_mg
ORDER BY prescription_count DESC
LIMIT 2;
```

dosage_mg	prescription_count 1
30	1
500	1

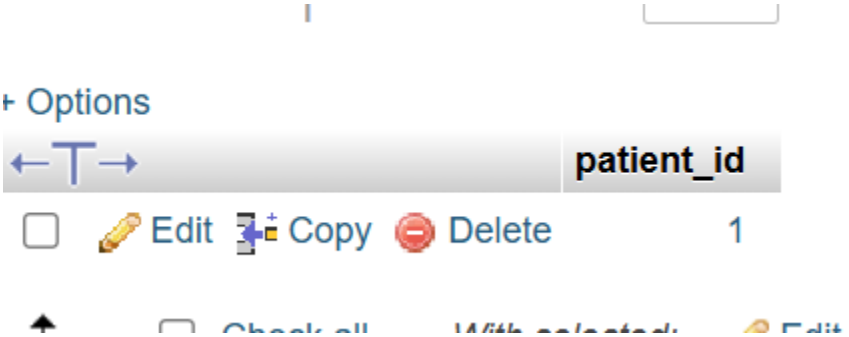
8) Calculate the average time between appointments for each patient.

```
SELECT
   DATE_FORMAT(app_date, '%Y-%m') AS month,
   COUNT(*) AS total_appointments
FROM appointments
GROUP BY month
ORDER BY month;
```

month	total_appointments
2025-12	10

9) Identify patients with appointments across at least 3 different months.

```
SELECT patient_id
FROM appointments
GROUP BY patient_id
HAVING COUNT(DISTINCT MONTH(app_date)) >= 3;
```



10)Find the department with the highest number of unique patients.

```
SELECT d.department,
    COUNT(DISTINCT a.patient_id) AS unique_patient_count
FROM doctors d
JOIN appointments a
ON d.doctor_id = a.doctor_id
GROUP BY d.department
ORDER BY unique_patient_count DESC
LIMIT 1;
```

+ Options

department	unique_patient_count
Cardiology	1