SQL PROJECT

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Scenario: Hospital Management System Database

You are responsible for designing a database management system for a medium-sized hospital. The hospital requires a system to manage patient records, appointments, medical staff information, billing, and medical history.

→ How to create database

Syntax: Create database data base name;

Create database medium_size_hospital_management_system;

```
MySQL 8.0 Command Line Cli  ×   +  ∨

Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 46
Server version: 8.0.33 MySQL Community Server - GPL

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> create database medium_size_hospital_management_system;
Query OK, 1 row affected (0.01 sec)

mysql>
```

Questions:

1 Patient Information:

How would you organize the patient information in the database? What data would you store for each patient?

→ Syntax : Create table tablename;

Dese tablename;

Insert into tablename values;

Select * from tablename;

```
mysql> use  medium_size_hospital_management_system;
Database changed
mysql> CREATE TABLE Patient (
    ->     patient_id INT PRIMARY KEY,
    ->     patient_name VARCHAR(100) NOT NULL,
    ->     date_of_birth DATE NOT NULL,
    ->     gender VARCHAR(10) NOT NULL,
    ->     address VARCHAR(200),
    ->     phone_number VARCHAR(20),
    ->     email VARCHAR(100)
    -> );
Query OK, 0 rows affected (0.05 sec)

mysql>
```

```
mysql> INSERT INTO Patient (patient_id, patient_name, date_of_birth, gender, address, phone_number, email)
    -> VALUES
    ->    (3, 'Sarah Johnson', '1978-12-10', 'Female', '789 Elm Rd, Village', '+1 555-222-3333', 'sarah.johnson@email.com'),
    ->    (4, 'Michael Brown', '1982-06-25', 'Male', '567 Pine Ave, Town', '+1 555-444-5555', 'michael.brown@email.com');
Query OK, 2 rows affected (0.03 sec)
Records: 2  Duplicates: 0  Warnings: 0

mysql> select * from patient;
+------------+---------------+---------------+--------+----------------------+------------------+---------------------------+
| patient_id | patient_name  | date_of_birth | gender | address              | phone_number     | email                     |
|            |               |               |        |                      |                  |                           |
+------------+---------------+---------------+--------+----------------------+------------------+---------------------------+
|          1 | John Doe      | 1990-05-15    | Male   | 123 Main St, City    | +1 555-123-4567  | john.doe@email.com        |
|          2 | Jane Smith    | 1985-09-22    | Female | 456 Oak Ave, Town    | +1 555-987-6543  | jane.smith@email.com      |
|          3 | Sarah Johnson | 1978-12-10    | Female | 789 Elm Rd, Village  | +1 555-222-3333  | sarah.johnson@email.com   |
|          4 | Michael Brown | 1982-06-25    | Male   | 567 Pine Ave, Town   | +1 555-444-5555  | michael.brown@email.com   |
+------------+---------------+---------------+--------+----------------------+------------------+---------------------------+
4 rows in set (0.00 sec)
```

```
mysql> desc  Patient;
+---------------+---------------+------+-----+---------+-------+
| Field         | Type          | Null | Key | Default | Extra |
+---------------+---------------+------+-----+---------+-------+
| patient_id    | int           | NO   | PRI | NULL    |       |
| patient_name  | varchar(100)  | NO   |     | NULL    |       |
| date_of_birth | date          | NO   |     | NULL    |       |
| gender        | varchar(10)   | NO   |     | NULL    |       |
| address       | varchar(200)  | YES  |     | NULL    |       |
| phone_number  | varchar(20)   | YES  |     | NULL    |       |
| email         | varchar(100)  | YES  |     | NULL    |       |
+---------------+---------------+------+-----+---------+-------+
7 rows in set (0.00 sec)
```

2. Doctor Details :

Create a table to store information about doctors. What attribute would you include table ?

Syntax : Create table tablename;

        Insert inti tablename values;

Attributes :   d_id , d_name , mobile , specialty

```
mysql> create table doctor(d_id int,d_name varchar(20),mobile int,specialty varchar(20));
Query OK, 0 rows affected (0.04 sec)

mysql> INSERT into doctor values(1,'DR.adi',56677,'internal_medicine'),(2,'DR.johan',65775,'internal_medicine'),(
hael',54667,'gynecology'),(5,'DR.raj',53636,'pediatrics');
Query OK, 5 rows affected (0.03 sec)
Records: 5  Duplicates: 0  Warnings: 0

mysql> select * from doctor;
+------+------------+--------+-------------------+
| d_id | d_name     | mobile | specialty         |
+------+------------+--------+-------------------+
|    1 | DR.adi     |  56677 | internal_medicine |
|    2 | DR.johan   |  65775 | internal_medicine |
|    3 | DR.anne    |  63639 | dermatology       |
|    4 | DR.michael |  54667 | gynecology        |
|    5 | DR.raj     |  53636 | pediatrics        |
+------+------------+--------+-------------------+
5 rows in set (0.00 sec)
```

3. Appointment Management :

Describe how you would track patient appointments with doctors in the database?

```
mysql> CREATE TABLE Appointment (
    ->     appointment_id INT PRIMARY KEY,
    ->     patient_id INT NOT NULL,
    ->     staff_id INT NOT NULL,
    ->     appointment_date DATETIME NOT NULL,
    ->     appointment_type VARCHAR(100) NOT NULL,
    ->     diagnosis VARCHAR(200),
    ->     prescription VARCHAR(500),
    ->     FOREIGN KEY (patient_id) REFERENCES Patient (patient_id),
    ->     FOREIGN KEY (staff_id) REFERENCES MedicalStaff (staff_id)
    -> );
Query OK, 0 rows affected (0.06 sec)
```

```
mysql> INSERT INTO Appointment (appointment_id, patient_id, staff_id, appointment_date, appointment_type, diagnosis, prescription)
    -> VALUES
    ->     (1003, 3, 103, '2023-08-05 11:15:00', 'Pediatric Checkup', 'Normal checkup, healthy child.', 'No prescription required.'),
    ->     (1004, 4, 104, '2023-08-07 09:30:00', 'General Checkup', 'High blood pressure.', 'Prescribed medication and advised lifestyle changes.');
Query OK, 2 rows affected (0.00 sec)
Records: 2  Duplicates: 0  Warnings: 0

mysql> select * from appoinment ;
ERROR 1146 (42S02): Table 'medium_size_hospital_management_system.appoinment' doesn't exist
mysql> select * from appointment ;
+----------------+------------+----------+---------------------+-------------------+--------------------------------+-----------------------------------------------------+
| appointment_id | patient_id | staff_id | appointment_date    | appointment_type  | diagnosis                      | prescription                                        |
+----------------+------------+----------+---------------------+-------------------+--------------------------------+-----------------------------------------------------+
|           1001 |          1 |      101 | 2023-07-30 10:00:00 | Cardiology Checkup | Normal checkup, no issues found. | No prescription required.                         |
|           1002 |          2 |      102 | 2023-07-31 14:30:00 | General Checkup   | Mild fever and sore throat.    | Prescribed antibiotics for a week.                  |
|           1003 |          3 |      103 | 2023-08-05 11:15:00 | Pediatric Checkup | Normal checkup, healthy child. | No prescription required.                           |
|           1004 |          4 |      104 | 2023-08-07 09:30:00 | General Checkup   | High blood pressure.           | Prescribed medication and advised lifestyle changes. |
+----------------+------------+----------+---------------------+-------------------+--------------------------------+-----------------------------------------------------+
4 rows in set (0.00 sec)
```

```
mysql> desc  Appointment;
+------------------+---------------+------+-----+---------+-------+
| Field            | Type          | Null | Key | Default | Extra |
+------------------+---------------+------+-----+---------+-------+
| appointment_id   | int           | NO   | PRI | NULL    |       |
| patient_id       | int           | NO   | MUL | NULL    |       |
| staff_id         | int           | NO   | MUL | NULL    |       |
| appointment_date | datetime      | NO   |     | NULL    |       |
| appointment_type | varchar(100)  | NO   |     | NULL    |       |
| diagnosis        | varchar(200)  | YES  |     | NULL    |       |
| prescription     | varchar(500)  | YES  |     | NULL    |       |
+------------------+---------------+------+-----+---------+-------+
7 rows in set (0.00 sec)
```

Syntax : select a. appointment_id, p.patient_id, d.d_id,d.d_name from patient as p join appointment as a on p.patient_id= a.patient_id join doctor as d on d.d_id=a.d_id;

```
mysql> select a. appointment_id, p.patient_id, d.d_id,d.d_name from patient as p join appointment as a on p.patient_id= a.patient_id  join doctor as d on d.d_id=a.d_id;
+----------------+------------+------+-------------+
| appointment_id | patient_id | d_id | d_name      |
+----------------+------------+------+-------------+
|           1001 |          1 |    1 | DR.adi      |
|           1002 |          2 |    2 | DR.johan    |
|           1003 |          3 |    3 | DR.anne     |
|           1004 |          4 |    4 | DR.michael  |
+----------------+------------+------+-------------+
4 rows in set (0.00 sec)
```

4.Medical Tests :

How would you manage the information about various medical tests offered by the hospital?

```
mysql> CREATE TABLE MedicalTests (
    ->     test_id INT PRIMARY KEY,
    ->     test_name VARCHAR(100) NOT NULL,
    ->     description VARCHAR(500),
    ->     cost DECIMAL(10, 2) NOT NULL
    -> );
Query OK, 0 rows affected (0.05 sec)
```

```
mysql> INSERT INTO MedicalTests (test_id, test_name, description, cost)
    -> VALUES
    ->     (1, 'Blood Test', 'A general blood test to check overall health.', 100.00),
    ->     (2, 'X-ray', 'Imaging test to visualize bones and organs.', 200.00),
    ->     (3, 'ECG', 'Electrocardiogram to measure heart activity.', 75.00),
    ->     (4, 'MRI', 'Magnetic Resonance Imaging for detailed internal images.', 500.00);
Query OK, 4 rows affected (0.00 sec)
Records: 4  Duplicates: 0  Warnings: 0

mysql> select * from medicaltests;
+---------+------------+----------------------------------------------------------+--------+
| test_id | test_name  | description                                              | cost   |
+---------+------------+----------------------------------------------------------+--------+
|       1 | Blood Test | A general blood test to check overall health.            | 100.00 |
|       2 | X-ray      | Imaging test to visualize bones and organs.              | 200.00 |
|       3 | ECG        | Electrocardiogram to measure heart activity.             |  75.00 |
|       4 | MRI        | Magnetic Resonance Imaging for detailed internal images. | 500.00 |
+---------+------------+----------------------------------------------------------+--------+
4 rows in set (0.00 sec)
```

```
mysql> desc medicaltests;
+-------------+---------------+------+-----+---------+-------+
| Field       | Type          | Null | Key | Default | Extra |
+-------------+---------------+------+-----+---------+-------+
| test_id     | int           | NO   | PRI | NULL    |       |
| test_name   | varchar(100)  | NO   |     | NULL    |       |
| description | varchar(500)  | YES  |     | NULL    |       |
| cost        | decimal(10,2) | NO   |     | NULL    |       |
+-------------+---------------+------+-----+---------+-------+
4 rows in set (0.00 sec)
```

```
mysql> select test_name as offered_medicaltests from medicaltests;
+-----------------------+
| offered_medicaltests  |
+-----------------------+
| Blood Test            |
| X-ray                 |
| ECG                   |
| MRI                   |
+-----------------------+
4 rows in set (0.00 sec)

mysql>
```

5. Doctors Weekly Schedule :

How would you store and display the weekly schedule for a specific doctor , showing the appointments with patients for each day ?

Syntax : select * from doctor_w_s where d_id=1;

```
mysql> create table doctor_w_s(date date, time time,mon varchar(20),tues varchar(20),wed varchar(20),thu varchar(20),fri varchar(20),sat varchar(20),d_id int);
Query OK, 0 rows affected (0.04 sec)

mysql> insert into doctor_w_s values('2023-9-1','9:00:00','avaliable','unavaliable','unavaliable','unavalible','unavaliable','unavaliable',1),('2023-9-2','10:0
e','unavaliable','unavaliable','unavalible','unavaliable',2),('2023-9-3','1:00:00','unavaliable','unavaliable','avaliable','unavalible','unavaliable','unavalia
,'avaliable','unavaliable','unavalible','unavaliable','unavaliable',4),('2023-9-5','8:00:00','unavaliable','avaliable','unavaliable','ununavalibl
',5);
Query OK, 5 rows affected (0.01 sec)
Records: 5  Duplicates: 0  Warnings: 0
```

```
mysql> select * from doctor_w_s;
+------------+----------+-------------+-------------+-------------+-------------+-------------+-------------+------+----------------+
| date       | time     | mon         | tues        | wed         | thu         | fri         | sat         | d_id | appointment_id |
+------------+----------+-------------+-------------+-------------+-------------+-------------+-------------+------+----------------+
| 2023-09-01 | 09:00:00 | avaliable   | unavaliable | unavaliable | unavalible  | unavaliable | unavaliable |    1 |           1001 |
| 2023-09-02 | 10:00:00 | unavaliable | avaliable   | unavaliable | unavalible  | unavaliable | unavaliable |    2 |           1002 |
| 2023-09-03 | 01:00:00 | unavaliable | unavaliable | avaliable   | unavalible  | unavaliable | unavaliable |    3 |           1003 |
| 2023-09-04 | 06:00:00 | avaliable   | unavaliable | unavaliable | unavalible  | unavaliable | unavaliable |    4 |           1004 |
| 2023-09-05 | 08:00:00 | unavaliable | avaliable   | unavaliable | ununavalible| unavaliable | unavaliable |    5 |           NULL |
+------------+----------+-------------+-------------+-------------+-------------+-------------+-------------+------+----------------+
5 rows in set (0.00 sec)
```

```
mysql> select * from doctor_w_s where d_id=1;
+------------+----------+-----------+-------------+-------------+------------+-------------+-------------+------+---------------
| date       | time     | mon       | tues        | wed         | thu        | fri         | sat         | d_id | appointment_id
+------------+----------+-----------+-------------+-------------+------------+-------------+-------------+------+---------------
| 2023-09-01 | 09:00:00 | avaliable | unavaliable | unavaliable | unavalible | unavaliable | unavaliable |    1 |           1001
+------------+----------+-----------+-------------+-------------+------------+-------------+-------------+------+---------------
1 row in set (0.00 sec)
```

THANK YOU