**Lab: Adding Databases and Tables**

1. create database cms;

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CREATE TABLE doctor (

id INT AUTO\_INCREMENT PRIMARY KEY,

email VARCHAR(100) NOT NULL UNIQUE,

name VARCHAR(100) NOT NULL,

password VARCHAR(255) NOT NULL, -- consider hashing in application layer

phone VARCHAR(20),

specialty VARCHAR(50) NOT NULL,

created\_at TIMESTAMP DEFAULT CURRENT\_TIMESTAMP

);

CREATE TABLE doctor\_available\_times (

id INT AUTO\_INCREMENT PRIMARY KEY,

doctor\_id INT NOT NULL,

available\_times VARCHAR(20) NOT NULL,

created\_at TIMESTAMP DEFAULT CURRENT\_TIMESTAMP,

FOREIGN KEY (doctor\_id) REFERENCES doctor(id) ON DELETE CASCADE

);

CREATE TABLE patient (

id INT AUTO\_INCREMENT PRIMARY KEY,

name VARCHAR(100) NOT NULL,

email VARCHAR(100) NOT NULL UNIQUE,

password VARCHAR(255) NOT NULL, -- Store hashed passwords in production

phone VARCHAR(20),

address VARCHAR(255),

created\_at TIMESTAMP DEFAULT CURRENT\_TIMESTAMP

);

CREATE TABLE appointment (

id INT AUTO\_INCREMENT PRIMARY KEY,

doctor\_id INT NOT NULL,

patient\_id INT NOT NULL,

appointment\_time DATETIME NOT NULL,

status TINYINT NOT NULL DEFAULT 0, -- 0 = pending, 1 = completed, etc.

created\_at TIMESTAMP DEFAULT CURRENT\_TIMESTAMP,

FOREIGN KEY (doctor\_id) REFERENCES doctor(id) ON DELETE CASCADE,

FOREIGN KEY (patient\_id) REFERENCES patient(id) ON DELETE CASCADE

);

CREATE TABLE admin (

id INT AUTO\_INCREMENT PRIMARY KEY,

username VARCHAR(50) NOT NULL UNIQUE,

password VARCHAR(255) NOT NULL,

created\_at TIMESTAMP DEFAULT CURRENT\_TIMESTAMP

);

Question 19

Submit the output of the SQL statement that lists all the tables using the “show tables” command. (3 points)

SHOW TABLES;

+------------------------+

| Tables\_in\_cms |

+------------------------+

| admin |

| appointment |

| doctor |

| doctor\_available\_times |

| patient |

+------------------------+

Question 20

Submit the output of the SQL query that displays exactly 5 records from the Patient table. (3 points)

SELECT \* FROM patient LIMIT 5;

+----+----------------+------------------------+-------------+--------------+-----------------------------+---------------------+

| id | name | email | password | phone | address | created\_at |

+----+----------------+------------------------+-------------+--------------+-----------------------------+---------------------+

| 1 | Jane Doe | jane.doe@example.com | passJane1 | 888-111-1111 | 101 Oak St, Cityville | 2025-06-23 07:02:50 |

| 2 | John Smith | john.smith@example.com | smithSecure | 888-222-2222 | 202 Maple Rd, Townsville | 2025-06-23 07:02:50 |

| 3 | Emily Rose | emily.rose@example.com | emilyPass99 | 888-333-3333 | 303 Pine Ave, Villageton | 2025-06-23 07:02:50 |

| 4 | Michael Jordan | michael.j@example.com | airmj23 | 888-444-4444 | 404 Birch Ln, Metropolis | 2025-06-23 07:02:50 |

| 5 | Olivia Moon | olivia.m@example.com | moonshine12 | 888-555-5555 | 505 Cedar Blvd, Springfield | 2025-06-23 07:02:50 |

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Question 21

Submit the output of the SQL statement that runs the *GetDailyAppointmentReportByDoctor* stored procedure. (3 points)

DELIMITER $$

CREATE PROCEDURE GetDailyAppointmentReportByDoctor(

IN report\_date DATE

)

BEGIN

SELECT

d.name AS doctor\_name,

a.appointment\_time,

a.status,

p.name AS patient\_name,

p.phone AS patient\_phone

FROM

appointment a

JOIN

doctor d ON a.doctor\_id = d.id

JOIN

patient p ON a.patient\_id = p.id

WHERE

DATE(a.appointment\_time) = report\_date

ORDER BY

d.name, a.appointment\_time;

END$$

DELIMITER ;

CALL GetDailyAppointmentReportByDoctor('2025-04-15');

+------------------+---------------------+--------+----------------+---------------+

| doctor\_name | appointment\_time | status | patient\_name | patient\_phone |

+------------------+---------------------+--------+----------------+---------------+

| Dr. Ava Hall | 2025-04-15 11:00:00 | 1 | Lucas Turner | 889-666-6666 |

| Dr. Mark Johnson | 2025-04-15 12:00:00 | 1 | Michael Jordan | 888-444-4444 |

| Dr. Mark Johnson | 2025-04-15 13:00:00 | 1 | Olivia Moon | 888-555-5555 |

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Question 22

Submit the output of the SQL statement that runs the *GetDoctorWithMostPatientsByMonth* stored procedure. (3 points)

DELIMITER $$

CREATE PROCEDURE GetDoctorWithMostPatientsByMonth(

IN input\_month INT,

IN input\_year INT

)

BEGIN

SELECT

doctor\_id,

COUNT(patient\_id) AS patients\_seen

FROM

appointment

WHERE

MONTH(appointment\_time) = input\_month

AND YEAR(appointment\_time) = input\_year

GROUP BY

doctor\_id

ORDER BY

patients\_seen DESC

LIMIT 1;

END $$

DELIMITER ;

CALL GetDoctorWithMostPatientsByMonth(4, 2025);

+-----------+---------------+

| doctor\_id | patients\_seen |

+-----------+---------------+

| 2 | 31 |

+-----------+---------------+

Question 23

Submit the output of the SQL statement that runs the *GetDoctorWithMostPatientsByYear* stored procedure. (3 points)

DELIMITER $$

CREATE PROCEDURE GetDoctorWithMostPatientsByYear(

IN input\_year INT

)

BEGIN

SELECT

doctor\_id,

COUNT(patient\_id) AS patients\_seen

FROM

appointment

WHERE

YEAR(appointment\_time) = input\_year

GROUP BY

doctor\_id

ORDER BY

patients\_seen DESC

LIMIT 1;

END $$

DELIMITER ;

CALL GetDoctorWithMostPatientsByYear(2025);

+-----------+---------------+

| doctor\_id | patients\_seen |

+-----------+---------------+

| 1 | 34 |

+-----------+---------------+