Assignment-2

DBMS

Zunaira Abdul Aziz
BSSE23058
Section A

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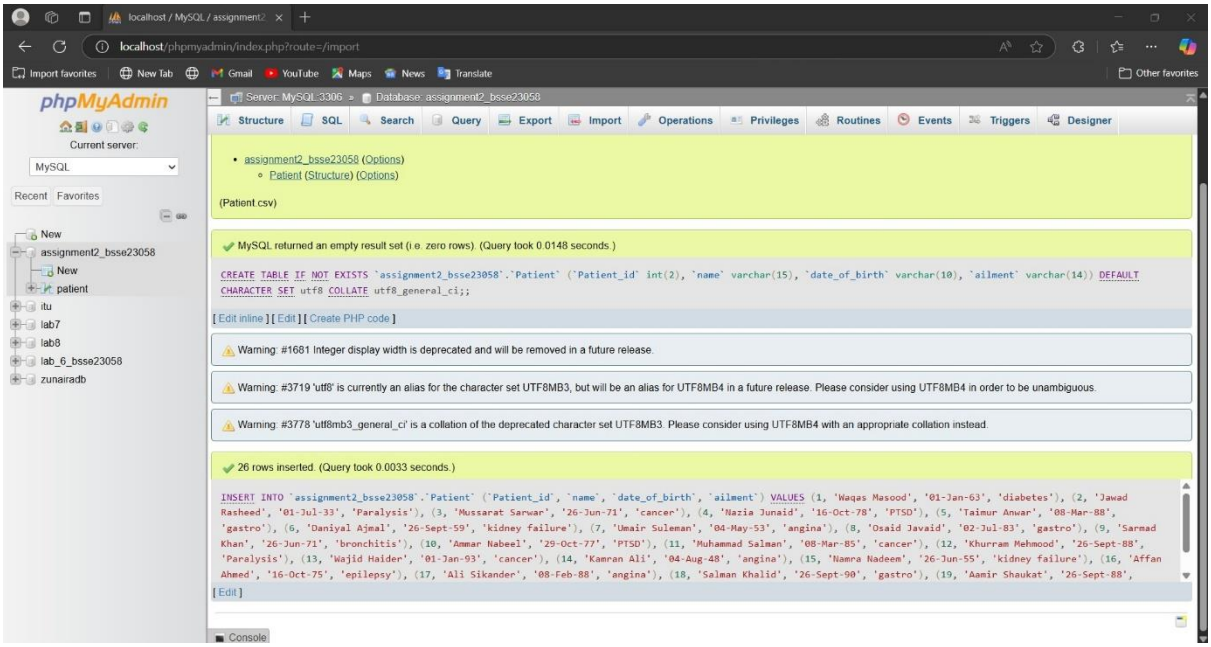
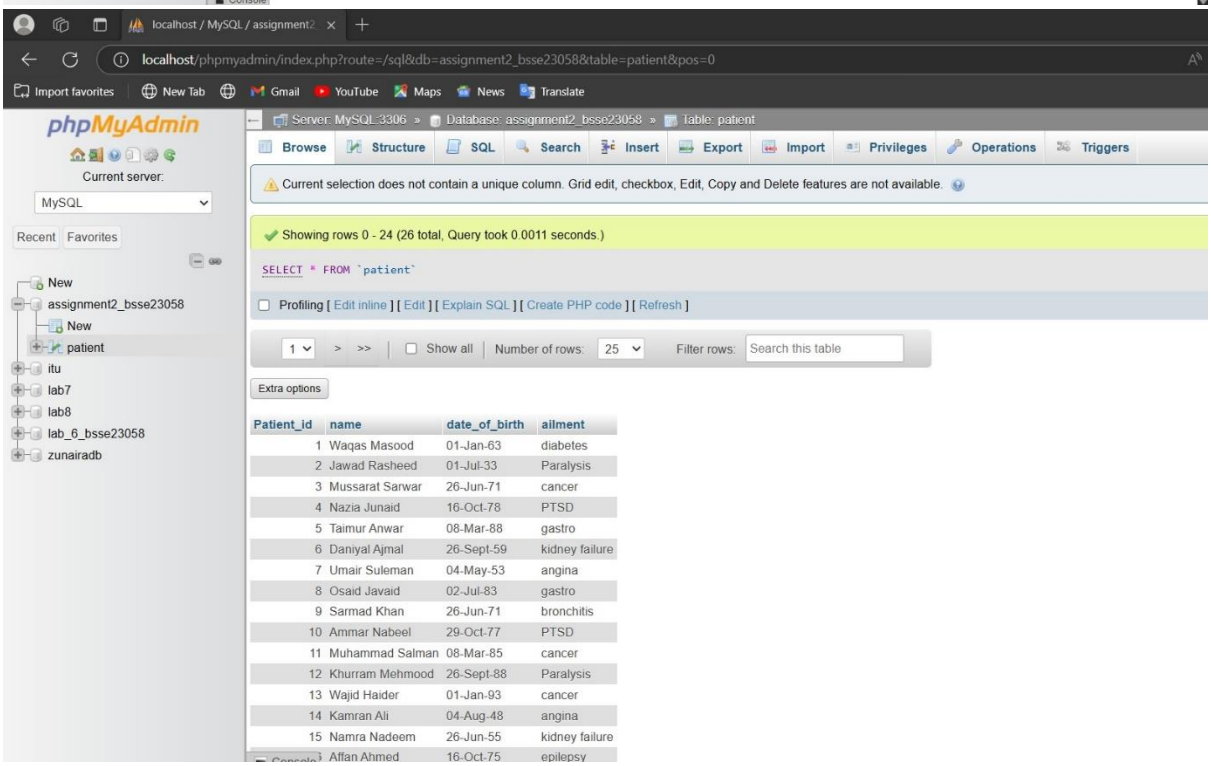
SECTION A

Importing Data from Excel Sheet

1. Patient





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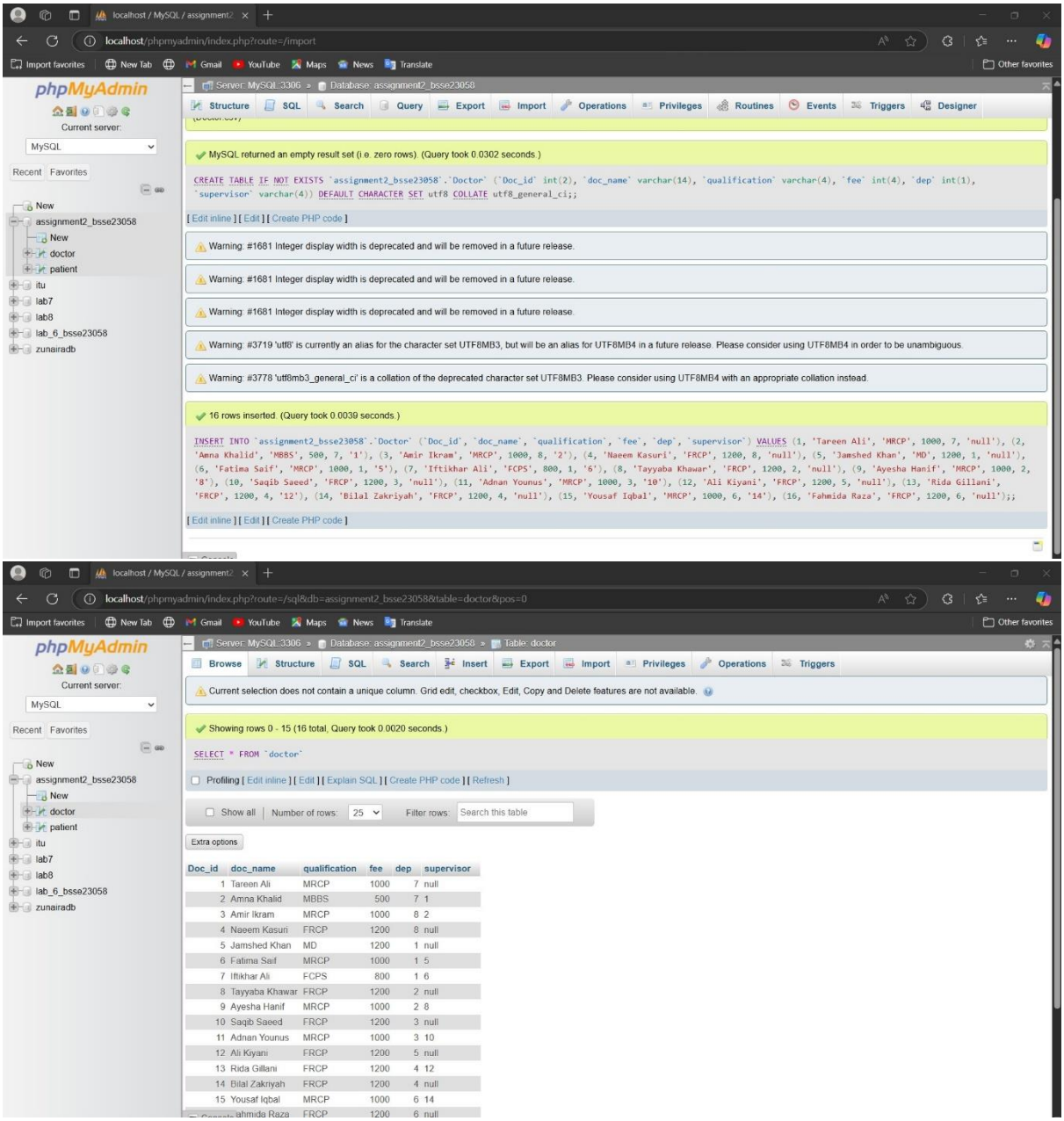
2. Doctor



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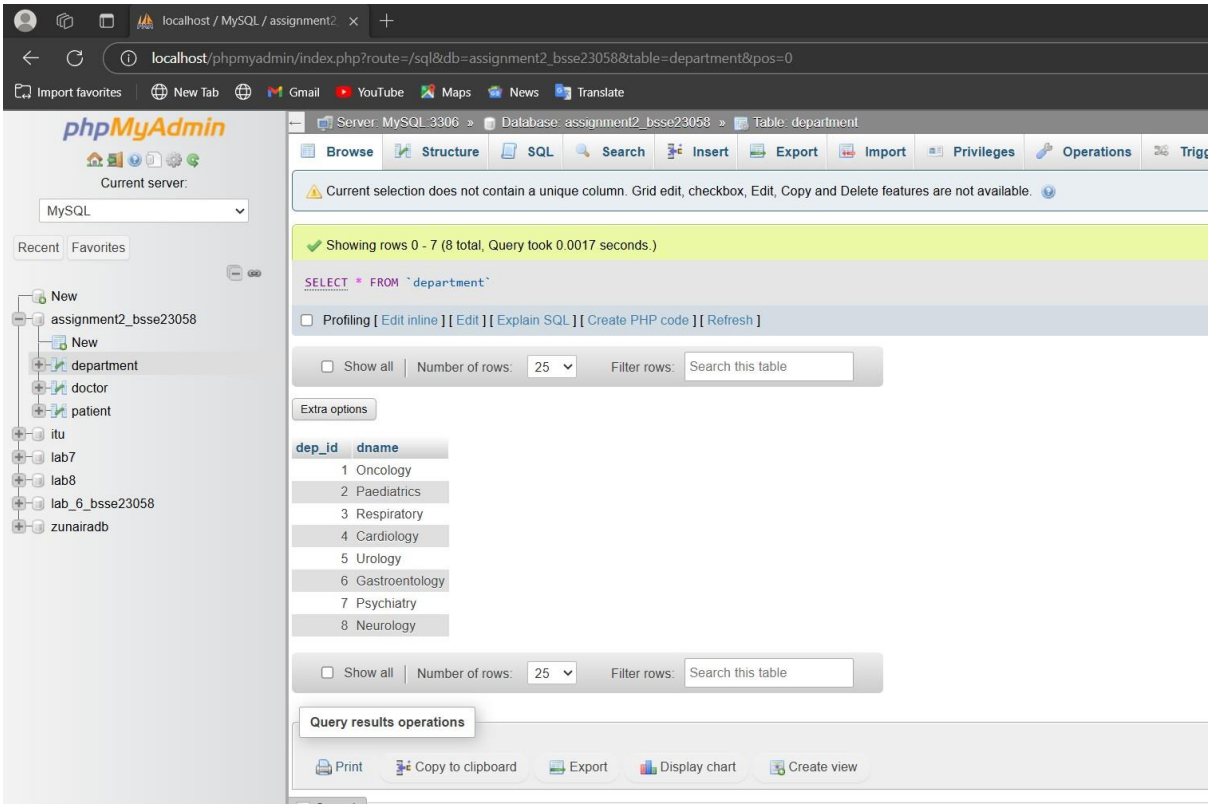
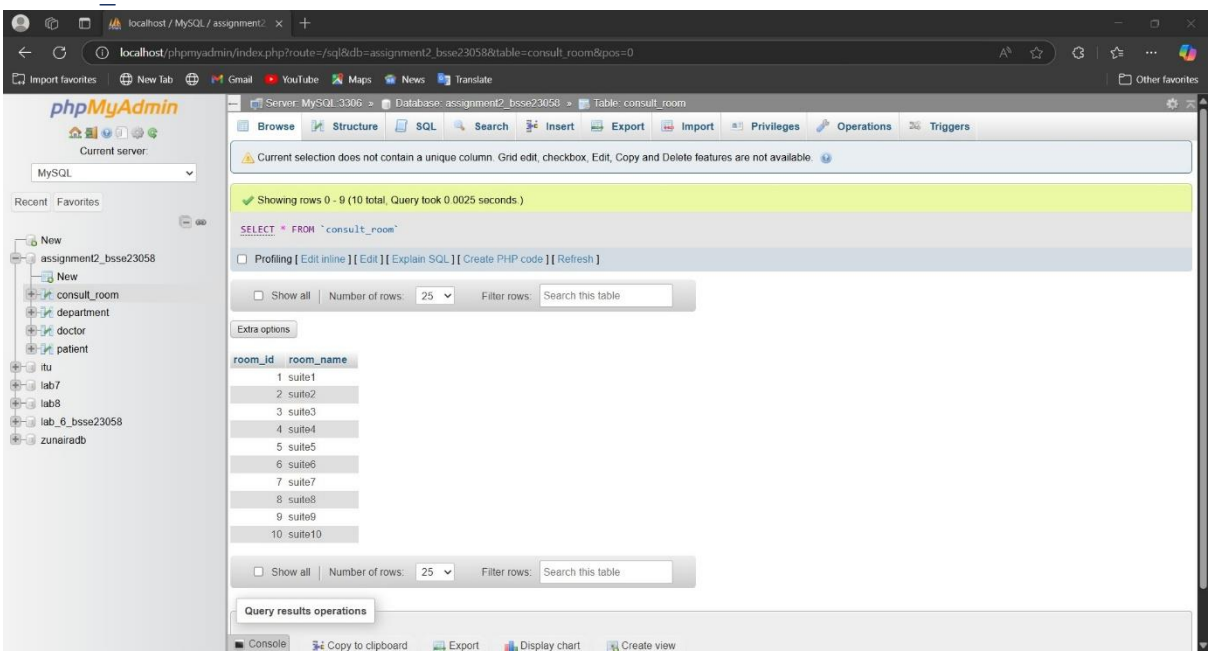
3. Department



4. Consult_room



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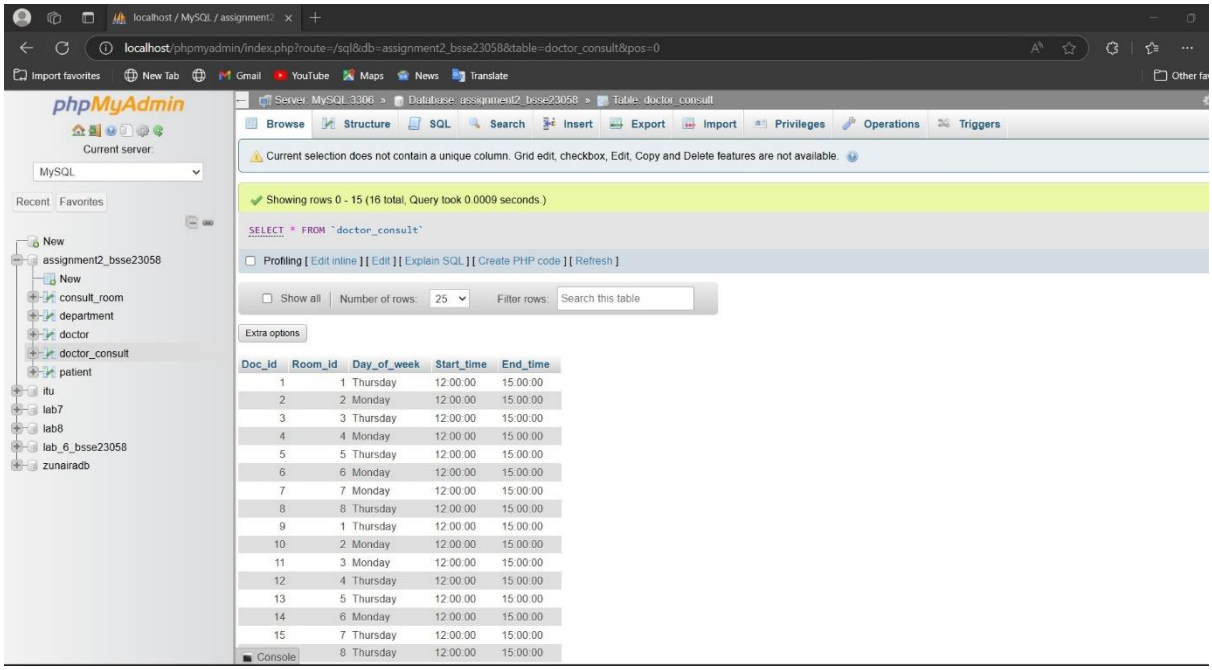
5. Doctor_consult



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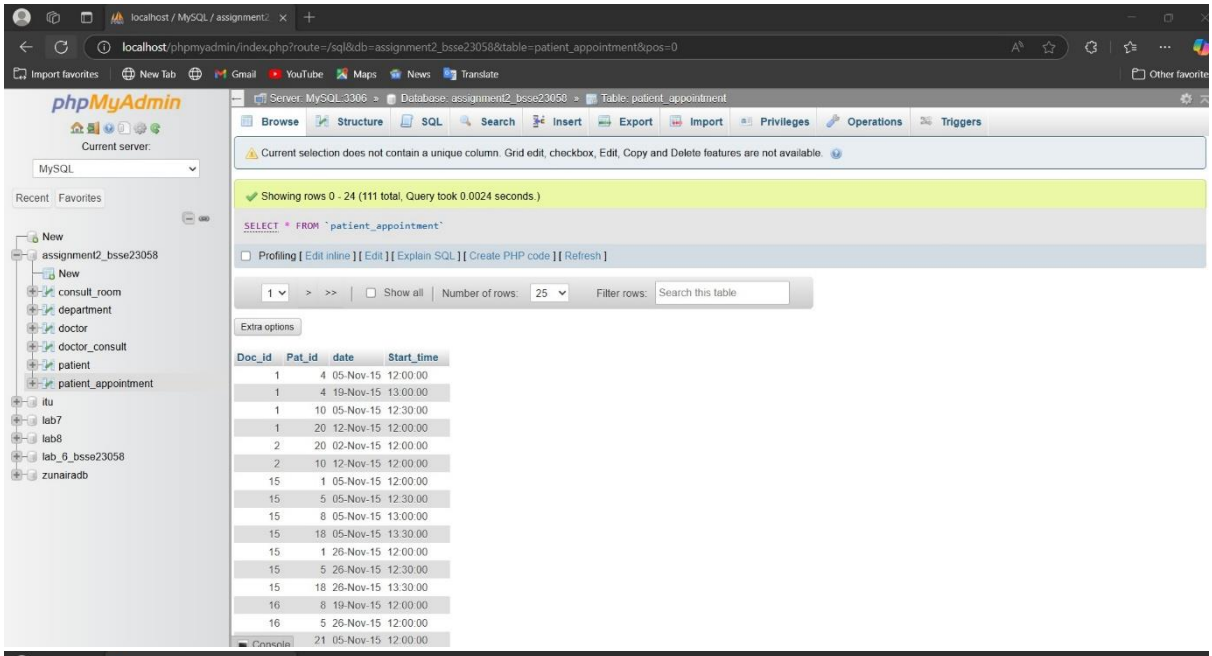
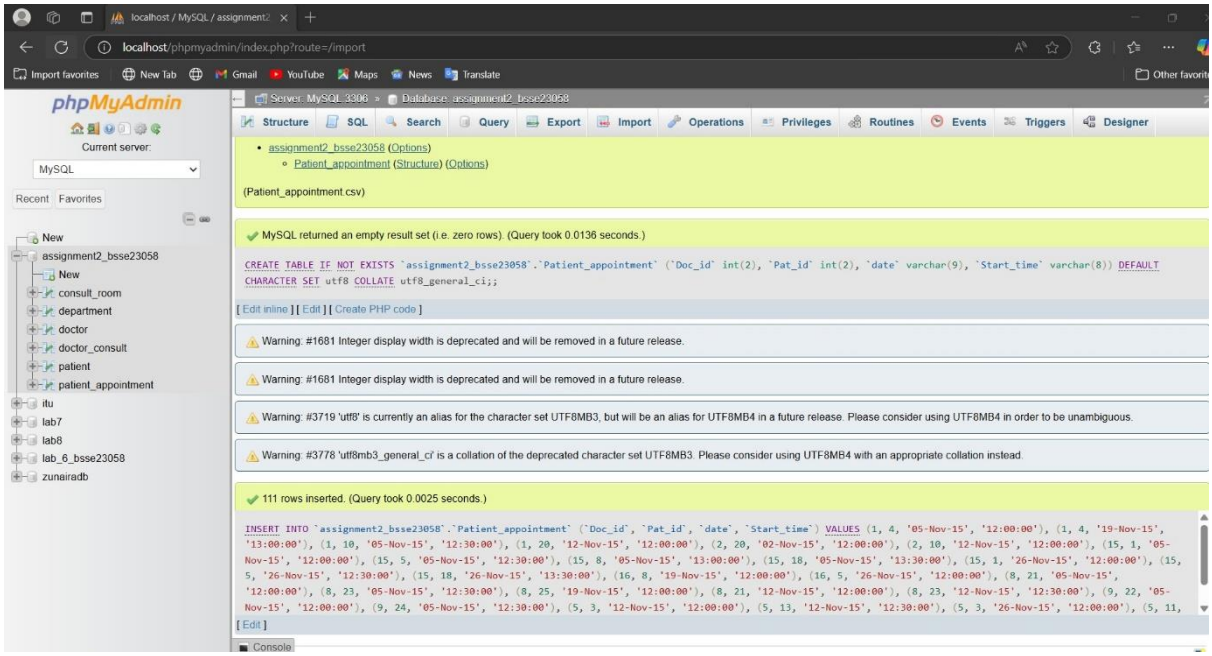
6. Patient_appointment





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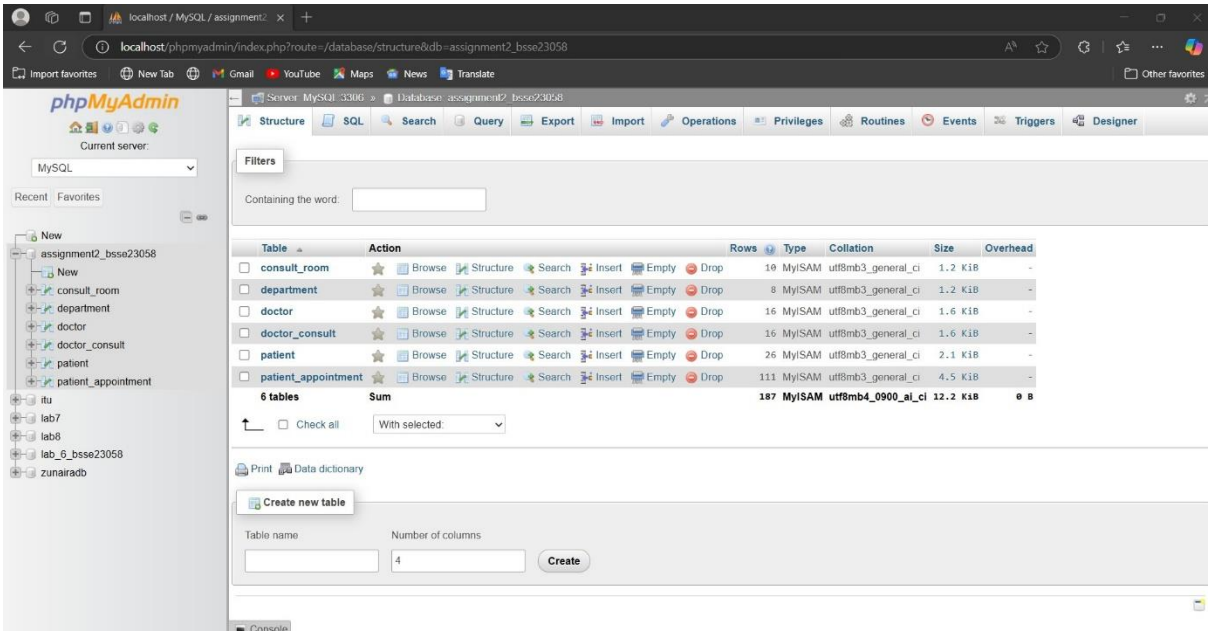
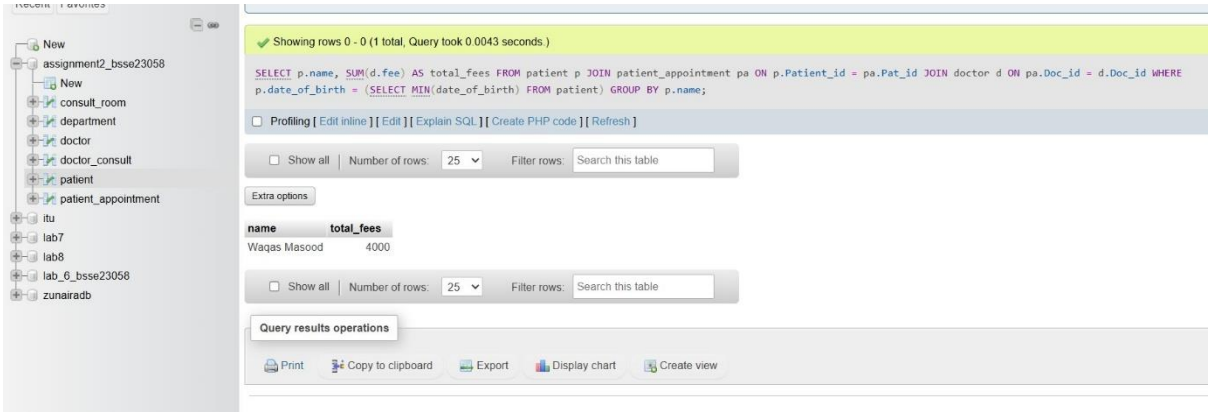
7. Database + All Tables



Question 1

1.

```
SELECT p.name, SUM(d.fee) AS total_fees
FROM patient p
JOIN patient_appointment pa ON p.Patient_id = pa.Pat_id
JOIN doctor d ON pa.Doc_id = d.Doc_id
WHERE p.date_of_birth = (SELECT MIN(date_of_birth) FROM patient)
GROUP BY p.name;
```



2.

```
SELECT d.doc_name
FROM doctor d
LEFT JOIN patient_appointment pa ON d.Doc_id = pa.Doc_id
WHERE pa.Doc_id IS NULL;
```

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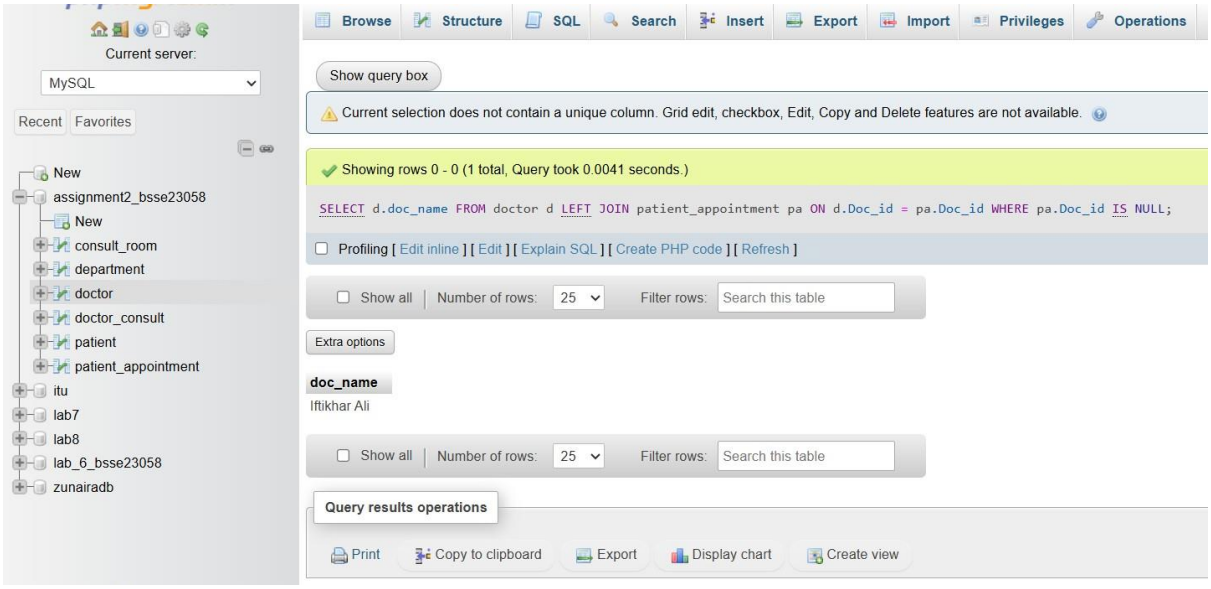
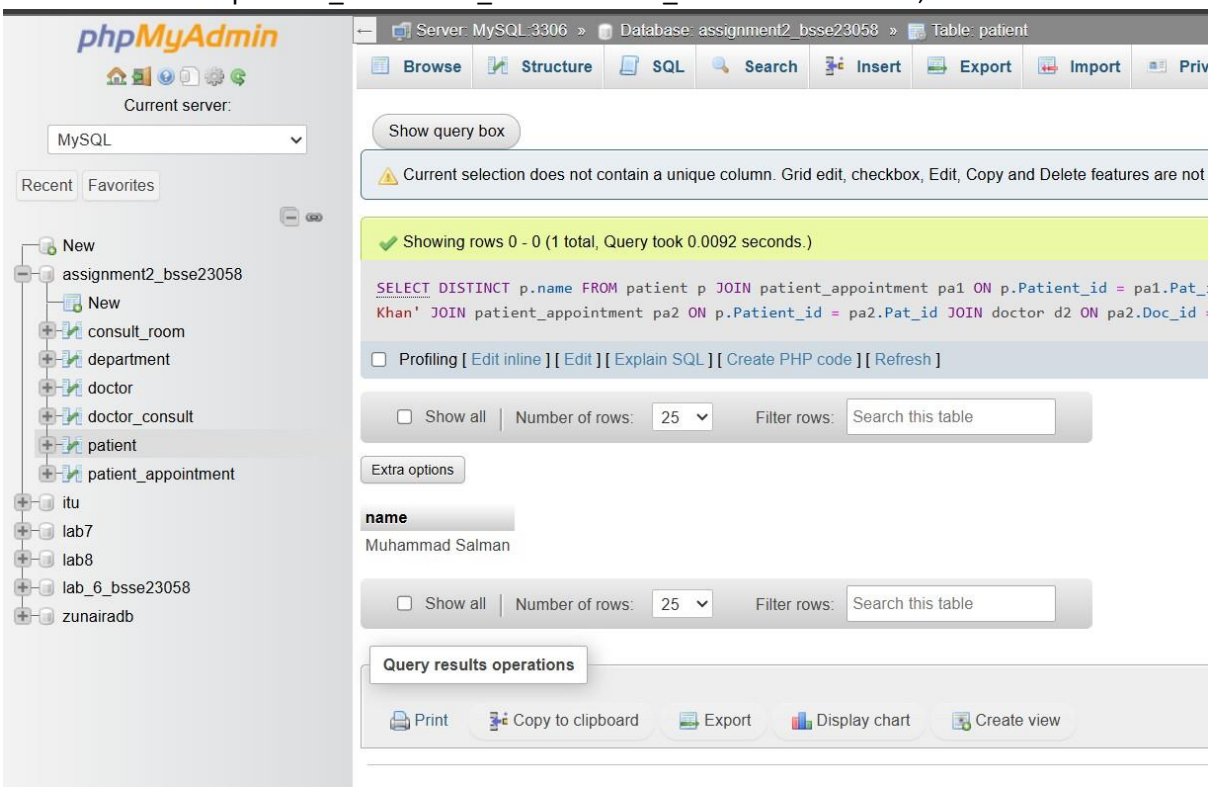


3.

```
SELECT DISTINCT p.name
FROM patient p
JOIN patient_appointment pa1 ON p.Patient_id = pa1.Pat_id
JOIN doctor d1 ON pa1.Doc_id = d1.Doc_id AND d1.doc_name = 'Jamshed Khan'
JOIN patient_appointment pa2 ON p.Patient_id = pa2.Pat_id
JOIN doctor d2 ON pa2.Doc_id = d2.Doc_id AND d2.doc_name = 'Fatima Saif';
```



4.

```
SELECT DISTINCT p.name
FROM patient p
JOIN patient_appointment pa1 ON p.Patient_id = pa1.Pat_id
```

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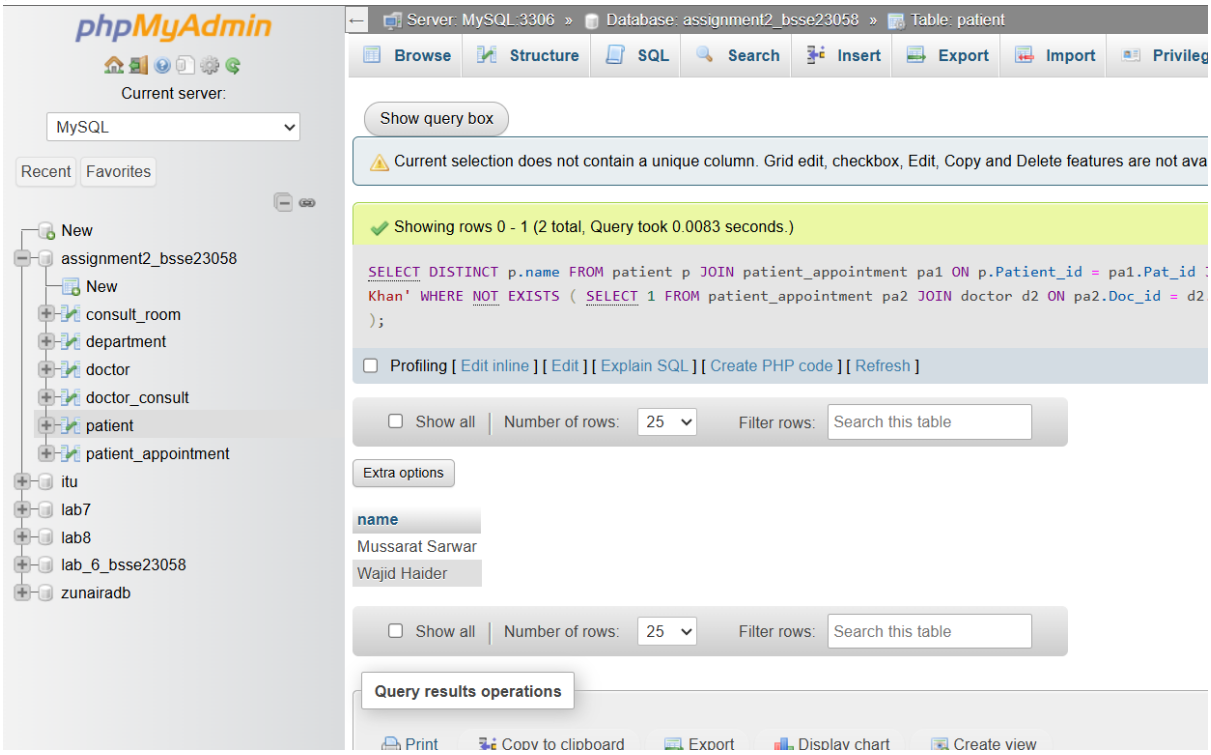
```
JOIN doctor d1 ON pa1.Doc_id = d1.Doc_id AND d1.doc_name = 'Jamshed Khan'
WHERE NOT EXISTS (
  SELECT 1
  FROM patient_appointment pa2
  JOIN doctor d2 ON pa2.Doc_id = d2.Doc_id
  WHERE pa2.Pat_id = p.Patient_id AND d2.doc_name = 'Fatima Saif'
);
```



5.

```
SELECT d.doc_name
FROM doctor d
LEFT JOIN patient_appointment pa ON d.Doc_id = pa.Doc_id
WHERE d.supervisor IS NULL
OR d.Doc_id IN (
  SELECT Doc_id
  FROM patient_appointment
  GROUP BY Doc_id
  HAVING COUNT(DISTINCT Pat_id) > 3
);
```

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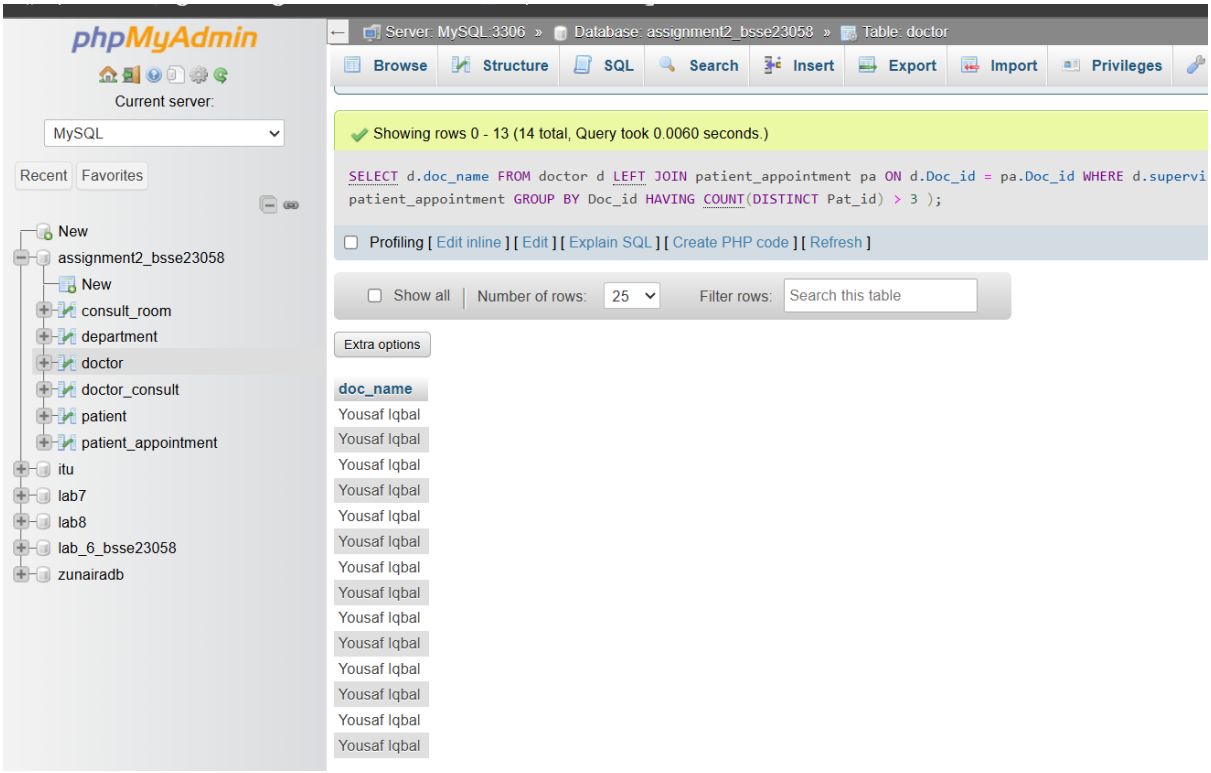

6.

```
SELECT d.doc_name, COUNT(pa.doc_id) * d.fee AS total_earnings
FROM doctor d
JOIN patient_appointment pa ON d.doc_id = pa.doc_id
WHERE EXTRACT(MONTH FROM pa.date) = 10 AND EXTRACT(YEAR FROM pa.date)
=2015
GROUP BY d.doc_name, d.fee
ORDER BY total_earnings DESC
LIMIT 1;
```

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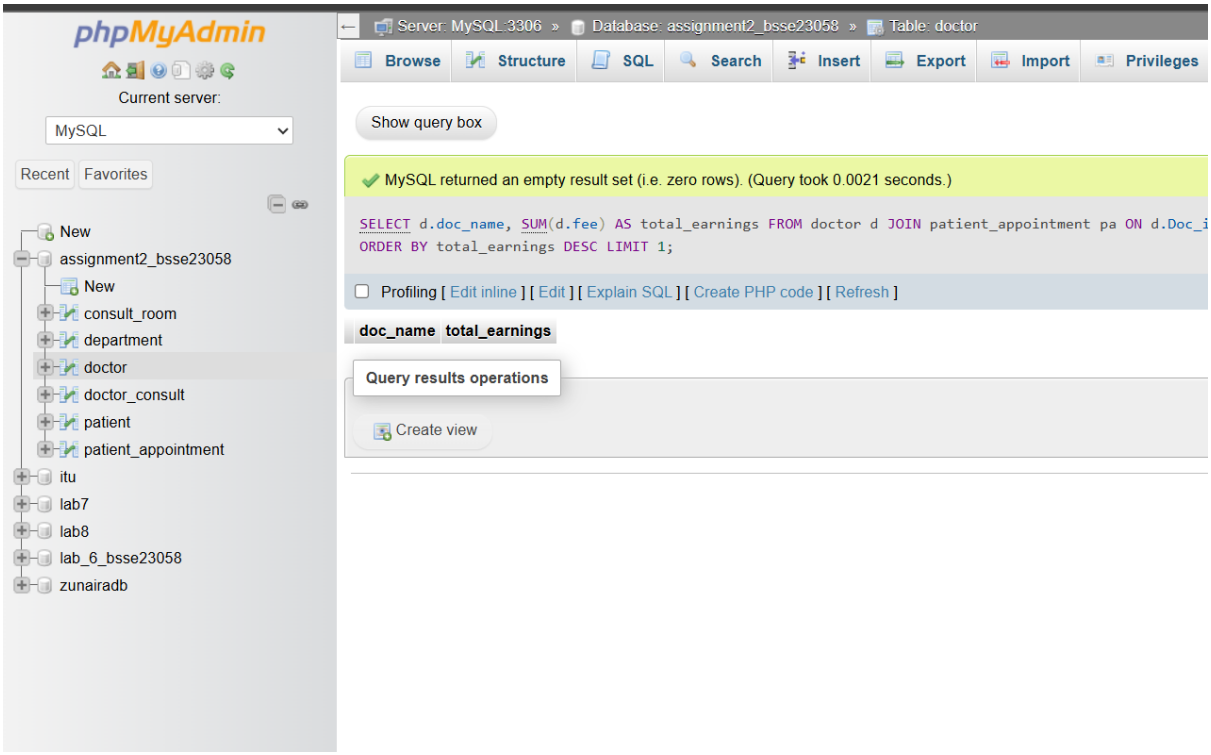
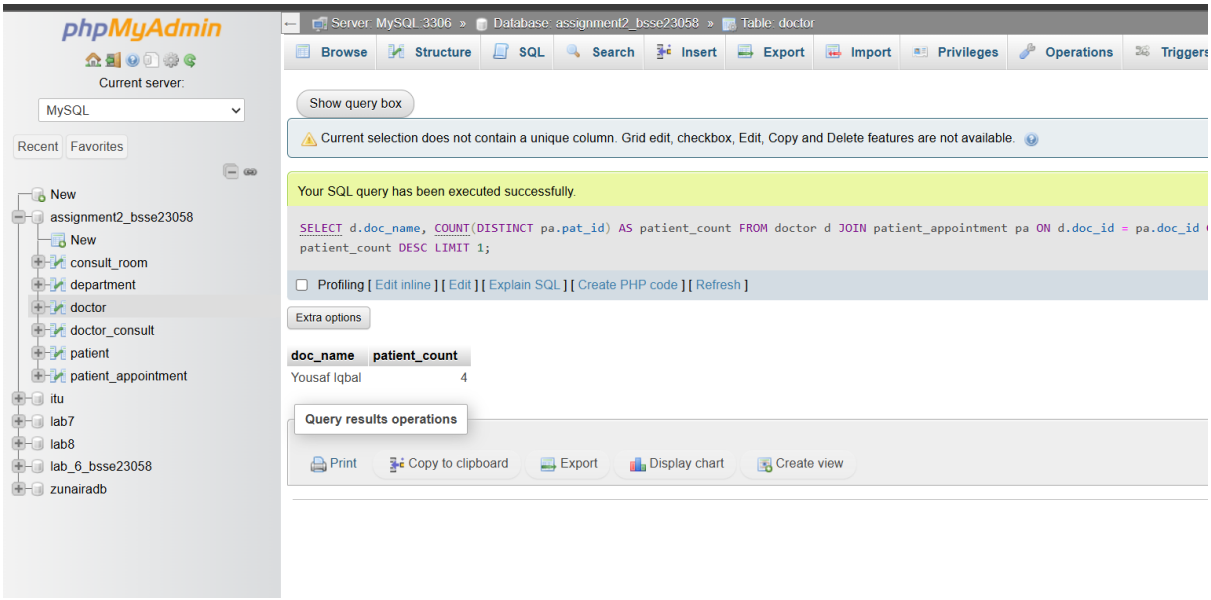


7.

```
SELECT d.doc_name, COUNT(DISTINCT pa.pat_id) AS patient_count
FROM doctor d
JOIN patient_appointment pa ON d.doc_id = pa.doc_id
GROUP BY d.doc_name
ORDER BY patient_count DESC
LIMIT 1;
```



8.

```
SELECT p.name
FROM patient p
WHERE NOT EXISTS (
```

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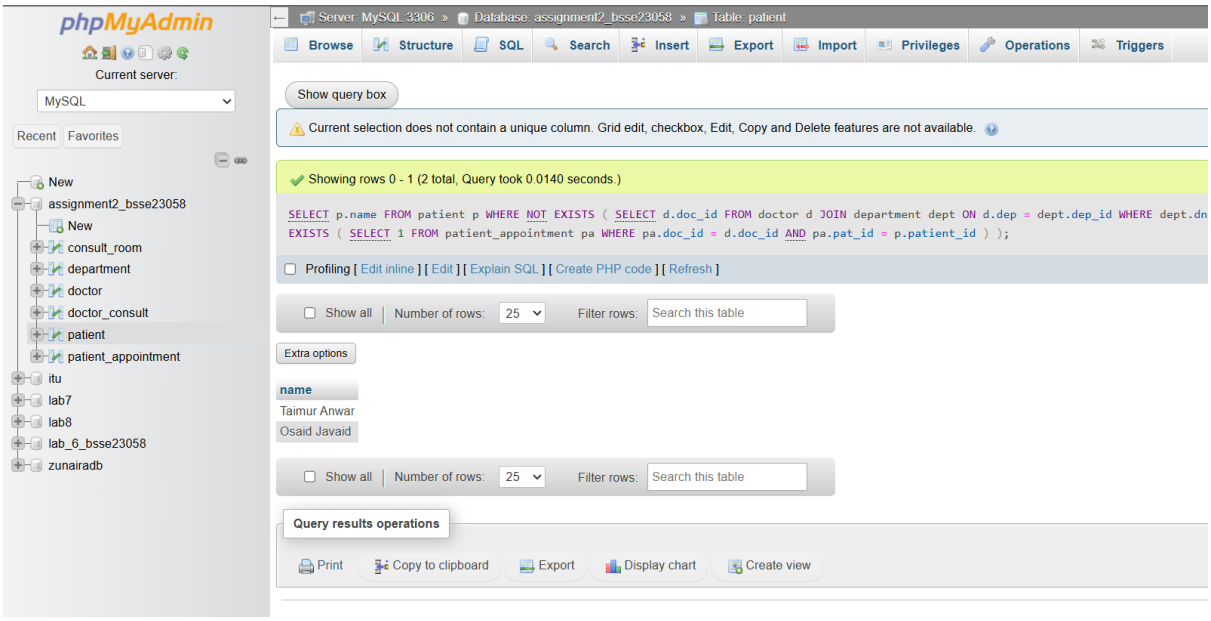
```
    SELECT d.doc_id
    FROM doctor d
    JOIN department dept ON d.dep = dept.dep_id
    WHERE dept.dname = 'Gastroentology'
    AND NOT EXISTS (
      SELECT 1
      FROM patient_appointment pa
      WHERE pa.doc_id = d.doc_id AND pa.pat_id = p.patient_id
    )
);
```



9.

```
SELECT p.name
FROM patient p
JOIN patient_appointment pa ON p.patient_id = pa.pat_id
JOIN doctor d ON pa.doc_id = d.doc_id
WHERE d.doc_name = 'Saqib Saeed'
AND NOT EXISTS (
  SELECT 1
  FROM patient_appointment pa2
  JOIN doctor d2 ON pa2.doc_id = d2.doc_id
  WHERE pa2.pat_id = p.patient_id AND d2.doc_name != 'Saqib Saeed'
);
```

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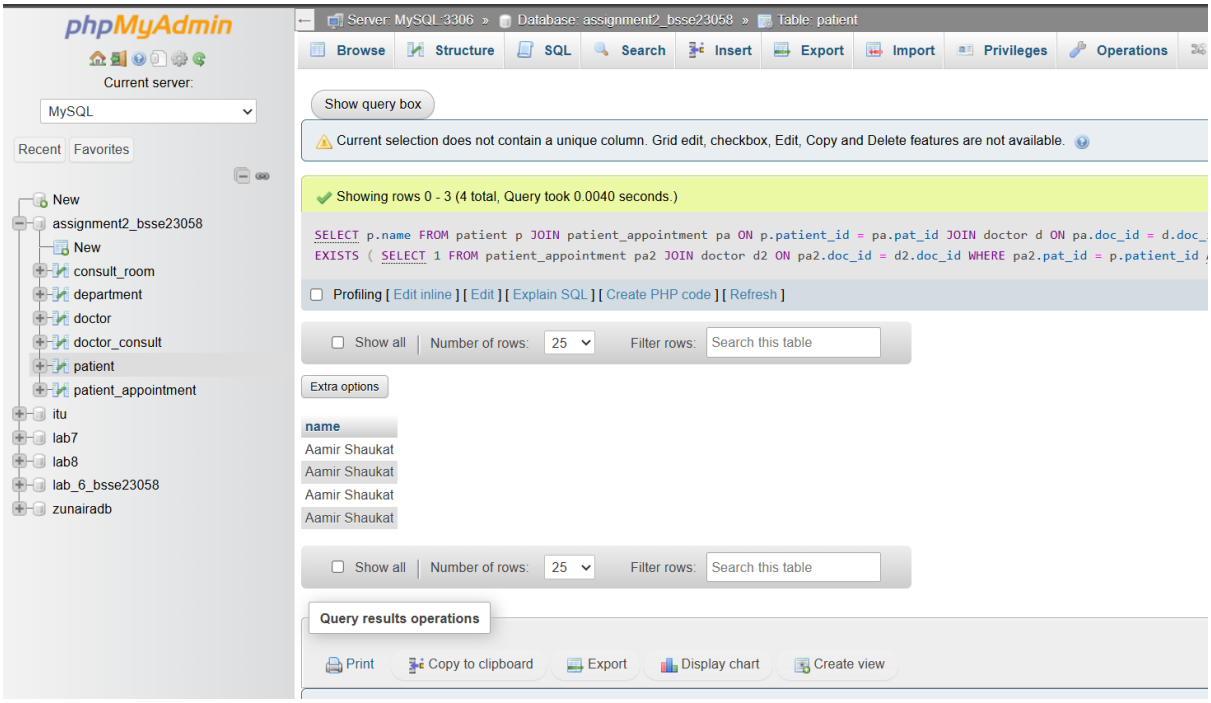
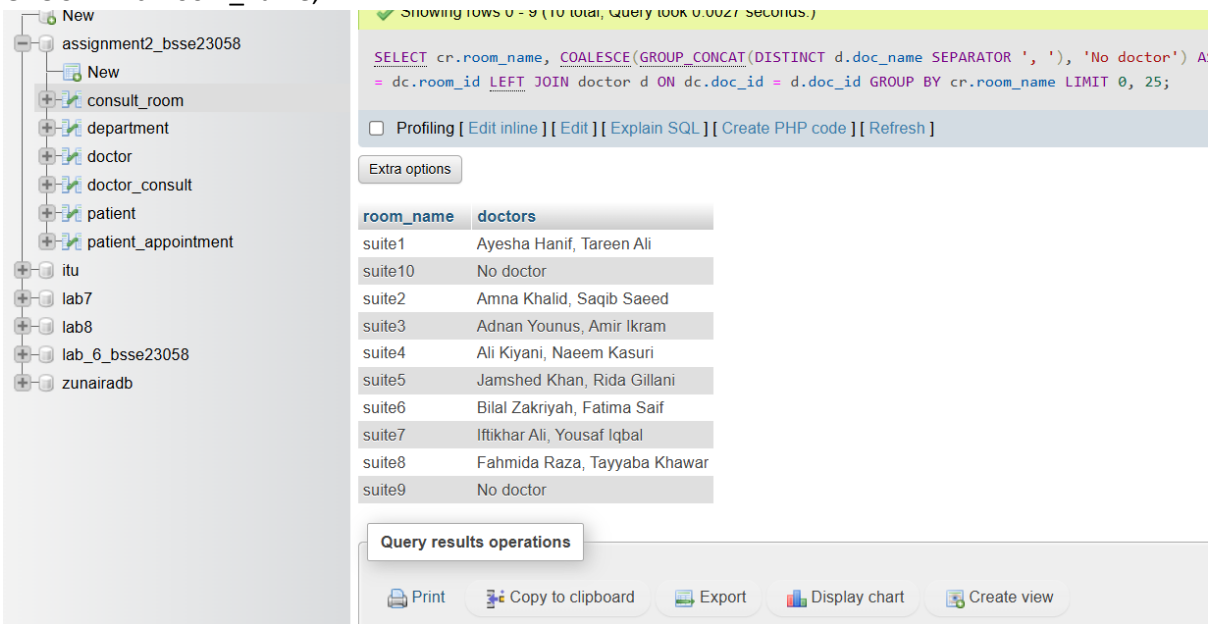


10.

```
SELECT cr.room_name, COALESCE(string_agg(d.doc_name, ', '), 'No doctor') AS doctors
FROM consult_room cr
LEFT JOIN doctor_consult dc ON cr.room_id = dc.room_id
LEFT JOIN doctor d ON dc.doc_id = d.doc_id
GROUP BY cr.room_name;
```



QUESTION 2

1.

```
DELIMITER //
CREATE FUNCTION CalculateAverageFeeByDepartment(dept_id INT)
RETURNS DECIMAL(10,2)
DETERMINISTIC
```

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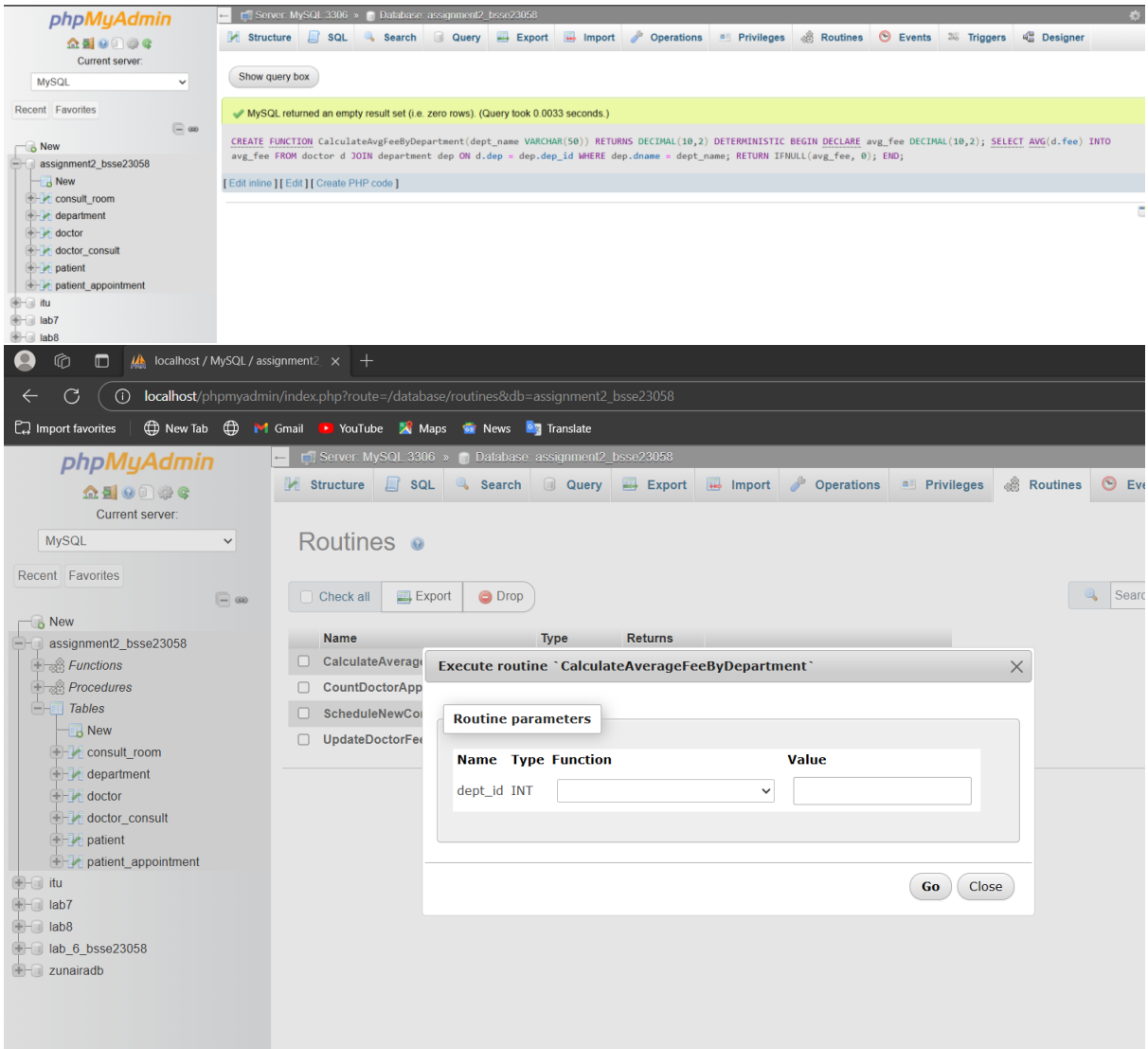
```
BEGIN
   DECLARE avg_fee DECIMAL(10,2);

   SELECT AVG(fee) INTO avg_fee
   FROM doctor
   WHERE dep = dept_id;

   RETURN IFNULL(avg_fee, 0);
END //
DELIMITER ;
```



2.

```
DELIMITER //
CREATE FUNCTION CountDoctorAppointments(doc_id INT)
RETURNS INT
DETERMINISTIC
BEGIN
   DECLARE appointment_count INT;
```

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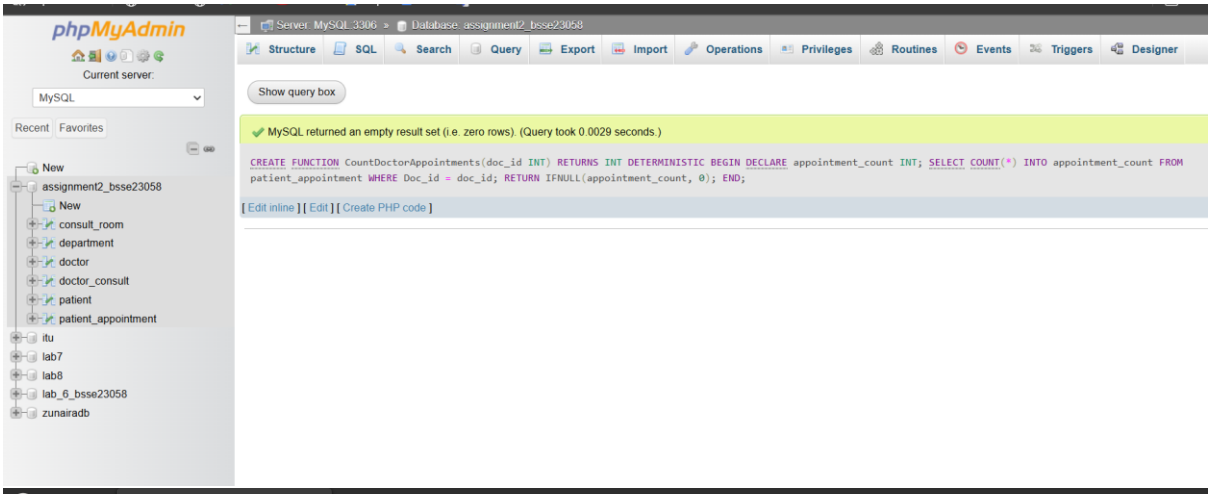
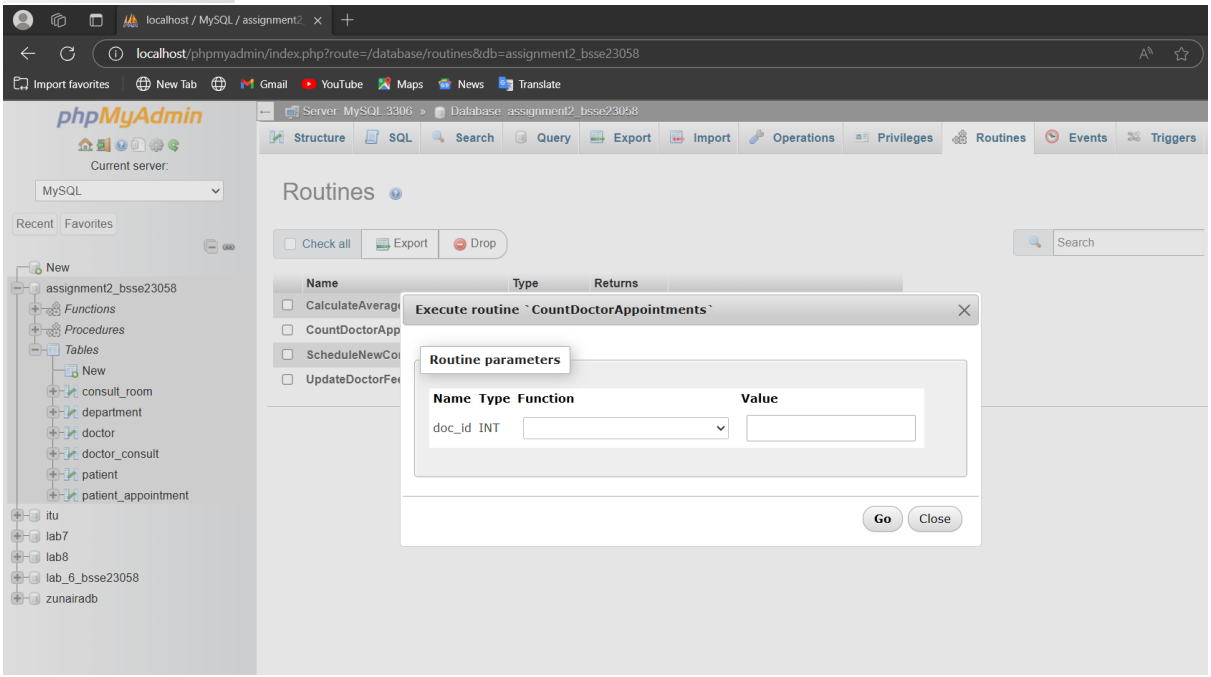
```
    SELECT COUNT(*) INTO appointment_count
    FROM patient_appointment
    WHERE Doc_id = doc_id;

    RETURN IFNULL(appointment_count, 0);
END //
DELIMITER ;
```





QUESTION 3

3.

```
DELIMITER //
CREATE PROCEDURE UpdateDoctorFee(
    IN doctor_id INT,
    IN new_fee DECIMAL(10,2)
)
BEGIN
    UPDATE doctor
```

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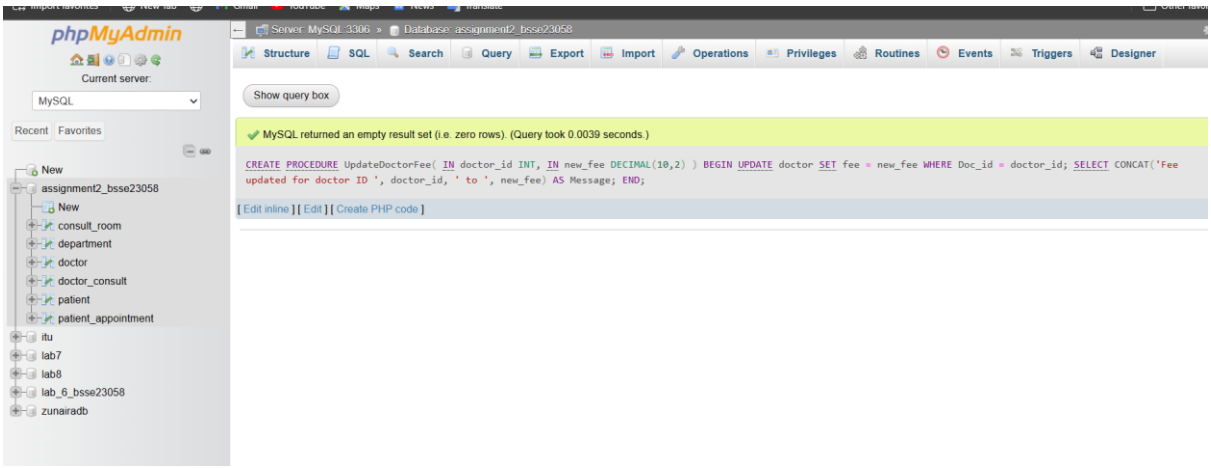
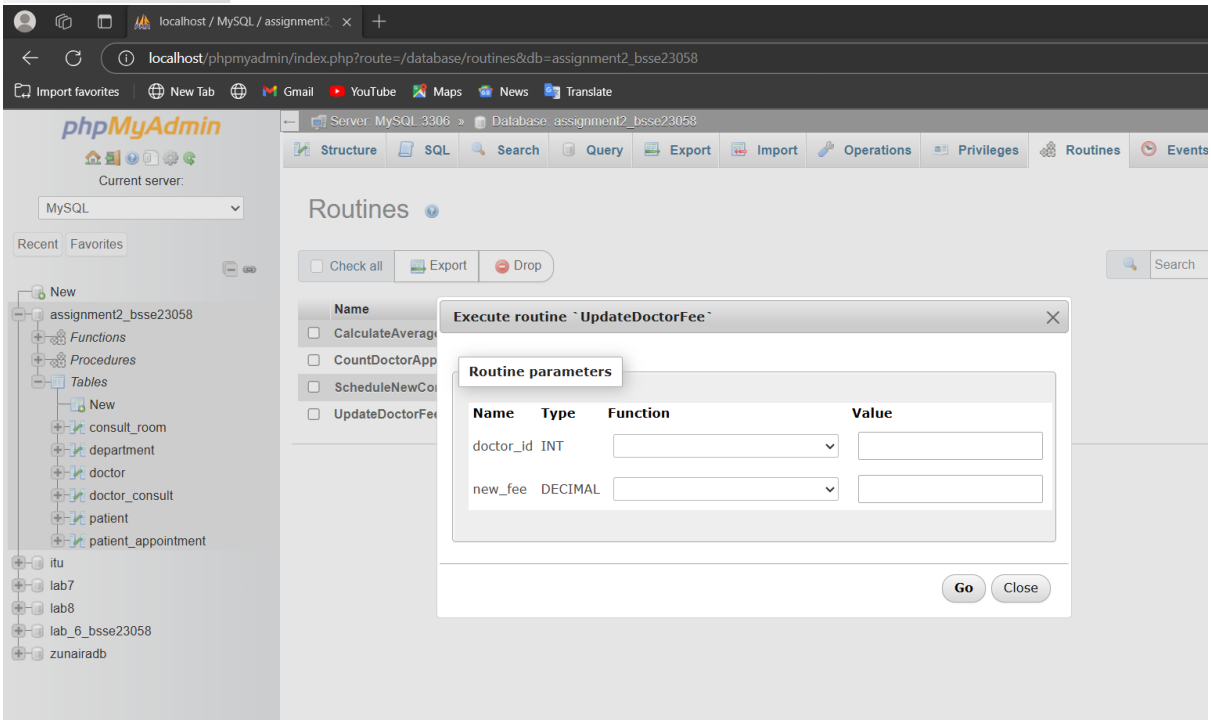
```
    SET fee = new_fee
    WHERE Doc_id = doctor_id;

    SELECT CONCAT('Fee updated for doctor ID ', doctor_id, ' to ', new_fee) AS Message;
END //
DELIMITER ;
```





4.

```
DELIMITER //
CREATE PROCEDURE ScheduleNewConsultation(
   IN doctor_id INT,
   IN patient_id INT,
   IN app_date DATE,
   IN start_time TIME)
BEGIN
   -- Check if doctor exists
   DECLARE doctor_exists INT;
```

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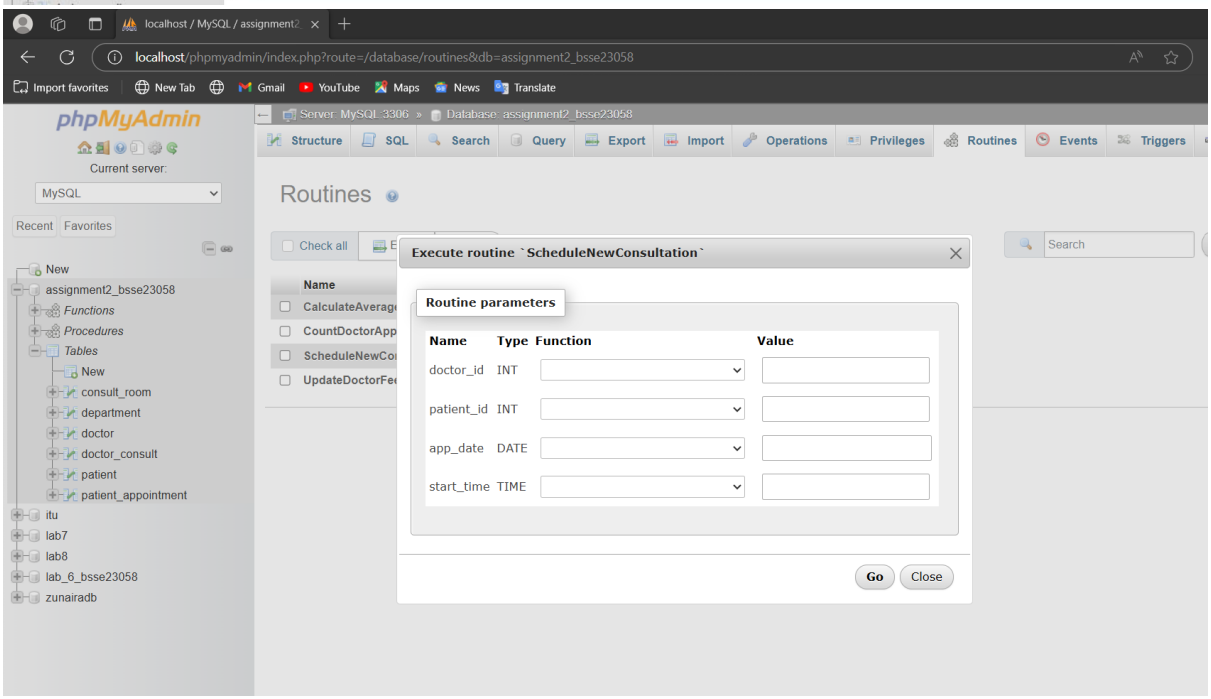
```
    DECLARE patient_exists INT;

    SELECT COUNT(*) INTO doctor_exists FROM doctor WHERE Doc_id = doctor_id;
    SELECT COUNT(*) INTO patient_exists FROM patient WHERE Patient_id = patient_id;

    IF doctor_exists = 0 THEN
       SELECT 'Error: Doctor does not exist' AS Message;
    ELSEIF patient_exists = 0 THEN
       SELECT 'Error: Patient does not exist' AS Message;
    ELSE
       -- Insert the new appointment
       INSERT INTO patient_appointment (Doc_id, Pat_id, date, Start_time)
       VALUES (doctor_id, patient_id, app_date, start_time);

       SELECT CONCAT('New appointment scheduled for patient ID ', patient_id,
              ' with doctor ID ', doctor_id, ' on ', app_date, ' at ', start_time) AS Message;
    END IF;
END //
DELIMITER ;
```



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ROUTINES