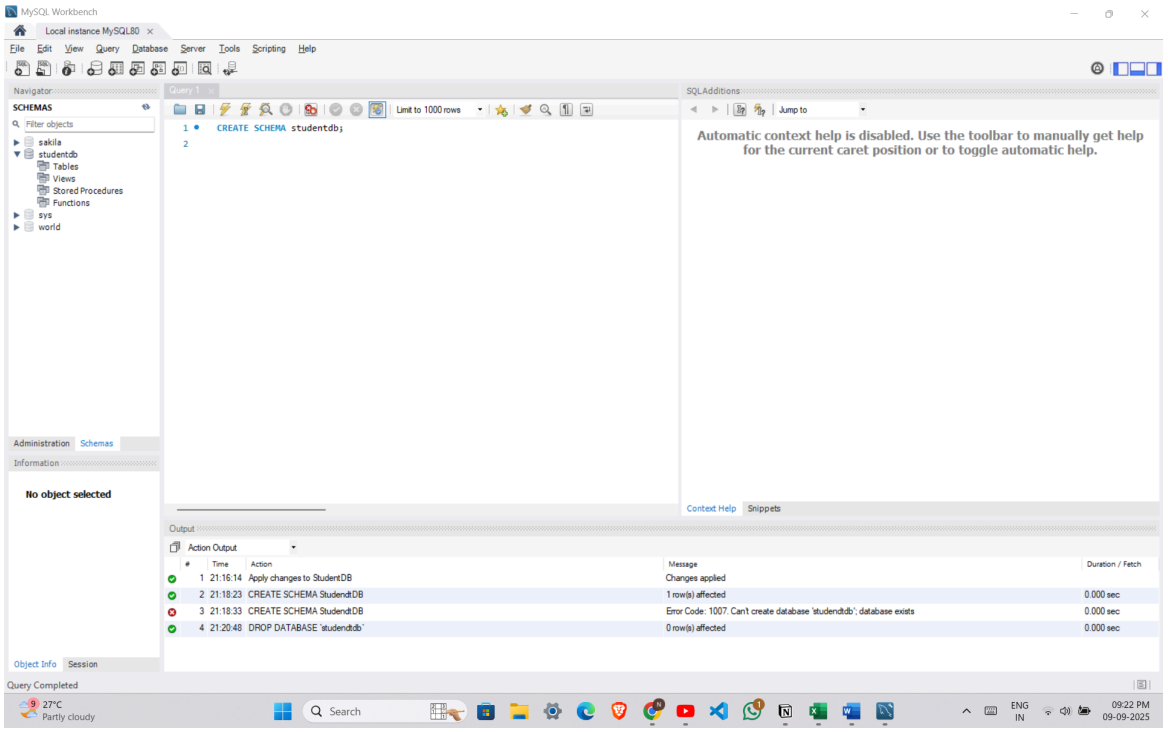
WEEK-1 ASSIGNMENTS

▼ Assignment 1

```
CREATE SCHEMA studentdb;
```



assignment1.sql

▼ Assignment 2

- Select the Database

```
USE studentdb;
```

- Create Students Table

```
CREATE TABLE students(
student_id INT PRIMARY KEY AUTO_INCREMENT,
name VARCHAR(100),
age INT,
gender ENUM('Male', 'Female'),
course_id INT
);
```

- `Create Courses Table`

```
CREATE TABLE courses (
course_id INT PRIMARY KEY AUTO_INCREMENT,
course_name VARCHAR(100),
duration VARCHAR(50)
);
```

- `Create Marks Table`

```
CREATE TABLE marks (
mark_id INT PRIMARY KEY AUTO_INCREMENT,
student_id INT,
subject VARCHAR(100),
score DECIMAL(5,2)
);
```

- `Modify Students table to add a new column email`

```
ALTER TABLE Students ADD COLUMN email VARCHAR(100);
```

- `Drop the Marks table and recreate it with the same structure.`

```
DROP TABLE IF EXISTS Marks;
```

```
CREATE TABLE marks (
mark_id INT PRIMARY KEY AUTO_INCREMENT,
```

```
student_id INT,
subject VARCHAR(100),
score DECIMAL(5,2)
);
```

assignment2.sql

▼ Assignment 3

1. Insert 5 Rows per Table

```
-- Insert into courses
INSERT INTO courses (course_name, duration) VALUES
('DBMS', '6 months'),
('OS', '1 year'),
('Python', '1 year'),
('Java', '6 months'),
('C++', '6 months');

-- Insert into students
INSERT INTO students (name, age, gender, course_id, email) VALUES
('Nisharg Soni', 21, 'Male', 1, 'nisharg@gmail.com'),
('Dakshil Gorasiya', 19, 'Male', 3, 'dakshil@gmail.com'),
('Diya Mehta', 22, 'Female', 2, 'diya@gmail.com'),
('Manish Patel', 20, 'Male', NULL, 'manish@gmail.com'),
('Krisha Shah', 23, 'Female', 1, 'krisha@gmail.com');

-- Insert into marks
INSERT INTO marks (student_id, subject, score) VALUES
(1, 'DBMS', 88.5),
(2, 'Python', 92.0),
(3, 'OS', 85.0),
(4, 'DLD', 78.0),
(5, 'DBMS', 91.5);
```

2. Update one student’s course.

```
UPDATE students SET course_id = 4 WHERE student_id = 2;
```

3. Delete a student record.

```
DELETE FROM students WHERE student_id = 4;
```

assignment3.sql

▼ Assignment 4

1. Students Above Age 20

```
SELECT
	*
FROM
	students
WHERE
	age > 20;
```

2. Students Ordered Alphabetically

```
SELECT
	*
FROM
	students
ORDER BY
	name ASC;
```

3. Total Students per Course

```
SELECT
	course_id,
	COUNT(*) AS total_students
FROM
	students
GROUP BY
	course_id;
```

4. Courses with More Than 2 Students

```
SELECT
	course_id,
	COUNT(*) AS student_count
FROM
	students
GROUP BY
	course_id
HAVING
	student_count > 2;
```

assignment4.sql

▼ Assignment 5

1. Display students with their enrolled course names using INNER JOIN.

```
SELECT
	s.student_id,
	s.name,
	c.course_id,
	c.course_name
FROM
	students s
```

```
        INNER JOIN
        courses c
        ON
        s.course_id = c.course_id;
```

2. Display all students even if they are not enrolled in any course (LEFT JOIN).

```
SELECT
        s.student_id,
        s.name,
        c.course_id,
        c.course_name
FROM
        students s
        LEFT JOIN
        courses c
        ON
        s.course_id = c.course_id;
```

3. Display all courses and their students (RIGHT JOIN).

```
SELECT
        s.student_id,
        s.name,
        c.course_id,
        c.course_name
FROM
        students s
        RIGHT JOIN
        courses c
        ON
        s.course_id = c.course_id;
```

4. Find highest, lowest, and average marks per subject.

```
SELECT
        subject,
```

```
        MAX(score) AS max_score,
        MIN(score) AS min_score,
        AVG(score) AS avg_score
FROM
        marks
GROUP BY
        subject;
```

5. Count how many male and female students exist.

```
SELECT
        gender,
        COUNT(*) AS total_count
FROM
        students
GROUP BY
        gender;
```

assignment5.sql

▼ LibraryDB

```
CREATE SCHEMA librarydb ;
```

```
USE librarydb;
```

```
CREATE TABLE authors (
author_id INT PRIMARY KEY AUTO_INCREMENT,
author_name VARCHAR(150),
country VARCHAR(100)
);
```

```
CREATE TABLE books (
book_id INT PRIMARY KEY AUTO_INCREMENT,
title VARCHAR(200),
author_id INT,
publish_year INT,
price DECIMAL(6,2),
FOREIGN KEY (author_id) REFERENCES Authors(author_id)
);
```

```
CREATE TABLE borrowers (
borrower_id INT PRIMARY KEY AUTO_INCREMENT,
book_id INT,
borrower_name VARCHAR(150),
borrow_date DATE,
return_date DATE,
FOREIGN KEY (book_id) REFERENCES Books(book_id)
);
```

```
INSERT INTO Authors (author_name, country) VALUES
('Chetan Bhagat', 'India'),
('Ruskin Bond', 'India'),
('Amish Tripathi', 'India'),
('Arundhati Roy', 'India'),
('R.K. Narayan', 'India');
```

```
INSERT INTO Books (title, author_id, publish_year, price) VALUES
('Five Point Someone', 1, 2004, 299.00),
('The Room on the Roof', 5, 1956, 199.00),
('The Shiva Trilogy', 3, 2010, 499.00),
('The God of Small Things', 4, 1997, 399.00),
('Our Trees Still Grow in Dehra', 2, 1991, 249.00);
```

```
INSERT INTO Borrowers (book_id, borrower_name, borrow_date, return_
date) VALUES
(1, 'Rajesh Kumar', '2025-08-01', '2025-08-15'),
```

```
(3, 'Sneha Sharma', '2025-08-05', NULL),
(4, 'Anil Verma', '2025-08-10', '2025-08-20'),
(2, 'Priya Singh', '2025-08-12', NULL),
(5, 'Vikas Mehta', '2025-08-15', '2025-08-25');
```

```
-- 1. Retrieve the list of all books along with their author's name.
SELECT
	b.title,
	a.author_name
FROM
	Books b
	INNER JOIN
	Authors a
	ON
	b.author_id = a.author_id;
```

```
-- 2. Find all authors from the India who published books after 2009.
SELECT
	a.author_name,
	b.publish_year
FROM
	Authors a
	INNER JOIN
	Books b
	ON
	a.author_id = b.author_id
WHERE
	a.country = 'India' AND b.publish_year >2009;
```

```
-- 3. List all borrowers who haven’t returned the book yet.
SELECT
	borrower_name,
	borrow_date
FROM
	borrowers
```

```
WHERE
	return_date IS NULL;
```

```
-- 4. Number of books per author
SELECT
	a.author_name,
	COUNT(b.book_id) AS total_books
FROM
	authors a
	LEFT JOIN
	books b
	ON
	a.author_id = b.author_id
GROUP BY
	a.author_id;
```

```
-- 5. Average price of books per author
SELECT
	a.author_name,
	AVG(b.price) AS avg_price
FROM
	authors a
	INNER JOIN
	books b
	ON
	a.author_id = b.author_id
GROUP BY
	a.author_id;
```

```
ALTER TABLE books
ADD COLUMN genre VARCHAR(50) NOT NULL DEFAULT 'Uncategorize
d';
```

```
SELECT
	*
```

```
FROM
        books;
```

```
ALTER TABLE books
ADD CONSTRAINT chk_price CHECK (price > 0);
```

```
UPDATE books SET genre = 'Contemporary' WHERE book_id = 1;
UPDATE books SET genre = 'Classic' WHERE book_id = 2;
UPDATE books SET genre = 'Mythology' WHERE book_id = 3;
UPDATE books SET genre = 'Fiction' WHERE book_id = 4;
UPDATE books SET genre = 'Classic' WHERE book_id = 5;
```

```
ALTER TABLE borrowers
ADD COLUMN borrower_email VARCHAR(255),
ADD COLUMN due_date DATE;
```

```
ALTER TABLE borrowers
ADD CONSTRAINT chk_return_date CHECK (return_date IS NULL OR ret
urn_date >= borrow_date);
```

```
ALTER TABLE borrowers
ADD CONSTRAINT chk_email CHECK (borrower_email LIKE '%@%.%');
```

```
SELECT
        *
FROM
        borrowers;
```

```
UPDATE borrowers SET borrower_email = 'rajesh@example.com', due_d
ate = '2025-08-22' WHERE borrower_id = 1;
UPDATE borrowers SET borrower_email = 'sneha@example.com', due_d
ate = '2025-08-25' WHERE borrower_id = 2;
UPDATE borrowers SET borrower_email = 'anil@example.com', due_dat
e = '2025-08-30' WHERE borrower_id = 3;
```

```
UPDATE borrowers SET borrower_email = 'priya@example.com', due_da
te = '2025-09-01' WHERE borrower_id = 4;
UPDATE borrowers SET borrower_email = 'vikas@example.com', due_d
ate = '2025-09-05' WHERE borrower_id = 5;
```

```
-- 6. Find all books that are currently overdue.
SELECT
	br.borrower_name,
	br.borrower_email,
	b.title,
	br.due_date
FROM
	borrowers AS br
	INNER JOIN
	books AS b
	ON
	br.book_id = b.book_id
WHERE
	br.return_date IS NULL AND br.due_date < CURDATE();
```

```
-- 7. List all books that have never been borrowed.
SELECT
	b.title
FROM
	books AS b
	LEFT JOIN
	borrowers AS br
	ON
	b.book_id = br.book_id
WHERE
	br.borrower_id IS NULL;
```

```
-- 8. Categorize books by their publication era using a CASE statement.
SELECT
	title,
	publish_year,
```

```
        CASE
        WHEN publish_year < 1990 THEN 'Classic Era'
        WHEN publish_year >= 1990 AND publish_year < 2010 THEN 'Mo
dern Era'
        ELSE 'Contemporary Era'
        END AS era
FROM
        books;
```

```
-- 9. Find the average number of days a book is borrowed for.
SELECT
        AVG(DATEDIFF(return_date, borrow_date)) AS avg_borrow_durati
on_days
FROM
        borrowers
WHERE
        return_date IS NOT NULL;
```

```
-- 10. Create a summary report of how many books were borrowed in ea
ch month of 2025.
SELECT
        COUNT(CASE WHEN MONTH(borrow_date) = 8 THEN 1 END) AS
'August_Borrows',
        COUNT(CASE WHEN MONTH(borrow_date) = 9 THEN 1 END) AS
'September_Borrows'
FROM
        borrowers
WHERE
        YEAR(borrow_date) = 2025;
```