

```
DROP tables if already exist (optional safety)
DROP TABLE IF EXISTS EnrollmentDetails, Courses, Students, Departments,
Instructors;
```

1. DEPARTMENTS Table

```
CREATE TABLE Departments (
    department_id INT PRIMARY KEY,
    department_name VARCHAR(50)
);
```

```
INSERT INTO Departments VALUES
(1, 'Computer Science'),
(2, 'Electronics'),
(3, 'Mechanical');
```

2. INSTRUCTORS Table

```
CREATE TABLE Instructors (
    instructor_id INT PRIMARY KEY,
    name VARCHAR(50),
    email VARCHAR(100),
    department_id INT,
    FOREIGN KEY (department_id) REFERENCES Departments(department_id)
);
```

```
INSERT INTO Instructors VALUES
(1, 'Dr. Smith', 'smith@university.edu', 1),
(2, 'Dr. John', 'john@university.edu', 2),
(3, 'Dr. Alice', 'alice@university.edu', 3);
```

3. COURSES Table

```
CREATE TABLE Courses (
    course_id INT PRIMARY KEY,
    title VARCHAR(100),
    credits INT,
    instructor_id INT,
    FOREIGN KEY (instructor_id) REFERENCES Instructors(instructor_id)
);
```

```
INSERT INTO Courses VALUES
(101, 'Data Structures', 4, 1),
(102, 'Digital Electronics', 3, 2),
(103, 'Thermodynamics', 4, 3),
(104, 'Operating Systems', 4, 1),
(105, 'Microprocessors', 3, 2);
```

4. STUDENTS Table

```
CREATE TABLE Students (
    student_id INT PRIMARY KEY,
    name VARCHAR(50),
    email VARCHAR(100),
    city VARCHAR(50)
);
```

```
INSERT INTO Students VALUES
(1, 'Ravi', 'ravi@student.edu', 'Chennai'),
(2, 'Meera', 'meera@student.edu', 'Delhi'),
(3, 'Kiran', 'kiran@student.edu', 'Mumbai'),
(4, 'Anjali', 'anjali@student.edu', 'Bangalore');
```

```
(5, 'Arjun', 'arjun@student.edu', 'Hyderabad');
```

5. ENROLLMENTDETAILS Table (Many-to-Many between Students and Courses)

```
CREATE TABLE EnrollmentDetails (  
    student_id INT,  
    course_id INT,  
    enrollment_date DATE,  
    FOREIGN KEY (student_id) REFERENCES Students(student_id),  
    FOREIGN KEY (course_id) REFERENCES Courses(course_id)  
);
```

```
INSERT INTO EnrollmentDetails VALUES
```

```
(1, 101, '2024-01-10'),  
(1, 104, '2024-01-12'),  
(2, 102, '2024-01-15'),  
(3, 103, '2024-01-20'),  
(4, 101, '2024-01-22'),  
(5, 105, '2024-01-25'),  
(2, 105, '2024-01-27'),  
(3, 102, '2024-01-30'),  
(5, 103, '2024-02-01'),  
(4, 104, '2024-02-05');
```

```
Select students from Chennai
```

```
SELECT * FROM Students  
WHERE city = 'Chennai';
```

```
-- Select all courses sorted by title
```

```
SELECT * FROM Courses  
ORDER BY title ASC;
```

```
-- Count how many students are from each city
```

```
SELECT city, COUNT(*) AS student_count  
FROM Students  
GROUP BY city;
```

```
-- INNER JOIN: List of students with their enrolled courses
```

```
SELECT s.name AS student_name, c.title AS course_title  
FROM Students s  
INNER JOIN EnrollmentDetails e ON s.student_id = e.student_id  
INNER JOIN Courses c ON e.course_id = c.course_id;
```

```
-- LEFT JOIN: List all students with their courses (if any)
```

```
SELECT s.name AS student_name, c.title AS course_title  
FROM Students s  
LEFT JOIN EnrollmentDetails e ON s.student_id = e.student_id  
LEFT JOIN Courses c ON e.course_id = c.course_id;
```

```
-- RIGHT JOIN: List all courses with enrolled students (Note: SQLite  
doesn't support RIGHT JOIN. Use in MySQL/PostgreSQL)
```

```
SELECT s.name AS student_name, c.title AS course_title  
FROM Students s  
RIGHT JOIN EnrollmentDetails e ON s.student_id = e.student_id  
RIGHT JOIN Courses c ON e.course_id = c.course_id;
```

```
-- List names of students enrolled in 'Data Structures'
```

```
SELECT name  
FROM Students
```

```

WHERE student_id IN (
    SELECT student_id
    FROM EnrollmentDetails
    WHERE course_id = (
        SELECT course_id
        FROM Courses
        WHERE title = 'Data Structures'
    )
);

-- Count of courses taught by each instructor (using subquery)
SELECT name, (
    SELECT COUNT(*)
    FROM Courses c
    WHERE c.instructor_id = i.instructor_id
) AS course_count
FROM Instructors i;

-- Total number of students enrolled per course
SELECT c.title, COUNT(e.student_id) AS total_enrolled
FROM Courses c
LEFT JOIN EnrollmentDetails e ON c.course_id = e.course_id
GROUP BY c.course_id;

-- Average number of credits per department
SELECT d.department_name, AVG(c.credits) AS avg_credits
FROM Departments d
JOIN Instructors i ON d.department_id = i.department_id
JOIN Courses c ON i.instructor_id = c.instructor_id
GROUP BY d.department_name;

-- View: Student Enrollment Info
CREATE VIEW StudentEnrollmentView AS
SELECT s.name AS student_name, c.title AS course_title, e.enrollment_date
FROM Students s
JOIN EnrollmentDetails e ON s.student_id = e.student_id
JOIN Courses c ON e.course_id = c.course_id;

-- View: Instructor Course Count
CREATE VIEW InstructorCourseCount AS
SELECT i.name AS instructor_name, COUNT(c.course_id) AS total_courses
FROM Instructors i
JOIN Courses c ON i.instructor_id = c.instructor_id
GROUP BY i.instructor_id;

-- Index on Students table for faster lookup by city
CREATE INDEX idx_students_city ON Students(city);

-- Index on EnrollmentDetails for faster joins
CREATE INDEX idx_enrollment_student ON EnrollmentDetails(student_id);
CREATE INDEX idx_enrollment_course ON EnrollmentDetails(course_id);

-- Index on Courses table for fast title lookup
CREATE INDEX idx_courses_title ON Courses(title)

```

Output

The screenshot shows the MySQL Workbench interface with the 'Query' tab selected. The SQL editor contains the following code:

```
1 CREATE TABLE Departments (  
2     department_id INT PRIMARY KEY,  
3     department_name VARCHAR(50)  
4 );
```

The Output pane at the bottom displays the execution results:

#	Time	Action	Message	Duration / Fetch
43	20:46:44	create index idx_user_city on users(city)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.047 sec
44	20:46:44	create index idx_product_price on products(price)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.031 sec
45	21:13:12	CREATE TABLE Departments (department_id INT PRIMARY KEY, department_name VARCHAR(50))	0 row(s) affected	0.016 sec
46	21:13:57	INSERT INTO Departments VALUES (1, 'Computer Science'), (2, 'Electronics'), (3, 'Mechanical')	3 row(s) affected Records: 3 Duplicates: 0 Warnings: 0	0.000 sec
47	21:15:08	CREATE TABLE Instructors (instructor_id INT PRIMARY KEY, name VARCHAR(50), email VARCHAR(50))	0 row(s) affected	0.047 sec
48	21:15:08	INSERT INTO Instructors VALUES (1, 'Dr. Smith', 'smith@university.edu'), (2, 'Dr. John', 'john@university.edu'), (3, 'Dr. Brown', 'brown@university.edu')	3 row(s) affected Records: 3 Duplicates: 0 Warnings: 0	0.000 sec

The screenshot shows the MySQL Workbench interface with the 'Query' tab selected. The SQL editor contains the following code:

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MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHMAS

Filter objects

sakila
 sys
 world

Query 1 SQL File 3* SQL File 4* SQL File 5* SQL File 6* SQL File 7* SQL File 8* SQL File 9* SQL File 10* SQL File 11* SQL

1 CREATE TABLE Instructors (
2 instructor_id INT PRIMARY KEY,
3 name VARCHAR(50),
4 email VARCHAR(100),
5 department_id INT,
6 FOREIGN KEY (department_id) REFERENCES Departments(department_id)
7);
8
9
10
11
12 INSERT INTO Instructors VALUES
13 (1, 'Dr. Smith', 'smith@university.edu', 1),
14 (2, 'Dr. John', 'john@university.edu', 2),
15 (3, 'Dr. Alice', 'alice@university.edu', 3);

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Context Help Snippets

Information

No object selected

Action Output

#	Time	Action	Message	Duration / Fetch
43	20:46:44	create index idx_user_city on users(city)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.047 sec
44	20:46:44	create index idx_product_price on products(price)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.031 sec
45	21:13:12	CREATE TABLE Departments (department_id INT PRIMARY KEY, department_name VARCHAR(50))	0 row(s) affected	0.016 sec
46	21:13:57	INSERT INTO Departments VALUES (1, 'Computer Science'), (2, 'Electronics'), (3, 'Mechanical')	3 row(s) affected Records: 3 Duplicates: 0 Warnings: 0	0.000 sec
47	21:15:08	CREATE TABLE Instructors (instructor_id INT PRIMARY KEY, name VARCHAR(50), email VARCHAR(100), department_id INT, FOREIGN KEY (department_id) REFERENCES Departments(department_id))	0 row(s) affected	0.047 sec
48	21:15:08	INSERT INTO Instructors VALUES (1, 'Dr. Smith', 'smith@university.edu', 1), (2, 'Dr. John', 'john@university.edu', 2), (3, 'Dr. Alice', 'alice@university.edu', 3);	3 row(s) affected Records: 3 Duplicates: 0 Warnings: 0	0.000 sec

Object Info Session

31°C Haze

Search

21:23 28-06-2025

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHMAS

Filter objects

sakila
 sys
 world

Query 1 SQL File 3* SQL File 4* SQL File 5* SQL File 6* SQL File 7* SQL File 8* SQL File 9* SQL File 10* SQL File 11* SQL

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CREATE TABLE Courses (
course_id INT PRIMARY KEY,
title VARCHAR(100),
credits INT,
instructor_id INT,
FOREIGN KEY (instructor_id) REFERENCES Instructors(instructor_id)
);

INSERT INTO Courses VALUES
(101, 'Data Structures', 4, 1),
(102, 'Digital Electronics', 3, 2),
(103, 'Thermodynamics', 4, 3),
(104, 'Operating Systems', 4, 1),
(105, 'Microprocessors', 3, 2);

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Context Help Snippets

Information

No object selected

Action Output

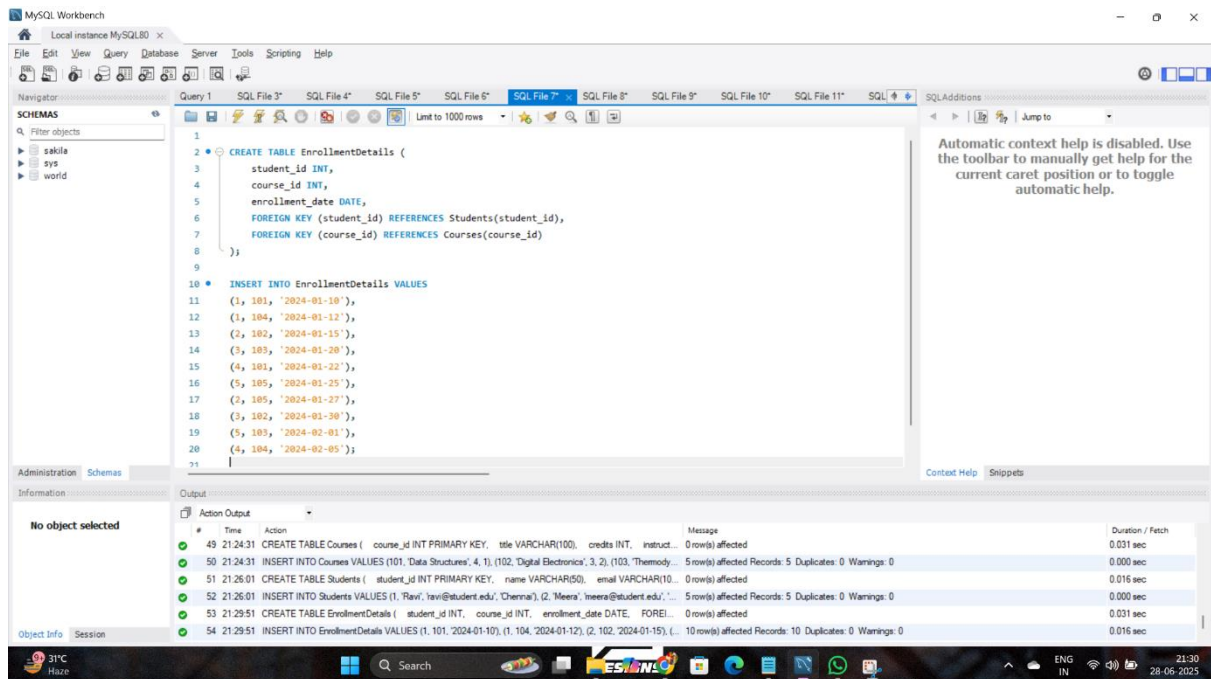
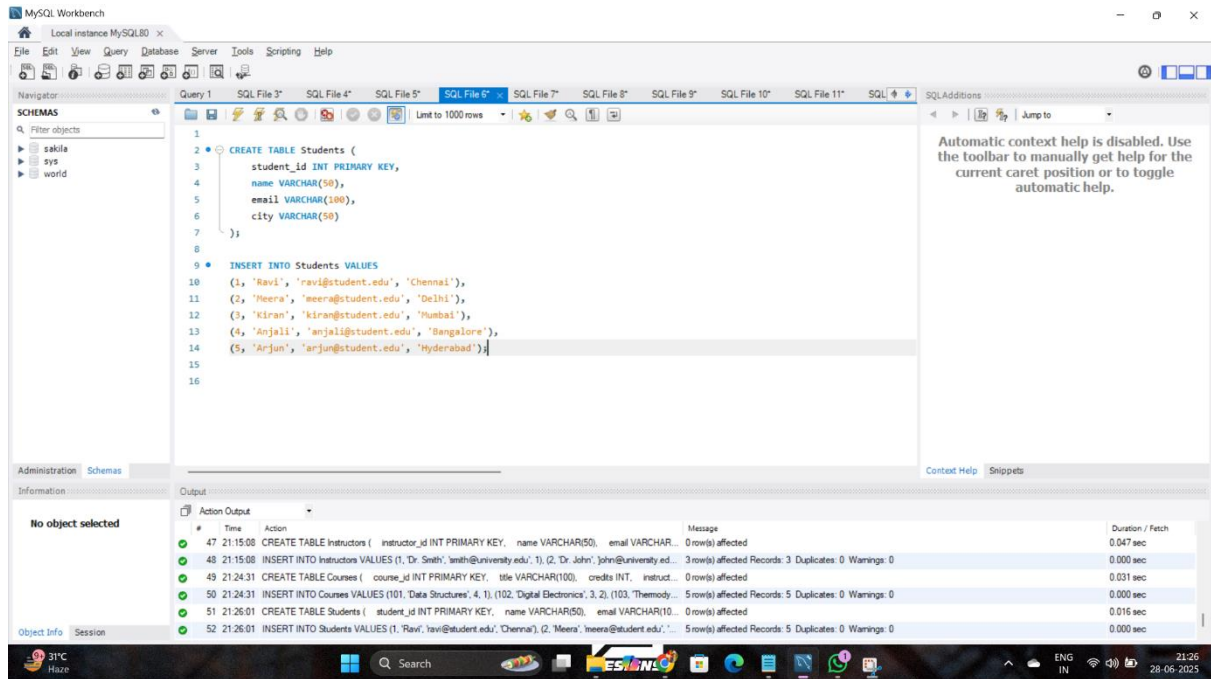
#	Time	Action	Message	Duration / Fetch
45	21:13:12	CREATE TABLE Departments (department_id INT PRIMARY KEY, department_name VARCHAR(50))	0 row(s) affected	0.016 sec
46	21:13:57	INSERT INTO Departments VALUES (1, 'Computer Science'), (2, 'Electronics'), (3, 'Mechanical')	3 row(s) affected Records: 3 Duplicates: 0 Warnings: 0	0.000 sec
47	21:15:08	CREATE TABLE Instructors (instructor_id INT PRIMARY KEY, name VARCHAR(50), email VARCHAR(100), department_id INT, FOREIGN KEY (department_id) REFERENCES Departments(department_id))	0 row(s) affected	0.047 sec
48	21:15:08	INSERT INTO Instructors VALUES (1, 'Dr. Smith', 'smith@university.edu', 1), (2, 'Dr. John', 'john@university.edu', 2), (3, 'Dr. Alice', 'alice@university.edu', 3);	3 row(s) affected Records: 3 Duplicates: 0 Warnings: 0	0.000 sec
49	21:24:31	CREATE TABLE Courses (course_id INT PRIMARY KEY, title VARCHAR(100), credits INT, instructor_id INT, FOREIGN KEY (instructor_id) REFERENCES Instructors(instructor_id))	0 row(s) affected	0.031 sec
50	21:24:31	INSERT INTO Courses VALUES (101, 'Data Structures', 4, 1), (102, 'Digital Electronics', 3, 2), (103, 'Thermodynamics', 4, 3), (104, 'Operating Systems', 4, 1), (105, 'Microprocessors', 3, 2);	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.000 sec

Object Info Session

31°C Haze

Search

21:24 28-06-2025



MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

sakila
 sys
 world

Query 1 SQL File 3* SQL File 4* SQL File 5* SQL File 6* SQL File 7* SQL File 8* SQL File 9* SQL File 10* SQL File 11* SQL

1 SELECT * FROM Students
2 WHERE city = 'Chennai';

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Result Grid

student_id name email city

1 Ravi ravi@student.edu Chennai

Administration Schemas

Students 1 x

Apply Revert Context Help Snippets

Information

No object selected

Action Output

#	Time	Action	Message	Duration / Fetch
50	21:24:31	INSERT INTO Courses VALUES (101, 'Data Structures', 4, 1), (102, 'Digital Electronics', 3, 2), (103, 'Thermody...	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.000 sec
51	21:26:01	CREATE TABLE Students (student_id INT PRIMARY KEY, name VARCHAR(50), email VARCHAR(10...	0 row(s) affected	0.016 sec
52	21:26:01	INSERT INTO Students VALUES (1, 'Ravi', ravi@student.edu, 'Chennai'), (2, 'Meera', meera@student.edu, ...	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.000 sec
53	21:29:51	CREATE TABLE EnrollmentDetails (student_id INT, course_id INT, enrollment_date DATE, FOREI...	0 row(s) affected	0.031 sec
54	21:29:51	INSERT INTO EnrollmentDetails VALUES (1, 101, 2024-01-10), (1, 104, 2024-01-12), (2, 102, 2024-01-15), (...	10 row(s) affected Records: 10 Duplicates: 0 Warnings: 0	0.016 sec
55	21:53:32	SELECT * FROM Students WHERE city = 'Chennai' LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

29°C Haze

Search

21:53 28-06-2025

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

sakila
 sys
 world

Query 1 SQL File 3* SQL File 4* SQL File 5* SQL File 6* SQL File 7* SQL File 8* SQL File 9* SQL File 10* SQL File 11* SQL

1 SELECT * FROM Courses
2 ORDER BY title ASC;

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Result Grid

course_id	title	credits	instructor_id
101	Data Structures	4	1
102	Digital Electronics	3	2
105	Microprocessors	3	2
104	Operating Systems	4	1
103	Thermodynamics	4	3

Administration Schemas

Courses 12 x

Apply Revert Context Help Snippets

Information

No object selected

Action Output

#	Time	Action	Message	Duration / Fetch
51	21:26:01	CREATE TABLE Students (student_id INT PRIMARY KEY, name VARCHAR(50), email VARCHAR(10...	0 row(s) affected	0.016 sec
52	21:26:01	INSERT INTO Students VALUES (1, 'Ravi', ravi@student.edu, 'Chennai'), (2, 'Meera', meera@student.edu, ...	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.000 sec
53	21:29:51	CREATE TABLE EnrollmentDetails (student_id INT, course_id INT, enrollment_date DATE, FOREI...	0 row(s) affected	0.031 sec
54	21:29:51	INSERT INTO EnrollmentDetails VALUES (1, 101, 2024-01-10), (1, 104, 2024-01-12), (2, 102, 2024-01-15), (...	10 row(s) affected Records: 10 Duplicates: 0 Warnings: 0	0.016 sec
55	21:53:32	SELECT * FROM Students WHERE city = 'Chennai' LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec
56	21:54:30	SELECT * FROM Courses ORDER BY title ASC LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

29°C Haze

Search

21:54 28-06-2025

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

- sakila
- sys
- world

Query 1

```
1 SELECT city, COUNT(*) AS student_count FROM Students
2 GROUP BY city;
```

Result Grid

city	student_count
Chennai	1
Delhi	1
Mumbai	1
Bangalore	1
Hyderabad	1

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Administration Schemas

Information

No object selected

Action Output

#	Time	Action	Message	Duration / Fetch
52	21:26:01	INSERT INTO Students VALUES (1, 'Ravi', 'ravi@student.edu', 'Chennai'), (2, 'Meera', 'meera@student.edu', 'Chennai');	5 row(s) affected Records: 5 Duplicates: 0 Warnings: 0	0.000 sec
53	21:29:51	CREATE TABLE EnrollmentDetails (student_id INT, course_id INT, enrollment_date DATE, FOREIGN KEY (student_id) REFERENCES Students (student_id), FOREIGN KEY (course_id) REFERENCES Courses (course_id));	0 row(s) affected	0.031 sec
54	21:29:51	INSERT INTO EnrollmentDetails VALUES (1, 101, '2024-01-10'), (1, 104, '2024-01-12'), (2, 102, '2024-01-15'), (2, 103, '2024-01-18');	10 row(s) affected Records: 10 Duplicates: 0 Warnings: 0	0.016 sec
55	21:53:32	SELECT * FROM Students WHERE city = 'Chennai' LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec
56	21:54:30	SELECT * FROM Courses ORDER BY title ASC LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
57	21:55:39	SELECT city, COUNT(*) AS student_count FROM Students GROUP BY city LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

29°C Haze

Search

21:55 28-06-2025

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

- sakila
- sys
- world

Query 1

```
1 SELECT s.name AS student_name, c.title AS course_title FROM Students s
2 INNER JOIN EnrollmentDetails e ON s.student_id = e.student_id
3 INNER JOIN Courses c ON e.course_id = c.course_id;
```

Result Grid

student_name	course_title
Ravi	Data Structures
Ravi	Operating Systems
Meera	Digital Electronics
Meera	Microprocessors
Kiran	Thermodynamics
Kiran	Digital Electronics
Anjali	Data Structures
Anjali	Operating Systems
Arjun	Microprocessors
Arjun	Thermodynamics

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Administration Schemas

Information

No object selected

Action Output

#	Time	Action	Message	Duration / Fetch
53	21:29:51	CREATE TABLE EnrollmentDetails (student_id INT, course_id INT, enrollment_date DATE, FOREIGN KEY (student_id) REFERENCES Students (student_id), FOREIGN KEY (course_id) REFERENCES Courses (course_id));	0 row(s) affected	0.031 sec
54	21:29:51	INSERT INTO EnrollmentDetails VALUES (1, 101, '2024-01-10'), (1, 104, '2024-01-12'), (2, 102, '2024-01-15'), (2, 103, '2024-01-18');	10 row(s) affected Records: 10 Duplicates: 0 Warnings: 0	0.016 sec
55	21:53:32	SELECT * FROM Students WHERE city = 'Chennai' LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec
56	21:54:30	SELECT * FROM Courses ORDER BY title ASC LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
57	21:55:39	SELECT city, COUNT(*) AS student_count FROM Students GROUP BY city LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
58	22:02:47	SELECT s.name AS student_name, c.title AS course_title FROM Students s INNER JOIN EnrollmentDetails e ON s.student_id = e.student_id INNER JOIN Courses c ON e.course_id = c.course_id;	10 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

29°C Haze

Search

22:02 28-06-2025

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

- sakila
- sys
- world

SQL File 4* SQL File 5* SQL File 6* SQL File 7* SQL File 8* SQL File 9* SQL File 10* SQL File 11* SQL File 12* SQL File 13*

Limit to 1000 rows

```
1 SELECT s.name AS student_name, c.title AS course_title
2 FROM Students s
3 LEFT JOIN EnrollmentDetails e ON s.student_id = e.student_id
4 LEFT JOIN Courses c ON e.course_id = c.course_id;
5
6 SELECT s.name AS student_name, c.title AS course_title
7 FROM Students s
```

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Result Grid

student_name	course_title
Ravi	Data Structures
Ravi	Operating Systems
Meera	Digital Electronics
Meera	Microprocessors
Kran	Thermodynamics
Kran	Digital Electronics
Anjali	Data Structures
Anjali	Operating Systems
Arjun	Microprocessors
Arjun	Thermodynamics

Administration Schemas

Information

No object selected

Object Info Session

Action Output

#	Time	Action	Message	Duration / Fetch
55	21:53:32	SELECT * FROM Students WHERE city = 'Chennai' LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec
56	21:54:30	SELECT * FROM Courses ORDER BY title ASC LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
57	21:55:39	SELECT city, COUNT(*) AS student_count FROM Students GROUP BY city LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
58	22:02:47	SELECT s.name AS student_name, c.title AS course_title FROM Students s INNER JOIN EnrollmentDetails e ...	10 row(s) returned	0.000 sec / 0.000 sec
59	22:03:54	SELECT s.name AS student_name, c.title AS course_title FROM Students s LEFT JOIN EnrollmentDetails e O...	10 row(s) returned	0.000 sec / 0.000 sec
60	22:03:54	SELECT s.name AS student_name, c.title AS course_title FROM Students s RIGHT JOIN EnrollmentDetails e ...	10 row(s) returned	0.015 sec / 0.000 sec

29°C Haze

Search

ESN

22:04 28-06-2023

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

- sakila
- sys
- world

SQL File 4* SQL File 5* SQL File 6* SQL File 7* SQL File 8* SQL File 9* SQL File 10* SQL File 11* SQL File 12* SQL File 13*

Limit to 1000 rows

```
3 LEFT JOIN EnrollmentDetails e ON s.student_id = e.student_id
4 LEFT JOIN Courses c ON e.course_id = c.course_id;
5
6 SELECT s.name AS student_name, c.title AS course_title
7 FROM Students s
8 RIGHT JOIN EnrollmentDetails e ON s.student_id = e.student_id
9 RIGHT JOIN Courses c ON e.course_id = c.course_id;
```

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Result Grid

student_name	course_title
Ravi	Data Structures
Anjali	Data Structures
Meera	Digital Electronics
Kran	Digital Electronics
Kran	Thermodynamics
Arjun	Thermodynamics
Ravi	Operating Systems
Anjali	Operating Systems
Arjun	Microprocessors
Meera	Microprocessors

Administration Schemas

Information

No object selected

Object Info Session

Action Output

#	Time	Action	Message	Duration / Fetch
55	21:53:32	SELECT * FROM Students WHERE city = 'Chennai' LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec
56	21:54:30	SELECT * FROM Courses ORDER BY title ASC LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
57	21:55:39	SELECT city, COUNT(*) AS student_count FROM Students GROUP BY city LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
58	22:02:47	SELECT s.name AS student_name, c.title AS course_title FROM Students s INNER JOIN EnrollmentDetails e ...	10 row(s) returned	0.000 sec / 0.000 sec
59	22:03:54	SELECT s.name AS student_name, c.title AS course_title FROM Students s LEFT JOIN EnrollmentDetails e O...	10 row(s) returned	0.000 sec / 0.000 sec
60	22:03:54	SELECT s.name AS student_name, c.title AS course_title FROM Students s RIGHT JOIN EnrollmentDetails e ...	10 row(s) returned	0.015 sec / 0.000 sec

29°C Haze

Search

ESN

22:05 28-06-2023

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

sakila
 sys
 world

SQL File 4* SQL File 5* SQL File 6* SQL File 7* SQL File 8* SQL File 9* SQL File 10* SQL File 11* SQL File 12* SQL File 13* x

1 SELECT name FROM Students
2 WHERE student_id IN (SELECT student_id FROM EnrollmentDetails WHERE course_id = (SELECT course_id
3 FROM Courses
4 WHERE title = 'Data Structures'
5)
6);
7

Result Grid

Filter Rows: Export: Wrap Cell Contents

name
 Ravi
 Anjali

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Administration Schemas

Students 1 x Result 2

Information

Output

No object selected

Action Output

#	Time	Action	Message	Duration / Fetch
57	21:55:39	SELECT city, COUNT(*) AS student_count FROM Students GROUP BY city LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
58	22:02:47	SELECT s.name AS student_name, c.title AS course_title FROM Students s INNER JOIN EnrollmentDetails e ...	10 row(s) returned	0.000 sec / 0.000 sec
59	22:03:54	SELECT s.name AS student_name, c.title AS course_title FROM Students s LEFT JOIN EnrollmentDetails e ...	10 row(s) returned	0.000 sec / 0.000 sec
60	22:03:54	SELECT s.name AS student_name, c.title AS course_title FROM Students s RIGHT JOIN EnrollmentDetails e ...	10 row(s) returned	0.015 sec / 0.000 sec
61	22:07:06	SELECT name FROM Students WHERE student_id IN (SELECT student_id FROM EnrollmentDetails WHERE ...	2 row(s) returned	0.000 sec / 0.000 sec
62	22:07:06	SELECT name, (SELECT COUNT(*) FROM Courses c WHERE c.instructor_id = i.instructor_id) AS course_cou...	3 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

29°C Haze

Search

22:07 28-06-2025

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

sakila
 sys
 world

SQL File 5* SQL File 6* SQL File 7* SQL File 8* SQL File 9* SQL File 10* SQL File 11* SQL File 12* SQL File 13* x SQL File 15

3 FROM Courses
4 WHERE title = 'Data Structures'
5)
6);
7
8 SELECT name, (SELECT COUNT(*) FROM Courses c WHERE c.instructor_id = i.instructor_id) AS course_count
9 FROM Instructors i;

Result Grid

Filter Rows: Export: Wrap Cell Contents

name course_count
 Dr. Smith 2
 Dr. John 2
 Dr. Alice 1

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Administration Schemas

Students 1 Result 2 x

Information

Output

No object selected

Action Output

#	Time	Action	Message	Duration / Fetch
57	21:55:39	SELECT city, COUNT(*) AS student_count FROM Students GROUP BY city LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
58	22:02:47	SELECT s.name AS student_name, c.title AS course_title FROM Students s INNER JOIN EnrollmentDetails e ...	10 row(s) returned	0.000 sec / 0.000 sec
59	22:03:54	SELECT s.name AS student_name, c.title AS course_title FROM Students s LEFT JOIN EnrollmentDetails e ...	10 row(s) returned	0.000 sec / 0.000 sec
60	22:03:54	SELECT s.name AS student_name, c.title AS course_title FROM Students s RIGHT JOIN EnrollmentDetails e ...	10 row(s) returned	0.015 sec / 0.000 sec
61	22:07:06	SELECT name FROM Students WHERE student_id IN (SELECT student_id FROM EnrollmentDetails WHERE ...	2 row(s) returned	0.000 sec / 0.000 sec
62	22:07:06	SELECT name, (SELECT COUNT(*) FROM Courses c WHERE c.instructor_id = i.instructor_id) AS course_cou...	3 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

29°C Haze

Search

22:12 28-06-2025

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

sakila
 sys
 world

SQL File 5* SQL File 6* SQL File 7* SQL File 8* SQL File 9* SQL File 10* SQL File 11* SQL File 12* SQL File 13* SQL File 15*

1 SELECT c.title, COUNT(e.student_id) AS total_enrolled FROM Courses c
2 LEFT JOIN EnrollmentDetails e ON c.course_id = e.course_id GROUP BY c.course_id;
3
4 SELECT d.department_name, AVG(c.credits) AS avg_credits FROM Departments d
5 JOIN Instructors i ON d.department_id = i.department_id
6 JOIN Courses c ON i.instructor_id = c.instructor_id GROUP BY d.department_name;

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Result Grid

title	total_enrolled
Data Structures	2
Digital Electronics	2
Thermodynamics	2
Operating Systems	2
Microprocessors	2

Administration Schemas

Information

No object selected

Action Output

#	Time	Action	Message	Duration / Fetch
59	22:03:54	SELECT s.name AS student_name, c.title AS course_title FROM Students s LEFT JOIN EnrollmentDetails e ON s.student_id = e.student_id	10 row(s) returned	0.000 sec / 0.000 sec
60	22:03:54	SELECT s.name AS student_name, c.title AS course_title FROM Students s RIGHT JOIN EnrollmentDetails e ON s.student_id = e.student_id	10 row(s) returned	0.015 sec / 0.000 sec
61	22:07:06	SELECT name FROM Students WHERE student_id IN (SELECT student_id FROM EnrollmentDetails WHERE student_id = 1)	2 row(s) returned	0.000 sec / 0.000 sec
62	22:07:06	SELECT name, (SELECT COUNT(*) FROM Courses c WHERE c.instructor_id = i.instructor_id) AS course_count FROM Instructors i	3 row(s) returned	0.000 sec / 0.000 sec
63	22:13:07	SELECT c.title, COUNT(e.student_id) AS total_enrolled FROM Courses c LEFT JOIN EnrollmentDetails e ON c.course_id = e.course_id	5 row(s) returned	0.000 sec / 0.000 sec
64	22:13:07	SELECT d.department_name, AVG(c.credits) AS avg_credits FROM Departments d JOIN Instructors i ON d.department_id = i.department_id	3 row(s) returned	0.016 sec / 0.000 sec

Object Info Session

29°C Haze

Search

22:13 28-06-2025

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

sakila
 sys
 world

SQL File 5* SQL File 6* SQL File 7* SQL File 8* SQL File 9* SQL File 10* SQL File 11* SQL File 12* SQL File 13* SQL File 15*

1 SELECT c.title, COUNT(e.student_id) AS total_enrolled FROM Courses c
2 LEFT JOIN EnrollmentDetails e ON c.course_id = e.course_id GROUP BY c.course_id;
3
4 SELECT d.department_name, AVG(c.credits) AS avg_credits FROM Departments d
5 JOIN Instructors i ON d.department_id = i.department_id
6 JOIN Courses c ON i.instructor_id = c.instructor_id GROUP BY d.department_name;

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Result Grid

department_name	avg_credits
Computer Science	4.0000
Electronics	3.0000
Mechanical	4.0000

Administration Schemas

Information

No object selected

Action Output

#	Time	Action	Message	Duration / Fetch
59	22:03:54	SELECT s.name AS student_name, c.title AS course_title FROM Students s LEFT JOIN EnrollmentDetails e ON s.student_id = e.student_id	10 row(s) returned	0.000 sec / 0.000 sec
60	22:03:54	SELECT s.name AS student_name, c.title AS course_title FROM Students s RIGHT JOIN EnrollmentDetails e ON s.student_id = e.student_id	10 row(s) returned	0.015 sec / 0.000 sec
61	22:07:06	SELECT name FROM Students WHERE student_id IN (SELECT student_id FROM EnrollmentDetails WHERE student_id = 1)	2 row(s) returned	0.000 sec / 0.000 sec
62	22:07:06	SELECT name, (SELECT COUNT(*) FROM Courses c WHERE c.instructor_id = i.instructor_id) AS course_count FROM Instructors i	3 row(s) returned	0.000 sec / 0.000 sec
63	22:13:07	SELECT c.title, COUNT(e.student_id) AS total_enrolled FROM Courses c LEFT JOIN EnrollmentDetails e ON c.course_id = e.course_id	5 row(s) returned	0.000 sec / 0.000 sec
64	22:13:07	SELECT d.department_name, AVG(c.credits) AS avg_credits FROM Departments d JOIN Instructors i ON d.department_id = i.department_id	3 row(s) returned	0.016 sec / 0.000 sec

Object Info Session

29°C Haze

Search

22:13 28-06-2025

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

sakila
 sys
 world

SQL File 6* SQL File 7* SQL File 8* SQL File 9* SQL File 10* SQL File 11* SQL File 12* SQL File 13* SQL File 15* SQL File 16*

Limit to 1000 rows

SQL

```
1 SELECT s.name AS student_name, c.title AS course_title, e.enrollment_date
2 FROM Students s
3 JOIN EnrollmentDetails e ON s.student_id = e.student_id
4 JOIN Courses c ON e.course_id = c.course_id;
5
6
7 SELECT i.name AS instructor_name, COUNT(c.course_id) AS total_courses
```

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Result Grid

student_name	course_title	enrollment_date
Ravi	Data Structures	2024-01-10
Ravi	Operating Systems	2024-01-12
Meera	Digital Electronics	2024-01-15
Meera	Microprocessors	2024-01-27
Kiran	Thermodynamics	2024-01-20
Kiran	Digital Electronics	2024-01-30
Anjali	Data Structures	2024-01-22
Anjali	Operating Systems	2024-02-05
Arjun	Microprocessors	2024-01-25
Arjun	Thermodynamics	2024-02-01

Administration Schemas

Information

No object selected

Action Output

#	Time	Action	Message	Duration / Fetch
65	22:22:14	CREATE VIEW StudentEnrollmentView AS SELECT s.name AS student_name, c.title AS course_title, e.enroll...	0 row(s) affected	0.000 sec
66	22:22:14	CREATE VIEW InstructorCourseCount AS SELECT i.name AS instructor_name, COUNT(c.course_id) AS total...	0 row(s) affected	0.016 sec
67	22:22:24	CREATE VIEW StudentEnrollmentView AS SELECT s.name AS student_name, c.title AS course_title, e.enroll...	Error Code: 1050, Table 'StudentEnrollmentView' already exists	0.000 sec
68	22:22:59	CREATE VIEW StudentEnrollmentView AS SELECT s.name AS student_name, c.title AS course_title, e.enroll...	Error Code: 1050, Table 'StudentEnrollmentView' already exists	0.000 sec
69	22:23:37	SELECT s.name AS student_name, c.title AS course_title, e.enrollment_date FROM Students s JOIN Enrollme...	10 row(s) returned	0.000 sec / 0.000 sec
70	22:23:37	SELECT i.name AS instructor_name, COUNT(c.course_id) AS total_courses FROM Instructors i JOIN Courses ...	3 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

29°C Haze

Search

22:23 28-06-2025

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

sakila
 sys
 world

SQL File 6* SQL File 7* SQL File 8* SQL File 9* SQL File 10* SQL File 11* SQL File 12* SQL File 13* SQL File 15* SQL File 16*

Limit to 1000 rows

SQL

```
4 JOIN EnrollmentDetails e ON s.student_id = e.student_id
5 JOIN Courses c ON e.course_id = c.course_id;
6
7 SELECT i.name AS instructor_name, COUNT(c.course_id) AS total_courses
8 FROM Instructors i
9 JOIN Courses c ON i.instructor_id = c.instructor_id
10 GROUP BY i.instructor_id;
```

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Result Grid

instructor_name	total_courses
Dr. Smith	2
Dr. John	2
Dr. Alice	1

Administration Schemas

Information

No object selected

Action Output

#	Time	Action	Message	Duration / Fetch
65	22:22:14	CREATE VIEW StudentEnrollmentView AS SELECT s.name AS student_name, c.title AS course_title, e.enroll...	0 row(s) affected	0.000 sec
66	22:22:14	CREATE VIEW InstructorCourseCount AS SELECT i.name AS instructor_name, COUNT(c.course_id) AS total...	0 row(s) affected	0.016 sec
67	22:22:24	CREATE VIEW StudentEnrollmentView AS SELECT s.name AS student_name, c.title AS course_title, e.enroll...	Error Code: 1050, Table 'StudentEnrollmentView' already exists	0.000 sec
68	22:22:59	CREATE VIEW StudentEnrollmentView AS SELECT s.name AS student_name, c.title AS course_title, e.enroll...	Error Code: 1050, Table 'StudentEnrollmentView' already exists	0.000 sec
69	22:23:37	SELECT s.name AS student_name, c.title AS course_title, e.enrollment_date FROM Students s JOIN Enrollme...	10 row(s) returned	0.000 sec / 0.000 sec
70	22:23:37	SELECT i.name AS instructor_name, COUNT(c.course_id) AS total_courses FROM Instructors i JOIN Courses ...	3 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

29°C Haze

Search

22:24 28-06-2025

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Filter objects

- skila
- sys
- world

SQL File 7* SQL File 8* SQL File 9* SQL File 10* SQL File 11* SQL File 12* SQL File 13* SQL File 15* SQL File 16* SQL File 17*

1 CREATE INDEX idx_students_city ON Students(city);

2

3 CREATE INDEX idx_enrollment_student ON EnrollmentDetails(student_id);

4 CREATE INDEX idx_enrollment_course ON EnrollmentDetails(course_id);

5

6 CREATE INDEX idx_courses_title ON Courses(title);

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

Administration Schemas

Information

No object selected

Output

Action Output

#	Time	Action	Message	Duration / Fetch
69	22:23:37	SELECT s.name AS student_name, c.title AS course_title, e.enrollment_date FROM Students s JOIN Enrollme...	10 row(s) returned	0.000 sec / 0.000 sec
70	22:23:37	SELECT i.name AS instructor_name, COUNT(c.course_id) AS total_courses FROM Instructors i JOIN Courses ...	3 row(s) returned	0.000 sec / 0.000 sec
71	22:24:54	CREATE INDEX idx_students_city ON Students(city)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.047 sec
72	22:24:54	CREATE INDEX idx_enrollment_student ON EnrollmentDetails(student_id)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.047 sec
73	22:24:54	CREATE INDEX idx_enrollment_course ON EnrollmentDetails(course_id)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.016 sec
74	22:24:54	CREATE INDEX idx_courses_title ON Courses(title)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.031 sec

Object Info Session

29°C Haze

Search

ENG IN

22:25 28-06-2025