

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator: SQL File 9* students SQL File 3* students courses enrollments

SCHEMAS: Filter objects annu ant classimodels collegedb db_sql_tutorial john pythontest sys wscube

Tables: courses enrollments Columns Indexes Foreign Key Triggers students Views Stored Procedures Functions

Administration Schemas Information

Schema: collegedb

enrollments 1 x

Output:

EnrollmentID	StudentID	CourseID	EnrollmentDate
1	1	1	2025-03-01
2	2	3	2025-03-02
3	3	5	2025-03-03
4	4	2	2025-03-04
5	5	4	2025-03-05
	MNULL	MNULL	MNULL

Result Grid | Filter Rows: Edit: Export/Import: Wrap Cell Content: Result Grid Form Editor Field Types

Action Output:

- 17 15:15:18 .
- 18 15:15:31 SELECT * FROM collegedb.enrollments LIMIT 0, 1000

Message: Error Code: 1064. You have an error in your SQL syntax; check the manual that corresponds to you

5 row(s) returned

Object Info Session

MySQL Workbench

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Navigator: SQL File 9* students SQL File 3* students courses enrollments courses

SCHEMAS: Filter objects annu ant classimodels collegedb db_sql_tutorial john pythontest sys wscube

Tables: courses enrollments Columns Indexes Foreign Key Triggers students Views Stored Procedures Functions

Administration Schemas Information

Table: courses

Columns:

CourseID	CourseName	Credits
1	Database Systems	4
2	Operating Systems	3
3	Data Structures	4
4	Linear Algebra	3
5	Physics I	4
	MNULL	MNULL

Result Grid | Filter Rows: Edit: Export/Import: Wrap Cell Content: Result Grid Form Editor Field Types

courses 1 x

Output:

Action Output	#	Time	Action	Message
18 15:15:31	1	SELECT * FROM collegedb.enrollments LIMIT 0, 1000		5 row(s) returned
19 15:16:16	2	SELECT * FROM collegedb.courses LIMIT 0, 1000		5 row(s) returned

Object Info Session

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS Filter objects

- annu
- ant
- classicmodels
- collegedb
 - Tables
 - courses
 - enrollments
 - students
 - Columns
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 - Foreign Key
 - Triggers
- Views
- Stored Procedures
- Functions

db_sql_tutorial

john

pythontest

sys

wscube

Administration Schemas

Information

Table: students

Columns:

StudentID	FirstName	LastName	Age	Major
1	Alice	Johnson	20	Computer Science
2	Bob	Smith	22	Mathematics
3	Charlie	Brown	21	Physics
4	David	Wilson	23	Engineering
5	Emma	Davis	19	Biology
NULL	NULL	NULL	NULL	NULL

Result Grid | Filter Rows: Edit: Export/Imports: Wrap Cell Content: Result Grid Form Editor Field Types

Output

Action Output

#	Time	Action	Message
19	15:16:16	SELECT * FROM collegedb.courses LIMIT 0, 1000	5 row(s) returned
20	15:16:52	SELECT * FROM collegedb.students LIMIT 0, 1000	5 row(s) returned

Object Info Session

MySQL Workbench

Local instance MySQL80 x

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS Filter objects

- annu
- ant
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- collegedb
 - Tables
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 - enrollments
 - students
 - Views
 - Stored Procedures
 - Functions
- db_sql_tutorial
- john
- librarydb
- pythontest
- sys
- wscube

Administration Schemas

Information

Schema: collegedb

1 -- (1)Write an SQL statement to create a database named LibraryDB.

2 • CREATE DATABASE LibraryDB;

3

SQLAdditions

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

Output

Action Output

#	Time	Action	Message	Duration / Fetch
3	15:22:12	SELECT * FROM collegedb.courses LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
4	15:24:28	CREATE DATABASE LibraryDB	1 row(s) affected	0.000 sec

Context Help Snippets

Object Info Session

MySQL Workbench

Local instance MySQL80

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Navigator

SCHEMAS

- students
- SQL File 3*
- students
- courses
- enrollments
- courses
- SQL File 8
- enrollments
- students - Table
- students
- courses
- books
- books
- books

Limit to 1000 rows

SQLAdditions

-- (2)How do you create a table 'Books' with columns 'BookID', 'Title', 'Author', and 'PublishedYear'?

```

1 -- (2)How do you create a table 'Books' with columns 'BookID', 'Title', 'Author', and 'PublishedYear'?
2 • CREATE TABLE Books (
3     BookID INT PRIMARY KEY,
4     Title VARCHAR(255),
5     Author VARCHAR(255),
6     PublishedYear INT
7 );

```

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

Schema: librarydb

Object Info Session

Output

Action Output

#	Time	Action	Message	Duration / Fetch
9	15:35:25	SELECT * FROM librarydb.books LIMIT 0, 1000	0 row(s) returned	0.000 sec / 0.000 sec
10	15:35:45	SELECT * FROM librarydb.books LIMIT 0, 1000	0 row(s) returned	0.000 sec / 0.000 sec

Context Help Snippets

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

- students
- SQL File 3*
- students
- courses
- courses
- books
- books
- students

Limit to 1000 rows

SQLAdditions

-- (3)What is the primary key, and how do you define it in a table?

```

1 -- (3)What is the primary key, and how do you define it in a table?
2 • CREATE TABLE Students (
3     StudentID INT PRIMARY KEY,
4     Name VARCHAR(100),
5     Age INT,
6     City VARCHAR(100)
7 );

```

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

Schema: collegedb

Result Grid

BookID	Title	Author	PublishedYear

Form Editor

Field Types

books1 x

Output

Action Output

#	Time	Action	Message	Duration / Fetch
10	15:35:45	SELECT * FROM librarydb.books LIMIT 0, 1000	0 row(s) returned	0.000 sec / 0.000 sec
11	15:51:43	SELECT * FROM collegedb.students LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec

Context Help Snippets

Object Info Session

MySQL Workbench

Local instance MySQL80 X

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

collegedb

students SQL File 3* students courses courses books books SQL File 9* x

1 -- (6)Write an SQL query to create a table Employees with fields EmpID, Name, Department, and Salary.

2

3 • CREATE TABLE Employees (

4 EmpID INT AUTO_INCREMENT PRIMARY KEY,

5 Name VARCHAR(100),

6 Department VARCHAR(50),

7 Salary DECIMAL(10, 2)

8);

9

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

SQLAdditions

Limit to 1000 rows Jump to

Information

Schema: collegedb

Object Info Session

Output

Action Output

#	Time	Action	Message	Duration / Fetch
11	15:51:43	SELECT * FROM collegedb.students LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec
12	16:35:59	CREATE TABLE Employees (EmpID INT AUTO_INCREMENT PRIMARY KEY, Name VARCHAR(100), De...)	0 row(s) affected	0.016 sec

Context Help Snippets

MySQL Workbench

Local instance MySQL80 X

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

collegedb

students SQL File 3* students courses courses books books SQL File 9* x students

1 -- (10)How can you modify an existing table to add a new column?

2 -- we use ALTER

3 • ALTER TABLE students

4 ADD email VARCHAR(100);

5 |

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

SQLAdditions

Limit to 1000 rows Jump to

Information

Schema: collegedb

Object Info Session

Output

Action Output

#	Time	Action	Message	Duration / Fetch
14	17:54:57	ALTER TABLE students ADD email VARCHAR(100)	0 row(s) affected Records: 0 Duplicates: 0 Warnings: 0	0.016 sec
15	17:55:00	SELECT * FROM collegedb.students LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec

Context Help Snippets

MySQL Workbench

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Navigator

SCHEMAS

- Filter objects
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- Views
- Stored Procedure
- Functions
- collegedb

 - Tables
 - courses
 - employees
 - enrollments
 - students
 - Column
 - Indexes
 - Foreign
 - Triggers

- Views
- Stored Procedure
- Functions
- db_sql_tutorial

 - Tables

SQL File 3*

students courses courses books books SQL File 9* students students

SQLAdditions

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

```

1 -- (11)Write an SQL query to insert a new student into the `Students` table.
2 -- INSERT INTO table_name (column1, column2, column3, ...)
3 -- VALUES (value1, value2, value3, ...);
4 • INSERT INTO Students (FirstName,LastName,Age,Major)
5   VALUES ('Anu','Rai',21,'IT');
6
7
8
9

```

Table: courses

Columns:

CourseID	int AI
Coursename	varchar
Credits	int

Output

Action Output

#	Time	Action	Message	Duration / Fetch
22	18:04:00	INSERT INTO Students VALUES ('Anu','Rai',21,IT)	Error Code: 1136. Column count doesn't match value count at row 1	0.000 sec
23	18:05:23	INSERT INTO Students (FirstName,LastName,Age,Major) VALUES ('Anu','Rai',21,IT)	1row(s) affected	0.000 sec

Object Info Session

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

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 - Functions

- db_sql_tutorial

 - Tables
 - Views
 - Stored Procedure
 - Functions

- john

SQL File 3*

students courses courses books books SQL File 9* students students

SQLAdditions

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

```

1 -- (12)How do you insert multiple rows into a table using a single query
2 -- INSERT INTO table_name (column1, column2, column3, ...)
3 -- VALUES
4   -- (value1_1, value1_2, value1_3, ...),
5   -- (value2_1, value2_2, value2_3, ...),
6   -- (value3_1, value3_2, value3_3, ...);
7 • INSERT INTO Students (FirstName,LastName,Age,Major,email)
8   VALUES
9     ('Anu','Rai',21,'CS','anurai@12'),
10    ('Avani','singh',22,'IT','avanisinghi@21');
11
12
13

```

Table: students

Columns:

StudentID	int AI PK
FirstName	varchar
LastName	varchar
Age	int
Major	varchar
email	varchar

Output

Action Output

#	Time	Action	Message	Duration / Fetch
25	18:17:38	SELECT * FROM collegedb.students LIMIT 0, 1000	8row(s) returned	0.000 sec / 0.000 sec
26	18:18:30	INSERT INTO Students (FirstName,LastName,Age,Major,email) VALUES ('Anu','Rai',21,CS,'anurai@12'), ('Avani','singh',22,'IT','avanisinghi@21');	2row(s) affected Records: 2 Duplicates: 0 Warnings: 0	0.000 sec

Object Info Session

MySQL Workbench

Local instance MySQL80 X

File Edit View Query Database Server Tools Scripting Help

Navigator: students SQL File 3* students courses books books SQL File 9* students students students

SCHEMAS: Filter objects Tables Views Stored Procedure Functions collegedb Tables courses employees enrollments students Views Stored Procedure db_sql_tutorial Tables Views Stored Procedure Functions John

```

1 -- (16)How can you insert a record with NULL values for some columns?
2 -- INSERT INTO table_name (column1, column2, column3, column4,column5)
3
4 • INSERT INTO Students (FirstName,LastName,Age,Major,email)
5     VALUE
6     ('Avani','singh',22,'null','avanisinghi@21')
7
8
9
10
11
12
13

```

Administration Schemas Information

Table: students

Columns:

StudentID	int AI PK
FirstName	varchar
LastName	varchar
Age	int
Major	varchar
email	varchar

Action Output

#	Time	Action	Message	Duration / Fetch
32	18:48:21	INSERT INTO Students (FirstName,LastName,Age,Major,email)	VALUES ('Avani','singh',22,'IT','avanisinghi@21')	1 row(s) affected 0.000 sec
33	18:50:16	INSERT INTO Students (FirstName,LastName,Age,Major,email)	VALUES ('Avani','singh',22,'null','avanisinghi@21')	1 row(s) affected 0.000 sec

Object Info Session Context Help Snippets

MySQL Workbench

Local instance MySQL80 X

File Edit View Query Database Server Tools Scripting Help

Navigator: students SQL File 3* students courses books books SQL File 9* students students students

SCHEMAS: Filter objects Tables Views Stored Procedure Functions collegedb Tables courses employees enrollments students Views Stored Procedure db_sql_tutorial Tables Views Stored Procedure Functions John

```

1 -- (17)Write an SQL statement to insert a record into `Courses` where only `CourseName` is provided.
2
3 • INSERT INTO Courses (CourseName)
4     VALUES ('DBMS');
5
6
7
8
9
10

```

Administration Schemas Information

Table: courses

Columns:

CourseID	int AI PK
CourseName	varchar
Credits	int

Action Output

#	Time	Action	Message	Duration / Fetch
33	18:50:16	INSERT INTO Students (FirstName,LastName,Age,Major,email)	VALUES ('Avani','singh',22,'null','avanisinghi@21')	1 row(s) affected 0.000 sec
34	18:56:53	INSERT INTO Courses (CourseName)	VALUES ('DBMS')	1 row(s) affected 0.000 sec

Object Info Session Context Help Snippets

MySQL Workbench

Local instance MySQL80 X

File Edit View Query Database Server Tools Scripting Help

Navigator Schemas students SQL File 3' students courses books books SQL File 9' students students students courses courses courses courses course SQLAdditions

SCHEMAS

Filter objects

classicmodels

Tables

- customers
- employees
- offices
- orderdetails
- orders
- payments
- productline
- products
- Views
- Stored Procedure
- Functions

Tables

- courses
- employees
- enrollments
- students

Administration Schemas

Information

Schema: classicmodels

Output

Action Output

#	Time	Action	Message	Duration / Fetch
46	19:25:18	INSERT INTO Students (id, age) VALUES (1, '25')	Error Code: 1054. Unknown column 'id' in field list'	0.000 sec
47	19:25:25	INSERT INTO Student (id, age) VALUES (1, 25)	1row(s) affected	0.000 sec

Object Info Session

Context Help Snippets

MySQL Workbench

Local instance MySQL80 X

File Edit View Query Database Server Tools Scripting Help

Navigator Schemas students courses courses books books SQL File 9' students students students courses courses courses courses student SQLAdditions

SCHEMAS

Filter objects

classicmodels

Tables

- customers
- employees
- offices
- orderdetails
- orders
- payments
- productline
- products
- Views
- Stored Procedure
- Functions

Tables

- courses
- employees
- enrollments
- student

Administration Schemas

Information

Schema: classicmodels

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: |

Students 2

StudentID	FirstName	LastName	Age	Major	email
1	Alice	Johnson	20	Computer Science	anuraj@12
2	Bob	Smith	22	Mathematics	anuraj@12
3	Charlie	Brown	21	Physics	anuraj@12
4	David	Wilson	20	Engineering	anuraj@12
5	Emma	Davis	19	Biology	anuraj@12
6	Anu	Rai	21	IT	anuraj@12
7	Anu	Rai	21	CS	anuraj@12
8	Avani	singh	22	IT	avansinghi@21
9	Anu	Rai	21	CS	anuraj@12
10	Avani	singh	22	IT	avansinghi@21
11	Avani	singh	22	IT	avansinghi@21
12	Avani	singh	22	IT	avansinghi@21

Output

Action Output

#	Time	Action	Message	Duration / Fetch
48	19:33:35	SELECT * FROM collegedb.student LIMIT 0, 1000	1row(s) returned	0.000 sec / 0.000 sec
49	19:39:52	SELECT * FROM Students LIMIT 0, 1000	13row(s) returned	0.016 sec / 0.000 sec

Object Info Session

Result Grid Form Editor Field Types Context Help Snippets

MySQL Workbench Local instance MySQL80

```

1 -- 22)How do you retrieve only FirstName and Age from the Students table?
2
3 • SELECT FirstName, Age
4   FROM Students;
5

```

Result Grid | Filter Rows: Export: Wrap Cell Content:

FirstName	Age
Alice	20
Bob	22
Charlie	21
David	23
Erena	19
Anu	21
Anu	21
Avari	22
Anu	21
Avari	22
Anu	22
Avari	22

Students 3 x

Output:

Action Output

#	Time	Action	Message	Duration / Fetch
49	19:39:52	SELECT * FROM Students LIMIT 0, 1000	13 row(s) returned	0.016 sec / 0.000 sec
50	19:42:36	SELECT FirstName, Age FROM Students LIMIT 0, 1000	13 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

MySQL Workbench Local instance MySQL80

```

1 -- 23)Write a query to get students whose age is greater than 20
2
3 • SELECT *
4   FROM Students
5   WHERE Age > 20;
6
7

```

Result Grid | Filter Rows: Edit: Export/Import: Wrap Cell Content:

StudentID	FirstName	LastName	Age	Major	email
2	Bob	Smith	22	Mathematics	
3	Charlie	Brown	21	Physics	
4	David	Wilson	23	Engineering	
6	Anu	Rai	21	IT	
7	Anu	Rai	21	CS	anurai@12
8	Avari	singh	22	IT	avarisinh@21
9	Anu	Rai	21	CS	anurai@12
10	Avari	singh	22	IT	avarisinh@21
11	Avari	singh	22	IT	avarisinh@21
12	Avari	singh	22	IT	avarisinh@21
13	Avari	singh	22	null	avarisinh@21

Students 4 x

Output:

Action Output

#	Time	Action	Message	Duration / Fetch
50	19:42:36	SELECT FirstName, Age FROM Students LIMIT 0, 1000	13 row(s) returned	0.000 sec / 0.000 sec
51	19:46:09	SELECT * FROM Students WHERE Age > 20 LIMIT 0, 1000	11 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

classicmodels

Tables

- customers
- employees
- offices
- orderdetails
- orders
- payments
- productline
- products

Views

Stored Procedure

Functions

collegedb

Tables

- courses
- employees
- enrollments
- student

Administration Schemas Information

Schema: classicmodels

le 3" students courses courses books books SQL File 9" students students courses courses courses courses student

SQLAdditions

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

```

1 -- 24)How do you retrieve records where the 'Major' is 'Computer Science'?
2 • S Execute the selected portion of the script or everything, if there is no selection.
3
4 FROM Students
5 WHERE Major = 'CS';
6
7

```

Result Grid | Filter Rows | Edits | Export/Import | Wrap Cell Content:

StudentID	FirstName	LastName	Age	Major	email
7	Anu	Rai	21	CS	anuraj@12
9	Anu	Rai	21	CS	anuraj@12

Students 5

Action Output

#	Time	Action	Message	Duration / Fetch
51	19:46:09	SELECT * FROM Students WHERE Age > 20 LIMIT 0, 1000	11 row(s) returned	0.000 sec / 0.000 sec
52	19:52:38	SELECT * FROM Students WHERE Major = 'CS' LIMIT 0, 1000	2 row(s) returned	0.015 sec / 0.000 sec

Object Info Session

MySQL Workbench

Local instance MySQL80

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Navigator

SCHEMAS

classicmodels

Tables

- customers
- employees
- offices
- orderdetails
- orders
- payments
- productline
- products

Views

Stored Procedure

Functions

collegedb

Tables

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- student

Administration Schemas Information

Schema: classicmodels

le 3" students courses courses books books SQL File 9" students students courses courses courses courses student

SQLAdditions

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

```

1 -- 26) How do you retrieve all courses sorted by `CourseName` in ascending order?
2 • SELECT *
3 FROM Courses
4 ORDER BY CourseName;
5
6
7
8

```

Result Grid | Filter Rows | Edits | Export/Import | Wrap Cell Content:

CourseID	CourseName	Credits
3	Data Structures	4
1	Database Systems	4
6	DBMS	
4	Linear Algebra	3
2	Operating Systems	3
5	Physics I	4

Courses 6

Action Output

#	Time	Action	Message	Duration / Fetch
52	19:52:38	SELECT * FROM Students WHERE Major = 'CS' LIMIT 0, 1000	2 row(s) returned	0.015 sec / 0.000 sec
53	19:54:34	SELECT * FROM Courses ORDER BY CourseName LIMIT 0, 1000	6 row(s) returned	0.016 sec / 0.000 sec

Object Info Session

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Schemas

Table: students

Columns:

StudentID	int AI P
Firstname	varchar
Lastname	varchar
Age	int
Major	varchar
email	varchar

Result Grid | Filter Rows: Export: Wrap Cell Content: Result Grid Form Editor Field Types

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

```

1 -- 27) What does the DISTINCT keyword do in a SELECT statement
2 -- it removes duplicate values
3 • SELECT DISTINCT Major
4 FROM students;
5
6
7
8

```

Result Grid | Filter Rows: Export: Wrap Cell Content: Result Grid Form Editor Field Types

Major

Computer Science
Mathematics
Physics
Engineering
Biology
IT
CS
null

Action Output

#	Time	Action	Message	Duration / Fetch
57	20:26:14	SELECT `*` FROM collegeb.students LIMIT 0, 1000	13 row(s) returned	0.000 sec / 0.000 sec
58	20:28:42	SELECT DISTINCT Major FROM students LIMIT 0, 1000	8 row(s) returned	0.000 sec / 0.000 sec

Object Info Session

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Schemas

Table: students

Columns:

StudentID	int AI P
Firstname	varchar
Lastname	varchar
Age	int
Major	varchar
email	varchar

Result Grid | Filter Rows: Export: Wrap Cell Content: Result Grid Form Editor Field Types

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

```

1 -- 28) How can you find the total number of students in the 'Students' table
2
3 • SELECT COUNT(*) AS TotalStudents
4 FROM Students;
5
6
7
8

```

Result Grid | Filter Rows: Export: Wrap Cell Content: Result Grid Form Editor Field Types

TotalStudents

13

Action Output

#	Time	Action	Message	Duration / Fetch
58	20:28:42	SELECT DISTINCT Major FROM students LIMIT 0, 1000	8 row(s) returned	0.000 sec / 0.000 sec
59	20:33:36	SELECT COUNT(*) AS TotalStudents FROM Students LIMIT 0, 1000	1 row(s) returned	0.016 sec / 0.000 sec

Object Info Session

MySQL Workbench - Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Schemas: classimodels collegedb db_sel_tutorial john

Table: students

Columns:

StudentID	FirstName	LastName	Age	Major	email
1	John	Doe	20	Computer Science	john.doe@example.com
2	Bob	Smith	22	Mathematics	bob.smith@example.com
3	Charlie	Brown	21	Physics	charlie.brown@example.com
4	David	Wilson	23	Engineering	da
5	Anu	Rai	21	IT	anu.rai@example.com
6	Aru	Rai	21	CS	aru.rai@example.com
7	Anu	Rai	22	IT	anu.rai@example.com
8	Avani	Singh	22	IT	avani.singh@example.com
9	Anu	Rai	21	CS	anu.rai@example.com
10	Avani	Singh	22	IT	avani.singh@example.com
11	Avani	Singh	22	IT	avani.singh@example.com
12	Avani	Singh	22	IT	avani.singh@example.com
13	Avani	Singh	22	null	avani.singh@example.com

Students 11 x

Action Output:

#	Time	Action	Message	Duration / Fetch
61	20:38:26	SELECT * FROM Students WHERE Major = 'CS' AND Age > 20 LIMIT 0, 1000	2 row(s) returned	0.015 sec / 0.000 sec
62	20:38:51	SELECT * FROM Students WHERE Major = 'CS' OR Age > 20 LIMIT 0, 1000	11 row(s) returned	0.000 sec / 0.000 sec

Result Grid | Filter Rows: | Edit: | Form Editor | Field Types | Result Grid | Context Help | Snippets

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

MySQL Workbench - Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Schemas: classimodels collegedb db_sel_tutorial john

Table: students

Columns:

StudentID	FirstName	LastName	Age	Major	email
1	Alice	Johnson	20	Computer Science	alice.johnson@example.com
2	Anu	Rai	21	IT	anu.rai@example.com
3	Anu	Rai	21	CS	anu.rai@example.com
4	Avani	Singh	22	IT	avani.singh@example.com
5	Anu	Rai	21	CS	anu.rai@example.com
6	Avani	Singh	22	IT	avani.singh@example.com
7	Avani	Singh	22	IT	avani.singh@example.com
8	Avani	Singh	22	IT	avani.singh@example.com
9	Avani	Singh	22	IT	avani.singh@example.com
10	Avani	Singh	22	IT	avani.singh@example.com
11	Avani	Singh	22	IT	avani.singh@example.com
12	Avani	Singh	22	IT	avani.singh@example.com
13	Avani	Singh	22	null	avani.singh@example.com

students 12 x

Action Output:

#	Time	Action	Message	Duration / Fetch
65	20:48:06	SELECT * FROM students WHERE name LIKE 'A%' LIMIT 0, 1000	Error Code: 1054. Unknown column 'name' in 'where clause'	0.000 sec
67	20:48:45	SELECT * FROM students WHERE FirstName LIKE 'A%' LIMIT 0, 1000	9 row(s) returned	0.000 sec / 0.000 sec

Result Grid | Filter Rows: | Edit: | Form Editor | Field Types | Result Grid | Context Help | Snippets

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

MySQL Workbench - Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Schemas: Filter objects

- classicmodels
 - Tables
 - annu
 - ant
 - customers
 - employees
 - offices
 - orderdetails
 - orders
 - payments
 - productline
 - products
 - vendors
 - Stored Procedures
 - Functions
- collegeDB
 - Tables
 - courses
 - employees

Administration Schemas Information

Table: students

Columns:

StudentID	int AI F
FirstName	varchar
LastName	varchar
Age	int
Major	varchar
email	varchar

Employees 13 x

Output:

Action Output

#	Time	Action	Message	Duration / Fetch
70	20:52:48	SELECT * FROM collegeDB.employees LIMIT 0, 1000	0 row(s) returned	0.000 sec / 0.000 sec
71	20:52:52	SELECT * FROM classicmodels.employees LIMIT 0, 1000	23 row(s) returned	0.031 sec / 0.000 sec

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: | Fetch rows: | Result Grid | Form Editor | Field Types | Context Help | Snippets

Object Info Session

SQL File 9" students students students courses courses courses courses student

-- 32) How do you retrieve the top 5 highest salaries from the 'Employees' table?

```

1 -- 32) How do you retrieve the top 5 highest salaries from the 'Employees' table?
2 • SELECT *
3   FROM Employees
4   ORDER BY salary DESC
5   LIMIT 5;
6
7
8

```

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

MySQL Workbench - Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Schemas: Filter objects

- classicmodels
 - Tables
 - annu
 - ant
 - customers
 - employees
 - enrollments
 - student
 - students
 - Columns
 - Indexes
 - Foreign
 - Triggers
 - Stored Procedures
 - Functions
- collegeDB
 - Tables
 - courses
 - employees
 - enrollments
 - student
 - students
 - Columns
 - Indexes
 - Foreign
 - Triggers
 - Views
 - Stored Procedures
 - Functions
- db_sel_tutorial
 - John

Administration Schemas Information

Schema: collegeDB

Table: Students

Columns:

StudentID	First Name	Last Name	Age	Major	Email
4	David	Wilson	23	Engineering	dwilson@21
8	Avani	Singh	22	IT	avansingh@21
2	Bob	Smith	22	Mathematics	bsmith@21

Students 14 x

Output:

Action Output

#	Time	Action	Message	Duration / Fetch
95	21:09:44	SELECT * FROM Students ORDER BY id DESC LIMIT 5	Error Code: 1054. Unknown column 'id' in 'order clause'	0.000 sec
96	21:10:16	SELECT * FROM Students ORDER BY age DESC LIMIT 3	3 row(s) returned	0.000 sec / 0.000 sec

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: | Fetch rows: | Result Grid | Form Editor | Field Types | Context Help | Snippets

Object Info Session

SQL File 9" students SQL File 3" students courses courses books books SQL File 9" courses courses courses student

-- 34) What is the purpose of the LIMIT clause in MySQL?

```

1 -- 34) What is the purpose of the LIMIT clause in MySQL?
2 • SELECT *
3   FROM Students
4   ORDER BY age DESC
5   LIMIT 3;
6
7
8

```

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

The screenshot shows the MySQL Workbench interface. The left sidebar displays the schema browser for the 'collegeedb' database, showing tables like 'courses', 'employees', 'enrollments', 'students', and 'subjects'. The main area contains a query editor with the following SQL code:

```
-- 36) How do you filter records using the BETWEEN operator?  
--  
3 • SELECT *  
4 FROM Students  
5 WHERE age BETWEEN 20 AND 22;  
6  
7  
8
```

The results grid below shows 11 rows of student data from the 'Students' table, filtered by age between 20 and 22. The columns are StudentID, FirstName, LastName, Age, Major, and email.

StudentID	FirstName	LastName	Age	Major	email
1	Alice	Johnson	20	Computer Science	alicej@12
2	Bob	Smith	22	Mathematics	bobsmith@12
3	Charlie	Brown	21	Physics	charlieb@12
4	Anu	Rai	21	IT	anurai@12
5	Anu	Rai	21	CS	anurai@12
6	Avari	singh	22	IT	avarisingh@21
7	Avari	singh	21	CS	avarisingh@21
8	Avari	singh	22	IT	avarisingh@21
9	Avari	singh	21	CS	avarisingh@21
10	Avari	singh	22	IT	avarisingh@21
11	Avari	singh	22	IT	avarisingh@21
12	Avari	singh	22	IT	avarisingh@21
13	Avari	singh	22	null	avarisingh@21

The status bar at the bottom shows the following log entries:

- # 98 21:18:44 SELECT * FROM Students WHERE age BETWEEN 20 AND 22 LIMIT 0, 1000 11 row(s) returned 0.000 sec / 0.000 sec Duration / Fetch
- # 99 21:18:45 SELECT * FROM Students WHERE age BETWEEN 20 AND 22 LIMIT 0, 1000 11 row(s) returned 0.000 sec / 0.000 sec Duration / Fetch

The screenshot shows the MySQL Workbench interface. The top menu bar includes File, Edit, View, Query, Database, Server, Tools, Scripting, and Help. The left sidebar displays the Navigator, Schemas (with db_sql_tutorial selected), Administration, and Information sections. The main area features a query editor with the following SQL code:

```
-- 38). How do you retrieve students who have not email?  
--  
3 • SELECT *  
4 FROM Students  
5 WHERE email IS NULL;
```

Below the query editor is a Result Grid table with columns: StudentID, FirstName, LastName, Age, Major, and email. The data is as follows:

StudentID	FirstName	LastName	Age	Major	email
1	Alice	Johnson	20	Computer Science	alice.johnson@example.com
2	Bob	Smith	22	Mathematics	bob.smith@example.com
3	Charlie	Brown	21	Physics	charlie.brown@example.com
4	David	Wilson	23	Engineering	da...@example.com
5	Emma	Davis	19	Biology	emma.davis@example.com
6	Andy	Elliott	21	IT	andy.elliott@example.com
7	Mark	Harris	22	Mathematics	mark.harris@example.com

The bottom section shows the Object Info and Session tabs.

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tool Scripting Help

Navigator

SCHEMAS

Table: students

Columns:

StudentID	int AI F
Firstname	varchar
Lastname	varchar
Age	int
Major	varchar

Result Grid | Filter Rows: Export: Wrap Cell Content: Result 8

Major total_students

Computer Science	1
Mathematics	1
Physics	1
Engineering	1
Biology	1
IT	5
CS	2
null	1

Action Output

#	Time	Action	Message	Duration / Fetch
130	21:43:19	SELECT Major, COUNT(id) AS total_students FROM Students GROUP BY Major LIMIT 0, 1000	Error Code: 1054. Unknown column 'id' in 'Field list'	0.016 sec
131	21:43:36	SELECT Major, COUNT(4) AS total_students FROM Students GROUP BY Major LIMIT 0, 1000	8 row(s) returned	0.000 sec / 0.000 sec

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

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

Table: students

Columns:

StudentID	int AI F
Firstname	varchar
Lastname	varchar
Age	int
Major	varchar

Result Grid | Filter Rows: Export: Wrap Cell Content: Result 8

Major total_students

Computer Science	1
Mathematics	1
Physics	1
Engineering	1
Biology	1
IT	5
CS	2
null	1

Action Output

#	Time	Action	Message	Duration / Fetch
130	21:43:19	SELECT Major, COUNT(id) AS total_students FROM Students GROUP BY Major LIMIT 0, 1000	Error Code: 1054. Unknown column 'id' in 'Field list'	0.016 sec
131	21:43:36	SELECT Major, COUNT(4) AS total_students FROM Students GROUP BY Major LIMIT 0, 1000	8 row(s) returned	0.000 sec / 0.000 sec

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

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

- annu
- ant
- classimodel
- collegebd
- courses
- employee
- enrollments
- student
- students
- views
- Stored Procedures
- db_selTutorial
- Tables

Administration Schemas Information

Table: students

Columns:

StudentID	int AI P
Firstname	varchar
Lastname	varchar
Age	int
Major	varchar

Result Grid | Filter Rows | Export: | Wrap Cell Content: |

Result 9 x Read Only

Action Output

#	Time	Action	Message	Duration / Fetch
131	21:43:36	SELECT Major, COUNT(*) AS total_students FROM Students GROUP BY Major LIMIT 0, 1000	8 row(s) returned	0.000 sec / 0.000 sec
132	22:03:54	SELECT Major, AVG(Age) AS average_age FROM Students GROUP BY Major LIMIT 0, 1000	8 row(s) returned	0.015 sec / 0.000 sec

SQLAdditions

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

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator

SCHEMAS

- annu
- ant
- classimodel
- collegebd
- courses
- employee
- enrollments
- student
- students
- views
- Stored Procedures
- db_selTutorial
- Tables

Administration Schemas Information

Table: courses

Columns:

CourseID	int AI
Coursename	varchar
Credits	int

Result Grid | Filter Rows | Edit: | Export/Import: | Wrap Cell Content: |

Result 1 x

Action Output

#	Time	Action	Message	Duration / Fetch
142	22:12:46	SELECT name, credit FROM courses WHERE credit > (SELECT MAX(credit) FROM courses) LIMIT 0, 1000	Error Code: 1054. Unknown column 'name' in field list'	0.000 sec
143	22:12:50	SELECT * FROM collegebd.courses LIMIT 0, 1000	6 row(s) returned	0.000 sec / 0.000 sec

SQLAdditions

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

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator: SQL File 10* students students students students courses collegedb.courses courses courses

SCHEMAS: Filter objects

- annu
- ant
- classmodels
- collegedb
 - Tables
 - courses
 - Columns
 - Indexes
 - Foreign
 - Triggers
 - employees
 - enrollments
 - student
 - Students
- Views

Administration Schemas Information

Table: students

Columns:

StudentID	int AI F
FirstName	varchar
LastName	varchar
Age	int
Major	varchar
email	varchar

Result Grid | Filter Rows: | Edit: | Wrap Cell Content: |

StudentID FirstName LastName Age Major email

1 Alice Johnson 20 Computer Science null

2 Bob Smith 22 Mathematics null

3 Charlie Brown 21 Physics null

4 Emma Davis 19 Biology null

5 Anu Rai 21 IT null

6 Anu Rai 21 CS anurai@12

7 Anu Rai singh 22 IT anuraisingh@21

8 Avari singh 22 IT anuraisingh@12

9 Anu Rai 21 CS anurai@12

10 Avari singh 22 IT anuraisingh@21

11 Avari singh 22 IT anuraisingh@21

12 Avari singh 22 IT anuraisingh@21

13 Avari singh 22 null anuraisingh@21

Students 2 x

Action Output

#	Time	Action	Message	Duration / Fetch
①	146 22:15:31	SELECT DBMS.credit FROM courses WHERE credits = (SELECT MAX(credits) FROM courses) LIMIT 0, 1000	Error Code: 1054. Unknown column 'DBMS' in field list'	0.000 sec
②	147 22:16:47	SELECT * FROM Students WHERE age BETWEEN 18 AND 22 LIMIT 0, 1000	12 row(s) returned	0.000 sec / 0.000 sec

Result Grid Form Editor Field Types Context Help Snippets

SQLAdditions: < > | Jump to

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

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator: SQL File 10* students students students students courses collegedb.courses courses courses

SCHEMAS: Filter objects

- annu
- ant
- classmodels
- collegedb
 - Tables
 - courses
 - Columns
 - Indexes
 - Foreign
 - Triggers
 - employees
 - enrollments
 - student
 - Students
- Views

Administration Schemas Information

Table: students

Columns:

StudentID	int AI F
FirstName	varchar
LastName	varchar
Age	int
Major	varchar
email	varchar

Result Grid | Filter Rows: | Edit: | Wrap Cell Content: |

StudentID FirstName LastName Age Major email

1 Alice Johnson 20 Computer Science null

4 David Wilson 23 Engineering null

Students 3 x

Action Output

#	Time	Action	Message	Duration / Fetch
③	147 22:16:47	SELECT * FROM Students WHERE age BETWEEN 18 AND 22 LIMIT 0, 1000	12 row(s) returned	0.000 sec / 0.000 sec
④	148 22:19:09	SELECT * FROM Students WHERE LastName LIKE '%son%' LIMIT 0, 1000	2 row(s) returned	0.000 sec / 0.000 sec

Result Grid Form Editor Field Types Context Help Snippets

SQLAdditions: < > | Jump to

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

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator: SQL File 10* students students students students courses collegedb.courses courses courses

SCHEMAS: Filter objects

- annu
- ant
- classicmodels
- collegeprodb
- Tables
 - courses
 - Columns
 - Indexes
 - Foreign
 - Triggers
 - employees
 - enrollments
 - student
 - Students
 - Views

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

```

1 -- 46)Write an SQL statement to find students whose `LastName` contains 'son'
2 • SELECT *
3 FROM Students
4 WHERE LastName LIKE '%son%';
5
6

```

Result Grid: Filter Rows: Edit: Export/Import: Wrap Cell Content: Result Grid Form Editor Field Types

StudentID	FirstName	LastName	Age	Major	email
1	Alice	Johnson	20	Computer Science	
4	David	Wilson	23	Engineering	

Action Output:

#	Time	Action	Message	Duration / Fetch
149	22:19:09	SELECT * FROM Students WHERE LastName LIKE '%son%' LIMIT 0, 1000	2 row(s) returned	0.000 sec / 0.000 sec
149	22:22:55	SELECT * FROM Students WHERE LastName LIKE '%son%' LIMIT 0, 1000	2 row(s) returned	0.000 sec / 0.000 sec

Table: students

Columns:

- StudentID** int AI F
- FirstName varchar
- LastName varchar
- Age int
- Major varchar
- email varchar

Object Info Session

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

Navigator: SQL File 10* students students students students courses collegedb.courses courses courses

SCHEMAS: Filter objects

- annu
- ant
- classicmodels
- collegeprodb
- Tables
 - courses
 - Columns
 - Indexes
 - Foreign
 - Triggers
 - employees
 - enrollments
 - student
 - Students
 - Views

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

```

1 -- 47)How do you retrieve students in a random order?
2 • SELECT *
3 FROM Students
4 ORDER BY RAND();
5

```

Result Grid: Filter Rows: Edit: Export/Import: Wrap Cell Content: Result Grid Form Editor Field Types

StudentID	FirstName	LastName	Age	Major	email
10	Avani	singh	22	IT	avansingh@21
5	Emma	Davis	19	Biology	emmadavis@21
11	Avani	singh	22	IT	avansingh@21
8	Avani	singh	22	IT	avansingh@21
9	Anu	Rai	21	CS	anurai@12
1	Alice	Johnson	20	Computer Science	
3	Charlie	Brown	21	Physics	
12	Anu	Rai	21	CS	anurai@12
13	Avani	singh	22	null	avansingh@21
4	David	Wilson	23	Engineering	
6	Anu	Rai	21	IT	

Action Output:

#	Time	Action	Message	Duration / Fetch
149	22:22:55	SELECT * FROM Students WHERE LastName LIKE '%son%' LIMIT 0, 1000	2 row(s) returned	0.000 sec / 0.000 sec
150	22:23:59	SELECT * FROM Students ORDER BY RAND() LIMIT 0, 1000	13 row(s) returned	0.016 sec / 0.000 sec

Table: students

Columns:

- StudentID** int AI F
- FirstName varchar
- LastName varchar
- Age int
- Major varchar
- email varchar

Object Info Session

MySQL Workbench

Local instance MySQL80

File Edit View Query Database Server Tools Scripting Help

SQL File 10* students students students students courses collegedb.courses courses courses

Limit to 1000 rows

Schemas

SCHEMAS

Filter objects

annu ant classmodels collegedb

Tables

courses Columns

Indexes Foreign Triggers

employees enrolments student Students

Views

Administration Schemas Information

Table: students

Columns:

StudentID	FirstName	LastName	Age	Major	email
10	Avani	singh	22	IT	avansingh@21
5	Emma	Davis	19	Biology	emmadavis@21
11	Avani	singh	22	IT	avansingh@21
8	Avani	singh	22	IT	avansingh@21
9	Anu	Rai	21	CS	anurajrai@12
1	Alice	Johnson	20	Computer Science	alicejohnson@21
3	Charlie	Brown	21	Physics	charliebrown@21
7	Anu	Rai	21	CS	anurajrai@12
13	Avani	singh	22	null	avansingh@21
4	David	Wilson	23	Engineering	dwilson@21
6	Anu	Rai	21	IT	anurajrai@21

Students 5 x

Action Output

#	Time	Action	Message	Duration / Fetch
149	22:22:55	SELECT * FROM Students WHERE LastName LIKE "%an%" LIMIT 0, 1000	2 row(s) returned	0.000 sec / 0.000 sec
150	22:23:59	SELECT * FROM Students ORDER BY RAND() LIMIT 0, 1000	13 row(s) returned	0.016 sec / 0.000 sec

Result Grid | Filter Rows: | Edit: | Export|Import: | Wrap Cell Content: |

SQLAdditions: < | > | Jump to

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

Result Grid Form Editor Field Types

Apply Refresh Context Help Snippets

Object Info Session