

# CNT 4714: Enterprise Computing

## Spring 2024

### Client User Creation Using The MySQL Workbench

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Office Hours via Zoom: M 4:00-5:00pm, T&Th 12:30-1:30pm,  
W 3:30-4:20pm

Office Hours Zoom Details: Meeting ID: 958 3198 1003  
Passcode: 500758

Q&A Sessions via Zoom: Meeting ID: 969 6878 1427  
Passcode: 453163

Department of Computer Science  
University of Central Florida



# Client User Creation In The MySQL Workbench

- For Project Three, in addition to the default root user, you need to create two new users `client1` and `client2` for the `project3` database and assign them specific privileges on the database. You will also need to create a new user named `theaccountant` with permissions on the `operationslog` database. You'll also need to create a specific user named `project3app` for your main application to update the `operationscount` table in the `operationslog` database.
- This set of slides steps you through that process using the MySQL Workbench.
- This can also be done via the MySQL command line client, however, it requires issuing specific GRANT commands and while providing finer grained privilege detail, goes a bit beyond what we need for this project.



MySQL Workbench

Local Instance MySQL8.3.0 (operationslog) - Warning - not supported | theaccountant - Warning - not supported | Local Instance MySQL8.3.0 (project3) - Warning - not supported | >

Administration Schemas Query 1

MANAGEMENT

- Server Status
- Client Connections
- Users and Privileges**
- Status and System Variables
- Data Export
- Data Import/Restore

INSTANCE

- Startup / Shutdown
- Server Logs
- Options File

PERFORMANCE

- Dashboard
- Performance Reports
- Performance Schema Setup

Query Editor

Limit to 1000 rows

1

Action Output

Time Action Response Duration / Fetch Time

SQL Editor Opened.

Log into the Workbench as a root user and select Users and Privileges from the Management menu.





Administration

Schemas

Query 1

Administration - Users and Privileges

**MANAGEMENT**

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## Local Instance MySQL8.3.0 Users and Privileges

### User Accounts

Select an account to edit or click [Add Account] to create a new one

User	From Host
mysql.infoschema	localhost
mysql.session	localhost
mysql.sys	localhost
project3app	%
root	localhost
theaccountant	%

Login    Account Limits    Administrative Roles    Schema Privileges

Login Name: You may create multiple accounts with the same name to connect from different hosts.

Authentication Type: caching\_sha2\_password For the standard password and/or host based authentication, select 'Standard'.

Limit to Hosts Matching: % and \_ wildcards may be used

Password: Type a password to reset it.

Consider using a password with 8 or more characters with mixed case letters, numbers and punctuation marks.

Confirm Password: Enter password again to confirm.

1. You'll now see a window that allows you to create user accounts and set permissions on those account. Currently you'll only have the root user and some system accounts by default.

2. Click the Add Account button here.

Add Account

Revert

Apply

SQL Editor Opened.



MySQL Workbench

Local Instance MySQL8.3.0 (operationslog) - Warning - not supported | theaccountant - Warning - not supported | Local Instance MySQL8.3.0 (project3) - Warning - not supported | >

Administration Schemas Query 1 Administration - Users and Privileges

**MANAGEMENT**

- Server Status
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**PERFORMANCE**

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- Performance Reports
- Performance Schema Setup

Local Instance MySQL8.3.0  
Users and Privileges

User Accounts

User	From Host
mysql.infoschema	localhost
mysql.session	localhost
mysql.sys	localhost
<b>newuser</b>	%
project3app	%
root	localhost
theaccountant	

Details for account newuser@%

Login Name:  You may create multiple accounts with the same name to connect from different hosts.

Authentication Type:  For the standard password and/or host based authentication, select 'Standard'.

Limit to Hosts Matching: % % and \_ wildcards may be used

word:  Weak password.

word:  Enter password again to confirm.

**1. Enter the information for the new user named “client1” as shown. Doesn’t matter if the password is considered weak. (Use “client1” as the password)**

**2. Click the Apply button when finished**

Add Account Delete Refresh Revert Apply

SQL Editor Opened.





## MANAGEMENT

- Server Status
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- Data Export
- Data Import/Restore

## INSTANCE

- Startup / Shutdown
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- Options File

## PERFORMANCE

- Dashboard
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Local Instance MySQL8.3.0  
Users and Privileges

## User Accounts

User	From Host
client1	%
mysql.infoschema	localhost
mysql.session	localhost
mysql.sys	localhost
project3app	%
root	localhost
theaccountant	%

## Details for account client1@%

Login    Account Limits    Administrative Roles    Schema Privileges

Login Name:

client1

You may create multiple accounts with the same name to connect from different hosts.

Authentication Type:

Standard

For the standard password and/or host based authentication, select 'Standard'.

Limit to Hosts Matching:

%  
% and \_ wildcards may be used

Password:

\*\*\*\*\*

Type a password to reset it.

Confirm Password:

\*\*\*\*\*

Enter password again to confirm.

You have now created your new client1 account. Next you need to set the permissions (as outlined in the assignment) for the client1 user.

Add Account

Delete

Refresh

Revert

Apply

Created account 'client1@%'





Administration

Schemas

Query 1

Administration - Users and Privileges

## MANAGEMENT

- Server Status
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- Dashboard
- Performance Reports
- Performance Schema Setup



Local Instance MySQL8.3.0  
Users and Privileges

## User Accounts

User	From Host
client1	%
mysql.infoschema	localhost
mysql.session	localhost
mysql.sys	localhost
project3app	%
root	localhost
theaccountant	%

## Details for account client1@%

Login    Account Limits    Administrative Roles    Schema Privileges

Login Name:

You may create multiple accounts with the same name to connect from different hosts.

Authentication Type:

For the standard password and/or host based authentication, select 'Standard'.

Limit to Hosts Matching:

% and \_ wildcards may be used

Password:

Type a password to reset it.

Confirm Password:

Enter password again to confirm.

Select a user (client1 in this case) and then click the Schema Privileges tab on the right side of the window.

Created account 'client1@%'



MySQL Workbench

Local Instance MySQL8.3.0 (operationslog) - Warning - not supported    theaccountant - Warning - not supported    Local Instance MySQL8.3.0 (project3) - Warning - not supported    >

Administration Schemas Query 1 Administration - Users and Privileges

**MANAGEMENT**

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Local Instance MySQL8.3.0  
Users and Privileges

User Accounts

User	From Host
client1	%
mysql.infoschema	localhost
mysql.session	localhost
mysql.sys	localhost
project3app	%
root	localhost

Details for account client1@%

Login Account Limits Administrative Roles Schema Privileges

Schema Privileges

From the Schema Privileges window click the Add Entry button. Notice that the various rights (permissions) are not accessible at the moment.

The server will match specific entries before wildcarded ones.

Revoke All Privileges Delete Entry... Add Entry...

Object Rights

- SELECT
- INSERT
- UPDATE
- DELETE
- EXECUTE
- SHOW VIEW

DDL Rights

- CREATE
- ALTER
- REFERENCES
- INDEX
- CREATE VIEW
- CREATE ROUTINE
- ALTER ROUTINE
- EVENT
- DROP
- TRIGGER

Other Rights

- GRANT OPTION
- CREATE TEMPORARY TABLES
- LOCK TABLES

Unselect All Select "ALL"

Add Account Delete Refresh Revert Apply

Created account 'client1@%'



Local Instance MySQL8.3.0 (operationslog) - Warning - not supported | theaccountant - Warning - not supported | Local Instance MySQL8.3.0 (project3) - Warning - not supported | >

Administration Schemas Query 1 Administration - Users and Privileges

MANAGEMENT

- Server Status
- Client Connections
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Local Instance MySQL8.3.0  
Users and Privileges

User Accounts Details for account client1@%

New Schema Privilege Definition

Select the Schema for which the user 'client1' will have the privileges you want to define.

Schema

All Schema (%) This rule will apply to any schema name.  
 Schemas matching pattern: This rule will apply to schemas that match the given name or pattern. You may use \_ and % as wildcards in a pattern. Escape these characters with \ in case you want their literal value.

Selected schema: Select a specific schema name for the rule to apply to.

- bikedb
- information\_schema
- mysql
- operationslog
- performance\_schema
- project3
- sys

Add Entry... Cancel OK Unselect All Select "ALL"

ARD TABLES

Created account 'client1@%'

Select the “Selected Schema” button and then select the **project3** database from the selection box. Then click OK.



Local Instance MySQL8.3.0 (operationslog) - Warning - not supported theaccountant - Warning - not sup

Administration Schemas Query 1 Administration - Users and Privileges

**MANAGEMENT**

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Local Instance MySQL8.3.0  
Users and Privileges

User Accounts

User	From Host
client1	%
mysql.infoschema	localhost
mysql.session	localhost
mysql.sys	localhost
project3app	%
root	localhost
theaccountant	%

Details for account client1@%

Schema	Privileges
project3	none

Schema and Host fields may use % and \_ wildcards.  
The server will match specific entries before wildcarded ones.

Revoke All Privileges Delete Entry Add Entry...

The user 'client1'@'%' will have the following access rights to the schema 'project3':

Object Rights

- SELECT
- INSERT
- UPDATE
- DELETE
- EXECUTE
- SHOW VIEW

DDL Rights

- CREATE
- ALTER
- REFERENCES
- INDEX
- CREATE VIEW
- CREATE ROUTINE
- ALTER ROUTINE
- EVENT
- DROP
- TRIGGER

Other Rights

- GRANT OPTION
- CREATE TEMPORARY TABLES
- LOCK TABLES

Unselect All Select "ALL"

Add Account Delete Refresh Revert Apply

Created account 'client1@%'

You've now returned to the Schema Privileges window, but the rights (permissions) are now accessible. Go to next page.





Administration Schemas Query 1 Administration - Users and Privileges

MANAGEMENT

- Server Status
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Local Instance MySQL8.3.0  
Users and Privileges

User Accounts

User	From Host
client1	%
mysql.infoschema	localhost
mysql.session	localhost
mysql.sys	localhost
project3app	%
root	localhost
theaccountant	%

Details for account client1@%

Login Account Limits Administrative Roles Schema Privileges

Schema	Privileges
project3	SELECT

The client1 should have only selection privileges on the project3 database. Click that option only and click Apply.

Schema and Host fields may use % and \_ wildcards.  
The server will match specific entries before wildcarded ones.

The user 'client1'@'%' will have the following access rights to the schema 'project3':

Object Rights

SELECT  
 INSERT  
 UPDATE  
 DELETE  
 EXECUTE  
 SHOW VIEW

DDL Rights

CREATE  
 ALTER  
 REFERENCES  
 INDEX  
 CREATE VIEW  
 CREATE ROUTINE  
 ALTER ROUTINE  
 EVENT  
 DROP  
 TRIGGER

Other Rights

GRANT OPTION  
 CREATE TEMPORARY TABLES  
 LOCK TABLES

Revoke All Privileges Delete Entry Add Entry...  
Unselect All Select "ALL" Revert Apply

Created account 'client1@%'



Local Instance MySQL8.3.0 (operationslog) - Warning - not supported | theaccountant - Warning - not supported | Local Instance MySQL8.3.0 (project3) - Warning - not supported | >

Administration Schemas Query 1 Administration - Users and Privileges

**MANAGEMENT**

- Server Status
- Client Connections
- Users and Privileges
- Status and System Variables
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**INSTANCE**

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- Options File

**PERFORMANCE**

- Dashboard
- Performance Reports
- Performance Schema Setup

Local Instance MySQL8.3.0  
Users and Privileges

User Accounts

User	From Host
client1	%
mysql.infoschema	localhost
mysql.session	localhost
mysql.sys	localhost
project3app	%
root	localhost
theaccountant	%

Details for account client1@%

Login Account Limits Administrative Roles Schema Privileges

Schema	Privileges
project3	SELECT

The new client1 now has only select privilege on the project3 database

Schema and Host fields may use % and \_ wildcards.  
The server will match specific entries before wildcarded ones.

Revoke All Privileges Delete Entry Add Entry...

The user 'client1'@'%' will have the following access rights to the schema 'project3':

Object Rights      DDL Rights      Other Rights

<input checked="" type="checkbox"/> SELECT	<input type="checkbox"/> CREATE	<input type="checkbox"/> GRANT OPTION
<input type="checkbox"/> INSERT	<input type="checkbox"/> ALTER	<input type="checkbox"/> CREATE TEMPORARY TABLES
<input type="checkbox"/> UPDATE	<input type="checkbox"/> REFERENCES	<input type="checkbox"/> LOCK TABLES
<input type="checkbox"/> DELETE	<input type="checkbox"/> INDEX	
<input type="checkbox"/> EXECUTE	<input type="checkbox"/> CREATE VIEW	
<input type="checkbox"/> SHOW VIEW	<input type="checkbox"/> CREATE ROUTINE	

Unselect All Select "ALL"

Add Account Delete Refresh Revert Apply

Created account 'client1'@'%'





Administration

Schemas

Query 1

Administration - Users and Privileges

**MANAGEMENT**

- Server Status
- Client Connections
- Users and Privileges
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**PERFORMANCE**

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- Performance Schema Setup



Local Instance MySQL8.3.0  
Users and Privileges

## User Accounts

User	From Host
client1	%
mysql.infoschema	localhost
mysql.session	localhost
mysql.sys	localhost
project3app	%
root	localhost
theaccountant	%

## Details for account client1@%

Login

Account Limits

Administrative Roles

Schema Privileges

Schema	Privileges
project3	SELECT
bikedb	SELECT

Schema and Host fields may use % and \_ wildcards.  
The server will match specific entries before wildcarded ones.

## Object Rights

- SELECT
- INSERT
- UPDATE
- DELETE
- EXECUTE
- SHOW VIEW

## DDL Rights

- CREATE
- ALTER
- REFERENCES
- INDEX
- CREATE VIEW
- CREATE ROUTINE
- ALTER ROUTINE
- EVENT
- DROP
- TRIGGER

## Other Rights

- GRANT OPTION
- CREATE TEMPORARY TABLES
- LOCK TABLES

Unselect All

Select "ALL"

Add Account

Delete

Refresh

Revert

Apply

Created account 'client1@%'





Local Instance MySQL8.3.0 (operationslog) - Warning - not supported

theaccountant - Warning - not supported

Local Instance MySQL8.3.0 (project3) - Warning - not supported

&gt;&gt;

X

# Welcome to MySQL Workbench

MySQL Workbench is the official graphical user interface (GUI) tool for MySQL. It allows you to design, create and browse your database schemas, work with database objects and insert data as well as design and run SQL queries to work with stored data. You can also migrate schema from other database vendors to your MySQL database.

[Browse Documentation >](#)[Read the Blog >](#)

Create a new connection for the client user. Click the “plus” sign.

[Discuss on the Forums >](#)**MySQL Connections**   Filter connections

Local Instance MySQL8.3.0



root

127.0.0.1:3306

theaccountant



theaccountant

127.0.0.1:3306

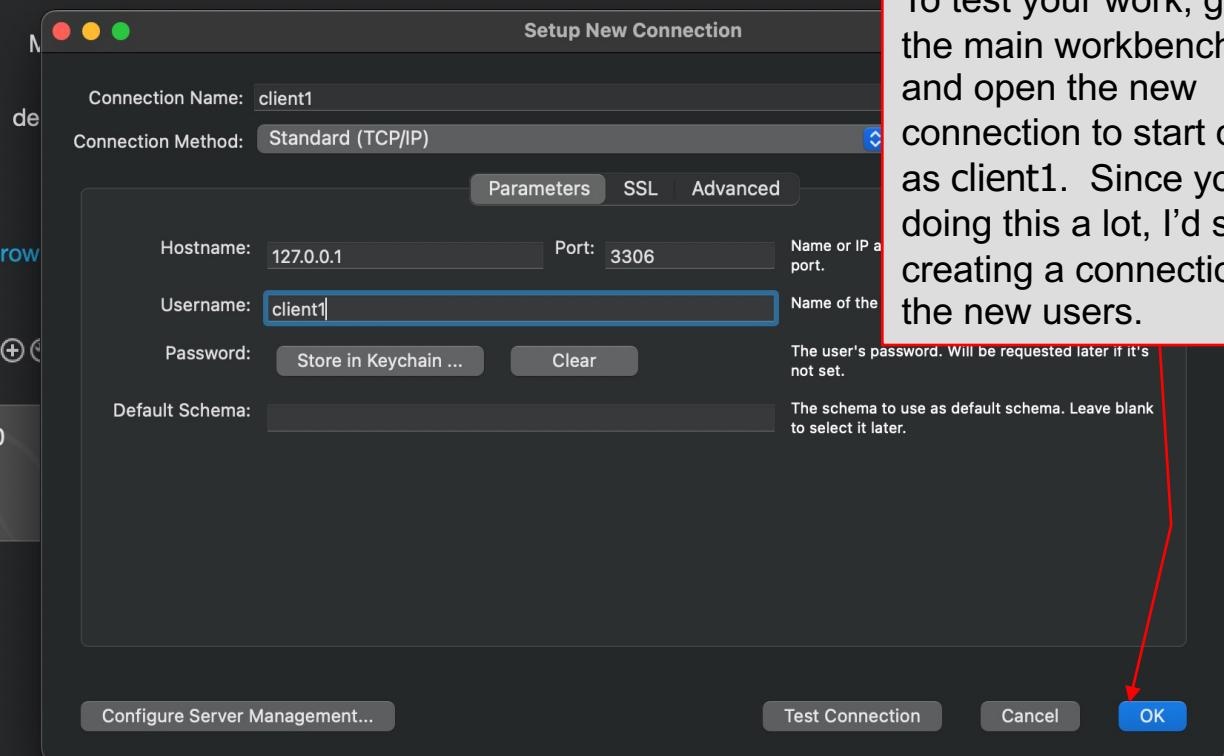
Created account 'client1@%'



# Welcome to MySQL Wo

## MySQL Connections

Local Instance MySQL8.3.0  
root  
127.0.0.1:3306



Enter the connection name and the username (client1). then click OK.

To test your work, go back to the main workbench screen and open the new connection to start querying as client1. Since you'll be doing this a lot, I'd suggest creating a connection for all the new users.

Created account 'client1@%'



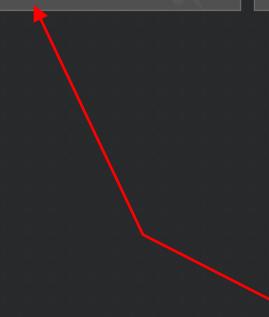
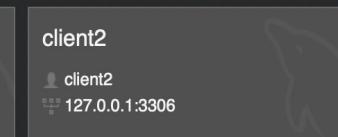
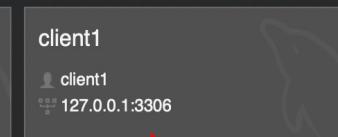
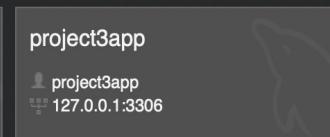
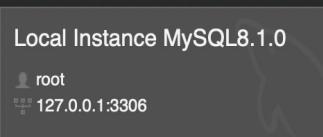


# Welcome to MySQL Workbench

MySQL Workbench is the official graphical user interface (GUI) tool for MySQL. It allows you to design, create and browse your database schemas, work with database objects and insert data as well as design and run SQL queries to work with stored data. You can also migrate schemas and data from other database vendors to your MySQL database.

[Browse Documentation >](#)[Read the Blog >](#)[Discuss on the Forums >](#)

## MySQL Connections

 Filter connections

Log in as the client1 user using the new connection.



MySQL Workbench

theaccountant - Warning - not supported | Local Instance MySQL8.3.0 (project3) - Warning - not supported | Local Instance MySQL8.3.0 (project3) - Warning - not supported | client2 - Warning - not supported | >

Administration Schemas Query 1

SCHEMAS

Filter objects

bikedb project3

1

Limit to 1000 rows

The Workbench after logging in on the client1 connection.

Notice that the only databases available to this user are the **project3** and **bikedb** databases. Those that were accessible to the root are not visible now.

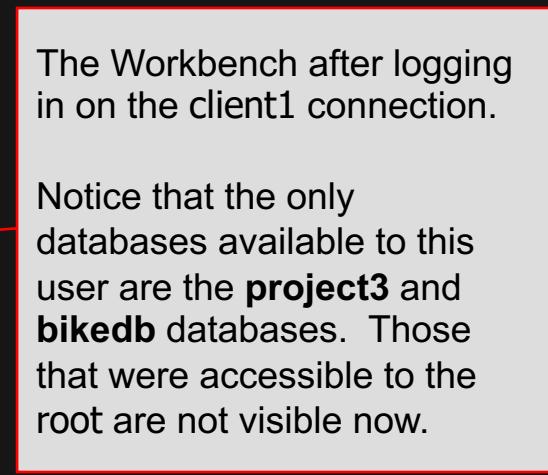
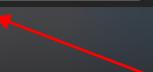
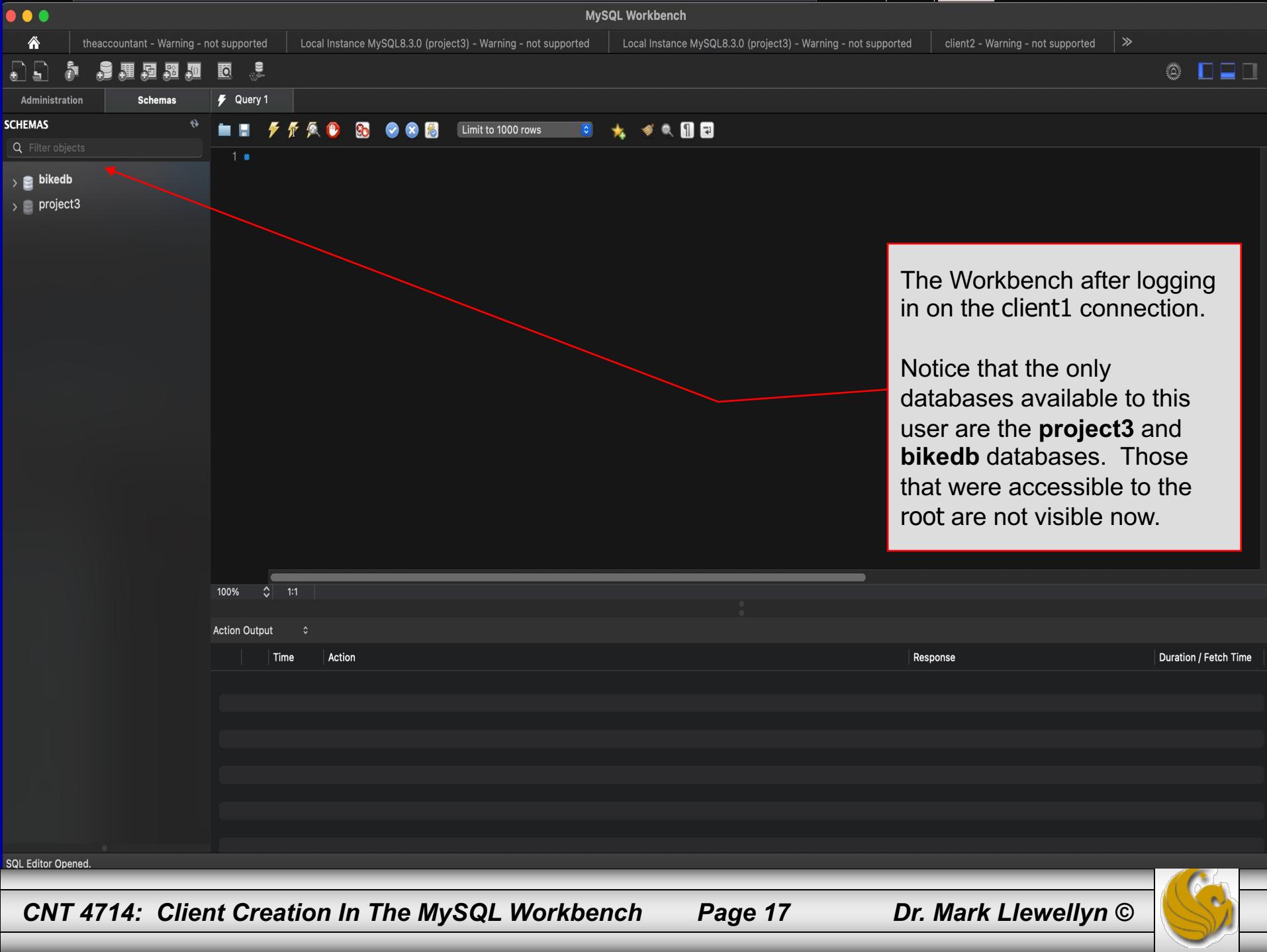
100% 1:1

Action Output

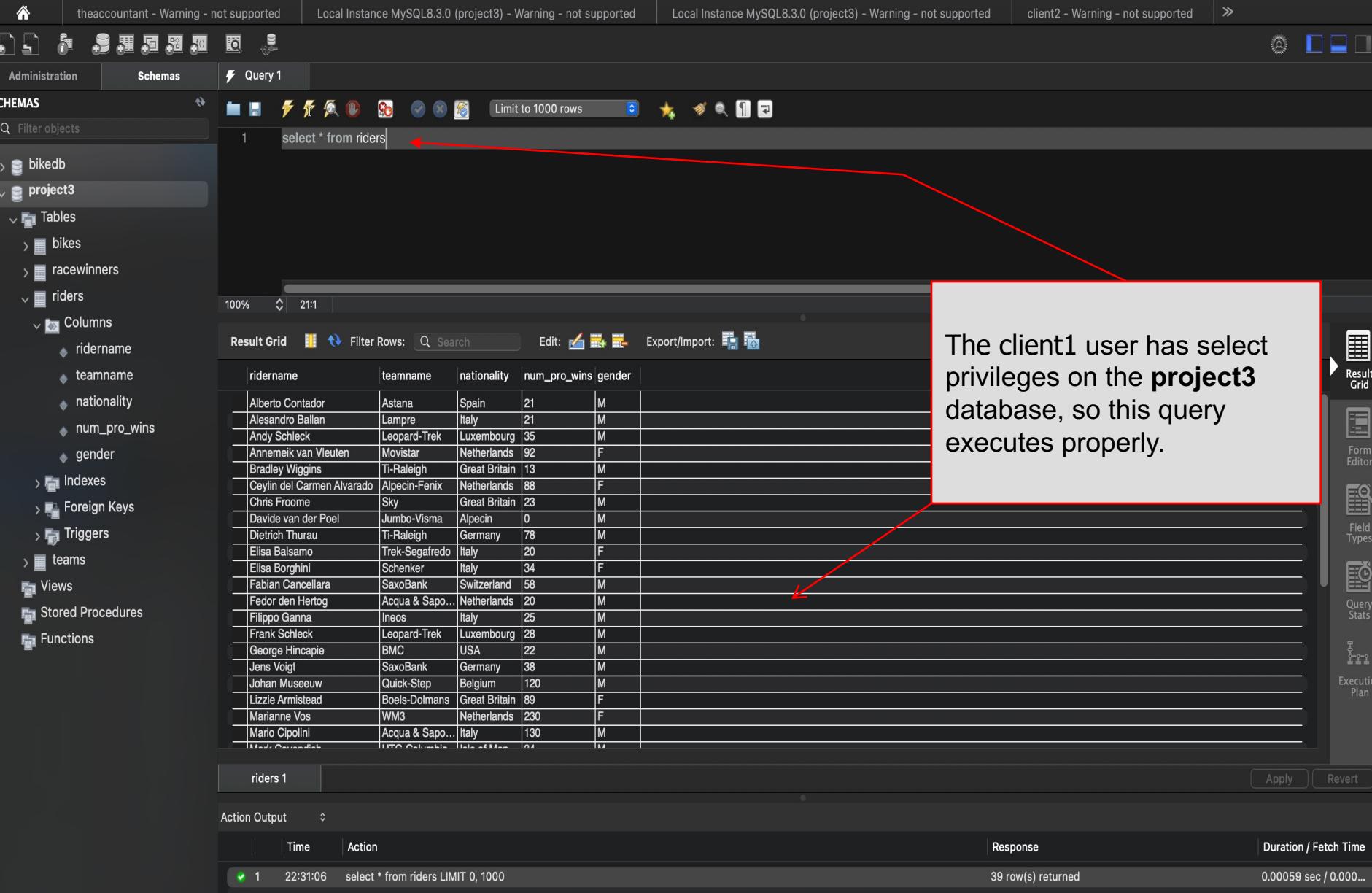
Time Action Response Duration / Fetch Time

SQL Editor Opened.

CNT 4714: Client Creation In The MySQL Workbench Page 17 Dr. Mark Llewellyn ©



theaccountant - Warning - not supported | Local Instance MySQL8.3.0 (project3) - Warning - not supported | Local Instance MySQL8.3.0 (project3) - Warning - not supported | client2 - Warning - not supported | >



The client1 user has select privileges on the **project3** database, so this query executes properly.

	ridername	teamname	nationality	num_pro_wins	gender
1	Alberto Contador	Astana	Spain	21	M
	Alesandro Ballan	Lampre	Italy	21	M
	Andy Schleck	Leopard-Trek	Luxembourg	35	M
	Anneke van Vleuten	Movistar	Netherlands	92	F
	Bradley Wiggins	Ti-Raleigh	Great Britain	13	M
	Ceylin del Carmen Alvarado	Alpecin-Fenix	Netherlands	88	F
	Chris Froome	Sky	Great Britain	23	M
	Davide van der Poel	Jumbo-Visma	Alpecin	0	M
	Dietrich Thurau	Ti-Raleigh	Germany	78	M
	Elisa Balsamo	Trek-Segafredo	Italy	20	F
	Elisa Longo-Borghini	Schenker	Italy	34	F
	Fabian Cancellara	SaxoBank	Switzerland	58	M
	Fedor den Hertog	Acqua & Sapori	Netherlands	20	M
	Filippo Ganna	Ineos	Italy	25	M
	Frank Schleck	Leopard-Trek	Luxembourg	28	M
	George Hincapie	BMC	USA	22	M
	Jens Voigt	SaxoBank	Germany	38	M
	Johan Museeuw	Quick-Step	Belgium	120	M
	Lizzie Armistead	Boels-Dolmans	Great Britain	89	F
	Marianne Vos	WM3	Netherlands	230	F
	Mario Cipollini	Acqua & Sapori	Italy	130	M



The client user has select privileges on the **bikedb** database, so this query executes properly.

This screenshot shows the MySQL Workbench interface. The left sidebar displays the schema browser for the **bikedb** database, which contains tables for **bikes**, **racewinners**, and **riders**. The **riders** table is currently selected, showing its columns: **bikename**, **size**, **color**, **cost**, **purchased**, and **mileage**. A red arrow points from the text box to the **riders** table in the result grid. Another red arrow points from the text box to the **Limit to 1000 rows** button in the toolbar above the query editor. The toolbar also includes other icons for executing scripts, saving, and filtering. The query editor at the top contains the command: **Execute the selected portion of the script or everything, if there is no selection**. The result grid shows 39 rows of data from the **riders** table. The bottom section shows the action output of two queries: selecting all rows from the **riders** table with a limit of 1000 rows, which returned 39 rows, and selecting all rows from the **bikes** table with a limit of 1000 rows, which returned 17 rows. The status bar at the bottom indicates "Query Completed".



The client1 user attempts to execute a delete command, but does not have this privilege on the **project3** database, so the DBMS denies the operation and no delete operation occurs.

Action	Time	Response	Duration / Fetch Time
select * from riders LIMIT 0, 1000	22:31:06	39 row(s) returned	0.000059 sec / 0.000...
select * from bikes LIMIT 0, 1000	22:32:43	17 row(s) returned	0.000055 sec / 0.000...
delete from riders where ridername = "Alberto Contado"	22:34:22	Error Code: 1142. DELETE command denied to user 'c...' for table 'riders'	0.00028 sec



theaccountant - Warning - not supported | Local Instance MySQL8.3.0 (project3) - Warning - not supported | Local Instance MySQL8.3.0 (project3) - Warning - not supported | client2 - Warning - not supported | >

Administration Schemas Query 1

Limit to 1000 rows

1 update bikes set size = 58 where size = 60

From the client's perspective, an attempt to execute any SQL command other than a **select** command will generate an error such as the one illustrated here.

Action	Time	Response	Duration / Fetch Time
select * from riders LIMIT 0, 1000	22:31:06	39 row(s) returned	0.00059 sec / 0.000...
select * from bikes LIMIT 0, 1000	22:32:43	17 row(s) returned	0.00055 sec / 0.000...
delete from riders where ridername = "Alberto Contado"	22:34:22	Error Code: 1142. DELETE command denied to user 'c...' 0.00028 sec	
update bikes set size = 58 where size = 60	22:36:58	Error Code: 1142. UPDATE command denied to user 'c...' 0.00027 sec	

Action Output

Query interrupted

