MySQL Shell Tutorial

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Introduction

This tutorial introduces you to the use of the MySQL Shell, a command-line based way to communicate with a MySQL database. You will use Shell to query the Schools database named **aproposl_school** located on a MySQL database management server (DBMS) running on a remote web hosting site.

Installation

Go to https://dev.mysql.com/downloads/ to download and install MySQL Shell. If you would rather run the MySQL DBMS locally, then also download and install the MySQL Community Server, which is the free version of the DBMS.

Start the MySQL Shell

To start the MySQL Shell on MacOS, open a Terminal window and enter the command **mysqlsh**. You will then get a few startup messages, including the Shell version, and the prompt for your initial command (Figure 1).

```
~: mysqlsh
MySQL Shell 8.0.19

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Type '\help' or '\?' for help; '\quit' to exit.
MySQL  JS
```

Figure 1. MySQL Shell startup and the initial prompt for a command on MacOS.

To start the MySQL Shell in Windows 10, first click the Windows icon in the lower left corner of your screen, scroll to **MySQL**, drop down the menu, and click on **MySQL Shell**. A Shell window will open and prompt for your initial command (Figure 2).
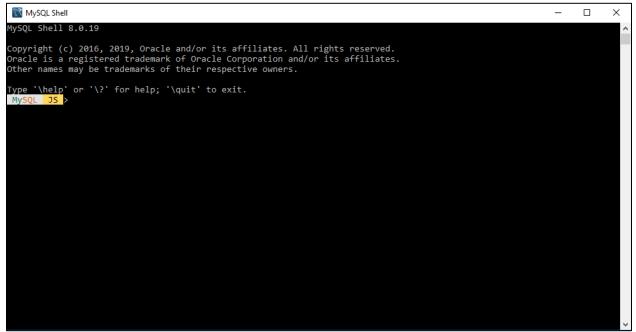

Figure 2. MySQL Shell window and the initial prompt for a command in Windows 10.

Connect to the Remote Database

Connect to the remote database manager using user **aproposl_school** at the server **apropos-logic.com** on port **3306** (the default port that MySQL listens to) with the Shell command

\connect aproposl_school@apropos-logic.com:3306

Use the password **school** :

Enter SQL commands

Switch to SQL command mode with the command **\sql** :

The **show databases** command verifies that the database, also named **aproposl_school**, exists on the database manager.

```
| MySQL  apropos-logic.com:3306  SQL  show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| aproposl_school    |
+--------------------+
2 rows in set (0.1990 sec)
```

Use the **aproposl_school** database for subsequent commands:

```
| MySQL  apropos-logic.com:3306  SQL  use aproposl_school;
Default schema set to `aproposl_school`.
Fetching table and column names from `aproposl_school` for auto-completion... Press ^C to stop.
```

Verify the existence of the database tables:

```
| MySQL  apropos-logic.com:3306 ssl  aproposl_school  SQL  show tables;
+---------------------------+
| Tables_in_aproposl_school |
+---------------------------+
| Address                   |
| Class                     |
| Student                   |
| Takes                     |
| Teacher                   |
+---------------------------+
5 rows in set (0.0828 sec)
```

See the data in the tables:

```
MySQL  apropos-logic.com:3306 ssl  apropos1_school  SQL  select * from Student;
+-------+--------+--------+----------------+
| id    | last   | first  | email_address  |
+-------+--------+--------+----------------+
| 1001  | Doe    | John   |             3  |
| 1005  | Novak  | Tim    |             4  |
| 1009  | Klein  | Leslie |             5  |
| 1014  | Jane   | Mary   |             1  |
| 1021  | Smith  | Kim    |             2  |
+-------+--------+--------+----------------+
5 rows in set (0.0750 sec)
MySQL  apropos-logic.com:3306 ssl  apropos1_school  SQL  select * from Teacher;
+-------+----------+--------+----------------+
| id    | last     | first  | email_address  |
+-------+----------+--------+----------------+
| 7003  | Rogers   | Pat    |             6  |
| 7008  | Thompson | Sidney |             7  |
| 7012  | Lane     | John   |             8  |
| 7051  | Flynn    | Mabel  |             9  |
+-------+----------+--------+----------------+
4 rows in set (0.0708 sec)
```

```
MySQL  apropos-logic.com:3306 ssl  aproposl_school  SQL  select * from Address;
+----+-------------------------+
| id | email_address           |
+----+-------------------------+
|  1 | mary.jane@state.edu     |
|  2 | kim.smith@state.edu     |
|  3 | john.doe@state.edu      |
|  4 | tim.novak@state.edu     |
|  5 | leslie.klein@state.edu  |
|  6 | pat.rogers@state.edu    |
|  7 | sidneythompson@state.edu|
|  8 | john.lane@state.edu     |
|  9 | mabel.flynn@state.edu   |
+----+-------------------------+
9 rows in set (0.0791 sec)
MySQL  apropos-logic.com:3306 ssl  aproposl_school  SQL  select * from Class;
+------+------------+----------------+------+
| code | teacher_id | subject        | room |
+------+------------+----------------+------+
|  908 |       7008 | English        |  114 |
|  914 |       7051 | Math           |  115 |
|  926 |       7003 | Art            |  101 |
|  931 |       7051 | Social Studies |  222 |
|  951 |       7012 | History        |  210 |
+------+------------+----------------+------+
5 rows in set (0.0709 sec)
MySQL  apropos-logic.com:3306 ssl  aproposl_school  SQL  select * from Takes;
+------------+------------+
| student_id | class_code |
+------------+------------+
|       1001 |        908 |
|       1001 |        926 |
|       1001 |        951 |
|       1005 |        908 |
|       1005 |        914 |
|       1005 |        926 |
|       1014 |        914 |
|       1014 |        931 |
|       1021 |        926 |
|       1021 |        931 |
|       1021 |        951 |
+------------+------------+
11 rows in set (0.0693 sec)
```

Now you can do arbitrary queries and table joins, such as, "Who are John Lane's students?"

```
MySQL  apropos-logic.com:3306 ssl  aproposl_school  SQL  SELECT Student.first, Student.last, subject
                                                         FROM Student, Teacher, Class, Takes
                                                         WHERE Teacher.first = 'Mabel' AND Teacher.last = 'Flynn'
                                                         AND teacher_id = Teacher.id
                                                         AND student_id = Student.id
                                                         AND code = class_code
                                                         ORDER BY subject, Student.last;
+-------+-------+----------------+
| first | last  | subject        |
+-------+-------+----------------+
| Mary  | Jane  | Math           |
| Tim   | Novak | Math           |
| Mary  | Jane  | Social Studies |
| Kim   | Smith | Social Studies |
+-------+-------+----------------+
4 rows in set (0.0786 sec)
```

To quit the MySQL Shell, enter `\quit` :

```
MySQL  apropos-logic.com:3306  aproposl_school  SQL  \quit
Bye!
~:
```

MySQL Shell documentation:
https://dev.mysql.com/doc/mysql-shell/8.0/en/

Google "SQL tutorial" for good tutorials
(text and videos) on the web!