

Create and Populate a Database Table with MySQL Workbench

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Create Initial Database and a Single Table

New SQL FILE button

Open and SQL FILE button

Save SQL FILE button

Execute SQL script button

Execute SQL script under cursor button

As soon as you create a new database or a new table, the schemas window is updated. You may need to use the refresh before it becomes visible.

In this window you find feedback on your code: if it worked, or if there was an error. The share table creation was successful.

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 contains the 'SCHEMAS' window, which is updated to show the 'temp' database and its tables. The main editor window displays a SQL script with comments and code. The bottom panel shows the 'Output' window with a table of execution results.

```
1  /* Create temporary database, called temp
2  NOTE: a database can only be create once */
3  create database temp;
4
5  /* Set the database to use */
6  use temp;
7
8  /* Create table share
9  NOTE: a table can only be create once in a database */
10 create table share (
11     shrancode    char(3),
12     shrfirm      varchar( 20 ) not null,
13     shrprice     decimal( 6, 2 ),
14     shrqty       decimal( 8 ),
15     shrdiv       decimal( 5, 2 ),
16     shrpe        decimal( 2 ),
17     primary key( shrancode )
18 );
19
```

#	Time	Action	Message	Duration / Fetch
3	11:07:01	create database temp	Error Code: 1007. Can't create database 'temp'; database exists	0.000 sec
4	11:07:17	use temp	0 row(s) affected	0.000 sec
5	11:07:17	create table share (shrancode(3), shrfirmvarchar(20) not null,	0 row(s) affected	0.047 sec
6	11:10:31	use temp	0 row(s) affected	0.000 sec
7	11:10:31	insert into share values ('FC', 'Freedonia Copper', 27.5, 10529, 1...	1 row(s) affected	0.015 sec

Code to create a database and a table in the database in a new SQL script file.

Note the following:

- Can create a DB only once
- The USE temp statement that sets temp as the current database
- Can create a table only once
- The text in grey are comments. Ignored by SQL, but important to us
- For creating the first database and tables, please use the SQL create table statement

Populate a Table with Data Using INSERT

MySQL Workbench

Local instance MySQL Router

File Edit View Query Database Server Tools Scripting Help

Navigator

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

SCHEMAS

Filter objects

- sakila
- sys
- temp
 - Tables
 - share
 - Views
 - Stored Procedures
 - Functions

Information

Schema: temp

SQL Editor

```
1 /* Set the database to use */
2 use temp;
3
4 insert into share
5 values ('FC', 'Freedonia Copper', 27.5, 10529, 1.84, 16);
```

SQL Additions

Automatic context help is disabled. Use the toolbar to help.

Output

Action Output

#	Time	Action	Message	Duration / Fetch
5	11:07:17	create table share (shrcodechar(3), shrfimvarchar(20) not null...	0 row(s) affected	0.047 sec
6	11:10:31	use temp	0 row(s) affected	0.000 sec
7	11:10:31	insert into share values ('FC', 'Freedonia Copper', 27.5, 10529, 1....	1 row(s) affected	0.015 sec
8	11:35:47	use temp	0 row(s) affected	0.000 sec
9	11:35:47	insert into share values ('FC', 'Freedonia Copper', 27.5, 10529, 1....	Error Code: 1062. Duplicate entry 'FC' for key 'PRIMARY'	0.032 sec

Code to populate a table with INSERT statement.

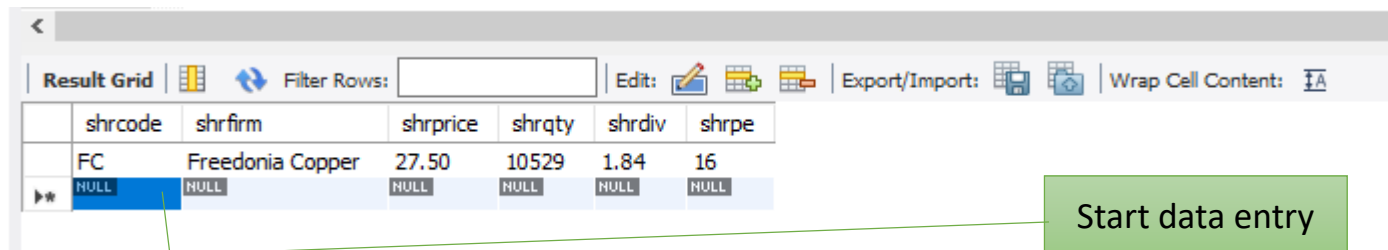
Note the following:

- This statement creates a single record/tuple in the table.
- You need such an INSERT statement for each record you need in the table.
- If you try to insert a record with a duplicate primary key, it gives an error.

Error generated when attempting to insert a record with a duplicate primary key.

Enter Records with Grid Data Entry

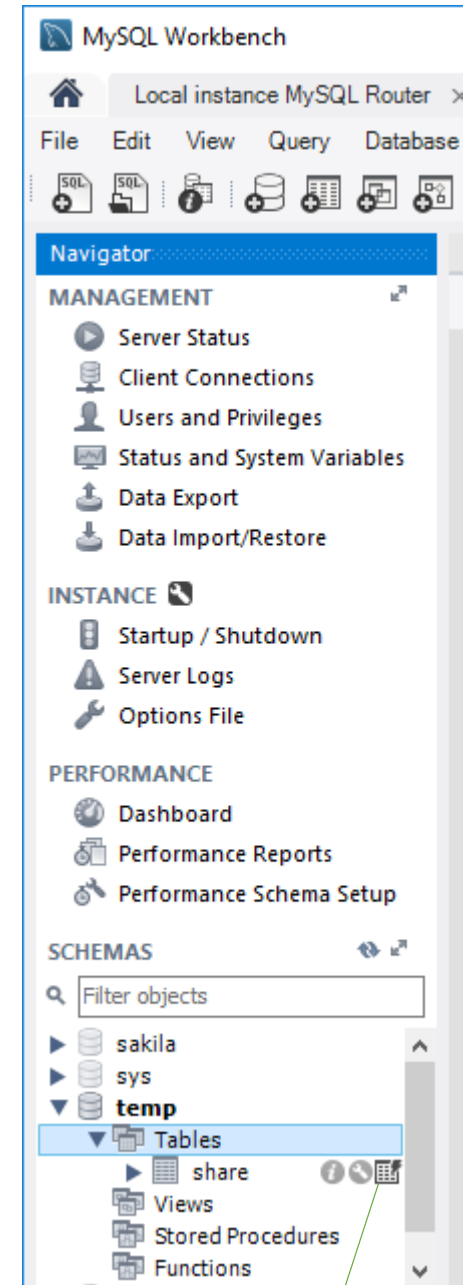
- Steps:
 1. Hover over the table (in this case *share*), and click on table grid next to the table name. The grid view opens.
 2. Click on the null cell in the left-most column to start data entry.
 3. You can enter as many rows as you want.
 4. NOTE: **IMPORTANT**: typing records in the grid does NOT automatically save the data to the table: extra steps are required (next slides)



	shrcode	shrfirm	shrprice	shrqty	shrdiv	shrpe
	FC	Freedonia Copper	27.50	10529	1.84	16
▶*	NULL	NULL	NULL	NULL	NULL	NULL

Start data entry

Table grid button

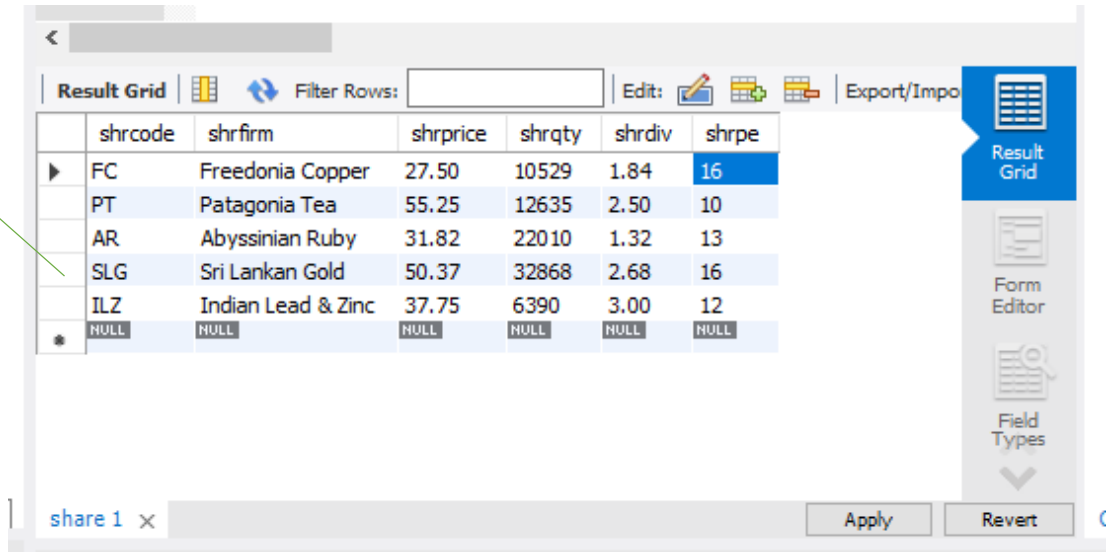


Populate Table with Data in Grid

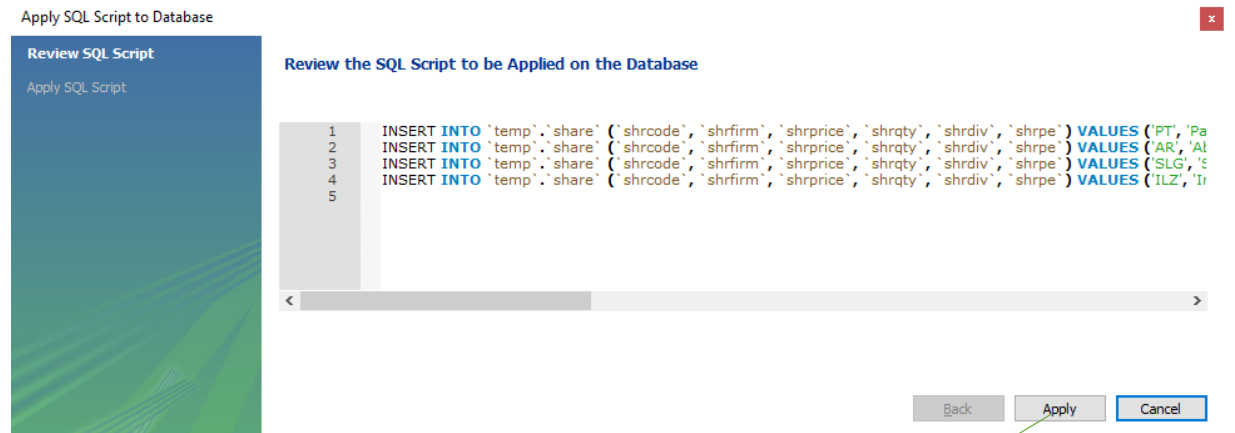
- Steps:

1. Four new records were entered in the grid.
2. To save those data to the *share* table, click the *Apply* button on the bottom right of the grid.
3. In the next pop-up window, you will see the SQL INSERT code generated for the data you typed in the grid. Click the *Apply* button to save the data to the share table.
4. MySQL executes the code, and your data are now in the table (next slide)

Data entered in the grid, an example



	shrcode	shrfirm	shrprice	shrqty	shrdiv	shrpe
▶	FC	Freedonia Copper	27.50	10529	1.84	16
	PT	Patagonia Tea	55.25	12635	2.50	10
	AR	Abyssinian Ruby	31.82	22010	1.32	13
	SLG	Sri Lankan Gold	50.37	32868	2.68	16
	ILZ	Indian Lead & Zinc	37.75	6390	3.00	12
*	NULL	NULL	NULL	NULL	NULL	NULL



Apply SQL Script to Database

Review SQL Script

Apply SQL Script

Review the SQL Script to be Applied on the Database

```
1 INSERT INTO `temp`.`share` (`shrcode`, `shrfirm`, `shrprice`, `shrqty`, `shrdiv`, `shrpe`) VALUES ('PT', 'Pa
2 INSERT INTO `temp`.`share` (`shrcode`, `shrfirm`, `shrprice`, `shrqty`, `shrdiv`, `shrpe`) VALUES ('AR', 'Al
3 INSERT INTO `temp`.`share` (`shrcode`, `shrfirm`, `shrprice`, `shrqty`, `shrdiv`, `shrpe`) VALUES ('SLG', 'S
4 INSERT INTO `temp`.`share` (`shrcode`, `shrfirm`, `shrprice`, `shrqty`, `shrdiv`, `shrpe`) VALUES ('ILZ', 'Ir
5
```

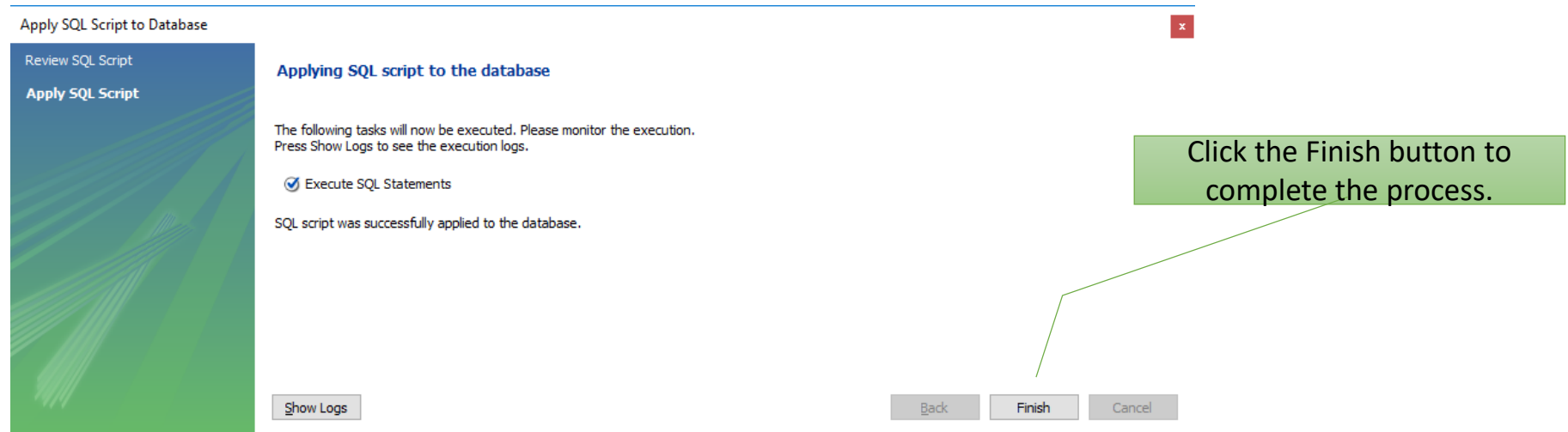
Back Apply Cancel

Click the Apply button to execute the generated SQL codes

Finalize It

- Steps

1. In the next pop-up window, finalize the execution of the SQL statements: click *Finish*
2. MySQL will automatically generate a *SELECT* statement in a new tab to show all the data in the table.
3. You can execute the statement and verify all your tuples are present.
4. You can repeat the process as often as needed to add more data as needed



Check the Results ...

Check out the generated SQL
SELECT code, in a new tab

Check out the new data in the
results grid

Check out the feedback on
execution: 5 rows returned

Now you are ready to do a lot of things:

- Add more data
- Write new SELECT queries, following the examples in your book or creating your own
- Save your own SELECT queries in an SQL file and save it.
- Add your name and notes on what queries do as comments

The screenshot shows the MySQL Workbench interface with the following components:

- Navigator:** A sidebar on the left with sections for 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), and SCHEMAS (Filter objects, temp database, Tables, share table).
- Query Editor:** The central pane shows a SQL query: `SELECT * FROM temp.share;`
- Result Grid:** A table displaying the query results with 6 columns: shrcode, shrfirm, shrprice, shrqty, shrdv, and shrpe. It contains 5 rows of data.
- Output Panel:** The bottom right pane shows the 'Action Output' log, which includes a message: '5 row(s) returned'.
- Context Help:** A sidebar on the right provides automatic context help for the current query.

shrcode	shrfirm	shrprice	shrqty	shrdv	shrpe
AR	Abyssinian Ruby	31.82	22010	1.32	13
FC	Freedonia Copper	27.50	10529	1.84	16
ILZ	Indian Lead & Zinc	37.75	6390	3.00	12
PT	Patagonia Tea	55.25	12635	2.50	10
SLG	Sri Lankan Gold	50.37	32868	2.68	16

#	Time	Action	Message	Duration / Fetch
9	11:35:47	insert into share values ('FC', 'Freedonia Copper', 2...	Error Code: 1062. Duplicate entry 'FC' for key 'PRI...	0.032 sec
10	11:45:50	SELECT * FROM temp.share LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec
11	11:46:18	EXPLAIN SELECT * FROM temp.share	OK	0.000 sec
12	11:46:18	EXPLAIN FORMAT=JSON SELECT * FROM temp....	OK	0.000 sec
13	11:50:52	SELECT * FROM temp.share LIMIT 0, 1000	1 row(s) returned	0.000 sec / 0.000 sec
14	12:12:13	SELECT * FROM temp.share LIMIT 0, 1000	5 row(s) returned	0.000 sec / 0.000 sec