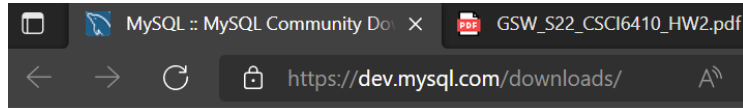


1. Go to <https://dev.mysql.com/downloads/>



MySQL Community Downloads

2. Select "MySQL Installer for Windows" if you use Windows. Choose appropriate download link if you use other operating systems.



MySQL Community Downloads

MySQL Installer

[General Availability \(GA\) Releases](#) [Archives](#) [Info](#)

MySQL Installer 8.0.28

Select Operating System: Looking for previous GA versions?

Microsoft Windows

Windows (x86, 32-bit), MSI Installer <small>(mysql-installer-web-community-8.0.28.0.msi)</small>	8.0.28	2.3M	Download
Windows (x86, 32-bit), MSI Installer <small>(mysql-installer-community-8.0.28.0.msi)</small>	8.0.28	435.7M	Download

MD5: 514567a7503999d271a20b86057f15d0 | [Signature](#)

MD5: ef223cbd7873a0857d5aa0abcfa596201 | [Signature](#)

We suggest that you use the MD5 checksums and GnuPG signatures to verify the integrity of the packages you download.

3. When asked Login or sign up, click the “No thanks, just start my download.”

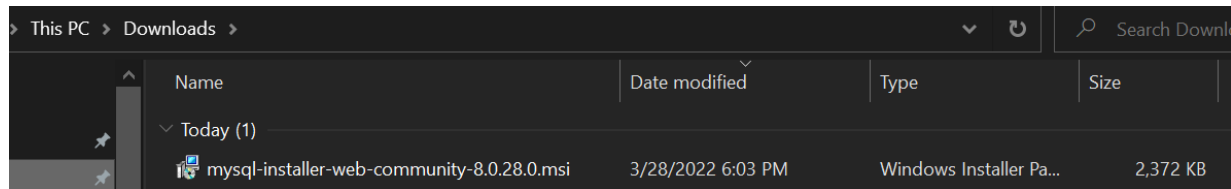
[Login »](#)
using my Oracle Web account

[Sign Up »](#)
for an Oracle Web account

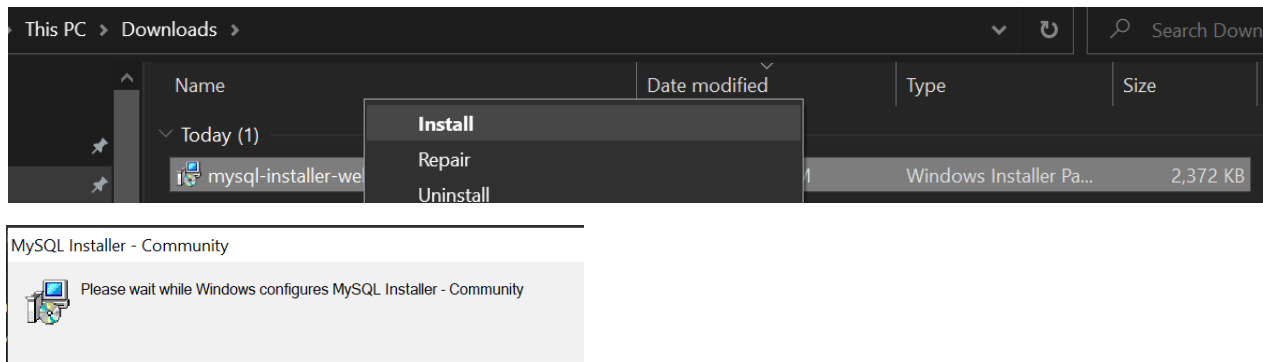
MySQL.com is using Oracle SSO for authentication. If you already have an Oracle Web account, click the Login link. Otherwise, you can sign up for a free account by clicking the Sign Up link and following the instructions.

[No thanks, just start my download.](#)

4. Save the installer file to your computer



5. Right-click the downloaded installation file. For example, mysql-installer-web-community-8.0.28.0.msi and click Run. The MySQL Installer starts.



6. On the Welcome panel, select Install MySQL Products (the first option).

The 'Welcome panel' did not pop up on my installation. Perhaps due to prior install.

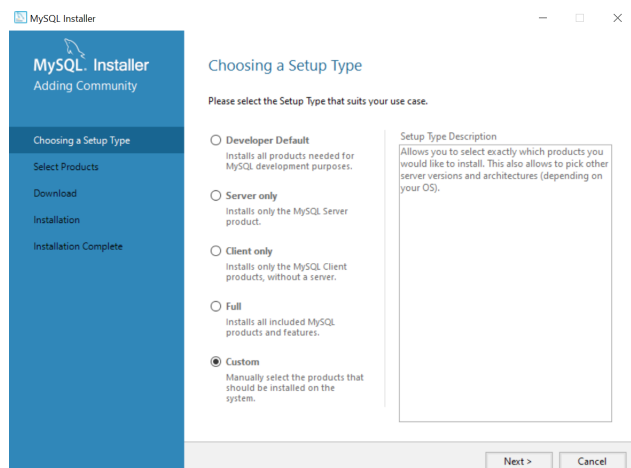
7. On the License Information panel, review the license agreement, click the acceptance checkbox, and click Next.

The 'License Information panel' did not pop up on my installation. Perhaps due to prior install.

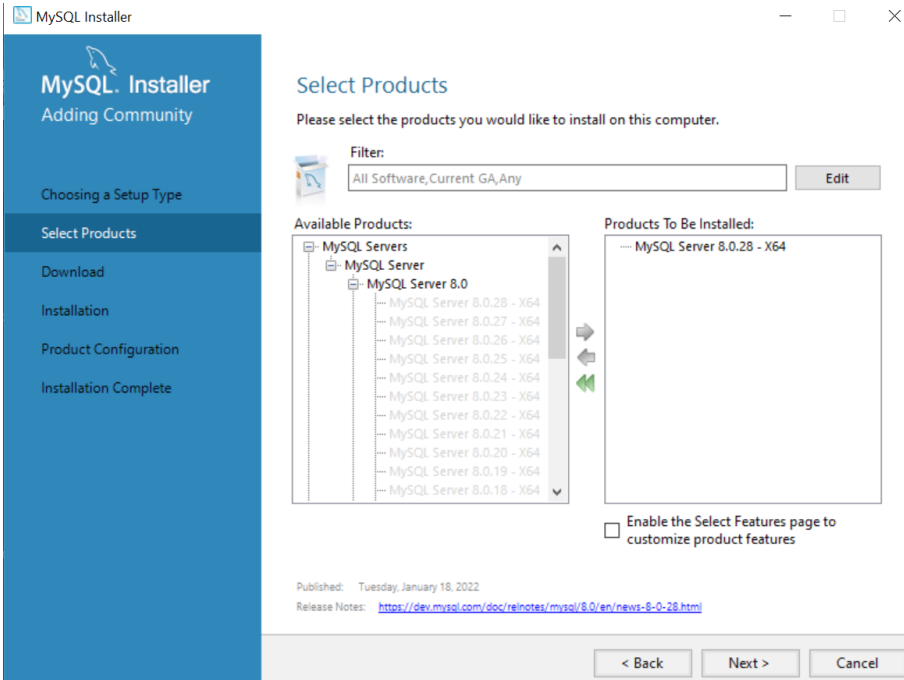
8. On the Find latest products panel, click Execute. When the operation is complete, click Next.

The 'Find latest products panel' did not pop up on my installation. The first pop up was step 9., ' Setup Type panel'.

9. On the Setup Type panel, choose the Custom option and click Next.



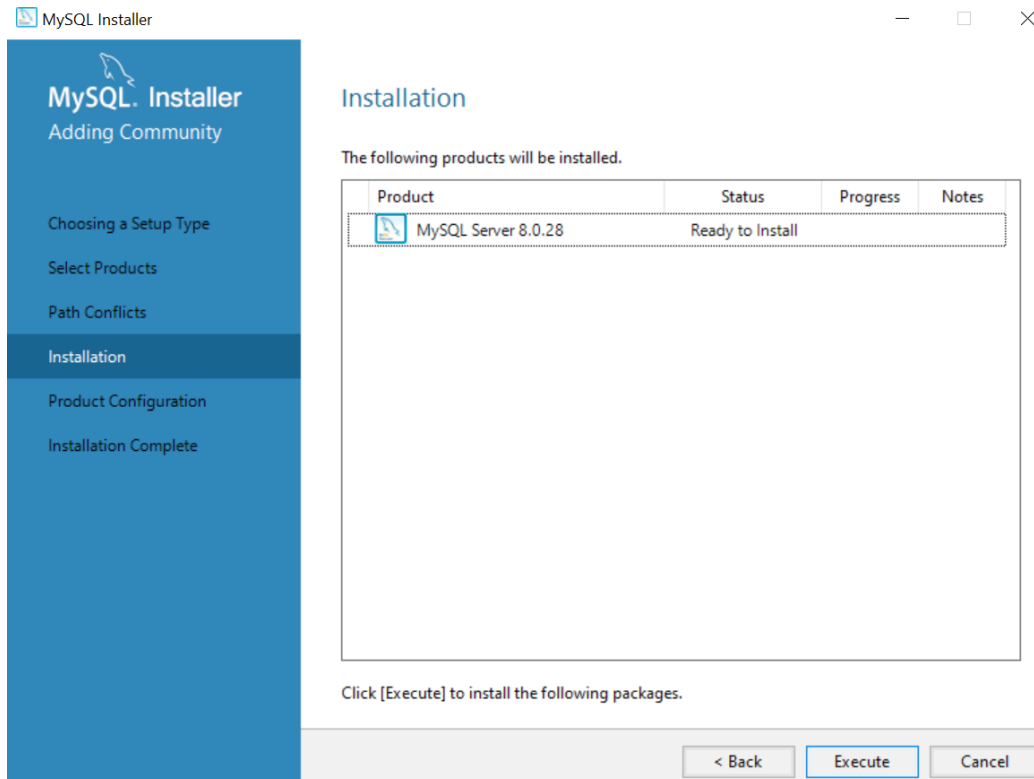
10. On the Feature Selection panel, ensure MySQL Server 8.0.x is selected, and click Next.



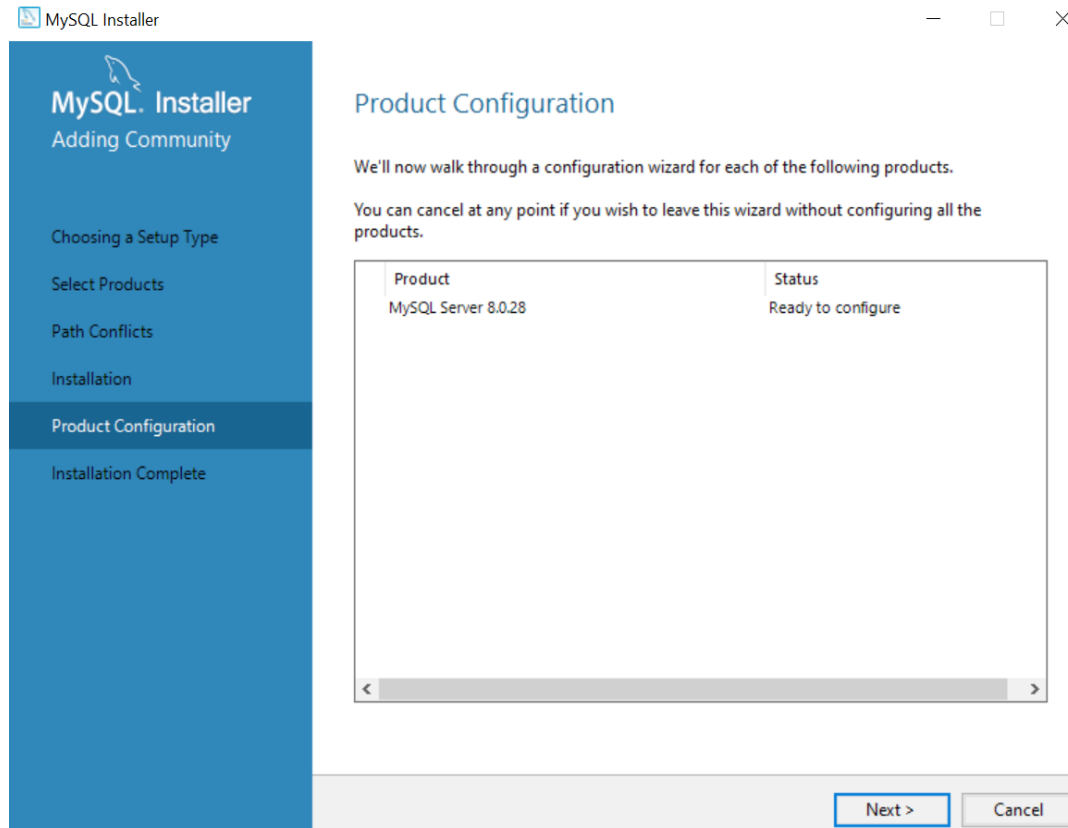
11. On the Check Requirements panel, click Next.

There is not a 'Check Requirements panel' on the current installer version.

12. On the Installation panel, click Execute. When the server installation is completed successfully, the information message appears on the Installation panel. Click Next.



13. On the Configuration panel, click Next.

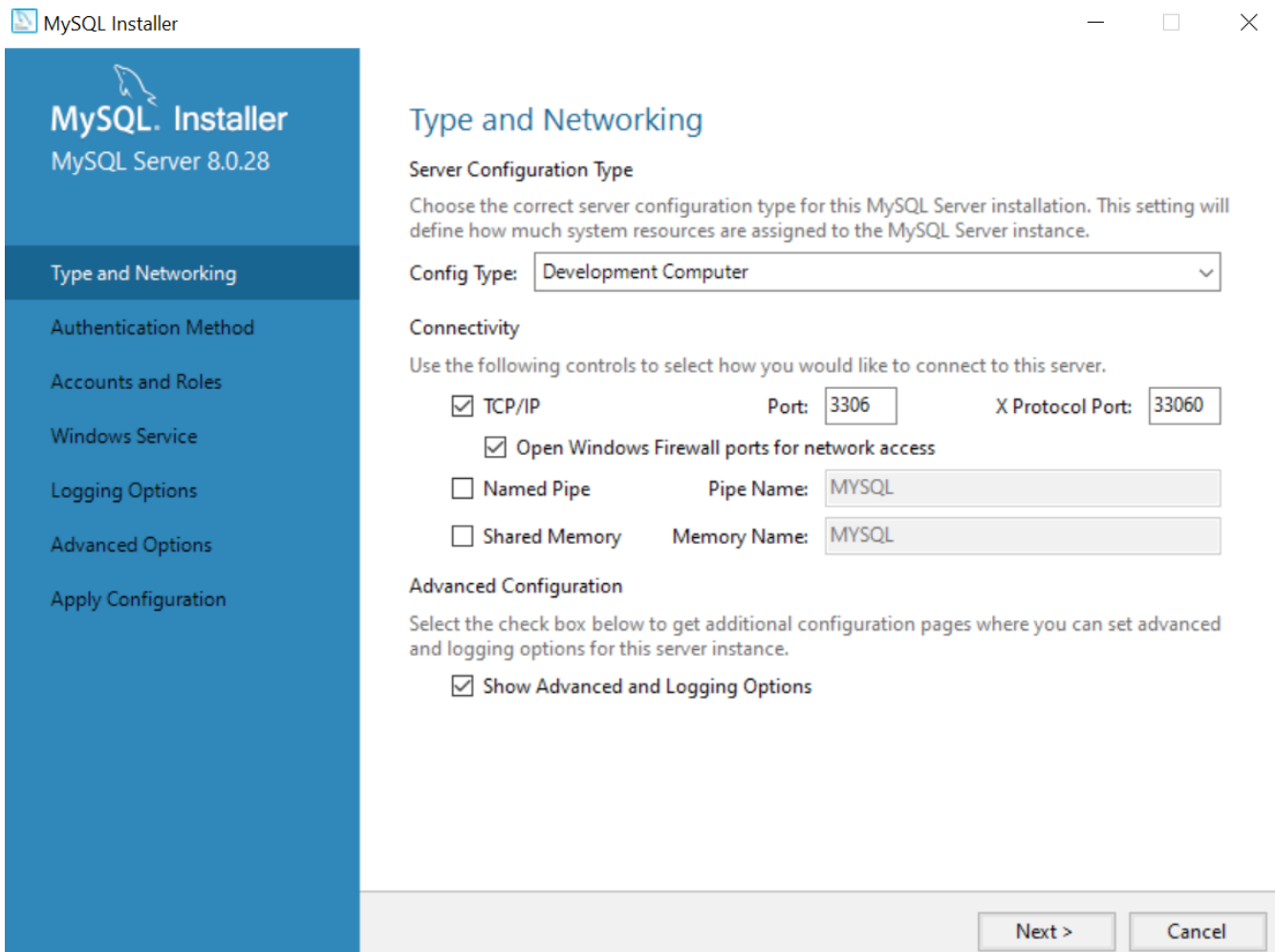


14. At the first MySQL Server Configuration page (1/3), set the following options:

- Server Configuration Type. Select the Development Machine option.
- Enable TCP/IP Networking. Ensure the checkbox is selected and specify the options below:
 - Port Number. Specify the connection port. The default setting is 3306 - leave it unchanged if there is not special reason to change it.
 - Open Firewall port for network access. Select to add firewall exception for the specified port.

o Advanced Configuration. Select the Show Advanced Options checkbox to display an additional configuration page for setting advanced options for the server instance if required.

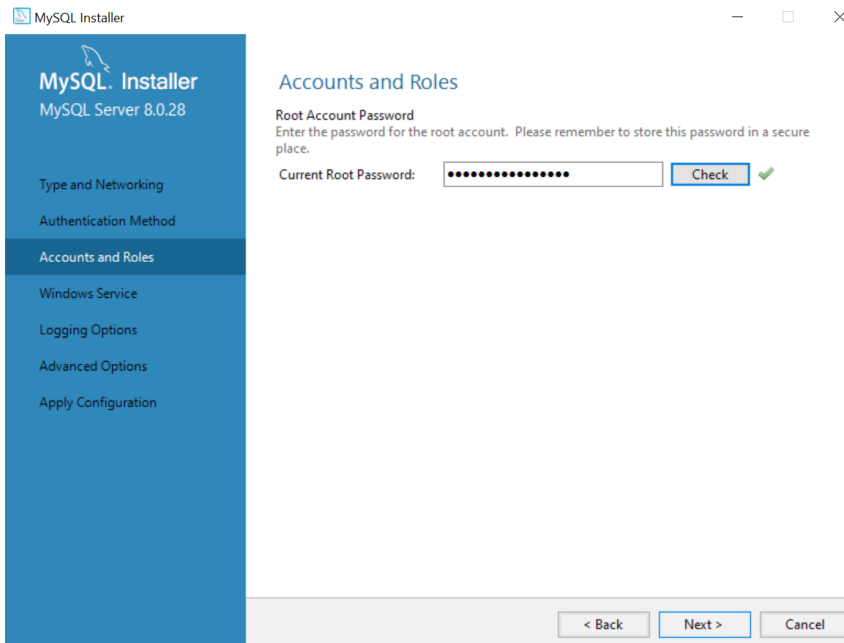
Note: Choosing this option is necessary to get to the panel for setting the network options where you will turn off the firewall for the port used by the MySQL server. Click Next.



15. At the second MySQL Server Configuration page (2/3), set the following options:

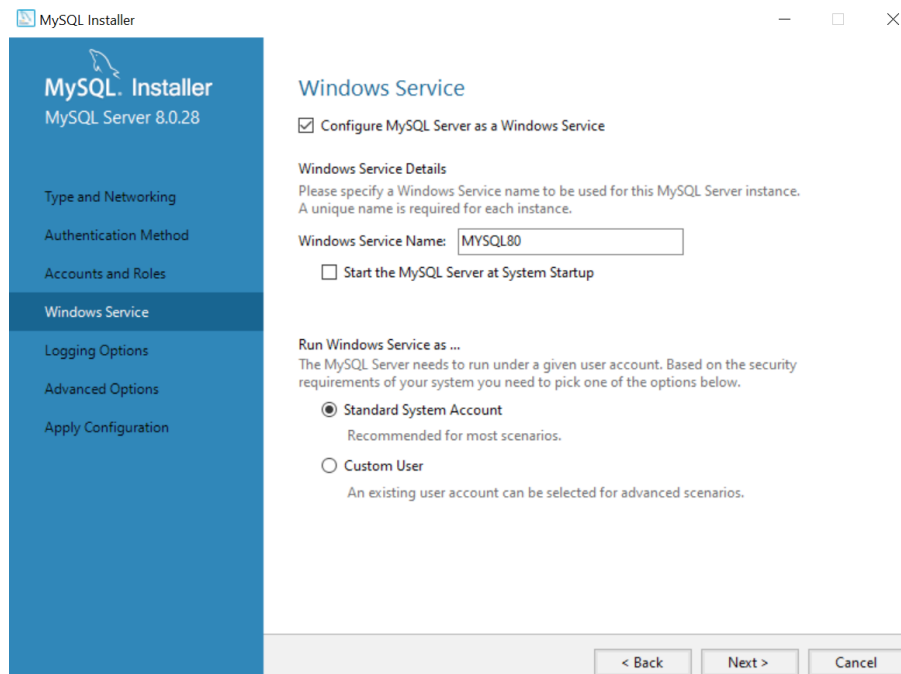
- Root Account Password.
- MySQL Root Password. Enter the root user's password.
- Repeat Password. Retype the root user's password.

Note: The root user is a user who has full access to the MySQL database server - creating, updating, and removing users, and so on. Remember the root password - you will need it later when creating a sample database. Click Next.

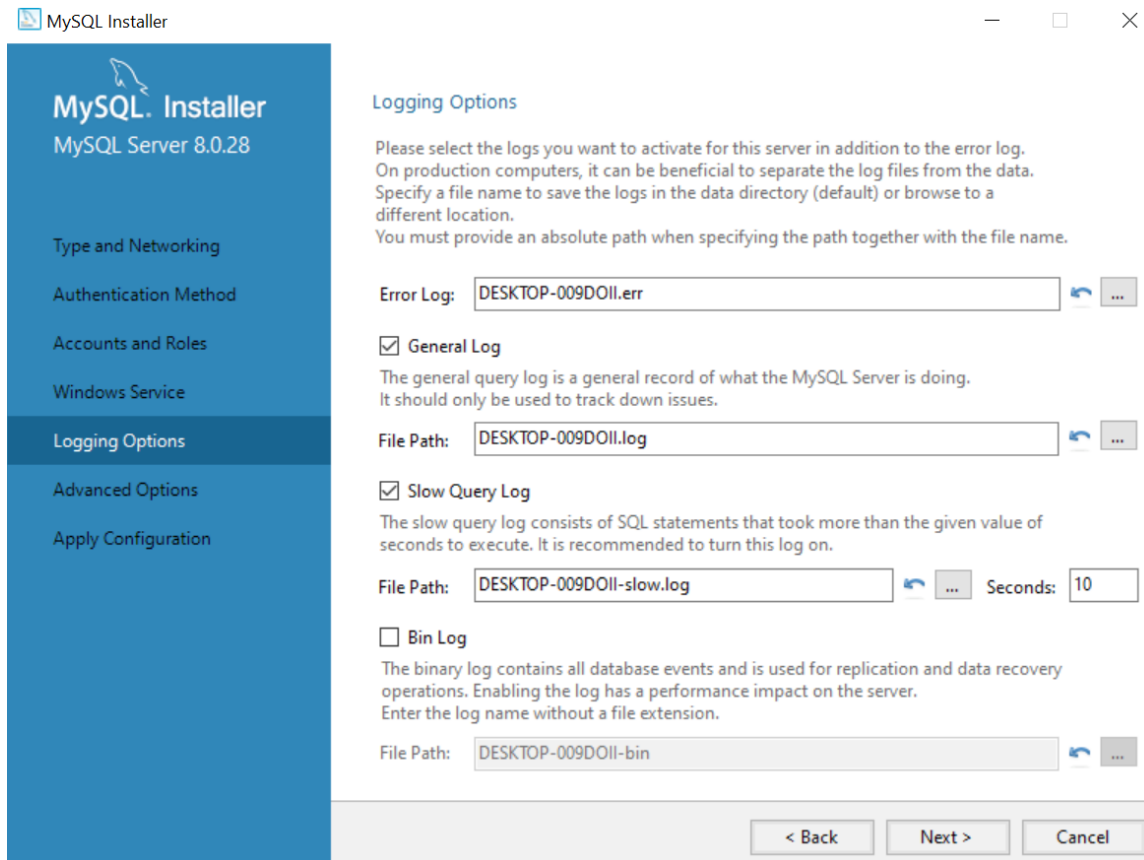


16. At the third MySQL Server Configuration page (3/3), set the following options:

- Windows Service Name. Specify a Windows Service Name to be used for the MySQL server instance.
- Start the MySQL Server at System Startup. Leave the checkbox selected if the MySQL server is required to automatically start at system startup time.
- Run Windows Service as Standard System Account
- Click Next



17. At the Advanced Options page, click Next.



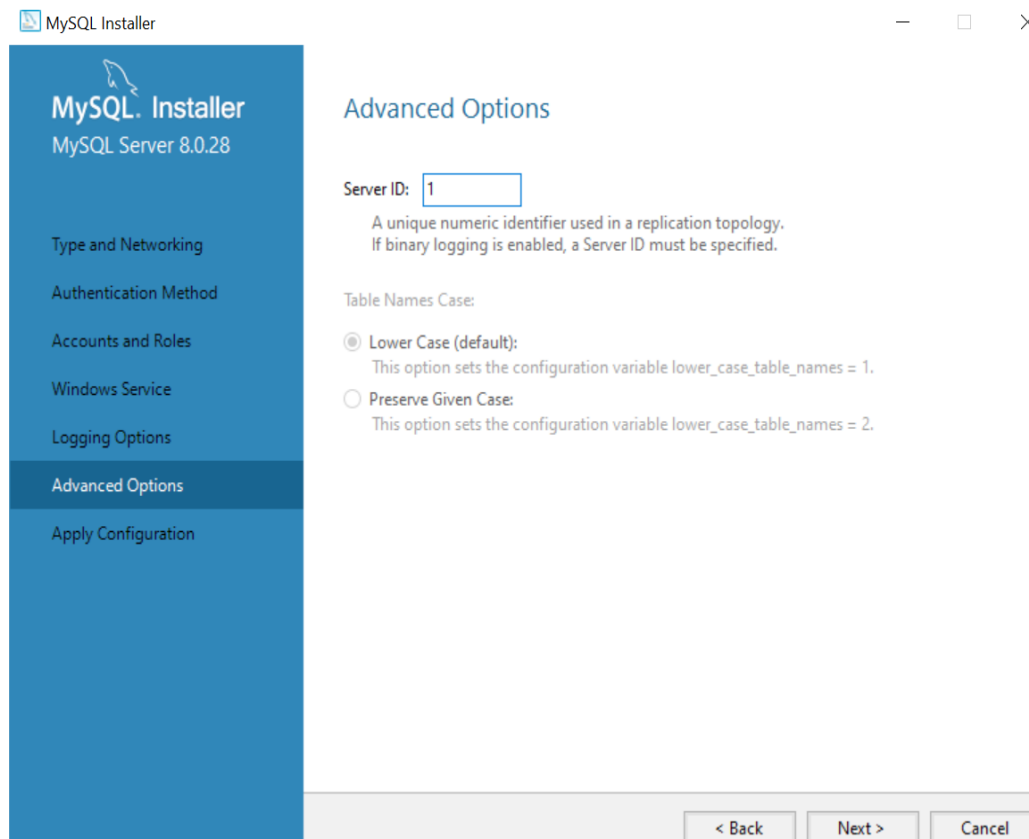
The screenshot shows the 'MySQL Installer' window for 'MySQL Server 8.0.28'. The left sidebar contains a list of configuration steps: 'Type and Networking', 'Authentication Method', 'Accounts and Roles', 'Windows Service', 'Logging Options' (which is highlighted), 'Advanced Options', and 'Apply Configuration'. The main area is titled 'Logging Options' and contains the following text: 'Please select the logs you want to activate for this server in addition to the error log. On production computers, it can be beneficial to separate the log files from the data. Specify a file name to save the logs in the data directory (default) or browse to a different location. You must provide an absolute path when specifying the path together with the file name.'

Below the text are three log configuration sections:

- Error Log:** A text box contains 'DESKTOP-009DOII.err'.
- General Log:** A checkbox is checked. Below it, text reads: 'The general query log is a general record of what the MySQL Server is doing. It should only be used to track down issues.' A text box for 'File Path' contains 'DESKTOP-009DOII.log'.
- Slow Query Log:** A checkbox is checked. Below it, text reads: 'The slow query log consists of SQL statements that took more than the given value of seconds to execute. It is recommended to turn this log on.' A text box for 'File Path' contains 'DESKTOP-009DOII-slow.log', and a 'Seconds' field contains '10'.

At the bottom, there is a section for **Bin Log** with an unchecked checkbox. Text below it reads: 'The binary log contains all database events and is used for replication and data recovery operations. Enabling the log has a performance impact on the server. Enter the log name without a file extension.' A text box for 'File Path' contains 'DESKTOP-009DOII-bin'.

At the bottom right of the window are three buttons: '< Back', 'Next >', and 'Cancel'.



The screenshot shows the 'MySQL Installer' window for 'MySQL Server 8.0.28'. The left sidebar contains a list of configuration steps: 'Type and Networking', 'Authentication Method', 'Accounts and Roles', 'Windows Service', 'Logging Options', 'Advanced Options' (which is highlighted), and 'Apply Configuration'. The main area is titled 'Advanced Options' and contains the following text: 'A unique numeric identifier used in a replication topology. If binary logging is enabled, a Server ID must be specified.'

Below the text is a 'Server ID' field containing the value '1'.

Below that is a section for 'Table Names Case' with two radio button options:

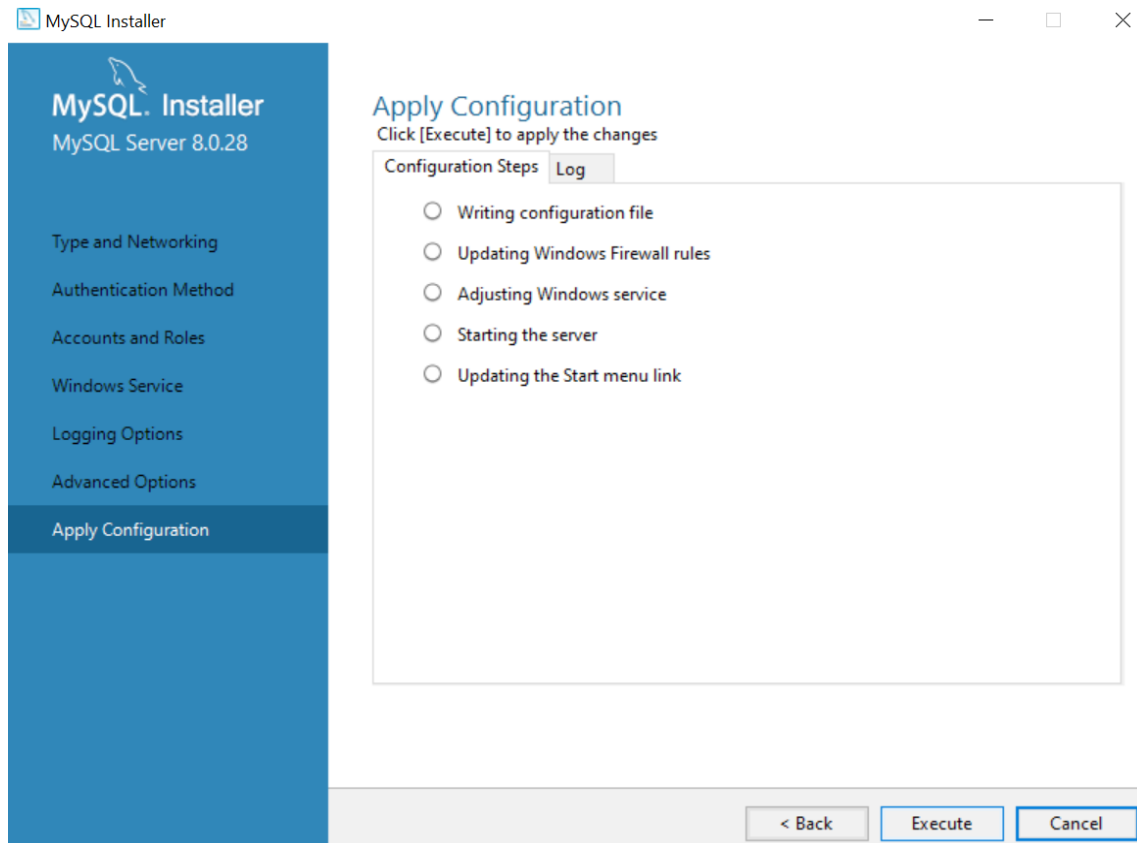
- Lower Case (default):** This option sets the configuration variable `lower_case_table_names = 1`.
- Preserve Given Case:** This option sets the configuration variable `lower_case_table_names = 2`.

At the bottom right of the window are three buttons: '< Back', 'Next >', and 'Cancel'.

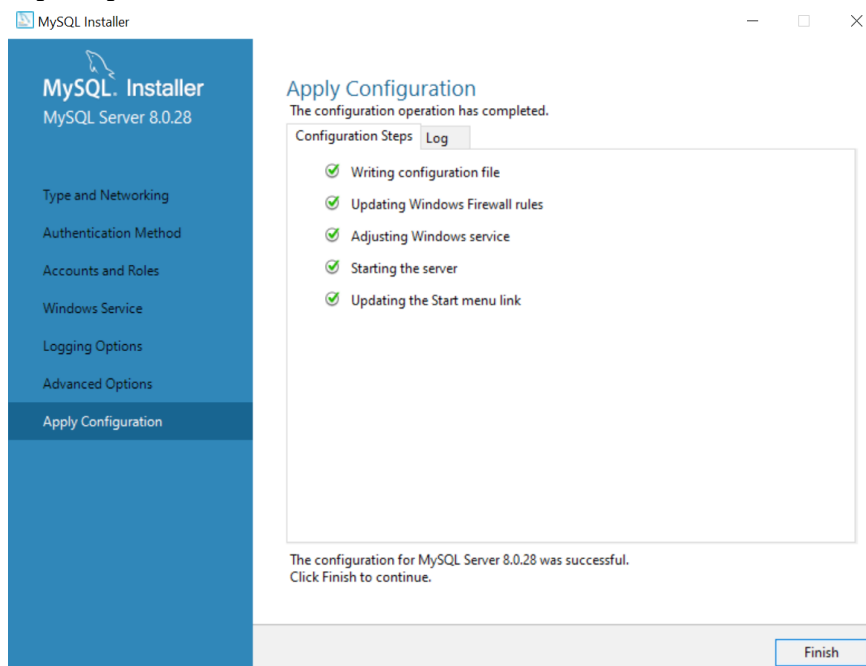
18. At the Plugins and Extensions page, click Next

There was not a 'Plugins and Extensions page' on the current install.

19. At the Server Configuration page, click execute.



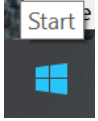
20. When the configuration is completed successfully, the information message appears on the Complete panel. Click Finish



Starting MySQL

To start MySQL, do following.

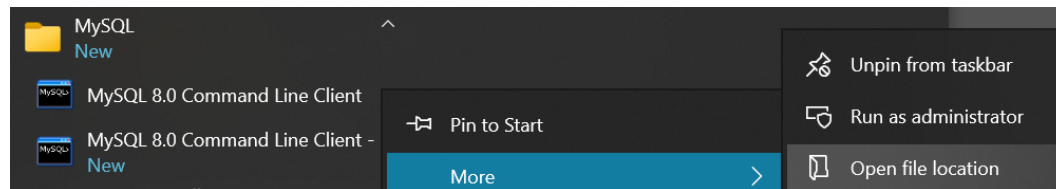
1. Select the Start button



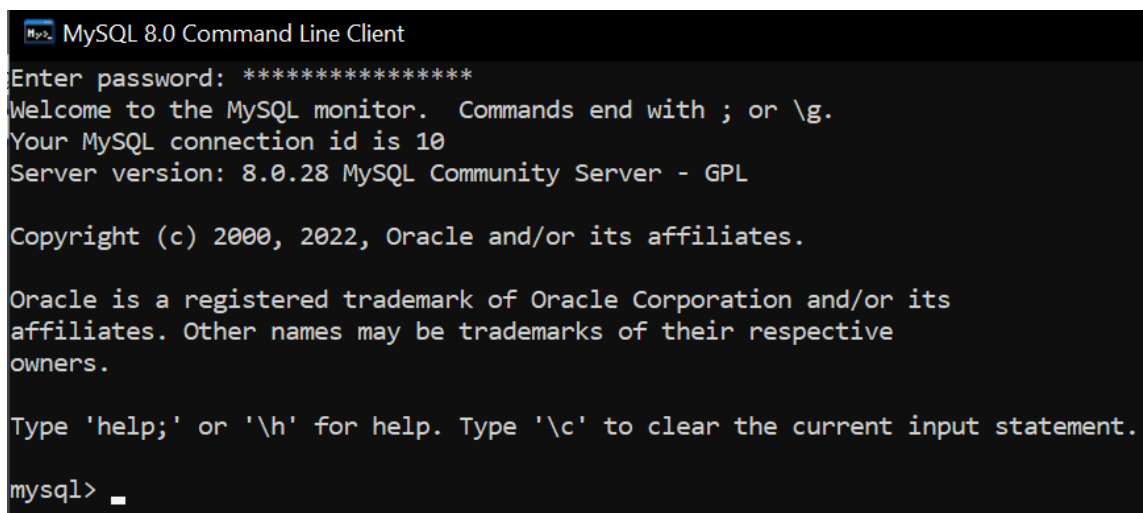
2. Select All Programs and then MySQL



3. Select MySQL Server 8.0



4. Click on the MySQL Command line client



5. Before creating any tables, MySQL requires you to create a database by executing the

CREATE DATABASE command. To create a database called SaleCo, type following:

```
mysql> CREATE DATABASE MySQL;
```

Notice that you need a semicolon to end the command To check to see if your database has been created you need to use the SHOW DATABASES command which lists the databases on the MySQL server host.

```
MySQL 8.0 Command Line Client
mysql> CREATE DATABASE IF NOT EXISTS MySQL;
Query OK, 1 row affected, 1 warning (0.01 sec)

mysql> SHOW DATABASES;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| sakila |
| sys |
| world |
+-----+
6 rows in set (0.00 sec)
```

To work with any specific database you first have to select it. When you first login to MySQL, the default database is always selected, so you need to execute the USE command followed by the name of the database that you want to use. E.g.

```
mysql> USE Lab4;
```

```
MySQL 8.0 Command Line Client
mysql> CREATE DATABASE IF NOT EXISTS Lab4;
Query OK, 1 row affected (0.01 sec)

mysql> SHOW DATABASES;
+-----+
| Database |
+-----+
| information_schema |
| lab4 |
| mysql |
| performance_schema |
| sakila |
| sys |
| world |
+-----+
7 rows in set (0.01 sec)

mysql> USE Lab4;
Database changed
```

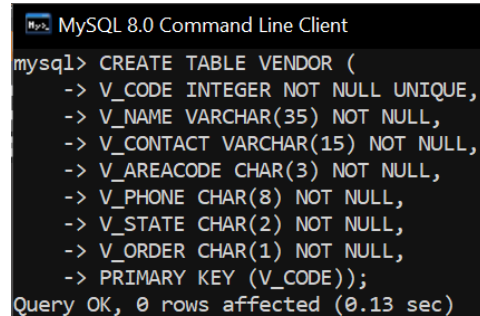
6. Create tables in the database.

Copy the following code to create tables we are going to use in this lab.

TABLE VENDOR

```
CREATE TABLE VENDOR (
V_CODE INTEGER NOT NULL UNIQUE,
V_NAME VARCHAR(35) NOT NULL,
```

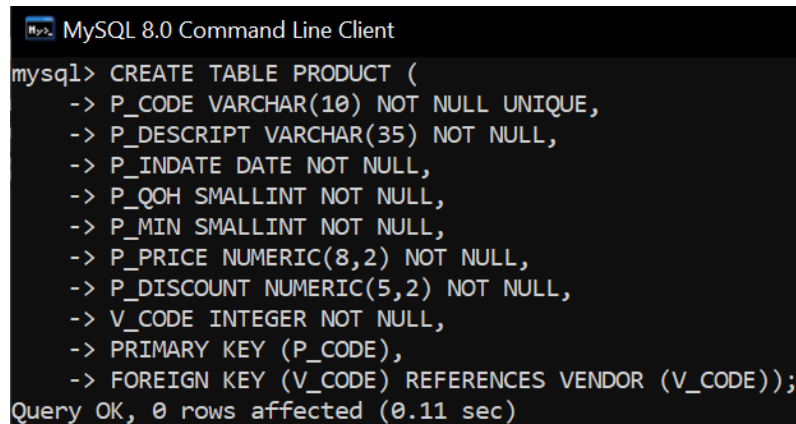
```
V_CONTACT VARCHAR(15) NOT NULL,  
V_AREACODE CHAR(3) NOT NULL,  
V_PHONE CHAR(8) NOT NULL,  
V_STATE CHAR(2) NOT NULL,  
V_ORDER CHAR(1) NOT NULL,  
PRIMARY KEY (V_CODE));
```



```
MySQL 8.0 Command Line Client  
mysql> CREATE TABLE VENDOR (  
-> V_CODE INTEGER NOT NULL UNIQUE,  
-> V_NAME VARCHAR(35) NOT NULL,  
-> V_CONTACT VARCHAR(15) NOT NULL,  
-> V_AREACODE CHAR(3) NOT NULL,  
-> V_PHONE CHAR(8) NOT NULL,  
-> V_STATE CHAR(2) NOT NULL,  
-> V_ORDER CHAR(1) NOT NULL,  
-> PRIMARY KEY (V_CODE));  
Query OK, 0 rows affected (0.13 sec)
```

TABLE PRODUCT

```
CREATE TABLE PRODUCT (  
P_CODE VARCHAR(10) NOT NULL UNIQUE,  
P_DESCRIPT VARCHAR(35) NOT NULL,  
P_INDATE DATE NOT NULL,  
P_QOH SMALLINT NOT NULL,  
P_MIN SMALLINT NOT NULL,  
P_PRICE NUMERIC(8,2) NOT NULL,  
P_DISCOUNT NUMERIC(5,2) NOT NULL,  
V_CODE INTEGER NOT NULL,  
PRIMARY KEY (P_CODE),  
FOREIGN KEY (V_CODE) REFERENCES VENDOR (V_CODE));
```



```
MySQL 8.0 Command Line Client  
mysql> CREATE TABLE PRODUCT (  
-> P_CODE VARCHAR(10) NOT NULL UNIQUE,  
-> P_DESCRIPT VARCHAR(35) NOT NULL,  
-> P_INDATE DATE NOT NULL,  
-> P_QOH SMALLINT NOT NULL,  
-> P_MIN SMALLINT NOT NULL,  
-> P_PRICE NUMERIC(8,2) NOT NULL,  
-> P_DISCOUNT NUMERIC(5,2) NOT NULL,  
-> V_CODE INTEGER NOT NULL,  
-> PRIMARY KEY (P_CODE),  
-> FOREIGN KEY (V_CODE) REFERENCES VENDOR (V_CODE));  
Query OK, 0 rows affected (0.11 sec)
```

7. Check the properties of table

```
DESCRIBE VENDOR;
```

```
MySQL 8.0 Command Line Client
mysql> DESCRIBE VENDOR;
+-----+-----+-----+-----+-----+-----+
| Field      | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| V_CODE     | int       | NO   | PRI | NULL    |       |
| V_NAME     | varchar(35) | NO   |     | NULL    |       |
| V_CONTACT  | varchar(15) | NO   |     | NULL    |       |
| V_AREACODE | char(3)    | NO   |     | NULL    |       |
| V_PHONE    | char(8)    | NO   |     | NULL    |       |
| V_STATE    | char(2)    | NO   |     | NULL    |       |
| V_ORDER    | char(1)    | NO   |     | NULL    |       |
+-----+-----+-----+-----+-----+-----+
7 rows in set (0.03 sec)
```

DESCRIBE PRODUCT;

```
MySQL 8.0 Command Line Client
mysql> DESCRIBE PRODUCT;
+-----+-----+-----+-----+-----+-----+
| Field      | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| P_CODE     | varchar(10) | NO   | PRI | NULL    |       |
| P_DESCRIPT | varchar(35) | NO   |     | NULL    |       |
| P_INDATE   | date       | NO   |     | NULL    |       |
| P_QOH      | smallint   | NO   |     | NULL    |       |
| P_MIN      | smallint   | NO   |     | NULL    |       |
| P_PRICE    | decimal(8,2) | NO   |     | NULL    |       |
| P_DISCOUNT | decimal(5,2) | NO   |     | NULL    |       |
| V_CODE     | int       | NO   | MUL | NULL    |       |
+-----+-----+-----+-----+-----+-----+
8 rows in set (0.01 sec)
```

8. Create more tables

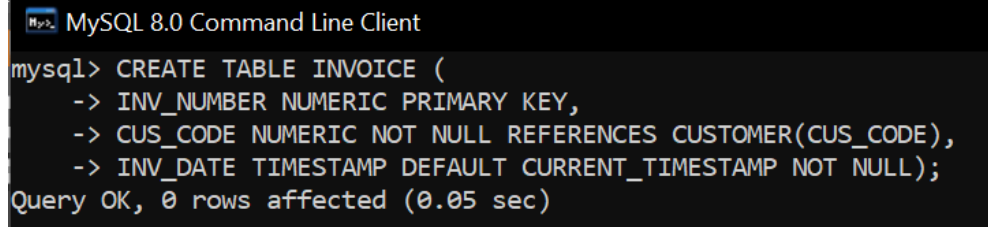
TABLE CUSTOMER

```
CREATE TABLE CUSTOMER (
CUS_CODE NUMERIC PRIMARY KEY,
CUS_LNAME VARCHAR(15) NOT NULL,
CUS_FNAME VARCHAR(15) NOT NULL,
CUS_INITIAL CHAR(1),
CUS_AREACODE CHAR(3) DEFAULT '615' NOT NULL
CHECK(CUS_AREACODE IN ('615','713','931')),
CUS_PHONE CHAR(8) NOT NULL,
CUS_BALANCE NUMERIC(9,2) DEFAULT 0.00,
CONSTRAINT CUS_UI1 UNIQUE(CUS_LNAME,CUS_FNAME));
```

```
Select MySQL 8.0 Command Line Client
mysql> CREATE TABLE CUSTOMER (
-> CUS_CODE NUMERIC PRIMARY KEY,
-> CUS_LNAME VARCHAR(15) NOT NULL,
-> CUS_FNAME VARCHAR(15) NOT NULL,
-> CUS_INITIAL CHAR(1),
-> CUS_AREACODE CHAR(3) DEFAULT '615' NOT NULL
-> CHECK(CUS_AREACODE IN ('615','713','931')),
-> CUS_PHONE CHAR(8) NOT NULL,
-> CUS_BALANCE NUMERIC(9,2) DEFAULT 0.00,
-> CONSTRAINT CUS_UI1 UNIQUE(CUS_LNAME,CUS_FNAME));
Query OK, 0 rows affected (0.11 sec)
```

TABLE INVOICE

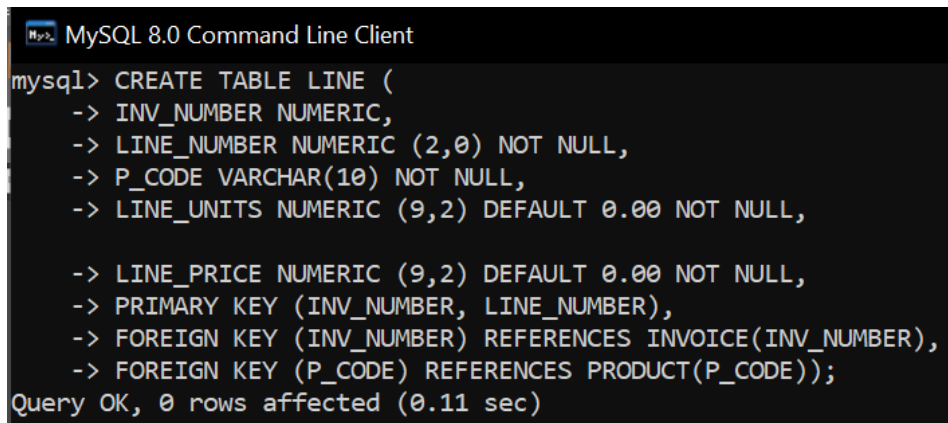
```
CREATE TABLE INVOICE (  
INV_NUMBER NUMERIC PRIMARY KEY,  
CUS_CODE NUMERIC NOT NULL REFERENCES CUSTOMER(CUS_CODE),  
INV_DATE TIMESTAMP DEFAULT CURRENT_TIMESTAMP NOT NULL);
```



```
MySQL 8.0 Command Line Client  
mysql> CREATE TABLE INVOICE (  
-> INV_NUMBER NUMERIC PRIMARY KEY,  
-> CUS_CODE NUMERIC NOT NULL REFERENCES CUSTOMER(CUS_CODE),  
-> INV_DATE TIMESTAMP DEFAULT CURRENT_TIMESTAMP NOT NULL);  
Query OK, 0 rows affected (0.05 sec)
```

TABLE Line

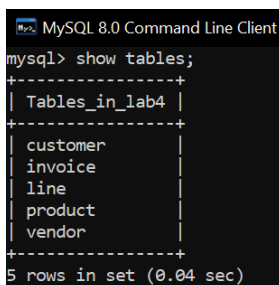
```
CREATE TABLE LINE (  
INV_NUMBER NUMERIC,  
LINE_NUMBER NUMERIC (2,0) NOT NULL,  
P_CODE VARCHAR(10) NOT NULL,  
LINE_UNITS NUMERIC (9,2) DEFAULT 0.00 NOT NULL,  
LINE_PRICE NUMERIC (9,2) DEFAULT 0.00 NOT NULL,  
PRIMARY KEY (INV_NUMBER, LINE_NUMBER),  
FOREIGN KEY (INV_NUMBER) REFERENCES INVOICE(INV_NUMBER),  
FOREIGN KEY (P_CODE) REFERENCES PRODUCT(P_CODE));
```



```
MySQL 8.0 Command Line Client  
mysql> CREATE TABLE LINE (  
-> INV_NUMBER NUMERIC,  
-> LINE_NUMBER NUMERIC (2,0) NOT NULL,  
-> P_CODE VARCHAR(10) NOT NULL,  
-> LINE_UNITS NUMERIC (9,2) DEFAULT 0.00 NOT NULL,  
  
-> LINE_PRICE NUMERIC (9,2) DEFAULT 0.00 NOT NULL,  
-> PRIMARY KEY (INV_NUMBER, LINE_NUMBER),  
-> FOREIGN KEY (INV_NUMBER) REFERENCES INVOICE(INV_NUMBER),  
-> FOREIGN KEY (P_CODE) REFERENCES PRODUCT(P_CODE));  
Query OK, 0 rows affected (0.11 sec)
```

9. Now, you should have 5 tables. You can list the tables by

MySQL>show tables;



```
MySQL 8.0 Command Line Client  
mysql> show tables;  
+-----+  
| Tables_in_lab4 |  
+-----+  
| customer       |  
| invoice        |  
| line           |  
| product        |  
| vendor         |  
+-----+  
5 rows in set (0.04 sec)
```

10. Now add Table Rows SQL requires the use of the INSERT command to enter data into a table. The INSERT command's basic syntax looks like this:

INSERT INTO tablename VALUES (value1, value2, ... , valuen).

Copy the following code to insert rows to each table

TABLE VENDOR

```
INSERT INTO VENDOR VALUES (21224,'Bryson, Inc.','Smithson','615','223-3234', 'TN', 'Y');
INSERT INTO VENDOR VALUES (21231,'D&E Supply', 'Singh' , '615','228-3245', 'TN', 'Y');
INSERT INTO VENDOR VALUES (21344,'Gomez Bros.', 'Singh', '615', '889-2546', 'KY', 'N');
INSERT INTO VENDOR VALUES (22567,'Dome Supply', 'Smith','901', '678-1419','GA','N');
INSERT INTO VENDOR VALUES (23119,'Randsets Ltd.','Anderson','901', '678-3998', 'GA', 'Y');
INSERT INTO VENDOR VALUES (24288,'ORDVA, Inc.', 'Smithson','615', '898-1234', 'TN', 'Y');
INSERT INTO VENDOR VALUES (25443,'B\&K, Inc.', 'Smith' , '904','227-0093','FL','N');
```

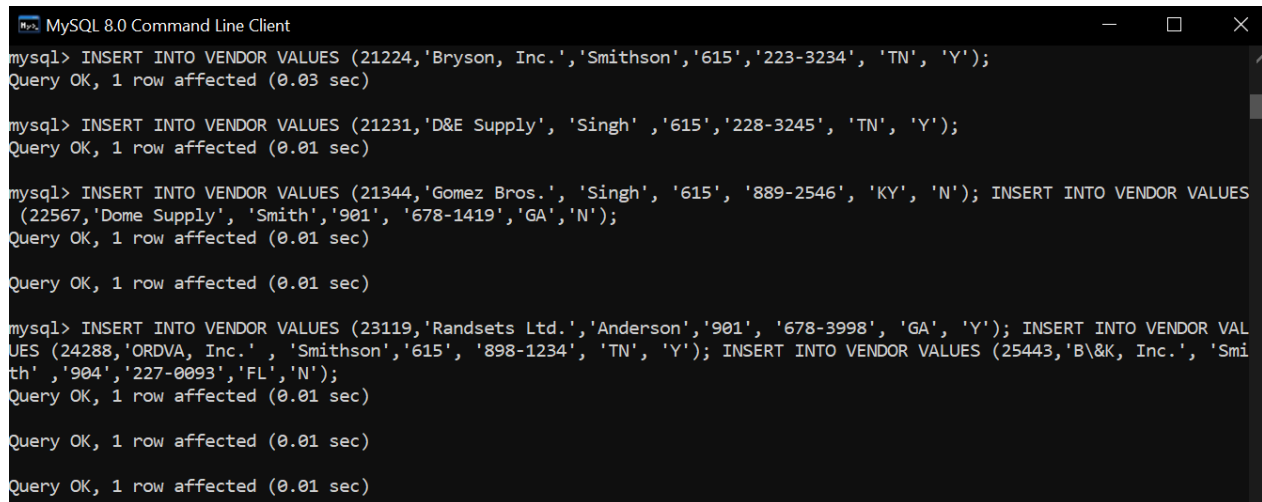
A screenshot of the MySQL 8.0 Command Line Client window. The window title is "MySQL 8.0 Command Line Client". The terminal shows several INSERT INTO VENDOR VALUES statements being executed. Each statement is followed by the output "Query OK, 1 row affected (0.01 sec)". The statements are: 1. INSERT INTO VENDOR VALUES (21224,'Bryson, Inc.','Smithson','615','223-3234', 'TN', 'Y'); 2. INSERT INTO VENDOR VALUES (21231,'D&E Supply', 'Singh' , '615','228-3245', 'TN', 'Y'); 3. INSERT INTO VENDOR VALUES (21344,'Gomez Bros.', 'Singh', '615', '889-2546', 'KY', 'N'); 4. INSERT INTO VENDOR VALUES (22567,'Dome Supply', 'Smith','901', '678-1419','GA','N'); 5. INSERT INTO VENDOR VALUES (23119,'Randsets Ltd.','Anderson','901', '678-3998', 'GA', 'Y'); 6. INSERT INTO VENDOR VALUES (24288,'ORDVA, Inc.', 'Smithson','615', '898-1234', 'TN', 'Y'); 7. INSERT INTO VENDOR VALUES (25443,'B\&K, Inc.', 'Smith' , '904','227-0093','FL','N');

TABLE PRODUCT

```
INSERT INTO PRODUCT VALUES ('13-Q2/P2','7.25-in. pwr. saw blade', '2013-12-13', 32, 15, 14.99,0.05,21344);
INSERT INTO PRODUCT VALUES ('14-Q1/L3','9.00-in. pwr. saw blade', '2013-11-13', 18, 12, 17.49,0.00,21344);
INSERT INTO PRODUCT VALUES ('1546-QQ2','Hrd. cloth, 1/4-in., x50','2014-01-15', 15, 8, 39.95,0.00,23119);
INSERT INTO PRODUCT VALUES ('1558-QW1','Hrd. cloth, 1/2-in., 3x50','2014-01-15', 23, 5, 43.99,0.00,23119);
INSERT INTO PRODUCT VALUES ('2232/QTY','B\&D jigsaw, 12-in. blade','2013-12-30',8, 5,109.92,0.05,24288);
INSERT INTO PRODUCT VALUES ('2232/QWE','B\&D jigsaw, 8-in. blade' , '2013-12-24', 6, 5, 99.87,0.05,24288);
INSERT INTO PRODUCT VALUES ('23109-HB','Claw hammer','2014-01-20',23, 10, 9.95, 0.10, 25443);
INSERT INTO PRODUCT VALUES ('23114-AA','Sledge hammer, 12 lb.','2014-01-20',8, 5, 14.40, 0.05,25443);
```

```
INSERT INTO PRODUCT VALUES('54778-2T','Rat-tail file, 1/8-in. fine' , '2013-12-15',43, 20,
4.99,0.00,21344);
INSERT INTO PRODUCT VALUES ('89-WRE-Q','Hicut chain saw, 16 in.', '2014-02-07',11, 5, 256.99,
0.05,24288);
```

```
MySQL 8.0 Command Line Client

mysql> INSERT INTO PRODUCT VALUES ('13-Q2/P2','7.25-in. pwr. saw blade', '2013-12-13', 32, 15, 14.99,0.05,21344);
Query OK, 1 row affected (0.03 sec)

mysql> INSERT INTO PRODUCT VALUES ('14-Q1/L3','9.00-in. pwr. saw blade', '2013-11-13', 18, 12, 17.49,0.00,21344);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO PRODUCT VALUES ('1546-QQ2','Hrd. cloth, 1/4-in., x50', '2014-01-15', 15, 8, 39.95,0.00,23119);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO PRODUCT VALUES ('1558-QW1','Hrd. cloth, 1/2-in., 3x50', '2014-01-15', 23, 5, 43.99,0.00,23119);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO PRODUCT VALUES ('2232/QT','B&D jigsaw, 12-in. blade', '2013-12-30',8, 5,109.92,0.05,24288);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO PRODUCT VALUES ('2232/QNE','B&D jigsaw, 8-in. blade', '2013-12-24', 6, 5, 99.87,0.05,24288);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO PRODUCT VALUES ('23109-HB','Claw hammer', '2014-01-20',23, 10, 9.95, 0.10, 25443);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO PRODUCT VALUES ('23114-AA','Sledge hammer, 12 lb.', '2014-01-20',8, 5, 14.40, 0.05,25443);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO PRODUCT VALUES('54778-2T','Rat-tail file, 1/8-in. fine' , '2013-12-15',43, 20, 4.99,0.00,21344);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO PRODUCT VALUES ('89-WRE-Q','Hicut chain saw, 16 in.', '2014-02-07',11, 5, 256.99, 0.05,24288);
Query OK, 1 row affected (0.01 sec)
```

Table CUSTOMER

```
INSERT INTO CUSTOMER VALUES(10010,'Ramas','Alfred', 'A','615','844-2573',0);
INSERT INTO CUSTOMER VALUES(10011,'Dunne','Leona', 'K', '713','894-1238',0);
INSERT INTO CUSTOMER VALUES(10012,'Smith','Kathy', 'W', '615','894-2285', 345.86);
INSERT INTO CUSTOMER VALUES(10013,'Olowski', 'Paul', 'F', '615','894-2180',536.75);
INSERT INTO CUSTOMER VALUES(10014,'Orlando', 'Myron', NULL, '615','222-1672',0);
INSERT INTO CUSTOMER VALUES(10015,'O'Brian','Amy', 'B', '713','442-3381',0);
INSERT INTO CUSTOMER VALUES(10016,'Brown','James', 'G', '615','297-1228',221.19);
INSERT INTO CUSTOMER VALUES(10017,'Williams','George', NULL, '615','290-2556',768.93);
INSERT INTO CUSTOMER VALUES(10018,'Farriss', 'Anne', 'G', '713','382-7185',216.55);
INSERT INTO CUSTOMER VALUES(10019,'Smith','Olette', 'K', '615','297-3809',0);
```

```
MySQL 8.0 Command Line Client

mysql> INSERT INTO CUSTOMER VALUES(10010,'Ramas','Alfred','A','615','844-2573',0);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO CUSTOMER VALUES(10011,'Dunne','Leona','K','713','894-1238',0);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO CUSTOMER VALUES(10012,'Smith','Kathy','W','615','894-2285',345.86);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO CUSTOMER VALUES(10013,'Olowski','Paul','F','615','894-2180',536.75);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO CUSTOMER VALUES(10014,'Orlando','Myron',NULL,'615','222-1672',0);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO CUSTOMER VALUES(10015,'O''Brian','Amy','B','713','442-3381',0);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO CUSTOMER VALUES(10016,'Brown','James','G','615','297-1228',221.19);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO CUSTOMER VALUES(10017,'Williams','George',NULL,'615','290-2556',768.93); INSERT INTO CUSTOMER VALUES(
10018,'Farriss','Anne','G','713','382-7185',216.55);
Query OK, 1 row affected (0.01 sec)

Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO CUSTOMER VALUES(10019,'Smith','Olette','K','615','297-3809',0);
Query OK, 1 row affected (0.01 sec)
```

Table INVOICE

```
INSERT INTO INVOICE VALUES(1000,10014,'2014-01-16, 21:51:09');
INSERT INTO INVOICE VALUES(1002,10011,'2014-01-16, 21:51:09');
INSERT INTO INVOICE VALUES(1003,10012,'2014-01-16, 14:12:17');
INSERT INTO INVOICE VALUES(1004,10011,'2014-01-17, 11:51:09');
INSERT INTO INVOICE VALUES(1005,10018,'2014-01-17, 10:51:09');
INSERT INTO INVOICE VALUES(1006,10014,'2014-01-17, 15:51:09');
INSERT INTO INVOICE VALUES(1007,10015,'2014-01-17, 18:51:09');
INSERT INTO INVOICE VALUES(1008,10011,'2014-01-17, 19:51:09');
```

```
MySQL 8.0 Command Line Client

mysql> INSERT INTO INVOICE VALUES(1000,10014,'2014-01-16, 21:51:09');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO INVOICE VALUES(1002,10011,'2014-01-16, 21:51:09');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO INVOICE VALUES(1003,10012,'2014-01-16, 14:12:17');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO INVOICE VALUES(1004,10011,'2014-01-17, 11:51:09');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO INVOICE VALUES(1005,10018,'2014-01-17, 10:51:09');
Query OK, 1 row affected (0.00 sec)

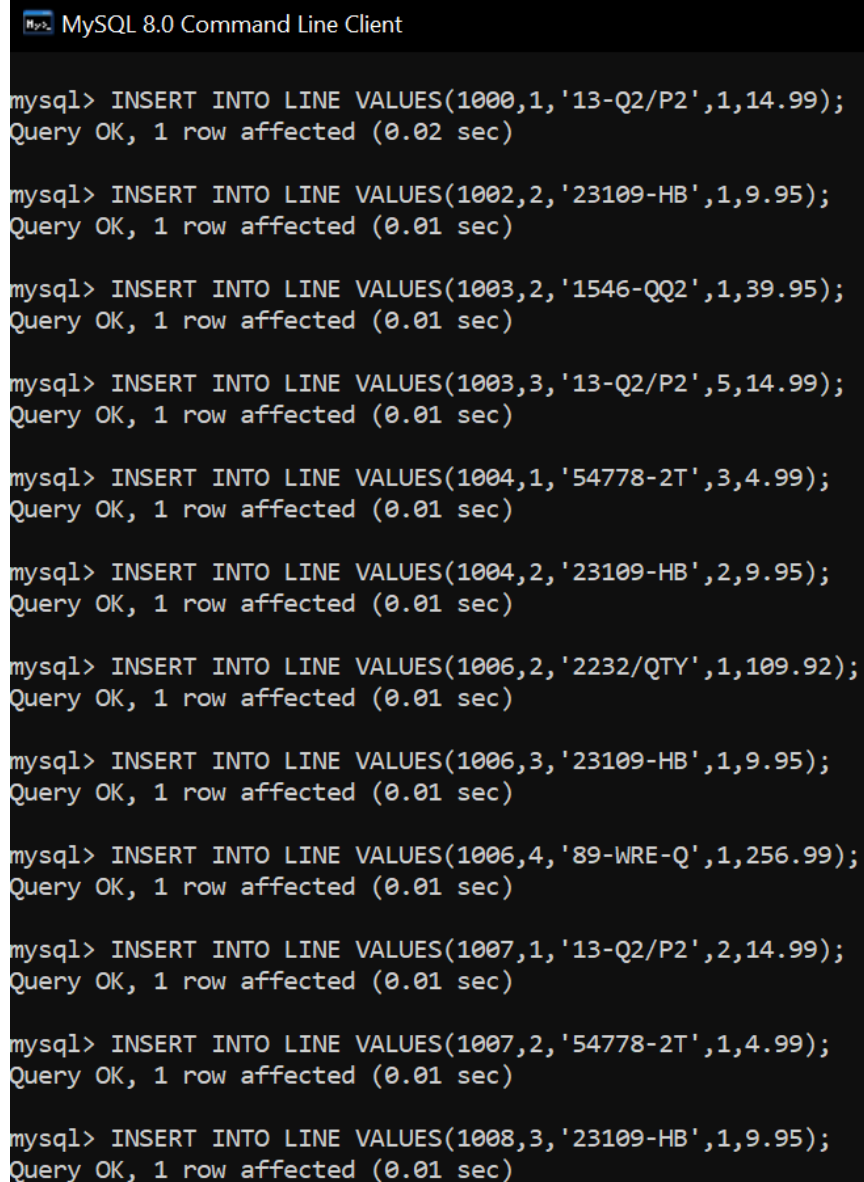
mysql> INSERT INTO INVOICE VALUES(1006,10014,'2014-01-17, 15:51:09');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO INVOICE VALUES(1007,10015,'2014-01-17, 18:51:09');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO INVOICE VALUES(1008,10011,'2014-01-17, 19:51:09');
Query OK, 1 row affected (0.01 sec)
```


Table LINE

```
INSERT INTO LINE VALUES(1000,1,'13-Q2/P2',1,14.99);
INSERT INTO LINE VALUES(1002,2,'23109-HB',1,9.95);
INSERT INTO LINE VALUES(1003,2,'1546-QQ2',1,39.95);
INSERT INTO LINE VALUES(1003,3,'13-Q2/P2',5,14.99);
INSERT INTO LINE VALUES(1004,1,'54778-2T',3,4.99);
INSERT INTO LINE VALUES(1004,2,'23109-HB',2,9.95);
INSERT INTO LINE VALUES(1006,2,'2232/QTY',1,109.92);
INSERT INTO LINE VALUES(1006,3,'23109-HB',1,9.95);
INSERT INTO LINE VALUES(1006,4,'89-WRE-Q',1,256.99);
INSERT INTO LINE VALUES(1007,1,'13-Q2/P2',2,14.99);
INSERT INTO LINE VALUES(1007,2,'54778-2T',1,4.99);
INSERT INTO LINE VALUES(1008,3,'23109-HB',1,9.95);
```



```
MySQL 8.0 Command Line Client

mysql> INSERT INTO LINE VALUES(1000,1,'13-Q2/P2',1,14.99);
Query OK, 1 row affected (0.02 sec)

mysql> INSERT INTO LINE VALUES(1002,2,'23109-HB',1,9.95);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO LINE VALUES(1003,2,'1546-QQ2',1,39.95);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO LINE VALUES(1003,3,'13-Q2/P2',5,14.99);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO LINE VALUES(1004,1,'54778-2T',3,4.99);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO LINE VALUES(1004,2,'23109-HB',2,9.95);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO LINE VALUES(1006,2,'2232/QTY',1,109.92);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO LINE VALUES(1006,3,'23109-HB',1,9.95);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO LINE VALUES(1006,4,'89-WRE-Q',1,256.99);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO LINE VALUES(1007,1,'13-Q2/P2',2,14.99);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO LINE VALUES(1007,2,'54778-2T',1,4.99);
Query OK, 1 row affected (0.01 sec)

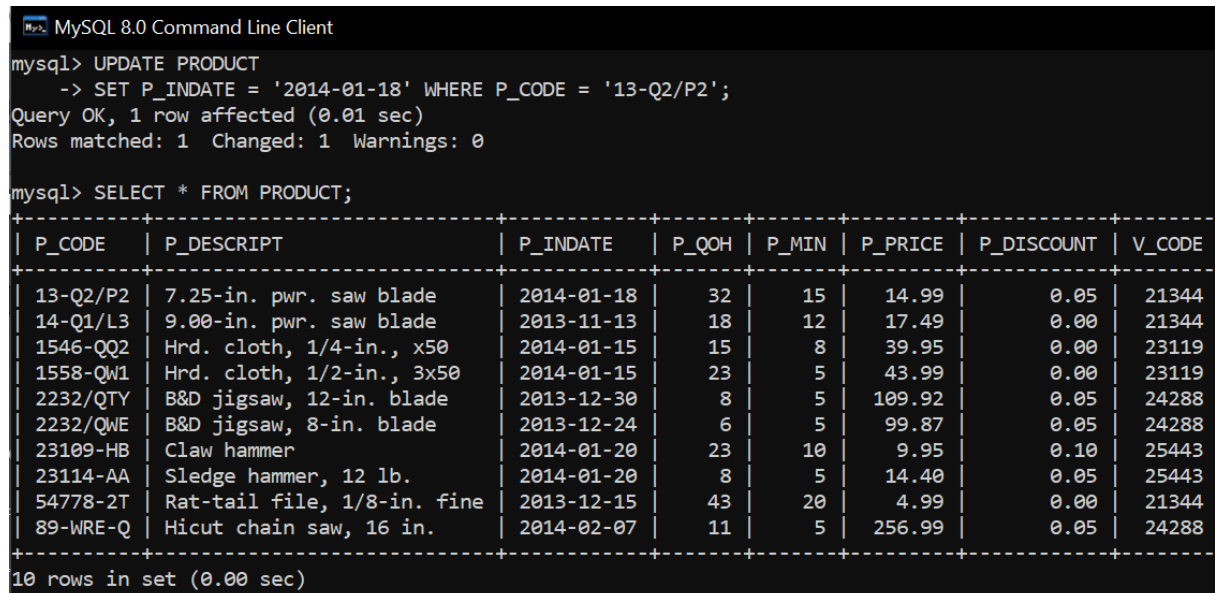
mysql> INSERT INTO LINE VALUES(1008,3,'23109-HB',1,9.95);
Query OK, 1 row affected (0.01 sec)
```

11. Practice other SQL queries. Note: All below are optional, will NOT be graded.

===== UPDATE TABLE ROWS

```
mysql> UPDATE PRODUCT
SET P_INDATE = '2014-01-18' WHERE P_CODE = '13-Q2/P2';
```

```
mysql> SELECT * FROM PRODUCT;
```



```
MySQL 8.0 Command Line Client
mysql> UPDATE PRODUCT
-> SET P_INDATE = '2014-01-18' WHERE P_CODE = '13-Q2/P2';
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> SELECT * FROM PRODUCT;
```

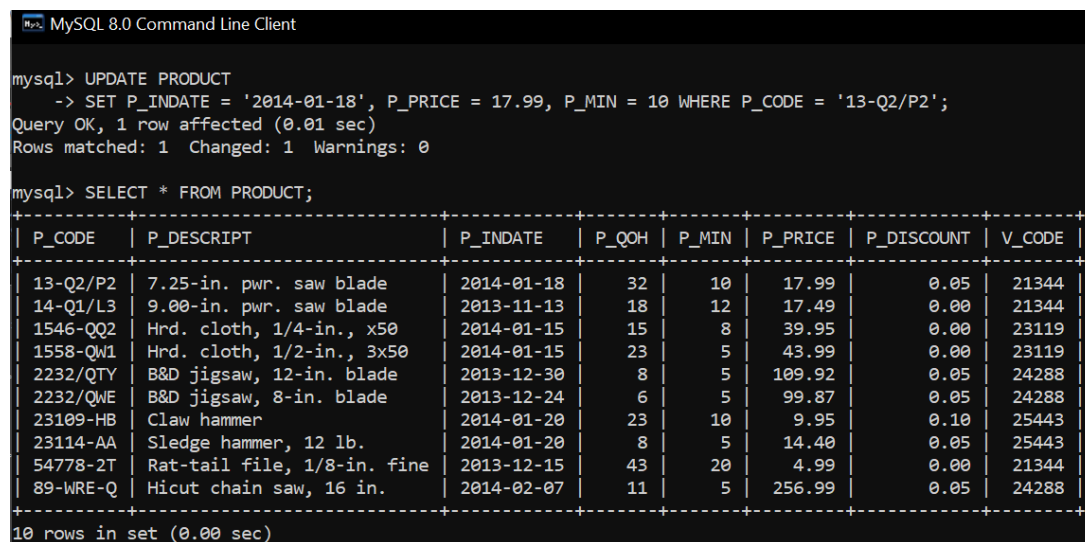
P_CODE	P_DESCRIPT	P_INDATE	P_QOH	P_MIN	P_PRICE	P_DISCOUNT	V_CODE
13-Q2/P2	7.25-in. pwr. saw blade	2014-01-18	32	15	14.99	0.05	21344
14-Q1/L3	9.00-in. pwr. saw blade	2013-11-13	18	12	17.49	0.00	21344
1546-QQ2	Hrd. cloth, 1/4-in., x50	2014-01-15	15	8	39.95	0.00	23119
1558-QW1	Hrd. cloth, 1/2-in., 3x50	2014-01-15	23	5	43.99	0.00	23119
2232/QTY	B&D jigsaw, 12-in. blade	2013-12-30	8	5	109.92	0.05	24288
2232/QWE	B&D jigsaw, 8-in. blade	2013-12-24	6	5	99.87	0.05	24288
23109-HB	Claw hammer	2014-01-20	23	10	9.95	0.10	25443
23114-AA	Sledge hammer, 12 lb.	2014-01-20	8	5	14.40	0.05	25443
54778-2T	Rat-tail file, 1/8-in. fine	2013-12-15	43	20	4.99	0.00	21344
89-WRE-Q	Hicut chain saw, 16 in.	2014-02-07	11	5	256.99	0.05	24288

10 rows in set (0.00 sec)

===== Set MySQL date format

```
mysql> UPDATE PRODUCT
SET P_INDATE = '2014-01-18', P_PRICE = 17.99, P_MIN = 10 WHERE P_CODE = '13-Q2/P2';
```

```
mysql> SELECT * FROM PRODUCT;
```



```
MySQL 8.0 Command Line Client
mysql> UPDATE PRODUCT
-> SET P_INDATE = '2014-01-18', P_PRICE = 17.99, P_MIN = 10 WHERE P_CODE = '13-Q2/P2';
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> SELECT * FROM PRODUCT;
```

P_CODE	P_DESCRIPT	P_INDATE	P_QOH	P_MIN	P_PRICE	P_DISCOUNT	V_CODE
13-Q2/P2	7.25-in. pwr. saw blade	2014-01-18	32	10	17.99	0.05	21344
14-Q1/L3	9.00-in. pwr. saw blade	2013-11-13	18	12	17.49	0.00	21344
1546-QQ2	Hrd. cloth, 1/4-in., x50	2014-01-15	15	8	39.95	0.00	23119
1558-QW1	Hrd. cloth, 1/2-in., 3x50	2014-01-15	23	5	43.99	0.00	23119
2232/QTY	B&D jigsaw, 12-in. blade	2013-12-30	8	5	109.92	0.05	24288
2232/QWE	B&D jigsaw, 8-in. blade	2013-12-24	6	5	99.87	0.05	24288
23109-HB	Claw hammer	2014-01-20	23	10	9.95	0.10	25443
23114-AA	Sledge hammer, 12 lb.	2014-01-20	8	5	14.40	0.05	25443
54778-2T	Rat-tail file, 1/8-in. fine	2013-12-15	43	20	4.99	0.00	21344
89-WRE-Q	Hicut chain saw, 16 in.	2014-02-07	11	5	256.99	0.05	24288

10 rows in set (0.00 sec)

===== ROLLBACK

mysql> ROLLBACK;

mysql> SELECT * FROM PRODUCT;

MySQL 8.0 Command Line Client

```
mysql> SELECT * FROM PRODUCT;
```

P_CODE	P_DESCRIPT	P_INDATE	P_QOH	P_MIN	P_PRICE	P_DISCOUNT	V_CODE
13-Q2/P2	7.25-in. pwr. saw blade	2014-01-18	32	10	17.99	0.05	21344
14-Q1/L3	9.00-in. pwr. saw blade	2013-11-13	18	12	17.49	0.00	21344
1546-QQ2	Hrd. cloth, 1/4-in., x50	2014-01-15	15	8	39.95	0.00	23119
1558-QW1	Hrd. cloth, 1/2-in., 3x50	2014-01-15	23	5	43.99	0.00	23119
2232/QTY	B&D jigsaw, 12-in. blade	2013-12-30	8	5	109.92	0.05	24288
2232/QNE	B&D jigsaw, 8-in. blade	2013-12-24	6	5	99.87	0.05	24288
23109-HB	Claw hammer	2014-01-20	23	10	9.95	0.10	25443
23114-AA	Sledge hammer, 12 lb.	2014-01-20	8	5	14.40	0.05	25443
54778-2T	Rat-tail file, 1/8-in. fine	2013-12-15	43	20	4.99	0.00	21344
89-WRE-Q	Hicut chain saw, 16 in.	2014-02-07	11	5	256.99	0.05	24288

10 rows in set (0.00 sec)

===== SELECT WITH WHERE CLAUSE

SELECT P_DESCRIPT, P_INDATE, P_PRICE,
V_CODE FROM PRODUCT
WHERE V_CODE = 21344;

MySQL 8.0 Command Line Client

```
mysql> SELECT P_DESCRIPT, P_INDATE, P_PRICE,  
-> V_CODE FROM PRODUCT  
-> WHERE V_CODE = 21344;
```

P_DESCRIPT	P_INDATE	P_PRICE	V_CODE
7.25-in. pwr. saw blade	2014-01-18	17.99	21344
9.00-in. pwr. saw blade	2013-11-13	17.49	21344
Rat-tail file, 1/8-in. fine	2013-12-15	4.99	21344

3 rows in set (0.01 sec)

===== comparison operators >, >=, <, <=, <>

SELECT P_DESCRIPT, P_QOH, P_MIN, P_PRICE FROM PRODUCT WHERE P_PRICE <= 10;

```
mysql> SELECT P_DESCRIPT, P_QOH, P_MIN, P_PRICE FROM PRODUCT WHERE P_PRICE <= 10;
```

P_DESCRIPT	P_QOH	P_MIN	P_PRICE
Claw hammer	23	10	9.95
Rat-tail file, 1/8-in. fine	43	20	4.99

2 rows in set (0.00 sec)

===== Using comparison operators in character attributes

SELECT P_CODE, P_DESCRIPT, P_QOH, P_MIN, P_PRICE FROM PRODUCT WHERE P_CODE < '1558-QW1';

```
mysql> SELECT P_CODE, P_DESCRIPT, P_QOH, P_MIN, P_PRICE FROM PRODUCT WHERE P_CODE < '1558-QW1';
+-----+-----+-----+-----+-----+
| P_CODE | P_DESCRIPT          | P_QOH | P_MIN | P_PRICE |
+-----+-----+-----+-----+-----+
| 13-Q2/P2 | 7.25-in. pwr. saw blade | 32    | 10    | 17.99   |
| 14-Q1/L3 | 9.00-in. pwr. saw blade | 18    | 12    | 17.49   |
| 1546-QQ2 | Hrd. cloth, 1/4-in., x50 | 15    | 8     | 39.95   |
+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

===== Using comparison operators on dates

SELECT P_DESCRIPT, P_QOH, P_MIN, P_PRICE, P_INDATE FROM PRODUCT WHERE P_INDATE >= '20-JAN-2014';

```
mysql> SELECT P_DESCRIPT, P_QOH, P_MIN, P_PRICE, P_INDATE FROM PRODUCT WHERE P_INDATE >= '20-JAN-2014';
ERROR 1525 (HY000): Incorrect DATE value: '20-JAN-2014'
```

===== Using computed columns and aliases

SELECT P_DESCRIPT, P_QOH, P_PRICE, P_QOH*P_PRICE FROM PRODUCT;

SELECT P_DESCRIPT, P_QOH, P_PRICE, P_QOH*P_PRICE AS TOTVALUE FROM PRODUCT;

```
mysql> SELECT P_DESCRIPT, P_QOH, P_PRICE,
-> P_QOH*P_PRICE FROM PRODUCT;
+-----+-----+-----+-----+
| P_DESCRIPT          | P_QOH | P_PRICE | P_QOH*P_PRICE |
+-----+-----+-----+-----+
| 7.25-in. pwr. saw blade | 32    | 17.99   | 575.68        |
| 9.00-in. pwr. saw blade | 18    | 17.49   | 314.82        |
| Hrd. cloth, 1/4-in., x50 | 15    | 39.95   | 599.25        |
| Hrd. cloth, 1/2-in., 3x50 | 23    | 43.99   | 1011.77       |
| B&D jigsaw, 12-in. blade | 8     | 109.92  | 879.36        |
| B&D jigsaw, 8-in. blade | 6     | 99.87   | 599.22        |
| Claw hammer          | 23    | 9.95    | 228.85        |
| Sledge hammer, 12 lb. | 8     | 14.40   | 115.20        |
| Rat-tail file, 1/8-in. fine | 43    | 4.99    | 214.57        |
| Hicut chain saw, 16 in. | 11    | 256.99  | 2826.89       |
+-----+-----+-----+-----+
10 rows in set (0.00 sec)

mysql> SELECT P_DESCRIPT, P_QOH, P_PRICE, P_QOH*P_PRICE AS TOTVALUE
-> FROM PRODUCT;
+-----+-----+-----+-----+
| P_DESCRIPT          | P_QOH | P_PRICE | TOTVALUE |
+-----+-----+-----+-----+
| 7.25-in. pwr. saw blade | 32    | 17.99   | 575.68    |
| 9.00-in. pwr. saw blade | 18    | 17.49   | 314.82    |
| Hrd. cloth, 1/4-in., x50 | 15    | 39.95   | 599.25    |
| Hrd. cloth, 1/2-in., 3x50 | 23    | 43.99   | 1011.77   |
| B&D jigsaw, 12-in. blade | 8     | 109.92  | 879.36    |
| B&D jigsaw, 8-in. blade | 6     | 99.87   | 599.22    |
| Claw hammer          | 23    | 9.95    | 228.85    |
| Sledge hammer, 12 lb. | 8     | 14.40   | 115.20    |
| Rat-tail file, 1/8-in. fine | 43    | 4.99    | 214.57    |
| Hicut chain saw, 16 in. | 11    | 256.99  | 2826.89   |
+-----+-----+-----+-----+
10 rows in set (0.00 sec)
```

===== Logical operators AND, OR, NOT

```
SELECT P_DESCRIPT, P_INDATE, P_PRICE, V_CODE FROM PRODUCT WHERE V_CODE = 21344 OR V_CODE = 24288;
```

```
SELECT P_DESCRIPT, P_INDATE, P_PRICE, V_CODE FROM PRODUCT WHERE P_PRICE < 50 AND P_INDATE > '15-JAN-2014';
```

```
SELECT P_DESCRIPT, P_INDATE, P_PRICE, V_CODE FROM PRODUCT WHERE (P_PRICE < 50 AND P_INDATE > '15-JAN-2014') OR V_CODE = 24288;
```

```
SELECT * FROM PRODUCT WHERE NOT (V_CODE = 21344);
```

```
mysql> SELECT P_DESCRIPT, P_INDATE, P_PRICE, V_CODE FROM PRODUCT WHERE V_CODE = 21344 OR V_CODE = 24288;
+-----+-----+-----+-----+
| P_DESCRIPT          | P_INDATE   | P_PRICE | V_CODE |
+-----+-----+-----+-----+
| 7.25-in. pwr. saw blade | 2014-01-18 | 17.99   | 21344  |
| 9.00-in. pwr. saw blade | 2013-11-13 | 17.49   | 21344  |
| Rat-tail file, 1/8-in. fine | 2013-12-15 | 4.99    | 21344  |
| B&D jigsaw, 12-in. blade | 2013-12-30 | 109.92  | 24288  |
| B&D jigsaw, 8-in. blade  | 2013-12-24 | 99.87   | 24288  |
| Hicut chain saw, 16 in.  | 2014-02-07 | 256.99  | 24288  |
+-----+-----+-----+-----+
6 rows in set (0.00 sec)

mysql> SELECT P_DESCRIPT, P_INDATE, P_PRICE, V_CODE FROM PRODUCT WHERE P_PRICE < 50 AND P_INDATE > '15-JAN-2014';
ERROR 1525 (HY000): Incorrect DATE value: '15-JAN-2014'
mysql> SELECT P_DESCRIPT, P_INDATE, P_PRICE, V_CODE FROM PRODUCT WHERE (P_PRICE < 50 AND P_INDATE > '15-JAN-2014') OR V_CODE = 24288;
ERROR 1525 (HY000): Incorrect DATE value: '15-JAN-2014'
mysql> SELECT * FROM PRODUCT WHERE NOT (V_CODE = 21344);
+-----+-----+-----+-----+-----+-----+-----+-----+
| P_CODE | P_DESCRIPT          | P_INDATE   | P_QOH | P_MIN | P_PRICE | P_DISCOUNT | V_CODE |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 1546-QQ2 | Hrd. cloth, 1/4-in., x50 | 2014-01-15 | 15    | 8     | 39.95   | 0.00        | 23119  |
| 1558-QW1 | Hrd. cloth, 1/2-in., 3x50 | 2014-01-15 | 23    | 5     | 43.99   | 0.00        | 23119  |
| 2232/QTY | B&D jigsaw, 12-in. blade | 2013-12-30 | 8     | 5     | 109.92  | 0.05        | 24288  |
| 2232/QWE | B&D jigsaw, 8-in. blade  | 2013-12-24 | 6     | 5     | 99.87   | 0.05        | 24288  |
| 89-WRE-Q | Hicut chain saw, 16 in.  | 2014-02-07 | 11    | 5     | 256.99  | 0.05        | 24288  |
| 23109-HB | Claw hammer             | 2014-01-20 | 23    | 10    | 9.95    | 0.10        | 25443  |
| 23114-AA | Sledge hammer, 12 lb.   | 2014-01-20 | 8     | 5     | 14.40   | 0.05        | 25443  |
+-----+-----+-----+-----+-----+-----+-----+-----+
7 rows in set (0.00 sec)
```

===== Special operators: BETWEEN, IS NULL, LIKE, IN, EXISTS

```
SELECT * FROM PRODUCT
```

```
WHERE P_PRICE BETWEEN 50.00 AND 100.00;
```

```
mysql> SELECT * FROM PRODUCT
-> WHERE P_PRICE BETWEEN 50.00 AND 100.00;
+-----+-----+-----+-----+-----+-----+-----+-----+
| P_CODE | P_DESCRIPT          | P_INDATE   | P_QOH | P_MIN | P_PRICE | P_DISCOUNT | V_CODE |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 2232/QWE | B&D jigsaw, 8-in. blade | 2013-12-24 | 6     | 5     | 99.87   | 0.05        | 24288  |
+-----+-----+-----+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

-- If DBMS does not support

```
BETWEEN SELECT *
```

```
FROM PRODUCT
```

```
WHERE P_PRICE > 50.00 AND P_PRICE < 100.00;
```

```
mysql> BETWEEN SELECT *
-> FROM PRODUCT
-> WHERE P_PRICE > 50.00 AND P_PRICE < 100.00;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version
for the right syntax to use near 'BETWEEN SELECT *'
```

```
SELECT P_CODE, P_DESCRIPT,
P_INDATE FROM PRODUCT
WHERE P_INDATE IS NULL;
```

```
mysql> SELECT P_CODE, P_DESCRIPT,
-> P_INDATE FROM PRODUCT
-> WHERE P_INDATE IS NULL;
Empty set (0.00 sec)
```

-- Note: MS Access is case insensitive, ORACLE is case sensitive
-- Note: MS Access uses * and %, ORACLE uses % and _

```
SELECT V_NAME, V_CONTACT, V_AREACODE, V_PHONE FROM VENDOR
WHERE V_CONTACT LIKE 'Smith%';
```

```
mysql> SELECT V_NAME, V_CONTACT, V_AREACODE, V_PHONE FROM VENDOR
-> WHERE V_CONTACT LIKE 'Smith%';
+-----+-----+-----+-----+
| V_NAME      | V_CONTACT | V_AREACODE | V_PHONE |
+-----+-----+-----+-----+
| Bryson, Inc. | Smithson  | 615        | 223-3234 |
| Dome Supply  | Smith     | 901        | 678-1419 |
| ORDVA, Inc.  | Smithson  | 615        | 898-1234 |
| B&K, Inc.    | Smith     | 904        | 227-0093 |
+-----+-----+-----+-----+
4 rows in set (0.01 sec)
```

===== or use this version if case sensitive

```
SELECT V_NAME, V_CONTACT, V_AREACODE, V_PHONE
FROM VENDOR
WHERE UPPER(V_CONTACT) LIKE 'SMITH%';
```

```
mysql> SELECT *
-> FROM PRODUCT
-> WHERE V_CODE IN (21344, 24288);
+-----+-----+-----+-----+-----+-----+-----+-----+
| P_CODE | P_DESCRIPT          | P_INDATE  | P_QOH | P_MIN | P_PRICE | P_DISCOUNT | V_CODE |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 13-Q2/P2 | 7.25-in. pwr. saw blade | 2014-01-18 | 32    | 10    | 17.99   | 0.05        | 21344 |
| 14-Q1/L3 | 9.00-in. pwr. saw blade | 2013-11-13 | 18    | 12    | 17.49   | 0.00        | 21344 |
| 54778-2T | Rat-tail file, 1/8-in. fine | 2013-12-15 | 43    | 20    | 4.99    | 0.00        | 21344 |
| 2232/QTY | B&D jigsaw, 12-in. blade | 2013-12-30 | 8     | 5     | 109.92  | 0.05        | 24288 |
| 2232/QWE | B&D jigsaw, 8-in. blade  | 2013-12-24 | 6     | 5     | 99.87   | 0.05        | 24288 |
| 89-WRE-Q | Hicut chain saw, 16 in.  | 2014-02-07 | 11    | 5     | 256.99  | 0.05        | 24288 |
+-----+-----+-----+-----+-----+-----+-----+-----+
16 rows in set (0.00 sec)
```

```
SELECT V_NAME, V_CONTACT, V_AREACODE, V_PHONE
FROM VENDOR
WHERE V_CONTACT NOT LIKE 'Smith%';
```

```
mysql> SELECT V_NAME, V_CONTACT, V_AREACODE, V_PHONE
-> FROM VENDOR
-> WHERE V_CONTACT NOT LIKE 'Smith%';
```

V_NAME	V_CONTACT	V_AREACODE	V_PHONE
D&E Supply	Singh	615	228-3245
Gomez Bros.	Singh	615	889-2546
Randsets Ltd.	Anderson	901	678-3998

```
3 rows in set (0.00 sec)
```

```
SELECT *
FROM VENDOR
WHERE V_CONTACT LIKE 'Johns_n';
```

```
mysql> SELECT *
-> FROM VENDOR
-> WHERE V_CONTACT LIKE 'Johns_n';
Empty set (0.00 sec)
```

```
SELECT *
FROM PRODUCT
WHERE V_CODE IN (21344, 24288);
```

```
mysql> SELECT *
-> FROM PRODUCT
-> WHERE V_CODE IN (21344, 24288);
```

P_CODE	P_DESCRIPT	P_INDATE	P_QOH	P_MIN	P_PRICE	P_DISCOUNT	V_CODE
13-Q2/P2	7.25-in. pwr. saw blade	2014-01-18	32	10	17.99	0.05	21344
14-Q1/L3	9.00-in. pwr. saw blade	2013-11-13	18	12	17.49	0.00	21344
54778-2T	Rat-tail file, 1/8-in. fine	2013-12-15	43	20	4.99	0.00	21344
2232/QTY	B&D jigsaw, 12-in. blade	2013-12-30	8	5	109.92	0.05	24288
2232/QWE	B&D jigsaw, 8-in. blade	2013-12-24	6	5	99.87	0.05	24288
89-WRE-Q	Hicut chain saw, 16 in.	2014-02-07	11	5	256.99	0.05	24288

```
6 rows in set (0.00 sec)
```

===== SELECT WITH ORDER BY

```
SELECT P_CODE, P_DESCRIPT, P_INDATE, P_PRICE
FROM PRODUCT
ORDER BY P_PRICE;
```



```
mysql> SELECT P_CODE, P_DESCRIPT, P_INDATE, P_PRICE
-> FROM PRODUCT
-> ORDER BY P_PRICE;
```

P_CODE	P_DESCRIPT	P_INDATE	P_PRICE
54778-2T	Rat-tail file, 1/8-in. fine	2013-12-15	4.99
23109-HB	Claw hammer	2014-01-20	9.95
23114-AA	Sledge hammer, 12 lb.	2014-01-20	14.40
14-Q1/L3	9.00-in. pwr. saw blade	2013-11-13	17.49
13-Q2/P2	7.25-in. pwr. saw blade	2014-01-18	17.99
1546-QQ2	Hrd. cloth, 1/4-in., x50	2014-01-15	39.95
1558-QW1	Hrd. cloth, 1/2-in., 3x50	2014-01-15	43.99
2232/QWE	B&D jigsaw, 8-in. blade	2013-12-24	99.87
2232/QTY	B&D jigsaw, 12-in. blade	2013-12-30	109.92
89-WRE-Q	Hicut chain saw, 16 in.	2014-02-07	256.99

10 rows in set (0.00 sec)

```
SELECT P_CODE, P_DESCRIPT, P_INDATE, P_PRICE
FROM PRODUCT
ORDER BY P_PRICE DESC;
```

```
mysql> SELECT P_CODE, P_DESCRIPT, P_INDATE, P_PRICE
-> FROM PRODUCT
-> ORDER BY P_PRICE DESC;
```

P_CODE	P_DESCRIPT	P_INDATE	P_PRICE
89-WRE-Q	Hicut chain saw, 16 in.	2014-02-07	256.99
2232/QTY	B&D jigsaw, 12-in. blade	2013-12-30	109.92
2232/QWE	B&D jigsaw, 8-in. blade	2013-12-24	99.87
1558-QW1	Hrd. cloth, 1/2-in., 3x50	2014-01-15	43.99
1546-QQ2	Hrd. cloth, 1/4-in., x50	2014-01-15	39.95
13-Q2/P2	7.25-in. pwr. saw blade	2014-01-18	17.99
14-Q1/L3	9.00-in. pwr. saw blade	2013-11-13	17.49
23114-AA	Sledge hammer, 12 lb.	2014-01-20	14.40
23109-HB	Claw hammer	2014-01-20	9.95
54778-2T	Rat-tail file, 1/8-in. fine	2013-12-15	4.99

10 rows in set (0.00 sec)

```
SELECT P_DESCRIPT, V_CODE, P_INDATE, P_PRICE
FROM PRODUCT
WHERE P_INDATE < '21-JAN-2014' AND P_PRICE <= 50.00
ORDER BY V_CODE, P_PRICE DESC;
```

```
mysql> SELECT P_DESCRIPT, V_CODE, P_INDATE, P_PRICE
-> FROM PRODUCT
-> WHERE P_INDATE < '21-JAN-2014' AND P_PRICE <= 50.00
-> ORDER BY V_CODE, P_PRICE DESC;
ERROR 1525 (HY000): Incorrect DATE value: '21-JAN-2014'
```


===== LISTING UNIQUE VALUES (ROWS!)

```
SELECT DISTINCT V_CODE
FROM PRODUCT
SELECT DISTINCT V_STATE
FROM VENDOR;
```

```
mysql> SELECT DISTINCT V_CODE
-> FROM PRODUCT
-> SELECT DISTINCT V_STATE
-> FROM VENDOR;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version
for the right syntax to use near 'SELECT DISTINCT V_STATE
FROM VENDOR' at line 3
```

== UNIQUE ROWS (VALUES COMBINATIONS)

```
SELECT DISTINCT V_STATE, V_NAME
FROM VENDOR
SELECT DISTINCT V_STATE, V_AREACODE FROM VENDOR;
```

```
mysql> SELECT DISTINCT V_STATE, V_NAME
-> FROM VENDOR
-> SELECT DISTINCT V_STATE, V_AREACODE FROM VENDOR;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version
for the right syntax to use near 'SELECT DISTINCT V_STATE, V_AREACODE FROM VENDOR' at line 3
```

===== AGGREGATE FUNCTIONS: COUNT, MIN, MAX, SUM, AVG, COUNT

- Q: How many vendors provide products? COUNT(column): counts the not null values in column

```
SELECT COUNT(DISTINCT V_CODE) FROM PRODUCT;
```

```
mysql> SELECT COUNT(DISTINCT V_CODE) FROM PRODUCT;
+-----+
| COUNT(DISTINCT V_CODE) |
+-----+
| 4 |
+-----+
1 row in set (0.00 sec)
```

```
SELECT COUNT(*) FROM (SELECT DISTINCT V_CODE FROM PRODUCT WHERE V_CODE
IS NOT NULL) as Count_DistV;
```

```
mysql> SELECT COUNT(*) FROM (SELECT DISTINCT V_CODE FROM PRODUCT WHERE V_CODE IS NOT NULL) as Count_DistV;
+-----+
| COUNT(*) |
+-----+
| 4 |
+-----+
1 row in set (0.00 sec)
```

Q: How many vendors (unique vendors) have products with price < 10?

```
SELECT COUNT (DISTINCT V_CODE) FROM PRODUCT WHERE P_PRICE <= 10.00;
```

```
mysql> SELECT COUNT (DISTINCT V_CODE) FROM PRODUCT WHERE P_PRICE <= 10.00;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version
for the right syntax to use near 'DISTINCT V_CODE) FROM PRODUCT WHERE P_PRICE <= 10.00' at line 1
```

Q: How many products with price < 10? (Finish the SQL code and run it)

SELECT MAX(P_PRICE) FROM PRODUCT;

```
mysql> SELECT MAX(P_PRICE) FROM PRODUCT;
+-----+
| MAX(P_PRICE) |
+-----+
|      256.99 |
+-----+
1 row in set (0.00 sec)
```

SELECT MIN(P_PRICE) FROM PRODUCT;

```
mysql> SELECT MIN(P_PRICE) FROM PRODUCT;
+-----+
| MIN(P_PRICE) |
+-----+
|         4.99 |
+-----+
1 row in set (0.00 sec)
```

Q: What product(s) have a price equal to the maximum product price?

SELECT P_CODE, P_DESCRIPT, P_PRICE FROM PRODUCT WHERE P_PRICE = (SELECT MAX(P_PRICE) FROM PRODUCT);

```
mysql> SELECT P_CODE, P_DESCRIPT, P_PRICE FROM PRODUCT WHERE P_PRICE = (SELECT MAX(P_PRICE) FROM PRODUCT);
+-----+-----+-----+
| P_CODE | P_DESCRIPT          | P_PRICE |
+-----+-----+-----+
| 89-WRE-Q | Hicut chain saw, 16 in. | 256.99 |
+-----+-----+-----+
1 row in set (0.00 sec)
```

- Q: What product(s) have the highest inventory value? (Finish the SQL code and run it)

SUM e.g. Q: How much is the total customer balance?

SELECT SUM(CUS_BALANCE) AS TOTBALANCE FROM CUSTOMER;

```
mysql> SELECT SUM(CUS_BALANCE) AS TOTBALANCE FROM CUSTOMER;
+-----+
| TOTBALANCE |
+-----+
|    2089.28 |
+-----+
1 row in set (0.01 sec)
```

== AVG

- Q: What is the average product price?

SELECT AVG(P_PRICE) FROM PRODUCT;

```
mysql> SELECT AVG(P_PRICE) FROM PRODUCT;
+-----+
| AVG(P_PRICE) |
+-----+
|    61.554000 |
+-----+
1 row in set (0.00 sec)
```

-Q: What products have a price that exceeds the average product price? (Finish the SQL code and run it)

== GROUP BY

e.g.- Q: What is the minimum price for each sale code?

SELECT V_CODE, MIN(P_PRICE) FROM PRODUCT GROUP BY V_CODE;

```
mysql> SELECT V_CODE, MIN(P_PRICE) FROM PRODUCT GROUP BY V_CODE;
```

V_CODE	MIN(P_PRICE)
21344	4.99
23119	39.95
24288	99.87
25443	9.95

```
4 rows in set (0.00 sec)
```

- Q: What is the average price for each sale code? (finish the SQL code and run it).

SELECT V_CODE, AVG(P_PRICE) FROM PRODUCT GROUP BY V_CODE;

```
mysql> SELECT V_CODE, AVG(P_PRICE) FROM PRODUCT GROUP BY V_CODE;
```

V_CODE	AVG(P_PRICE)
21344	13.490000
23119	41.970000
24288	155.593333
25443	12.175000

```
4 rows in set (0.00 sec)
```