Chapter 12 – Creating a database and tables

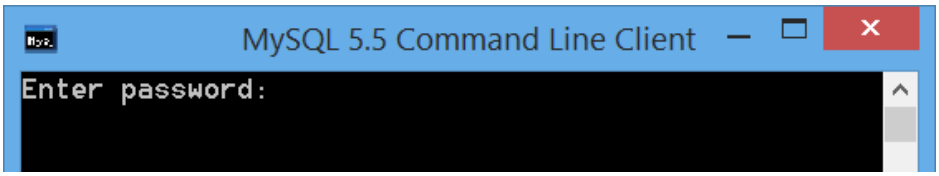
Shopping database

Step 1 Open the MySQL Command-Line client

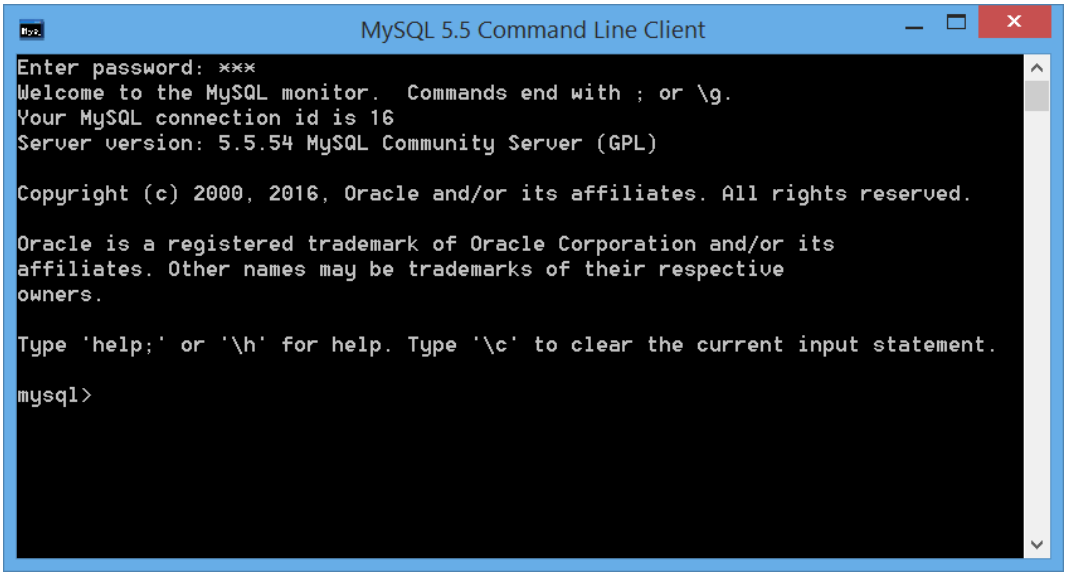
- Open the MySQL Command-Line client by clicking the program icon

Step 2 Enter the password for root

- You will be prompted to enter the password for the root user which you created during the installation of MySQL



- Enter the password and press enter
- If successful the MySql welcome screen will appear ready to receive commands on the mysql> prompt



Step 3 Create a database

- We will issue commands on the prompt line. A command is ended with a semi colon (;)

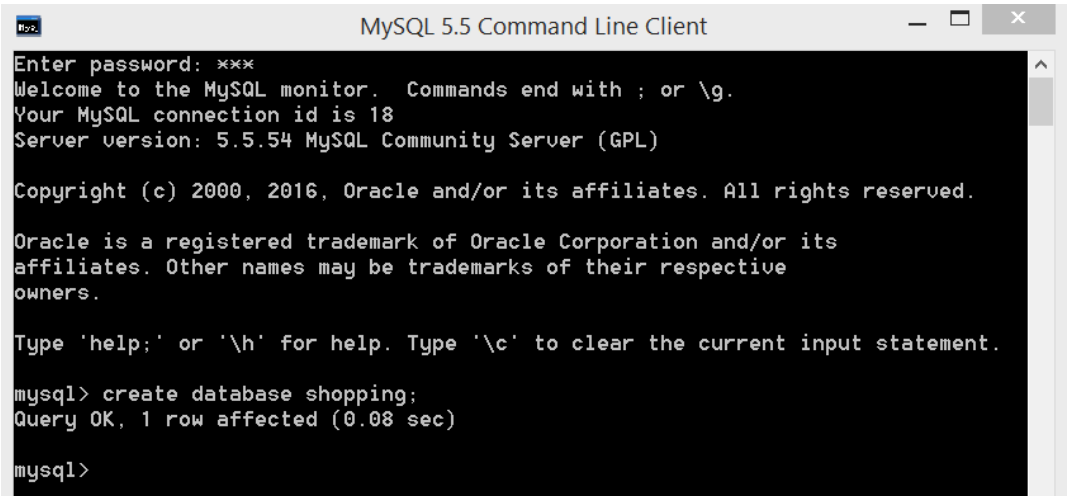
- To create a new database we use the following syntax

```
Create database database_name;
```

- We want to create a database called shopping, so enter the following next to the mysql> prompt and press enter

```
Create database shopping;
```

- If the creation is successful you should get the following screen:



- MySQL reports that it has completed the query and the time it took to complete it.

Step 4 Create a table with Python script

- We write a python script to create a table called `products` in the `shopping` database that we have created with the MySQL command-line prompt.
- Open the Python IDLE.
- I will deviate from the textbook code as I am using the mysql python module and not the MySQLdb module used in the textbook. If you use the MySQLdb module follow the code in the textbook.
- First we import the sys module as always so the first line of the script is:

```
import sys
```

- Next we import the mysql connector module (if your using the same module as I am)

```
import mysql.connector
```

(As always note the case and indentation in Python)

- Now we create a connection to the database. As parameters we have to specify
  - where the database is (host),

- which user is accessing the database (user),
- the password to use (password) and
- the database to connect to (db)

```
conn=mysql.connector.connect(host="localhost", user="root",
passwd="mce", db="shopping")
```

(As always note the case and indentation in Python)

- We create a cursor that points to the connection we just created

```
cursor=conn.cursor()
```

(As always note the case and indentation in Python)

- We are enclosing our code in a try..except code block, to trap any errors that might occur. Python will try to execute the code between the try: and the except keywords, if any error occurs during the execution of the code, Python will execute the code after the except that are indented.
- We pass a SQL statement to create the table as a parameter to the cursor object we created to execute in MySQL. Enter the following code:

```
try:
    cursor.execute ("""
    create table products (prod_id smallint NOT NULL,
    prod_name char(50),
    quantity smallint,
    price float)
    """)
except mysql.connector.Error:
    print ("Error in creating products table")
    sys.exit(1)
```

(As always note the case and indentation in Python)

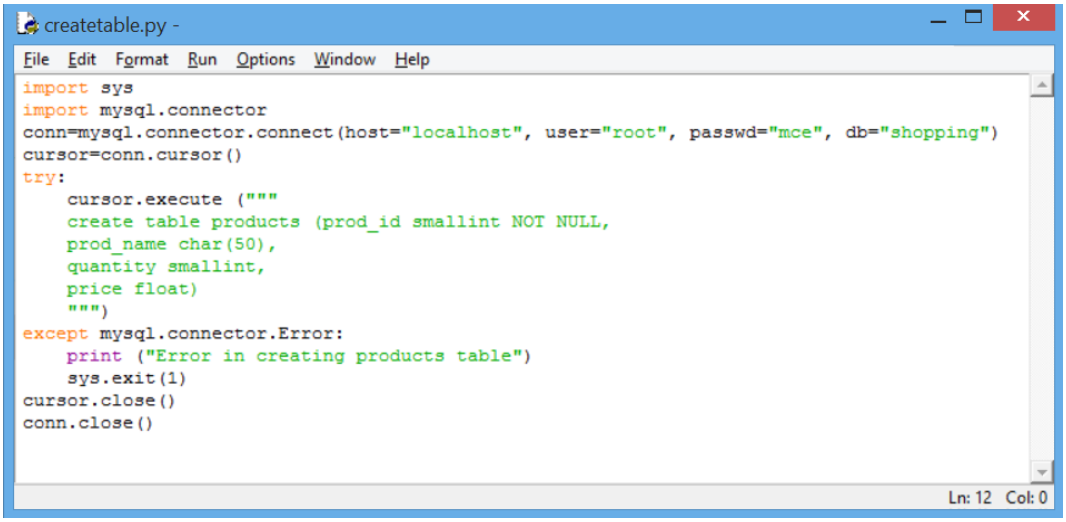
- Note how the SQL statement was coded, for readability each field is written on a separate line. Python would have accepted it all in a single line as well

- We need to close the connection when we are done. Enter the following code to close the cursor and the connection to the database:

```
cursor.close()
conn.close()
```

(As always note the case and indentation in Python)

- You final code should look like the screen print below (Note the indentation)



- Save your script as `createtable.py`
- Press F5 to run your script
- Python will execute the script and return to the command prompt

Step 5 Confirm table creation in MySQL

- Open the MySQL Command-line client
- Enter the password for the root user
- Open the shopping database by entering the following command and pressing enter

```
use shopping;
```

- We will issue commands on the prompt line. A command is ended with a semi colon (;)

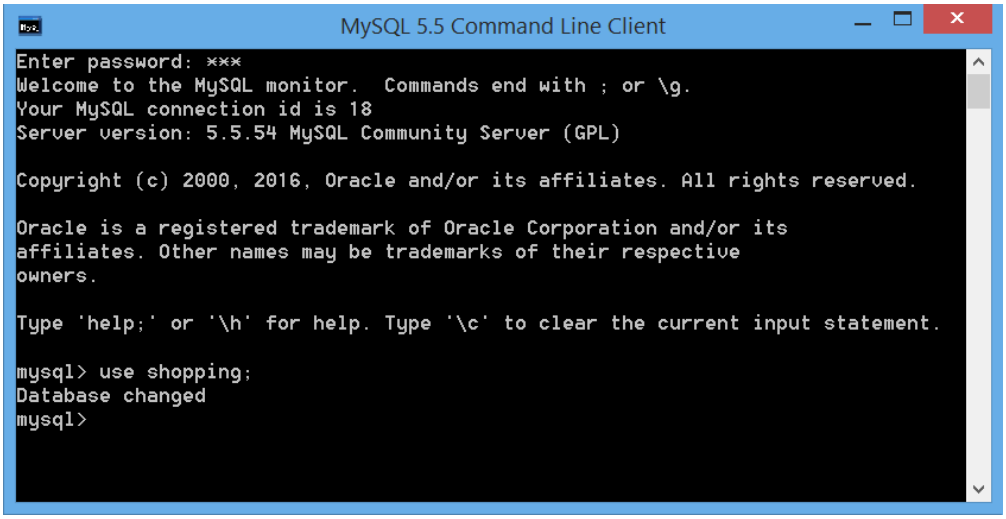
- To create a new database we use the following syntax

```
create database database_name;
```

- We want to create a database called shopping, so enter the following next to the mysql> prompt and press enter

```
create database shopping;
```

- You should get the following message

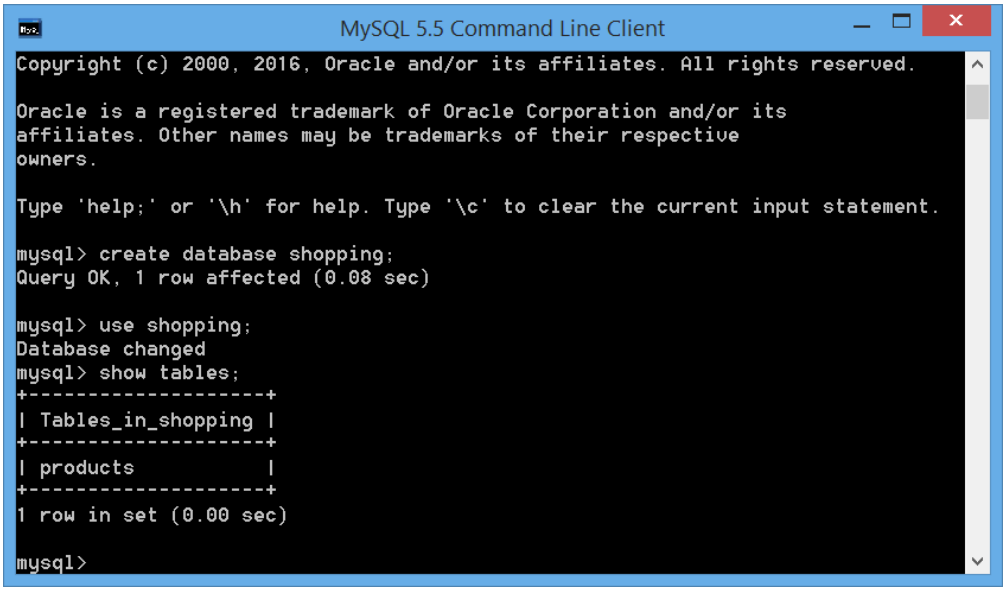


- Database changed indicates that we are now using the shopping database

- We want to see a list of tables in the database. Enter the following command and press enter:

```
show tables;
```

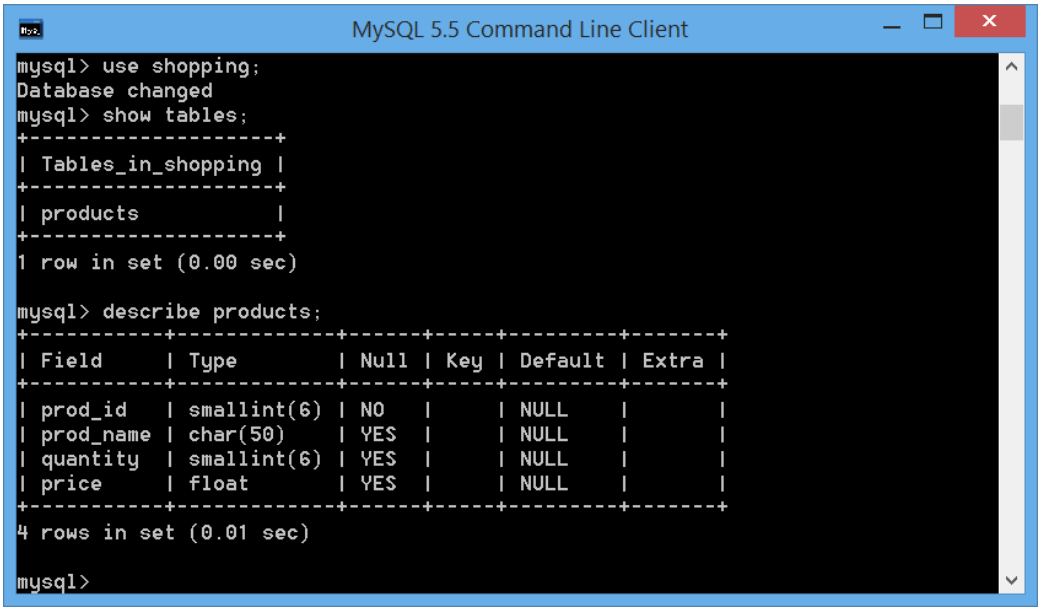
- You should get the following message, listing the tables in the database



- Check that the table layout is correct by entering the following command:

```
describe products;
```

- The table structure and layout will be displayed.


MySQL 5.5 Command Line Client
mysql> use shopping;
Database changed
mysql> show tables;
+------------------+
| Tables_in_shopping |
+------------------+
| products |
+------------------+
1 row in set (0.00 sec)
mysql> describe products;
+-----------+------------+------+-----+---------+-------+
| Field | Type | Null | Key | Default | Extra |
+-----------+------------+------+-----+---------+-------+
prod_id	smallint(6)	NO		NULL	
prod_name	char(50)	YES		NULL	
quantity	smallint(6)	YES		NULL	
price	float	YES		NULL	
+-----------+------------+------+-----+---------+-------+
4 rows in set (0.01 sec)
mysql>