# Query the database

Welcome to this Lab activity

In this lab activity you will be exploring how to view and retrieve data from your 'myBookshop' database. For the purpose of this lab you will be working with the Terminal panel inside Visual Studio Code.

Start the Lab environment application

It is simple to launch a lab exercise. You only need to click on the button "Start" below the activity title to enter a lab environment.

Let's explore this lab activity. Go ahead and click on the "Start" button!
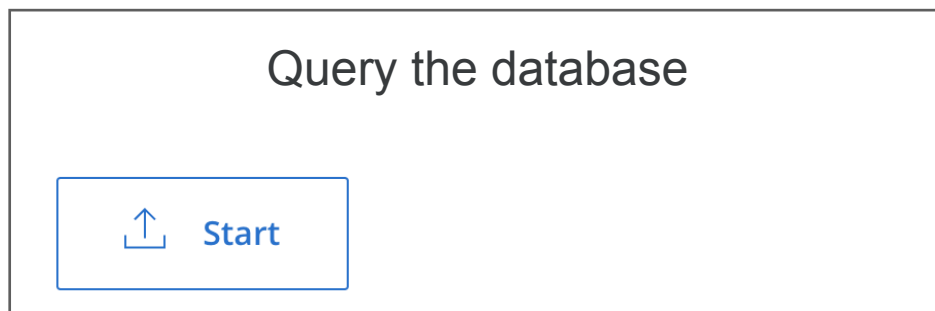
Task 1: Accessing the MySQL interactive shell

The folder structure has already been partially constructed for you and organised into different topics. For the purpose of this lab, you are not required to make any changes to the folder structure. You can see a folder called 'topic5' inside this lab environment; it is only there as a reference for you and you are not required to add any content to it. Let's get started!

In order to access your mysql interactive shell use the Visual Studio Code Terminal and run the following command:

- **mysql**: type this command and press *Enter*. This command will log you into mysql shell as the root(default) user.

If you have successfully followed all the above steps you should now be logged in inside mysql and see the following result on the Terminal:

Task 2: Query the data in mysql shell

In your previous lab activity you added data to the 'books' table in your 'myBookshop' database. Let's now see how you can access these data.

First of all let's check that your 'myBookshop' database is still present in the virtual server list.

Use the Visual Studio Code Terminal and run the following command:

- **SHOW DATABASES;** type this command and press *Enter*. This command will show you all the databases that already exist in your virtual server.

As you can see the "myBookshop" database is still part of the list and ready for you to use. Select the database so that you can query some data from it.

Use the Visual Studio Code Terminal and run the following command:

- **USE myBookshop;** type this command and press *Enter*. This command will switch and select the "myBookshop" database.

If you have successfully selected the database you will get the following confirmation:

```
mysql> USE myBookshop;
Database changed
mysql>
```

Now that you have successfully selected your database, you are able to perform SQL queries on it. In order to read data from a database with SQL, you need to use the SELECT statement.

The basic format of the SELECT statement looks like below:

SELECT filedName1, fieldName2 FROM TableName;

filedName1 and fieldName2 are the field names that you want to retrieve and TableName is the name of the table where you want to retrieve the data from.

You may also use the wildcard (*) to return all the fields in a table:

SELECT * FROM TableName;

Run the above command in the Terminal, you should get the following result:

```
mysql> SELECT * FROM books;
+----+---------------+-------+
| id | name          | price |
+----+---------------+-------+
|  1 | database book | 40.25 |
|  2 | Node.js book  | 25.00 |
|  3 | Express book  | 31.99 |
+----+---------------+-------+
3 rows in set (0.00 sec)
```

Remember to change TableName with the name of your table. Also you will have two additional books in your database if you have completed all the activities so far.

Now try running the following command:

SELECT * FROM TableName LIMIT 2;

Here, the asterisk (*) is a wildcard, which means "all". Including the LIMIT clause restricts how many records (rows) are returned in the result-set.

SELECT can be combined with various clauses to restrict/filter the records returned in the result-set. For example, the WHERE clause can be used to return only records matching a specific criteria.

Try running the following query:

SELECT name, price FROM books WHERE id=2;

Now that you are familiar with the basics of SQL queries, try to write a statement to retrieve all the books that cost more than £20.

Task 4: Exit mysql shell

Exiting the mysql shell is very straight forward. In your Terminal panel type the following command:

- **exit**: type this command and press *Enter*. This command will log you out from your mysql virtual server.

If you have successfully exited the database you will get the following confirmation:

```
mysql> exit
Bye
root@7fbe1633ac7c:/home/coder/project#
```

End of Section

Congratulations for completing this section. As long as you have saved your work, your files will remain when you close this lab activity so do not worry about losing your data. You have successfully logged in inside your mysql shell and managed to write some SQL queries to retrieve your data. In the next lab activity you will practice further with SQL operations.