Guided Lab 342.3.1 - Connecting to MySQL Database Using connect() function

Lab Objective:

In this lab, we will demonstrate how to connect to MySQL databases from Python using MySQL Connector/Python API.

Create a file named **connect.py** and add the following code:

```python
import mysql.connector as mydbconnection
from mysql.connector import Error

def connect():
    """ Connect to MySQL database """
    conn = None
    try:
        conn = mydbconnection.connect(database='classicmodels',
                                      user='root',
                                      password='password')
        if conn.is_connected():
            print('Connected to MySQL database')

    except Error as e:
        print(e)

    finally:
        if conn is not None and conn.is_connected():
            conn.close()


if __name__ == '__main__':
    connect()
```

Let's examine this module in detail:

- First, import the mysql.connector and Error objects from the MySQL Connector/Python package.

- Second, use the connect() function to connect to the MySQL Server. The connect() function accepts four parameters: host, database, user, and password. The connect() function establishes a connection to the python_mysql database and returns a MySQLConnection object.

- Third, check if the connection to the MySQL database has been established successfully by using the is_connected() method. In case an exception occurs such as the MySQL server not being available, the database does not exist, or the username or password is invalid, Python will raise an exception. The try except block handles the exception and displays the error.

- Fourth, close the database connection using the close() method of the MySQLConnection object.

To test the connect.py module, open the command line interface and use the following command:

```
python connect.py
Connected to MySQL database
```

If the username or password is not valid, you will get the following error:

```
1045 (28000): Access denied for user 'root'@'localhost' (using password: YES)
```

In case the MySQL is not available, you will get the following error:

```
2003: Can't connect to MySQL server on 'localhost:3306' (10061 No connection could be made because the target machine actively refused it)
```