# Authentication

The authentication module has several components or functions defined. They are adding account, deleting account, and editing account (password change). All the components are built based on MySQL commands. The database connected is developed in the localhost of the device during development. However, the database is hosted on servers during deployment. Hence, information such as the host, user and password should be changed based on deployment environment.

Within the functions, another self-defined module, database.py is used to facilitate the MySQL commands execution such executing queries and connecting database. The authentication functions define the proper queries and execute them using the database’s functions.

The tests for authentication functions are unit testing. Unit testing is useful to check whether the query is successful as the database functions are designed such that each successful query execution returns a Boolean true.

For authentication, four unit tests were designed to test the different functionalities of the module. Test add account checks whether an account can be added into the Users table in a test database. Test delete account checks whether an account can be deleted from the Users table in the test database. Test change password checks whether the account’s password can be changed. Test login checks whether login is successful or not given the correct credentials as well as the wrong credentials.

To avoid interfering with the actual database, a test database was created. This test database contains the Users table with the exact parameters to ensure the testing ground is as close as the actual deployment.