**Test Process:**

The mobile application developed in the project was tested for basic functions such as real-time data retrieval, error code processing and maintenance time calculation. This testing process was carried out in order to increase the stability, reliability and user experience of the software and to eliminate possible errors.

* Unit testing:

Unit tests were performed to see if each module worked correctly individually. In particular, the interpretation of error codes from microcontrollers, the maintenance time calculation algorithm and the data transmission functions were tested both with the “unittes” library provided by the python library and with different unit testing platforms.

* System Testing:

All components of the system were brought together and tested end-to-end. It was checked whether the data received with the user interface was displayed correctly.,

* Security Testing:

In terms of data security, login, user authentication and database access permissions were checked on Firebase. Whichever account the user logged in with, they can only track their devices from the account they logged in with.

* Acceptance Testing:

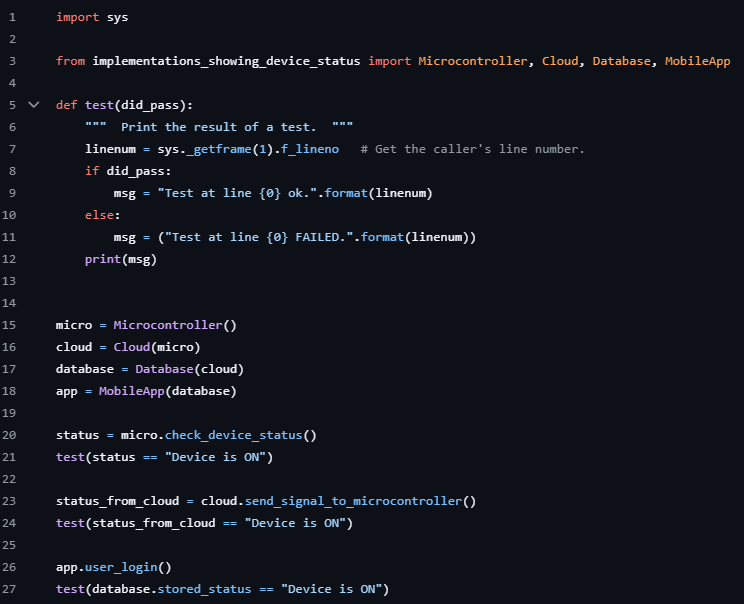
User scenarios were created to test whether the application is functional for the end user. It was analyzed whether all the developed functionalities meet the project requirements. For example, the error codes coming through the user interface and the maintenance date are displayed correctly or not.

* Performance Testing:

The basic functionality of the application was tested under poor network connectivity. Potential delays during real-time data processing were observed. It works smoothly even under poor network connections, with a maximum delay of 2-3 seconds for very large data exchanges.

**Unit testing example SCRIPT:**

Unit test script for “Showing device status code”

****