Quality Assurance Workflow

Subject to Change

This section presents the initial plan on application testing process during development process. Further changes may be applied when the development team creates extra testing scripts.

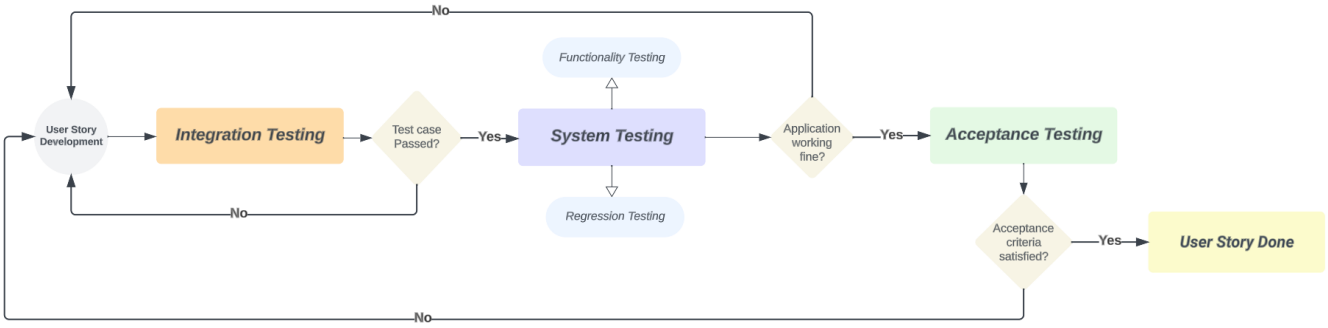

Figure: Quality Assurance Workflow diagram

Test Plan Explanation

Although our team is aware of the importance of unit testing during the testing phase, we are limited by our technical knowledge and experience in writing unit test scripts. Consequently, unit tests are postponed until the development team has acquired sufficient familiarity with writing test scripts. For Sprint 2, the testing process is primarily conducted manually, with the details included in the test plan (please refer to Sprint 2 Test Plan as an example).

Integration Testing

Integration testing is performed whenever a user story is completed and is carried out by the assigned team member who is not the author of the feature. During this process, we use the black box method, in which testers interact with the user interface to assess the functionality of a single user story or feature. This involves actions such as clicking on buttons, scrolling, and swiping. Testers are not required to understand how the code works or consider the backend components at this stage. If multiple features are involved in a user story, testers will examine the integration between these features. For example, to test the deletion of registered sensors, we may first perform a sensor registration and then proceed with the deletion to evaluate both the functionality and the integration between these features.

System Testing

System testing examines every component of an application to make sure that they work as a complete and unified whole. This process happens when every a new user story is being added into the application, but different from integration testing, we are testing the whole application instead of partially. This involves two different types of tests:

- ***Functionality Testing***: Check whether the new features are still working after adding into the application, including checking the expected changes in databases.
- ***Regression Testing***: Check whether previously completed features are still working fine with the newly added user story features.

Acceptance Testing

Although acceptance testing requires end-users' involvement, due to project limitations we are not able to satisfy this need. Hence the acceptance testing are also done within the development team by the assigned reviewers according to acceptance criteria documented in Sprint backlogs (example shown in Sprint 2 Plan(18/08/2023 - 22/09/2023)).