



8.0 System Testing

8.1 Testing Objectives

8.1.1 General Objectives

The objective of this system testing is to be able to check and fix all possible errors and to make sure that the system is functioning properly in accordance to its requirements and specifications.

8.1.2 Specific Objectives

The specific objectives are the following:

- To execute the test cases to ensure correct and proper functionalities
- To check and fix errors within the flow of the system
- To evaluate feedbacks, comments and suggestions by the users

8.2 Testing Stages

8.2.1 Unit Testing

This type of software testing involves validates the individual functions of the system for each module. The functions may be the simplest procedures of the system in order to check them one by one. Most components of this type of testing involve the buttons, navigations and text fields.

The group conducted unit testing in areas such as log-in and register as the initial part of the testing procedure. The group moved on to the three main modules of the system. Functions such as sending via mobile and sending from web to mobile. Other important functionalities such as creating recommendations were done in order to see if other modules have working procedures as well. In this phase of testing, the errors are limited to mostly wrong syntax in coding.

8.2.2 Integration Testing

Integration testing involves the testing of combined modules and these will be tested as a group. The purpose of this testing is to be able to find errors between the integrated functions of the system. The previous level focused on the functionalities itself as an individual. Here, it will focus on the logical interaction of those functions.

The group conducted integration testing by validating the functionalities of a module that will interact with the next module. The group made the integration testing with two modules at a time. An example would be from the data acquisition module to programs and recommendations. The first module needs to work properly for the recommendations module to have the corrected and updated data for processing and creating reports.

8.2.3 System Testing



System testing involves the testing of all the modules as a whole. The purpose of this testing is to validate if the system is able to comply with all of the requirements. Another part of this testing is to focus on non-functional testing like performance, stress, security and recovery.

The group conducted system testing by having a whole simulation of all of the modules. It is to see if the group's system is able to meet the main requirements like creating forms, automating processes, generating and printing reports. The group also conducted performance and stress testing by continuously doing transactions and updating the information in the database. This is to know if the system is able to handle continuous use without it failing or crashing. It is also to know if the system is consistent and efficient in its functionalities. Security tests to know if assigned users are correctly directed to the webpages and restriction of unauthorized users.

8.2.4 User Acceptance Testing

User acceptance testing was used in order to determine if the system is ready for release. Here, the testing is focused on the user interface itself. The testers were the users of the system themselves to evaluate if the usability and functionality of the system is consistent and efficient.

The group conducted user acceptance testing by printing UAT forms and giving them to the employees of the company. The employees are the following: board members, farmers and mill district officer. The farmer will also be part of the UAT since they will be using a mobile application in which they may not be familiar with.

Overall, the user acceptance test for the three users was satisfactory. They all agreed that the proposed system is very helpful for making their work faster. The UI for them is also attractive. The functionalities are also helpful for them. Navigation was also easy for them. The colors were also easy for them to understand. For the farmer, however, he had a difficulty in understanding some information in his mobile application primarily because of the English Language. The farmer also had to adjust more to the mobile application as compared to the mill district officer.

For the ratings, the range was from 1-5, with 5 being the highest. For the MDO UAT, the average was 4.8 which was high. For the board member, the average score was 4.7. For the farmer, the average was 4.2 which was the lowest of the 3 users.