Navy Food Security App

Test Plan

Purpose: This documentation is for the testing of the Navy Food Security App, to outline the Performance, Functional and Non-Functional testing of features.

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# Overview

## Purpose

The purpose of this document is to define:

* The context of the testing,
* The test methodology,
* The test environment
* The types of tests
* The standards that will apply
* The test deliverables
* The test scope, including functional and non-functional tests.

## Context

The application is being developed under the premise of improving the current process the Navy is currently utilising paper-based process towards to a more state of the art procedure removing the use of paper. This application will be tested to confirm the usability of each function that will be required by the client, testing of the application will provide insight into the validity of each function developed and determine the which direction the development will occur based on the result.

The relevant stakeholders of this application will be the Danny the client, his role will be to provide his views and provide concepts into what he wishes for the application to produce. His role will also be the end user where he will be able to test how the prototype to determine the whether the product does function appropriately and to the scope provided to developers while testing the actual project to determine it will function as required by the needs of the scope. The developers are also stakeholders to this project as they will need to provide the testing procedures to the testers with functions to test and to provide debugging to ensure the testing passes the requirement.

## Methodology

The testing will follow the instructions on the testing schedule documented in this plan where the test is organised under headings of:

* the test number,
* what is being tested,
* what will be used to test it,
* how it will be tested,
* expected outcome,
* actual outcome

This project will follow agile methodology with sprints components designed for weekly cycles.

In each sprint testing will be done for each discussed task and tested in the same or next cycle this will help minimise backlog of task. This project will be dependent on visual studio being accessible and up to the same version to ensure usability from each developer while working on the mobile version of the app and for the web app side of the project because we are using Laravel with Jetstream this will be the dependency as a requirement for the use of the web app development, to test the database the application will be required to be connected to a MySQL server to function correctly.

The decision to implement Agile methodology is one of efficiency. By taking advantage of the short cycle and add regular meetings the process of developing plans has been reduced to the minimum to allow for higher frequency of communications and client interaction to ensure the project stays in line with the scope.

## Test environment

The complete testing environment will be designed on three separate components:

### Hardware:

Standard operating system with Windows10 to run standard programs with access to network to connect to cloud-based servers to access. Specifications of operating systems is based on general use hardware that operates up to standards of the naval department. Special equipment will include a handheld QR scanner for the web application for the station using the program.

### Software:

#### Mobile Application:

Language: C#

IDE: Visual Studio with Xamarin package installed

Operating System: Android OS – Mobile

Visual Studio will be used to run the code sample and setup debug for the mobile app and the use of Mobile with Android OS will be used to test in a theoretical real-world application. Test cases will be executed in Visual studios with records documented in the Test Schedule, if needed screen captures will be recorded

#### Web Application:

Language: PHP 7.4

IDE: PhpStorm

Framework: Laravel Jetstream

Browser: MS Edge, Google Chrome, Mozilla Firefox

Dependency: MySQL

The development will be done with the IDE PhpStorm to run the test plans and browser will be used to run the theoretical real world application, Laravel is the framework that the web application being utilised with the Jetstream component. Test cases will be executed in PhpStorm with records documented in the Test Schedule, if needed screen captures will be recorded.

#### Database:

DMS: MySQL

Environment: Laragon

Cloud Platform: Heroku

API Testing: Postman

## Types of Tests

This Test plan will be implemented with a combined use of manual and automated testing the use of manual testing will be primarily used to test the UI as an end user to confirm what is shown to the user. The type of testing being implemented in this plan will be unit testing designed for the functional features to see it works on a development settings system and on a separate system where development has not occurred this is to simulate a standalone system owned by the client.

By using these two systems we currently have a two-stage testing environment:

Phase 01:

The test of the will be the set of tests that will be completed on the developers’ system to test the code functions correctly in accordance development intentions and test plan.

Phase 02:

The testing of function on a separate machine where the development packages have been removed to simulate a machine being used by the client’s end users.

Phase 01 testing will be initiated by developer in charge, once testing is completed Phase 02 will be completed by the other developer in the project to determine the functionality of the code as an end user. If possible we would have a secondary station to complete all Phase 02 testing to accurately simulate end user situation but for the preliminary testing this will be sufficient for our purpose.

## Test standards

<https://www.cyber.gov.au/acsc/view-all-content/guidance/application-development>

The test will be done to the same standards by all developers to achieve this standardisation the distribution of documentation will be accessible to provide the relevant specifications for all testing and specific application and software versions to ensure during testing the variable factors are accurately determined. To ensure the standards are met, reviews will be conducted during meetings to confirm the status of each developer and whether any discrepancy has been raised that maybe of concern. In each sprint cycle we will have a discussion on whether there is anything that will need to be raised and issue a priority cycle to rectify major defects. Other issues will be placed in the next cycle to be added to the task to be completed

## Test deliverables

[Test Deliverables In Software Testing | Software Testing Material](https://www.softwaretestingmaterial.com/test-deliverables/#:~:text=Test%20Deliverables%20are%20the%20test%20artifacts%20which%20are,there%20will%20be%20some%20deliverables%20in%20every%20phase.)

Test results will be recorded in the test plan after the completion of the test. The information being recorded will be the screenshot of results and/or the confirmation of expected results matching actual results. These results will be the dictate the continuing development.

The deliverables being provided to the client will be as follows:

* Test Plan:
  + Test scenario
  + Test Data – Login credentials and database preset info
  + Test Cases
* Bug reports / Debug report
* Test summary report
* Test incident report
* Release notes
* Installation / Configuration plan
* User guide
* Weekly status report

The supervisor will be the primary signatory for all tests completion provided both members have confirmed the test results and debug actions.

How will test results be captured or recorded? What are the test deliverables?

Who will signing off at the end of the test cycle and what will be the handover process?

# Testing Plan

## Scope of Testing

### Functional tests

[Test Schedule](TestSchedule.xlsx)

### Performance tests

Performance evaluation that will be considered will be recorded in the Mobile and Web application with Visual Studio inbuilt performance management and browser developer performance tools respectively. The testing will currently be minor due to the project will be limited to single use application, once project has been approved for next stage development and discussions commenced on budget, load testing may begin to determine the possibility of conducting a reasonable load testing in a more accurate manner for the client.

### Other non-functional tests

The testing of compatibility of the program from different browsers and hardware be tested to determine if there will be any issues. Testing of the security will be done with to determine whether access is limited to only authorised personnel.

### Out of scope

Features that won’t be included in testing will be the on-site testing that would need to be executed to ensure the viability of the program. The features that this would include is the network access while connected to the military network, the compatibility of databases information from Naval sources. Specific details of the database will also be out of scope details of column and tables information will be restricted to what is predetermined.