Test Summary Report

For

Flora of Indiana

Table of Contents

**1 PURPOSE....................................................................................................................................3**

**2 APPLICATION OVERVIEW.........................................................................................................3**

**3 TESTING SCOPE ........................................................................................................................3**

**4 METRICS......................................................................................................................................4**

**5 TYPES OF TESTING PERFORMED ..........................................................................................4**

**6 TEST ENVIRONMENT & TOOLS ...............................................................................................5**

**7 LESSONS LEARNED..................................................................................................................5**

**8 RECOMMENDATIONS ...............................................................................................................6**

**9 BEST PRACTICES………………………………………………………………………………………6**

**10 EXIT CRITERIA..........................................................................................................................6**

**11 CONCLUSION/SIGN OFF .........................................................................................................6**

**12 DEFINITIONS, ACRONYMS, AND ABBREVIATIONS……………………………………………7**

**1 Purpose**

This document explains the various activities performed as part of testing the Flora mobile application.

**2 Application Overview**

The Flora application is a mobile application which resides on users’ physical mobile devices and allows users to access information stored on a variety of interconnected databases. The databases include pulling plant information from an API and then comparing the data with another API to bring back an image. The application uses geo location to determine what type of plants are located near the user’s location based on the Herbarium at IUS. The FLORA app will eventually be distributed via each operating system’s primary application store, and uses third-party APIs to interact with a variety of data sources. The application aims to bring the field of plant identification into the current technological era. The goal is to keep an updated API through IUS and other sources to interact with the FLORA application to identify plants near the user.

**3 Testing Scope**

This section explains the functions and modules that are in and out of scope for testing.

**a) In scope**

Functional testing for the following systems are within scope of testing:

* User Interface
* User Interface to Data Access Layer
* Database
* Data Integrity
* Geo Location

**b) Out of Scope**

* Performance testing was not within scope for the current release.
* Performance tuning and testing will be a good candidate for future release cycles.

**c) Items not tested**

The following should both be tested in future releases:

* Data Access Layer to Database
* Data Access Layer to Remote Data Source
* API connection both plant description and plant image

**4 Metrics**

**a) Number of tests cases planned versus executed (planned/executed):**

10/15 in the initial test cycle, we plan to set up automated testing to navigate the app to different parts and pull information back from the API.

**b) Number of test cases passed versus failed (passed/failed):**

10/10

**c) Number of defects identified and their status and severity**

Some of the defects we are encountering are with the API lookup for an image, some aren't getting an image due to the API not having an image for it. Currently we are making our search more specific but we might also need to look into other image API services.

**5 Types of Testing Performed**

**a) User Interface** - Manual testing

Tests performed:

• Load Home page

• Load About menu

• Load Plant selection page

• Load Plant Detail page

**b) User Interface to Data Access Layer** - Manual testing

Tests performed:

• Load plants based on location

• Load specific number of plants per page

**c) Database** – Manual testing

Tests performed:

* Query for plant by county
* Query for plant by id
* Query for images
* Query for family name
* Query for genus name
* Query for species name

Additionally full System Integration testing was performed.

**6 Test Environment & Tools**

Currently, all features are being tested manually through an Android emulator.

We currently only maintain a development environment. Additional environments (including Quality Assurance, Demo/Staging, and Production) should be gradually implemented for future release cycles.

For future testing, the following tools should be explored:

• User Interface – UITest

• User Interface to Data Access Layer – xUnit, Moq

• Database – Automated suite of SQL scripts

**7 Lessons Learned**

Finding and using an API for plants can be difficult. This area was the most difficult due to not having all the information needed. We had to pull in a second API just to pull in pictures for each individual plant and this could cause an error in getting the wrong picture or none at all.

Each tester was using a slightly different PC and emulator. At times, this led to inconsistent test results.

The development, maintenance, and execution of useful tests is at least as time-consuming as developing the full project, and the tests are more likely to be used for a long period of time.

**8 Recommendations**

Future development cycles would benefit from a clearly defined list of regression and integration tests, as well as manual and automated unit tests. These should be added to a checklist which is completed after each check-in. Trying to use a singular API rather than multiple would save time in the future.

PCs and emulators used for testing should be standardized, and multiple PCs and emulators should be used to guarantee consistency across devices.

**9 Best Practices**

Automated testing should have been implemented, due to the repetition of manual testing. This would save time by significantly decreasing the amount of time spent doing manual testing.

**10 Exit Criteria**

a) All test cases should be executed – Yes, all test cases were executed.

b) All defects in Critical, Major, Medium severity should be verified and closed – Yes, no tested defects remained in these states.

c) Any open defects in trivial severity – No, there were no open defects with a trivial severity.

d) Possible check for performance due to the API lookup time being slow.

**11 Conclusion/Sign Off**

As the Exit criteria was met and satisfied as mention in Section 10, this application met all testing criteria.

This application is ready to be released to a Demo environment for testing by the project

Sponsor. The sponsor needs to understand that the application still needs to have an updated API through the IUS herbarium to fix Floyd county. Once complete more testing should be implemented to figure out performance and simplification.

**12 Definitions, Acronyms, and Abbreviations**

Family-One of the eight major hierarchical taxonomic ranks in Linnaean taxonomy, classified between order and genus

Genus-Taxonomic rank comprised of species with common attributes.

Species-A group of organisms that can reproduce with one another in nature and produce offspring. Species can be defined based on a shared evolutionary history and ancestry.