FABI Mobile User Manual

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May 2019

Contents

1 General Information

The purpose of this document is to serve as an in-depth explanation and analysis of the system. The primary functionality and functions provided by the FABI Mobile software system are explained and outlined in an easy-to-understand and comprehensible manner.

1.1 Organization of this Manual

This user manual consist of five sections: General Information, System Summary, Getting Started, Using the System, and Troubleshooting.

The **General Information** section explains in general terms the system and the purpose for which it is intended. The Points of Contact are also provided in this section.

The **System Summary** section provides a general overview of the system. The summary outlines the use of the system's hardware and software requirements, the system's configuration, as well as the user access levels.

The **Getting Started** section explains how to get both the web and mobile applications, as well as how to use them based on the user levels.

Using the System provides a detailed description of all the system's functions.

The **Troubleshooting** sections describes all the recovery and error correction procedures. including error conditions that may generated and corrective actions that may need to be taken.

1.2 System Overview

FABI Mobile is the primary product. It encapsulates a web and mobile application intended to drastically modernize FABI's existing system as well as to compliment the roll-out of their Diagnostic Clinic to the forestry and agriculture sector. Another aspect of this software solution is to provide a central means for allowing internal staff within FABI to manage and maintain their databases, staff, and associated organizations. An external management system has been put in place for industry organizations to manage the guests that are associated to them and can in turn make use of the Diagnostic Clinic facilities.

The functionality of FABI Mobile lies within two main areas. The first main area is the web application. The intention of the web application is to provide a centralized and automated means for which organizations and users within those organizations can submit forms to the Diagnostic Clinic as well as track the progress of the samples that they submit. The web application also provides the ability for internal FABI staff to submit request and deposit forms for certain cultures as well submit samples to the Diagnostic Clinic. The mobile application will provide the exact same information with the exception that FABI administrators will not use the mobile application, as the mobile application is only intended for organizations, their members, and the FABI internal staff.

1.3 Points of Contact

FABI Contact Details:

Telephone: +27 (12) 420-3937 or 3938
FAX: +27 (12) 420-3960
Email: madelein.vanheerden@fabi.up.ac.za

Postal Address:
Forestry and Agricultural Biotechnology Institute (FABI)
University of Pretoria
Private bag X20
Hatfield
0028
South Africa

Physical address (also for courier deliveries pickups):
Forestry and Agricultural Biotechnology Institute (FABI)
University of Pretoria
Lunnon Street Entrance
Hatfield
0083
Pretoria
South Africa

1.4 Acronyms and Abbreviations

API: Application Programming Interface.
FABI: Forestry and Agricultural Biotechnology Institute.
HTTP: HyperText Transfer Protocol.
JSON: JavaScript Object Notation.
PDF: Portable Document Format.

1.5 System Configuration

The web application will be run in a web browser and therefore any device may access the web application. There is no real constraints on these devices except that an Internet connection will be required to access the web application. The mobile application has been designed to run on both Android and IOS platforms. Again, these mobile devices will required and internet connection to use the mobile application. Offline local storage is provided by the mobile application. Once connected to the Internet, the mobile device will sync its local storage with the online databases. The Internal GPS system of the mobile devices will be used to capture the users GPS coordinates. These coordinates will also be extracted from the meta data of the images sent via the mobile application. Once download, the mobile application will need no other configuration.

1.6 System Installation

The web application will not require any installation because it can be accessed via any web browser. The mobile application will need to be downloaded from either the Android app store or the IOS app store depending on the mobile device being used. No other installations will be required for the use of this software system.

1.7 User Access Levels

With regards to the web application, all possible users will be given access, which requires them to login with their login credentials, however, their login credentials and user type will determine what they will be able to access within the web application. The same access procedure applies to the mobile application. Only registered administrators and FABI super users will be given access to the databases. As long as an organization has a registered account with FABI, the organization administrator will have access to both the mobile and web applications. Only registered members within the organization will be given access to the mobile and web applications. This system is not open to members of the general pubic outside of FABI or an organization.

2 Getting Started

2.1 Web Application

Logging In
You will be presented with the main page of the application. Click the 'login' button to move to the login page. Enter your login credentials .ie. their email and password in the fields provided and then click the 'login' button.

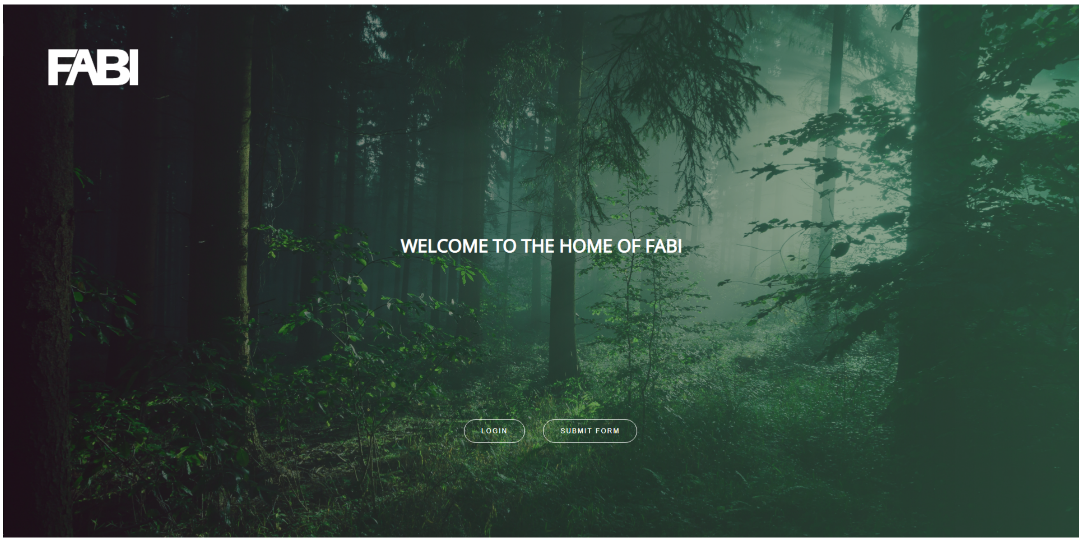

Figure 1: Web Application Main Page

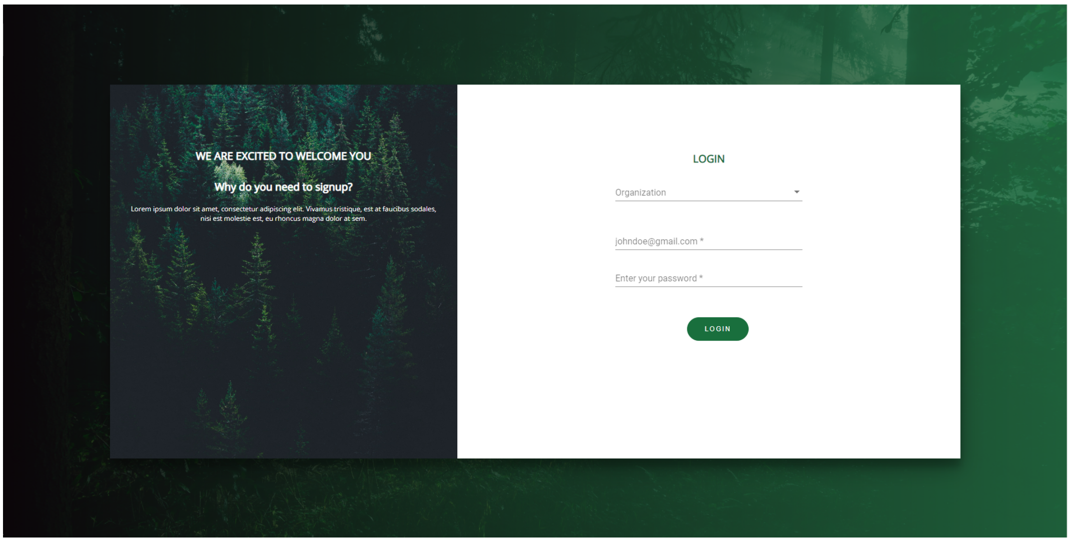

Figure 2: Web Application Login Page

Understanding the Menu

2.1.1 Organization Administrator

Understanding the Dashboard

The below image depicts what the dashboard (the main page once logged in) looks like. In the top left-hand corner is the burger menu by which the slide-out menu can be accessed. The 'help' icon on the dashboard will direct you to a 'help' page once clicked. The buttons provided on the dashboard (ie. Manage Members, Manage Profile, View Organization Samples, and Submit Samples) will direct you to the associated pages once clicked.

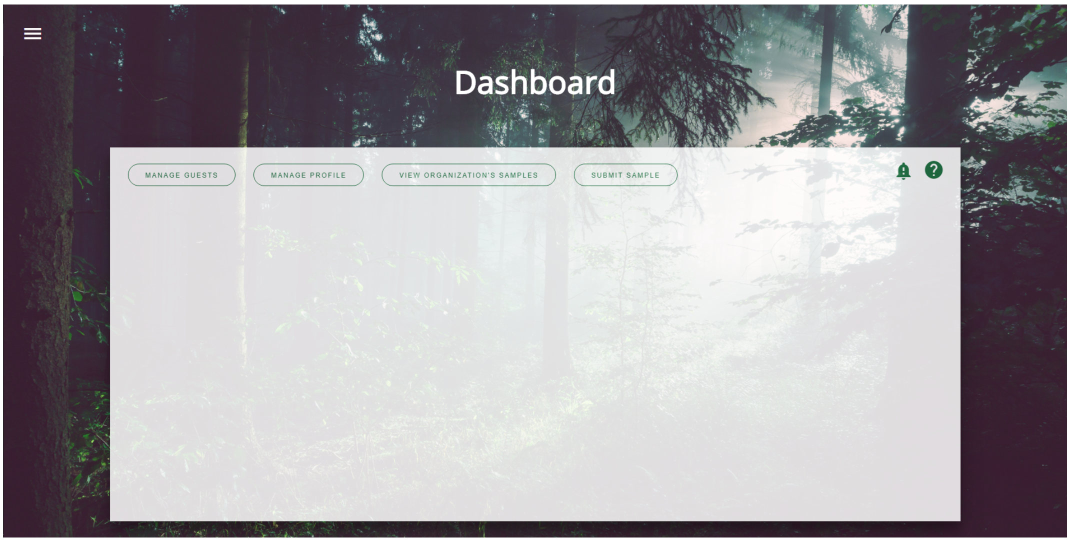

Figure 3: Web Application Dashboard

Member Management

Profile Management

Select the 'profile' button provided on the dashboard, or navigate to the 'profile' page via the menu provided. Once at the 'profile' page, all of the organization's information will be provided. Clicking on the edit icons (pencils) will allow the user to edit specific details. Once finished, click the 'save' button to ensure that all changes will be saved.

Submit a Sample

Navigate to the 'Submit Sample' page by using the menu provided, or by clicking on the 'Submit Sample' button provided on the dashboard. Once at the 'sample' page, the sample submission form will be provided. Fill in all the information required in the fields provided. There is an option to upload images. To upload images, click the 'camera' icon and the images can be selected from your computer or other online storage facilities .ie. Google Drive. When ready to submit the sample form, click the 'submit' button and the form will be sent. You will then be issued with a reference number.

View Samples

To view all samples submitted, click the associated button provided by the dashboard. This will then show the samples.

Exiting the System

To exit the application, select to 'logout' via the menu provided. Once selected, you will then be logged out of the application. The web application can then be closed by closing the browser tab.

2.1.2 Organization's Members

Understanding the Dashboard

The below image depicts what the dashboard (the main page once logged in) looks like. In the top left-hand corner is the burger menu by which the slide-out menu can be accessed. The 'help' icon on the dashboard will direct you to a 'help' page once clicked. The buttons provided on the dashboard (ie. Manage Profile, View Your Samples, and Submit Samples) will direct you to the associated pages once clicked.

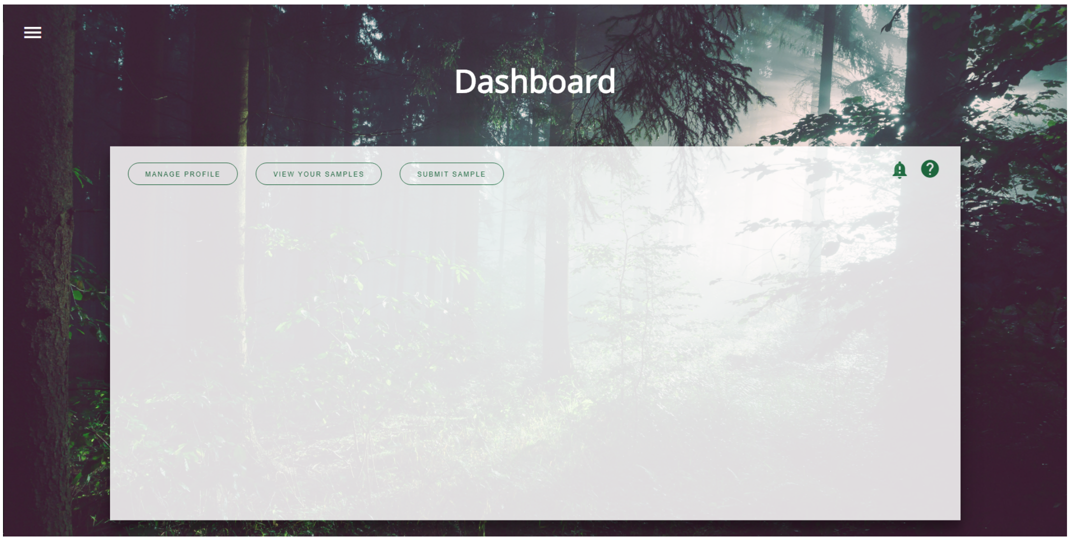

Figure 4: Web Application Dashboard

Profile Management
Select the 'profile' button provided on the dashboard, or navigate to the 'profile' page via the menu provided. Once at the 'profile' page, all of the organization's information will be provided. Clicking on the edit icons (pencils) will allow the user to edit specific details. Once finished, click the 'save' button to ensure that all changes will be saved.

Submit a Sample
Navigate to the 'Submit Sample' page by using the menu provided, or by clicking on the 'Submit Sample' button provided on the dashboard. Once at the 'sample' page, the sample submission form will be provided. Fill in all the information required in the fields provided. There is an option to upload images. To upload images, click the 'camera' icon and the images can be selected from your computer or other online storage facilities .ie. Google Drive. When ready to submit the sample form, click the 'submit' button and the form will be sent. You will then be issued with a reference number.

View Samples
To view all samples submitted, click the associated button provided by the dashboard. This will then show the samples.

Exiting the System
To exit the application, select to 'logout' via the menu provided. Once selected, you will then be logged out of the application. The web application can then be closed by closing the browser tab.

2.2 Mobile Application

Understanding the Menu
The menu provides the following options:

1. **Home:** Navigates to the dashboard
2. **Submit Sample:** Navigates to the sample form that can be submitted
3. **Profile:** Navigates to the profile page
4. **More Information:** Navigates to the page that provides more information about insects and diseases
5. **Notifications:** Navigates to a page that shows all recently received notifications
6. **Settings:** Navigates to the settings page which contains the 'About Us', 'Contact Us', 'FAQ', and 'Terms and Conditions'
7. **Help:** Navigates to the FABI website
8. **Logout:** To log out of the mobile application
9. **Search field:** To search for information

Selecting the 'burger' menu is the left-hand corner will display the menu. The 'burger' menu is provided on every page within the mobile application.

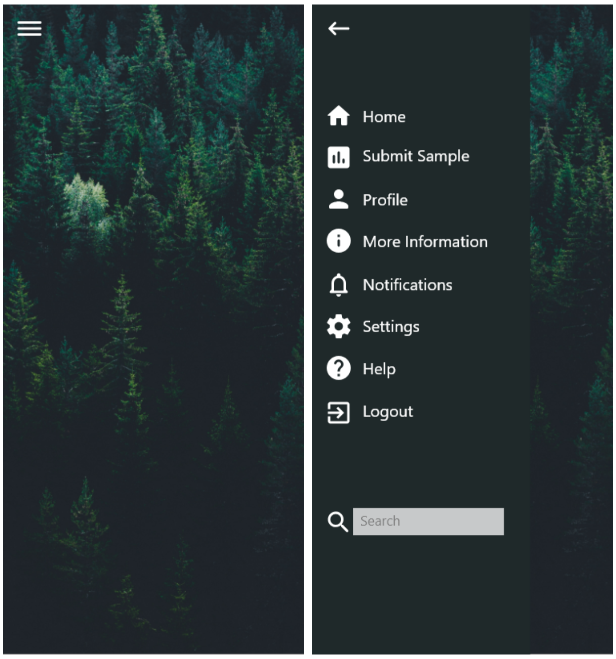

Figure 5: Mobile Application Menu

Logging In

The the main page of the application is presented first. Click the 'login' button to move to the login page. The enter your login credentials .ie. email and password in the fields provided and then click the 'login' button.

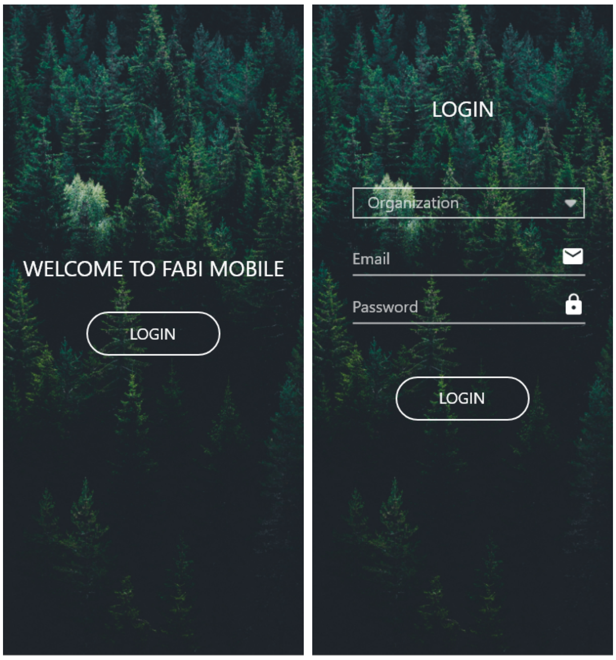

Figure 6: Mobile Application Logging In

Understanding the Dashboard

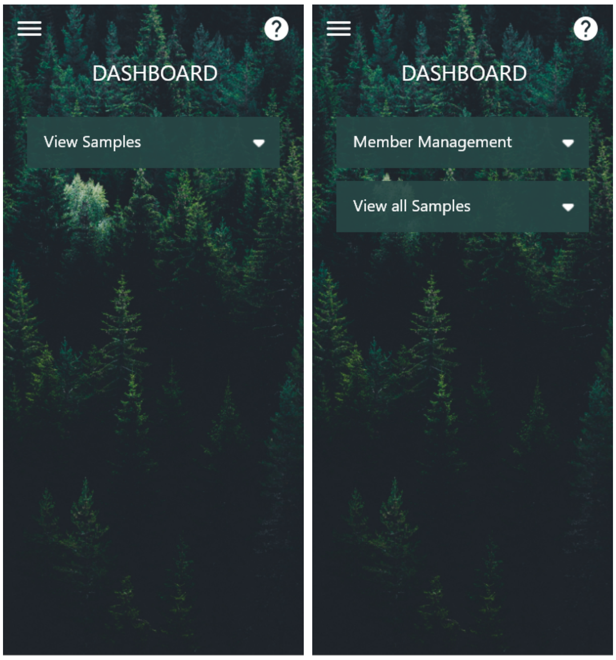

Figure 7: Mobile Application Dashboard

Profile Management
Navigate to the 'profile' page via the menu provided.
Once navigated to the 'profile' page, all of your information will be provided. Clicking on the edit icons (pencils) will allow you to edit specific details. Once finished, click the 'save' button to ensure that all changes will be saved.

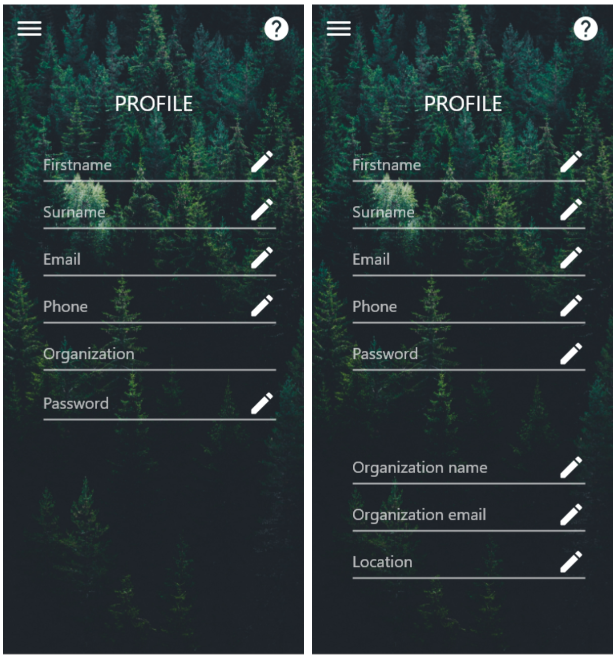

Figure 8: Mobile Application Profile Management

Submit a Sample
Navigate to the 'Sample' page by using the menu provided. Once at the 'sample' page, the sample submission form will be provided. Fill in all the information required in the fields provided. There is an option to upload images. To upload images, click the 'camera' icon and the images can be selected from the users computer or other online storage facilities .ie. Google Drive. When ready to submit the sample form, click the 'submit' button and the form will be sent. The user will then be issued with a reference number.

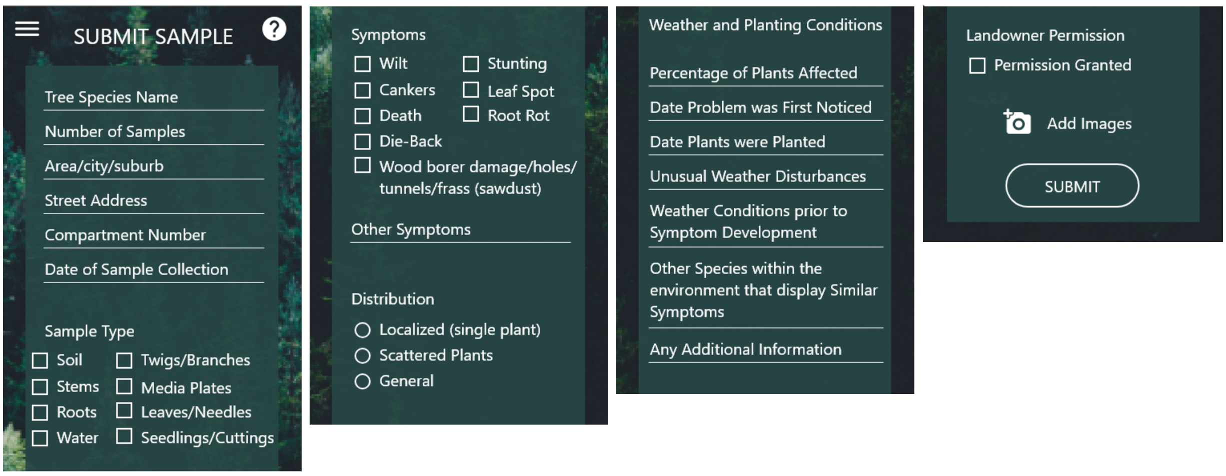

Figure 9: Mobile Application Sample Form

View Samples
To view all samples submitted, navigate to the 'dashboard' page via the menu provided. The dashboard graphically presents all submitted samples and their current stages in the analysis process. From the dashboard, individual samples may be selected to view in more detail.

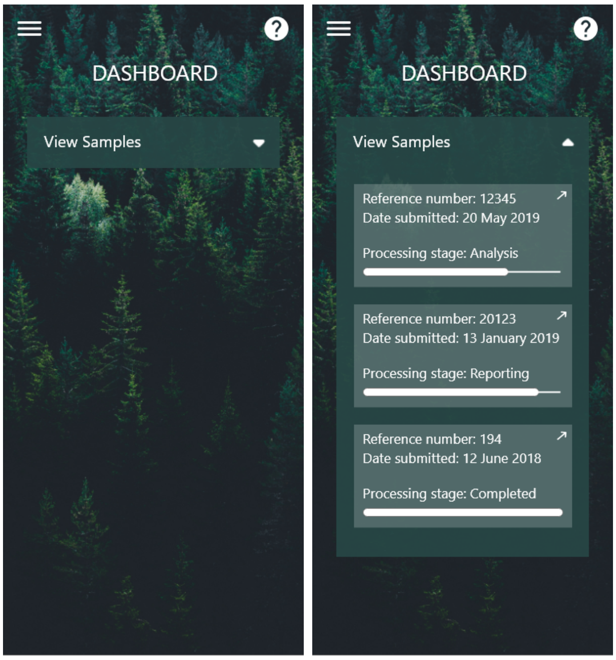

Figure 10: Mobile Application Viewing Samples

Exiting the System
To exit the application, select to 'logout' via the menu provided. Once selected, you will be logged out of the application. The mobile application can then be closed.

3 Using the System

3.1 The Organization

3.1.1 Adding an organization member

This functionality is reserved for the administrator assign to be in charge of the organization's account, and is provided by both the mobile and web applications. The user will navigate to the 'Member Management' option provided on their dashboard (home page). Selecting the option to 'add' a new member will present the user will the necessary form by which to add a new member. The user will provide all the required information and select to 'add' the new member. The web or mobile application will validate the form before submitting the form. If not all the necessary information has been provided, a message will be displayed for the user indicating so. Otherwise, a HTTP POST request will be sent to the 'Organization Management' API containing the form information. The APi will first search through the 'member' database to determine if the member already exists within the system or not. If the member does exist, a response message will be sent back to the mobile or web application indicating so. If the member is not found, the API will begin processing the form information sent through with the request. Once the new member's account/profile has been created and saved to the 'member' database, a response message will be sent to the web or mobile application indicating that the request was successful. In addition to this, an email will be sent to the new member containing a temporary login password that they can change via the 'profile' page provided by both the mobile and web applications.

3.1.2 Viewing a member's details

This functionality is reserved only for the organization's administrator, and is provided by both the mobile and web applications. The user will navigate to the 'Member Management' option provided by their dashboard (home page) and select to either 'view' a member, or by searching for the member in the search field provided. A HTTP GET request will be sent to the 'Organization Management' API to request the information associated with the member. If no information is found (ie. the member does not exist within the system), a response message will be sent back to the web or mobile application indicating so. Otherwise, the found member's information will be sent in a response message back to the web or mobile application. The web or mobile application will then display this information for the user.

3.1.3 Searching for a member

This functionality is provided by both the mobile and web applications. The user will either select to search by filling in the search criteria in the field provided once navigated to the 'Member Management' option provided on their dashboard (home page), or by navigating to the menu and filling in the search criteria in the field provided. A member can be identified by their name, surname, email address, and phone number, meaning that any one of these can be used as the search criteria to find a user. An HTTP POST request will be sent to the 'Organization Management' API containing the search criteria. The API will then search through the member database for the member whose information matches that of the given search criteria. If the member is not found, a response message will be sent to the web application indicating that the member does not exists in the system. If the member is found, their information (excluding any sensitive information) will be sent with the response message to the web or mobile application. The web application will then display this information for the user.

3.1.4 Deactivating a member's account

This functionality is reserved for the organization's administrator, and can be performed on both the web and mobile applications. The user can perform this action by either navigating to the 'Member Management' option provided on their dashboard (home page) and selecting to 'remove' the member, or by searching for the member and selecting the appropriate option to remove the member. The selection to remove a member will result in an HTTP POST request being sent to the 'Organization Management' API. This request will contain the user's session id as well as the request to remove the member. The system has been designed to never fully delete a member from the system, but rather to deactivate their account. The API will perform the necessary session validation and then begin the processing of the request. The relevant member database will be searched through and if the member is not found, a response message will be sent back to either the mobile or web application indicating so. If the member is found, their account/profile within the database will be deactivated. The API will then send a success response to the web or mobile application indicating that the member has been 'removed' from the system.

3.1.5 Viewing an organization's profile

This functionality is reserved only for the organization's administrator, and is provided by both the mobile and web applications. The user will navigate to the 'profile' page via the menu. A HTTP GET request will be sent to the 'Organization Management' API to request the information associated with the organization. If no information is found (ie. the organization does not exist within the system), a response message will be sent back to the web or mobile application indicating so. Otherwise, the found organization's information will be sent in a response message back to the web or mobile application. The web or mobile application will then display this information for the user.

3.1.6 Updating an organization's profile

This functionality is provided by both the mobile and web applications. The user will either select to update an organization's information by searching for the organization and then selecting the necessary options to edit the organization's information, navigate to the profile page via the menu, or by selecting to update the organization's details provided by the 'Organization Management' option provided by the user's dashboard (home page). The necessary organization information can be edited and then selecting to 'save' this updated information will result in an HTTP POST request being sent to 'Organization Management' API. This request will contain all the updated information as well as the user's session id. If the session id is valid, the API will process the changes and updated in the relevant organization database. Otherwise, a response message will be sent back to the web or mobile application indicating that the session id is invalid. If all updates have been processed and saved successfully, a response message will be sent indicating so.

3.1.7 Viewing all submitted samples

This functionality is reserved only for the organization's administrator, and is provided by both the mobile and web applications. The user will select the 'View all submitted samples' option provided on their dashboard (home page). This will send a HTTP GET request to the 'Organization Management' API requesting all the submitted samples associated with the organization. If not samples are found, a response message will be sent back to the mobile or web application indicating so. Otherwise, this found information will be sent in a response message to the mobile or web application, and the information will be displayed for the user.

3.2 The Organization's Members

3.2.1 Viewing their profile

This functionality is provided by both the mobile application and the web application. The user will navigate to the 'profile' page via the menu. This will open the 'profile' page as well as simultaneously send a HTTP GET request to the 'Organization Management' API requesting the associated member's information. This information will then be sent back to the web or mobile application in the response message. The information sent through from the API will be displayed by the mobile or web application for the user.

3.2.2 Updating their profile

This functionality is provided by both the mobile application and the web application. The user will navigate to the 'profile' page via the menu. This will open the 'profile' page as well as simultaneously send a HTTP GET request to the 'Organization Management' API requesting the associated member's information. This information will then be sent back to the web or mobile application in the response message. The information sent through from the API will be displayed by the mobile or web application for the user. 'Clicking' on the edit icons (pencils) provided for each field, will allow the member to edit the selected field. Once the user has updated their information, 'clicking' the 'save' button will send a HTTP POST request to the 'Organization Management' API containing the updated information. The APi will begin the processing the information and save the necessary changes to the 'member' database. A response message will then we sent back to the mobile or web application indicating whether the processing was successful or not.

3.2.3 Viewing their submitted samples

This functionality is provided by both the mobile and web applications. The user will navigate to the 'Submitted samples' option provided by their dashboard (home page). This will send an HTTP GET request to the 'Form Management' API requesting the sample forms associated with the user. If no sample forms are found to be associated with the user, a response will be sent back to the mobile or web application indicating so. Otherwise, the found information will be sent in a response message to the web or mobile application. This information will then be displayed for the user.

(This functionality is still to be implemented and therefore has not been completed in this user manual)

3.3 Sample Processing

3.3.1 Submitting a sample

3.3.2 Canceling a sample's processing

3.3.3 Initiating a sample's processing

3.3.4 Confirming a samples allocation

3.3.5 Completing a process

3.3.6 Sending a diagnosis report

4 Troubleshooting

All forms to be submitted have been designed to provide error checking on the input fields. If an input field has not been filled out, the system will detect this and inform the user. No form will be submitted unless all the required information has been provided.