

**Project LYF**

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Structure Systems Analysis and Design (SYSADD1)

By:

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**Executive Summary**

Philippine Institute of Traditional and Alternative Health Care (PITAHC) is a government institution created under the Department of Health. Its vision is described as “People’s health through traditional and alternative health care” which affirms its desire to inject traditional and alternative medicines to the conventional health care system in the country. PITAHC aims to promote and advocate the use of traditional, alternative, preventive, and curative health care modalities that have been proven safe, effective, cost effective and consistent with government standards on medical practice.

According to an interview with a PITAHC researcher, the main hindrance to achieve PITAHC’s goal is the lack of awareness and knowledge regarding the results of Department of Health's researches on Traditional Medicine. Also, it is difficult for the Institute to advocate the use of medicinal plants because most Filipinos find it hard to recognize plants that are officially identified by the botanists of the Bureau of Plant Industry through mere observation of its physical characteristics.

Project LYF aims to support PITAHC in its mandated function by providing results of their researches, which include traditional medicines and their clinically approved usage to users. Moreover, the project includes image recognition that could help users identify medicinal plant through image capture of its leaf at various angles, lighting and its varieties and shares its location to other users upon recognition

**I. Introduction**

**Project Context**

The government created Philippine Institute of Traditional and Alternative Health Care as mandated by the Republic Act 8423 “to improve the quality and delivery of health care services to the Filipino people through the development of traditional and alternative health care and its integration into the national health care delivery system”. Philippine Institute of Traditional and Alternative Health Care, or PITAHC, is working under the Department of Health towards this mandated goal. PITAHC envisions itself to lead research, development, promotion and development of standards on traditional and complementary medicines to ensure its accessibility, availability, sustainability and integration into the national health care system.

The project members have interviewed Ms. Ma. Teresa M. Torres, a Science Research Specialist II for PITAHC. According to her, the greatest hindrance towards their goal is the lack of awareness and knowledge regarding traditional and complementary medicine. It is also difficult for PITAHC to advocate use of medicinal plants because some Filipinos can’t recognize them. During the interview, Ms. Torres has explained various physical characteristics of the plants that the general public more often misidentify or how some of these beneficial plants are treated like weeds despite its medicinal benefits. In addition, PITAHC has performed numerous studies proving their effectivity and safety but this information hasn’t reached the general public.

These problems cripple the operation of PITAHC. The team addresses these problems in support of PITAHC towards their mandated function through Lyf.

**Purpose and Description**

Philippine Institute of Traditional and Alternative Healthcare, or PITAHC, is facing problems on regarding their advocacy and promotion of traditional and contemporary medicine. Their researches, which includes clinic studies and test, has been difficult to disseminate and they are afraid this cause skepticism towards traditional and contemporary medicine.

To address these, the team developed Lyf. Lyf is a system that includes an Android application for users and website for the admin. The android application allows users to register and login. Once account has been created, the user can now access the application’s functions. These includes image recognition trained on the Department of Health’s recommended medicinal plants. The feature helps users to identify plants and explore their medicinal benefits. Users will have to take a photo of its leaf for the system to recognize.

Ms. Ma. Teresa M. Torres, a Science Research Specialist II for PITAHC, has provided the team with the results of their studies to include in the system. Once identified by the app, the location is shared among all users which can be seen through map. Using this function, users can view all shared plant location, or filter the results through plant search. Upon viewing a certain plant location, the user can also view that plant’s details.

The app also contains a plant glossary which users can browse through to access all plant details derived from the studies.

The system’s website allows admin to respond to reports such as mismatch, and mislocation. The admin can also view all results of image recognition. Most importantly, if new studies and information has to be added to the system, the admin can do so using the website. These changes are visible to the users through the android app.

**II. Scope and Limitations**

**III. Review of Related Literature/Systems**

**IV. Theoretical Background**

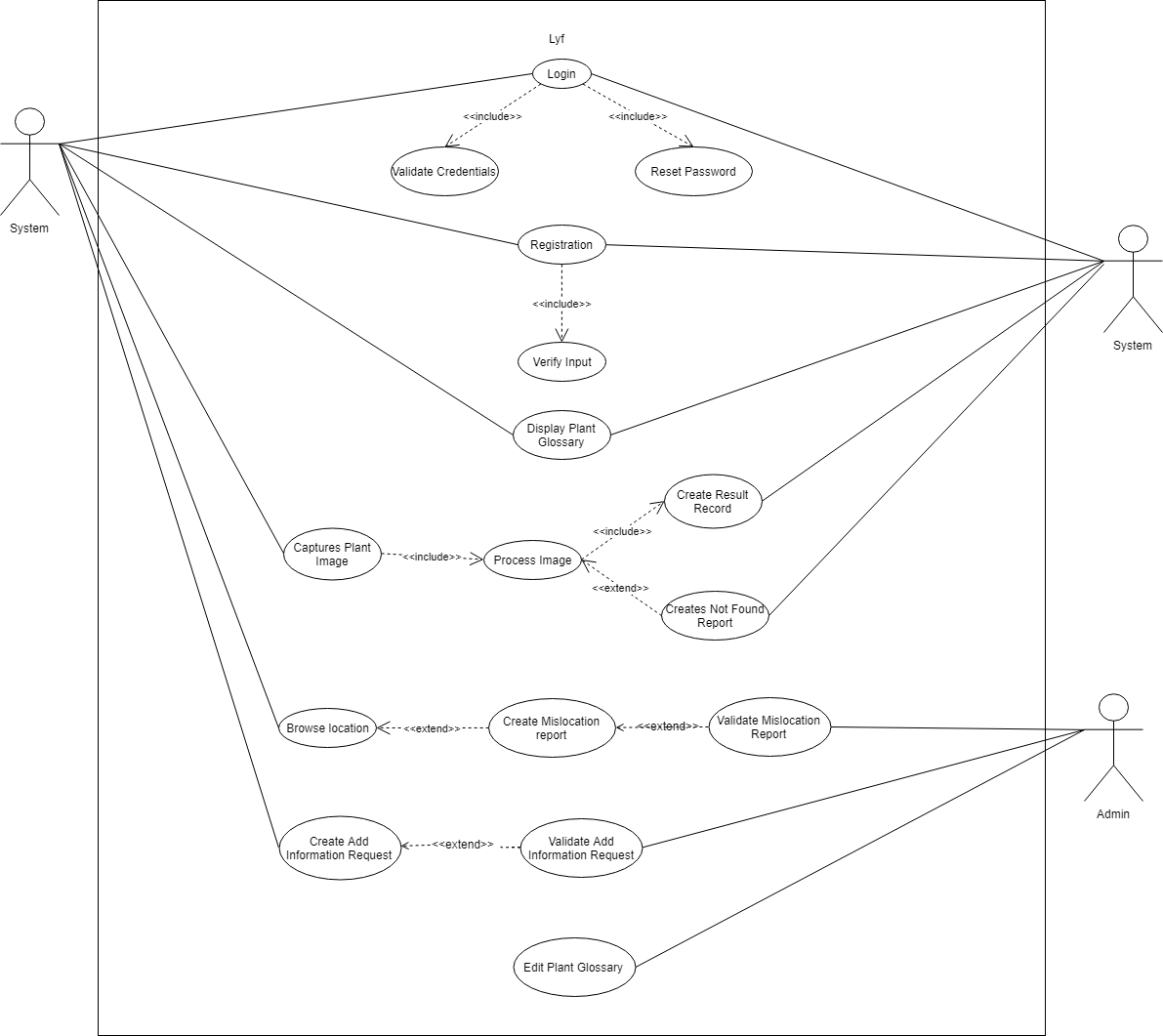
**V. Appendices**

**Gap Analysis**

**Event Table**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Event | Trigger | Source | Use Case | Response | Destination |
| A registration form will be shown if the user hasn’t created an account for the app yet (or wants to create a new account for the app) | User registration | User | User Registers | Display Register form | User/System |
| User has photographed a plant for identification | User wants to identify a certain plant | User | Captures Plant Image | System prepares image for identification | System |
| System compares image with training data set | System receives photo | System | Process image | System displays identified plant match | User |
| System creates report if plant match is not found | Plant cannot be identified by system | System | Creates not found report | System generates Plant Not Found report | User/System |
| User reports incorrect/missing location | Report from user | User | Create mislocation report | System generates Mislocation report | User/System |
| User wants to add plant information | User adds information | User | Create Add  Information request | System generates Add Information request for the admin | Admin/System |
| Admin responds to requests and reports | Requests and reports from user | Admin | Validate Report and Request | Admin validates reports and requests | User/System |
| Admin updates plant glossary | Validation from admin | Admin | Edits Plant Glossary | System updates plant glossary | System |

# **Use Case Diagram**

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# **Use Case Full Description**

|  |  |  |
| --- | --- | --- |
| Use Case Name: | User Registers | |
| Scenario: | A registration form will be shown if the user hasn’t created an account for the app yet (or wants to create a new account for the app) | |
| Triggering Event: | User registration | |
| Brief Description: | If the user hasn’t created an account yet or wants to create a new one, then the user will be directed to the registration screen | |
| Actor/s | * User * System | |
| Related Use Case: | - | |
| Stakeholders: | * System | |
| Preconditions: | * User must have internet access * App must be given permission to access internet on their devices. | |
| Post Conditions: | * User account created | |
| Flow of Activities: | User | System |
| 1. Login Screen verification 2. User enters account details   3.0 Users confirms account details | 1.1 Directs to Registration  2.1 System creates user account  3.0 Directs user to Login Screen |
| Exception Conditions: | 2.0 User will re-enter account details in case of invalid or mismatched information  2.1 User must enter unique username and email address. | |

|  |  |  |
| --- | --- | --- |
| Use Case Name: | Login | |
| Scenario: | Upon launching the app, the first screen the user will see is the login form | |
| Triggering Event: | App launched | |
| Brief Description: | Launching the app will directly go to the Login screen | |
| Actor/s | * Users * System | |
| Related Use Case: | Create Account | |
| Stakeholders: | * Users * System | |
| Preconditions: | * User must have internet access * User must have an existing Lyf account * User must give permission to internet access on their PDA devices | |
| Post Conditions: | * User is logged in the app * User can access plant functions | |
| Flow of Activities: | User | System |
| 1. Launched the app 2. User enters account credentials 3. User logged in | * 1. Directs to Login Screen   2. System verifies credentials   3.1 Display Lyf Home |
| Exception Conditions: | 1. App is not launched.   1.1 User has no account and must register a new account.  2.1 User entered incorrect credentials. User will be asked to enter credentials again. | |

|  |  |  |
| --- | --- | --- |
| Use Case Name: | Captures Plant Image | |
| Scenario: | User has photographed a plant for identification | |
| Triggering Event: | User wants to identify a certain plant | |
| Brief Description: | Once the user is logged in the app, he/she can now use the app’s intended features, like browsing for the plants and capturing for identification. | |
| Actor/s | * Users * System | |
| Related Use Case: | * Login * User Registers | |
| Stakeholders: | * System | |
| Preconditions: | * User’s device must have a Camera * User must give permission to camera and internet access. | |
| Post Conditions: | * Photo uploaded for processing | |
| Flow of Activities: | User | System |
| 1.0 User captures photo | 1.1 Upload photo to system |
| Exception Conditions: | 1.0 Permission to access camera not granted.  1.1 Permission to access internet not granted. | |

|  |  |  |
| --- | --- | --- |
| Use Case Name: | Process Image | |
| Scenario: | System compares image with training data set | |
| Triggering Event: | System receives photo | |
| Brief Description: | Once the image is uploaded to the system, it replies with match to the user’s photograph. | |
| Actor/s | * System | |
| Related Use Case: | * Login * User Registers * Captures Plant Image | |
| Stakeholders: | 1. System | |
| Preconditions: | * User must have photographed a plant | |
| Post Conditions: | * Display result | |
| Flow of Activities: | System | User |
| 1.0 System find match  2.0 System get device location  3.0 System generate result | 1.0 User is notified of match finding  2.0 User is notified of location usage  3.1 Receive result |
| Exception Conditions: | 2.0 Permission to access device location not granted  3.0 Permission to access internet not granted | |

|  |  |  |
| --- | --- | --- |
| Use Case Name: | Creates not found report | |
| Scenario: | System creates report if plant match is not found | |
| Triggering Event: | Plant cannot be identified by system | |
| Brief Description: | In cases of no matches in the system’s data set , the system will generate a not found report | |
| Actor/s | * System | |
| Related Use Case: | * Login * User Registers * Process Image | |
| Stakeholders: | * System * User | |
| Preconditions: | * System is not able to find a match from the data set | |
| Post Conditions: | * Not found report is created | |
| Flow of Activities: | System | User |
| 1.0 Generate plant not found report | 1.1 User is notified that a not found report is created |
| Exception Conditions: | 1.0 Plant is identified by the system | |

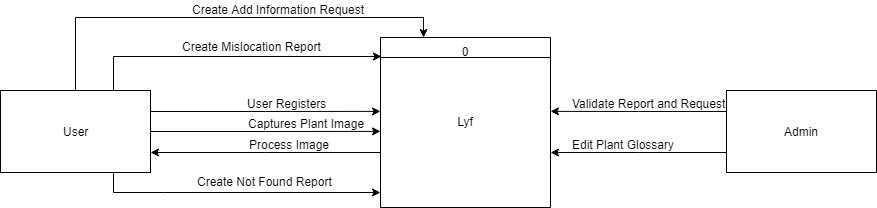
|  |  |  |
| --- | --- | --- |
| Use Case Name: | Create mislocation report | |
| Scenario: | User reports incorrect/missing location | |
| Triggering Event: | Report from user | |
| Brief Description: | User can create mislocation report if locations of plant matches are incorrect or missing. | |
| Actor/s | * System * User | |
| Related Use Case: | * Login * User Registers | |
| Stakeholders: | * System * Admin | |
| Preconditions: | * The user must have reported for either incorrect match or mislocation. | |
| Post Conditions: | * Mislocation report generated | |
| Flow of Activities: | User | System |
| 1.0 User reports incorrect match or plant not found in the location | 1.1 System generates mislocation reports |
| Exception Conditions: | - | |

|  |  |  |
| --- | --- | --- |
| Use Case Name: | Create add information request | |
| Scenario: | User wants to add plant information | |
| Triggering Event: | User adds information | |
| Brief Description: | Users can share information currently not available in the system | |
| Actor/s | * User * System | |
| Related Use Case: | * Login * User Registers | |
| Stakeholders: | * System * Admin | |
| Preconditions: | - | |
| Post Conditions: | * User has created an add information request | |
| Flow of Activities: | User | System |
| 1.0 User creates a request to add information to the system | 1.1 System generates Add Information request for the admin |
| Exception Conditions: | - | |

|  |  |  |
| --- | --- | --- |
| Use Case Name: | Validate Report and Request | |
| Scenario: | Admin responds to requests and reports | |
| Triggering Event: | Validation from Admin | |
| Brief Description: | Admin checks reports and requests. Admin can update locations as a response to mislocation reports. | |
| Actor/s | * Admin * System | |
| Related Use Case: | * Login | |
| Stakeholders: | * System | |
| Preconditions: | * Admin must be logged in | |
| Post Conditions: | * System records updated. | |
| Flow of Activities: | Admin | System |
| 1.0 Admin logs in to system  2.0 Admin selects record to be edited  3.0 Admin make changes to record | 1.1 Display all plant match records  2.1 Display edit record form  3.1 System updates records |
| Exception Conditions: | 3.0 Admin makes no changes to records. | |

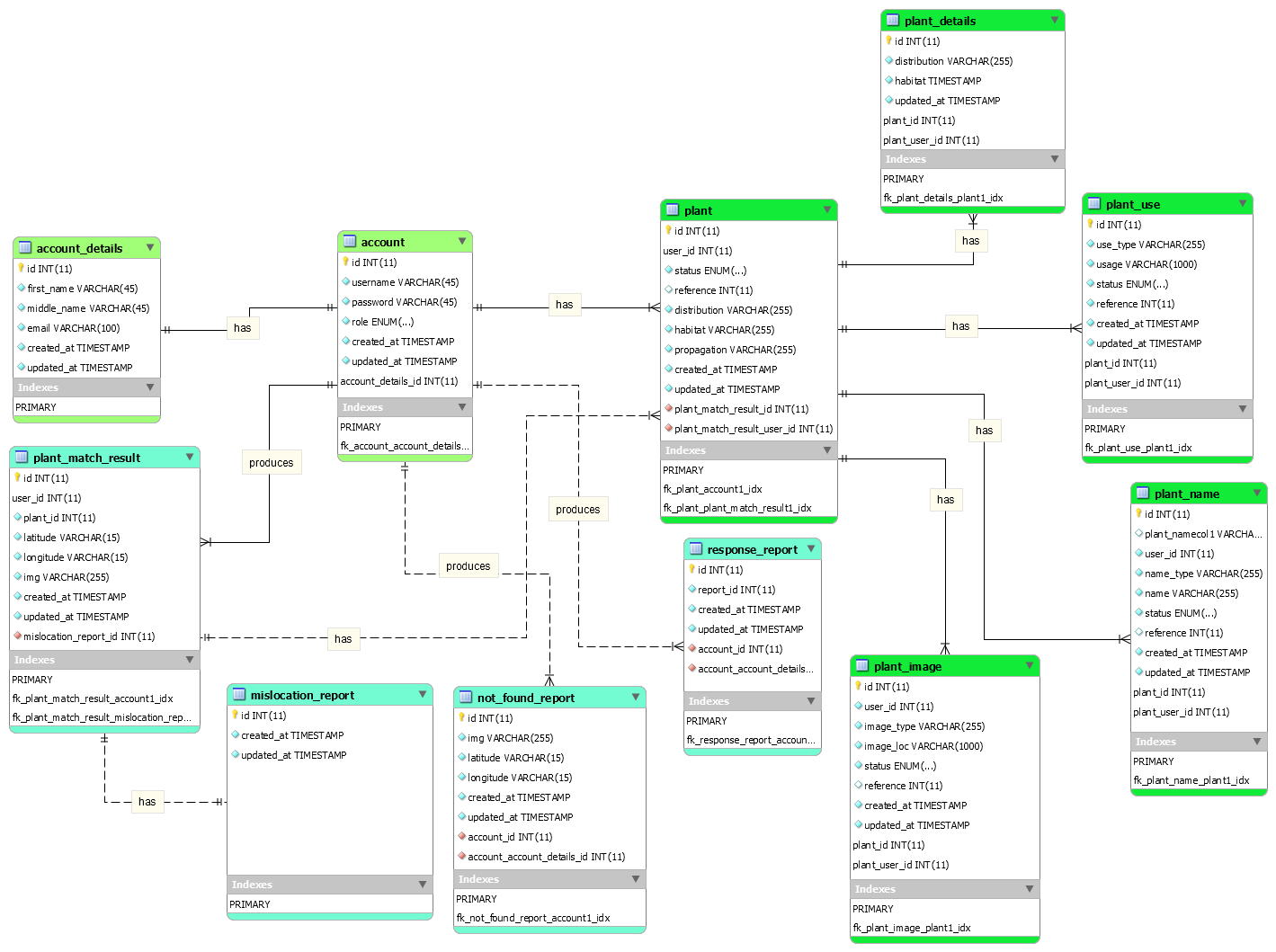
|  |  |  |
| --- | --- | --- |
| Use Case Name: | Edits Plant Glossary | |
| Scenario: | Admin updates plant glossary | |
| Triggering Event: | Admin updates plant details in the system | |
| Brief Description: | Admin can add new findings/information originating from the admin or users to make sure it is up-to-date. | |
| Actor/s | * Admin * System | |
| Related Use Case: | * Login | |
| Stakeholders: | * System | |
| Preconditions: | * Admin must be logged in | |
| Post Conditions: | * Plant Glossary updated | |
| Flow of Activities: | Admin | System |
| 1.0 Admin logs in to system  2.0 Admin selects record to be edited  or creates new plant record  3.03 3.0 Admin make changes to record  submit new record | 1.0 Display all plant records  2.1 Display edit/create record form  3.1 System updates records |
| Exception Conditions: | 3.0 No information will be added. | |

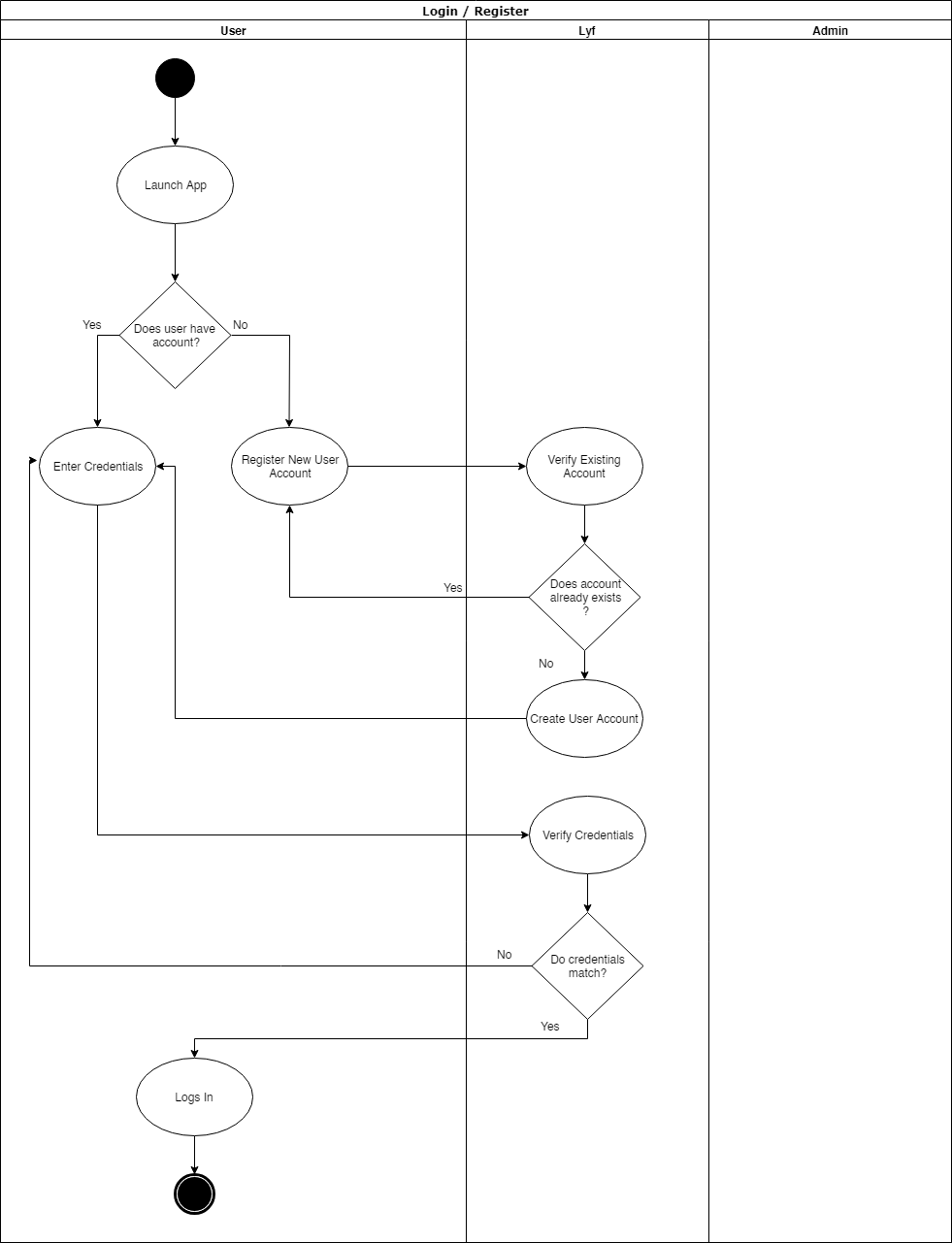
# **Context Diagram**

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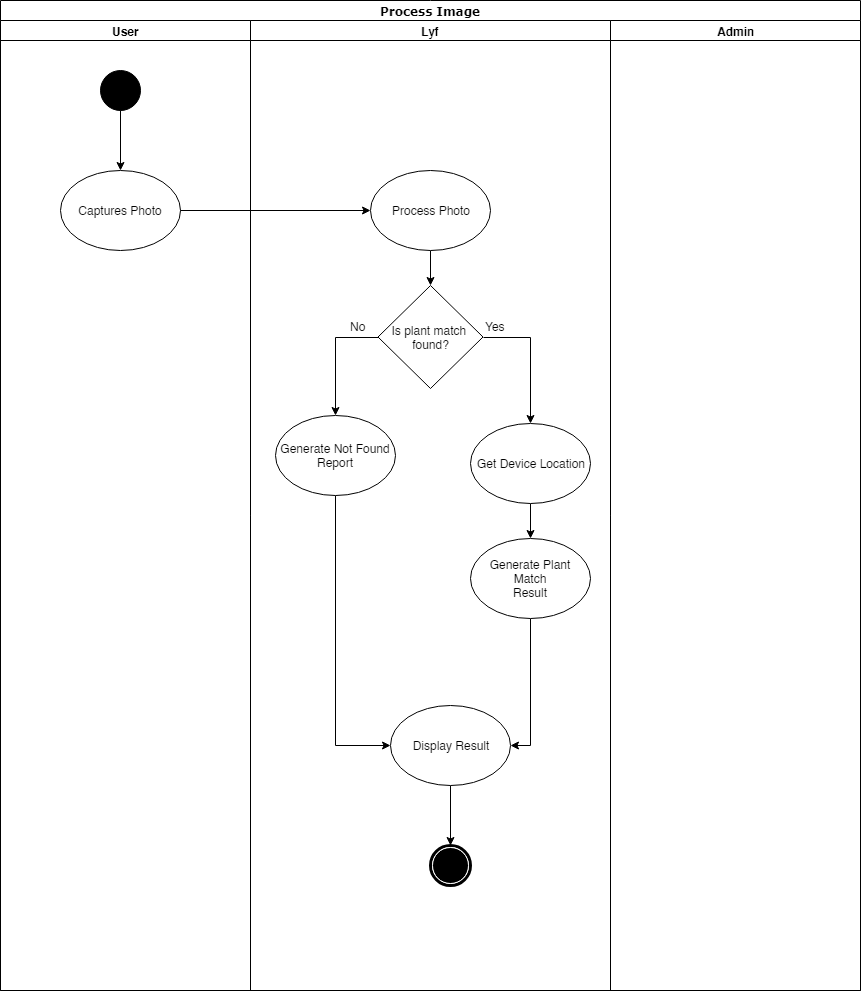
# **Data Flow Diagram – Data Flow Diagram (Level 0)**

# **Entity Relationship Diagram**

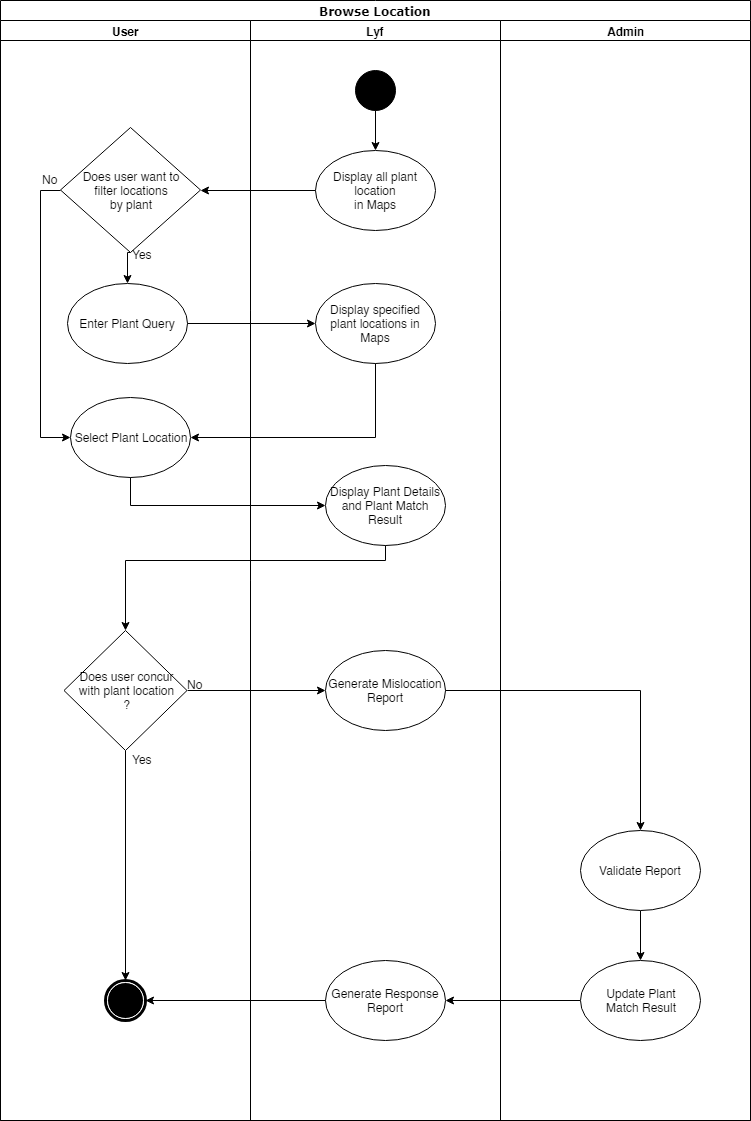


**Activity Diagram – Activity Diagram (Login)**

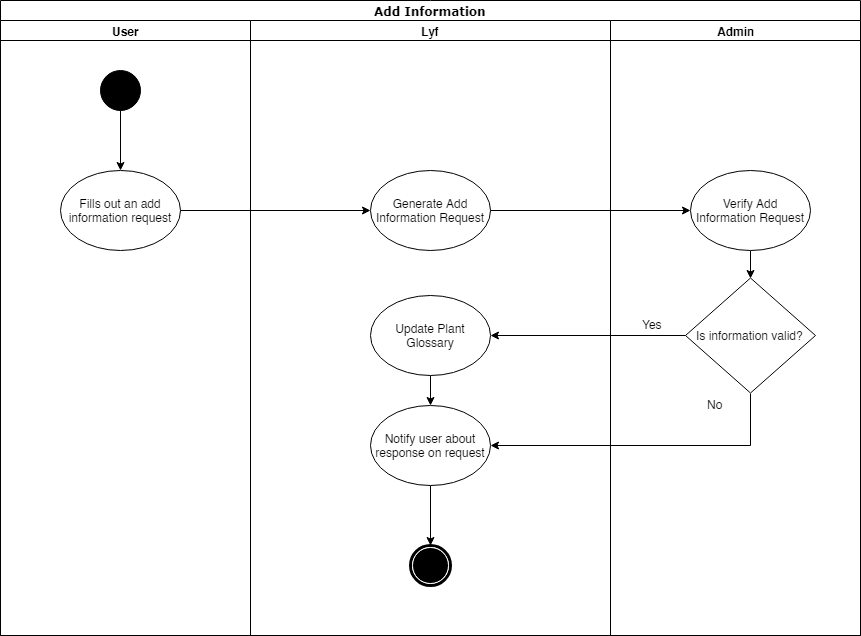
# **Activity Diagram (Process Image)**

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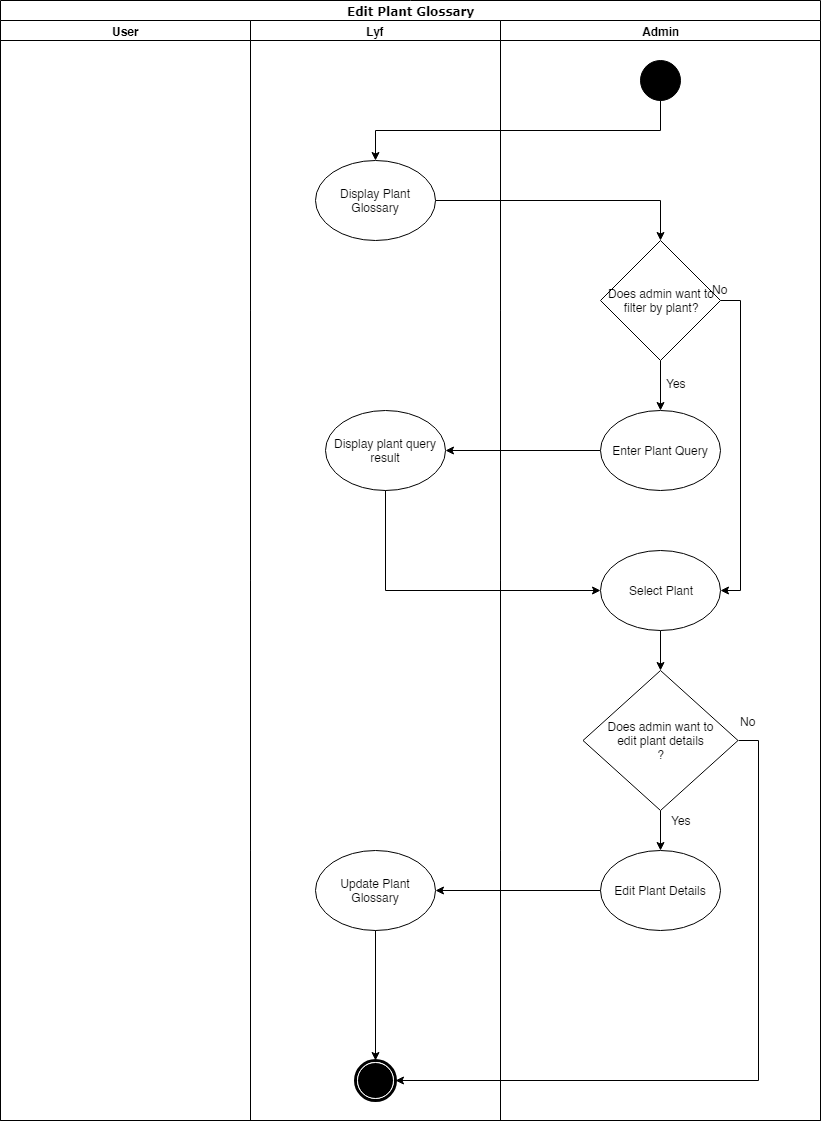
# **Activity Diagram (Browse Location)**

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# **Activity Diagram (Add Information)**

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# **Activity Diagram (Edit Plant Glossary)**

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# **Sequence Diagram**

# **Class Diagram**