AR Map 2Go!

Software Requirement Specification

By

Mr. Parun Pichaiwong   522115043

Department of Software Engineering
College of Arts, Media and Technology
Chiang Mai University

Project advisor

_____

Mr. Jayakrit Hirisajja

Document History

Document Name	Version	Status	Date	Viewable	Reviewer	Responsible
Documents						
AR Map 2GO!_SRS_1.0a	AR Map 2GO!_SRS • SRS Outline • Introduction and Background • Feature	Initial Version	18-06-2016	PP, JH	PP	PP
AR Map 2GO!_SRS_1.0b	AR Map 2GO!_SRS • Software scope • Functional Requirement • Use Case Diagram & Description • Requirement Specification	Reviewed	24-06-2016	PP, JH	PP	PP
AR Map 2GO!_SRS_1.0c	AR Map 2GO!_SRS • Edit use case description • Activity diagram description	Reviewed	04-07-2016	PP, JH	PP	PP
AR Map 2GO!_SRS_1.0d	AR Map 2GO!_SRS Added • Update SRS	Reviewed	15-07-2016	PP, JH	PP	PP
AR Map 2GO!_SRS_1.1	AR Map 2GO!_SRS • Update SRS	Reviewed	05-08-2016	PP, JH	PP	PP

*PP = Parun Pichaiwong

*JH = Jayakrit Hirisajja

Table of Contents

Chapter One | Introduction

1.1 Purpose

The purpose of this document (Software Requirement Specification: SRS) is use to describe the functional requirement. The functional requirement is based on the researching of current problem and current solution. The requirements in this document are involved the stakeholders and users to use the system. This document is provided for the users and developers to explicit understand the detail of each requirement. In addition, the SRS document is used in the software design phase, which is lead to consistent of software product and functional requirement.

1.2 Software Scope

The scope of software has controlled by the user requirements. The software developed in the form of mobile application integrating with Augmented Reality technology and the web service.
The main features of software have 5 features;

- Registration and Authorization Management
- Web-Application and server Management
- Augmented Reality Management
- Map and Navigation Management
- Notification Management

The user should register before operating the activity in the system by using user email address as a username. After registration, the user information will send to the server for creating the new user account in the server database. The user can be interacting with the common features which provide by the application.

The system operates by scanning the specified picture (e.g. map shape) and location text title by using mobile camera view via this application. After that, the system will display all related Point of Interest (POI) locations in term of interactive 3D-object, create and operate with **Augmented Reality** technology, to the user. The user can touch on each 3D-object to get an action e.g. showing the location information or start navigating the user to the target destination.

The administrator will manage the data and information on the server side via the web application by adding a new location and new 3D object symbol into the server database to keep this application are newly and up-to-date.

1.3 Operation Environment

AR Map 2 Go2! is developing in form of mobile application. This application needs an Android operating system version 2.3.3(Gingerbread) and API 11 or higher because of the function of database system, Google API v.2.1 and application widget require. The user must have smartphone that is an Android operating system for running this application. This application requires the internet connection while using. Therefore, it is suitable and high mobility for mobile devices to run the system.

1.4 Definition, Acronyms and Abbreviation

1.4.1 Key Definition Key Definition

IEEE	Institute for Electrical and Electronics Engineers. Biggest global interest group for engineers of different branches and for computer scientists. [IEEE90]
Augmented reality	Augmented reality (AR) is a live, copy, view of a physical, real-world environment whose elements are augmented (or supplemented) by computer-generated sensory input such as sound, video, graphics or GPS data.
Requirement	A condition or capability needed by a user to solve a problem or achieve an objective. A condition or capability that must be met or possessed by a system or system component to satisfy a contract, standard, specification, or other formally imposed document. A documented representation of a condition or capability as in definition
Feature	Transformation of input parameters to output parameters based on a specified algorithm. It describes the functionality of a product in the language of the product. Used for requirements analysis, design, coding, testing or maintenance. [IEEE90]

Use Case	Concept to describe a system based on usage of system resources by its environment. Characterized by an objective-set of interactions within and at the borders of that system. Notation from UML for describing a scenario (Usage approach, operational scenario) from the perspective of tis users. [IEEE90]
Web Application	A computer software application that is coded in a browser-supported and reliant on a common web browser to render the application executable.
Software Engineering	The application of a systematic, disciplined, quantifiable approach to the development, operation, and maintenance of software; that is, the application of engineering to software." [IEEE90]
Specification	Precise description of an activity or work product which serves as basis or input for further activities or work product. A specification can comprise requirements to a product and how they will be solved. Different parts of a specification (e.g., what is to be done, how it will be done) must not be mixed. [IEEE90]
Server	"a computer program running to serve the requests of other programs, the "clients". Thus, the "server" performs some computational task on behalf of "clients". The clients either run on the same computer or connect through the network. In most common use, server is a physical computer (a computer hardware system) dedicated to running one or more such services (as a host), to serve the needs of users of the other computers on the network. Depending on the computing service that it offers it could be a database server, file server, mail server, print server, web server, or some other kind of server."

1.4.2 Key Definition Key Definition

KEY	ABBREVIATIONS
VSE	Very Small Entity
IEEE	Institute of Electrical and Electronics Engineers Software
UML	Unified Modeling Language
SRS-XX	Software Requirement Specification number YY
URS-XX	User Requirement Specification number XX
AD-XXX	Activity Diagram number XX
C0-XX	Constraints number XX

Chapter Two | Overall Description & Requirement

2.1 Product Perspective

AR Map 2Go! is a mobile application project which developing base on **Android** Operating System. The system has integrated with basic features of Android mobile application, **Augmented Reality** Technology, Geo-location Service and Web Application. The system provides a feature to display an interactive 3D-object, operate via **Vuforia SDK**, to the user by scanning on the map shape picture or the text title. The system has a basic feature on navigation and location tracking via Google Play Service and native Google Map application on android to navigate the user to the target destination.

The user should register for using the common features which provide by the application. The system operates by scanning on the specified map shape or location text title via camera view and display the related interactive 3D-object to the user. The administrator manages the data and information on the server side via the web application by adding a new location and new 3D object symbol into the server database to keep this application are up-to-date.

2.2 Product Features

Feature #1: Registration and Authorization Management

Description: This features supports web-application management   system for administrator.

Target: Users

- The user can register a new account.
- The user can delete an account.
- The user can login to the system.
- The user can logout from the system.
- The user can recover the password.
- The user can view the user profile.
- The user can update profile information.
- The user can change profile picture.

Feature #2: Web-Application and server Management

Description: This feature supports registration of users for using the system.

Target: Administrator

- The administrator can login into the web application system.
- The administrator can logout from the web application system.

- The Administrator can add the new location into the server.
- The Administrator can add the new 3D object symbol into the server.

Feature #3: Augmented Reality Management

Description: This features supports about Augmented Reality management to show the 3-dimension object on the map.

Target: Users

- The system can scan on the specified map picture.
- The system can scan on the specified text title.
- The system can show the 3D-object via camera view.
- The user can interact with 3D-object by click to get the action.

Feature #4: Map and Navigation Management

Description: This features supports map management system on mobile application.

Target Users

- Develop Map using Google Maps API.
- The user can click on each 3D-object to get route direction planning.
- The system can navigate route direction via Google Map application.
- The system can show nearby locations related with the specified target.

Feature #5: Notification Management

Description: This features supports map management system on mobile application.

Target: Users

- The system can send the notification to the user when the system has been updated.

2.3 User Characteristics

The target users are travelers (foreign and domestic traveler) or anyone who need to use the new kind of map application and easy to use to support on location tracking and navigation while traveling along Thailand.

2.3.1 User

These are the general users that did not register to the system.

2.3.2 Member

These are the people who have registered as a member. They can login to get an authorization and identity from the system. The system will allow member to use fully function in the application.

2.3.3 Administrator

These are the people who have registered as a administrator. They have a permission to management the web-application system to provide the new location information, new 3D object files, edit or update the data on the server side.

2.4 Target Sources

AR Map 2Go! use **Augmented Reality** Technology to present the interactive 3D object by scanning on the target media sources;

2.4.1 Picture of map shape

These are the picture contains map shape of each target province.

2.4.2 Location text title's name

These are the location name as a text title on the magazine or specified book guide.

2.5 User Requirements Specification

2.5.1 URS of user side:

URS-01: The user can register a new account.
URS-02: The user can delete an account.
URS-03: The user can login to the system.
URS-04: The user can logout from the system.
URS-05: The user can recover the password.
URS-06: The user can view the user profile.
URS-07: The user can update profile information.
URS-08: The user can change profile picture.
URS-09: The user can view the specified map list from the server database via the application.
URS-10: The user can view the specified location text title list from the server database via the application.
URS-11: The user can select one of the specified map picture from the list to see more detail.
URS-12: The user can select one of the specified text title from the list to see more detail.
URS-13: The user can scan on specified map shape or specified text title to see the related 3-dimension object via the camera view.

2.5.2 URS of administrator side:

URS-20: Administrator can login into the web application on the server.
URS-21: Administrator can logout from the web application on the server.
URS-22: Administrator can add the new location information into the system.

2.6 System Requirements Specification list

SRS-01: The system shall connect to the Internet.

SRS-02: System must provide the user interface of user account registration for registering, which is shown in Table 1.

SRS-03: System shall connect to the user account database on the server.

SRS-04: System shall connect to the user account database on the application.

SRS-05: System must check the duplicate username.

SRS-06: System must check matching between password and confirmed password.

SRS-07: System shall evaluate and check the complete of the user account information.

SRS-08: System can record the registered user account information in the user account information database on the server.

SRS-09: System can record the registered user account information in the user account information database on the application.

SRS-10: System must provide the user interface of deleting user account.

SRS-11: System must provide the dialog interface for confirm the action to delete a user account from the system.

SRS-12: System delete user account contains all of user account information from user registration database on the server.

SRS-13: System delete user account contains all of user account information from the user database on the mobile application.

SRS-14: The system provides the interface that presents the Sign-in input form which is shown in Table 2.

SRS-15: The system validates the E-mail/password with the database on the server.

SRS-16: The system gives the authorization and identity to the users.

SRS-17: The system validates the user authorization and identity.

SRS-18: The system updates the user status to online status in the database.

SRS-19: The system provides the interface that presents the logout button.

SRS-20: System must provide the dialog interface for confirm the

action to logout from the system.

SRS-21: The system validates the user authorization and identity.

SRS-22: The system updates the user status to offline status in the database.

SRS-23: The system destroys the user's authorization.

SRS-24: The system provides the interface that presents the recover password which is shown in Table 3.

SRS-25: The system validates the E-mail account in the database.

SRS-26: The system creates URL for create new password.

SRS-27: The system stores the created new password URL information in the server database.

SRS-28: The system sends create new password URL to an E-mail account.

SRS-29: The system validates the create new password URL with database.

SRS-30: The system provides the interface that presents input new password form.

SRS-31: The system updates new password information in the server database.

SRS-32: The system provides the interface to presents the user information.

SRS-33: System must provide the user interface of user update profile information input form, which is shown in Table 4.

SRS-34: The system validates the user authorization and identity.

SRS-35: The system update the user's profile information on the application database.

SRS-36: System must provide the user interface to select one photo from mobile photo gallery to the user.

SRS-37: System must resize the selected photo width and high into 150 x 150 pixel.

SRS-38: System set the new profile picture on the profile image layout in the Profile page to present a new profile picture.

SRS-39: The system must convert image file type from Bitmap to BLOB.

SRS-40: The system updates user image file in the application database.

SRS-41: The system provides the interface that presents the map list row to shows the map information from the location map list database on the server via this application.

SRS-42: The system provides the interface that presents the text title list row to shows the map information from the text title list database on the server via this application.

SRS-43: The system provides the interface to presents the all of the available map list on the server database to the user.

SRS-44: The system provides the interface with contains location name, specified map picture, scanning condition and help information to user.

SRS-45: The system provides the interface to presents the all of the available text title list on the server database to the user.

SRS-46: The system provides the interface that presents the text title list row to shows the map information from the text title list database on the server via this application.

SRS-47: The system shall connect the LocationDBAdapter to retrieve the data of location information.

SRS-48: System shall connect to the TextTitleDBAdapter database on the server.

SRS-49: The system shall connect to the AR database on asset folder in the application to provide **.XML** and .DAT files.

SRS-50: The system shall compile all of data source with Vuforia SDK manager, rendering and represent as a 3-dimension object on mobile camera view.

SRS-51: The system provides the interface to presents the Google map activity for showing 3D object model to the user.

SRS-52: System shall connect to the administrator account database on the server.

SRS-53: The system provides the interface that presents the Sign-in input form to administrator.

SRS-54: The system gives the authorization and identity to the administrator.

SRS-55: The system validates the administrator authorization and identity.

SRS-56: The system updates the administrator status to online status in the server database

SRS-57: The system destroys the authorization and identity of the administrator.

SRS-58: The system updates the administrator status to offline status in the server database.

SRS-59: The system provides the interface that presents navigate admin to home page.

SRS-60: System shall connect to the locationDBAdapter database on the server.

SRS-61: The system provides the interface that presents the add the new location which require parameter input.

SRS-62: The system provides the interface that presents complete adding message of adding new location information status to administrator.

2.7 Constraint

CO-01: The system needs the Internet connection for accessing to the system.

CO-02: The application requires Android Operation System version 2.3.3 or higher to run some function and android Widget in the application.

CO-03: The users must have at less an account of email address for registration.

CO-04: The application requires to open the service of GPS on the user mobile to access the user location.

CO-05: The application requires Google Play Service to run the function on the Google map on mobile.

CO-06: The application requires the mobile internal storage to store the data and application media.

CO-07: The limited of Augmented Reality using are the hardware specification and environmental constraints such as the ambient light

Chapter Three | Specific Requirement

3.1 Use Case Diagram

3.1.1 The Overview Use Case Diagram: User Side
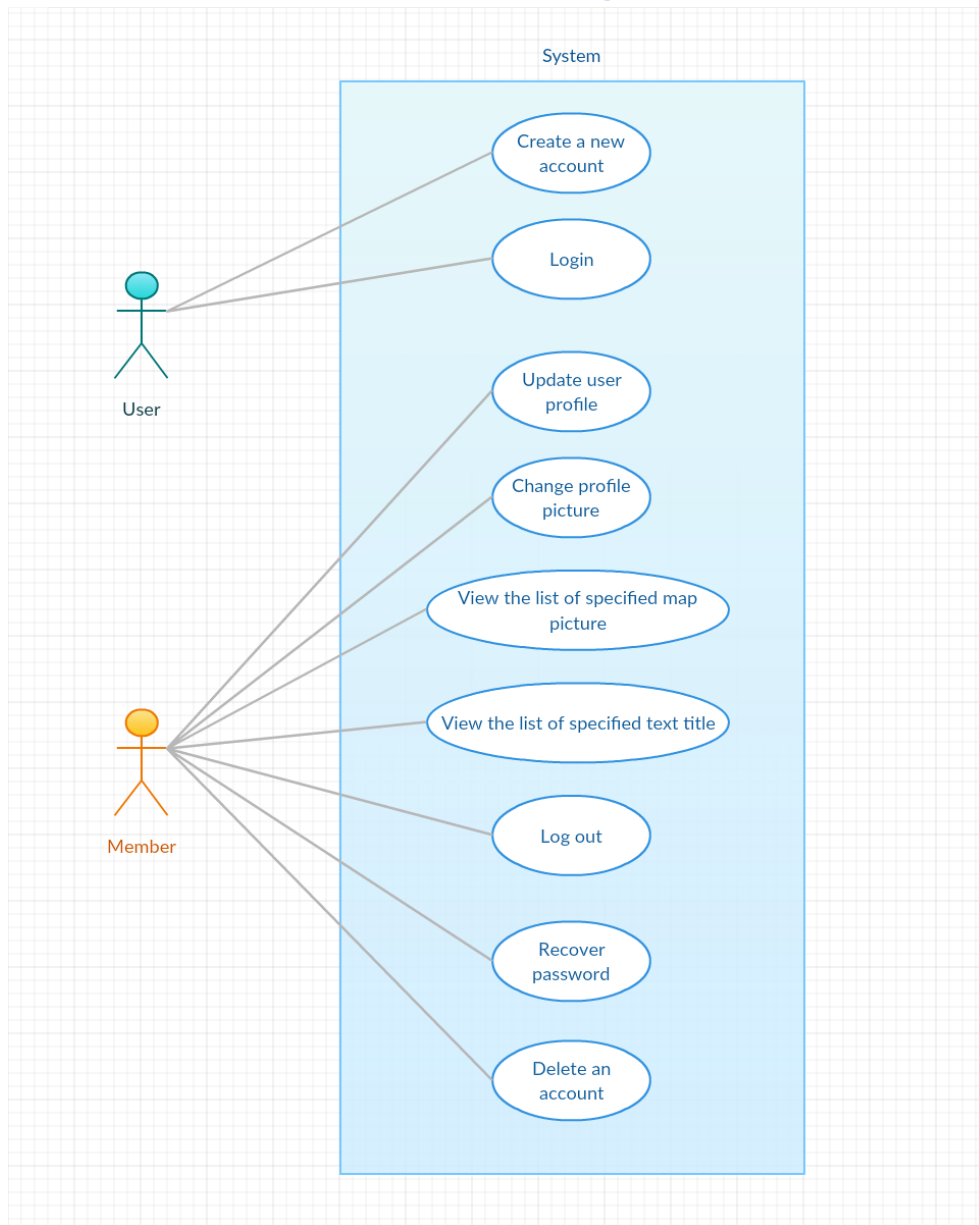
Figure 3.1: The Overview Use Case Diagram: User Side - part 1
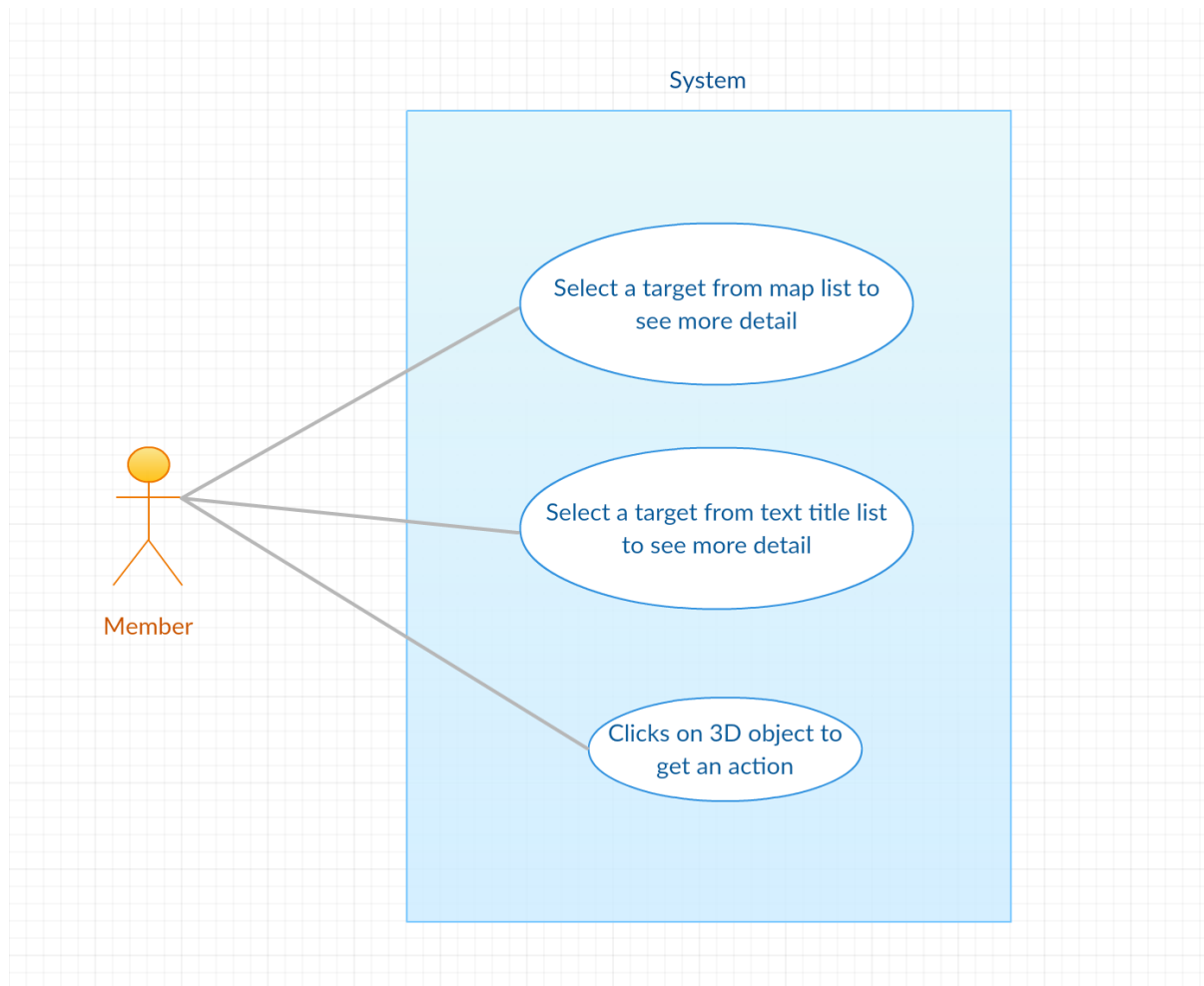
Figure 3.2: The Overview Use Case Diagram: User Side - part 2

From the **figure 3.1** and **3.2** is the overview use case diagram of the system of the user side. The use case diagram presents the entire functional requirement that an actor can do. In the figure, there are many kinds of functions that interact with the system. The functions depend on the user purpose. Also, all kinds of functions come from the general users.

3.1.2 The Overview Use Case Diagram: Administer side
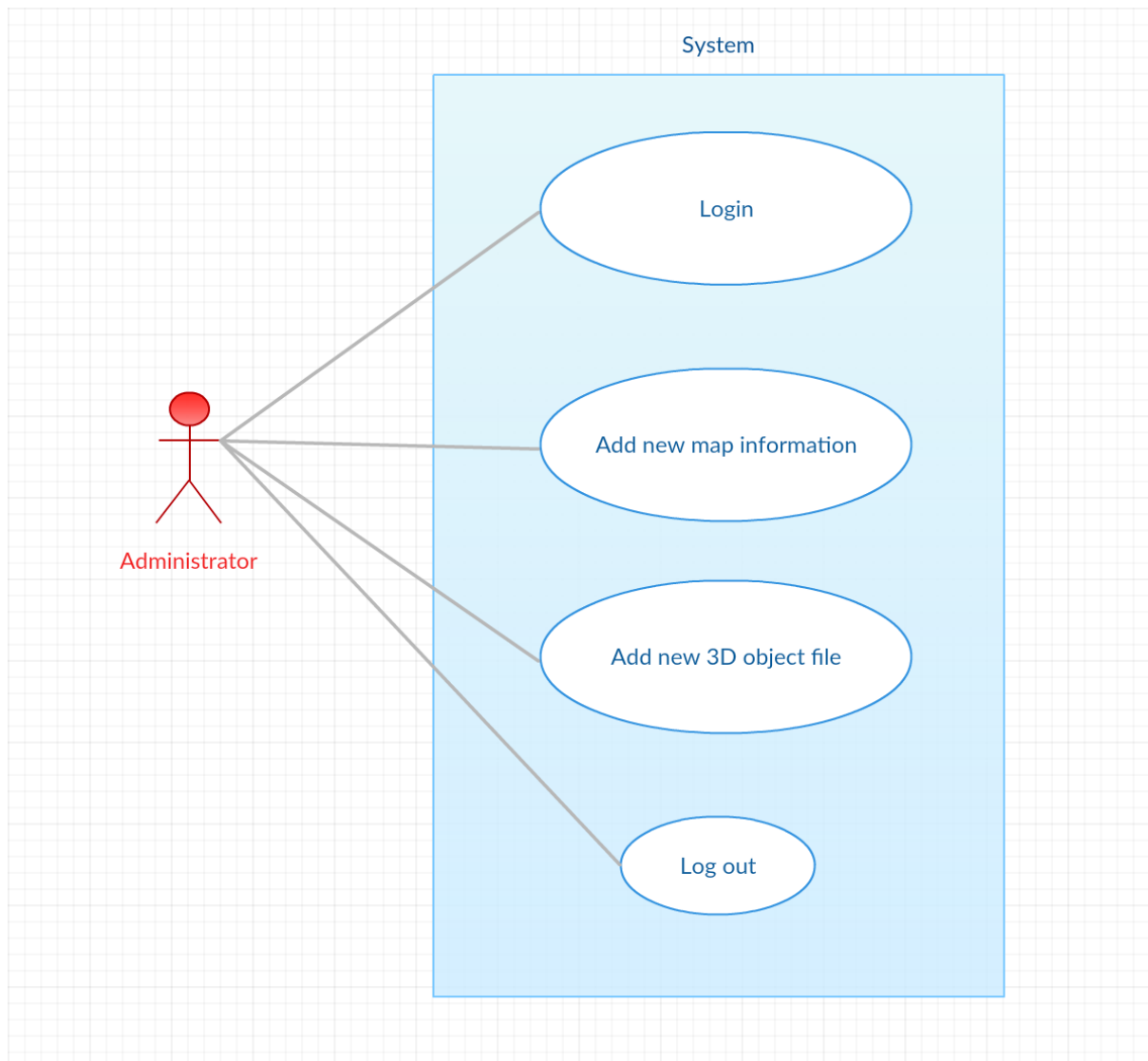
Figure 3.3: Overview Use Case Diagram: Administrator side

From the **figure 3.3** is the overview use case diagram of the system of the administer side. The administer can interact with the system with the functions which only the administrator can use.

Chapter Four |Software Requirement Specification

4.1 System Requirement Specification

4.1.1 URS-01: The user can register a new account.

Introduction

The user can select Sign-Up button on the main page to start the registration. The user can register with the system to create a new account. The registration contains user account information, which includes e-mail as a username, password, confirm password.

Input

1. Input the E-mail as a username, Password and Confirm Password.

Table 1: Present the data which used to input for creating new profile.

Data	Example	Note
Username	parunn@hotmail.com	- length : 10 - 254 characters - format : email format
Password	Rtwe3dfa	- length : 6 - 15 characters
Re-password	Rtwe3dfa	- use only : alphabet and number
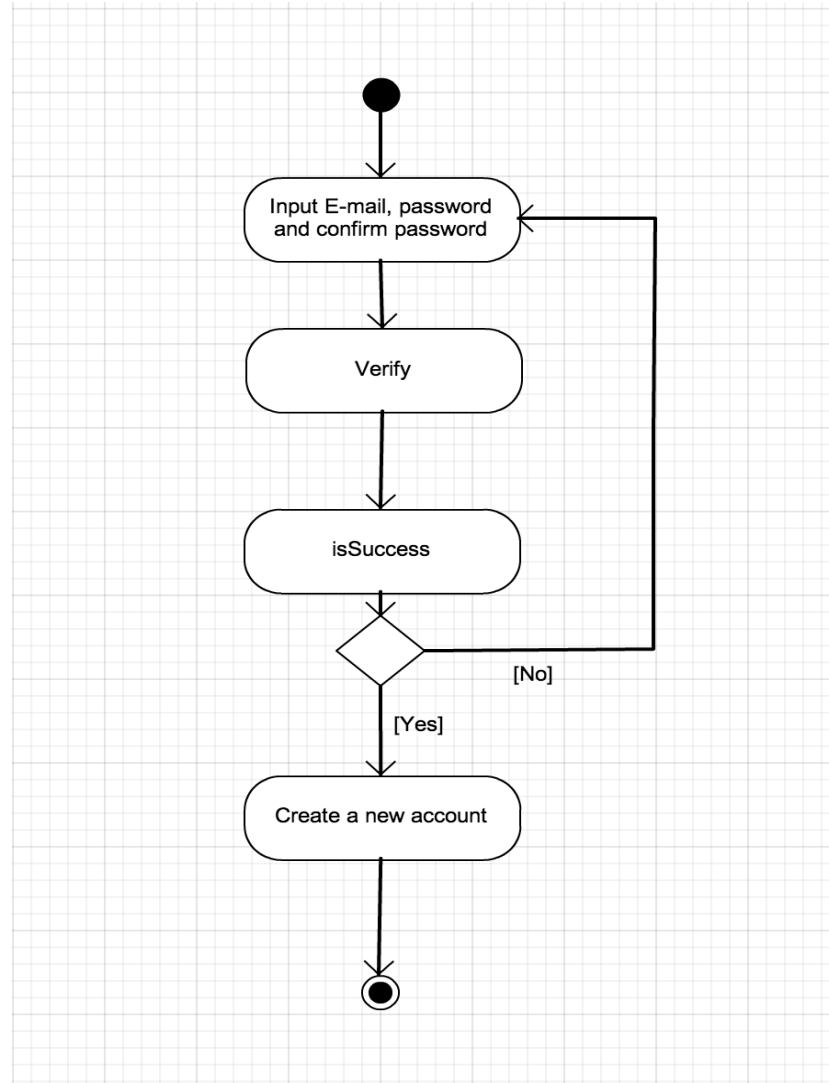
Process

Figure 4.1: Activity Diagram of register a new account (AD-001)

The activity diagram from the **figure 4.1** presents the registration process. The users register with the system by receive user E-mail address, password and confirm password. The system will verify that the E-mail address already existed in the server database. Then verify matching between password and confirm password. If the process is success, System allows registering and create a user account and information into the database server. Also, the application will create a user account and information in SQLite database on mobile application.

Output

- If the user has completed the registration, the system shows the message "Registration Successful". Then the system will navigate the user to the home page. In contrast, if users do not complete the registration, the system will show the error message depend on the kinds of error. If E-mail already existed, system will show the error message "Email Exists!". If password and confirm password does not match, system will show the error message "Password and Confirm Password Not Match!". If no internet connection, system will show the error message "No Internet Connection!".

Software Requirement Specification

SRS-01: The system shall connect to the Internet.

SRS-02: System must provide the user interface of user account registration for registering, which is shown in Table 1.

SRS-03: System shall connect to the user account database on the server.

SRS-04: System shall connect to the user account database on the application.

SRS-05: System must check the duplicate username.

SRS-06: System must check matching between password and confirmed password.

SRS-07: System shall evaluate and check the complete of the user account information.

SRS-08: System can record the registered user account information in the user account information database on the server.

SRS-09: System can record the registered user account information in the user account information database on the application.

4.1.2 URS-02: The user can delete an account.

Introduction

User can delete the own account which have to register with the system. The registration contains all of user account information will remove from both of server database and application database system.

Input
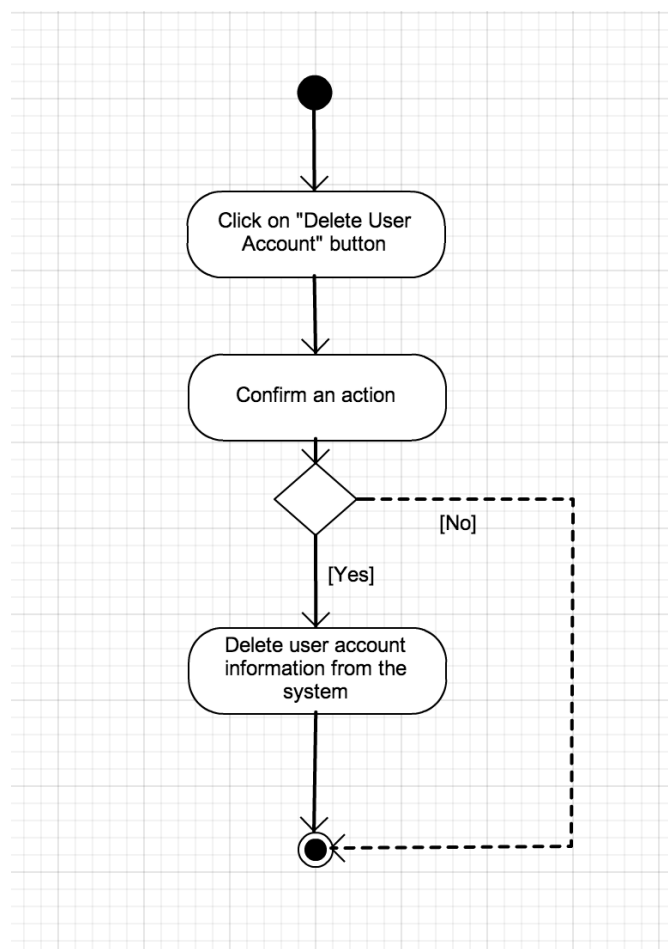
1.   User click on "Delete User Account" Button.

Process

Figure 4.2: Activity Diagram of delete user account (AD-002)

The activity diagram from the **figure 4.2** presents delete user account process. User can delete the own account by click on "Delete User Account" Button. The system will ask the user to confirm to delete an account between "Accept" or "Cancel". If user confirm to delete the account. The user account contains all of user account information will remove from both of server database and application database system. On the other hand, the action will cancel.

Output

- If user confirm to delete the account. The user account contains all of user account information will remove from both of server database and application database system. On the other hand, the action will cancel and return to the previous page.

Software Requirement Specification

SRS-01: The system shall connect to the internet.

SRS-03: System shall connect to the user account database on the server.

SRS-04: System shall connect to the user account database on the application.

SRS-10: System must provide the user interface of deleting user account.

SRS-11: System must provide the dialog interface for confirm the action to delete a user account from the system.

SRS-12: System delete user account contains all of user account information from user registration database on the server.

SRS-13: System delete user account contains all of user account information from the user database on the mobile application.

4.1.3 URS-03: The user can login to the system.

Introduction

The user can select Sign-In button on main the page to start login activity. The user can login to the system via using Thailand Quest Hunt account with their authenticate E-mail and password.

Input

1. Input the user E-mail as a username and Password.

Table 2: Present the data which used to input for login to the system.

Data	Example	Note
Username	parun@hotmail.com	- length : 10 - 254 characters - format : email format
Password	parun15	- length : 6 - 15 characters - use only : alphabet or number

Process

Figure 4.3: Activity Diagram of login to the system (AD-003)

The activity diagram from the **figure 4.3** presents the login process. The user can login via system account by inputting username and password. If login to the system successful, the system will give the user authorization.

Output

- If success, the system will give the authorization for the user and navigates the user to the Home page. If fail, the system navigates the users to the login interface form and show error message depend on the kinds of error. If username input field are empty, system will shows the error message "Please input [Username]". If password input field are empty, system will shows the error message "Please input [Password]". If username and password are not correct, system will shows the error message "Incorrect Username and Password".

Software Requirement Specification

SRS-01: The system shall connect to the Internet.

SRS-03: System shall connect to the user account database on the server.

SRS-14: The system provides the interface that presents the Sign-in input form which is shown in Table 2.

SRS-15: The system validates the E-mail/password with the database on the server.

SRS-16: The system gives the authorization and identity to the users.

SRS-17: The system validates the user authorization and identity.

SRS-18: The system updates the user status to online status in the database.

4.1.4 URS-04: The user can logout from the system.

Introduction

The users can logout from the system. The system will destroy the user' authorization and not allow the user to operate with the system.

Input

1. User click on "Log out" Button.
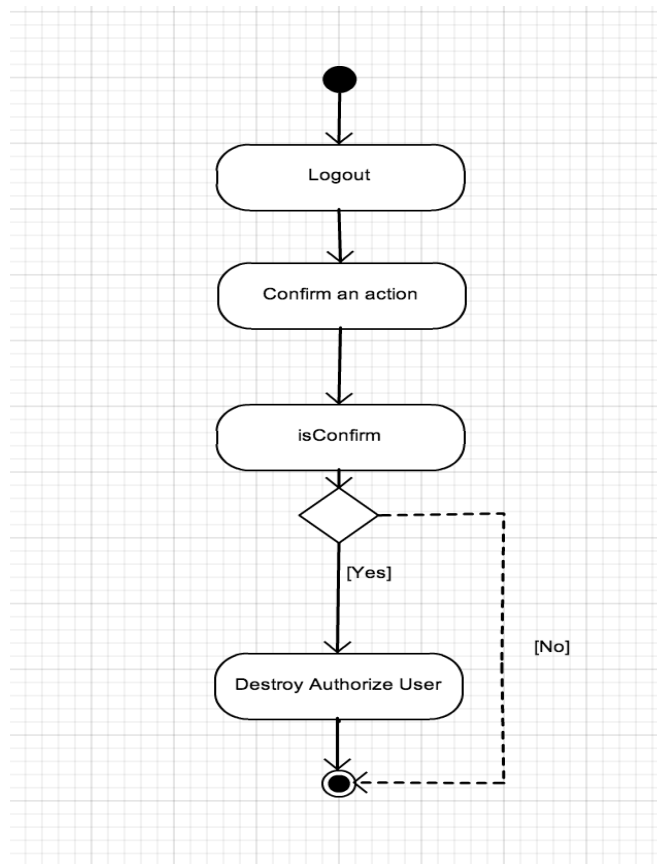
Process

Figure 4.4: Activity Diagram of delete user account (AD-004)

The activity diagram from the **figure 4.4** presents the logout process. The users can click for logout from the system. The system will remove the user authorization and user identity.

Output

- The authorization of users is destroyed and navigates the users to the main page.

Software Requirement Specification

SRS-01: The system shall connect to the Internet.

SRS-03: System shall connect to the user account database on the server.

SRS-19: The system provides the interface that presents the logout button.

SRS-20: System must provide the dialog interface for confirm the action to logout from the system.

SRS-21: The system validates the user authorization and identity.

SRS-22: The system updates the user status to offline status in the database.

SRS-23: The system destroys the user's authorization.

4.1.5 URS-05: The user can recover the password.

Introduction

The users who have forgot the password, they can recover new password by input user E-mail address as they used to register. The system will send the URL for create new password to user's E-mail. The users must input new password and re-password.

Input

1. Input the user E-mail and Password.

Table 3: Present the data which used to input for recover the password.

Data	Example	Note
E-Mail	parun@hotmail.com	- length : 10 - 254 characters - format : email format
Password	parun15	- length : 6 - 15 characters - use only : alphabet or number

Process
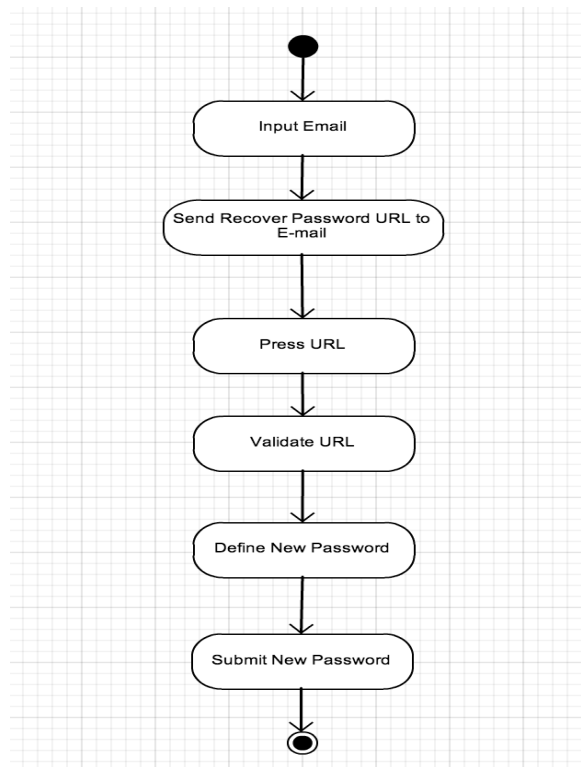
Figure 4.5: Activity Diagram of recover the password. (AD-005)

The activity diagram from the **figure 4.5** presents the recover password process. The users can recover new password. The users input the E-mail account and submit to the system. The system validates the E-mail with the database. If the system found the E-mail, the system will send URL to an E-mail. The users click URL for create new password.

Output

- If success, the system update new user's password and show message "Create a new password has successful". In case of failure, the system will show the page of define new password from and show message "Something wrong for creating new password, please try again".

Software Requirement Specification

SRS-01: The system shall connect to the Internet.
SRS-03: System shall connect to the user account database on the server.
SRS-24: The system provides the interface that presents the recover password which is shown in Table 3.
SRS-25: The system validates the E-mail account in the database.
SRS-26: The system creates URL for create new password.
SRS-27: The system stores created new password URL information in the server database.
SRS-28: The system sends create new password URL to an E-mail account.
SRS-29: The system validates the create new password URL with database.
SRS-30: The system provides the interface that presents input new password form.
SRS-31: The system updates new password information in the server database.

4.1.6 URS-06: The user can view the user profile.

Introduction

The user can view the user profile by click on view profile button. The user profile contains username, E-mail address, mobile phone, Facebook account and user address.

Input

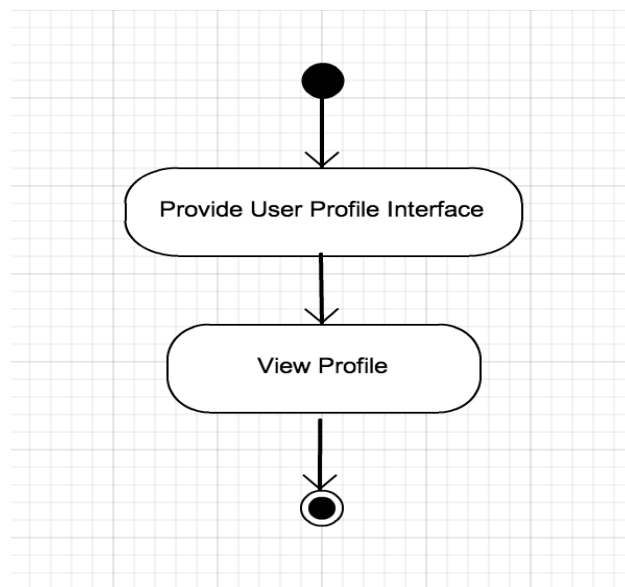   **1.**   User clicks on "View Profile" button.

Process

Figure 4.6: Activity Diagram of view the user profile. (AD-006)

The activity diagram from the **figure 4.6** presents view the user profile process. The users can view the profile by click on "View Profile" button in the profile page. The system will provide the user information in the user database and show into user profile interface.

Output

- System will show the profile interface with user information in the application databases.

Software Requirement Specification

SRS-01: The system shall connect to the Internet.
SRS-03: System shall connect to the user account database on the server.
SRS-04: System shall connect to the user account database on the application.
SRS-32: The system provides the interface to presents the user information.

4.1.7 URS-07: The user can update profile information.

Introduction

The user can update the user profile information and background. The profile update contains username, E-mail address, mobile phone, Facebook account and user address. The users are able to update each part for updating.

Input

1.   Input the Username, E-mail address, Mobile phone, Facebook account and User address which following in the **table 4**.

Table 4: Present the data which used to input for updating new profile.

Data	Example	Note
Username	Parun	- length : 2 - 40 characters - use only : alphabet and space
Address	6/31 Lampang	- length : 10 - 100 characters - use only : alphabet, number and space
Mobile	02-222-2222	- length : 9 - 15 characters - use only : number
Facebook	Parun	- length : 2 - 40 characters - use only : alphabet and number
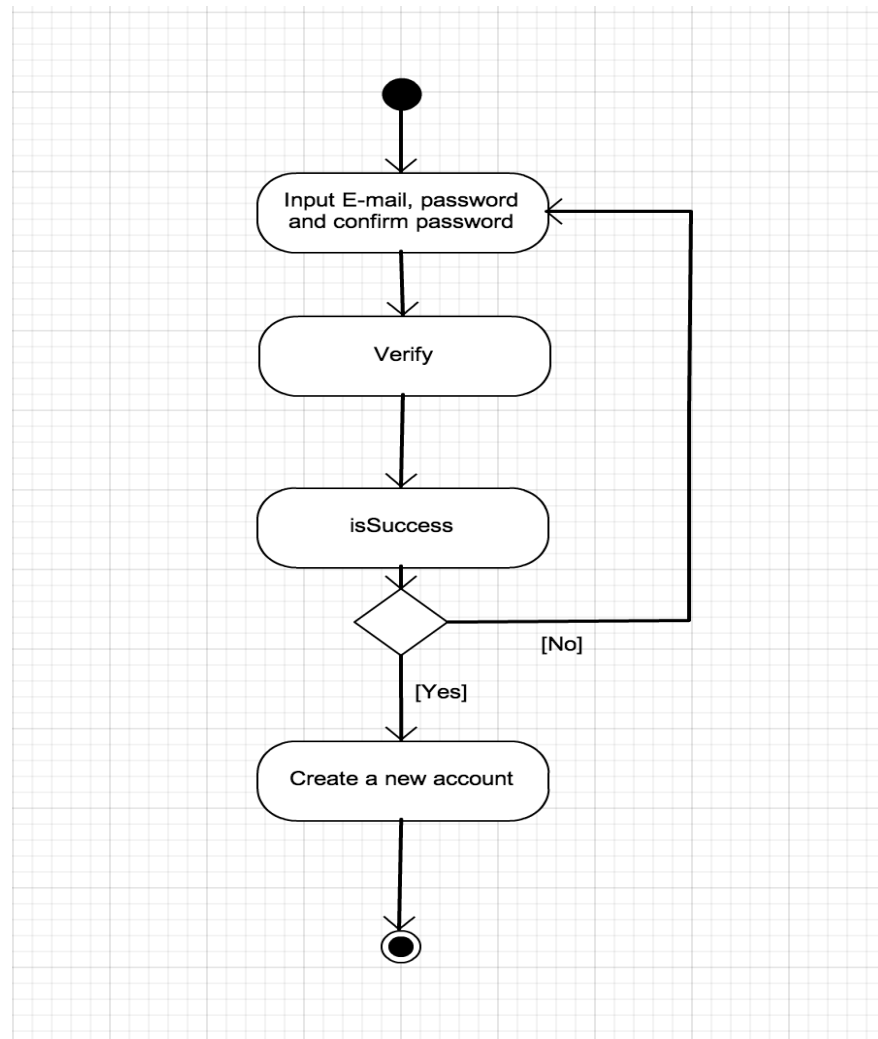
Process

Figure 4.7: Activity Diagram of update profile information process (AD-007)

The activity diagram from the **figure 4.7** presents the update profile process. The users click for update the user's profile. The system provides the form for update the information. The users input new information and submit.

Output

- The system shows message "Update Profile Successful" after system update success. If the system can not update the user profile, the system will show message "Update Profile Fail".

-

Software Requirement Specification

SRS-33: System must provide the user interface of user update profile information input form, which is shown in Table 4.
SRS-04: System shall connect to the user account database on the application.
SRS-34: The system validates the user authorization and identity.
SRS-35: The system update the user's profile information on the application database.

4.1.8 URS-08: The user can change profile picture.

Introduction

The user can change profile picture by select from the albums or the photo gallery in the mobile phone. the photo will resize to 150 x 150 (pixel x pixel).

Input

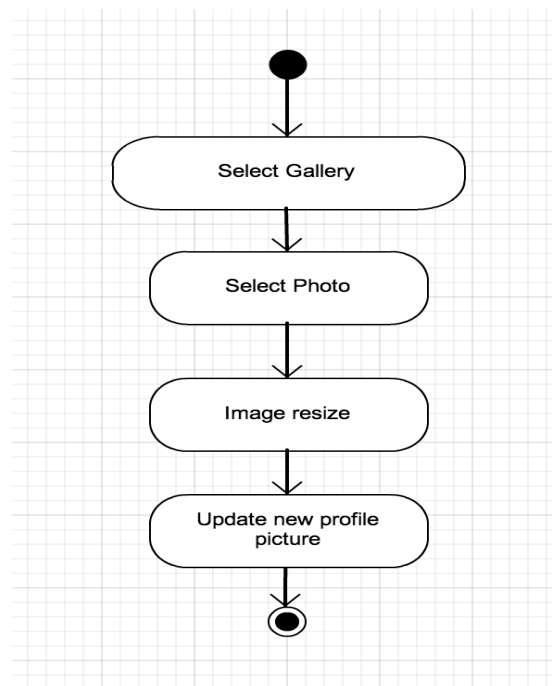1.   User click on profile picture image view layout on the Profile page.

Process

Figure 4.8: Activity Diagram of change profile picture process (AD-008)

The activity diagram from the **figure 4.8** presents the change profile picture process. The users click on image view layout on the Profile page for update the user's profile picture. The system provides the interface for select photo from the form mobile library (internal storage). The users can select one of the photo from the mobile gallery to update a new profile picture.

Output

- The selected image will show on the Profile page at user image view layout.

Software Requirement Specification

SRS-36: System must provide the user interface to select one photo from mobile photo gallery to the user.

SRS-37: System must resize the selected photo width and high into 150 x 150 pixel.

SRS-38: System set the new profile picture on the profile image layout in the Profile page to present a new profile picture.

SRS-04: System shall connect to the user account database on the application.

SRS-39: The system must convert image file type from Bitmap to BLOB.

SRS-40: The system updates user image file in the application database.

4.1.9 URS-09: The user can view the specified map list from the server database via the application.

Introduction

The user can view all new release of the specified map picture at the Home page. The list of the specified map information contains location name, specified map picture, scanning condition and help information.
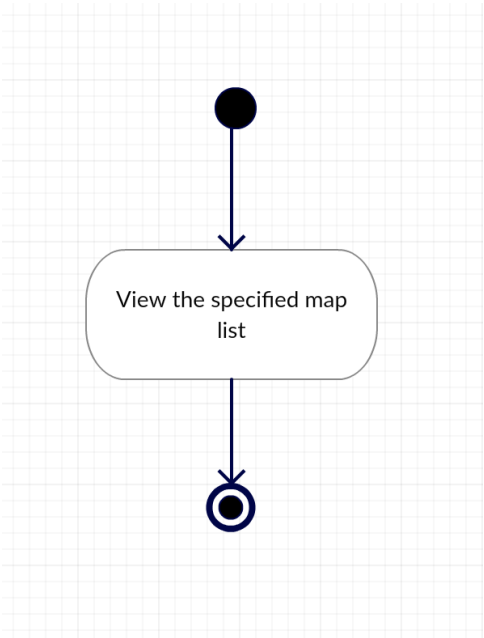
Input

1.   -

Process

Figure 4.9: Activity Diagram of view the specified map list view (AD-009)

The activity diagram from the **figure 4.9** presents view the specified map list information process. The users can view all of the specified map list which store in the server database to see more the information and detail. The system provides the interface that presents the map list row to user.

Output

- System shows the interface with the map list contains location name, specified map picture, scanning condition and help information.

Software Requirement Specification

SRS-01: The system shall connect to the Internet.

SRS-47: The system shall connect the LocationDBAdapter to retrieve the data of location information.

SRS-41: The system provides the interface that presents the map list row to shows the map information from the location map list database on the server via this application.

4.1.9 URS-10: The user can view the specified location text title list from the server database via the application.

Introduction

The user can view all new release of the specified location text title at the Home page. The list of the specified text information contains text of the location name, specified magazine or specified book that use for, scanning condition and help information.
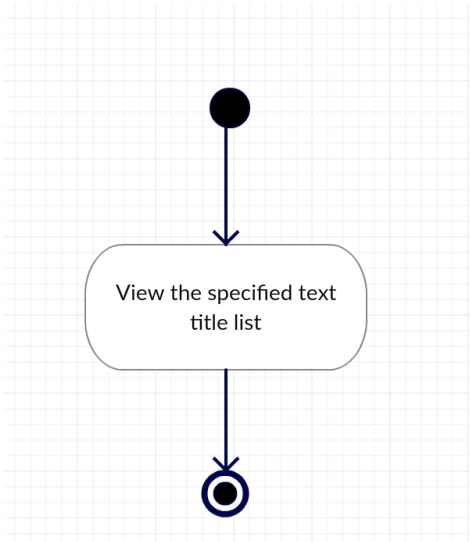
Input

1.   -

Process

Figure 4.10: Activity Diagram of view the specified location text title list view (AD-010)

The activity diagram from the **figure 4.10** presents view the specified location text title list information process. The users can view all of the specified text title list which store in the server database to see more the information and detail. The system provides the interface that presents the map list row to user.

Output

- System shows the interface with the location text title list contains text of the location name, specified magazine or specified book that use for, scanning condition and help information.

Software Requirement Specification

SRS-01: The system shall connect to the Internet.
SRS-47: System shall connect to the map adapter database on the application.
SRS-42: The system provides the interface that presents the text title list row to shows the map information from the text title list database on the server via this application.

4.1.11 URS-11: The user can select one of the specified map from the list to see more detail.

Introduction

The user can choose one of the specified map from map list to see more quest detail by click on the map target map from the map list row. The system will show the new interface with contains location name, specified map picture, scanning condition and help information in more detail.

Input

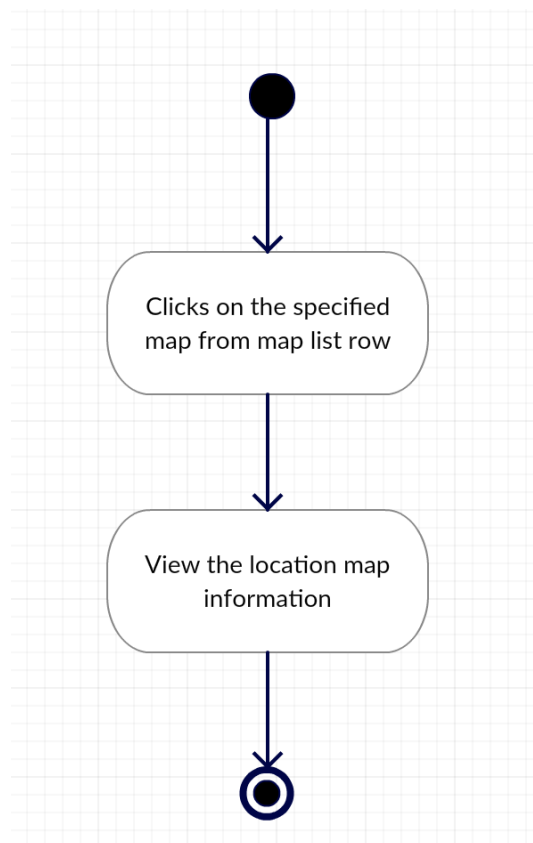1.   User clicks on the map target from map list row.

Process

Figure 4.11: Activity Diagram of selecting the specified map process. (AD-011)

The activity diagram from the **figure 4.11** presents the specified map selecting process. The user can click on specified map target from map list row to see more quest detail with contains location name, specified map picture, scanning condition and help information.

Output

- System will show the interface with location name, specified map picture, scanning condition and help information in more detail.

Software Requirement Specification

SRS-01: The system shall connect to the Internet.
SRS-04: System shall connect to the specified map list database on the server.
SRS-45: The system provides the interface to presents the all of the available map list on the server database to the user.
SRS-46: The system provides the interface with contains location name, specified map picture, scanning condition and help information to user.

4.1.12 URS-12: The user can select one of the specified text title from the text list to see more detail.

Introduction

The user can choose one of the specified text title from text title list row to see more quest detail by click on the target text title from the text title list row. The system will show the new interface with contains text of the location name, specified magazine or specified book that use for, scanning condition and help information in more detail.

Input

1. User clicks on the text title from text title list row.
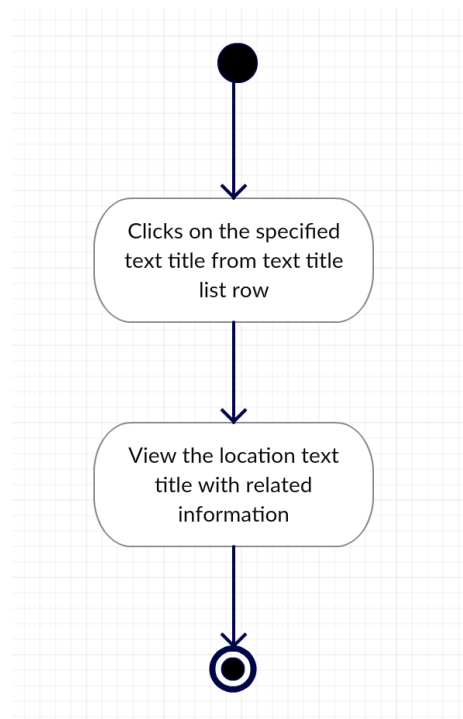
Process

Figure 4.12: Activity Diagram of selecting the specified map process. (AD-012)

The activity diagram from the **figure 4.12** presents the specified text title selecting process. The user can click on specified text title target from text title list row to see more detail with

contains text of the location name, specified magazine or specified book that use for, scanning condition and help information.

Output

- System will show the interface with contains text of the location name, specified magazine or specified book that use for, scanning condition and help information in more detail.

Software Requirement Specification

SRS-01: The system shall connect to the Internet.

SRS-04: System shall connect to the specified text title list database on the server.

SRS-47: The system provides the interface to presents the all of the available text title list on the server database to the user.

SRS-48: The system provides the interface that presents the text title list row to shows the map information from the text title list database on the server via this application.

4.1.13 URS-13: The user can scan on specified map shape or specified text title to see the related 3-dimension object via the camera view.

Introduction

The user can view the related of 3-dimension object on the map via using mobile camera scan on the specified target.

Input

- The user pans the camera on mobile phone to target object in the quest clue to find the hidden 3D object via camera view.

- The user pans the camera on mobile phone to target object in the quest clue to find the hidden 3D object via camera view.
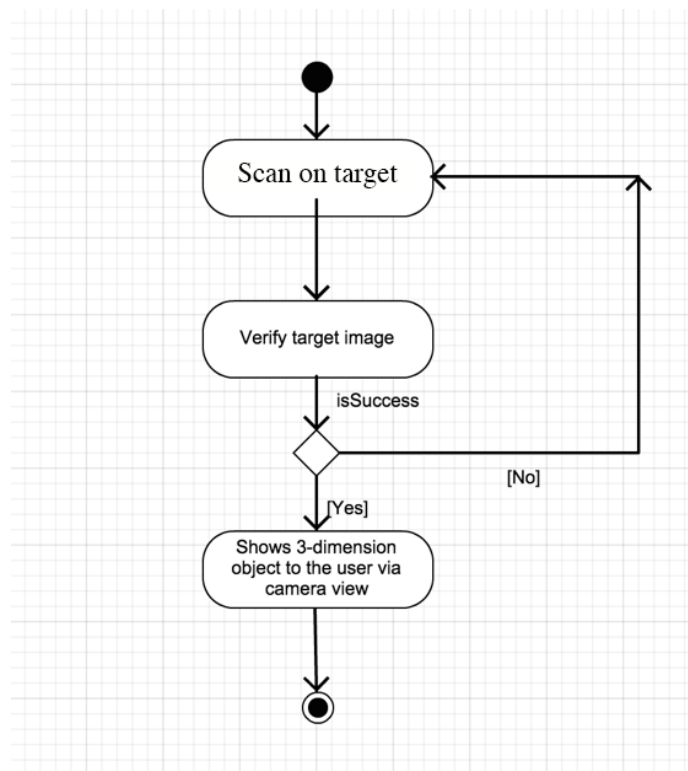
Process

Figure 4.13: Activity Diagram of start to play the game process. (AD-013)

The activity diagram from the **figure 4.13** presents view the 3-dimension object on the map via the mobile camera view. The user clicks "Check-in" button on UI menu to navigate the user to AR-View. When the user pans the camera on mobile phone to target object in the quest clue to find the hidden 3D object via camera view. If the applications verify the target data success, the application will render and represent the 3D-object to the user. If not, the user cannot see any result via camera view.

Output

- System will represent 3D object via camera view to the user if the verification is success. If not, there are no any result return to the user.

Software Requirement Specification

SRS-01: The system shall connect to the Internet.

SRS-47: The system shall connect the LocationDBAdapter to retrieve the data of location information.

SRS-48: System shall connect to the TextTitleDBAdapter database on the server.

SRS-49: The system shall connect to the AR database on asset folder in the application to provide **.**XML and .DAT files.

SRS-50: The system shall compile all of data source with Vuforia SDK manager, rendering and represent as a 3-dimension object on mobile camera view.

SRS-51: The system provides the interface to presents the Google map activity for showing 3D object model to the user.

4.1.20 URS-20: The administrator can login into the web application system.

Introduction

The user can select Sign-In button on main the page to start login activity. The user can login to the system via using Thailand Quest Hunt account with their authenticate E-mail and password.

Input

1.	Input the administrator Username and Password.

Table 6: Present the data which used to input for login to the system.

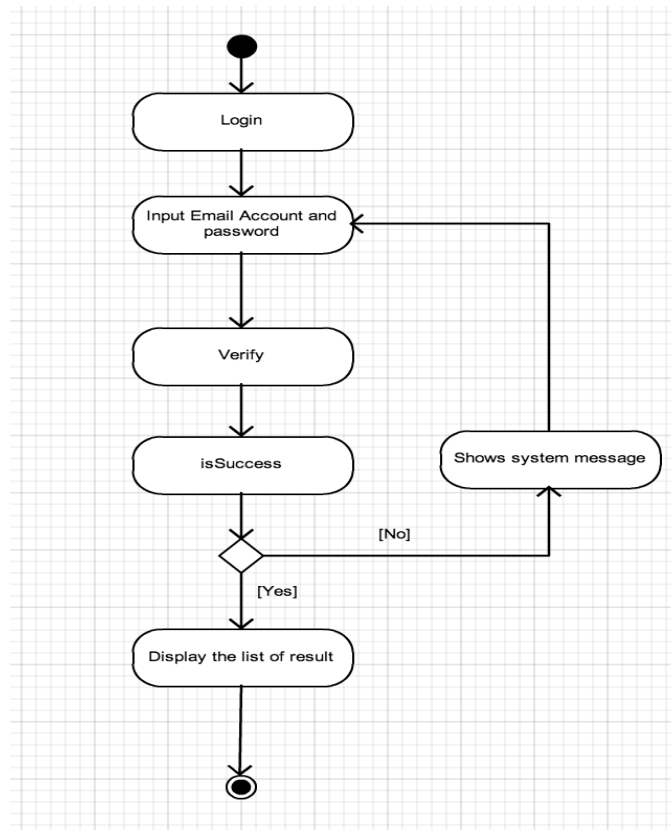| Data	Example	Note
Username	parun@hotmail.com	- length : 10 - 254 characters - format : email format
Password	parun	- length : 6 - 15 characters - use only : alphabet or number

Process

Figure 4.20: Activity Diagram of login to the system (AD-020)

The activity diagram from the **figure 4.20** presents the login process. The user can login via system account by inputting username and password. If login to the system successful, the system will give the user authorization.

Output

- If success, the system will give the authorization for the user and navigates the user to the Home page. If fail, the system navigates the users to the login interface form and show error message depend on the kinds of error. If username input field are empty, system will shows the error message "Please input [Username]". If password input field are empty, system will shows the error message "Please input [Password]". If username and password are not correct, system will shows the error message "Incorrect Username and Password".

Software Requirement Specification

SRS-01: The system shall connect to the Internet.

SRS-52: System shall connect to the administrator account database on the server.

SRS-53: The system provides the interface that presents the Sign-in input form which is shown in **Table 6** to administrator.

SRS-15: The system validates the E-mail/password with the database on the server.

SRS-54: The system gives the authorization and identity to the administrator.

SRS-55: The system validates the administrator authorization and identity.

SRS-56: The system updates the administrator status to online status in the server database.

4.1.21 URS-21: The administrator can logout from the web application system.

Introduction

The administrator can logout from the web application system. The system will destroy the admin' authorization and not allow the admin to operate with the system.
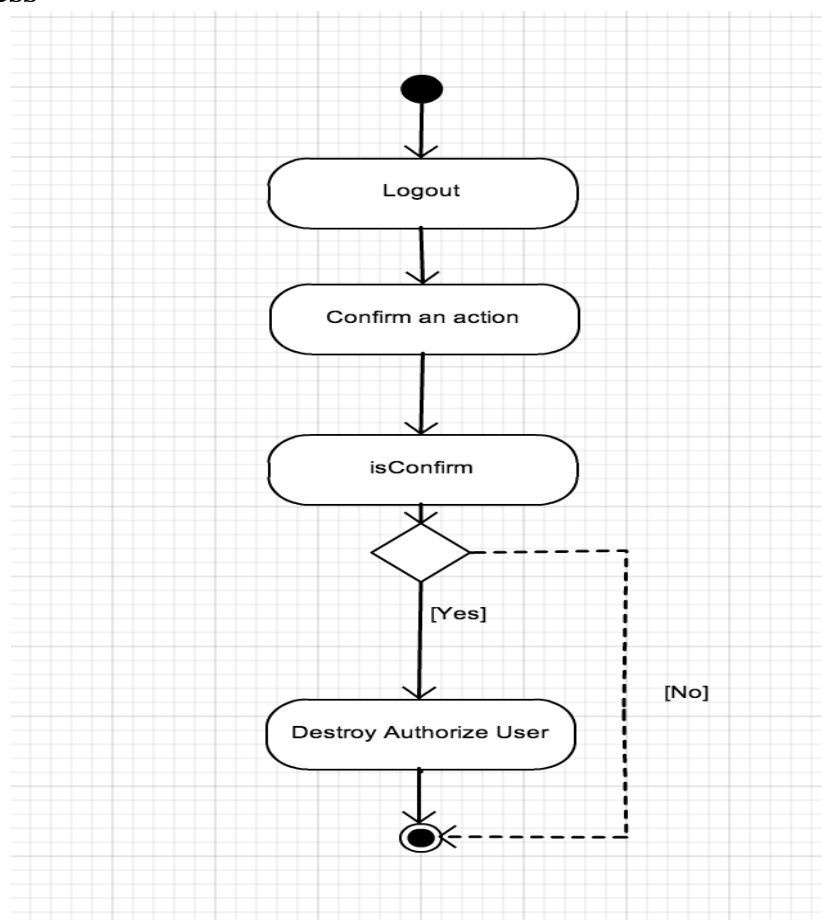
Input

1.   User click on "Log out" Button.

Process

Figure 4.21: Activity Diagram of delete user account (AD-021)

The activity diagram from the **figure 4.21** presents the logout process. The admin can click for logout from the system. The system will remove the admin authorization and admin identity.

Output

-        The authorization of admin is destroyed and navigates the admin to the main page.

Software Requirement Specification

SRS-01: The system shall connect to the internet.
SRS-52: System shall connect to the administrator account database on the server.
SRS-57: The system destroys the authorization and identity of the administrator.
SRS-58: The system updates the administrator status to offline status in the server database.
SRS-59: The system provides the interface that presents navigate admin to home page.

4.1.22 URS-22: The Administrator can add the new location information into the server.

Introduction

Administrator can add the new quest package into system.

Input

1. Input the administrator Username and Password.

2. l_name, l_image, l_description, l_total_place, l_status, l_map_id

Table 7: Present the data which used to input for login to the system.

Data	Example	Note
Username	parun@hotmail.com	- length : 10 - 254 characters - format : email format
Password	parun	- length : 6 - 15 characters - use only : alphabet or number

Table 8: Present the data which used to input for adding the new location information to the server database.

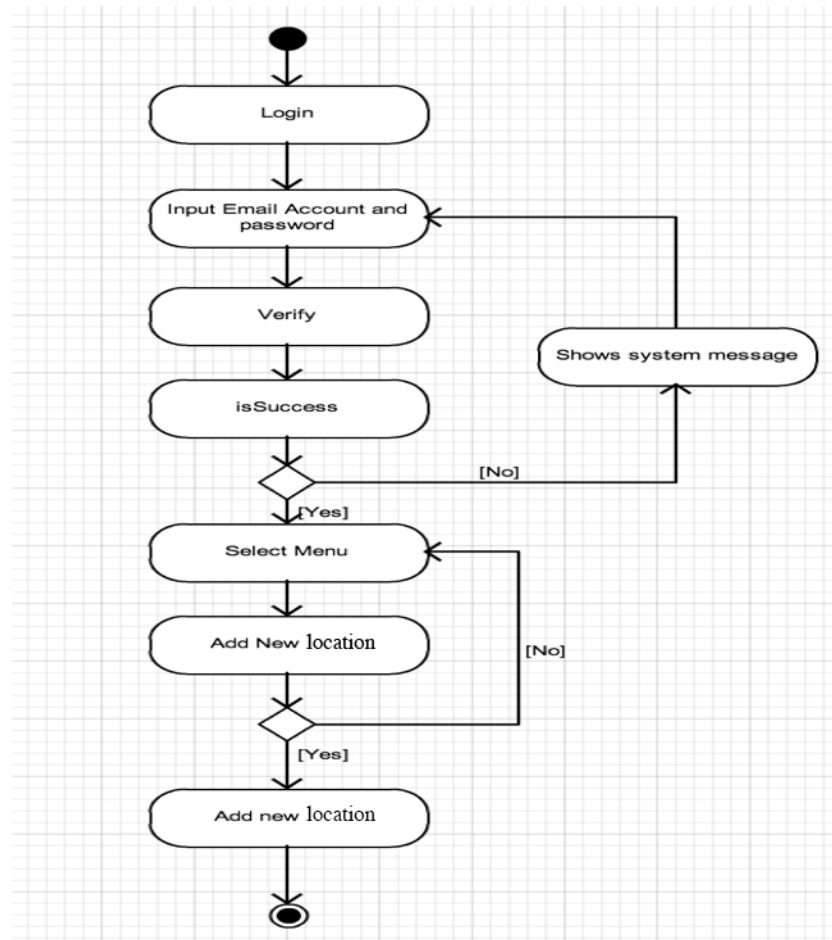| Data	Example	Note
l_name	Chiang Mai	- length : 10 - 254 characters - use only : alphabet or number
l_image	Chiangmai.jpg	- BLOB
l_description	Chiang Mai province	- length : 10 - 254 characters - use only : alphabet or number
l_total_place	1	- length : 6 - 15 characters - use only : alphabet or number
l_status	1	- Integer

Process

Figure 4.22: Activity Diagram of administrator can add the new location information into server database. (AD-022)

The activity diagram from the **figure 4.22** presents adding the new location information by the administrator into server database process. The Administrator can add the new location information into the server with location name, location image, description and status mapping with Vuforia online database. After complete, it will available and show to the user.

Output

-    The system provides the interface that presents the system message "insert complete" to the administrator.

Software Requirement Specification

SRS-01: The system shall connect to the internet.

SRS-52: System shall connect to the administrator account database on the server.

SRS-53: The system provides the interface that presents the Sign-in input form which require input as showing in **Table 7** to administrator.

SRS-15: The system validates the E-mail/password with the database on the server.

SRS-54: The system gives the authorization and identity to the administrator.

SRS-55: The system validates the administrator authorization and identity.

SRS-56: The system updates the administrator status to online status in the server database.

SRS-60: System shall connect to the locationDBAdapter database on the server.

SRS-61: The system provides the interface that presents the add the new location which require parameter input as showing in **Table 8** to administrator.

SRS-62: The system provides the interface that presents complete adding message of adding new location information status to administrator.