

MINISTRY OF EDUCATION AND TRAINING



My Trips

Architecture Design

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SIGNATURE PAGE

ORIGINATOR:	Dao Thi Khanh Trang	23 th June, 2015
	Project Manager	
	Vu Van Manh	23 th June, 2015
	Member	
REVIEWERS:	Ly Manh Linh	23 th June, 2015
	Member	
	Tran Van Duong	23 th June, 2015
	Member	
	Dao Thi Khanh Trang	23 th June, 2015
	Project Manager	
	Vu Van Manh	23 th June, 2015
	Member	
	Tran Binh Duong	23 th June, 2015
	Instructor	
APPROVAL:	Dao Thi Khanh Trang	26 th June, 2015
	Project Manager	

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Introduction

This document, which is a part of MT project, provides a high level overview and explains the whole architecture of the project; and this introduction section presents an over view of the document.

1.1 Purpose

This document provides a comprehensive architectural overview of the system, using a number of different architectural views to depict different aspects of the system. It is intended to capture and convey the significant architectural decisions that have been made on the system.

This document is intended for both of supervisor and developers of MT project, submitted to instructor and stored in the team's capstone project deliverables kit.

1.2 Scope

This document applies to the overall design of the system. It contains information relating to the architectural design of the software, the structure of the system and the constraints.

This explains main parts of system that is architecture of application.

1.3 Definitions, acronyms and abbreviations

Abbreviation	Description	Note
MT	My Trips	Name of project
SAD	Software Architecture Design	

1.4 References

No	Reference document name	Source/Web Address
1	Software Requirements Specification	Internal Resource
2	Screen Design	Internal Resource

1. Architectural representation

1.1.Overall System Architectural

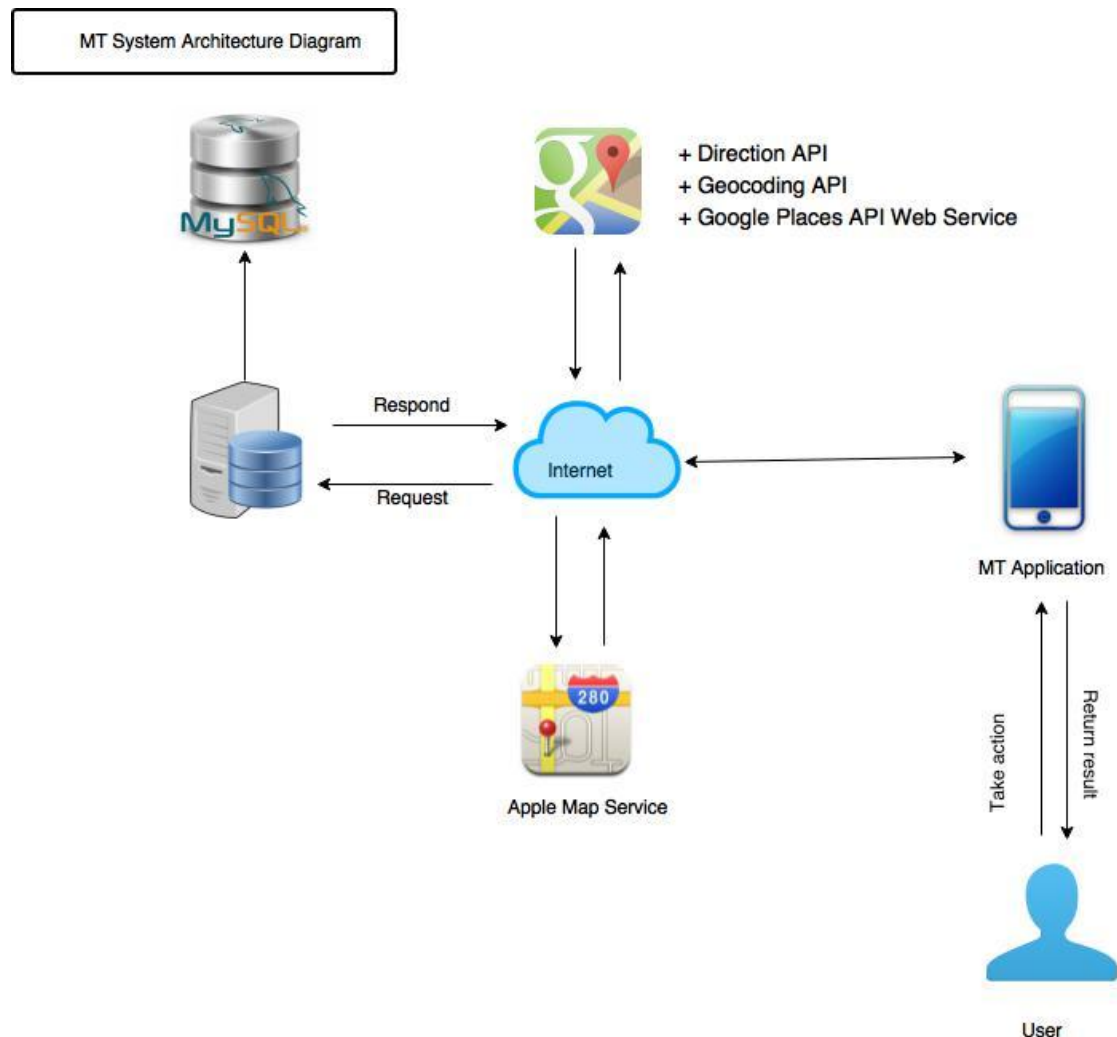


Figure 2 – 1: Overall system architecture

The MT System include My Trip Application was built on swift language, server and two kind of the actor: Admin and User.

User uses the application. The application queries data from MySQL database or insert, update data into this database through I-phone device is connecting the internet. Then, Server database returns result on screen for user. Each user must create personal account to able use this app. New version of the application that has updated functions and new functions will be pushed to the Apple Store then User can download and use the updated application.

Admin takes responsibility of manager data in server through internet. Then the application will automatically update from server when the device is connecting to the internet.

1.2. MT Application Architecture

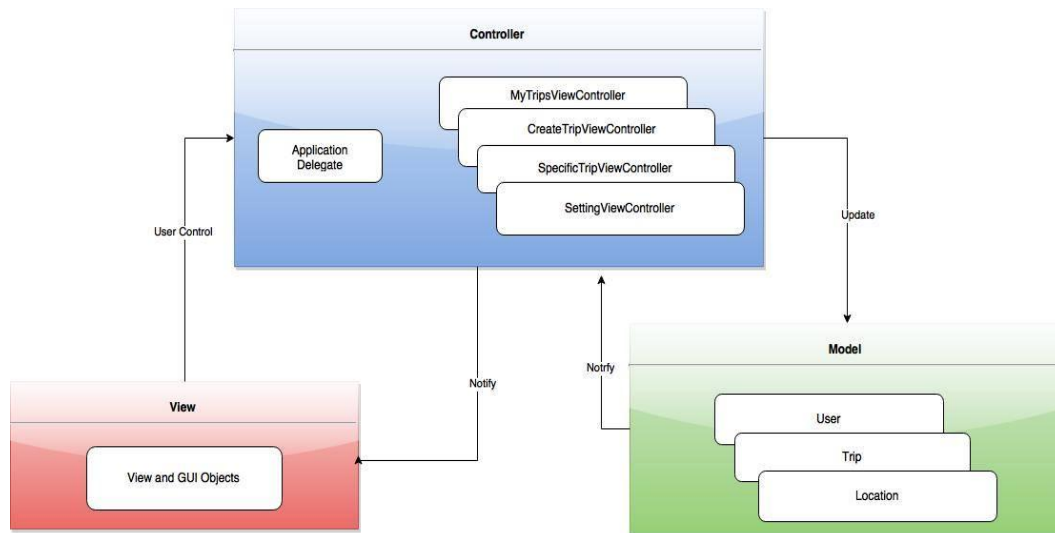


Figure 2 – 2: MT application architecture

MT project uses Model – View – Controller design pattern.

User actions in the view layer that create or modify data are communicated through a controller object and result in the creation or updating of a model object. When a model objects changes, it notifies a controller object, which updates the appropriate view objects.

2. Architectural Goals and Constraints

2.1. Design and implement strategy

- Basing on use case diagram to design package diagram and class diagram, sequence diagram.
- User Interface is designed based on Apple's design style for IOS

2.2. Design tools

No	Tool Name	Function
1	Astah Professional	Design sequence diagram, package diagram, class diagram, ERD, table diagram
2	ww.draw.io	System Architect chart, Application Architect chart

Table 3-1: Design tool

3. Use-case View

3.1. Application Use-case

- **Audience:** Application End User
- **Area:** Describes all central functions of the application
- **Related Artefacts:**
 - Use case model (refer to MT_SRS_v1.9 document)
 - Screen flow, detail screens

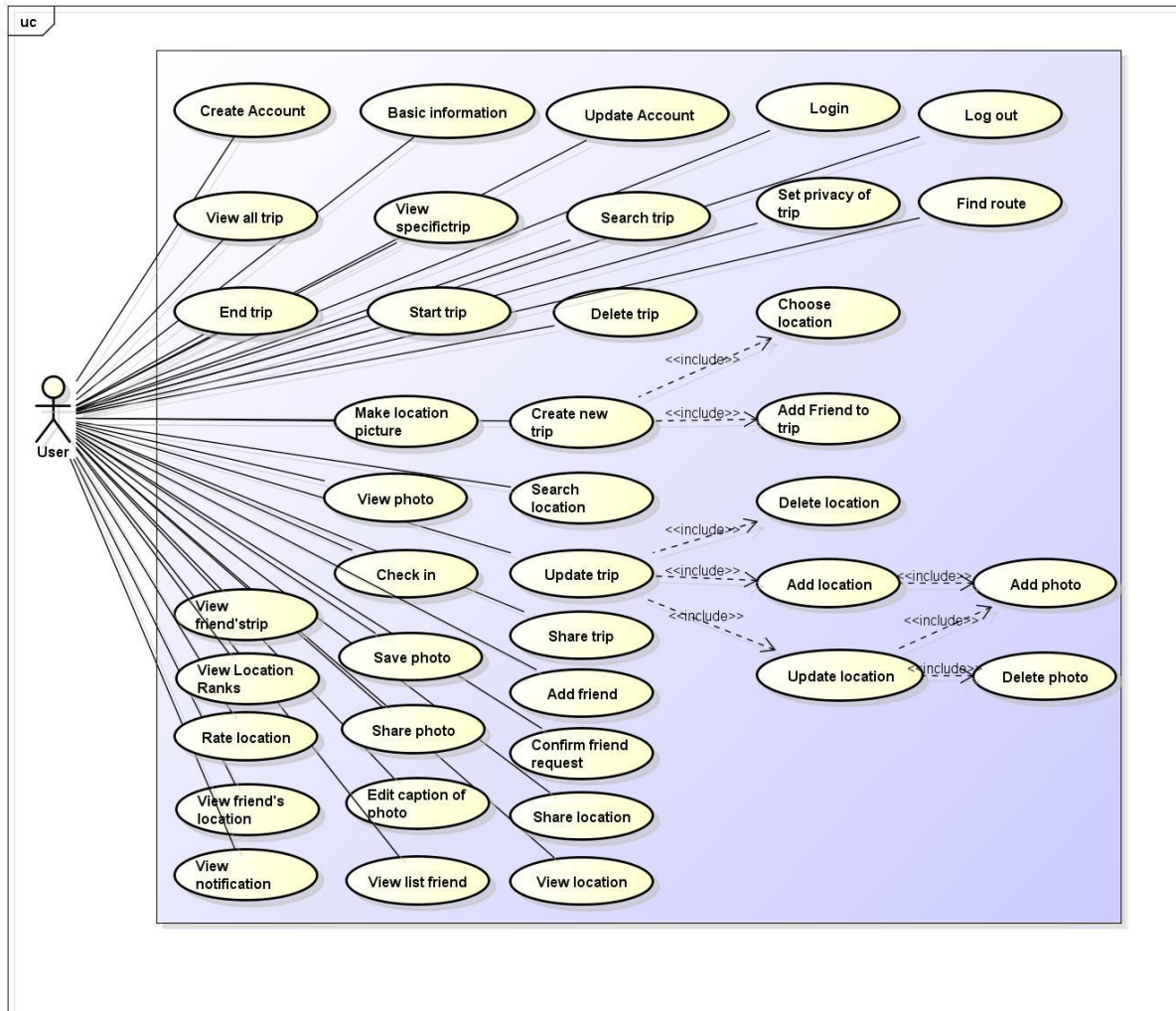


Figure 3-1: Application Use Case

4. Application logical view

4.1. Over view

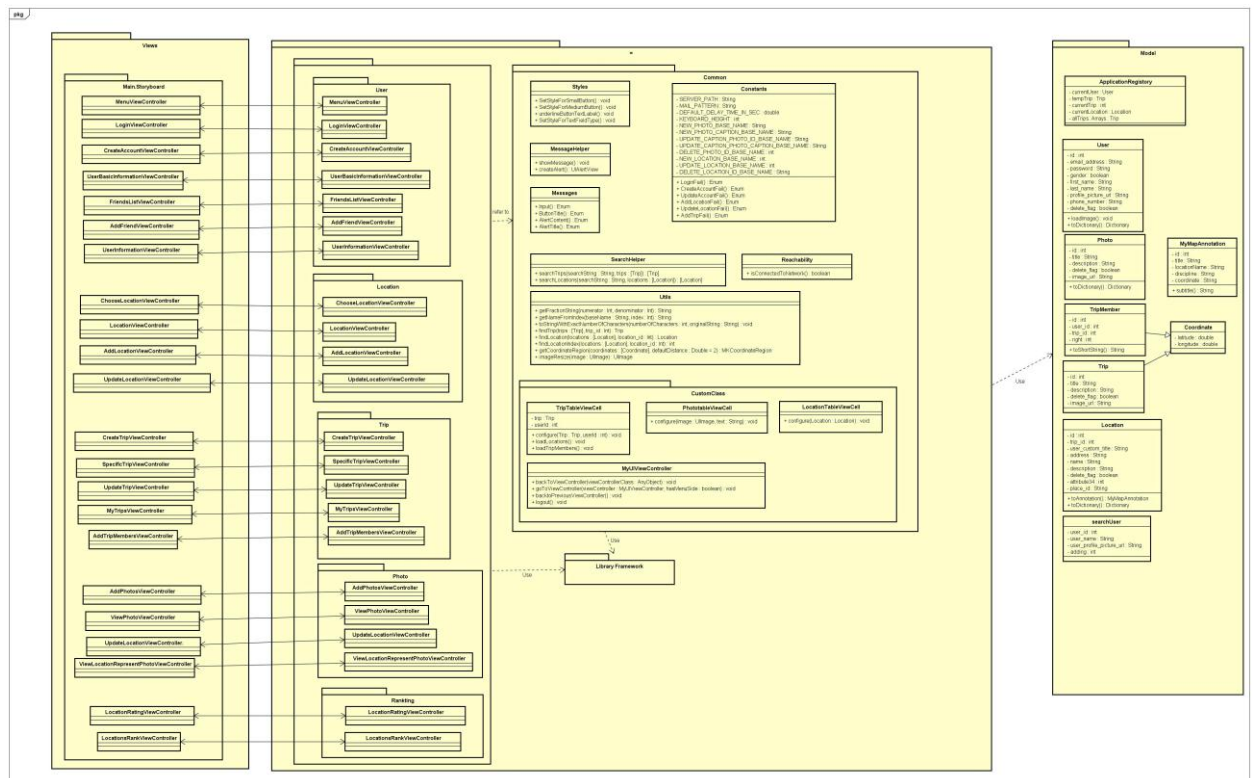


Figure 4-1: Class Diagram

4.1.1. Common controller package

4.1.1.1. LocationTableViewCell Class

- **Attribute**
N/A
- **Method**

N/A

configure ()			
<ul style="list-style-type: none"> • Return: void • Visibility: public • Purpose <ul style="list-style-type: none"> - Custom each cell of Location Table View 			
Parameters: N/A			
No	Parameter	Type	Description
1	Location	Location	Location model

4.1.1.2. MyUIViewController class

- **Attribute**
N/A
- **Method**

backToViewController ()			
<ul style="list-style-type: none"> • Return: void • Visibility: public • Purpose <ul style="list-style-type: none"> - Back to screen before 			
Parameters: N/A			
No	Parameter	Type	Description
1	viewControllerClass	AnyObject	Caption of Photo

goToViewController ()			
<ul style="list-style-type: none"> • Return: void • Visibility: public • Purpose <ul style="list-style-type: none"> - Next to screen 			
Parameters: N/A			
No	Parameter	Type	Description
1	viewController	MyUIViewController	
2	hasMenuSide	Boolean	Check have use menu side

logout ()			
<ul style="list-style-type: none"> • Return: void • Visibility: public • Purpose <ul style="list-style-type: none"> - Logout Account 			
Parameters: N/A			

No	Parameter	Type	Description
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4.1.1.3. TripTableViewCell class

- **Attribute**

Attribute	Type	Visibility	Description
trip	Int	Private	Trip model
user_id	Int	Private	User ID

- **Method**

configure ()			
<ul style="list-style-type: none"> • Return: void • Visibility: public • Purpose <ul style="list-style-type: none"> - Custom each cell of Trip Table View 			
Parameters: N/A			
No	Parameter	Type	Description
1	Trip	Trip	
2	userId	Int	Id of user

loadTripMembers ()			
<ul style="list-style-type: none"> • Return: void • Visibility: public • Purpose <ul style="list-style-type: none"> - Load name of Trip Member from server to cell 			
Parameters: N/A			

loadLocations ()			
<ul style="list-style-type: none"> • Return: void • Visibility: public • Purpose 			

- Load Location of Trip from server to cell

Parameters: N/A

4.1.1.4. PhototableViewCell class

- **Attribute**
N/A
- **Method**

configure ()

- **Return:** void
- **Visibility:** public
- **Purpose**
 - Custom each cell of Photo Table View

Parameters: N/A

No	Parameter	Type	Description
1	text	String	Caption of Photo
2	Image	UIImage	

4.1.1.5. Styles class

- **Attribute**
N/A
- **Method**

SetStyleForSmallButton ()

- **Return:** void
- **Visibility:** public
- **Purpose**
 - Set style for small Button

Parameters: N/A

No	Parameter	Type	Description
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SetStyleForMediumButton ()			
<ul style="list-style-type: none"> • Return: void • Visibility: public • Purpose <ul style="list-style-type: none"> - Set style for medium Button 			
Parameters: N/A			
No	Parameter	Type	Description

UnderlineButtonTextLabel ()			
<ul style="list-style-type: none"> • Return: void • Visibility: public • Purpose <ul style="list-style-type: none"> - Define Under line for button text field 			
Parameters: N/A			

SetStyleForTextFieldType ()			
<ul style="list-style-type: none"> • Return: void • Visibility: public • Purpose <ul style="list-style-type: none"> - Define style for text field 			
Parameters: N/A			

4.1.1.6. MessageHelper Class

- **Attribute**
N/A

- **Method**

showMessage ()

<ul style="list-style-type: none"> • Return: void • Visibility: public • Purpose <ul style="list-style-type: none"> - Show message
Parameters: N/A

createAlert ()
<ul style="list-style-type: none"> • Return: void • Visibility: public • Purpose <ul style="list-style-type: none"> - Create UI Alert
Parameters: N/A

4.1.1.7. Message Class

- **Attribute**
N/A

- **Method**

Input ()
<ul style="list-style-type: none"> • Return: Enum • Visibility: Static • Purpose <ul style="list-style-type: none"> - Define constant
Parameters: N/A

ButtonTitle ()
<ul style="list-style-type: none"> • Return: Enum • Visibility: Static • Purpose

- Define constant

Parameters: N/A

AlertContent ()

- **Return:** Enum
- **Visibility:** Static
- **Purpose**
 - Define constant

Parameters: N/A

AlertTitle ()

- **Return:** Enum
- **Visibility:** Static
- **Purpose**
 - Define constant

Parameters: N/A

4.1.1.8. Constant Class

- **Attribute**

Attribute	Type	Visibility	Description
SEVER_PATH	String	Static	
MAIL_PATTERN	String	Static	
DEFAULT_DELAY_TIME_IN_SEC	double	Static	
KEYBOARD_HEIGHT	int	Static	
NEW_PHOTO_BASE_NAME	String	Static	
NEW_PHOTO_CAPTION_BASE_NAME	String	Static	

UPDATE_CAPTION_PHOTO_ID_BASE_NAME	String	Static	
UPDATE_CAPTION_PHOTO_CAPTION_BASE_NAME	String	Static	
DELETE_PHOTO_ID_BASE_NAME	int	Static	
NEW_LOCATION_BASE_NAME	int	Static	
UPDATE_LOCATION_BASE_NAME	int	Static	
DELETE_LOCATION_ID_BASE_NAME	String	Static	

- **Method**

LoginFail ()
<ul style="list-style-type: none"> • Return: Enum • Visibility: Static • Purpose <ul style="list-style-type: none"> - Define Static variable
Parameters: N/A

CreateAccountFail ()
<ul style="list-style-type: none"> • Return: Enum • Visibility: Static • Purpose <ul style="list-style-type: none"> - Define Static variable
Parameters: N/A

UpdateAccountFail ()
<ul style="list-style-type: none"> • Return: Enum • Visibility: Static • Purpose <ul style="list-style-type: none"> - Define Static variable

Parameters: N/A

AddLocationFail ()

- **Return:** Enum
- **Visibility:** Static
- **Purpose**
 - Define Static

Parameters: N/A

UpdateLocationFail ()

- **Return:** Enum
- **Visibility:** Static
- **Purpose**
 - Define Static variable

Parameters: N/A

Add TripFail ()

- **Return:** Enum
- **Visibility:** Static
- **Purpose**
 - Define Static variable

Parameters: N/A

4.1.1.9.Reachability Class

- **Attribute**
N/A
- **Method**

isConnectedToNetwork()
<ul style="list-style-type: none"> • Return: boolean • Visibility: public • Purpose <ul style="list-style-type: none"> - Check connect Internet
Parameters: N/A

4.1.1.10. Utils

- **Attribute**
N/A
- **Method**

getFractionString ()

- **Return:** String
- **Visibility:** Public
- **Purpose**
 - Fraction String

Parameters:

No	Parameter	Type	Description
1	numerator	Int	Numerator
2	Denominator	Int	Denominator

getNameFromIndex ()			
<ul style="list-style-type: none">• Return: String• Visibility: Public• Purpose<ul style="list-style-type: none">- Return name with index			
Parameters:			
No	Parameter	Type	Description

1	baseName	String	Name
2	index	Int	Index

toStringWithExactNumberOfCharacters ()

- **Return:** void
- **Visibility:** Public
- **Purpose**
 - Extract Number of characters

Parameters:

No	Parameter	Type	Description
1	numberOfCharacters	int	Length of String
2	originalString	String	Original String

findTrip ()

- **Return:** Trip
- **Visibility:** Public
- **Purpose**
 - Find trip with name of trip

Parameters:

No	Parameter	Type	Description
1	trips	[Trip]	Array list trip
2	trip_id	Int	ID ò Trip

findLocation ()

- **Return:** Location
- **Visibility:** Public

<ul style="list-style-type: none"> • Purpose <ul style="list-style-type: none"> - Find Location with name of Location 			
Parameters:			
No	Parameter	Type	Description
1	locations	[Location]	Array list trip
2	location_id	Int	ID ò Trip

findLocationIndex ()			
<ul style="list-style-type: none"> • Return: Location • Visibility: Public • Purpose <ul style="list-style-type: none"> - Return index of Location 			
Parameters:			
No	Parameter	Type	Description
1	locations	[Location]	Array list trip
2	location_id	Int	ID ò Trip

getCoordinateRegion ()			
<ul style="list-style-type: none"> • Return: MKCoordinateRegion • Visibility: Public • Purpose <ul style="list-style-type: none"> - Get Coordinate Regionon 			
Parameters:			
No	Parameter	Type	Description
1	coordinates	[Coordinate]	Array list trip
2	defaultDistance	Double	ID ò Trip

imageResize ()			
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<ul style="list-style-type: none"> • Return: UIImage • Visibility: Public • Purpose <ul style="list-style-type: none"> - Resize image 			
Parameters:			
No	Parameter	Type	Description
1	image	UIImage	Image will Resize

4.1.2. Model package

4.1.2.1. MyMapAnnotation Class

- **Attribute**

Attribute	Type	Visibility	Description
Id	int	Private	Id of Annotation
Title	String	Private	Title of Annotation
locationName	String	Private	Location name include Annotation
Discipline	String	Private	
coordinate	String	Private	Coordinate of Annotation

- **Method**

Subtitle()			
<ul style="list-style-type: none"> • Return: String • Visibility: public • Purpose <ul style="list-style-type: none"> - Return subtitle of Annotation 			
Parameters: N/A			
No	Parameter	Type	Description

4.1.2.2. ApplicationRegistry

- **Attribute**

Attribute	Type	Visibility	Description
currentUser	User	public	Get current user
tempTrip	Trip	Public	
currentTrip	Int	Public	Get current Trip
currentLocation	Location	Public	Get current Location
allTrips	Array:Trip	Public	List op trip

- **Method**

N/A

4.1.2.3. User Class

- **Attribute**

Attribute	Type	Visibility	Description
Id	Int	Private	User id
Email_address	String	Private	Email address
Password	String	Private	Password
Gender	Boolean	Private	Gender of user
first_name	String	Private	First name of user
Last_name	String	Private	Last name of user
Profile_picture_url	String	Private	Profile picture url connect server
Phone_number	String	Private	Phone number of user
Delete_flag	boolean	Private	Delete status

- **Method**

loadImage()

- **Return:** void
- **Visibility:** public
- **Purpose**
 - Load Image from sever to GUI

Parameters: N/A

toDictionary()
<ul style="list-style-type: none"> • Return: Dictionary • Visibility: public • Purpose <ul style="list-style-type: none"> - Convert object to Dictionary
Parameters: N/A

4.1.2.4. Photo Class

- **Attribute**

Attribute	Type	Visibility	Description
Id	Int	Private	Id of photo
Title	String	Private	Title of photo
Description	String	Private	Description of photo
Delete_flag	Boolean	Private	Status delete
Image_url	String	Private	url load image from database

- **Method**

toDictionary()
<ul style="list-style-type: none"> • Return: Dictionary • Visibility: public • Purpose <ul style="list-style-type: none"> - Convert object to dictionary
Parameters: N/A

4.1.2.5. TripMember Class

- **Attribute**

Attribute	Type	Visibility	Description
Id	Int	Private	Id of Tripmember

user_id	Int	Private	Id of Member
trip_id	Int	Private	Id of Trip
Right	Int	Private	Role of member who can update, delete trip or not

- **Method**

toShortString()
<ul style="list-style-type: none"> • Return: String • Visibility: Public • Purpose <ul style="list-style-type: none"> - Convert photo to dictionary
Parameters: N/A

4.1.2.6. Trip Class

- **Attribute**

Attribute	Type	Visibility	Description
Id	Int	Private	Id of trip
Title	Int	Private	Title of trip
Description	String	Private	Description of trip
Delete_flag	boolean	Private	Status delete of trip
Image_url	String	Private	url server of trip

- **Method**

N/A

4.1.2.7. Location Class

- **Attribute**

Attribute	Type	Visibility	Description
Id	Int	Private	Id of Location
trip_id	Int	Private	Id of Trip
user_custom_title	String	Private	Information of pin

Address	String	Private	Address of location
Name	String	Private	Location Name
Description	String	Private	Description
delete_flag	boolean	Private	Status delete
Place_id	String	Private	Google map's place id

- **Method**

toDictionary()
<ul style="list-style-type: none"> • Return: Dictionary • Visibility: public • Purpose <ul style="list-style-type: none"> - Convert object to Dictionary
Parameters: N/A

toAnnotation()
<ul style="list-style-type: none"> • Return: MyMapAnnotation • Visibility: Public • Purpose <ul style="list-style-type: none"> - Convert Annotation to Dictionary
Parameters: N/A

4.1.2.8. searchUser Class

- **Attribute**

Attribute	Type	Visibility	Description
user_id	Int	Private	Id of User
user_name	String	Private	Name of user
user_profile_picture_url	String	Private	url of user avatar
Adding	Int	Private	Status add

- **Method**
N/A

4.1.2.9. Coordinate

- **Attribute**

Attribute	Type	Visibility	Description
latitude	double	Private	Latitude in map
longitude	double	Private	longitude in map

4.2. Architecturally significant design packages

4.2.1. Login

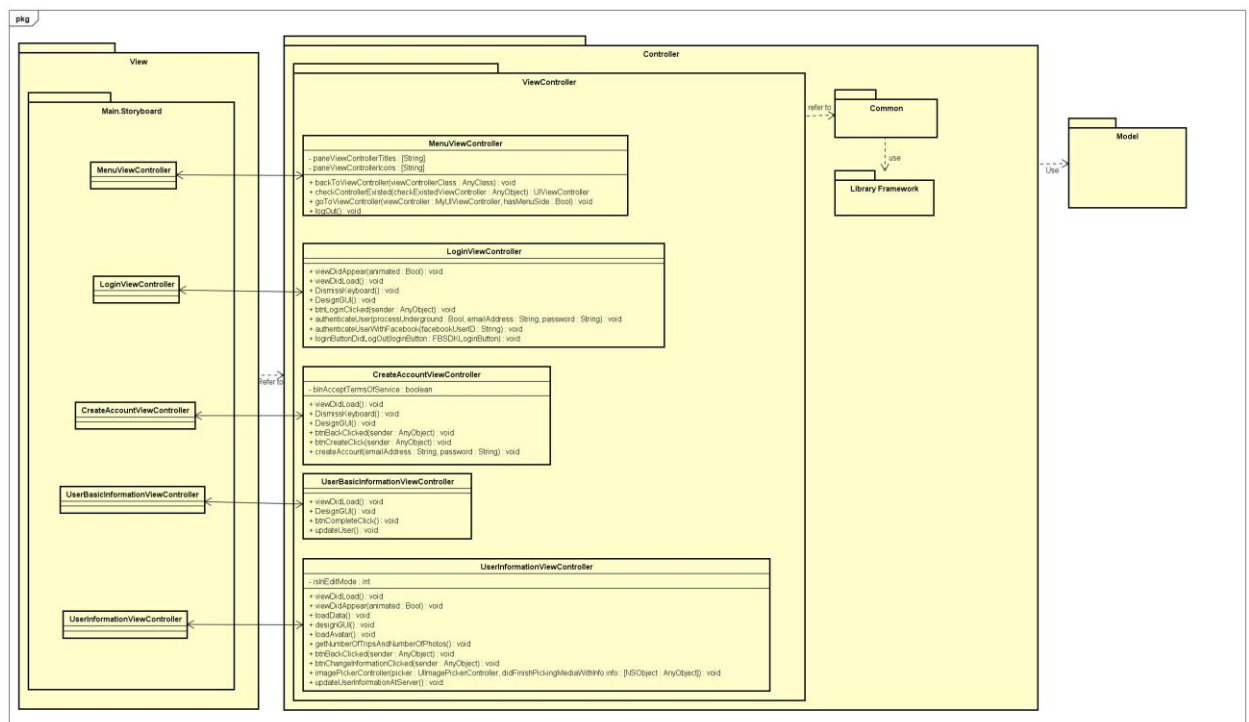


Figure 4-2: Class Diagram

4.2.1.1. MenuViewContriller Class

- **Attribute**

Attribute	Type	Visibility	Description
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paneViewController Titles	[String]	Private	Check Status in Update information of User State
paneViewController Icons	[String]	Private	Current Index of Location

- **Method**

backToViewController ()			
<ul style="list-style-type: none"> • Return: void • Visibility: Public • Purpose <ul style="list-style-type: none"> - Action back to before screen 			
Parameters			
No	Parameter	Type	Description
1	viewControllerClass	AnyClass	

checkControllerExisted ()			
<ul style="list-style-type: none"> • Return: UIViewController • Visibility: Public • Purpose <ul style="list-style-type: none"> - Check screen is exist or not 			
Parameters			
No	Parameter	Type	Description
1	checkExistedViewController	AnyClass	

4.2.1.2. LoginViewController Class

- **Attribute**
N/A
- **Method**

viewDidAppear()

<ul style="list-style-type: none"> • Return: void • Visibility: Public • Purpose <ul style="list-style-type: none"> - Save , Load data and GUI when call back Login screen 			
Parameters			
No	Parameter	Type	Description
1	Animated	Boolean	

viewDidLoad()			
<ul style="list-style-type: none"> • Return: void • Visibility: Public • Purpose <ul style="list-style-type: none"> - Load data and GUI before call Login screen 			
Parameters: N/A			

DismissKeyboard()			
<ul style="list-style-type: none"> • Return: Void • Visibility: Public • Purpose <ul style="list-style-type: none"> - Hiding keyboard 			
Parameters: N/A			

DesignGUI()			
<ul style="list-style-type: none"> • Return: Void • Visibility: Public • Purpose <ul style="list-style-type: none"> - Create component UI and style 			

Parameters: N/A

btnLoginClicked()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Action when tap to login button

Parameters:

No	Parameter	Type	Description
1	Sender	AnyObject	Button UI

authenticcateUser()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Authenticate account of user when login

Parameters:

No	Parameter	Type	Description
1	processUnderground	Boolean	Status check process underground when application is run
2	emailAddress	String	Email address
3	Password	String	Password

authenticateUserWithFacebook()

- **Return:** Void
- **Visibility:** Public
- **Purpose**

- Authenticate user account when login by facebook

Parameters:

No	Parameter	Type	Description
1	facebookUserID	String	Facebook User ID of each account

4.2.1.3. CreateAccountViewController Class

- **Attribute**

Attribute	Type	Visibility	Description
btnAcceptTermsOfService	boolean	Private	Check status when user agree with term of service

- **Method**

viewDidLoad()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Load data and GUI before call create account screen

Parameters: N/A**viewWillAppear()**

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Save , load data and GUI when call screen

Parameters:

No	Parameter	Type	Description
1	Animated	Boolean	

DismissKeyboard()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Hiding keyboard

Parameters: N/A**DesignGUI()**

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Create component UI and style

Parameters: N/A**btnBlackClicked()**

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Action when tap to Back Button

Parameters:

No	Parameter	Type	Description
1	sender	AnyObject	Button UI

btnCreateClick()

- **Return:** Void
- **Visibility:** Public
- **Purpose**

- Action when tap to Create button			
Parameters:			
No	Parameter	Type	Description
1	sender	AnyObject	Button UI

createAccount()			
<ul style="list-style-type: none"> • Return: Void • Visibility: Public • Purpose <ul style="list-style-type: none"> - Create account and save to sever 			
Parameters:			
No	Parameter	Type	Description
1	emailAddress	String	Email Address
2	Password	String	Password

4.2.1.4. UserBasicInformationViewController Class

- **Attribute**
N/A
- **Method**

viewDidLoad()			
<ul style="list-style-type: none"> • Return: Void • Visibility: Public • Purpose <ul style="list-style-type: none"> - Load data and GUI when call screen 			
Parameters: N/A			

DesignGUI()			
<ul style="list-style-type: none"> • Return: Void 			

- **Visibility:** Public
- **Purpose**
 - Create component UI and style

Parameters: N/A

btnCompleteClick()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Action when Tap on Compete Button

Parameters: N/A

updateUser()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Update user information to server

Parameters: N/A

4.2.1.5. UserInformationViewControllerClass

- **Attribute**

Attribute	Type	Visibility	Description
isInEditMode	Int	Private	Check Status in Update information of User State

- **Method**

viewDidLoad()

- **Return:** Void

- **Visibility:** Public
- **Purpose**
 - Load data and GUI when call screen

Parameters: N/A

viewDidAppear()

- **Return:** N/A
- **Visibility:** Public
- **Purpose**
 - Load data and GUI when call screen

Parameters:

No	Parameter	Type	Description
1	Animated	Boolean	

loadData()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Load data from server to the GUI

Parameters: N/A

DesignGUI()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Create component UI and style

Parameters: N/A

loadAvatar()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Load avatar of user from Server to GUI

Parameters: N/A**getNumberOfTripsAndNumberOfPhotos()**

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Get number of trip and Number of photo

Parameters: N/A**btnBlackClicked()**

- **Return:** void
- **Visibility:** Public
- **Purpose**
 - Action when tap on Back Button

Parameters:

No	Parameter	Type	Description
1	Sender	AnyObject	Button UI

btnChangeInformationClicked()

- **Return:** Void
- **Visibility:** Public
- **Purpose**

- Action when tap on Change Information Button			
Parameters:			
No	Parameter	Type	Description
1	Sender	AnyObject	Button UI

imagePickerController()			
<ul style="list-style-type: none"> • Return: Void • Visibility: Public • Purpose <ul style="list-style-type: none"> - Action when tap on Image UI 			
Parameters:			
No	Parameter	Type	Description
1	picker	UIImagePickerController	
2	didFinishPickingMediaWithInfo	[NSObject : AnyObject]	

4.2.2. Friends

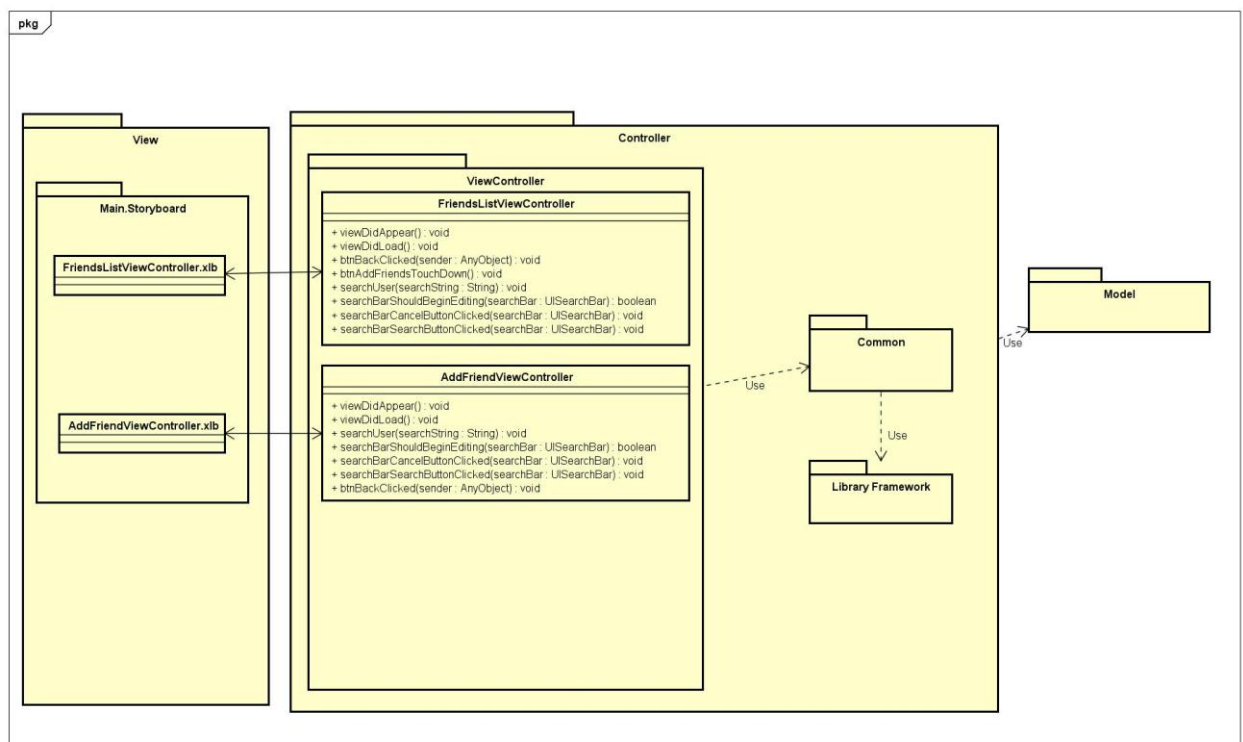


Figure 4-3: Class Diagram

4.2.2.1.FriendsListViewController Class

- **Attribute**
N/A
- **Method**

viewDidLoad()
<ul style="list-style-type: none"> • Return: Void • Visibility: Public • Purpose <ul style="list-style-type: none"> - Load data and GUI when call screen
Parameters: N/A

viewWillAppear ()
<ul style="list-style-type: none"> • Return: Void • Visibility: Public • Purpose <ul style="list-style-type: none"> - Load data and GUI when call screen
Parameters: N/A

btnBackClicked ()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Action button back when click

Parameters:

No	Parameter	Type	Description
1	Sender	AnyObject	Button UI

btnAddFriendsTouchDown ()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Action button add friends touch down when click

Parameters: N/A**searchUser ()**

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Search user with String from database and return result

Parameters:

No	Parameter	Type	Description
1	searchString	String	Name of User

searchBarShouldBeginEditing ()

- **Return:** Boolean
- **Visibility:** Public
- **Purpose**
 - UISearch bar prepare data before return result

Parameters:

No	Parameter	Type	Description
1	searchBar	UISearchBar	Component search view

searchBarCancelButtonClicked ()

- **Return:** Void

<ul style="list-style-type: none"> • Visibility: Public • Purpose <ul style="list-style-type: none"> - Search bar have contain button “Cancel” - Define action for button “Cancel” 			
Parameters:			
No	Parameter	Type	Description
1	searchBar	UISearchBar	Component search view

searchBarSearchButtonClicked ()			
<ul style="list-style-type: none"> • Return: Void • Visibility: Public • Purpose <ul style="list-style-type: none"> - Search bar have contain button “Search” - Define action for button “Search” 			
Parameters:			
No	Parameter	Type	Description
1	searchBar	UISearchBar	Component search view

4.2.2.2. AddFriendViewController Class

- **Attribute**
N/A
- **Method**

viewDidLoad ()			
<ul style="list-style-type: none"> • Return: Void • Visibility: Public • Purpose <ul style="list-style-type: none"> - Load data and GUI when screen called 			
Parameters: N/A			

viewDidAppear ()			
------------------	--	--	--

<ul style="list-style-type: none"> • Return: Void • Visibility: Public • Purpose <ul style="list-style-type: none"> - Load data and GUI when screen call
Parameters: N/A

searchUser ()			
<ul style="list-style-type: none"> • Return: Void • Visibility: Public • Purpose <ul style="list-style-type: none"> - Search user with String from database and return result 			
Parameters:			
No	Parameter	Type	Description
1	searchString	String	Name of User

searchBarShouldBeginEditing ()			
<ul style="list-style-type: none"> • Return: Boolean • Visibility: Public • Purpose <ul style="list-style-type: none"> - UISearch bar prepare data before return result 			
Parameters:			
No	Parameter	Type	Description
1	searchBar	UISearchBar	Component search view

searchBarCancelButtonClicked ()			
<ul style="list-style-type: none"> • Return: Void 			

<ul style="list-style-type: none"> • Visibility: Public • Purpose <ul style="list-style-type: none"> - Search bar have contain button “Cancel” - Define action for button “Cancel” 			
Parameters:			
No	Parameter	Type	Description
1	searchBar	UISearchBar	Component search view

searchBarSearchButtonClicked ()			
<ul style="list-style-type: none"> • Return: Void • Visibility: Public • Purpose <ul style="list-style-type: none"> - Search bar have contain button “Search” - Define action for button “Search” 			
Parameters:			
No	Parameter	Type	Description
1	searchBar	UISearchBar	Component search view

btnBackClicked ()			
<ul style="list-style-type: none"> • Return: Void • Visibility: Public • Purpose <ul style="list-style-type: none"> - Action button back when click 			
Parameters:			
No	Parameter	Type	Description
1	Sender	AnyObject	Button UI

4.2.3. Ranking

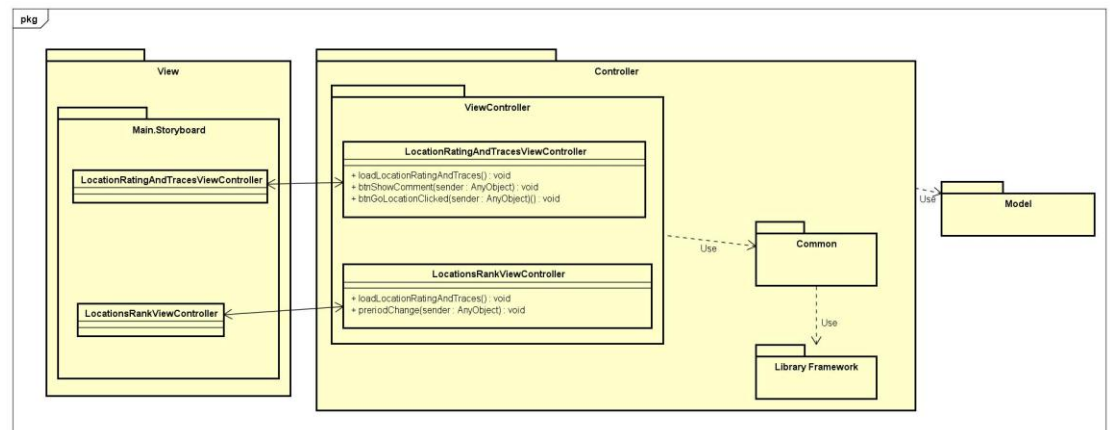


Figure 4-3: Class Diagram

4.2.3.1. LocationRatingAndTracesViewController

- **Attribute**
N/A
- **Method**

loadLocationRatingAndTraces ()

- **Return:** N/A
- **Visibility:** Public
- **Purpose**
 - Load data about Location rating from server

Parameters:

No	Parameter	Type	Description
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btnShowComment ()

- **Return:** N/A

<ul style="list-style-type: none"> • Visibility: Public • Purpose <ul style="list-style-type: none"> - Action of button show comment 			
Parameters:			
No	Parameter	Type	Description
1	Sender	AnyObject	UI Button

btnGoLocationClicked ()			
<ul style="list-style-type: none"> • Return: N/A • Visibility: Public • Purpose <ul style="list-style-type: none"> - Action of button go location 			
Parameters:			
No	Parameter	Type	Description
1	Sender	AnyObject	UI Button

4.2.3.2. LocationsRankViewController

- **Attribute**
N/A
- **Method**

loadLocationRatingAndTraces ()			
<ul style="list-style-type: none"> • Return: N/A • Visibility: Public • Purpose <ul style="list-style-type: none"> - Load data about Location rating from server 			
Parameters:			
No	Parameter	Type	Description

periodChange ()

- **Return:** N/A
- **Visibility:** Public
- **Purpose**
 - Action of button go location

Parameters:

No	Parameter	Type	Description
1	Sender	AnyObject	UI Button

4.2.4. Trip

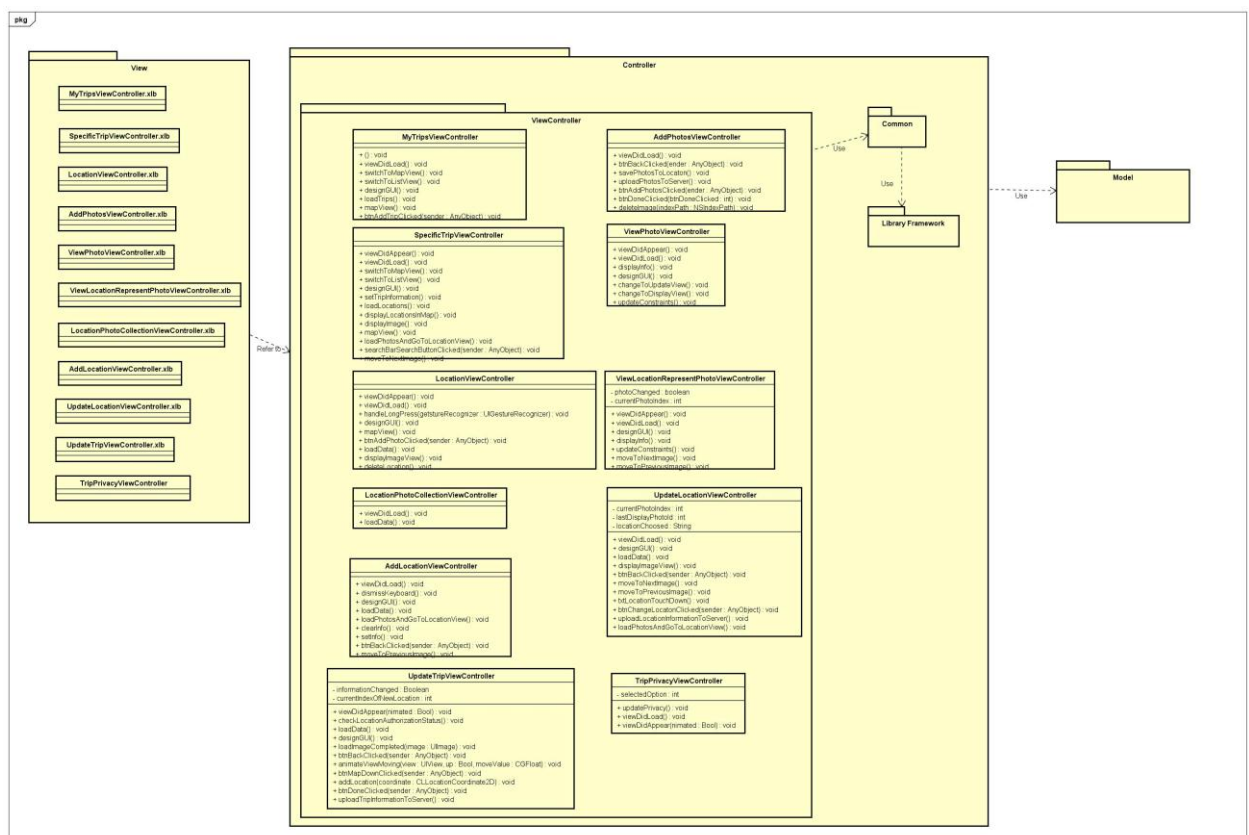


Figure 4-4: Class Diagram

4.2.4.1. MyTripsViewController Class

- **Attribute**
N/A
- **Method**

viewDidAppear()			
<ul style="list-style-type: none"> • Return: N/A • Visibility: Public • Purpose <ul style="list-style-type: none"> - Load data and GUI when call screen 			
Parameters:			
No	Parameter	Type	Description
1	Animated	Boolean	

viewDidLoad ()			
<ul style="list-style-type: none"> • Return: Void • Visibility: Public • Purpose <ul style="list-style-type: none"> - Load data and GUI when screen called 			
Parameters: N/A			

switchToMapView()			
<ul style="list-style-type: none"> • Return: Void • Visibility: Public • Purpose <ul style="list-style-type: none"> - Switch view to the map view 			
Parameters: N/A			

DesignGUI()
<ul style="list-style-type: none">• Return: Void• Visibility: Public• Purpose<ul style="list-style-type: none">- Create component UI and style
Parameters: N/A

loadTrips()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Load data from server into GUI

Parameters: N/A**mapView()**

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Load data and assign GUI into Map view

Parameters: N/A**btnAddtripClicked()**

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Action when tap on AddTrip Button

Parameters: N/A**4.2.4.2. SpecificTripViewController Class**

- **Attribute**
N/A
- **Method**

viewDidAppear()

- **Return:** N/A

<ul style="list-style-type: none">• Visibility: Public• Purpose<ul style="list-style-type: none">- Load data and GUI when call screen			
Parameters:			
No	Parameter	Type	Description
1	Animated	Boolean	

viewDidLoad ()			
<ul style="list-style-type: none">• Return: Void• Visibility: Public• Purpose<ul style="list-style-type: none">- Load data and GUI when screen called			
Parameters: N/A			

switchToMapView()			
<ul style="list-style-type: none">• Return: Void• Visibility: Public• Purpose<ul style="list-style-type: none">- Switch view to the map view			
Parameters: N/A			

switchToListView()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Switch view to the List view

Parameters: N/A**DesignGUI()**

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Create component UI and style

Parameters: N/A**setTripInformation()**

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Load data from server into GUI

Parameters: N/A

loadLocations()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Load information of location into list

Parameters: N/A**displayLocationsInMap()**

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Load pin and x+y of location into Map

Parameters: N/A**displayImage()**

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Load Image from server to GUI

Parameters: N/A

mapView()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Assign data and show into Map View

Parameters: N/A**loadPhotoAndGoToLoactionView()**

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Go to Location view when tap on Image

Parameters: N/A**searchBarSearchButtonClicked()**

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Action when tap on Search Bar Button

Parameters: N/A**moveToNextImage()**

- **Return:** Void

- **Visibility:** Public
- **Purpose**
 - Next to image when tap

Parameters: N/A

4.2.4.3. LocationViewController Class

- **Attribute**
N/A
- **Method**

viewDidAppear()

- **Return:** N/A
- **Visibility:** Public
- **Purpose**
 - Load data and GUI when call screen

Parameters:

No	Parameter	Type	Description
1	Animated	Boolean	

viewDidLoad ()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Load data and GUI when screen called

Parameters: N/A

handleLongPress()

- **Return:** Void
- **Visibility:** Public

<ul style="list-style-type: none"> • Purpose <ul style="list-style-type: none"> - Action when handle Long press 			
Parameters: N/A			
No	Parameter	Type	Description
1	getstureRecognizer	UIGestureRecognizer	Recognizer action Tap on

DesignGUI()
<ul style="list-style-type: none"> • Return: Void • Visibility: Public • Purpose <ul style="list-style-type: none"> - Create component UI and style
Parameters: N/A

mapView()
<ul style="list-style-type: none"> • Return: void • Visibility: Public • Purpose <ul style="list-style-type: none"> - Load data and assign GUI on Map View
Parameters: N/A

btnAddPhotoClicked()
<ul style="list-style-type: none"> • Return: Void • Visibility: Public • Purpose <ul style="list-style-type: none"> - Action when tap on AddPhoto Button
Parameters:

No	Parameter	Type	Description
1	Sender	AnyObject	Button UI

LoadData()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Load data from server to GUI

Parameters: N/A**displayImageView ()**

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Load image to GUI

Parameters: N/A**deleteLocation ()**

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Request delete Location to server

Parameters: N/A**4.2.4.4. LocationPhotoCollectionViewController Class**

- **Attribute**
N/A
- **Method**

viewDidLoad ()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Load data and GUI when screen called

Parameters: N/A

LoadData()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Load data from server to GUI

Parameters: N/A

4.2.4.5. AddLocationViewController Class

- **Attribute**
N/A
- **Method**

viewDidLoad ()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Load data and GUI when screen called

Parameters: N/A

DismissKeyboard()

- **Return:** Void

- **Visibility:** Public
- **Purpose**
 - Hiding keyboard

Parameters: N/A

DesignGUI()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Create component UI and style

Parameters: N/A

loadData()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Load data from server into GUI

Parameters: N/A

loadPhotoAndGoToLocationView()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Load image and move to Location view when on this image

Parameters: N/A

clearInfo ()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Clear Info which assigned into Text Field

Parameters: N/A

btnBack ()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Action when tap on Back Button

Parameters:

No	Parameter	Type	Description
1	Sender	AnyObject	Button UI

4.2.4.6. UpdateTripViewController Class

• Attribute

Attribute	Type	Visibility	Description
informationChanged	Boolean	Private	Check Status in Update information of User State
currentIndexOfNew Location	Integer	Private	Current Index of Location

• Method

checkLocationAuthorizationStatus ()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Check location Authorization Status

Parameters: N/A

loadData()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Load data from server into GUI

Parameters: N/A

DesignGUI()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Create component UI and style

Parameters: N/A

loadImageCompleted ()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Load data from server to UI Image

Parameters:

No	Parameter	Type	Description
1	Image	UIImage	

btnBackClicked ()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Action when tap on Back Button

Parameters: N/A**animateViewMoving ()**

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Add Animation when View moving

Parameters: N/A**btnMapDownClicked ()**

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Action when tap on MapDown Button

Parameters: N/A**addLocation ()**

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Action when tap on MapDown Button

Parameters:

No	Parameter	Type	Description
1	coordinate	CLLocationCoordinate2D	Information relate to Location

btnDoneClicked ()
<ul style="list-style-type: none"> • Return: N/A • Visibility: Public • Purpose <ul style="list-style-type: none"> - Action when tap on Done Button
Parameters: N/A

uploadTripInformationToServer ()
<ul style="list-style-type: none"> • Return: Void • Visibility: Public • Purpose <ul style="list-style-type: none"> - Request save data trip information to server
Parameters: N/A

4.2.4.7. ViewPhotoViewController Class

- **Attribute**
N/A
- **Method**

viewDidLoad ()
<ul style="list-style-type: none"> • Return: Void • Visibility: Public • Purpose <ul style="list-style-type: none"> - Load data and GUI when screen called
Parameters: N/A

viewDidAppear()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Load data and GUI when call screen

Parameters:

No	Parameter	Type	Description
1	Animated	Boolean	

displayInfo()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Prepare data before load into GUI

Parameters: N/A**DesignGUI()**

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Create component UI and style

Parameters: N/A**changetoUpdateView()**

- **Return:** Void
- **Visibility:** Public

- **Purpose**
 - Change view to Update processing

Parameters: N/A

changeToDisplayView()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Change hidden or show component View

Parameters: N/A

UpdateConstraints()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Update constraint between component GUI

Parameters: N/A

4.2.4.8. AddPhotosViewController Class

- **Attribute**
N/A
- **Method**

viewDidLoad ()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Load data and GUI when screen called

Parameters: N/A

btnBackClicked()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Action when tap on Back Button

Parameters: N/A**savePhotosToLocation()**

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Add photo to current Location

Parameters: N/A**uploadPhotosToServer()**

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Upload Photos to Server

Parameters: N/A**btnAddPhotosClicked()**

- **Return:** Void
- **Visibility:** Public
- **Purpose**

- Action when tap on AddPhoto buton			
Parameters:			
No	Parameter	Type	Description
1	Gender	AnyObject	Button UI

btnDoneClicked ()			
<ul style="list-style-type: none"> • Return: Void • Visibility: Public • Purpose <ul style="list-style-type: none"> - Action when tap on Done Button 			
Parameters:			
No	Parameter	Type	Description
1	Gender	AnyObject	Button UI

deleteImage ()			
<ul style="list-style-type: none"> • Return: Void • Visibility: Public • Purpose <ul style="list-style-type: none"> - Action when tap on Done Button 			
Parameters:			
No	Parameter	Type	Description
1	indexPath	NSIndexPath	Index of row cell

4.2.4.9. ViewLocationRepresentPhotoViewController Class

- **Attribute**

Attribute	Type	Visibility	Description
photoChanged	boolean	Private	Check photo have changed
currentPhotoIndex	int	Private	Current Photo index

- **Method**

viewDidLoad ()
<ul style="list-style-type: none"> • Return: Void • Visibility: Public • Purpose <ul style="list-style-type: none"> - Load data and GUI when screen called
Parameters: N/A

viewDidAppear()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Load data and GUI when call screen

Parameters:

No	Parameter	Type	Description
1	Animated	Boolean	

displayInfo()
<ul style="list-style-type: none"> • Return: Void

- **Visibility:** Public
- **Purpose**
 - Prepare data before assign into GUI

Parameters: N/A

UpdateConstraints()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Update constraint between component GUI

Parameters: N/A

moveToNextImage()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Move to Next Image View when tap

Parameters: N/A

moveToPreviousImage()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Move to Previous Image when tap

Parameters: N/A

4.2.4.10. TripPrivacyViewController

- **Attribute**

Attribute	Type	Visibility	Description
selectedOption	int	Private	Select Option Id

- **Method**

updatePrivacy ()
<ul style="list-style-type: none"> • Return: Void • Visibility: Public • Purpose <ul style="list-style-type: none"> - Update role of user to server
Parameters: N/A

viewDidLoad ()
<ul style="list-style-type: none"> • Return: Void • Visibility: Public • Purpose <ul style="list-style-type: none"> - Load data and GUI when screen called
Parameters: N/A

viewDidAppear()			
<ul style="list-style-type: none">• Return: Void• Visibility: Public• Purpose<ul style="list-style-type: none">- Load data and GUI when call screen			
Parameters:			
No	Parameter	Type	Description
1	Animated	Boolean	

4.2.4.11. UpdateLocationViewController

- **Attribute**

Attribute	Type	Visibility	Description
currentPhotoIndex	Int	Private	Current photo Index
lastDisplayPhotoId	Int	Private	Id of latest Photo
locationChooosed	String	Private	Location choosed

- **Method**

viewDidLoad ()
<ul style="list-style-type: none"> • Return: Void • Visibility: Public • Purpose <ul style="list-style-type: none"> - Load data and GUI when screen called
Parameters: N/A

viewDidAppear()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Load data and GUI when call screen

Parameters:

No	Parameter	Type	Description
1	Animated	Boolean	

loadData()
<ul style="list-style-type: none"> • Return: Void • Visibility: Public

- **Purpose**
 - Load data from server to the GUI

Parameters: N/A

moveToPreviousImage()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Go to previous Image

Parameters: N/A

txtLocationTouchDown()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Action when tap on Text Field Location

Parameters:

No	Parameter	Type	Description
1	Sender	AnyObject	UI Text Field

btnChangeLocationClicked()

- **Return:** Void
- **Visibility:** Public
- **Purpose**
 - Action when Tap on Change Location

Parameters:

No	Parameter	Type	Description
----	-----------	------	-------------

1	Sender	AnyObject	UI Text Field
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uploadLocationInformationToServer()
<ul style="list-style-type: none">• Return: Void• Visibility: Public• Purpose<ul style="list-style-type: none">- Upload Location information Into Server
Parameters: N/A

loadPhotosAndGoToLocationView()
<ul style="list-style-type: none">• Return: Void• Visibility: Public• Purpose<ul style="list-style-type: none">- Load Photos and Go to Location view
Parameters: N/A

5. Application process View

5.1. Login

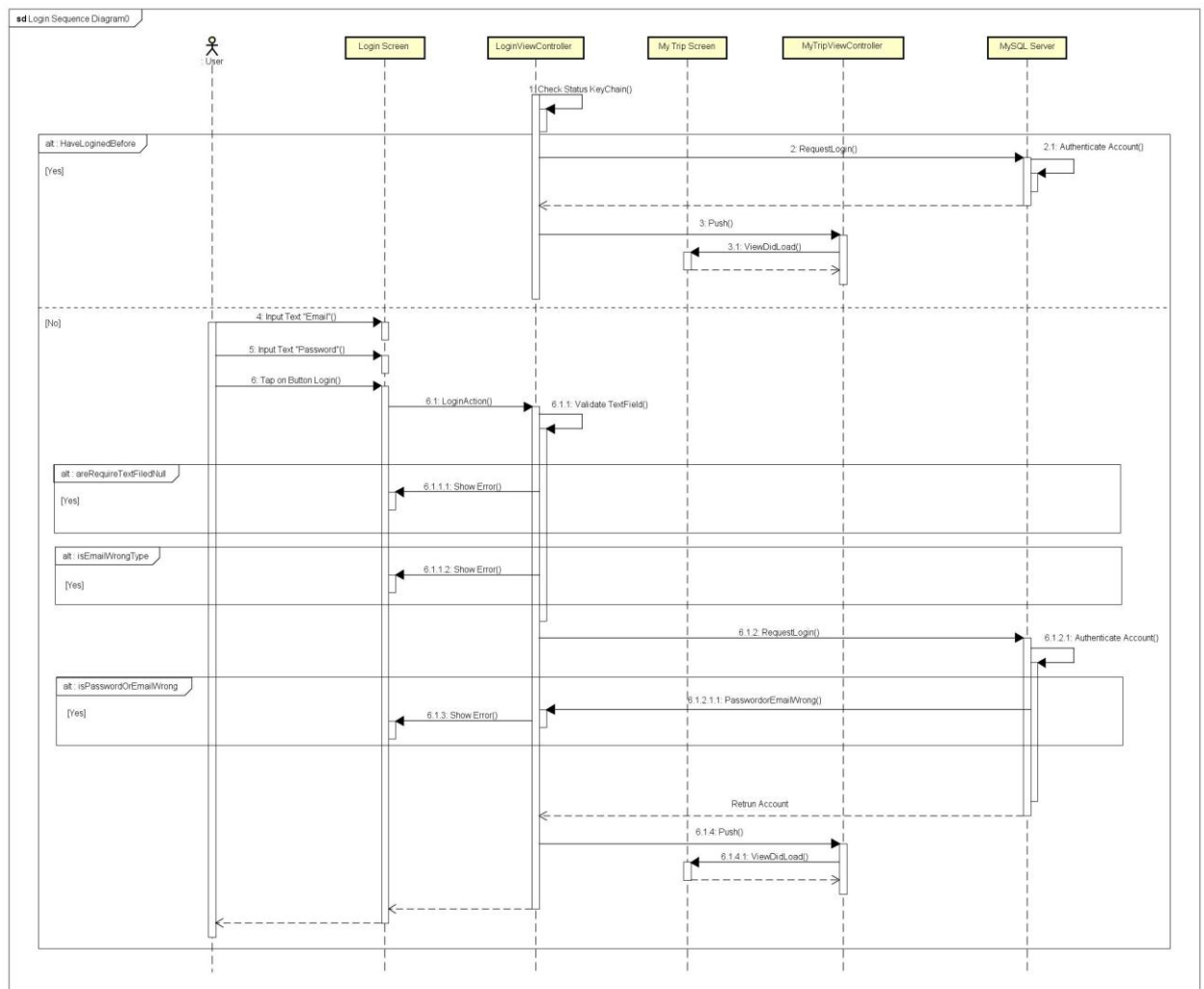


Figure 5-1: Sequence diagram _Login

5.2.Create Account

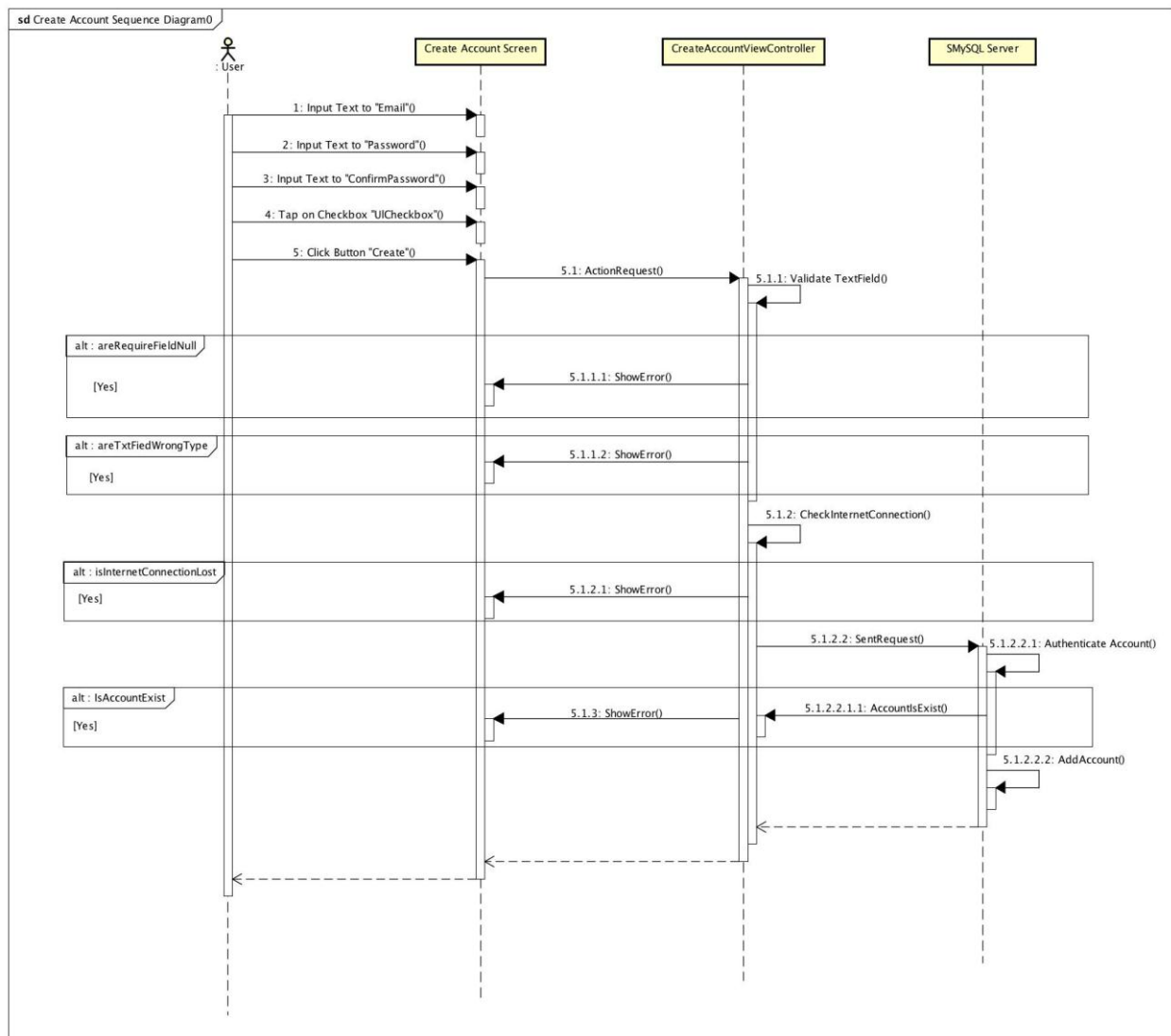


Figure 5-2: Sequence diagram _ Create Account

5.3.View User Information

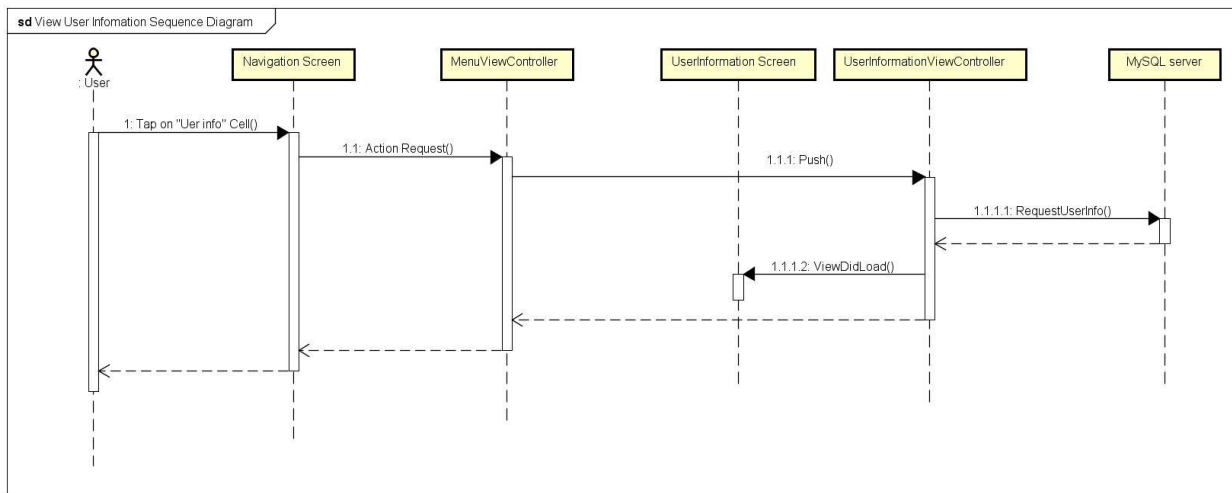


Figure 5-3: Sequence diagram _View User information

5.4.Create new Trip

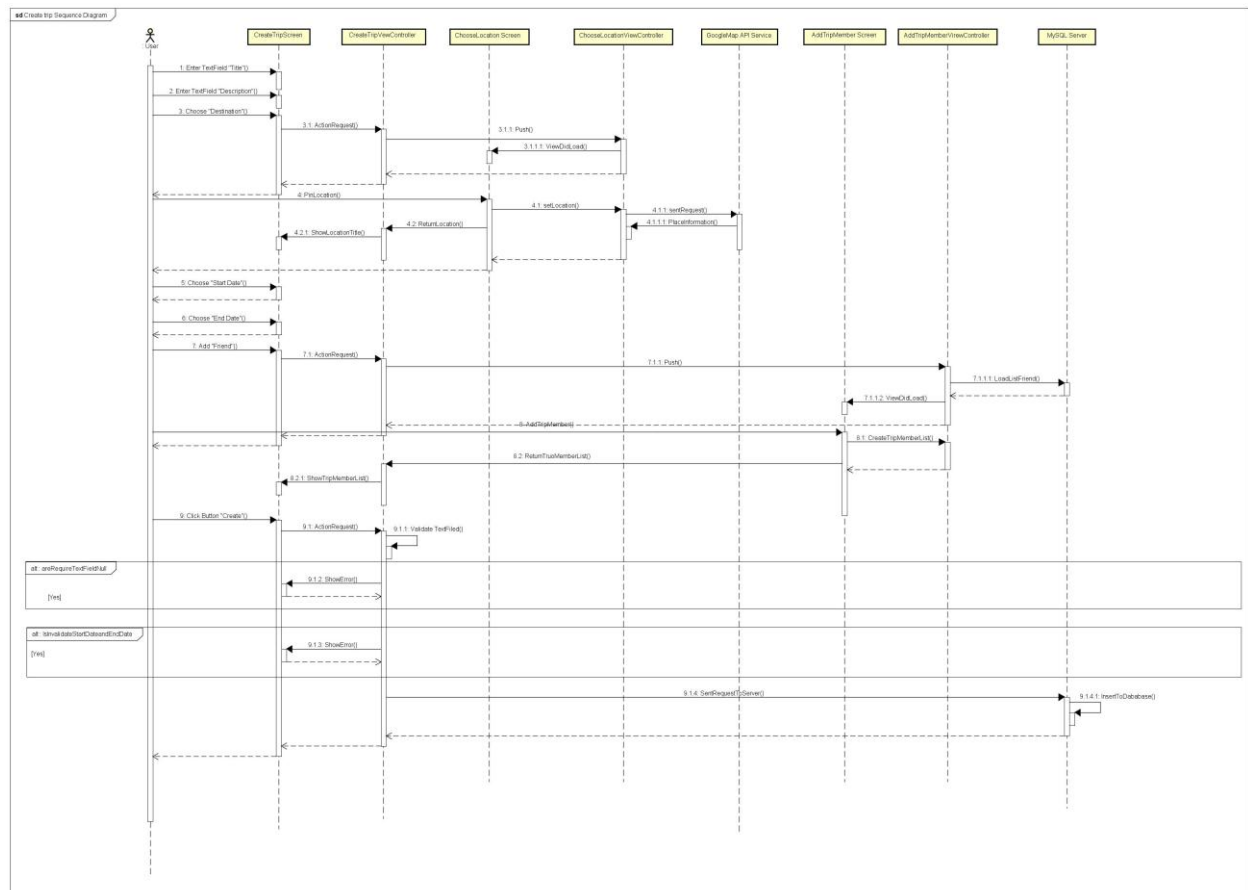


Figure 5-4: Sequence diagram _ Create new trip

5.5.View My Trip

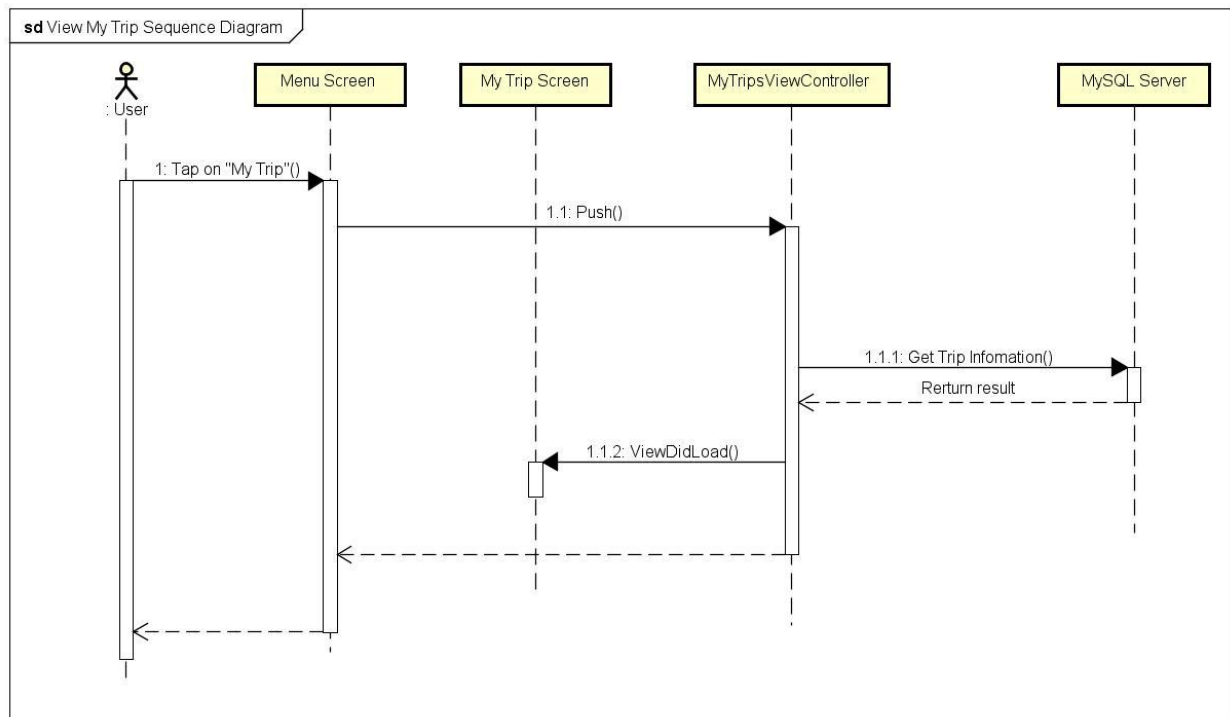


Figure 5-5: Sequence diagram _View My Trip

5.6.View Specific Trip

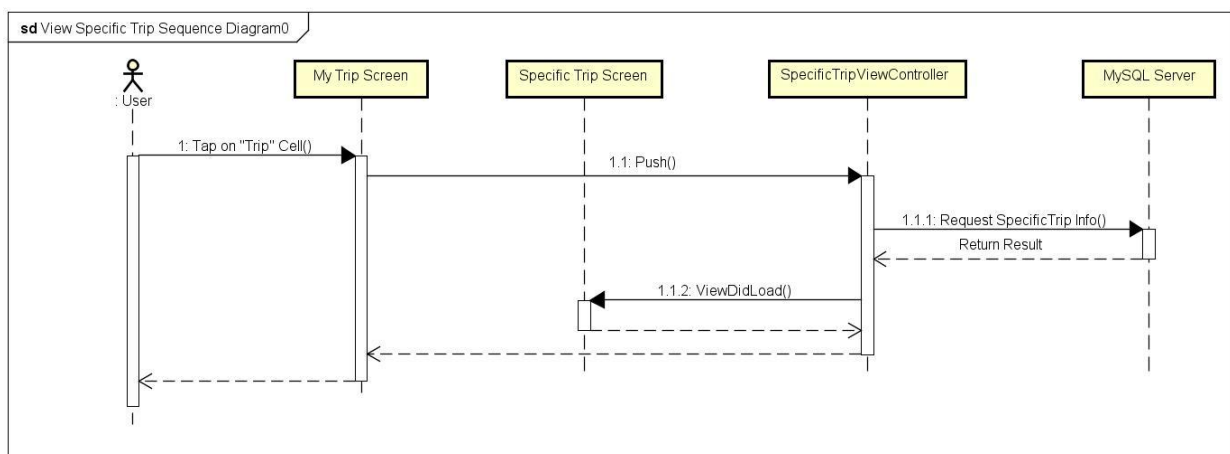


Figure 5-6: Sequence diagram _ View Specific trip

5.7.Update Trip

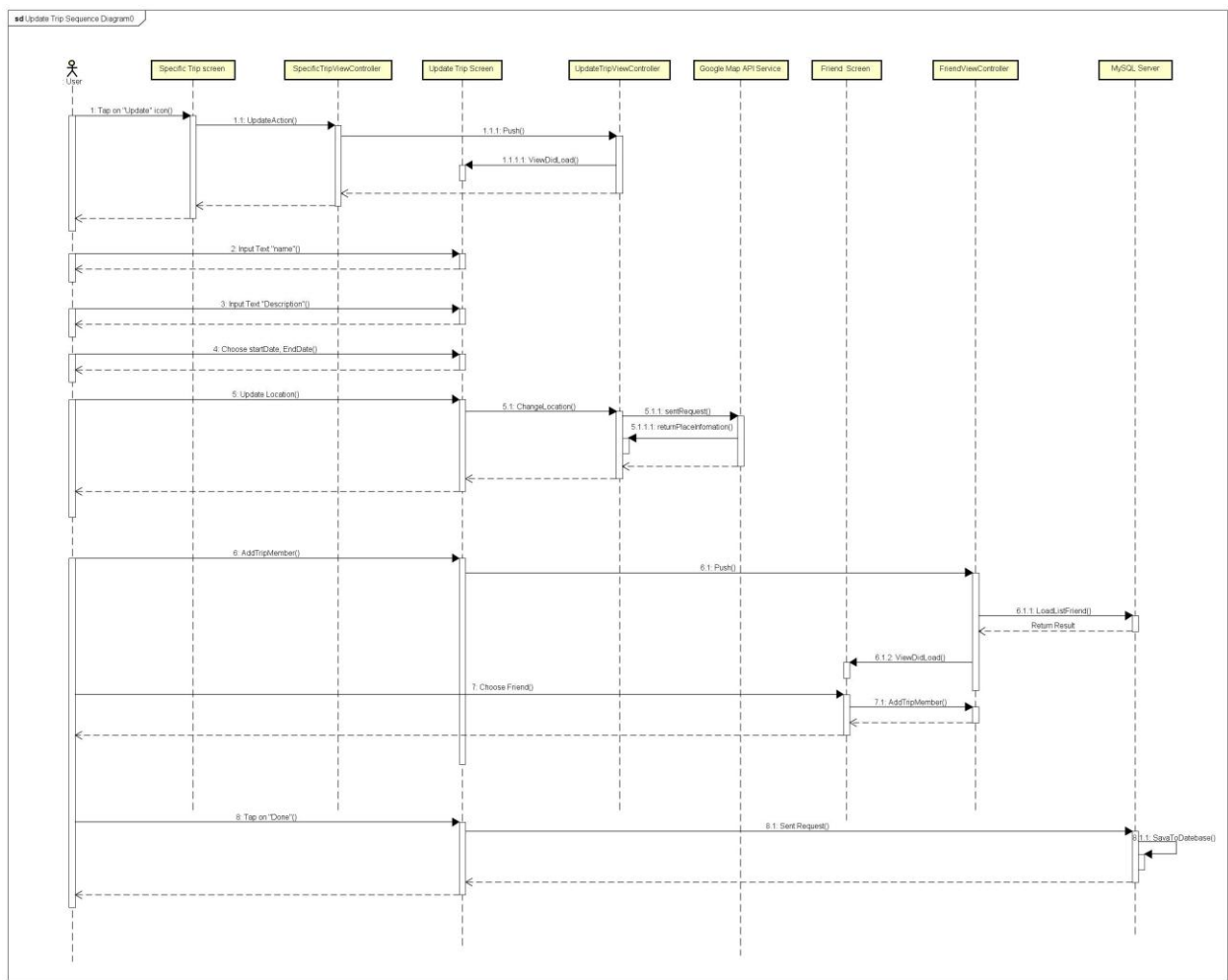


Figure 5-7: Sequence diagram _ Update trip

5.8.View Specific Location

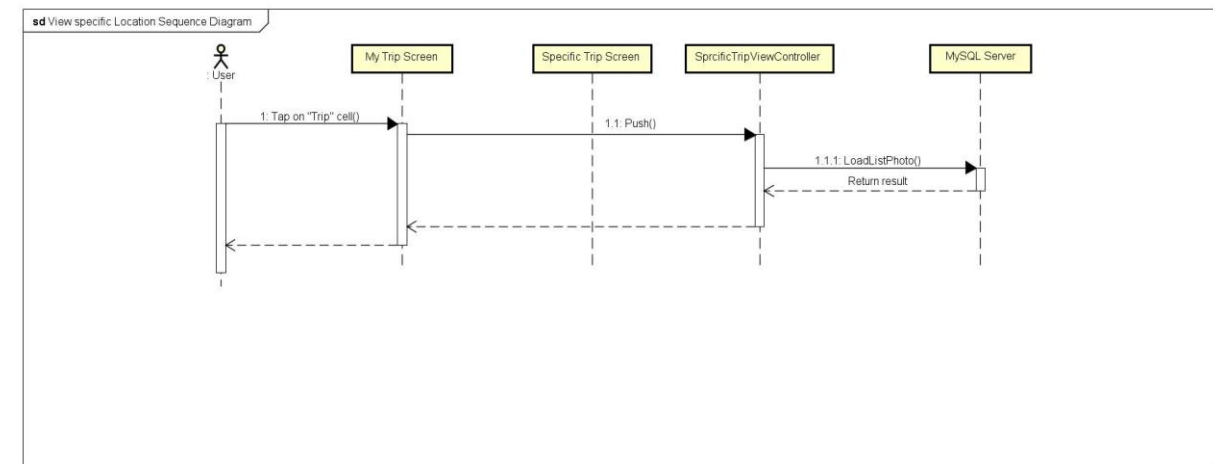


Figure 5-8: Sequence diagram _View Specific Location

5.9.Update Location

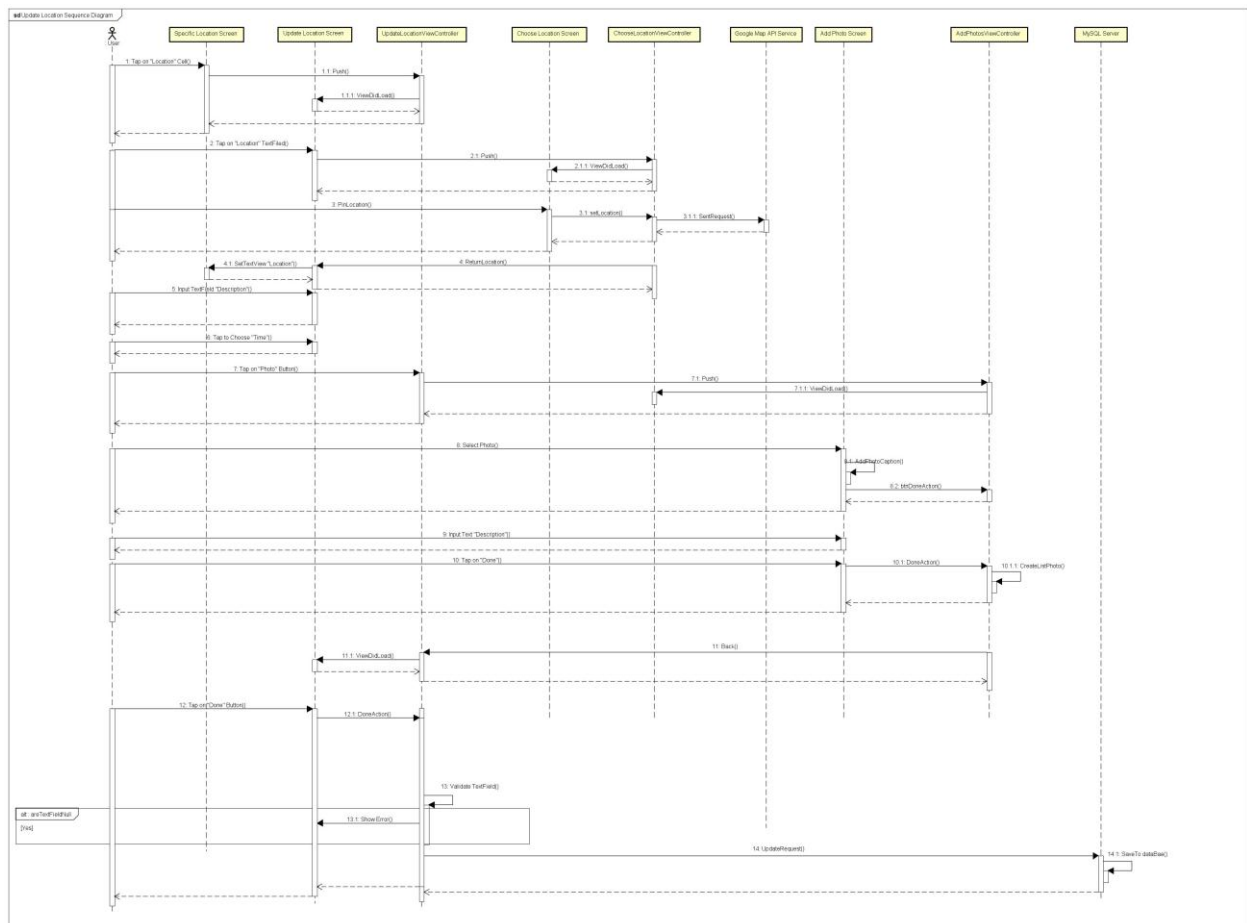
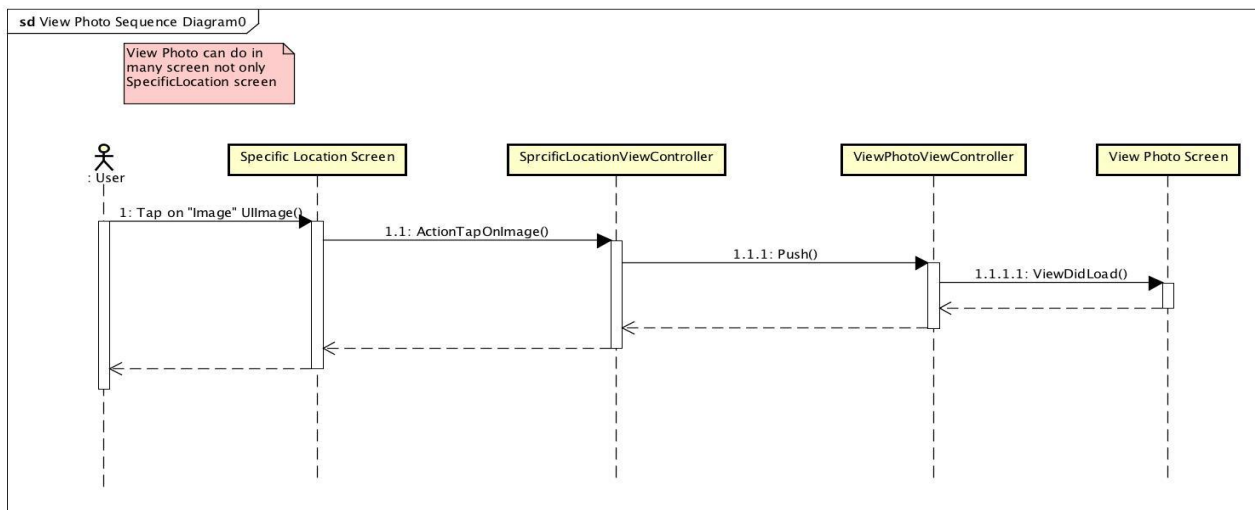


Figure 5-9: Sequence diagram _ Update Location

5.10. View Photo



powered by Astah

Figure 5-10: Sequence diagram _ View photo

5.11. Delete Photo

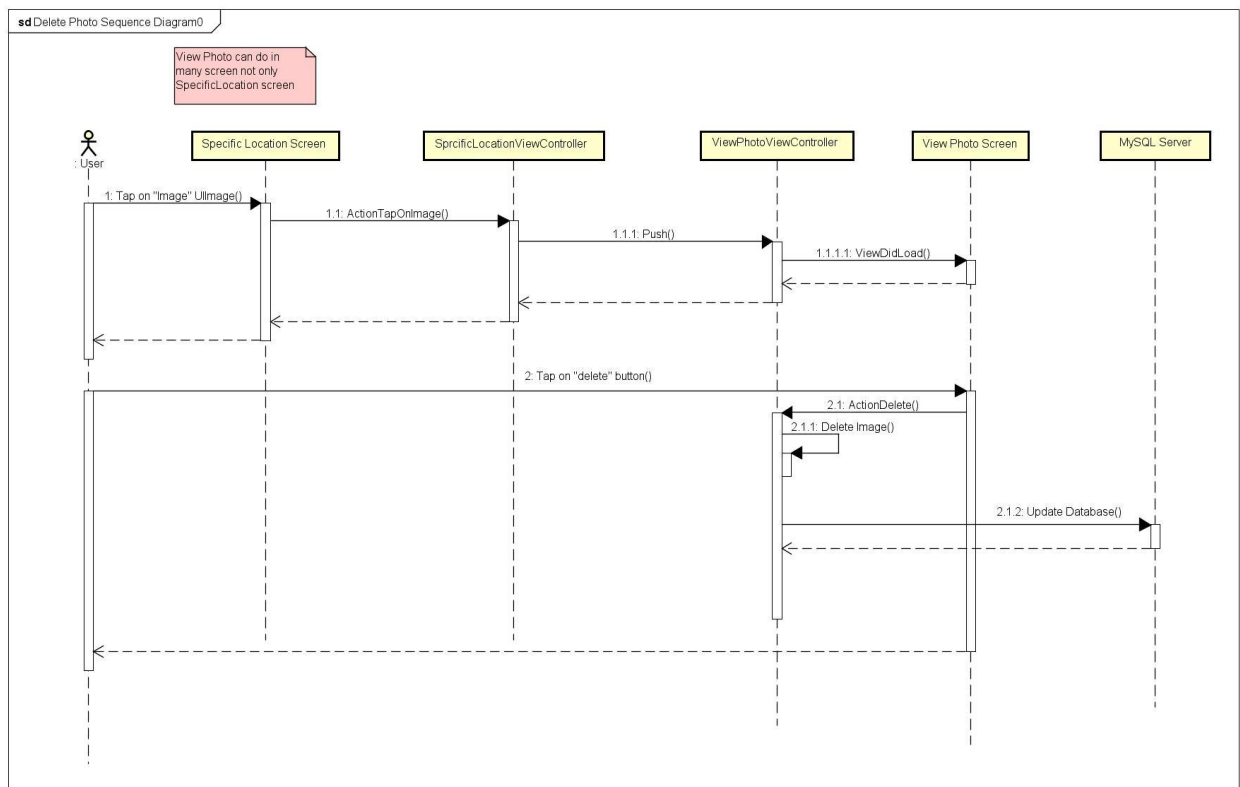
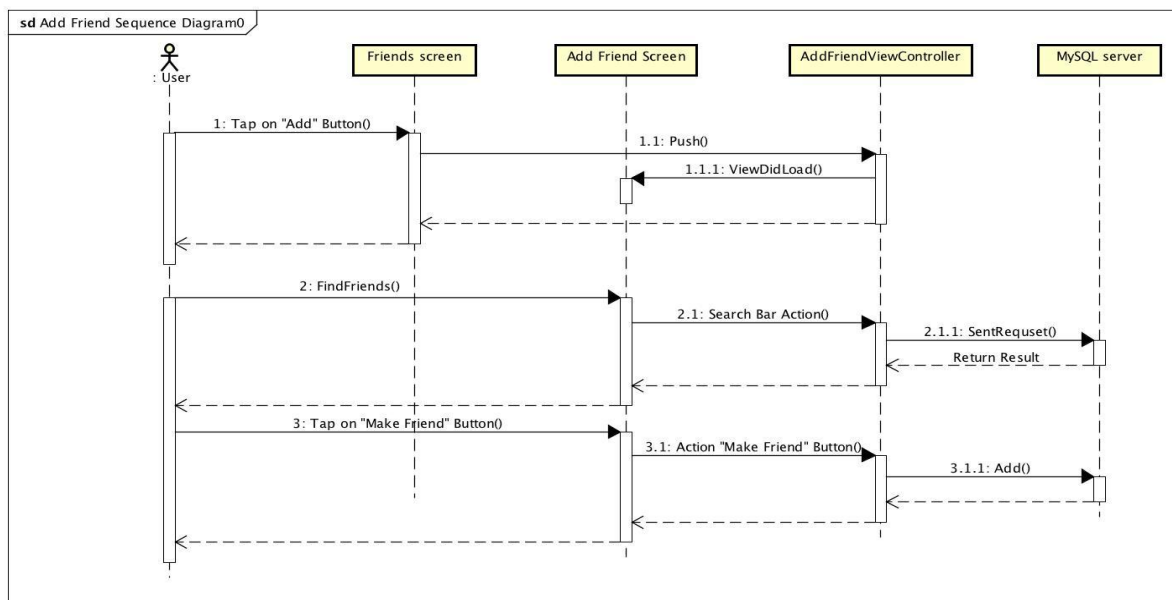


Figure 5-11: Sequence diagram _ Delete Photo

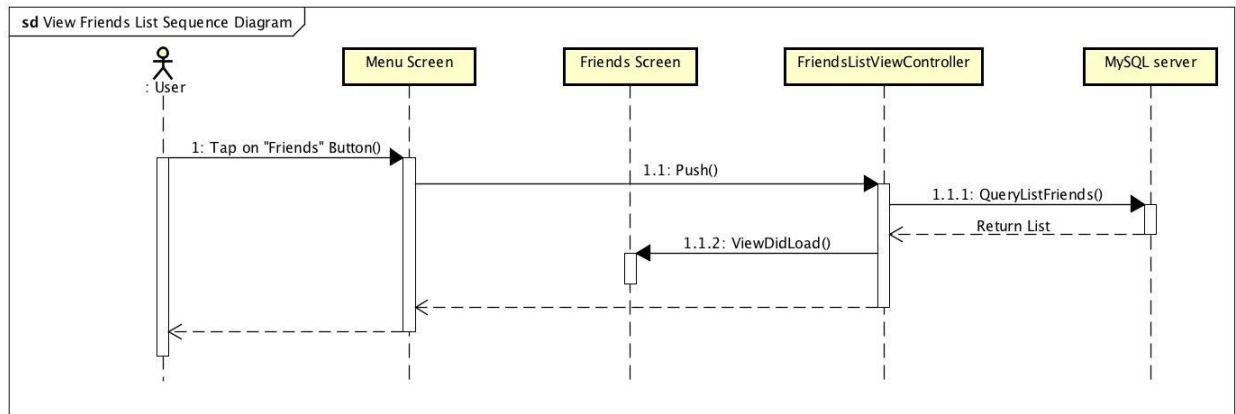
5.12. Add friend



powered by Astah

Figure 5-12: Sequence diagram _Login

5.13. View Friends list



powered by Astah

Figure 5-13: Sequence diagram _ View Friends list