Lab2 Deliverables: Requirements Analysis

for

Skyscape

Version 1.0 approved

Prepared by

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20 FEBRUARY 2024

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Revision History

Name	Date	Reason For Changes	Version
LI YAOHAO	20/02/2024	First Draft	1.0.0

1. Use Case Descriptions

1.1. Use case of Registration

Use Case ID:	REG1		
Use Case Name:	Registration		
Created By:	Li Yaohao	Last Updated By:	Yaohao
Date Created:	29/01/2024	Date Last Updated:	20/02/2024

Actor:	User (initiating)
Description:	First time users must register for a new account. Having an account allows them to store pictures taken and share them online to various social media platforms.
Preconditions:	Nil
Postconditions:	The user has successfully created an account and logged in.
Priority:	High
Frequency of Use:	Low
Flow of Events:	1. User clicks on 'Register for new account' 2. Users are prompted to enter an username and password. 3. User submits required information. 4. System validates Information, and store login credentials into database 5. Users are prompted to log in.
Alternative Flows:	REG1-AF-S1 If username is not unique: 1. The system shows the error message "Please enter a different username" 2. The system will return to step 2. REG1-AF-S2 If password does not meet requirements: 1. The system shows the error message "Password does not meet requirements. Please enter a different password" 2. The system will return to step 2. REG1-AF-S3 If re-entered password does not match the password: 1. The system shows the error message "Passwords do not match. Please enter them correctly!" 2. The system will return to step 2.
Exceptions:	EX1 The system is currently offline.
Includes:	Nil
Special Requirements:	Nil
Assumptions:	The user is connected to the internet.
Notes and Issues:	Nil

1.2. Use case of Login

Use Case ID:	LOG1		
Use Case Name:	Login		
Created By:	Lim Zhi Yong	Last Updated By:	Zhi Yong
Date Created:	29/01/24	Date Last Updated:	20/02/2024

Actor:	User (initiating)
Description:	Users can login with their login details to access their recently-viewed history and starred locations.
Preconditions:	User already has a registered account.
Postconditions:	Users will login and the homepage will be shown.
Priority:	High
Frequency of Use:	High
Flow of Events:	1. Users will input their username and password into the system. 2. Users will either click enter or the login button. 3. The system will verify the username and the password to ensure that it is a valid account. 4. The user will be logged into the system and the home screen will be displayed.
Alternative Flows:	LOG1-AF-S1 If the username does not exist in the database. 1. Show error message “Incorrect username or password. Please try again.” 2. The system will return to step 1. LOG1-AF-S2 If the password does not match the correct password saved in the database. 1. Show error message “Incorrect username or password. Please try again.” 2. The system will return to step 1.
Includes:	Nil
Special Requirements:	Nil
Assumptions:	Nil
Notes and Issues:	Nil

1.3. Use case of Homepage

Use Case ID:	HOME1		
Use Case Name:	Home Page		
Created By:	Li Yaohao	Last Updated By:	
Date Created:	30/01/24	Date Last Updated:	

Actor:	User
Description:	The home page shows the quality of golden hour sorted from ascending to descending for a day.
Preconditions:	User already has a registered account.
Postconditions:	Nil
Priority:	High
Frequency of Use:	High
Flow of Events:	1. Default: Users can view the quality of sunsets that is sorted from ascending to descending. 2. Users can click the top right button to sort the location list based on proximity. 3. Users can click on the date tab at the top of the screen to change the date they want to view the sunset qualities. 4. Users can access other features from the home page 4.1 This includes searching and adding other locations, removing locations going into profile and settings. 5. Users can click in into each location to view detailed information about that location
Alternative Flows:	Nil
Includes:	Nil
Special Requirements:	Nil
Assumptions:	Nil
Notes and Issues:	Nil

1.4. Use case of Editing Homepage

Use Case ID:	FAV1		
Use Case Name:	Editing Homepage		
Created By:	Yoon Sang Won	Last Updated By:	
Date Created:	31/01/24	Date Last Updated:	

Actor:	User (initiating)
Description:	User can edit the homepage by adding or removing locations which user searches
Preconditions:	User has pressed the “search” button at the bottom of the screen to add or user has pressed the trashcan icon at the top left corner to remove locations.
Postconditions:	Homepage will be updated with the locations the user has added or removed.
Priority:	High
Frequency of Use:	High
Flow of Events:	1. User can add locations by pressing “search” button on the bottom of the screen 1.1 User can search locations in the search bar. 1.2 If the input location is in the list, it will show up on the screen. 1.3 User can add this location to the homepage by pressing the + icon next to the location. 2. User can remove locations by pressing the trashcan icon at the top left corner of the screen. 2.1 User can select multiple locations 2.2 Once user presses the delete button at the top left corner of the screen, the selected locations will be deleted from the homepage.
Alternative Flows:	FAV1-AF-S1 If the location entered by the user is not in the list 1. The system will show a text saying “No results found” and user is not allowed to proceed until user enters a valid name. FAV1-AF-S2 If the location is already added to the homepage 1. If user tries to add a location that has already been added, the system will show a text saying “Location already added!”
Exceptions:	Nil
Includes:	Nil
Special Requirements:	Nil
Assumptions:	Nil
Notes and Issues:	Nil

1.5. Use case of Calendar Function

Use Case ID:	CAL1		
Use Case Name:	Calendar function		
Created By:	Jin Ying	Last Updated By:	Yoon Sang Won
Date Created:	04/02/2024	Date Last Updated:	05/02/2024

Actor:	User (initiating)
Description:	A calendar like function to show which days are most likely to have good sunsets.
Preconditions:	Another date has been pressed by the user on the date tab
Postconditions:	Data shown on the homepage is changed to the user's choice of date
Priority:	High
Frequency of Use:	High
Flow of Events:	1. User clicks on one of the dates shown on the date tab at the top of the screen. 2. Date shown changes to the date chosen by the user. 3. Golden hour quality of the chosen date will be displayed.
Alternative Flows:	CAL1-AF-S1 If the user clicks on a date that is more than 7 days away 1. System displays "No predictions for the selected date yet!" 2. System returns to step 2. CAL1-AF-S2 If the user clicks on a date that is more than 30 days ago 1. System displays "Information expired." 2. System returns to step 2.
Exceptions:	Nil
Includes:	Nil
Special Requirements:	Nil
Assumptions:	Nil
Notes and Issues:	Nil

1.6. Use case of Location Details

Use Case ID:	DET1		
Use Case Name:	Location details		
Created By:	Yoon Sang Won	Last Updated By:	
Date Created:	04/02/2024	Date Last Updated:	

Actor:	User (initiating)
Description:	User is able to view the details of the sunset as well as other weather conditions that affects the sunset.
Preconditions:	User taps on one of the locations in the home page.
Postconditions:	Nil
Priority:	High
Frequency of Use:	High
Flow of Events:	1. User taps on one of the locations added to his homepage. 2. System will display the location name, quality of the sunset, the time of sunset, wind speed and humidity.
Alternative Flows:	Nil
Exceptions:	EX1 No location has been added to the homepage
Includes:	Nil
Special Requirements:	Nil
Assumptions:	Nil
Notes and Issues:	Nil

1.7. Use case of Sorting Locations

Use Case ID:	SORT1		
Use Case Name:	Sorting locations		
Created By:	Yoon Sang Won	Last Updated By:	
Date Created:	04/02/2024	Date Last Updated:	

Actor:	User (initiating)
Description:	User can sort the locations in his homepage on the home page according to distance or the quality of sunset.
Preconditions:	User has entered the home page.
Postconditions:	Order of the locations in the home list will be sorted according to the distance or quality that user chooses.
Priority:	High
Frequency of Use:	High
Flow of Events:	1. User taps the sort button at the top right hand corner of the screen on the home page. 2. User can choose to sort the list by either distance or the quality of sunset 2.1 If user sorts by distance, the list will be sorted starting from the location that is nearest to the user's current location. 2.2 If user sorts by quality, the list will be sorted starting from the location with the highest quality score of the sunset.
Alternative Flows:	SORT1-AF-S1 If there is no location in the home page 1. System will show a text saying "No location to be sorted!".
Exceptions:	EX1 If there is a tie between the distance or the quality 1. The tie will be broken by alphabetical order.
Includes:	Nil
Special Requirements:	Nil
Assumptions:	Nil
Notes and Issues:	Nil

1.8. Use case of Upload Pictures

Use Case ID:	POST1		
Use Case Name:	Upload Pictures		
Created By:	Lim Zhi Yong	Last Updated By:	
Date Created:	06/02/2024	Date Last Updated:	

Actor:	User (initiating)
Description:	Users can upload photos onto their profile that are visible to followers.
Preconditions:	User has entered the profile page.
Postconditions:	Nil
Priority:	Low
Frequency of Use:	Medium
Flow of Events:	1. Upon entering the profile page by clicking onto the profile button on the navigation bar located at the bottom of the screen, the user will click onto the "Upload Picture" button. 2. User will get to select either the "Take Picture" option or the "Choose From Gallery" option. 2.1 If the user selects the "Take Picture" option, the phone's camera will be turned on and the user will be able to take a photo which will be uploaded. 2.2 If the user selects the "Choose From Gallery" option, the gallery application will open and the user will be able to select a picture to upload. 3. User will see a preview of the photo before deciding if he/she would like to confirm the upload. 4. User can click on the "Upload Picture" option to confirm the upload. 5. The system will return to the profile page.
Alternative Flows:	POST1-AF-S1 If the user clicks on back 1. The system will return to the profile page.
Exceptions:	EX1 If the user clicks on "Upload Picture" before uploading one 1. The system will show an error message "You have not yet selected a picture.". 2. System returns to the Upload Picture page.
Includes:	Nil
Special Requirements:	Nil
Assumptions:	Nil
Notes and Issues:	Nil

1.9. Use case of Follow User

Use Case ID:	FOL1		
Use Case Name:	Follow User		
Created By:	Lim Zhi Yong	Last Updated By:	
Date Created:	06/02/2024	Date Last Updated:	

Actor:	User (initiating)
Description:	User can search for another user and follow them such that they can view their content.
Preconditions:	The other user has created an account.
Postconditions:	Nil
Priority:	Low
Frequency of Use:	Medium
Flow of Events:	1. Upon entering the profile page by clicking onto the profile button on the navigation bar located at the bottom of the screen, the user will click onto the “Find Other Users” button. 2. User will get to input the username of the other user. 3. User has to click “Follow” button.
Alternative Flows:	FOL1-AF-S1 If the user inputs an invalid username 1. The system will show an error message “No such user found, please try again.”. 2. System will return to the Find Other Users page. POST1-AF-S2 If the user clicks on back 1. The system will return to the profile page.
Exceptions:	Nil
Includes:	Nil
Special Requirements:	Nil
Assumptions:	Nil
Notes and Issues:	Nil

1.10. Use case of View and Edit Following

Use Case ID:	FOL1		
Use Case Name:	View and Edit Following		
Created By:	Lim Zhi Yong	Last Updated By:	
Date Created:	08/02/2024	Date Last Updated:	

Actor:	User (initiating)
Description:	User can view and edit the accounts that he/she is following
Preconditions:	Nil
Postconditions:	Nil
Priority:	Medium
Frequency of Use:	Medium
Flow of Events:	1. Upon entering the profile page by clicking onto the profile button on the navigation bar located at the bottom of the screen, the user will click onto the "Account System" button. 2. The user will click onto the "Following" button that is located below the profile picture. 3. Upon entering the "Following" page, users can view and remove the accounts that he/she is following. 3.1. User can click on the "Unfollow" button to unfollow the account.
	ACC1-AF-S1 If the user clicks on back: 1. The system will return to the Profile page.
Exceptions:	Nil
Includes:	Nil
Special Requirements:	Nil
Assumptions:	Nil
Notes and Issues:	Nil

1.11. Use case of Account Application

Use Case ID:	ACC1		
Use Case Name:	Edit Account Details		
Created By:	Lim Zhi Yong	Last Updated By:	
Date Created:	08/02/2024	Date Last Updated:	

Actor:	User (initiating)
Description:	User can edit username, profile picture and password.
Preconditions:	Nil
Postconditions:	Nil
Priority:	Low
Frequency of Use:	Low
Flow of Events:	1. Upon entering the profile page by clicking onto the profile button on the navigation bar located at the bottom of the screen, the user will click onto the "Account System" button. 2. The user will click onto the "Edit Profile" button that is located below the profile picture. 3. Upon entering the "Edit Profile" page, users can make changes to the following fields 1. User can edit the profile picture and will get to select either the "Take Picture" option or the "Choose From Gallery" option. 3.1.1. If the user selects the "Take Picture" option, the phone's camera will be turned on and the user will be able to take a photo which will be uploaded. 3.1.2. If the user selects the "Choose From Gallery" option, the gallery application will open and the user will be able to select a picture to upload. 3.1.3. User will see a preview of the photo before deciding if he/she would like to confirm the upload. 3.1.4. User can click on the "Upload Picture" option to confirm the upload. 3.1.5. The system will return to the profile page. 2. User can edit the username. 3.2.1. The user can input a new username into the username field text. 3. User can edit the password. 3.2.1. The user can input a new password into the password field text. 3.2.2. The user needs to verify password by keying in the same password again. 4. User can click "Save Changes" button once everything has been confirmed.
	ACC1-AF-S1 If the user clicks on back: 1. The system will return to the Profile page. ACC1-AF-S2 If the user clicks on back when he is in the Edit Picture page: 1. The system will return to the Edit Profile page. ACC1-AF-S3 If the new username is not unique:

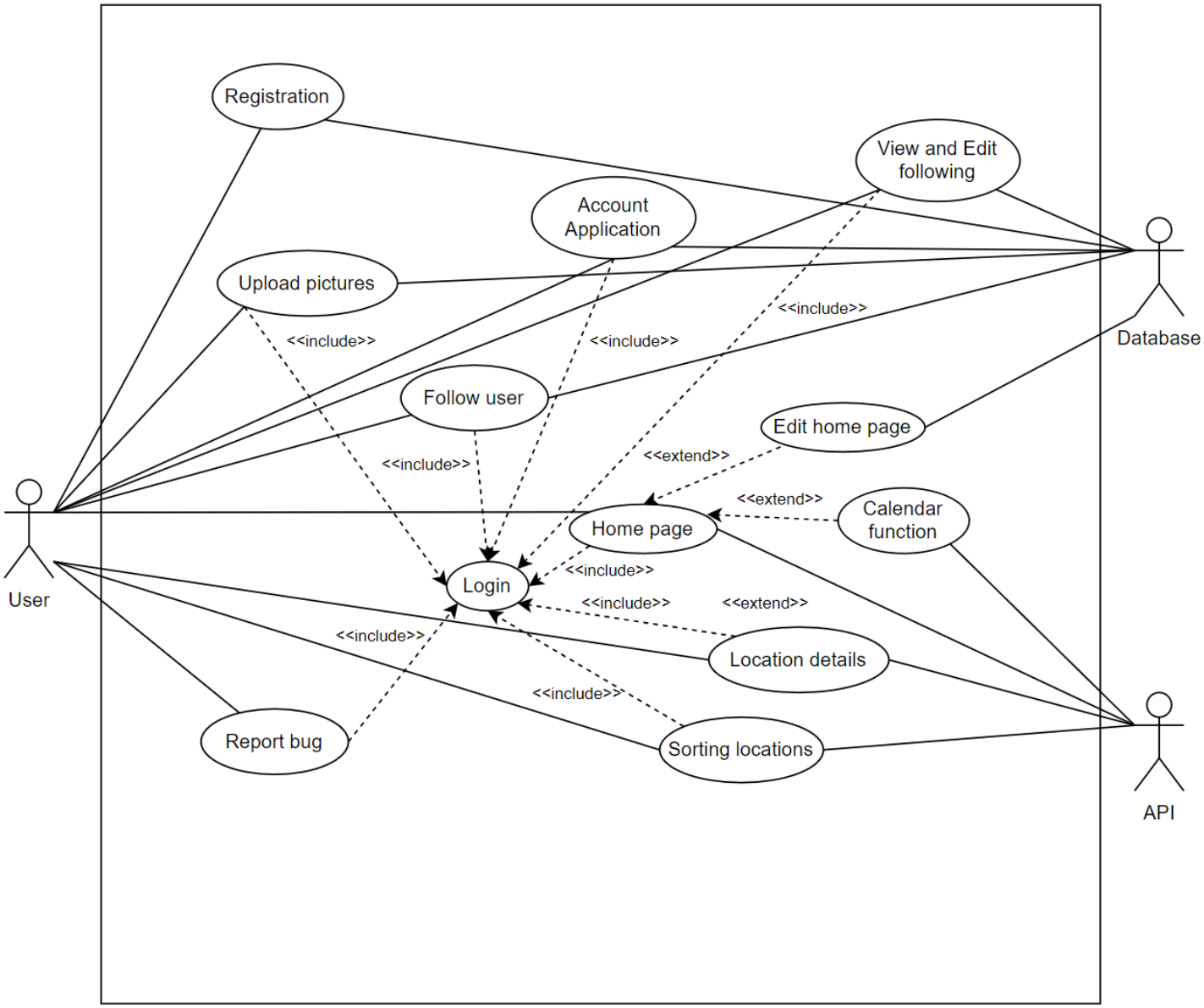
	1. The system shows the error message “Please enter another username”. ACC1-AF-S4 If password does not meet requirements: 1. The system shows the error message “Password does not meet requirements. Please enter a different password”.
Exceptions:	Nil
Includes:	Nil
Special Requirements:	Nil
Assumptions:	Nil
Notes and Issues:	Nil

1.12. Use case of Report Bug

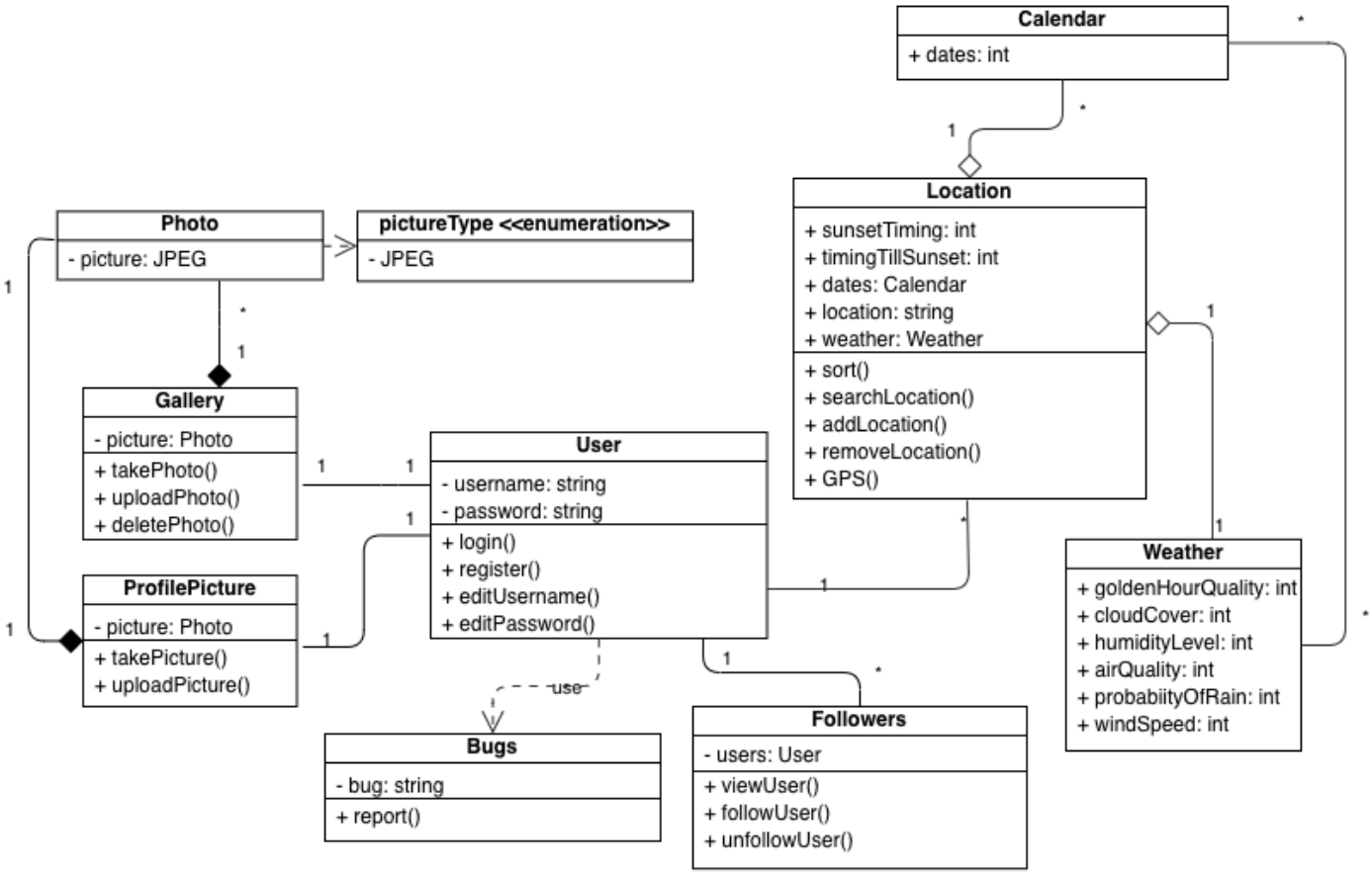
Use Case ID:	REP1		
Use Case Name:	Report Bug		
Created By:	Lim Zhi Yong	Last Updated By:	
Date Created:	06/02/2024	Date Last Updated:	

Actor:	User (initiating)
Description:	User can report a bug that he/she has found within the application.
Preconditions:	A bug has been found in the application.
Postconditions:	Nil
Priority:	High
Frequency of Use:	Low
Flow of Events:	1. Upon entering the profile page by clicking onto the profile button on the navigation bar located at the bottom of the screen, the user will click onto the “Report a Bug” button. 2. The user will be provided a field for the title and a field for the description of the bug. 3. The user can click on “Report Bug” to submit the report. 4. The system will return to the profile page.
Alternative Flows:	POST1-AF-S1 If the user clicks on back 1. The system will return to the profile page.
Exceptions:	Nil
Includes:	Nil
Special Requirements:	Nil
Assumptions:	Nil
Notes and Issues:	Nil

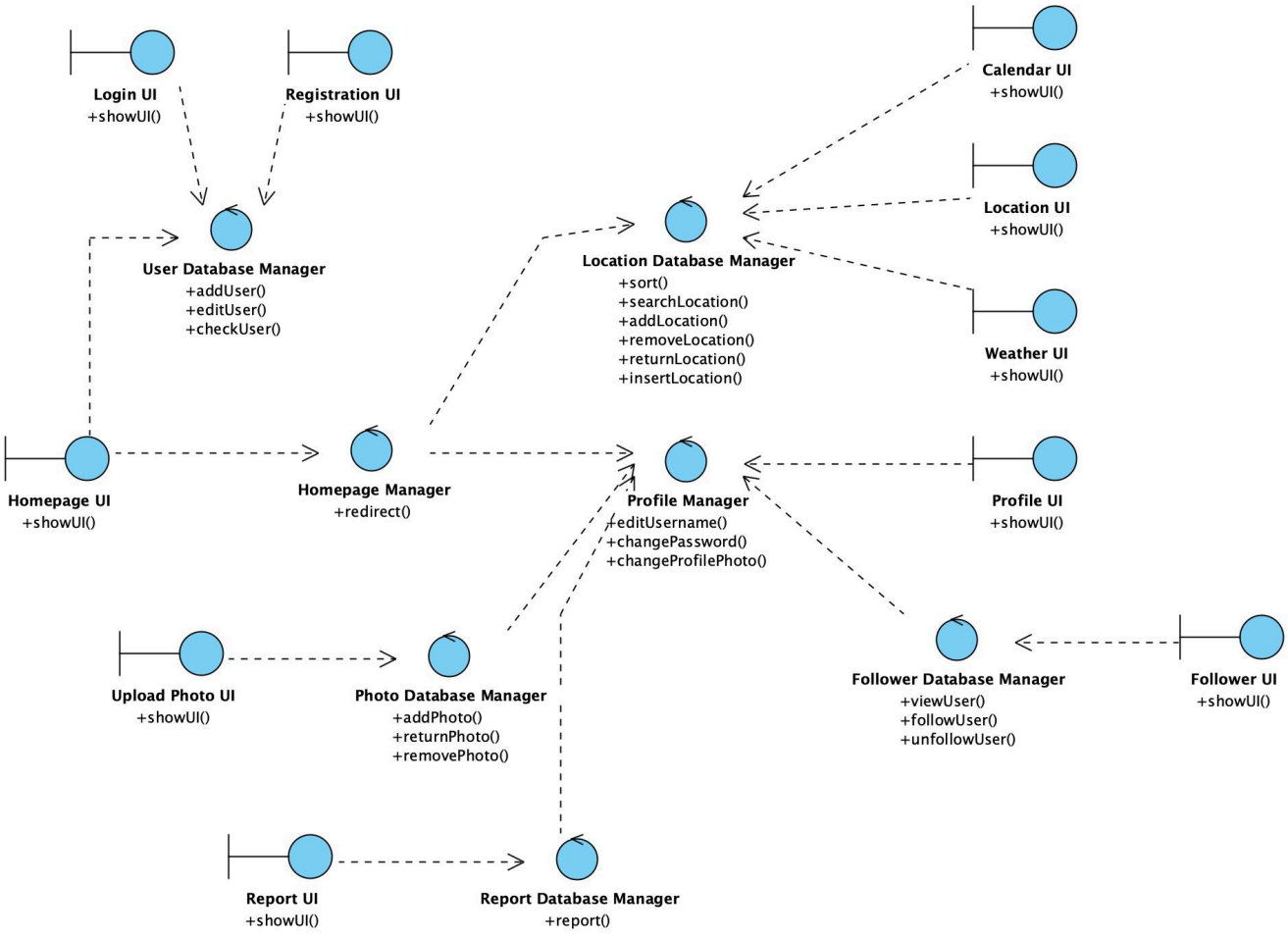
2. Use Case Descriptions



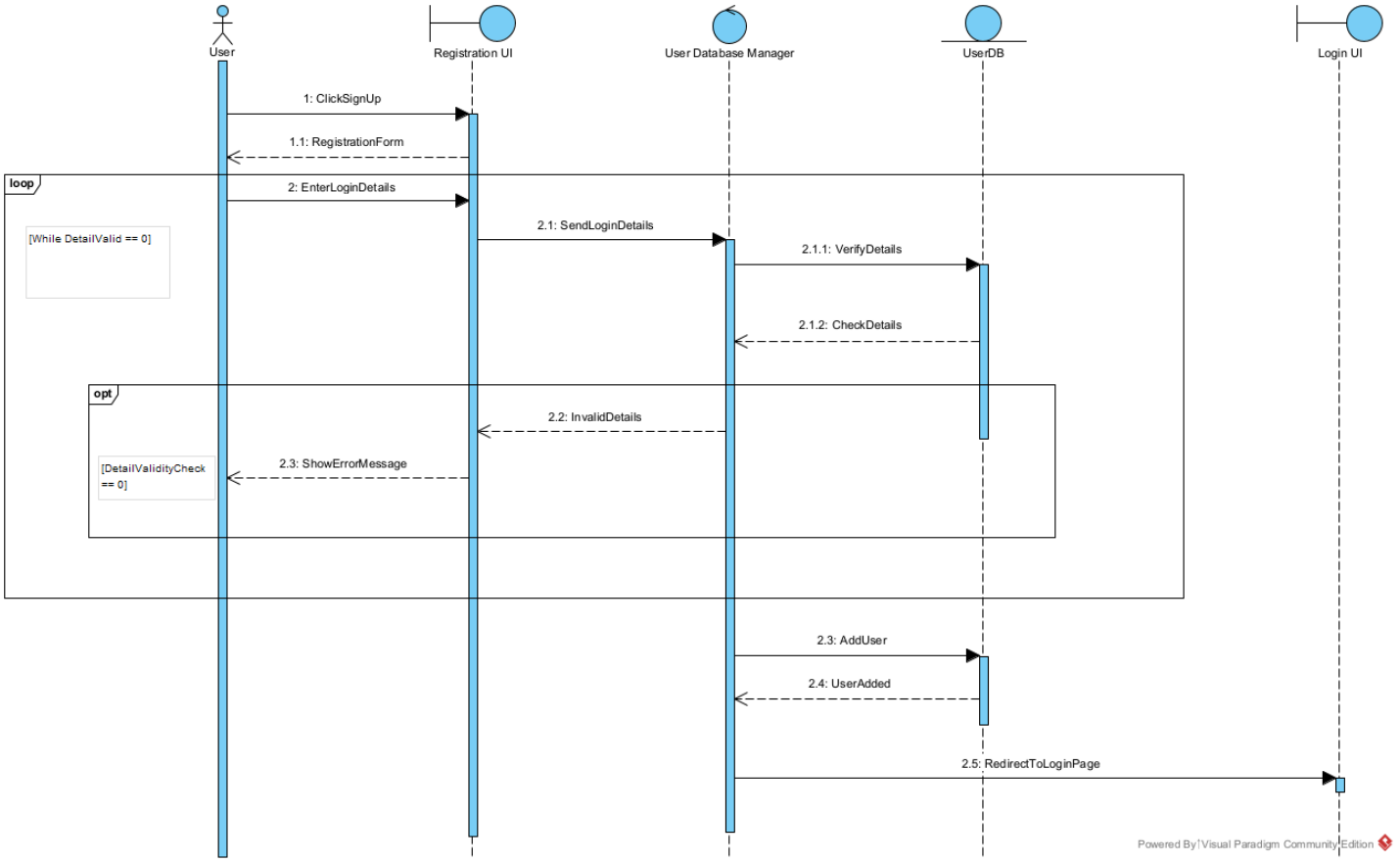
3. Class diagram of entity classes

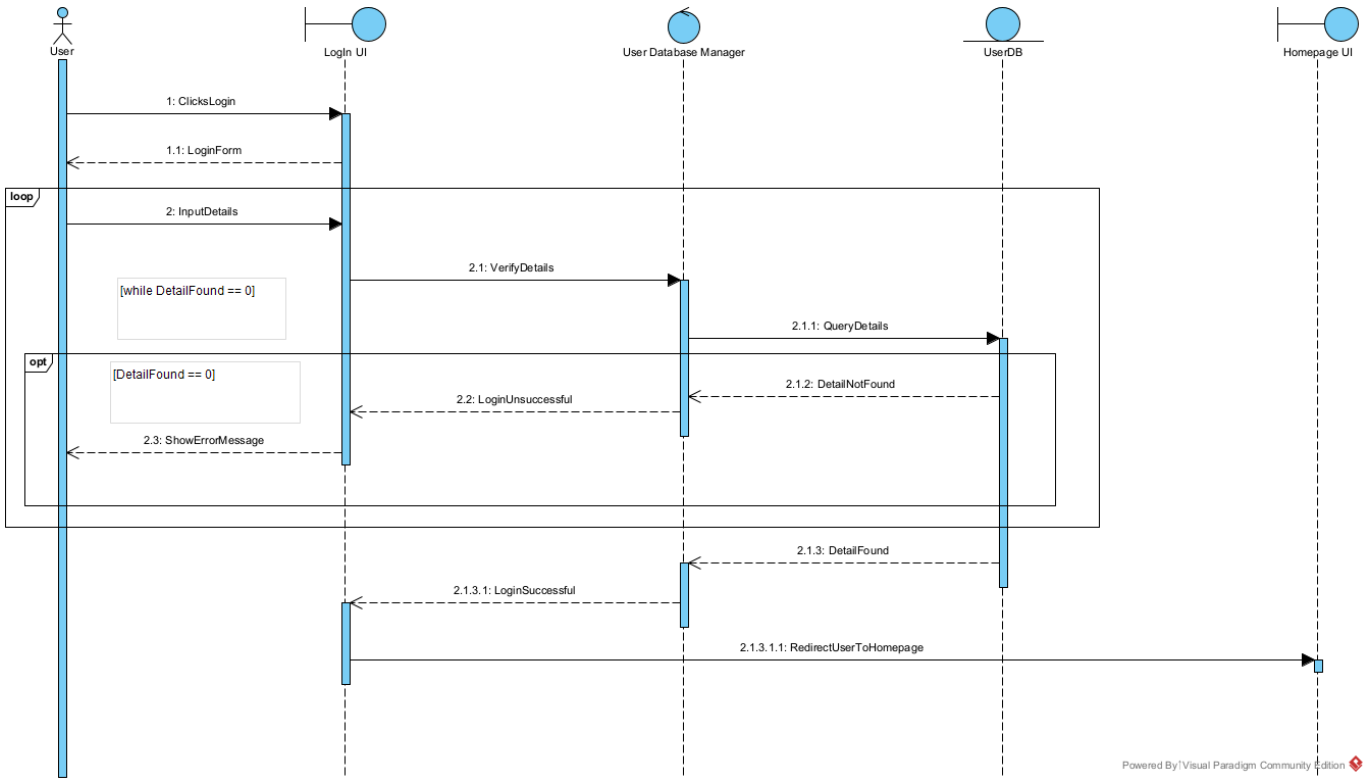


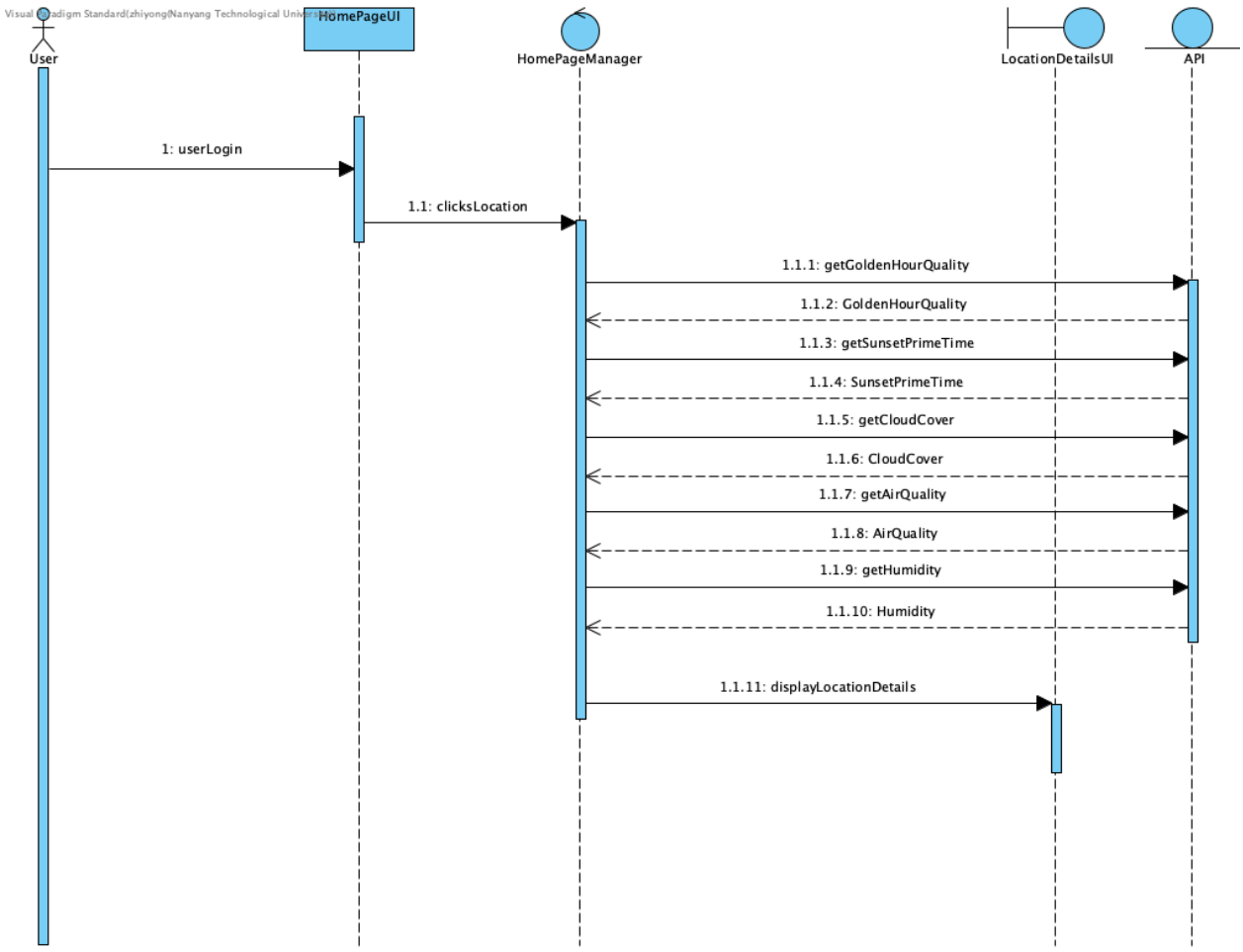
4. Key boundary classes and control classes

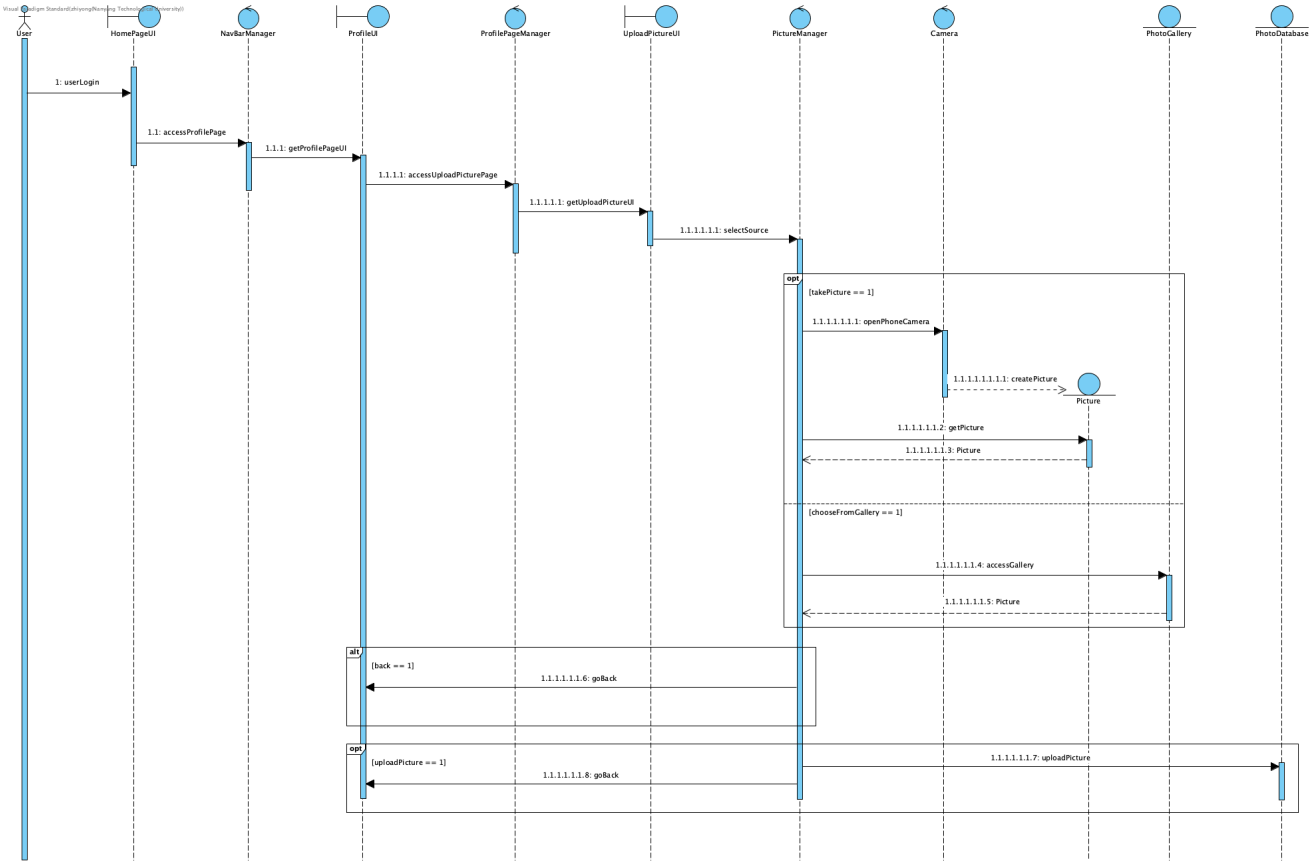
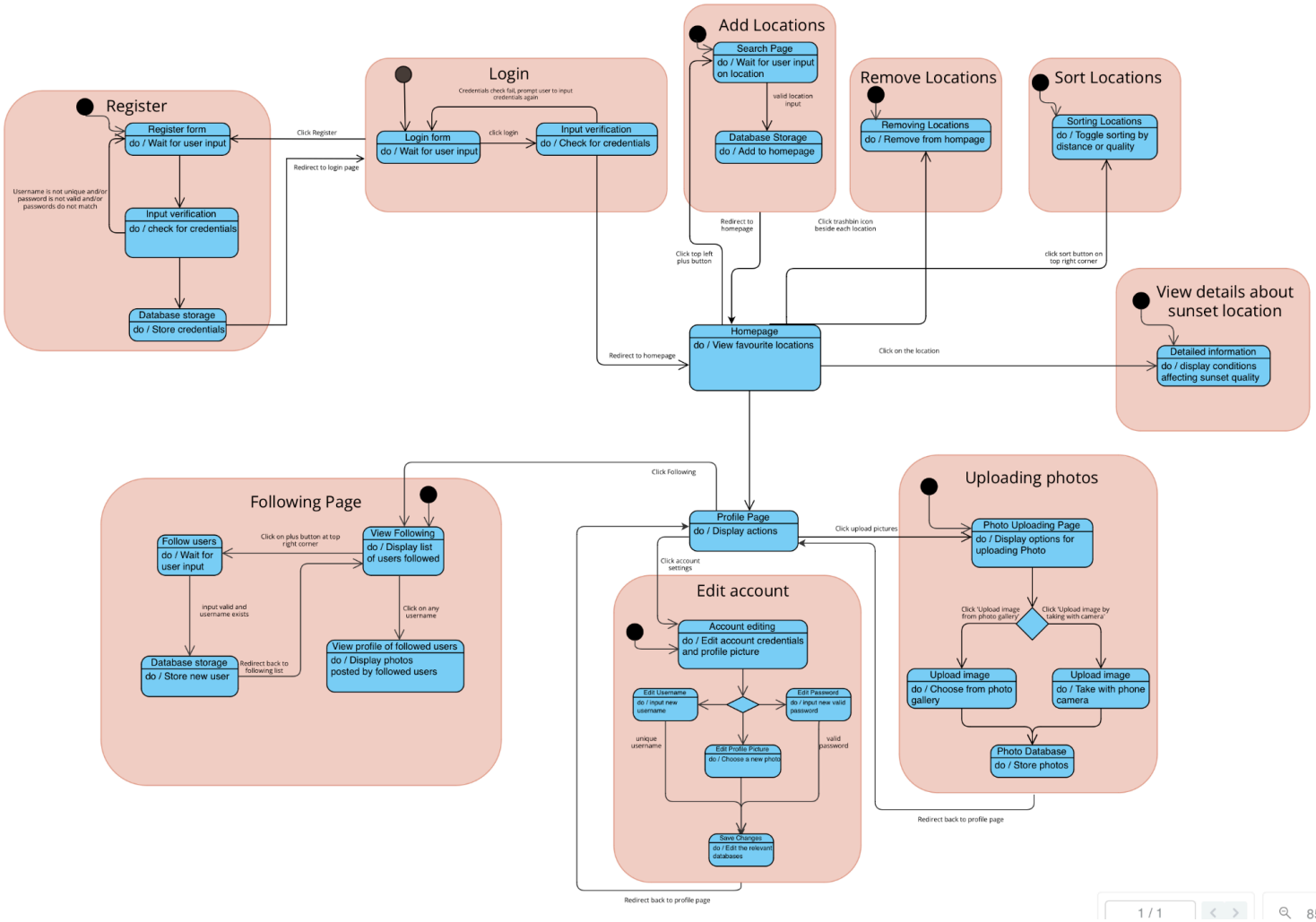


5. Sequence diagrams of some use cases




User
LogIn UI
User Database Manager
UserDB
Homepage UI
1: ClicksLogin
1.1: LoginForm
loop
2: InputDetails
2.1: VerifyDetails
[while DetailFound == 0]
2.1.1: QueryDetails
opt
[DetailFound == 0]
2.1.2: DetailNotFound
2.2: LoginUnsuccessful
2.3: ShowErrorMessage
2.1.3: DetailFound
2.1.3.1: LoginSuccessful
2.1.3.1.1: RedirectUserToHomepage
Powered By Visual Paradigm Community Edition


User
HomePageUI
HomePageManager
LocationDetailsUI
API
1: userLogin
1.1: clicksLocation
1.1.1: getGoldenHourQuality
1.1.2: GoldenHourQuality
1.1.3: getSunsetPrimeTime
1.1.4: SunsetPrimeTime
1.1.5: getCloudCover
1.1.6: CloudCover
1.1.7: getAirQuality
1.1.8: AirQuality
1.1.9: getHumidity
1.1.10: Humidity
1.1.11: displayLocationDetails


User
HomePageUI
NavBarManager
ProfileUI
ProfilePageManager
UploadPictureUI
PictureManager
Camera
PhotoGallery
PhotoDatabase
1: userLogin
1.1: accessProfilePage
1.1.1: getProfilePageUI
1.1.1.1: accessUploadPicturePage
1.1.1.1.1: getUploadPictureUI
1.1.1.1.1.1: selectSource
opt
[takePicture == 1]
1.1.1.1.1.1.1: openPhoneCamera
1.1.1.1.1.1.1.1: createPicture
Picture
1.1.1.1.1.1.2: getPicture
1.1.1.1.1.1.3: Picture
[chooseFromGallery == 1]
1.1.1.1.1.1.4: accessGallery
1.1.1.1.1.1.5: Picture
alt
[back == 1]
1.1.1.1.1.1.6: goBack
opt
[uploadPicture == 1]
1.1.1.1.1.1.7: uploadPicture
1.1.1.1.1.1.8: goBack

6. Initial Dialog Map