ITP Project Sprint 1

Void Team: Yiyan Wang / Jiacheng Ye / Wenrui Zhang / Tianyi Zhang

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1. Background

1.1 Background Description

In the rapidly changing era with various electronic devices, individuals pay more time and attention on work and entertainment than family life. Bringing more attention to individuals' attention on family, the synchronization of electronic devices and family make memories be easily kept so the stories could be continued to know generations by generations. The stories can be fun and legendary from the old generation's perspective. From the young generations' point of view, curiousness are full of their minds towards their life and they hope that they can hear the stories, understand the experiences and feel their happiness or sadness. A way connecting the old generation and the young generation together is needed for storing memorable stories and impressive artifacts.

Family memories could hardly get a way to permanently kept with details; stories would be finally lost if orally keeping the memories is the only way of keeping them. As for the main methods for storing those beautiful stories are journals, photos, even memorizing them in mind, are too ancient. Those ways have a common disadvantage --- easy to be lost and hard to preserve (ambiguous memory or aging paper).

Therefore, keeping family memories through a way by electrical devices is necessary nowadays. An application should be considered to help individuals to store their artifacts and their precious memory eternally. The idea of recording the artifacts with corresponding story is proposed, where the electronic devices could raise family cohesion and generation

inheritance. Currently no such platforms are established yet and this needs to be realized for the market demand so this application is urgently needed.

1.2 Project Goal

Provide elder individuals an application which captures photos of artifacts to track the stories and family memories, for passing the memories generation by generation.

Provide an enjoyable experience for the client.

Provide the use of the application efficiently for the user to store and communicate among family members (or friends, based on client's needs).

2. Target Client

2.1 Personas

**Steve Jobs
Age: 65 Gender: Male**

Habits/ Interests :
　　Reading books is the top interest for gaining knowledge. However, due to the rapid development of the internet and mobile devices, social media application becomes to other important habits to gain the modern information. Meanwhile, running is a good exercise in his daily life for keeping healthy. keeping a diary for storing valuable memory.

Cultural Background:
　　Lives in an atheistic family.
　　Main language is Mandarin.
　　No interest in politics

Educational Background:
　　Graduated in junior high school, and self-studied accounting knowledge

Current Address	Mohe, Heilongjiang Province, China
Family Member	Live with his wife and daughter
Current Job	Retired

Previous Jobs	Accountant, Marathoner, HR		

Goals:
    Always learn new things
    Win the Marathon
    Avoid Alzheimer's disease

Usage of PC and Mobile	Almost 90% use on mobile devices, mere 10% use on PC

Requirements:
    Want an electronic diary
    Want to share his story to other on good platform
    Want more convenient app like WeChat

Main Entertainment	Reading and keeping a diary.

Frustrations:
    Haven't won Marathon
    Feel that time is passing too fast
    Afraid about death

Frequent-use-APP	WeChat / Camera

2.2 Interview Document for Client

Background Analysis for Introduction to Client

As the potential client of the proposal of our product idea, you are assumed that you may require the need to keep family memories in a way of keeping information (such as relative events and stories) related to the memorial artifacts. Our team proposes the design with basic concepts of specifying the family memories in forms of websites or mobile applications for further inheritance through generations. Your requirements and suggestions are necessary for the promotion of the product. Due to the fact that you may not be an expert in this field, some information will be provided to you in this interview. Our team has designed this interview guideline based on the previous connection to you about your will and your draft thoughts, and this interview documentation would provide details officially and specifically. We hope this interview would inspire your thoughts and we hope that you earn a nice experience as our client.

Before doing the interview and answer the questions, please agree with our team that you could officially be the client and would accept to provide product requirements and suggestions in further stage.

For the below provision of ideas in designing and questions about your suggestions of the product using, you (our client) is required to answer them and communicate with the team member freely. Or, for your convenience, the process could be done orally and the documentation could be summed up by the team members.

1. **Website or Mobile App**

Websites are widely used through laptops and computers while mobile applications are installed on mobile phones. The choice may be affected by the frequency of using websites and mobile applications or the frequency of your use of the application. This will determine

the primary design (like size and layout) of the product. What is your preference and do you have any suggestions?

Client:

Currently less and less people use laptops and it is a little inconvenient for me to run the application on laptops. (In my point of view,) More and more individuals use mobile phones rather than laptops. The evidence is that the laptop selling store closed down often. Meanwhile, I carry the mobile phone every day and if the product can be realized through applications, it would be fine for me.

2. Search Function

Among the photos of artifacts stored in the product, you may need to search one or more particular ones and do further operations onto that photo such as editing, deleting or just showing the photo to your friends. Search function might be needed then. For search stage, some options may be title search, similar word search and tag search, which might be determined by the amount of photo and your preference.

Client:

Search function is necessary but I am afraid that after I recorded a new photo and gave it some information, during some time, I would forget the title or tag. So you'd better provide me some tags I have already entered. Therefore, if I use the search function, I would have some options reminding me what I have stored in this application.

About the number of photos, I am not sure how many would I record in this application.

3. Zoom-in and Zoom-out Photo Function

 For the requirement of zooming in and zooming out the photos, our team has come up with three main categories of functions: first, zooming in and out photos partially; second, zooming in and out photos according to screen size; Third, 3D function including rotating and multi-angle views. The advantages, disadvantages and the design outlooks are listed below in a table and you may compare and contrast and make choices.

	Advantages	Disadvantages	Outlook
Zooming Partially	The total and partial of the photo can both be represented at the same time.	Clarity and sharpness would not be as high as the original picture after zooming in.	

Zooming by screen size	This is realized by finger dragging; convenient to operate.	Clarity and sharpness would not be as high as the original picture after zooming in.	
3D Effects	Multiple angles of point of view could be provided; High sense of experience.	The production of 3D model for one artifact needs about 70 photos to generate; the operation would be messy and unfriendly to non-professionals.	

Client:

I think 3D effect of the photos is fascinating, however, I am not a professional and the operation is too complex. Therefore, I would like to choose one from the first and the second. For myself, I prefer the second one since I could drag anywhere I want and the first one is not that much what I want.

As for the 3D effect of the artifact, I propose that the video recording of the artifact could replace this function of showing how it looks, so if I upload the video, it would be fine without the 3D effect photo.

4. **Basic Layout**

The layout detail would be communicated with you further after the prototypes are finished by our team. For your phone, Android, the menu is always at the side of the phone. About the layout of our product, is that okay for you that we follow the main Android software structure? This includes the menu which is located on the right side of the mobile phone and returning key which is automatically applied on Android phones.

Client:

 The structure is suitable for my phone and the phone would not be changed in a short time so this is okay.

5. **Concept of Cover**

One of the members in our team proposed a concept of welcome page, which gives a cover of all photos and will appear when you first enter the application. This may last a short time

or a long time and if you click it, it may disappear. Do you think this is a good idea and if so, do you have any preference or suggestions?

Client:

I think it is a good idea to set a welcome page; this idea would let me know I enter this product successfully. And this provides a sense of ceremony, letting me know that I did the operations right for entering.

The picture could be set by me so that I could choose what the welcome page is like but this is not a must-do thing.

6. Social

Our team would like to know your attitude to share the photos online, with your friends or with strangers. Though the main function of this product is to store the memories, the extension could be about social media and sharing. Would you like to apply social functions on this product so that your friends and you could record the artifacts separately and share the artifacts to each other?

Client:

I would like to share with my friends about the stories and photos if that is possible. Every user should own an account to use this product.

7. Privacy

Your privacy means importantly for us and we would consider this seriously. Do you want a totally public interface or a partially public interface? Do you want anyone (any stranger) to comment or view your artifacts?

Client:

I do not want anybody to see what I recorded but only my friends. Also, some photos should be witnessed by my friends while some do not. In this case, some photo should be totally private, which means only me could have a look at them. You could use keys to develop this, with locking the photos so I could choose who could or could not view them.

8. Timeline

Timeline is a function provided by the product. This is designed by our team in many ways before your choice between mobile application and website. Due to the choice on the mobile application, the timeline could be rarely chosen, but left the choice of vertically laid out. Is this okay for you or are there any other thoughts about how to apply timeline on mobile applications?

Client:

The vertical and automatic zoom design is fantastic and I would totally accept it.

9. Prototype Presentation

Digital prototype is designed by our group and we would like to ask for development and advice from you. After showing you the prototype of the design, do you have some comments and advice or do you have something to suggest for changing?

Client:

There is an adding process for photos so there is correspondingly the delete function. For the deleting, because this is an application to record things, I want you to design for me an additional process so that I would not delete the photos by mistake. The prototypes are good in my point of view and they are all fine and acceptable.

3. Project Requirements

3.1 Functional Requirements

Requirement Explanation

The functional requirements mentioned below is the primary functional requirements the application needs to achieve. The basic functions are explained generally. More detailed functions would be added to use case or user story for the IT developers to understand the project or when the client adds more requirements to the application.

1. **Login**

This function allows the user to log into the application with an account and a password. If the user is new to the application, the user needs to register for a new account with an email address.

2. **Add Artifacts**

This function allows the user to add a new artifact to the album, with required information such as name, time, and video description. A save button would be provided for saving the added information.

3. **Delete Artifacts**

This function could be realized for each artifact, deleting the ones the user has chosen.

4. **Edit Artifacts**

This happens when a new story needs to be added to a particular artifact or a mistake needs to be corrected. For each artifact, a button for editing would be provided to modify current information and after editing, a save button would save the work.

5. **Timeline**

This function is provided as a main characteristic function in the application and the timeline would show the user the photos of the artifacts, sorting by the time the story happens.

6. **Search**

This function provides some of the tags that the user has labeled; it searches the relative key words and gives the result of photos to the user.

3.2 Emotional Requirements

Intent of the Application

The application is projected aimed for the family members to keep the stories and memories in the form of document, video or audio, servicing the family members by recording life experiences, sharing moments in life and tracking back the drops of memories to satisfy the emotional needs of the users.

Expectation of Emotional State of the User

The application could be utilized in many scenarios by users, such as when missing some family members, when sharing the stories with friends, when the artifact needs to be abandoned or sold. The expectation of emotional state of the user should be decided the scenarios the user is using this application.

From the general scenarios the user might use the application, the expected emotional state of the user could be wistful, excited, encouraging, happy or peaceful. Most of the emotional states should be comparatively positive than without using the application. The function quality because of technical problems should not block the fluent use and influence the emotional state of the user, which needs the developers to put efforts on.

Anticipated Interactions of the Application with User

The application is anticipated to be like a time machine that could communicate or translate the user back to the time the stories have happened (according to the expression of the client). The interactions should be fluent and full of memory, restoring the scene in the client's mind as much as possible.

Anticipated Interactions of User with Other Users

The application is anticipated to have interactions between different users so that the friendship could be closed and strong. The emotional state would be the sense of belonging and connection, which comes from users as family members and users as friends. The satisfaction emotion is the typical target for the client when using the application.

Anticipation relating to Client's Identity

The personality of the client should be sensitive because the target client is the elder. Also, target client's culture is Chinese culture, which is traditional and conservational. The age of target client is relatively old, life experience would be rich, so the anticipation should be relating to the youth of the client, satisfy the client's psychological needs when he/she uses the application to track his/her entire life.

Unanticipation

- The complexiness becoming a problem for the client to use
- No emotional resonance between the photo arranging and the client
- The social media functions proportioning more than storing function

3.3 Quality Requirements

The client needs the application to run fast and fluent, with time for waiting no more than 2 seconds. Usually, the application should run with waiting no more than 1 second with no accident. Also, the outlook of the application should not be messy and the instruction should be clear.

4. Project Information

4.1 Use Cse

1. **Search**

Note: app can provide wanted item based on the key words provided by the user

Main case: user types in the key words, the application shows all items that matches the requirement, then the user can click on anyone to view more details

Alternative case: The application cannot find the searched item and jumps out a window to ask the user to input other keywords that hopefully can find the item, and suggests the user to view the timeline if they still cannot find the item.

2. Timeline

Main case: User clicks the timeline and the application shows a timeline and it pins every item to the timeline, the user then finds the item for a certain period. User then drags the range of time they are looking for, such as viewing all items from 1900 to 2000 or viewing all items from 1.7.1900 to 31.7.1900.

Alternative case: if one item was not attached to a certain year, it may not appear here

3. Login

Main case: User opens the application, and then types his user id and password. Application sends the information to server for authorization checking. Then application receives the confirmation and goes to welcome page.

Alternative case a: application receives failed authorization acknowledgment and let user re-input User ID and Password.

Alternative case b: if the account is failed to log in in database because of internet problems, the application will give a internet-busy alert so that the user needs to log in again.

4. Add

Main case: User opens the menu page and press the add button. Application goes to adding page and show all required information. User add title, photos, text description and press the submit button. Application sends information to the server and receives confirmation.

Alternative case: user does not app minimum required information and presses the submit button. Application directs to the non-input required information window and asks for inputting.

5. Register

Main case: If the user currently has no account, the user could register a new account by entering the email, password and user information. Then the user is available to use the account to login. User could return to login page if the user tends not to retrieve password.

Alternative case a: application receives failed authorization acknowledgment and let user re-input User ID and Password. Failed authorization includes invalid password lengths, email validation failure, date of birth validation failure, must-filled items not filled.

Alternative case b: if the account is failed to register because of internet problems, the application will give a internet-busy alert so that the user needs to log in again.

6. Retrieve Password

Main case: If the user forgets his/her password, the user could reset the password by resetting the password after entering the email. This will be realized by sending an email to the email the user has entered, and the password would be reset in the email. It will return to login page after the email is sent.

Alternative case: User could return to login page if the user tends not to retrieve password.

7. Setting

Note: app can provide wanted item based on the key words provided by the user

Main case: User could access option menu through home page to alter the mode, from night mode to day mode, changing the theme.

Alternative case: User could access setting section through home page to alter the mode, from day mode to night mode, changing the theme.

8. Sending Email for Verification

Note: this could be complemented by setting questions for user to verify the identity, however, this loads more work to the user.

Main case: When user forget the password or register for a new account, database will send an email for the user to verify his/her identity.

9. Generating Info-pictures of Artifacts

Main case: User is allowed to generate each artifact information (including title, date, description and pictures of artifact) into a picture so that the user could save the picture to local photo album or send the picture to his/her friends or relatives.

10. Alter User Information

Note: this functionality is part of would-have use case due to the fact that user information would not be public to show others since the application is not a social media application.

Main case: User could access option menu through home page to alter the user information, including name, gender, portrait, self introduction, date of birth.

4.2 Scope

In-Scope: Log-in; upload pictures; delete pictures; edit picture information
Out-Scope: Editing the picture by drawing; 3D artifact building; QR code showing the artifact;

4.3 User Story

StoryID	User	Story/Scenario	MosCoW Priority
01	Artifact Owner	As an Artifact Owner, I want to be able to log in my own account with password, so that only I can login the account	Must-have
02	Artifact Owner	As an Artifact Owner, I want to be able to add artifacts to the application, so that I can review and edit the artifacts with my family later on	Must-have
03	Artifact Owner	As an Artifact Owner, I want to be able to delete artifacts to the application, so that I can remove the artifacts if I do not want to record it any more	Must-have
04	Artifact Owner	As an Artifact Owner, I want to be able to edit the information of artifacts, so that I can keep adding more stories to the item	Must-have
05	Artifact Owner	As an Artifact Owner, I want to view all items by zoom in a timeline, so that I can easily find the item and compare the time of the item	Should-have
06	Artifact Owner	As an Artifact Owner, I want to search the artifacts by using the keywords, so that I can easily find the item by its feature or tags	Should-have
07	Artifact Owner	As an Artifact Owner, I want to zoom in the picture of the artifacts, so that I can take a look of the detail	Should-have
08	Artifact Owner	As an Artifact Owner, I want to have a 3D model of the artifacts, so that I can view the item from all directions	Could-have
09	Artifact Owner	As an Artifact Owner, I want to have a different QR code attached to every artifact, so that I can view the item by scanning the QR code	Could-have
10	Artifact Owner	As an Artifact Owner, I want to match the similar word when I search for some artifacts, so that I don't have to remember the	Could-have

		exact keywords, e.g. dad=father	
11	Artifact Owner	As an Artifact Owner, I want to receive a message of resetting the password when I press the word 'forget your passwords?', so that I can find my password back	Should-have
12	Artifact Owner	As an Artifact Owner, I want to be able to log in by the account of wechat or QQ, so that I can pass the process of creating an account	Could-have
13	Artifact Owner	As an Artifact Owner, I want to add (maybe remove) other account as friends, so that they can view the artifacts by browsing my page	Would-have
14	Artifact Owner	As an Artifact Owner, I want to set the permission to view as different levels such as public, only some can view, someone cannot view and privacy, so that I can choose who can view the artifacts	Would-have
15	Artifact Owner	As an Artifact Owner, I want to have a clean interface, so that they can easily find the button I want to press	Should-have
16	Artifact Owner	As an Artifact Owner, I want to set my theme and background of the application, so that I can choose my preferred background	Could-have
17	Artifact Owner	As an Artifact Owner, I want to have a large font, so that I can read easily even without glasses	Should-have
18	Artifact Owner	As an Artifact Owner, I want to upload a video to describe the item, so that I can describe the artifacts by myself	Should-have

4.4 Division of User Story into Tasks

Sprint	Stories and improvement	Main Task	Point
2	01.As an Artifact Owner, I want to be able to log in my own account with password, so that only I can login the account	1. Connect the app to database 2. match account and passwords 3. login in from one device only	2 1 1
2	02.As an Artifact Owner, I want to be able to add artifacts to the application, so that I can review and edit the artifacts with my family later on	1.Upload picture of items 2.Upload the words description 3.Upload the audio 4 Upload video (User Story 18)	1 1 1 2

2	03.As an Artifact Owner, I want to be able to delete artifacts to the application, so that I can remove the artifacts if I do not want to record it any more	1. Delete the item from the database 2. Show the box of 'Are you sure to delete?' to prevent misuse	2 1
2	04.As an Artifact Owner, I want to be able to edit the information of artifacts, so that I can keep adding more stories to the item	1.Be able to edit picture 2.Be able to edit words description 3.Be able to edit audio 4.Be able to edit video	1 1 1 1
2	05.As an Artifact Owner, I want to view all items by zoom in a timeline, so that I can easily find the item and compare the time of the item	1.Add the page of timeline 2.Be able to change to timeline page 3.Match items by their time 4.Change to the page of chosen item	1 1 2 1
2	06.As an Artifact Owner, I want to search the artifacts by using the keywords, so that I can easily find the item by its feature or tags	1.Add the page of search 2.match the item by the keyword 3.change the page to the chosen item	1 3 1
2	07.As an Artifact Owner, I want to zoom in the picture of the artifacts, so that I can take a look of the detail	1.Be able to open up the image 2.zoom in the image just like photos	1 1
3	08.As an Artifact Owner, I want to have a 3D model of the artifacts, so that I can view the item from all directions	1.Receive the image of from different direction 2. Create the model for the item 3. Be able to drag and show every direction of the item	1 4 1
3	09.As an Artifact Owner, I want to have a different QR code attached to every artifact, so that I can view the item by scanning the QR code	1.Be able to create the QR code 1.The user can go to the related item by scanning the QR code	2 1
3	10.As an Artifact Owner, I want to match the similar word when I search for some artifacts, so that I don't have to remember the exact keywords, e.g. dad=father	1.Do the language processing using Machine learning or other technique 2.show the related item in order	4 1
2	11.As an Artifact Owner, I want to receive a message of resetting the password when I press the word 'forget your passwords?', so that I can find my password back	1.Send the email to the email address 2.Send the message to the phone	1 1
3	12.As an Artifact Owner, I want to be able to log in by the account of wechat or QQ, so that I can pass the process of creating an account	1.Login by QQ 2.Login by Wechat	1 1

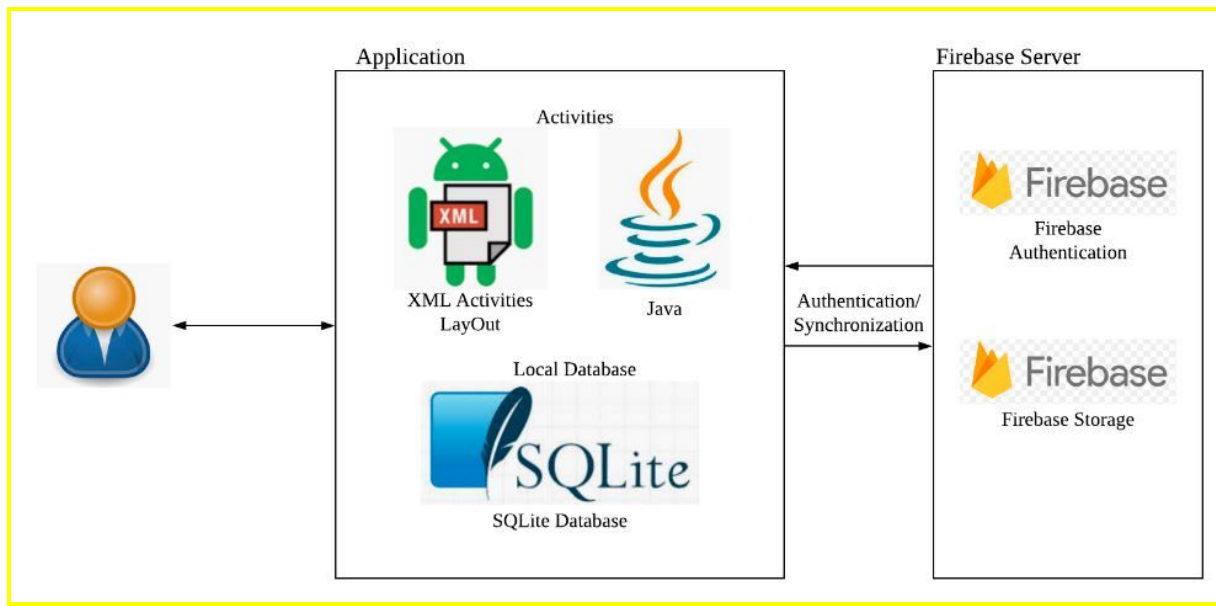| 3	13.As an Artifact Owner, I want to add (maybe remove) other account as friends, so that they can view the artifacts by browsing my page	1. Add the page of friends 2. Be able to search other users to add them as friends 3. Be able to view their items if we have permission	1 2 1
3	14.As an Artifact Owner, I want to set the permission to view as different levels such as public, only some can view, someone cannot view and privacy, so that I can choose who can view the artifacts	1.Set the item public viewing 2.Set the item public except for a group of people 3.Set the item can only be viewed by some people 4.Privacy viewing	1 1 1 1
2	15.As an Artifact Owner, I want to have a clean interface, so that they can easily find the button I want to press	1.Reduce the number of the function button to make it clean 2.Choose a clean default background	1 1
2	16.As an Artifact Owner, I want to set my theme and background of the application, so that I can choose my preferred background	1.Create the customize background function in settings 2.Change the background by given picture	1 1
2	17.As an Artifact Owner, I want to have a large font, so that I can read easily even without glasses	1.Create the change the font size function in settings 2.Change the font on every page by given size	1 1

4.5 Minimum Viable Product

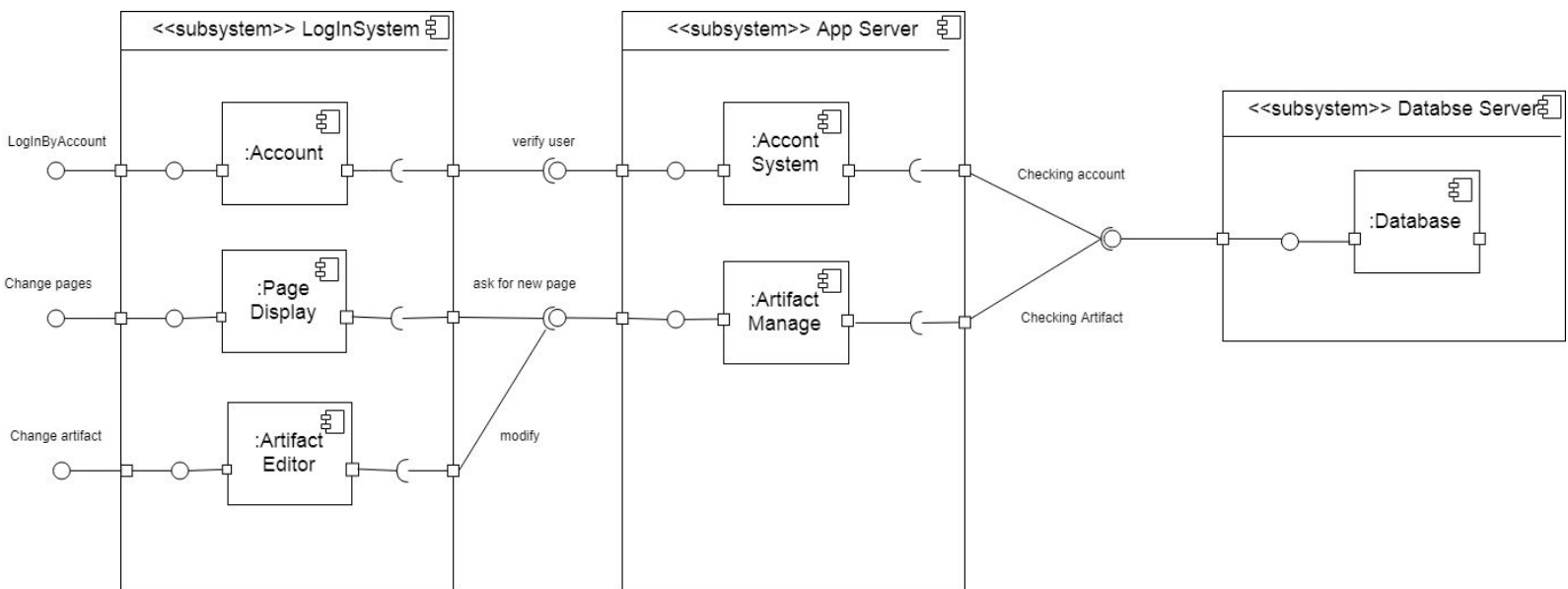Minimum viable product meeting the functional requirements of the client include:

Log-in to the application; add or delete photos to the album; edit information of the photos; register for a new account; and reset the password of the account. This supports basic functions from the proposal of the application.
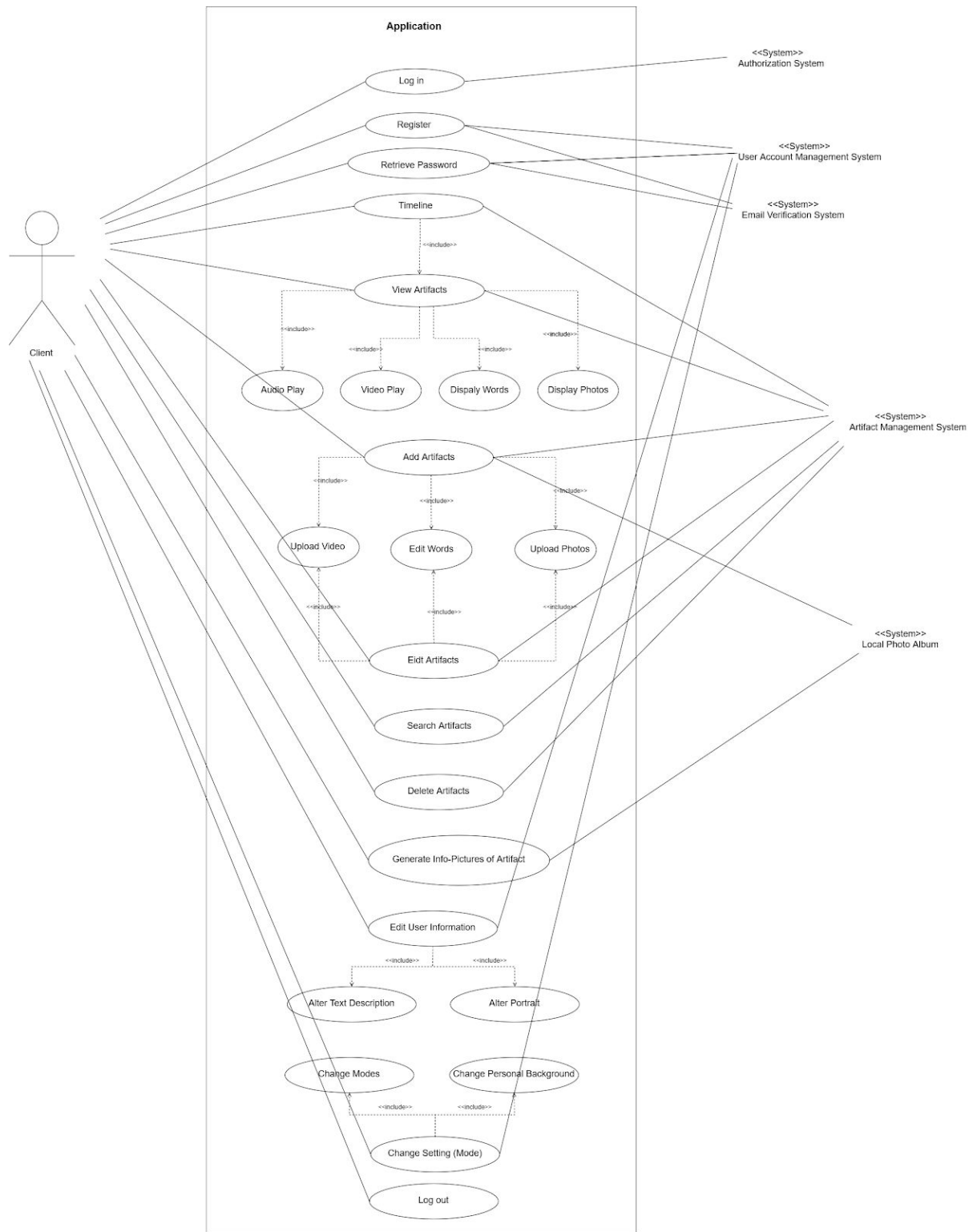
4.6 Diagram

4.6.1 High-Level Architecture diagram

4.6.2 Component Diagram

4.6.3 Use Case Diagram

Application

Log in

Register

Retrieve Password

Timeline

View Artifacts

Audio Play   Video Play   Dispaly Words   Display Photos

Add Artifacts

Upload Video   Edit Words   Upload Photos

Eidt Artifacts

Search Artifacts

Delete Artifacts

Generate Info-Pictures of Artifact

Edit User Information

Alter Text Description   Alter Portrait

Change Modes   Change Personal Background

Change Setting (Mode)

Log out

Client

<<System>>
Authorization System

<<System>>
User Account Management System

<<System>>
Email Verification System

<<System>>
Artifact Management System

<<System>>
Local Photo Album

4.6.4 Class (UML) Diagram

4.6.5 Flow Diagram