

Design process report

1. The members of your group and their usernames.

Name	Leeds_ID	SWJTU_ID	User name
HuJiajun	201199524	2017110214	sc17j3h
ZhouJingming	201199823	2017110225	sc17j2z
DingYuming	201199510	2017110267	sc17y2d
ZhaoZiyu	201199710	2017110218	sc17zz

2. The selected user group (a-c).

This time we choose to design the interface for a class c user.

3. The persona (one paragraph) and use scenarios (one paragraph per scenario) which refines your user group.

(1) Requirements of user group C

Our group chose to improve the application for user group C.

- 1.Elderly users need video software to be able to play his videos.
- 2.Elderly users need video software to be simple to operate and easy to understand.
- 3.Elderly users need video software to be able to store and manage his video library.
- 4.Elderly users need the main playback area of the video software to be slightly larger.
- 5.Elderly users need to be able to switch videos.
- 6.Elderly users need to control the progress of video playback through a progress bar.
- 7.Elderly users need a volume widget to adjust the volume.

(2) user persona

Name: Mr. Jiang

Age: 93

Gender: Male

Occupation: Engineer (retired)

Character: outgoing

Hobbies: Literature, poetry, musical instruments, learning foreign languages, music

Mr. Jiang is a retired engineer. He has a wide range of hobbies. After retirement, he has enough time to enjoy life.

Mr. Jiang is the leader of an elderly society. The community is a group of art lovers who often perform locally, such as singing, dancing and so on.

Mr.Jiang focuses on health. He often browses for information on health.

Mr. Jiang focuses on new technologies. Although he can't quickly understand the latest technology, he has a strong interest in cutting-edge technology and products in the society, and is willing to try to learn related content.

Because of his wide range of hobbies, Mr. Jiang has a huge collection of videos. He wants / needs a relatively simple video player software to manage, store, and play his video

library.

(3) Scenarios

1. As an elderly person over 65 years old, the most concerned information is health information. Modern Internet technology is developed, and there are various videos about health on the Internet and TV. Faced with such a wealth of information, sometimes elderly users cannot watch all of them in a short period of time. Similarly, there are some meaningful and excellent videos that elderly people want to watch multiple times. Playing on mobile devices sometimes pays extra huge communication network costs. Therefore, at this time, the elderly need to download the important videos they are interested in beforehand. They are then categorized into specific categories within the video software. In this way, seniors can play and revisit videos anytime, anywhere.

2. As a retired senior, you have plenty of time to enjoy life. Therefore, the lives of the elderly are not monotonous. Many elderly people have various activities. Older people are keen to record their colorful lives by shooting videos. At this time, the elderly need a video player software for him to store and replay the video he shot. Older people also want to personalize and manage his video library (by time, place, person, time).

4. The platform you are targeting

This time we are targeting tablets

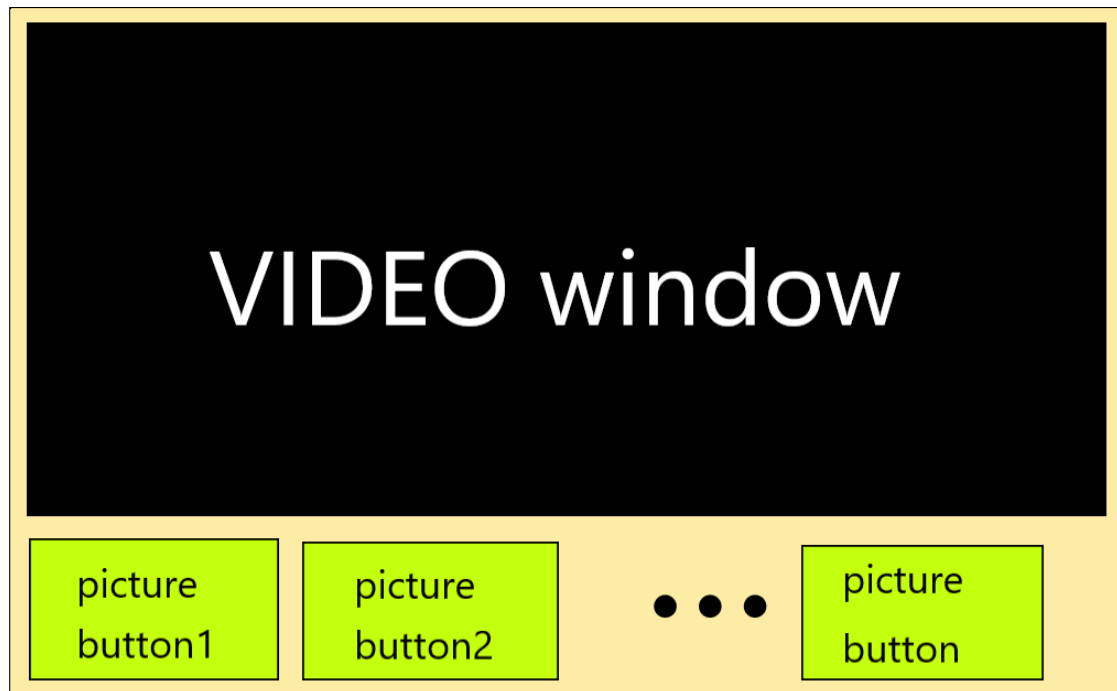
5. a title and description of each cycle in the following format

Interaction 1:

1. Prototype

This time we used 3Dpainter to sketch our app framework.

Our purpose is to arrange all related images in the target folder as buttons under the video window. There are two main reasons for our purpose. The most important reason is to increase the quality of user experience. When we first got this app template, there are four picture buttons under the video window. The pictures of the four buttons will change randomly according to time. In this way user cannot choose the video in time as we are targeting at elder users who don't like to be fussy. The second reason is to lay the foundation for future development and the addition of functions. In our opinion, the button mode of the template contains too many functions (including the ability to browse all videos by scrolling through pictures and arrange multiple buttons to show multiple videos), so that can't achieve every function well.



2. Evaluation

This time we used a questionnaire to evaluate the changes in the first iteration. There are several reasons for this. The first reason is that questionnaires are more efficient. Compared with other schemes, the questionnaire method can obtain more people's evaluation of the changes in the iteration at the same time. While setting fixed questions in the questionnaire, we will also set open questions. This ensures that the user's evaluation of the changes in the iteration is maximized. The second reason is not to disturb others too much. For example, in the way of interview, if we directly interview others, it may take up others' time. Efficiency will also suffer. The use of questionnaires can avoid this kind of problem. The third reason is that the questionnaire method can obtain certain data so as to accurately evaluate the advantages and disadvantages of the iteration. The purpose of this questionnaire is to obtain the user's intention to use the template button and the button changed in the first iteration. This is used to determine whether we need to make the version of the change the next version of the UI application.

By analyzing the survey data, we found that people preferred the layout of the buttons that changed during the iteration. Most people think this layout is simpler and less confusing to the user. It's even easier for older people. So, we finally decided to use the button layout that had changed during the iteration.

Number	Q1	Q2
choose (1)	9	3
choose (2)	21	27

Questionnaire1 Prefer this?

- Compare the template version to the new version, which image button you prefer.
 - The image button mode of the template
 - Line up all the picture buttons below (the number you choose) (2)
- Which do you think older users would prefer?
 - The image button mode of the template
 - Line up all the picture buttons below (the number you choose) (2)
- Why do you think so?(according to the answer)

old people don't like to be fussy
- For more advice(if any)

Too many video buttons can get crowded

3. Code

The difference between the prototype and the implementation for this iteration is not huge. For the code, the scroll of the button is simply implemented using functions in the template. We simply disable this function to scroll the cancel button image. For the purpose of arranging all the picture buttons existing in the target directory, it is to read the pictures in the target directory continuously through the loop. You only need to set the number of loops as the number of pictures in the target directory to achieve the effect of all picture button arrangement. So, the difference between the prototype and the implementation of the first iteration is not that big.

Video link:

https://v.youku.com/v_show/id_XNDQ4MTUzMzkwMA==.html?spm=a2h3j.8428770.3416059.1

Interaction 2:

1. Prototype

This time we used 3Dpainter to sketch our app framework.

The goal of this iteration was to reposition the image button below the video window in the first iteration to the right of the video and add a scrollbar to this area. There are two reasons for this. The first is that we need to improve the user experience. It might be a good idea to place the image button below the video, but we still put it on the right side of the video, which is more in keeping with most people's habits. The scrollbar function is also added to this area to ensure that in the case of too many video items, the picture

button bar will not cause each button to shrink. This is to further facilitate the use of users. The second reason is that we left room for later releases. We will place the new function button in the original image button position.



2. Evaluation

This time we used a questionnaire to evaluate the changes in the second iteration. There are several reasons for this. First of all, compared with the first iteration, this iteration only changed the position of the original image button, moving it from the bottom of the video window to the right of the video window. And added the function of scroll wheel to this area. Using other methods (video interviews, etc.) might have provided a more detailed picture of the user's usage, but this was not appropriate for this iteration. On the contrary, the method of questionnaire survey is more efficient to know users' views on the iterative change. Secondly, the use of questionnaires will not bring too much trouble to the respondents (not willing to be on camera and other factors). This time, the purpose of the questionnaire is only to obtain the user's opinion on the selection of the button position in the picture and whether it is necessary to add the scroll wheel area.

Through analyzing the data we obtained, we know that more users chose the version of the second iteration. More than half of the users who chose the location thought it would be more comfortable to be on the right. At the same time, all respondents in the survey thought that we need to add a scroll bar to this area to avoid the situation that the buttons are too small due to too many picture buttons. Taking all of this together, we'll use the second iteration version as the next version of the UI application.

Number	Q1	Q2
choose (1)	17	30
choose (2)	13	0

Questionnaire2 Position and ScrollArea

- Do you prefer to place the picture button on the right or the bottom
 - right
 - bottom

(the number you choose) (1)
- Do you think we need to add a scroll bar to the image button area
 - Yes
 - No

(the number you choose) (1)
- Why do you think so?(according to the answer)
 - For the position of picture button
People's habits
 - For the scroll bar
Be easy to use.
- For more advice(if any)
Window arrangement is more reasonable

3. Code

There are some differences between this iteration and prototyping. The original shape is the size of the fixed video window, and the roller area will be fine-tuned as the UI window changes. In reality, we can only implement the video window and the scroll area to adjust along with the changes of the UI window. The reason is that in the design of the code, we used the QHBoxLayout method in order to realize the two areas can be placed side by side. This means that all elements in the layout will populate the layout and change as their size changes. There might have been a better way to solve the problem of two Windows sitting side by side, but we didn't find a better solution due to technical problems. Video link:

https://v.youku.com/v_show/id_XNDQ4MTUzNDEzNg==.html?spm=a2h3j.8428770.3416059.1

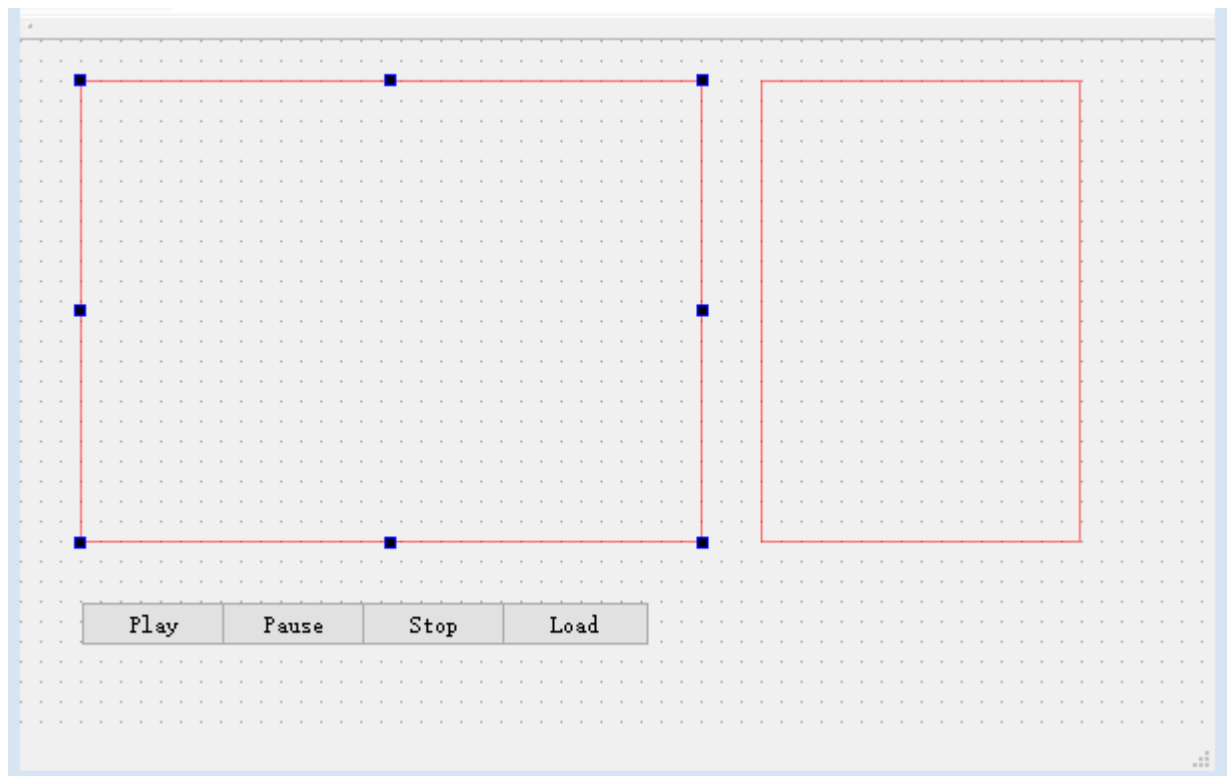
Interaction 3:

1. Prototype

This time we used UI Designer to sketch our app framework.

The goal of this iteration is to add four basic buttons to our player. The button is located below the main page of the player. Adding four buttons is necessary for any player. It has four functions: play, pause, stop and load files. However, due to technical reasons, we have not fully implemented the function of loading files. We can only open the loading interface in the player, but we can not really load. These four buttons can let users better control the video and get a better user experience. At the same time, the four buttons are also set to be arranged in a horizontal column, so that users have better video experience

and sensory experience.



2. Evaluation

This time we used a questionnaire to evaluate the changes in the third iteration..The reason is obvious, document survey can make it more convenient for us to collect user experience information. And as we can already guess, all users will think these four buttons are necessary and practical. Besides, the use of questionnaires will not bring too much trouble to the respondents (not willing to be on camera and other factors).

After analyzing the results of the questionnaire, it is concluded that all users prefer the third iteration version. There is no doubt about it. After all, with the addition of these four buttons, the user experience has been greatly improved, allowing the user to control the start and end of the player at will, or to pause at the desired location. Taking all of this together, we'll use the third iteration version as the next version of the UI application.

Questionnaire

1.What do you think of the design of look of the four control buttons?

A.Beautiful

B.General

C.Bad-look

2.Are these four buttons practical?

A.Yes

B.General

C.Bad

3.What do you think of these four buttons?

A.Very good

B.General

C.Bad

Question 1			Question 2			Question3		
A	B	C	A	B	C	A	B	C
2	10	3	14	1	0	2	12	1

3. Code

In terms of code, we used the QPushButton class to create four new buttons, and then used the connection between the button and the anchor room screen. The connection is that when the user clicks on the button, the program will get the click signal and feed back to the player to run the slot function set inside. The slot functions mainly use the built-in QMediaPlayer "play ()", "pause ()", "stop ()" and a custom slot function "OnSetMediaFile()".

This custom slot function allows the player to open the local file and load it, but unfortunately we can only open the local file and not load it.

Video link:

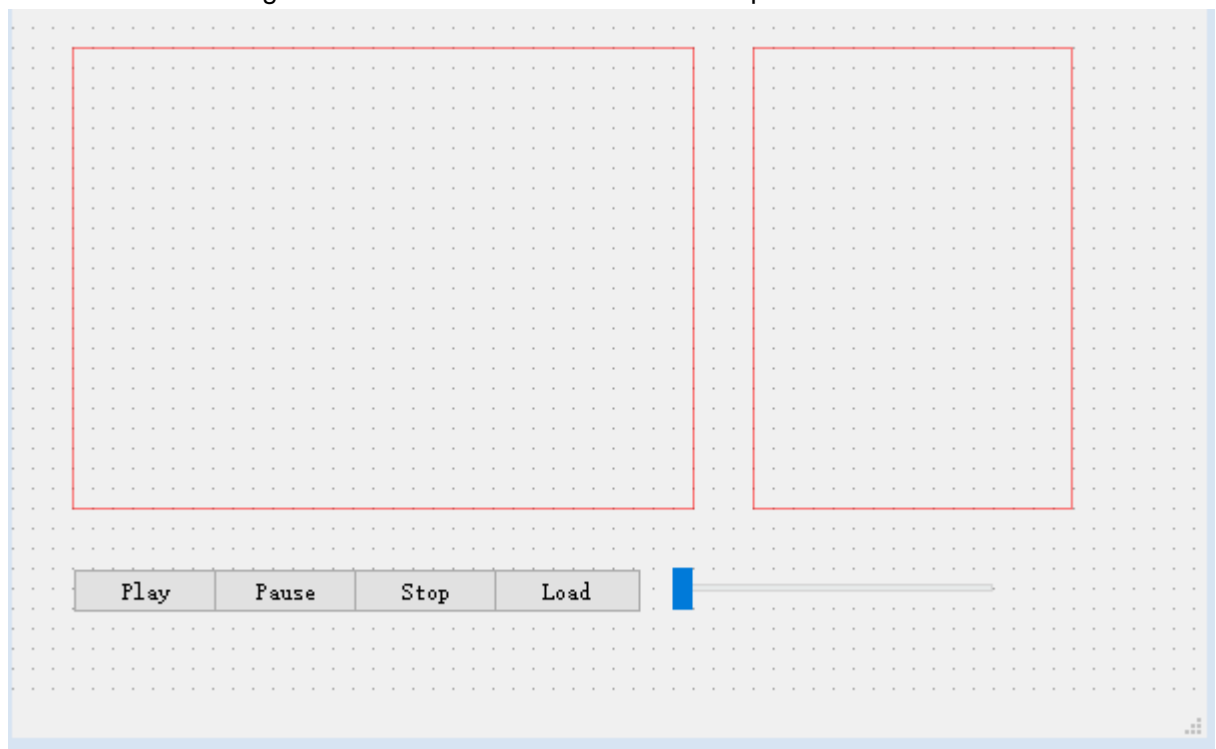
https://v.youku.com/v_show/id_XNDQ4MTUzNDk1Mg==.html?spm=a2h3j.8428770.3416059.1

Interaction 4:

1. Prototype

This time we used UI Designer to sketch our app framework.

The goal of this iteration is to add a volume control bar to the player. It has the effect of controlling the volume. It was necessary to add this feature, which allows the user to control the volume freely, to stop the player from being silent, and to avoid excessive noise. We placed the progress bar on the right side of the four-button column from the previous iteration, and set the four buttons and the volume controller to a horizontal layout so that the user can get an intuitive and comfortable user experience.



2.Evaluation

This time we used a questionnaire to evaluate the changes in the forth iteration. There are several reasons for this. First, it won't be too much trouble for respondents. Second, the data obtained from the questionnaire is intuitive and clear. Third, you can directly know the difference between this iteration and the last iteration, and what are the advantages or improvements. The purpose of this questionnaire is to get whether users think it is necessary to use the volume progress bar and compare it with the previous iteration.

After analyzing the results of the questionnaire, We have learned that most users think that adding a volume controller is necessary and practical, and that this iteration is better than

the previous one. Because in comparison, previous versions have no sound, and a video without sound is bad for the user experience, which will make users lose interest in watching video. Based on user feedback and practical analysis, we decided to use this iterative version.

Questionnaire

1.What do you think of the design of look of the volume slider?

A.Beautiful

B.General

C.Bad-look

2.Is the volume slider practical?

A.Yes

B.General

C.Bad

3.What do you think of the volume slider?

A.Very good

B.General

C.Bad

Question 1			Question 2			Question3		
A	B	C	A	B	C	A	B	C
2	11	2	13	2	0	5	8	2

3.Code

To improve the code, we added a new control, QSlider. This control can create progress

bars between each other, assign values to each position of the progress bar, and then let it connect the progress bar and video. The connection method is that when the user sends the signal that the slider changes the value of the progress bar, the video player receives the signal and runs the slot function. This slot function is custom named "setlineeditvalue (int)". There is only one function of qmediaplayer, which is "SetVolume (int)", so that you can control the volume freely. Then fix the four buttons and volume controller into a horizontal layout and put them under the main screen by QHBoxLayout.

Video link:

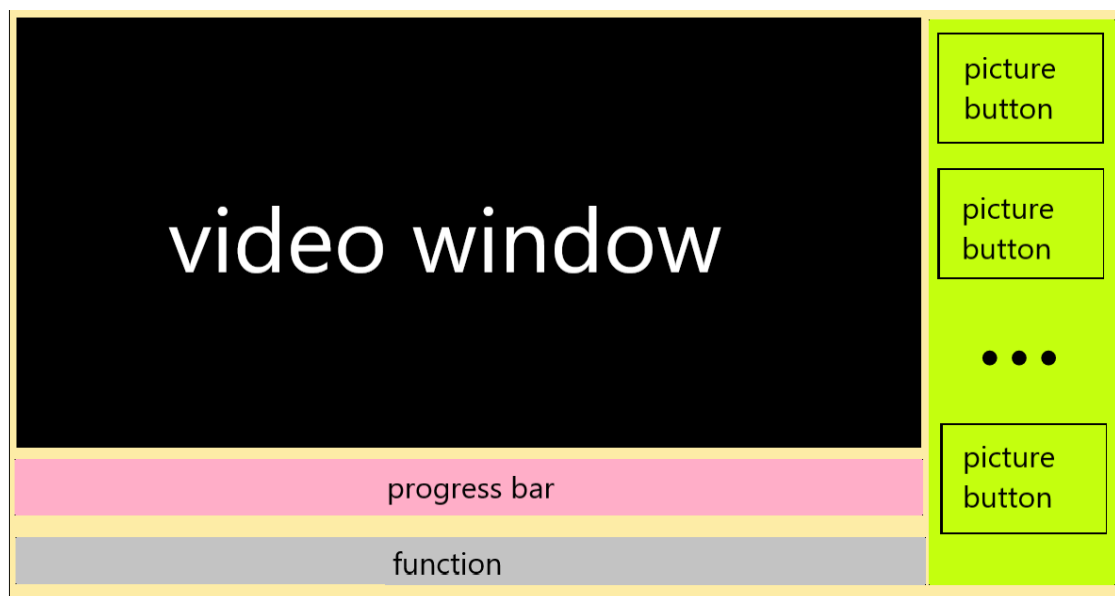
https://v.youku.com/v_show/id_XNDQ4MTUzNTIzNg==.html?spm=a2h3j.8428770.3416059.1

Interaction 5:

1. Prototype

This time we used 3Dpainter to sketch our app framework.

The goal of this iteration was to add a progress bar feature between the video playback window and the button ribbon. There are several reasons for this. The first is to optimize the user experience, to facilitate the user to intuitively understand the video playing progress. It also allows the user to manually change the progress of the video by manipulating the progress bar.



2. Evaluation

This time we used a questionnaire to evaluate the changes in the second iteration.

There are several reasons for choosing the questionnaire for evaluation. Firstly, compared with other methods (video interview, etc.), the questionnaire method is relatively more efficient in this iteration. This iteration has a positive impact on the user experience because it only adds a progress bar to the previous iteration. Secondly, we need to obtain detailed information about the location and operation mode of the progress bar from the user, so we don't need the user to use the entire UI application. Secondly, the

questionnaire is more convenient, which can be realized by dictating the way we fill in or the way interviewees fill in. Try to minimize the disturbance to the interviewees. This time, the goal is to get the user's opinion on whether or not to add a progress bar and the location of the progress bar.

Conclusions are drawn by analyzing the data obtained. All respondents agreed to add a progress bar. More than half of the respondents chose to place the progress bar between the video window and the functional interface. To summarize, we will add the progress bar feature and place it in place. This version was eventually used as the fifth iteration.

Number	Q1	Q2
Choose(1)	30	21
Choose(2)	0	9

Questionnaire5 Progress bar

1. Do you think the progress bar is necessary
(1) Yes
(2) No
(the number you choose) (1)

2. Where do you think the progress bar should go(if you choose yes)
(1) Between the video window and the feature bar
(2) Located below the function bar
(the number you choose) (1)

3. For more advice(if any)
More features

3. Code

This iteration is still somewhat different from the prototype. In terms of design, we plan to add certain explanatory text before the progress bar. Due to the language use is not proficient, we did not succeed to add the text correctly. Only the basic progress bar functionality has been implemented.

Video link:

https://v.youku.com/v_show/id_XNDQ4MTUzNTg0OA==.html?spm=a2h3j.8428770.3416059.1

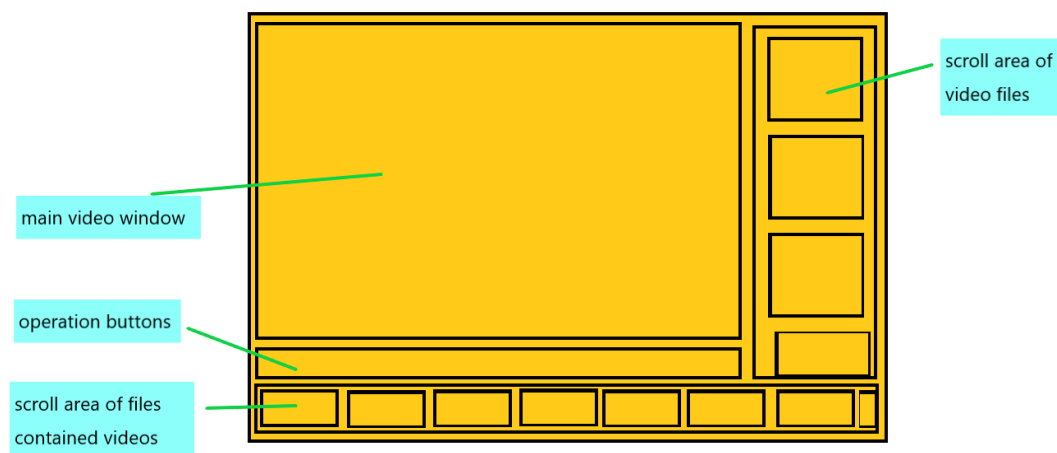
Interaction 6:

1. Prototype:

This time our group decided to make a new scroll on the bottom to present some push buttons. The users/elders can click these buttons to change the content on the right. For example, there are some family videos recorded in mid - autumn festival which are stored in a folder named “A”, so this time we were working on reading all folders in the specified directory and present these folder in the bottom scroll area, meanwhile, users can click these button to get all videos in these folders and at last present these video on the right hand scroll area. In this way, the elders can find the videos which he/she wants to watch as quickly as possible and when the elders feel lonely, they can choose to watch recorded videos rely on timer shaft.

Method to make this prototype: 3D print

Evidence:



2. Evaluation

I made a questionnaire to the elders in our campus to evaluate the practicability of this new prototype. The result turned to be optimistic, in other words, majority of respondents thought this new prototype was very practical.

My questionnaire is very simple and clear because the group of people of our investigation is the elder.

The number of people surveyed	Attitude: good UI design	Attitude: practical design
12	10	11

Evidence:

▪ Questionnaire: interaction final ↵

● Do you think the interface looks comfortable : ↵

A: not really ↵

B: a little bit ↵

C: comfortable ↵

● Do you think the new function is useful : ↵

A: not really ↵

B: a little bit ↵

C: useful ↵

↵

Thank you! ↵

3. Code

Through our group's hard work, a new class object that two member variables are a url and a picture of icon was created, and some functions were written which can read the all folders under the target path and return the date we wanted: a QUrl pointer which points to the destination folder, but however we tried, we could not transfer this QUrl to the other function which can change the content in the scroll area on the right side cause of not familiar with the function "connect()". So sad and confusing, and our group is still working on this headache bug.

Video link:

https://v.youku.com/v_show/id_XNDQ4MTUzNjAxNg==.html?spm=a2h3j.8428770.3416059.1

6. A final video-link showing summarizing the changes

Video link:

https://v.youku.com/v_show/id_XNDQ4MTUzNjEyOA==.html?spm=a2h3j.8428770.3416059.1