

Coursework Submission – Cover Sheet

Please complete ALL information

Leeds Student ID Number: /	
SWJTU Student ID Number: /	
Student Name: FuYipeng, ChenHaodong, WangXun, GaoShenghao, ZhuHaining, ZhangXuanying	
Module Code & Name: XJCO2811 Coursework 3: The Process	
Title of Coursework Item: XJCO2811 Coursework 3: The Process Report	
For the Attention of: Chongshou Li	
Deadline Time: 20 pm (Beijing Time)	Deadline Date: 19 th Sep 2021
Student Signature: 付毅鹏, 陈浩东, 王训, 高盛昊, 朱海宁, 张萱颖	

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Summary

This report contains a PACT evaluation of the team's design and production of a motion video player, use-case scenarios, four cycle recording evaluations and other important information.

This is our GitHub URL: <https://github.com/sc19hz/UI-video>

Overview of the team members

The group consists of six members:

FuYipeng sc19y2f@leeds.ac.uk

ChenHaodong sc19hc2@leeds.ac.uk

WangXun sc19x2w@leeds.ac.uk

GaoShenghao sc19sg@leeds.ac.uk

ZhuHaining sc19hz@leeds.ac.uk

ZhangXuanying sc19x2z@leeds.ac.uk

Among them, FuYipeng is the leader of the group.

PACT analysis for the video player

An important part of our approach to designing the video player was to make it as user-centred as possible, and Benyon et al. (2005) suggest that PACT (People, Activity, Context, Technology) is a useful framework for thinking about the design situation in relation to interactive systems. We believe that conducting a PACT analysis is useful for both our analysis and design activities; to understand the current situation, and to see possible improvements and to envisage future situations.

Through PACT analysis we are able to bring together all of our research on target users and examine a variety of different sport user groups, activity styles, sport environments and video technology. Based on these examinations and subsequent analytical research, we were able to develop clear and specific scenarios of how our target users would interact with our video player. Below are the results of the PACT analysis:

People

There are many differences between people, due to congenital, acquired, cultural and religious influences resulting in different people having different personalities and reacting differently to

things. These reactions depend mainly on the five senses, namely hearing, seeing, smelling, tasting and touching. It is therefore important that the video player we design needs to be friendly, usable and enjoyable for all types of people. An example of how this can be achieved is to ensure that our video players cater for people with disabilities such as visual impairments (e.g. long/short sight, colour blindness etc.) and hearing impairments.

As people also differ psychologically, it is necessary for video players to be accessible to those who are less able to use them. People have varying aspirations and abilities, therefore the video player must also cater for all levels of cognitive ability.

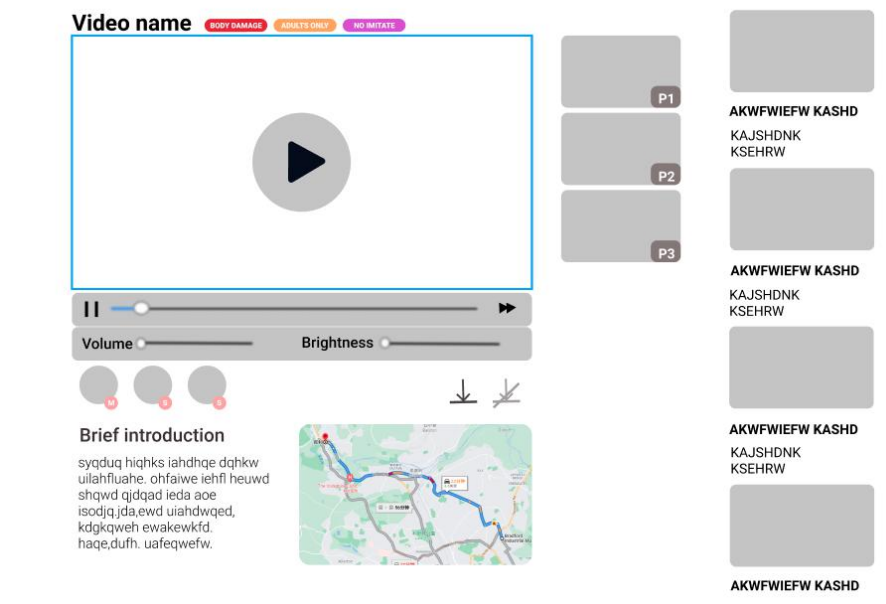
The video player is heterogeneous in that users will be spread across the world, even though the player's common language is English. This means that users are likely to have different levels of computer literacy, different language skills and different cognitive and physical abilities.

- **Computer literacy/knowledge**

Users of our video player may be beginners, intermediate or experts, so the design must cater for all users. Therefore, we have designed it to be easy to understand, so that users who have been exposed to similar video player software will be able to get up and running quickly.

- **Cognitive ability**

Because people are better at recognising things than remembering them, we took human cognitive abilities into account when designing the player, for example by using conventions or icons commonly used by major video software in the design of the buttons, and by precisely aligning the position of the main video and push videos to fit with the fact that most people pay more attention to the left-of-centre area of the screen. After careful analysis we found that the main actions that users will perform when using our video player are "watch, click buttons and drag and drop sliders". In order to make it easy for the user to interact with the product, we have reduced the number of mouse actions required by the user after a logical layout.



● Physical ability

Our player is also vital for those with physical disabilities. In the case of our video player, one of our goals is to cater for users with visual impairments. In order to cater for the needs of our visually impaired customers, our player allows the user to adjust the brightness of the video independently. The video also caters for the needs of the hearing impaired, with a volume slider allowing them to adjust the volume. If the volume level exceeds what is medically determined to be comfortable for the human ear, an alert pop-up window will appear.



● Age factors

As a sports video player for all ages, we need to cater for different generations of users. It must not be overlooked that some extreme sports or sports videos with a high risk factor have a definite potential to entice young users to attempt high level movements without a guardian. We have therefore added warning tags and pop-ups to the player settings so that underage users can choose and watch videos with caution.



Activities

The main activities available to users in the sports video player are playing the main video and the video being pushed. Users can click to open the video or drag various sliders to work on fast forward, brightness adjustment and volume adjustment. Users will also be able to upload videos as individuals or as a group. The player will also allow users to view some additional features such as multi-angle videos and trip maps. The player also allows users to download videos if they need to and if the copyright is running.

Regularity of activity:

Users generally use this video player from 15:00-23:00.

Response time of the system:

The system can respond immediately if the user has a good internet speed.

Colours used in the site:

The main colours of the player are black, white, grey and blue, which can satisfy the grey scale test.

Text information:

The text size of the player will not be smaller than 14px for the convenience of the user.

Context

Activities are constantly taking place in context and this section explores how the two can be examined together. The type of context that influences our designs is the physical environment.

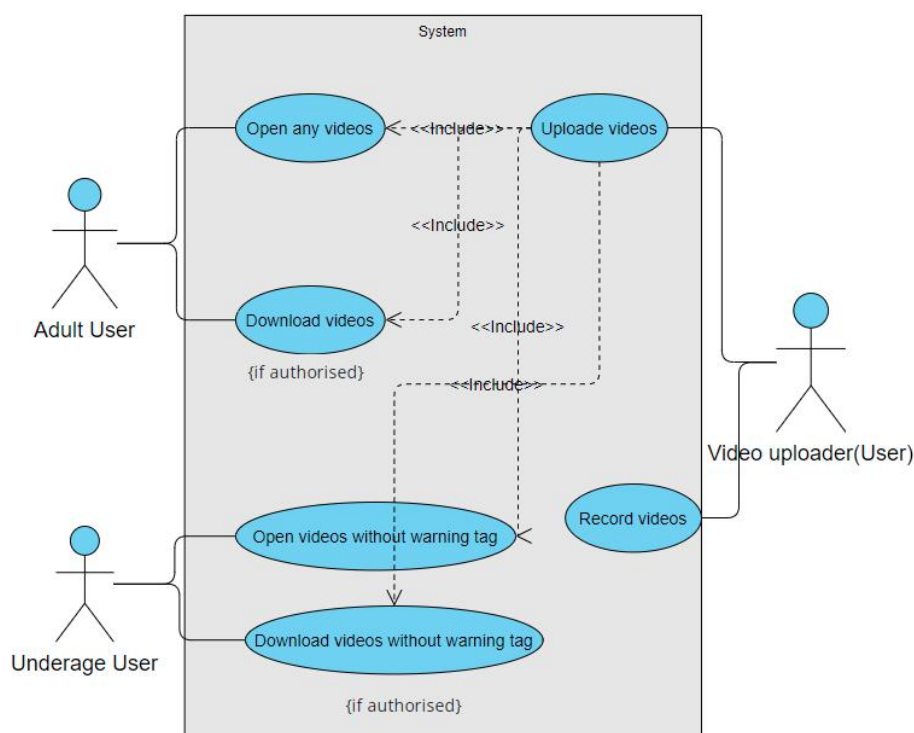
The physical environment

For example, the video player should cater for people who may log on to my site in areas where internet access is slow; this will be a problem if they decide that the site takes time to upload. Users will be accessing the site from a variety of locations, such as home, workplace, educational institution or internet café; therefore, access to the site is critical for those visitors using different resolutions, operating systems, colour depth platforms and browsers.

Technologies

Technology allows for a variety of operations, often consisting of large amounts of data or information. As the player needs to interact with the user, a range of UI styles are required. Also considering that users often use different operating systems (e.g. Windows, Mac, etc.), and different display screens, we have adopted a responsive design to face the multiple needs of users.

Use-case scenarios



The UML use case diagram shown below briefly reflects the three types of user interaction in the video player.

Video uploader

The first is the video uploader, these are sports enthusiasts who record relevant sports videos in the field or while playing sports. When they upload, these users have the option of uploading as individuals or as a group of video recorders. Each video upload group will have a primary video producer and a secondary video producer and this information will be displayed in the video upload area.



Brief introduction

syqduq hqhks iahdhqe dqhkw
uilahfluahe. ohfaiwe iehfl heuwd
shqwd qjdqad ieda aoe
isodjq,jda,ewd uiahdwqed,
kdgkqweh ewakewkfd.
haqe,dufh. uafeqwefw.

Adult users

Then there are the adult users, who can play all the videos in the video player and play, fast forward, pause etc. on the videos. Adult users can download videos with the permission of the video uploader.

Underage users

Finally, there are underage users, who can watch videos without a warning tag. In addition, they can also download open copyright videos without a warning tag.

Targeting platform

The main platform for this video player is desktop and we have designed it to be responsive so that it can be adapted to a wide range of screens. Our development took place on the Desktop with Qt and C++ and we also used PS, Figma and visual-paradigm in the design.

Iteration

Cycle 1:

i. Prototype

a. One paragraph describing the goal of this cycle and the reason this was selected as the highest priority.

As a first cycle, the goal of this work is to build a general framework that contains the basic functions of a regular video player, including video screen, progress bar dragging, pause play button, previous, next and video loading. Considering that the work is progressing, it is imperative to build a simple framework that we can continuously improve and refine based on this framework. After exploring the initial prototype and the , we divided our current task into three parts. The first was that we should add some buttons, including not only clickable buttons like play, pause, previous and next, but also controls that could be dragged, like the progress

bar and the volume buttons. Next, the size, shape, and color of these additional elements were discussed and determined. Finally, once these elements were added, it was necessary to plan the layout of the interface.

b. The name of the prototyping technique and any software used. The technique used to design the prototype is QT Designer.

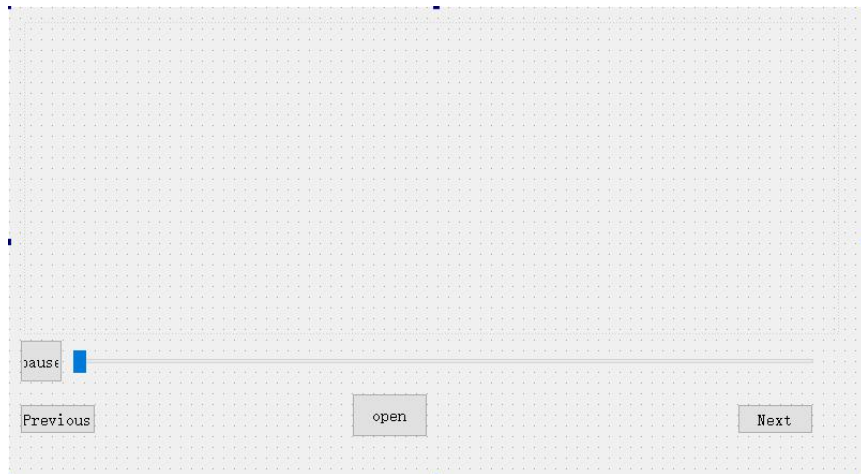
c. One paragraph motivating the design shown in your prototype

In the preliminary investigation, we found that the most frequently mentioned requirements for user interface and user experience are simple and clear interface and easy-to-understand design and functional layout. Considering that the interface of the video player should have both simplicity and ease of use, we first set up a framework and tried to determine the proper layout of the interface through continuous experimentation. The size, color, placement, space between elements and aspect ratio of each element were the main points to be considered. To solve these problems, we designed this prototype as a first attempt to visually identify problems and make targeted improvements. Since the users are basically outdoor sports enthusiasts and have some ability to use similar applications, we believe that the screen should be simple and efficient. Also, the brightness and sound can be adjusted to cope with different environments. In addition, we determined the background color and distribution of the interface and buttons after analyzing the mental model of outdoor sports enthusiasts.

d. One paragraph giving the reason for the chosen technique

By trying different techniques, we found that QT Designer can quickly pre-produce the final result with a high degree of fit. This is mainly because QT Designer, as a tool for software interface prototyping, not only has a large number of templates to show our ideas in our mind and help us develop our thoughts, but also has a very powerful pre-production function to ensure that a high-fidelity prototype of the software interface can be built efficiently at design time. Based on such high-fidelity prototypes, we can quickly communicate with each other and reduce unnecessary internal work. Therefore, we chose QT designer as our main technology.

e. Evidence of the design



ii. code

a. A video illustrating the improvements

The name of the file is demoOFcycle1.mov.

b. A list describing any differences between the prototype and the implementation (because of time or technical difficulties).

	Difference	Difficulties
1	Rewrote the widget application instead of populating the modularization on the original project.	The original project file did not provide an environment for the UI editing platform.
2	There are a few minor issues with replaying after pausing, the screen will automatically zoom in, which has not been fixed yet.	Not enough knowledge of the code to solve this problem in the cycle1 period.
3	There are some issues with the layout of the interface.	At present, there is no suitable idea, and we expect to design a more reasonable layout after the increase of elements.

iii. Evaluation

a. The name of the evaluation technique used

For the evaluation of this cycle, we chose the questionnaire method.

b. One paragraph describing why this technique was chosen

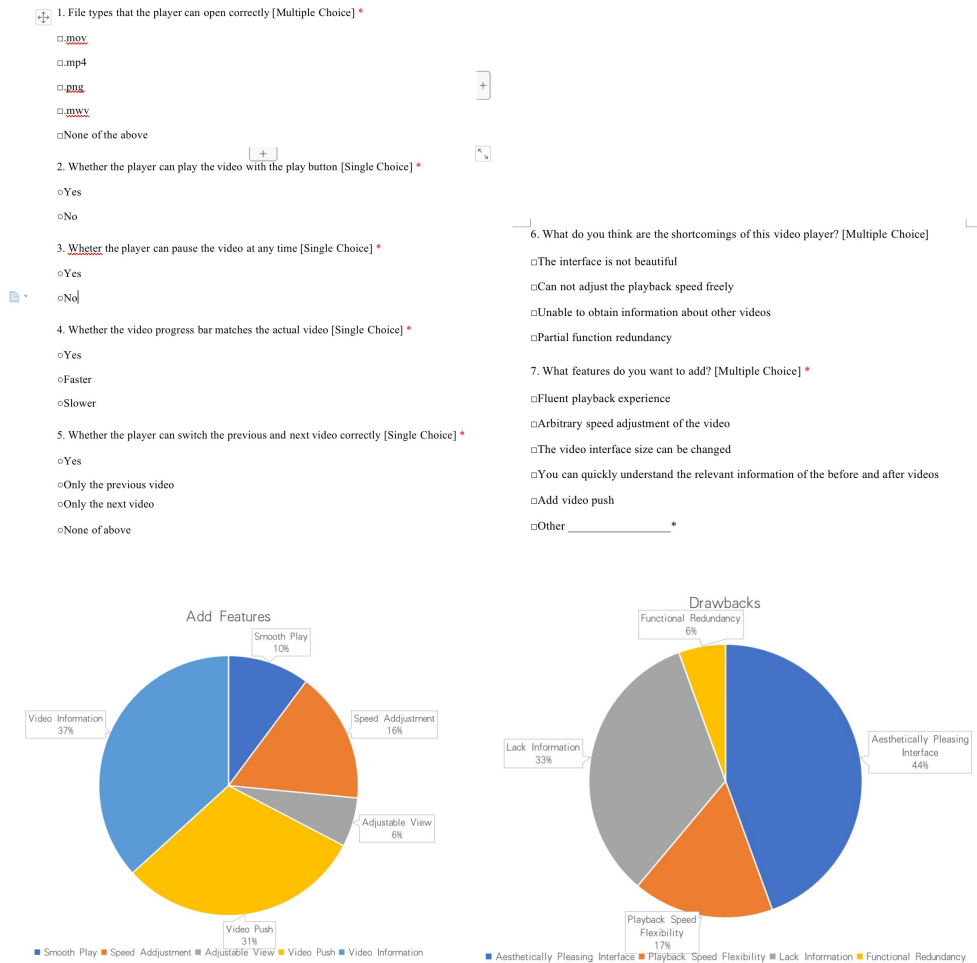
The questionnaire is efficient, extensive and unified, allowing us to obtain a considerable amount of useful information in a short time. First of all, the questionnaire is unified, so that we

can make a specific analysis in the same situation, while special opinions can be analyzed separately. Secondly, questionnaires are highly efficient, relatively low cost, simple and easy to use, saving a lot of time for analysis. Finally, the questionnaire's extensive means that the scope of the questionnaire is not limited, while the design is generally chosen by the survey respondents, so as to facilitate the understanding of the survey content. Therefore, the choice of the questionnaire is in line with our current needs, not only to understand the strengths and weaknesses of the current prototype, but also to obtain a very objective evaluation to make improvements in the next cycle.

c. One paragraph describing the outcomes of the evaluation and whether the changes this cycle were accepted or rejected moving forward.

The results of the questionnaire reflect two aspects, one is that they feel there is a lack of functionality when playing videos, and the other is that they feel the layout of the interface is not very reasonable. After combining the evaluation results and the implementation design, we think our results are acceptable. First of all, they think there should be volume as well as brightness adjustment to cope with the difference of different environments when playing videos. In addition, the previous and next buttons caused confusion when switching between videos, and users felt that they were not sure which video appeared after the button was clicked. Regarding the layout of the interface, they felt that it was difficult to balance usability and aesthetics when elements were missing. Hence they suggested that we should make a more diverse video presentation.

d. Evidence of the evaluation



Cycle 2:

i. prototype

a. One paragraph describing the goal of this cycle and the reason this was selected as the highest priority.

The goal of the second cycle was to complete the optimization of the video playback interface and reflect the analysis results of the last evaluation in the prototype. In the feedback from the last evaluation, on the one hand, users felt that there should be corresponding adjustment functions for volume and brightness during video playback, and on the other hand, they thought that there was a lack of corresponding information display during video playback, such as video title, tags and video preview thumbnails. Therefore, in this design, we added the drag bar of volume and brightness, the label of the video and the title of the video. In addition, the thumbnail of the video is placed on the right side as a push, and for this, we adjusted the way

of switching videos, so that users no longer need the previous and next buttons to switch, but click the thumbnail of the push video to switch. Finally, at the top of the video page, we added video titles and tags to warn people of the social issues the video may create, including consideration for people with agoraphobia and certain religious groups.

b. The name of the prototyping technique and any software used.

The technique used to design the prototype is Figma.

c. One paragraph motivating the design shown in your prototype

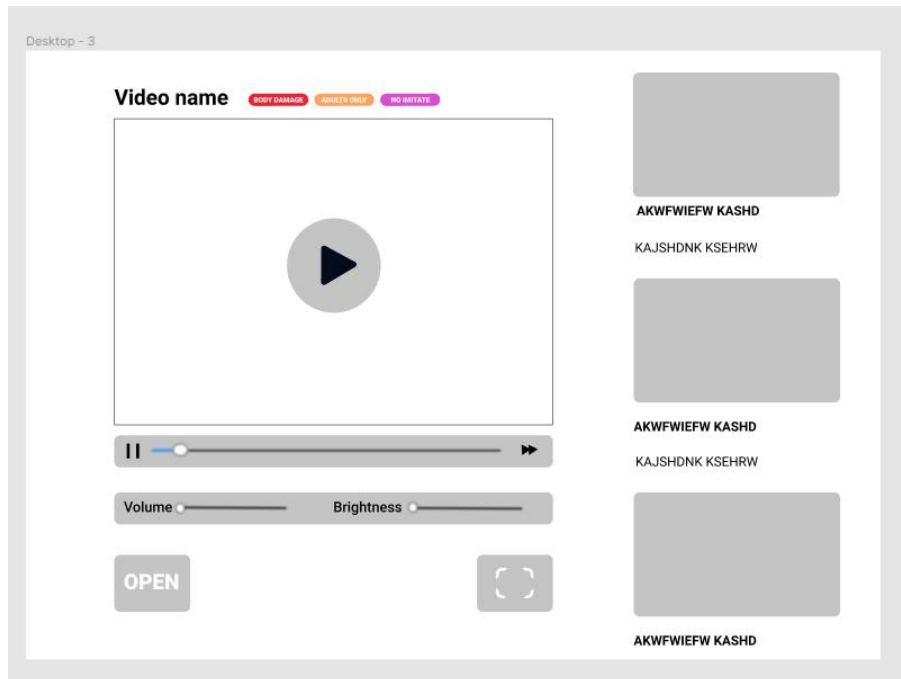
Based on different scenarios and evaluation results, we have made adjustments and improvements to the previous prototype. First, when users watch videos outdoors, the brightness and volume adjustments should be implemented to cope with the environmental differences. Second, when browsing different videos, simply switching between previous and next type of video does not allow users to jump between videos well enough to satisfy their own ideas, so we chose to use the thumbnail push on the right side as the basis for video switching, which not only allows users to understand the corresponding video content based on the image, but also makes the video switching more natural and smooth. In addition, the title of the video in the video library should be the mandatory information to be displayed, while displaying the title, we added the corresponding tags that can display video warnings to cope with the physical and psychological differences of different people like fear of heights, fear of the deep sea, and social differences of different religious people.

d. One paragraph giving the reason for the chosen technique

This paragraph gives the reason of chosen “Figma” as the main tool to design the user interface. “Figma” provides a convenient and intuitive menu for selecting the color of the controls, which improves efficiency and gives users a better visual impression. Compared to “Qt designer”, the controls in figam is more flexible and entirely image-based, with no need to change the details in code, so the ui design is closer to the finished product. What’s more, “Figma” is a collaborative browser-based UI design tool, so it could work cross-platform, which is very helpful for collaborative projects. Because different operating systems may be

used in a team. Another advantage of being browser-based is that there is no need to save during the design process and thus no possibility of losing work progress for specific reasons.

e. Evidence of the design



ii. code

a. A video illustrating the improvements

The name of the file is demoOFcycle2.mov.

b. A list describing any differences between the prototype and the implementation (because of time or technical difficulties).

	Difference	Difficulties
1	Failed to add title and tag at top of video.	Due to time constraints, this issue could not be completed in cycle2.
2	Drag bar for volume and brightness added but not implemented functionality	Limited by some time and technical problems
3	In the list of pushed videos, we want to click the thumbnail to switch the videos that are played, but the pushed videos are only played at the bottom of the right side, and the main interface still needs to be loaded	Limited by code issues in limited time
4	The problem that the playback will be enlarged after pause in Cycle1 is still not solved in Cycle2	Technical problems
5	The layout of the page is not exactly as planned	Objective gap between design and implementation

iii. Evaluation

a. The name of the evaluation technique used

For this cycle, we choose interview as the technique of our evaluation.

b. One paragraph describing why this technique was chosen

After the implementation of the video playback interface was basically completed, we needed to get more realistic feedback from the users, so we chose interviews as our main means of evaluation. In the interview method, the interviewer and the interviewee communicate directly with each other verbally, through a question and answer method, and the interviewee is not able to think for a long time, so we can get more realistic ideas. In addition, since the interviewer and the interviewee communicate face to face, the questions are not easily rejected, so the problem of questions being missed can be effectively avoided. Moreover, the order and content of the questions are flexible, so that other factors can be avoided. Most importantly, we talk directly or indirectly with the interviewee, so we have the opportunity to lead and pursue further questions to explore deeper issues.

c. One paragraph describing the outcomes of the evaluation and whether the changes this cycle were accepted or rejected moving forward

Based on the track record of the whole visit, we got a lot of questions from

different identity groups about the application and suggestions for the next improvements. Among them were students and amateurs who, after using it, pointed out some ease of use issues and the need for creator attribution, so we added author avatar uploads as well as collaborative uploads which also can encourage creativity. In addition, we invited parents and sports and fitness bloggers to participate in the test. Parents expressed legitimate concerns about whether minors would imitate high-risk extreme sports. Sports professionals wanted the product to be a little more personalized, such as adding a download feature and the ability to upload multi-angle videos.

d. Evidence of the evaluation

There is a pdf file named "Cycle2_interview_document" that tracks our interview process as evidence for this evaluation.

Cycle 2

	Difference	Difficulties
1	Failed to add title and tag at top of video.	Due to time constraints, this issue could not be completed in cycle2.
2	Drag bar for volume and brightness added but not implemented functionality	Limited by some time and technical problems
3	The problem that the playback will be enlarged after pause in Cycle1 is still not solved in Cycle2	Technical problems
4	The layout of the page is not exactly as planned	Objective gap between design and implementation

Cycle 3:

i. prototype

a. One paragraph describing the goal of this cycle and the reason this was selected as the highest priority.

The goal of this cycle is focused on the personality of the user experience, and in conjunction

with the results of the evaluation, we will increase more the interaction with the user, which is an integral component of a great application. First of all, users consider the attribution of creators to be an important issue, for this reason we added the display of avatars and will show multiple avatars if the video is a collaboration between multiple authors. Secondly, for accessibility reasons, we added a video profile screen to show more details about the video content, location, equipment and people. Furthermore, users would like to add the ability to download videos and upload videos from multiple angles to meet the individual characteristics of different videos. Finally, considering the limitations of the warning tab, we have added the option to alert minors.

b. The name of the prototyping technique and any software used

The technique we used for this design is Figma.

c. One paragraph motivating the design shown in your prototype.

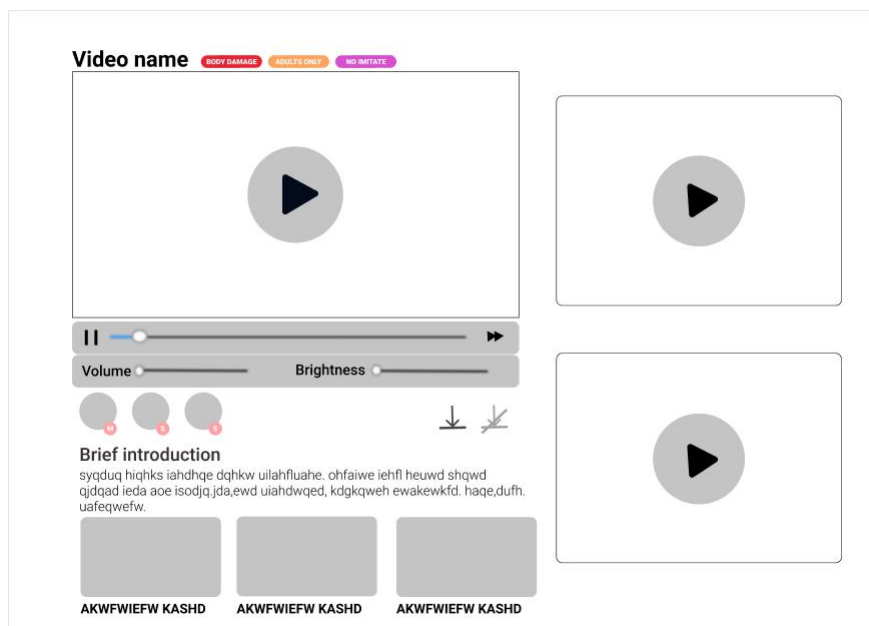
After optimizing the interface and functionality of the video playback, we shifted our focus to the functionality and interaction of the app and made changes based on evaluation feedback and demand analysis. In terms of user experience, we added the ability to display avatars to not only encourage creativity but also to allow for collaborative uploads. We also added a download feature that allows users to download video files by clicking the download button. For a personalized experience, users can upload videos from multiple perspectives and play them through multiple windows, such as basketball games, soccer games and skiing in first and third person. For the push video list, it will intelligently push videos based on user preferences. In terms of accessibility, we have made corresponding layout adjustments for the newly added elements. First, the creator's avatar and the download button are displayed at the bottom of the play screen, and then the thumbnails of the tweeted videos are placed at the bottom. On the right side of the interface, there is a multi-window playback interface with different angles.

d. One paragraph giving the reason for the chosen technique.

In cycle3, the "Figma" has been applied again in UI designing process. The design file created

by it is an URL link, which makes it convenient for the designer to share multiple outcomes with other teammates and it also could make changes to workflow. And“Figma”supports historical version recovery, which greatly increases the tolerance for error in the design process and encourages designers to experiment with more daring designs. Figma puts disaster recovery into consideration, with all the infrastructure spread across 3 AWS data centers, hence if any one of them fails, the others would keep working.

e. Evidence of the design



ii. code

a. A video illustrating the improvements

The name of the file is demoOFcycle3.mov.

b. A list describing any differences between the prototype and the implementation

iii. Evaluation

a. The name of the evaluation technique used

For cycle3, we used Cognitive Walkthrough as the evaluation technique.

b. One paragraph describing why this technique was chosen

After two interviews and questionnaires, the whole project became more mature after cycle 2. Therefore, in cycle 3 and 4, we mainly used cognitive walk-throughs

and heuristics supplemented by user interviews to evaluate and improve the whole project. In this section we will simulate the case of these two categories of users, in order to figure out the unreasonable design in this project.

c. One paragraph describing the outcomes of the evaluation and whether the changes this cycle were accepted or rejected moving forward

The result of Cognitive Walkthrough is succeed, both adult and underage users could understand of the elements' function and how they are applied by the guild of the design. For example, the adult user know that could use the "Full Screen" button to play video in full screen, and drag, drop or fast forward the video progress bar to adjust video playback progress and click the "Download" to download the video. For underage user, they know from experience that pop-ups are used to warn him/her not to imitate the dangerous actions of the video and that he/she should turn it off. And they also knows how to call the basic functions.

d. Evidence of the evaluation

There is a pdf file named "Cycle3 Cognitive Walkthrough" that documented our entire evaluation process.

Cycle 3

	Difference	Difficulties
1	The different hazard warning labels are not as designed to be different colors	Due to technical problems
2	Drag bar for volume and brightness added but not implemented functionality	Limited by some time and technical problems
3	We used the pushed video instead of another shooting angle and played it in the small window.	Since the multi-angle video was not found
4	The problem that the playback will be enlarged after pause	Technical problems
5	The layout of the page is not exactly as planned	Objective gap between design and

		implementation
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Cycle 4:

i. prototype

a. One paragraph describing the goal of this cycle and the reason this was selected as the highest priority.

The final cycle we improved on the feedback from the professional sports enthusiasts we invited last evaluation, and once again made the final details to optimize it for the final product launch. In their experience with the product, they expressed a considerable degree of satisfaction and suggested that we could add a map function to record the miles and routes taken. They also pointed out the download feature that they encountered when downloading that some videos could not be downloaded. In response, we added a map display and redesigned the download and non-download icons. Additionally, we added a new video splitting feature to increase the ornamental value of videos like the marathon videos, considering that they were too long and the middle part lacked ornamental value. Finally, we have adjusted the layout to make users more comfortable with the interface based on the new features.

b.The name of the prototyping technique and any software used

The technique we used for this design is Figma.

c. One paragraph motivating the design shown in your prototype.

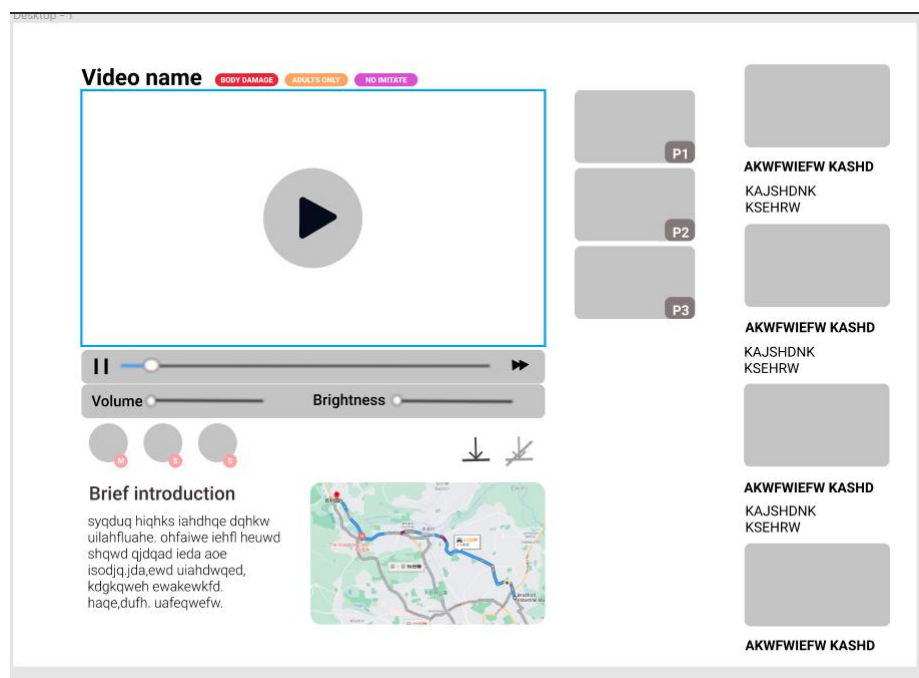
In the final cycle, we wanted to improve all the current problems of the application and refine some details. We designed the final interface layout after we finished refining the features and details. In terms of layout, we divided it into two parts. If users upload the video with exercise route and mileage, the creator's avatar, download and undownload buttons, video profile and map are shown at the bottom of the video playback screen, while the split video and the smart push video list are shown on the right. If the video uploaded by the user is a multi-angle video, then the interface will play the multi-angle video as well as the display of the

author and profile.

d. One paragraph giving the reason for the chosen technique.

In the last iteration all members of the team had to comment on the UI of the final product on the same platform, so the team took advantage of Figma's collaboration feature to help teammates share their options. In Figma, design and collaboration could work in the same time and anyone could add comments anywhere on the design. Compared with sketch, "Figma" is less dependent on third-party plug-ins, making it easier to get started.

e. Evidence of the design



ii. code

a. A video illustrating the improvements

The name of the file is demoOFcycle4.mov. We have to mentioned that demoOFcycle4.mov is the final version.

b. A list describing any differences between the prototype and the implementation

iii. Evaluation

a. The name of the evaluation technique used

For cycle4, we used the Nielsen-Molich heuristic as the evaluation technique.

b. One paragraph describing why this technique was chosen

Compared to the first three versions, Cycle 4 is more mature and practical.

Therefore, for the testing of this version, we invited two evaluators to evaluate cycle 4 using the Nielsen-Molich heuristic. the heuristic evaluation will help us a lot to find more usability problems in our limited time and resources. Also the heuristic evaluation is low cost and efficient for our case where there are few version changes.

c. One paragraph describing the outcomes of the evaluation and whether the changes this cycle were accepted or rejected moving forward

After a systematic evaluation, we all agreed that cycle4 is a more mature version of the video player and can provide a good user experience. We therefore consider it an acceptable product. The interface layout and UI/UX design takes into account the needs of users and incorporates a great deal of human common sense and cognitive logic into the design. The user experience and error-proof design are worth mentioning. However, it is undeniable that cycle4 could be better, such as more refined and user-friendly interface layout, more convenient indexing, adding help tips, etc.

d. Evidence of the evaluation

There is a pdf file named "Cycle4 Heuristics Evaluation" that documented our entire evaluation process.

Cycle 4

	Difference	Difficulties
1	The entire layout is not modified exactly as designed when clicking the Modify Layout button	Due to technical problems
2	The layout of the page is not exactly as planned	Objective gap between design and implementation

How to use the video player

Requirements

Except for the source code, a significant folder named "res" should be placed with ".pro" file in parallel. This is because the ".pro" file contains the resources of the user interface. The file architecture is like the picture below.

Start method

The "res" file already contains some demo videos to test, however, if you want to play your own videos, it is also OK. In either case, you will need to write the absolute path to the file in the command line argument, with double quotes surrounded. Like the picture below:

Then, just click the run button in QT to run.

Functions

1: play and pause

2: Faster and slower

3: Switching interface to

4: Full screen (You can click esc button to exit the full screen)

5: Video segmentation This allows user to cut a long video to several pieces and play any of them

6: Video push This is connected to other relevant videos in the same file.

7: Volume

8: Bright Adjustment

9: Download

10: Introduction to the video

11: The track of the user

Note: Refer to the readme file for detailed operation.

Ethics statement

All members of this group are committed to conducting this assignment free from any academic misconduct and data theft. All research conducted in this assignment has been analysed and used with the consent and authorisation of the testers themselves. This data will be removed after the assignment has been uploaded to the College for archival purposes.

Consent to take part in	Add your initials next to the statement if you agree
I confirm that I have read and understand the information sheet/ letter dated [22.11.21] explaining the above research project and I have had the opportunity to ask questions about the project.	Wang.Fu. Gao.Chen. Zhu. Zhang.
I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason and without there being any negative consequences. In addition, should I not wish to answer any particular question or questions, I am free to decline. If I withdrawal from the study, the data I provided will be deleted.	Wang.Fu. Gao.Chen. Zhu. Zhang.
I understand that members of the research team may have access to my responses. I understand that my name will not be linked with the research materials, and I will not be identified or identifiable in the report or reports that result from the research. I understand that my responses will be kept strictly confidential .	Wang.Fu. Gao.Chen. Zhu. Zhang.
I understand that the data collected from me may be stored and used in relevant future research or I understand that the data I provide may be archived at [name of archive].	Wang.Fu. Gao.Chen. Zhu. Zhang.
I understand that relevant sections of the data collected during the study, may be looked at by individuals from the University of Leeds or from regulatory authorities where it is relevant to my taking part in this research.	Wang.Fu. Gao.Chen. Zhu. Zhang.
I agree to take part in the above research project and will inform the lead researcher should my contact details change.	Wang.Fu. Gao.Chen. Zhu. Zhang.

Name of participant	FuYipeng, ChenHaodong, WangXun, GaoShenghao, ZhuHaining, ZhangXuanying
Participant's signature	付毅鹏, 陈浩东,王训,高盛昊,朱海宁,张萱颖
Date	19.12.21
Name of lead researcher	FuYipeng
Signature	付毅鹏
Date*	19.12.21