

Software Function Requirements

The software should contain the following modules:

Module 1: the editing module, through which we researchers can upload any video (in any video format) and insert blue buttons anywhere in the video.

Module 2: the publishing module, through which we researchers can generate and publish THREE types of videos for our experiment.

Module 3: the tracking module, which provides the tracking functions of the software. We researchers need to track a set of viewers' actions when they watch a video in our experiment.

Module 4: the house-keeping module, through which the software provides functions such as creating/editing/deleting the video access user list.

(1) Software function requirements for Module 1

This is the current software: Once the mouse is moved over a blue button, the title page is displayed (Figure 1 below) for the number of seconds we researchers have specified; Click on the title, the video automatically pauses and an information page is popped up in the center of the video with title, description, image, and a link (Figure 2 below); Click on the link, go to any webpage we assign.



(2) Software function requirements for Module 2

We would like to be able to generate three different versions of view-only video for our experiment. In the interface of the video editing module, please provide three buttons. Clicking each button generates and publishes one version of view-only video. In all versions, the videos will occupy **xxx%** of the entire screen space. In all versions, the users should be allowed to see a progress bar of the video if they wish.

(1) Version 1 view-only video



The key of this version of view-only video is that we need a slider bar underneath the video. When this version of video is played, the viewer can move the slider bar AT ANY MOMENT to express his/her evaluation on the video. All of the slider bar actions must be tracked and stored in the database in the following format:

Video ID	Viewer ID	Timestamp	Evaluation Value
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Notes:

- There is NO blue button in this version.
- By “at any moment,” we researchers want the users to be able to slide the bar any second.
- We also want to have at least two decimal points for the ratings underlying the slide bar but these numbers, e.g., 5.66, do not have to be shown to the users.
- In this version of view-only video, no fast forward, rewind, or pause of the video is allowed.

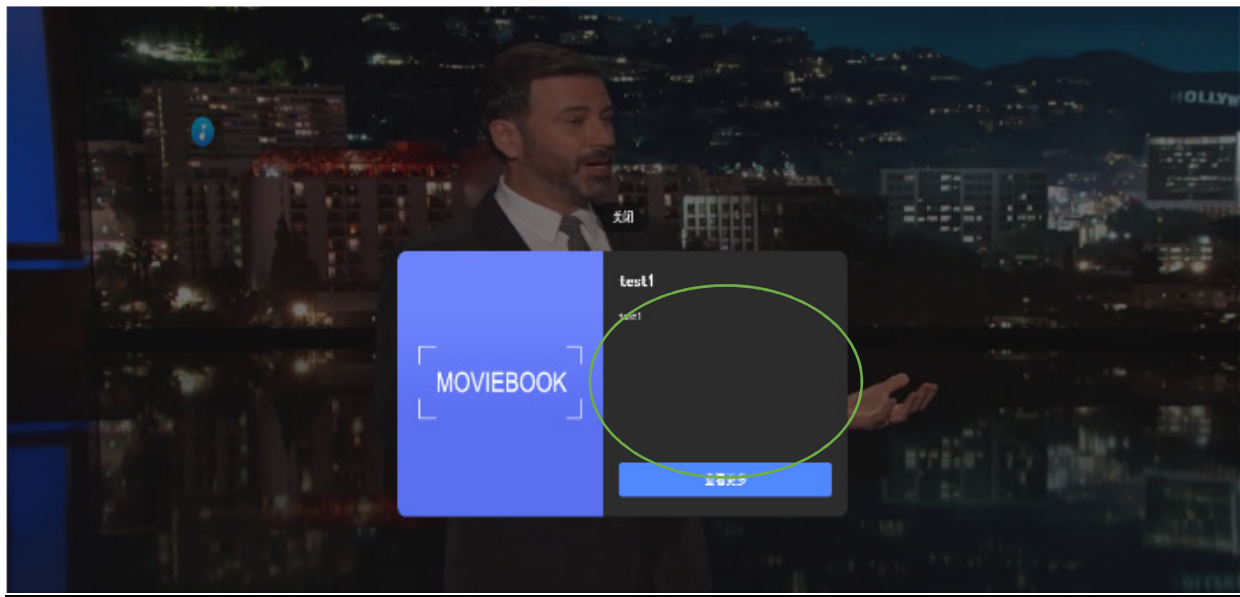
(b) Version 2 view-only video

In this version of view-only video, the video play automatically pauses whenever a blue button appears. A window pops up, and a number of questions are shown:

1. Which product is this (ideally with a brand name too)? _____ (e.g., Nike shoes). OR I’m not sure.

2. I am familiar with this product.
0 = not at all ... 10 = very much [that is, show 11 buttons for the user to click/choose OR show a slider bar with 11 options of whole numbers – the same for the next few questions]
3. I want to learn more information about this product.
0 = not at all ... 10 = very much
4. I want to buy this product NOW (if budget is not an issue).
0 = not at all ... 10 = very much
5. I want to buy this product LATER (if budget is not an issue).
0 = not at all ... 10 = very much

Viewers are able to answer those questions by sliding or clicking. That is, the green area in the figure below becomes an interaction area that can accept viewers' input (Note: the link button is no longer needed there).



All of the viewers' input must be tracked and stored in the database in the following format:

Video ID	Viewer ID	Blue Button ID	Answer to Q1	Answer to Q2
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(C) Version 3 view-only video

The key of this version of view-only video is to be able to track a set of viewers' mouse actions, which we are going to describe in detail in the next section.

Notes:

- In this version of view-only video, we allow rewind, or pause (clicking on the pause button at the center bottom of the video screen or the blue button to pause) of the video (but do not allow fast forward)

(3) Software function requirements for Module 3

In Version 3 view-only video, the following events during a viewer's video watching process will be tracked:

- Each viewer's video start time.
- Video pause/resume caused by a mouse click event on the video control panel area, and these actions' timestamps. In this version of view-only video, we allow rewind, or pause of the video (but do not allow fast forward).
- Video pauses triggered by viewer clicking on a blue button, and the corresponding timestamps and blue button number.
- A link embedded in a blue button information area is clicked, and the corresponding timestamp.
- The viewer closes the blue button information area (and the video automatically resume), and the corresponding timestamp.
- Video end time. (this may not be need, since the researcher has already know the length of each video)

Below is an example how the collected tracking data looks like:

Viewer ID	Video ID	Blue Button ID	Time	Action
Viewer1	A	N/A	9:00:30 09/09/2017	Login
Viewer1	A	N/A	9:01:30 09/09/2017	Play button clicked
Viewer1	A	A1	9:01:44 09/09/2017	Mouse over blue button
Viewer1	A	A1	9:01:45 09/09/2017	Click on a blue button's title window
Viewer1	A	A1	9:01:47 09/09/2017	Close the pop up window area; video resumes
Viewer1	A	A2	9:02:01 09/09/2017	Mouse over blue button
Viewer1	A	A2	9:02:02 09/09/2017	Mouse left blue button
Viewer1	A	N/A	9:02:02 09/09/2017	Rewind button clicked; video back to xxx (video time elapsed from the beginning)
Viewer1	A	A2	9:02:51 09/09/2017	Mouse over blue button
Viewer1	A	A3	9:04:02 09/09/2017	Mouse over blue button
Viewer1	A	A3	9:04:05 09/09/2017	Click on a blue button's title window
Viewer1	A	A3	9:04:08 09/09/2017	Click on the link on the pop up window area
Viewer1	A	A3	9:07:23 09/09/2017	Close the pop up window area; video resumes
Viewer1	A	N/A	9:08:02 09/09/2017	Video play ended
Viewer1	B	Same tracking for the second (and third) video		

Note:

- for all the mouse click actions, we also want to know the mouse click coordinates.
- In the example above, Viewer 1 didn't click the second blue button (Blue Button ID=2).

Once the mouse is moved over a blue button, the title page is displayed (Figure 1 below) for the number of seconds we researchers have specified; Click on the title, the video automatically

pauses and an information page is popped up in the center of the video with title, description, image, and a link (Figure 2 below); Click on the link, go to any webpage we assign.

(4) Software function requirements for Module 4

There are several house-keeping functions.

(a) at the beginning of an experiment session, each student is given a web server address and a login information when they register the session.

Each student needs a unique login credential so that the researcher can track individual participant's completeness

➔ The software needs to offer a way so that the researcher can add/edit/delete the login credential in the system.

(b) After typing the server's web address, a participant must provide a log-in credential to access the system. As discussed previously, the participant's ID (Viewer ID) must be tracked.

(c) In our experiment, each participant needs to view three videos, with a minute break in between. Also, at the end of each test, students need to ask a survey. Is it possible to have this sequence pre-setup?

(d) If technically possible, we researchers would also like to track all the mouse movements/activities (i.e. the mouse coordinates) during the entire video watching process.