



Brandeis University

**Human Computer Interaction
Final Project Report**

WeMovie

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I. Project Overview

a. Title and members

Project title: WeMovie

Group member:

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b. An executive summary of the project.

A city promotional film is a great way to encourage tourism, display attractions, make important announcements for events, encourage visits, and engage investors and top talents. However, it is extremely difficult for the government of a city to determine the most suitable filmmaker for the project; WeMovie is an online platform which enables the governments of cities to start a promotional film competition with detailed requirements to filmmakers worldwide to help cities find the best promotional films on their purposes. On WeMovie, filmmakers do not need to be located in the city of competition, instead, they can easily team up with people around the city or the world who are interested in this competition and want to collaboratively make videos through WeMovie. WeMovie's special features, including collaborative planning and editing via video conferencing, shared folder, and discussion pages, enable filmmakers to remotely and collaboratively make a city promotional film. It is not only a competition gathering platform but also a knowledge learning community where video-making enthusiasts can build community forum to exchange creative and innovative ideas and advanced techniques to get a deeper view of city promotional film production and video making in general.

c. A table of contents with page numbers for the different sections.

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II. Overview of proposal for a technology-mediated collaboration embedded in an online community

City councils may want to make city promotional films to promote upcoming events in the city as well as show the best view of the city to attract visitors, talents, and investors. They may plan to start a competition with money rewards online to encourage most creative and innovative talents to participate in this competition. However, it is difficult for city councils to spread this information to filmmakers all over the world and some talent individual filmmakers may not be able to participate because of the limitation of their budget and long traveling distance to the cities. For example, the competition might be a Boston promotional film but many gifted individual filmmakers are located thousands of miles away from Boston; if they plan to stay in Boston for few weeks to join the competition, they might spend much money for the flight tickets and hotels, and they might be currently working on a project and not even having time to travel or cannot leave where they are now. Also, in general, if they don't get the top rankings in a competition, they cannot get money to compensate what they have spent for film taking. The high opportunity cost decreases their motivation of making films for the competition.

WeMovie is an online city promotional filmmaking competition platform and a filmmaker community which not only helps city councils find the best films but also helps filmmakers especially some filmmakers who are not located in the city of competition team up with other filmmakers to participate the competition. In WeMovie, there is no need for a group of filmmakers to meet up face to face in person. Only one person (the photographer) in the group needs to be located in the subject city. All others in the same group can be in different places. The film production can all be made through WeMovie's online promotional film planning and editing. WeMovie is also a large community for all promotional filmmaking enthusiasts to share ideas or products, ask questions, get feedbacks, and achieve knowledge advancement together.

III. Issues (discussion of the critical issues of our design problem)

- 1) How do users form a group with others?
- 2) How do group members communicate with each other?
- 3) How do they communicate about how to film at the scene?
- 4) Why does the platform provide discussion page for groups? And for the whole community?
- 5) How do users pick a project that they are interested in?
- 6) Why do groups have to have a leader? What does the leader do in the group?
- 7) How do group members get to know with each other? How to increase group cohesiveness? How to decrease team opacity?
- 8) How do group members have their meeting?
- 9) How do group members share their research findings?
- 10) Is it possible that all group members are located in different places?
- 11) How do they settle down the routes of visiting those scenes? And when? How do they achieve co-referencing and pointing?
- 12) How do group members schedule their meetings?
- 13) How are tasks divided and assigned among group members?
- 14) How do group members collaborate to create an outline/script of their video project?
- 15) How do they decide the scenes they are going to put in their video?
- 16) How do they split the work when they are filming?
- 17) How does this platform achieve version control?
- 18) How do they solve disagreement? For example, disagreement on the content of the video and disagreement on the filming angle
- 19) How do you handle version control of the shared Notes and video? How are different version of video saved?
- 20) How do they collaborate to edit their video clip? How do you solve turn taking when you are editing video together?

IV. Walkthrough of our design solution.

A. Story

Ella loves film making. Normally, she would shoot videos for fun. She met some friends who loves shooting too. One of her friends recommends her a platform called WeMovie. The friend tells her that this platform is a community of video artists. It's a platform for organizations to post projects to recruit video like city promotional film in the form of competition. People can participate in the projects for awards. Ella finds this platform is very interesting.

Step 1:

Once Ella decides to join the platform, she is asked to fill out her personal information. On the **profile page**, she fills out some basic personal information -- location, contact info, time availability, etc.... After that, she is directed to a part that asks her some professional questions. For instance, Ella chooses her interests and specialties as script writer and camera woman.

Step 2:

After she finishes her profile, she is directed to a **home page**. On that page, she sees exhibition of videos created by competition winners. She also wants to make videos like they did. She goes to the **video competition page** on her homepage. She finds out that there are a lot of on-going projects on the page. Therefore, she uses the filter and find out *Travel In Boston*. Luckily, the deadline for this project is not ended yet. After reading the description of the project on the project description page, Ella sees there are some groups that are looking for more groupmates. She uses the filter to find out which group is looking for camera woman or script writer. There are few groups match her requests. After reading the detailed information about group meeting time and location on the **group page**, she views the profiles of each current group member in the group. After viewing few groups, Ella decides to join a group called *Academy Studio*. She clicks the join button, which sends a join request to the group leader. In few hours, the leader, Mark chats with Ella about their goal as a group.

Step 3

Ella agrees to join the group. She gets a **instant message** from the system shows her that there are updates In the notification area, Ella sees an **announcement** from Mark about the time of their first meeting, which would be a **group meeting via video conferencing**, which will take place in the chat room on the platform. In the meeting, everyone introduces themselves to the group. In their first meeting, everyone is assigned specific jobs. Ella is assigned as one of the camera women. In the first meeting, they create a to-do list for the project. On this **to do** list, they include deadlines for specific tasks -- research, planning, shooting and editing.

Step 4

The first task on the to-do list is research, which is a group task. Everyone is responsible for this project. They create a folder under **Notes**, where they can store all their files, pictures, videos. On the calendar of the platform, it shows the time for the next meeting, which is arranged from the previous meeting. On the next meeting, they decide that the research phase is over. They decide to create an outline of the movie. During that meeting, they choose what should be put into the movie. They come up with some places they want to include in the film, which is from the location file from the group folder, and mark it on the **map**.

Step 5

After they decide which place they will shoot, they make a list of tasks and assigned to camera men and Production Designer who are located at Boston. In the group chat, Ella gets the job of shooting Boston Common. She is team up with Patrick, who is a production designer. After the group meeting, they start their private video chat for meeting location and time arrangement. Ella puts the time and location down into the calendar as a reminder. They meet up and start the shooting at that day. Patrick provides the ideas of what the frame should look like. Ella takes his suggestion and shoot the clip. They shoot several clips before they call it a day. Ella submits the video onto the folder after she gets home. If the group feels there is something missing in those clips in the next meeting, Ella would re-shoot the film with Patrick.

Step 6

After all the shooting is finished and the group is satisfied with the clips, the group starts to put pieces of clips together. Everyone can view the process of video editing during the conference, but only one person has the access to edit it at one time. However, during the editing process, two people who are in charge of background music have some disagreements. Both of them want to use their music selections. During the group discussion, the group find it is hard to choose between them. Therefore, they modify the clips from the **version history** and post the clips with different musics on to the forum. They want to get some the feedback from users on this platform. In the end, they choose the one with a positive feedback.

Once the first draft is finished, they organized another meeting to discuss if there anything more that they will edit. They realize that there are some flaws in the clips from Ella. Therefore, the group points out the flaw and helped Ella re-shoot the clip by meeting on the shooting site.

Step 7

After all the makeup shots and editing are finished. They post some part of the video onto the forum for getting the feedback. After they get the feedback, they hold another meeting to discuss if they should make any change. If they agree on adding more information, they will repeat step 5 and step 6.

The group feel confident about their work from the feedbacks. After the final view of their video, they submit it onto the project page before the deadline. After the deadline, their access to editing

is closed. But the group remains the same. Everyone could add friends in the group if they want to keep their private connection.

Step 8

Before the result date, Ella joins into another group and starts a new project. She pulls Patrick with her into another group because she finds that it's pleasant to work with him. One day, she received an email from the platform that their video make the top three. Unfortunately, they are not the winner. The email contains comments and grades from the experts, who are professional video commentators from the project. However, they still receive a thousand bucks as a group. In the group chat, they feel happy about this result.

Step 9

Becoming the top 3 of the project, Ella sees one achievement is unlocked on her personal page. She gets a title of award winning filmmaker. And their video is posted in her archive. She decides to make it public. She wants earn the title of Master Filmmaker like some of users in the forum.

B. Explanation/Introduction of Features

1) Profile page

After the user create an account, he or she will be direct to a profile page. Within this page, he or she will post his personal information about himself, which includes:

- What is he or she good at? Filming shooting? Editing video? Writing script?
- What is his previous experience about creating video clips?
- What is his weekly availability? When will he or she has time in general?
- A short biography or paragraph to introduce himself; a fun fact about himself
- What does he or she like to do? What are his hobbies?
- What does he or she like to achieve?

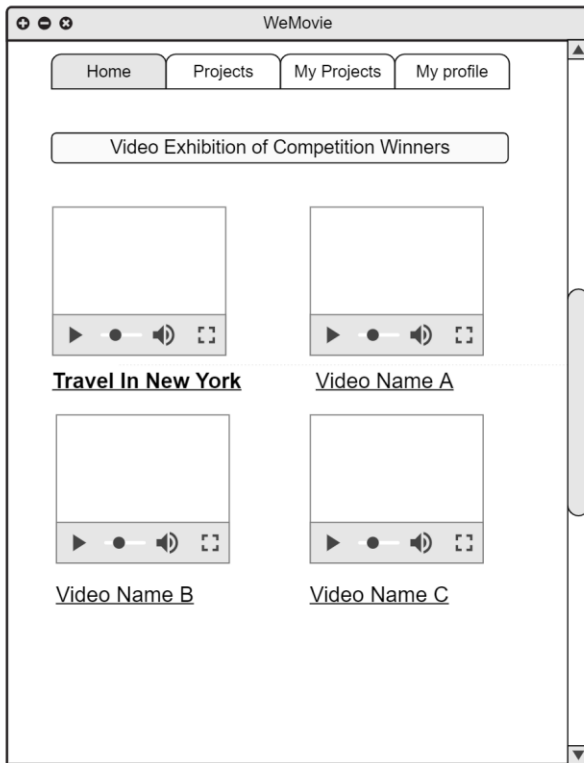
Later, as he or she used this platform for a while and become an active user, the profile page will also show a history record of what video projects he or she has participated in and how many “likes” those video projects has gained.

When a user makes a comment, other readers can view the summary of user’s history record (reputation) next to the comment to value the credibility of his or her words. The summary of a user’s record will be shows in the form of his or her competition history: _ times champion, _ times top three, _ times participant. This is a reputation system which encourages users to be involved in this platform and to make high quality projects and comments, and users can check each other’s credibility through this system.

2) Home page of WeMovie

The Home page of WeMovie displays the videos that has won the competition previously. See Graph A below.

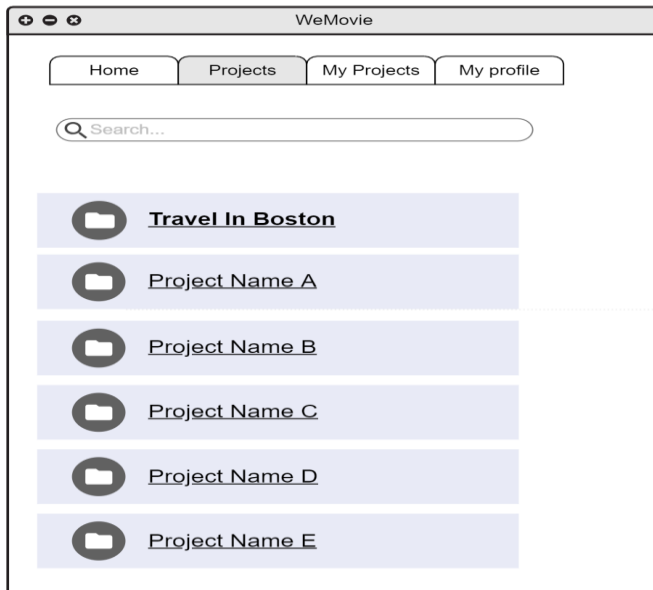
[Graph A]



3) Video Competition Page

After clicking the [Projects] tab, users can use keywords to filter or search for the projects that he or she is interested in in the search box. See the graph B below

[Graph B]



If he or she is interested in one project in the result list, he or she can click on the name of the project and will be direct to the main page of that project. Within the main page of the project, under the overview tab, it will show a description of the project: what are expected in the video, what kind of videos are wanted, and what are the requirements, etc.

See the graph C below

4) Project Main page

[Graph C]

Overview	Incomplete Teams	Complete Teams	Create A New Team
----------	------------------	----------------	-------------------

here it shows the overview of the video wanted
people who made this post explain what kind of video they want,
what are the requirements

The user can click [Create A New Team] to start his own team. After clicking [Create A New Team], he or she needs to enter the Team Name to finish the process of creating a new team. (See Graph D). After he or she creates a team, he or she will be directed to the team workspace page. He or she can write a short description in the team bio section to recruit people to his team. (See Graph G) The short description will be displays when other users are searching for teams to join (See Graph E)

[Graph D]

Overview	Incomplete Teams	Complete Teams	Create A New Team
----------	------------------	----------------	-------------------

Create A New Team?

Team Name Placeholder

Cancel

Create

If a user wants to join an incomplete team, he or she can click the [incomplete team] tab to see which teams are looking for teammates and find available teams to join in. He or she can use keywords to search for the teams he or she wants to join. He or she can also filter the result list by location, time availability or other criteria. The teams in the result list generated by the platform will be the team that mostly match his time availability.

If the user is interested in a team, he or she can click the team Name. It will then show who are in the team right now. The user can click on the name of a team member to see that person's profile to get to know better about the team. For example, what do the team members like to do, what their expertise are, what their goal is, what their hobbies are. If he or she finds a team that he or she wants to join in, he or she can click on the [request to join] icon to send a request to the founder of the team. See graph E below

[Graph E]

Overview

Incomplete Teams

Complete Teams

Create A New Team

Search...

Location

▼

Time availability

▼

filter 3

▼

▼ Brandeis Hoots

request to join

▶ Richard Alterman

▶ Maria Altebarmakian

▶ Devan Walton

▶ Team Member 4

+ Hey! We are a group of people who love xyz. We are looking for one person who is good at editing music! If you also likes xxx.....
Please join us!

▼ Team Name 1

request to join

▶ Team member 1

▶ Team member 2

▶ Team Member 3

+ Team post

▶ Team Name 2

request to join

▶ Team Name 3

request to join

▶ Team Name 4

request to join

▶ Team Name 5

request to join

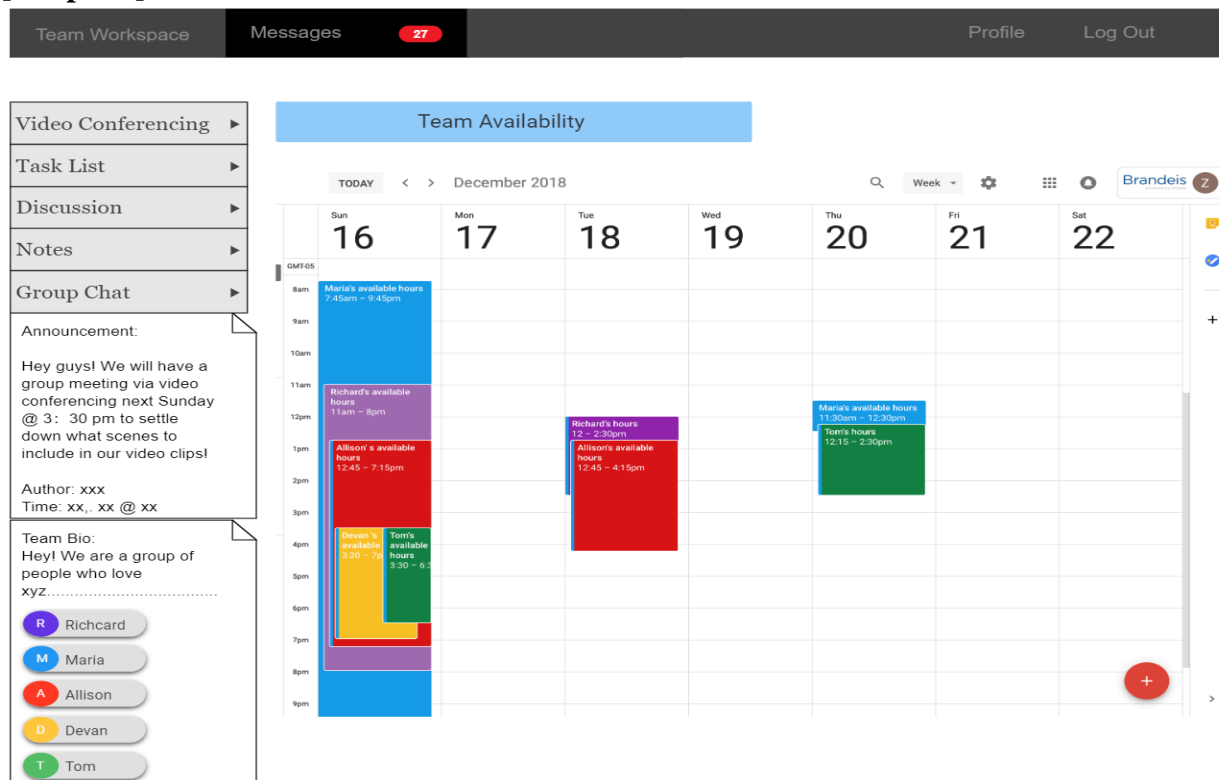
....

[Graph F]



After the team founder receive the request (See Graph F above), the team founder can click “Profile” to look at the requestor’s profile. The **【Profile】** button will direct the team founder to the requestor’s profile page. The team founder can use instant message to ask the requestor a few questions to get to know more about the requestor. If the team founder likes the requestor and agree to have him in the team, he can click **【accept】**. Then the requestor usefully joins the team and have full access of the team shared workspace. See graph G Below

[Graph G]



5) Team Availability

Each team members will mark his/her availability on the team availability calendar for each week. Each team member's available hours are color coded. The team leader (founder) will pick the overlapped block of most of the members' available time to be their group meeting time.

6) Group chat

If a group member finds something interesting and he wants other group members to look at it, he can communicate with other group members via group chat. Or if a user wants to ask a quick question, he can ask his group member in group chat. Group members can have casual conversation in the group chat when they are free, chatting about what happened in their life. These causal conversations can help users get to know more about each other and help the group stay more connected.

7) Announcement

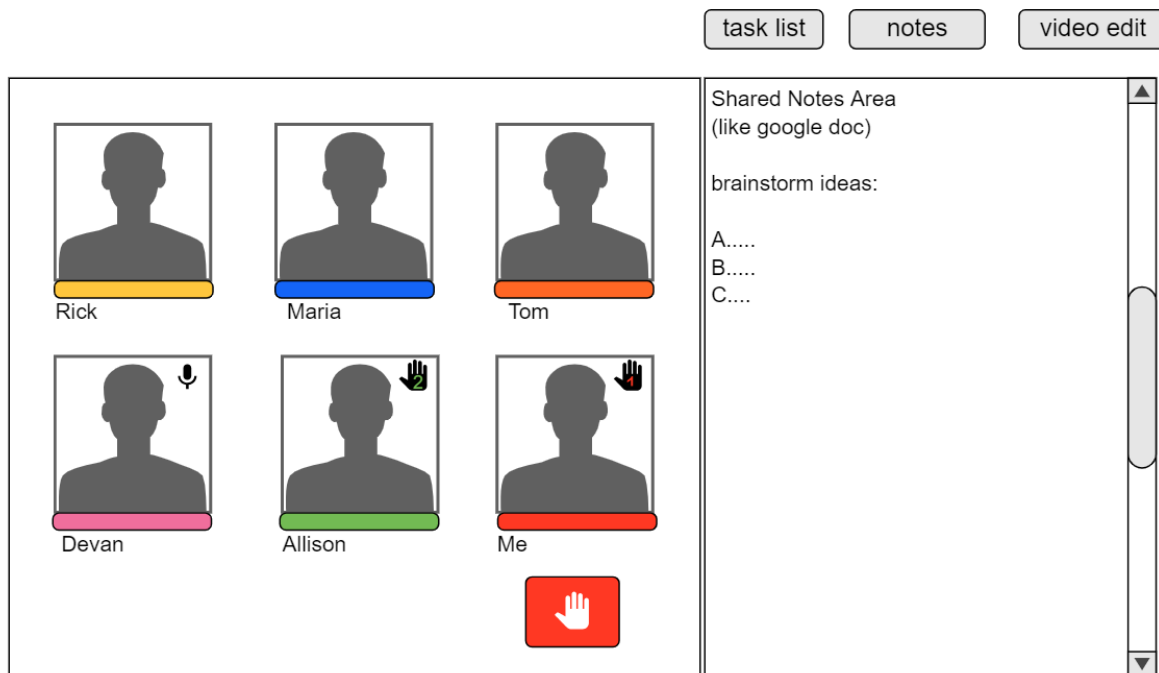
The group member can make a group announcement in the Announcement area. After an announcement is made, every group member will receive an instant message about the announcement.

8) Group meeting via video conferencing

The team will have their first meeting through video conferencing. The name of each team member is shown at the bottom of each person's window. The current speaker will have a "microphone icon" floating on the top right of his window. If a team member wants to make comments or ask questions, he can click the [raise hand] icon. After he clicks the [raise hand] icon, a little "hand" icon will be floating on the up-right corner of the window showing his face. Whoever click the [raise hand] icon first will be the one to speak next after the current speaker finishes his turn. The current speaker indicates that he has finished talking by clicking the [raise hand] button again and then the "microphone icon" on his window will disappear. The order of who raised hand will show as number in the [raise hand] icon (see Graph H below). If other people already asked the questions he wants to ask, he can cancel the "hand-raising" by clicking the [raise hand] icon again and the "hand" icon will disappear.

After clicking the [Notes] icon, a shared folder which is only visible to team members on the cloud will pop up as a window. (See Graph L) Inside this shared folder, team members can either create a new shared document to take notes together or edit an existing shared document on the shared notes area on the right. Each member's cursor is color coded. (See Graph H). Everyone can take notes if they want. They decide who to take notes by talking directly to group members.

[Graph H]

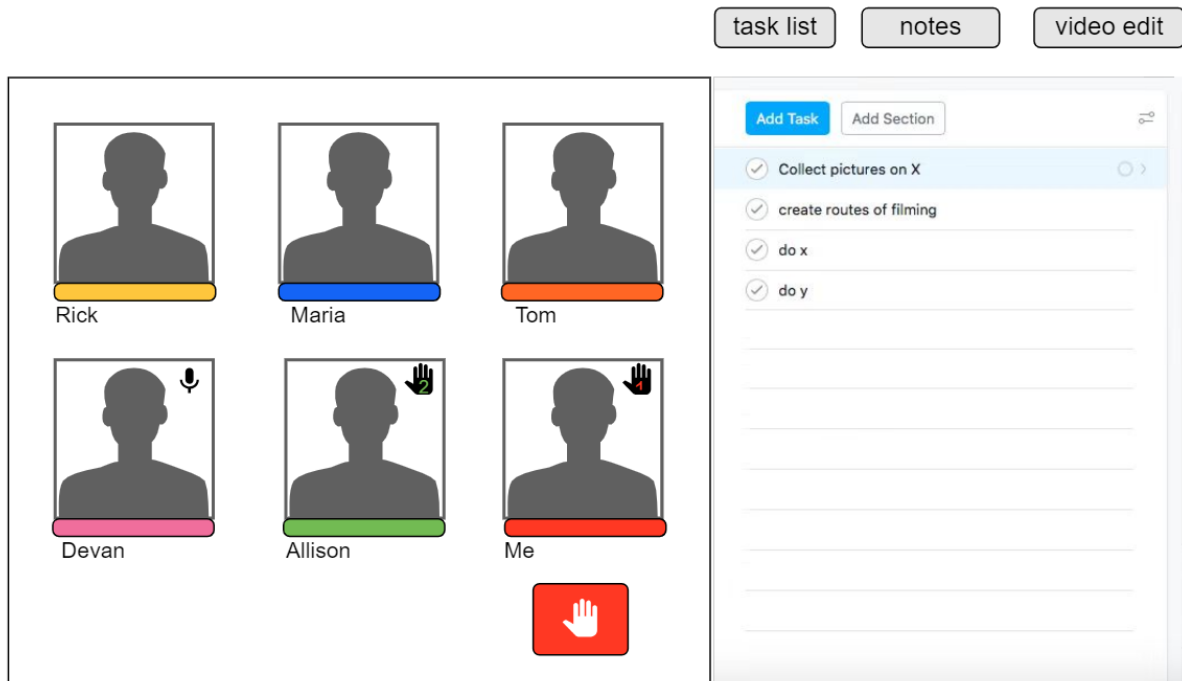


During video conferencing, they can also create a task list together if they click [task list] icon. (See Graph I)

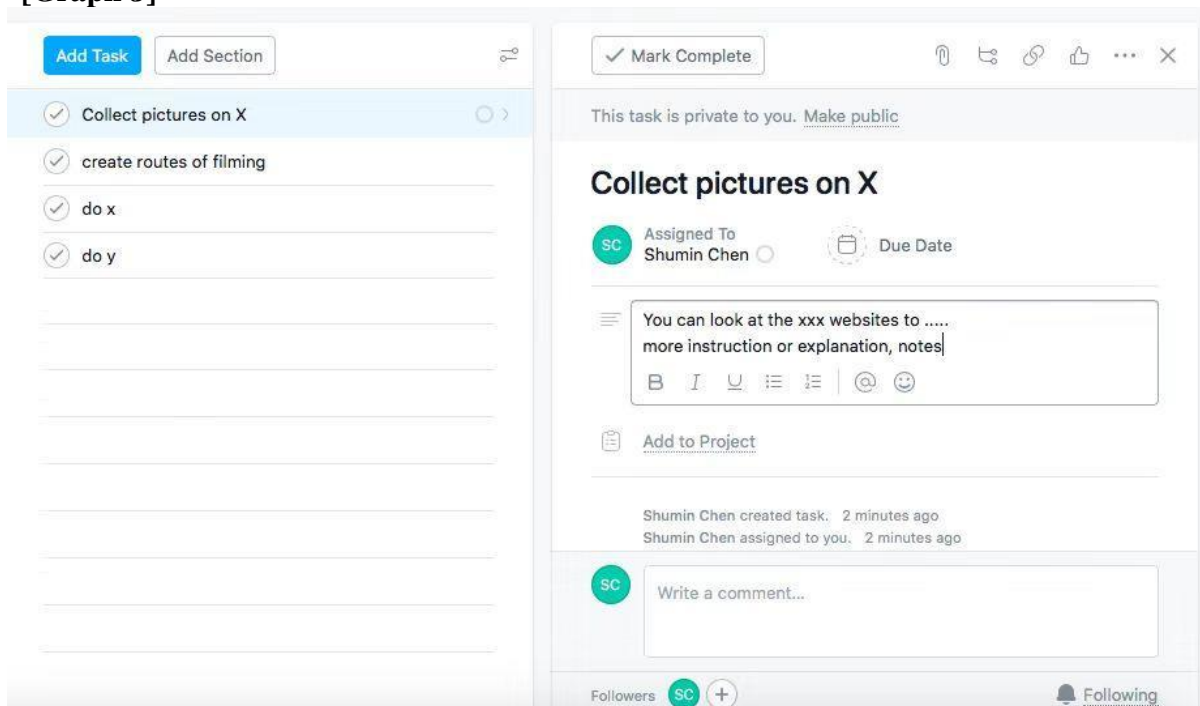
In the task list section, their cursors are also color coded. A user can click [>] at the end of each task item to expand the task list. (See Graph J). On the right side of Graph J, users can add detailed instruction or information about the task, assign the task to certain team members, set due date, and attach links within the task. For example, If the task is “Tom collect information about Boston history on the website Big Boston”, they can attach the link to 3the website in the description area. Everyone in the video conferencing can edit the task list. They will decide who to write on the task list by directly talking. The current speaker can write on the task list, but if he wants other people to write down what is said while he is talking, he can simply ask that person to do so.

For the time when they are not having video conferencing, users can navigate from the main page of [Team workspace] (See Graph G) to get the task list by clicking [Task list]. After the task is complete, the person who is responsible for it can mark it as complete by clicking [mark Complete]. And it will show a record of who added what and who checked it as complete if you check the edit history.

[Graph I]



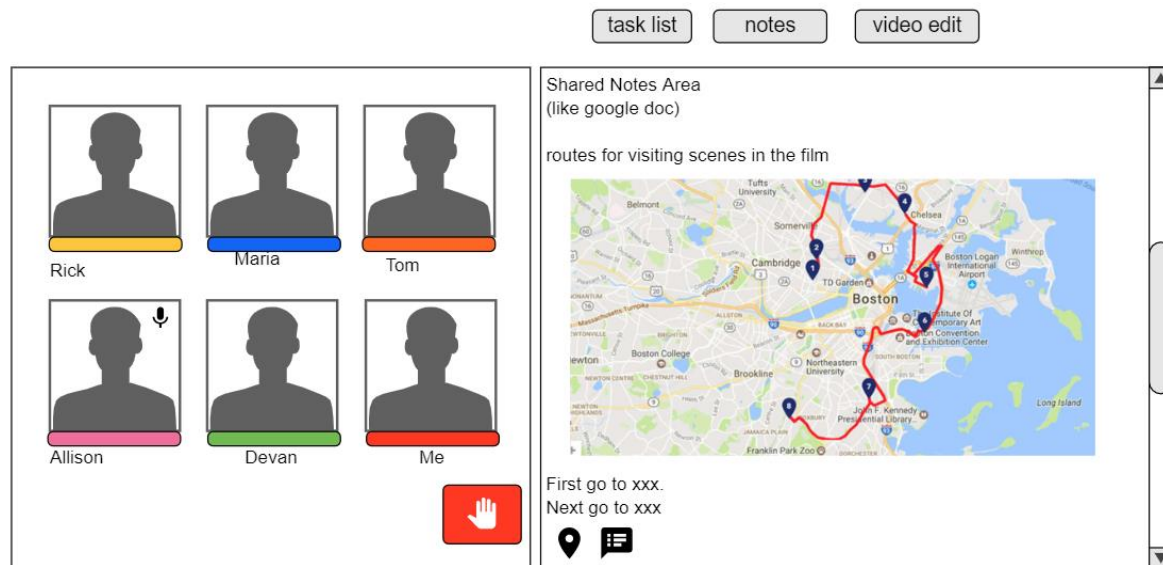
[Graph J]



During the video conferencing, if the team wants to collaborate to decide a route/order of shooting different scenes, they can click [Notes] to open the shared folder, create a new document file in the shared folder, and then add the map in that document. Users can drop a

landmark icon where they want to go on the map.(See Graph K) They achieve co-referencing by the landmark icon and their color coded cursors. Only the current speaker can drop or remove a landmark icon, which ensures control of turn taking.

[Graph K]



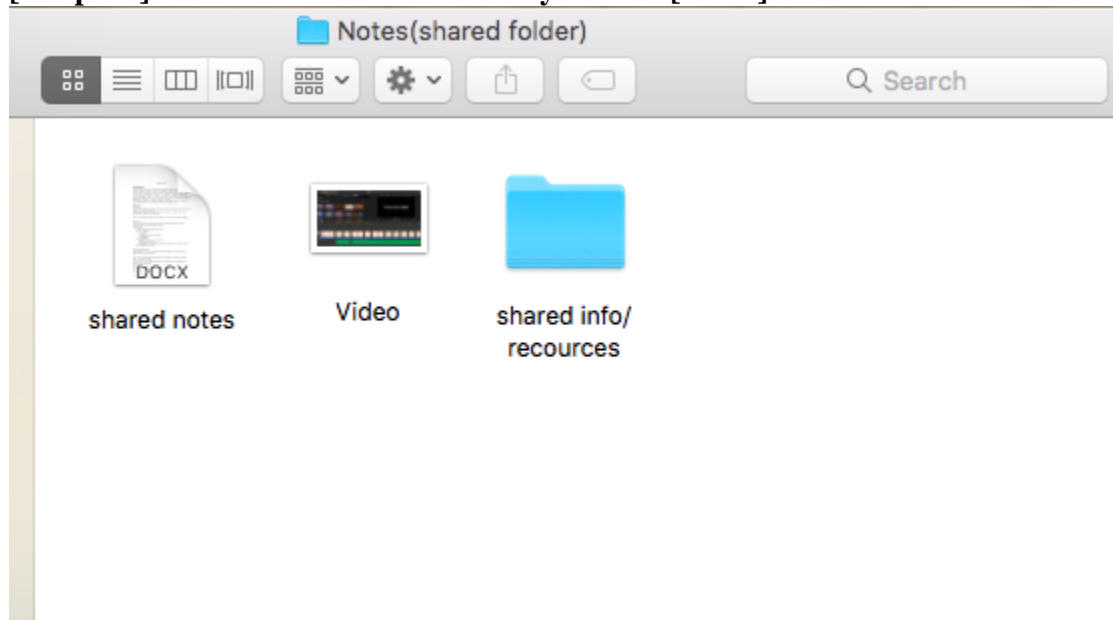
9)[Notes]

[Notes] is a shared folder which consists of all the documents and resources the group has ever made. (See Graph L).

The team will store their shared documents or files in the [Notes].

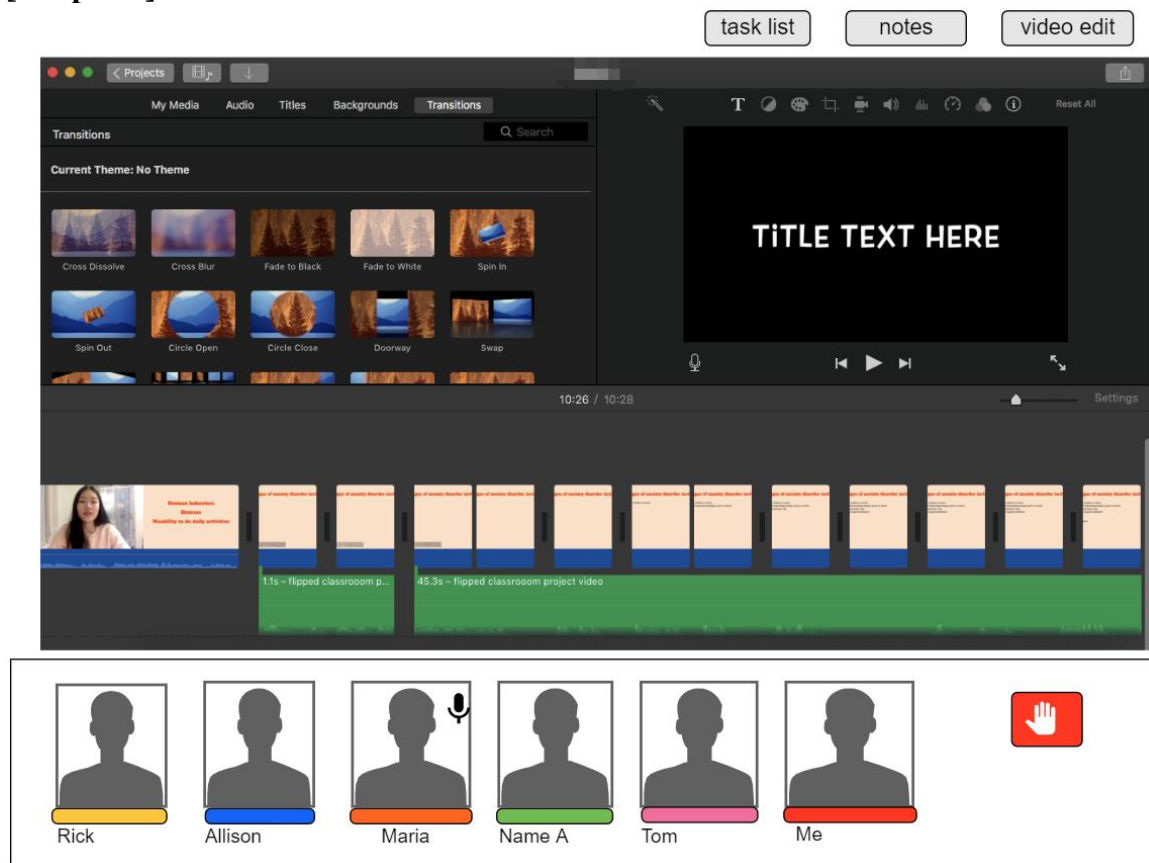
Additionally, after the team members finish the detailed outline and decides where to capture a particular moving, still, or sweeping shot, the team members who are assigned to be photographers will follow the outline to carry the equipments to travel to the pre-decided locations at appropriate time and then start filming. After the photographer finishes shooting and gets back home with strong internet connection, he will upload all the materials he collected to the [Notes] which is visible and accessible to everyone in the same team. In the incoming meeting via video conferencing, all team members will discuss whether the materials collected by the photographer are good enough during the video conference together. If team members think this is not good enough after discussion, they will give some suggestions to the photographer to recollect the materials. They will repeatedly do this until they collect all the materials they want.

[Graph L] This what it looks like after you click [Notes]



Group members can take turns to edit the video together through video conference.(See Graph M) This is a online version of iMovie, just like Google Docs. Again, each group member's cursor will be color coded. For edition, one person a time. No two persons can edit at the same time. Only the current speaker has the access to edit the video. When a team member is editing, other team members can see his cursor and how he is making edition, as he talks and explains his ideas. If a group member wants to edit the video, he can click [raise hand] icon and wait until it is his turn to talk and edit the video. When the current speaker see Tom raise his hand and want to hear what comments or suggestion that Tom wants to make while he himself is editing the video, he can click [raise hand] icon again to indicate that he wants to end his turn. And then Tom can take his turn to offer feedback.

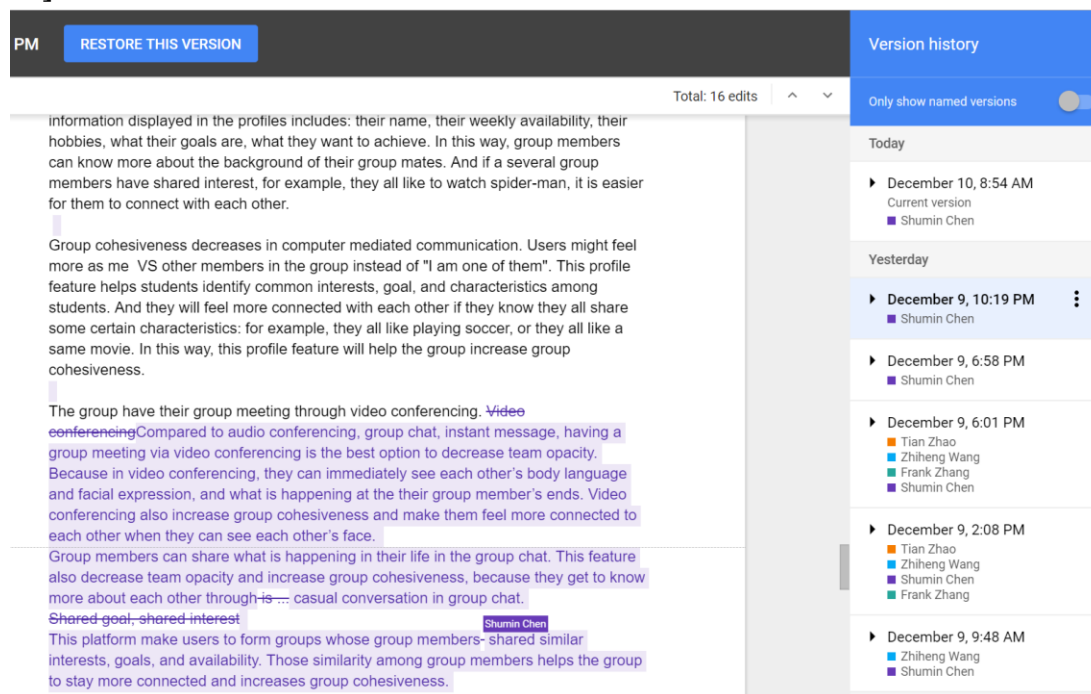
[Graph M]



10) Version History

When you open a file, it will always display the most current version. The system will keep a record of who added what, who delete what and when the changes are made. Users can see previous version by checking the edit history. (See Graph P). For version history of video, it will highlight the section that are changed and the highlight colors are color coded too. To check edit history, right click the file and then click [view edit history]. For the time when they are not having video conferencing, they can also edit the text files, shared notes, and video in the shared folder([Notes]), by navigate through [Home page]-->[Notes]-->The file you want to edit. Records of all the edition was made will be saved in the Version History. Users can see previous versions by clicking the tabs under the Version History column. Group members can click [restore this version] to make the file display “this version”(call it version A). After clicking [restore this version], they won’t lose the versions created after version A. The system will generate a new version that is the same as version A to be the current version.

[Graph P]



11) [Discussion]

If they have disagreement or questions, they can discuss them under the [Discussion] page. (See Graph N). After several turns of responses back and forth, they will get a better understanding of how each other thinks about the disagreement or the questions. In the end, they will finalize their choices when they have a group meeting via video conferencing.

In the Discussion page, users can type in keywords in the searching bar to find the discussion that they want to join. They can filter the result list by “General Content”, “Topic”, or “Author”. For example, if the user wants to find the questions posted by Maria, he can type in “Maria” in the searching bar, then select [search by Author]. The system will generate all the posts posted by Maira. If the user only wants to see recent discussion, he can further filter the result list by checking the [Recent posts] box. If a group member wants to reply to a comment, he can click [reply] to add comments. He can also add links to other pictures, music or website within his comments.

If a user wants to raise up a problem or question, he can click [Add Post] icon to create a new post. Within a post, he can label his post by the topic of the problem. He can also attach files to the post, so that his team members can compare the two files right within the post area and don’t need to transfer to another window.

For example, Tom and his teammates have a disagreement on which song to use as the intro music at the beginning of their video, he posts a question on the discussion page. When the comments are made and who made these comments will be shown. The comments are indented so that it clearly shows which comment respond to which comment.

[Graph N]

Discussion

search by


Author

Topic

General Content

☒ All Posts ☐ Recent Posts

Add Post

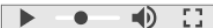


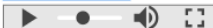
Topic: Music


Tom Should we use *Hello* or *Beautiful World* as the intro music at the beginning? I like *Hello* more because it is sounds more powerful. It is my favorite song!

[Hello](#)

[Beautiful World](#)








Yea it is more powerful. But the overall scenes and style is more relaxed and peaceful. Maybe Beautiful world is a better fit.

Reply


(12:50 pm, Dec 2, 2018)



I agree with Maria. And I think *Beautiful World* correspond with the last theme. Rememver weright?.... So.....

Reply


(2:00 pm, Dec 2, 2018)



Oh.. I see.. Ok! I didn't think of that aspect. Now I think Beautifyl World is better. Lets make a final decision during our group meeting. I guess we will all agree on this one.

Reply

(2:30 pm, Dec 2, 2018)



Cool!

Reply

(2:40 pm, Dec 2, 2018)

Another post of discussion...
...
...

«

1

2

3

4

5

6

7

8

9

»

←

→

12) Community Forum

Within each Competition page/Project Page, there is a Community forum. (See Graph O) In the community forum, users can communicate with other people in the whole community, collectively build up knowledges and learn from each other. For example, under the “Travel In Boston” competition/project page, users can post questions on how to do something to get help for ask for feedbacks. Users can get feedback from people in other teams who are also working for this project. They can get feedback from people who are not working on any projects too. The searching, filtering, reply, and “add post” functions are very similar to the within group Discussion function. The only difference is that users can search by “Group Name” instead of “Topic”.

21

[Graph O]

Community Forum

search by

Author

Group Name

General Content

☒ All Posts

☐ Recent Posts

Add Post



Group Name: Brandeis Hoots

Hi! I am doing xyz. Our team has difficulties doing xyz. Does anyone knows how to do it? _____

Tom _____ [Reply](#) [\(12:30 pm, Dec 2, 2018\)](#)



You can do xxx, then do xxx. _____

Maria _____ [Reply](#) [\(12:50 pm, Dec 2, 2018\)](#)



Rick _____ [Reply](#) [\(2:00 pm, Dec 2, 2018\)](#)



Oh.. I see.. Thank you so much! It works! _____

Tom _____ [Reply](#) [\(2:30 pm, Dec 2, 2018\)](#)



Cool! _____

Rick _____ [Reply](#) [\(2:40 pm, Dec 2, 2018\)](#)

Another post of discussion...

...
...

« 1 2 3 4 5 6 7 8 9 »



V. Commentary (A discussion of the problems your design solves)

A. problems related to communication lectures

- 1) How do users form a group with others?

Keywords: Communication, Team filter, Specialty

In the team page, the user can see two different kinds of groups, one is the team that is looking for teammates, and the other is the group that has been formed. First of all, teams can be selected based on the profile of user. Because every group member on this platform is good at some areas, such as directors, photography and video editing. This also ensures that each team has the ability to complete a video. When selecting a group, users can filter out a list of groups by searching for missing positions using [filter 3].

In addition to screening through positions, users can filter by availability, and then the platform will automatically match availability. Having the overlapped availability is important for scheduling group meetings. When users choose from different groups, the system will prioritize the team with the most overlapped availability with theirs. The benefit of this is to ensure that each group has time to discuss, also ensuring the quality of the video and the efficiency of the team. Similarly, if a user wants to work with people nearby so that it is possible to meet in person if necessary, he/she can filter by location. The searching and filter feature help users find the team they want to join in a more efficient way.

After a user gets a list of teams, he/she can see each team with labels, for example, style of shooting. Users can use this information for further selection.

After a user find his/her favorite group, he/she can click [request to join] to join a group. Then the team's creator will receive a notification (instant message), and he will have a communication with the applicant. This could be instant message or video call. He can also view the applicant's profile page to learn about the information. If the creator feels the applicant is good, he can invite the applicant to join the group.

Users can also choose to create a group and find someone else to join in. When the team leader is satisfied with the current team member, the team leader can choose to complete the team and then this team will be moved to the Complete Team area.

- 2) How do group members communicate with each other?

Keywords: Types of groupware, Video conference, Flow control, make comments under the clips, message

The group members' communication methods are mainly three types: video conference, instant message, and discussion forum. These three types are designed for different situations.

In most situation, group members will communicate through video conferencing. Because the system made recommendations based on time when they selected the team, finding an available time that members have in common is easier. At each meeting, members will join a dedicated room for discussion. Each member can see other people's faces and a shared note page for discussion. Members can send text, pictures and videos to discuss resources, and they can use micro and headphones to communicate directly. members discuss current issues, such as which places should be selected for shooting, when to shoot, and for the division of members. The leader can add the result to the to-do-list (this will be explained in detail later). The reason for this design is that the VC approach is more orderly, more task oriented, and easier to make decisions. It also achieves the highest extent of mutual understanding.

For the time they are not meeting via video conferencing, if a group member have some small and quick question, he can communicate with others through group chat(instant message). Team members send messages within the group through the chat system provided by the platform. The content of the message could be time adjustments to the meeting, or some emergent information that a member wants the group to know. Because the way through the group chat takes longer to reach a decision and is harder to keep everybody to be on the same page. So important issues or decisions will be resolved in video conference.

The last way is the discussion forum. For example, the director thinks that the music selection in a certain place is not good or the screen is switched too fast. He can add a post in the discussion forum and attach the music click within the post. Others can also post their comments under the comments. This kind of design can make the comments more obvious. If you use the instant message to express your opinions, others may not be able to immediately understand the location of the problem and the video. This facilitates communication and discussion between the members.

3) How do they communicate about how to film at the scene?

They will discuss how to film at each scene in outline making process during video conference. This makes team members make decisions more collaboratively since people tend to be more focused and engaged on the video conference than any other forms of online communication.

4) Why does the platform provide discussion page for groups? And for the whole community?

The discussion page inside group is used for group members to post their ideas for the potential disagreements between two virtual meetings. They can reason and defend their choices at their own convenience, and therefore it saves time for the negotiation in the video conference. The discussion page for the whole community is called community forum, and it is used for groups to share some part of their videos to get feedbacks. Therefore, groups can learn from other people or other groups and the whole community can also be seen as a learning community.

B. problems related to groupware lectures

5) How do users pick a project that they are interested in?

The user can click on the platform's competition button to view the current situation. We set competitions into three categories: the ones you have joined, the ones are hosting and the ones that have already been completed. Users can check through filters to get a more suitable competition list. Filtered options include the due date, the amount of the bonus, and the latest release time. Users can also search by keyword. For example, if the user knows more about the Boston, he can search 'Boston' to choose the competition that he is willing to join in.

After the user selects the competition, he can enter the page for the competition. The user can see the description of the project, which has been explained in detail in the previous section. He will see how many teams are looking for teammates and how many teams have been formed and are doing this competition on the team page. When the user knows the competition, he can choose whether to join it based on difficulty, bonus, and interest. If he chooses to join, he will pick the team he likes and applies to participate. The purpose of this design is to manage all the competitions and give the user a free choice.

6) Why do groups have to have a leader? What does the leader do in the group?

Because in many cases, a leader is needed in the group to set the pace of team progress and motivate the team members. The leader can help team members better cooperate and improve the cohesiveness of the team.

Leadership is responsible for controlling the entire process at each video conference.

There may be problems in turn taking or some people keep talking. At this time, he can help stop speaking in time. In addition to the first time, each time of the Meeting is determined by the team leader after discussion. The team leader is also responsible for creating new topics in the discussion board and doing some summary work.

7) How do group members get to know with each other? How to increase group cohesiveness? How to decrease team opacity?

Group members get to know about each other by sharing their personal information in his/her own profile and reading other group members' profile. User's personal information displayed in the profiles includes their name, their availability, their hobbies, what their goals are. In this way, group members can know more about the background of their group mates. And if several group members have shared an interest, for example, they all like to watch spider-man, it is easier for them to connect with each other.

Group cohesiveness decreases in computer-mediated communication. In a group meeting, when group members cannot see each other physically with high team opacity, group members tend to have a feeling of “ I am one party within the group and the rest of others are another party in the group,” instead of feeling "I am one of them".

This profile feature helps students identify common interests, goal, and characteristics among students. And they will feel more connected with each other if they know they all share some certain characteristics: for example, they all like playing soccer, or they all like the same movie. In this way, this profile feature will help the group increase group cohesiveness.

The group has their meetings through video conferencing. Compared to audio conferencing, group chat, instant message, having a group meeting via video conferencing is the best option to decrease team opacity. Because in video conferencing, they can immediately see each other's body language and facial expression, and what is happening at their group member's ends. Video conferencing also increase group cohesiveness and make them feel more connected to each other when they can see each other's face.

Group members can share what is happening in their life in the group chat. This feature also decreases team opacity and increase group cohesiveness, because they get to know more about each other through casual conversation in group chat.

This platform makes users form groups whose group members shared similar interests, goals, and availability. That similarity among group members helps the group to stay more connected and increases group cohesiveness.

8) How do group members have their meeting?

Keywords: Video conferencing, floor control, turn taking

After the team is successfully formed, the leader (creator) can select a suitable time to perform the meeting according to the available time of the calendar.

Before the meeting begins, the team leader can create topics on the discussion board. These issues include problems in group chat and issues to be discussed at the next meeting. Team members can enter the topic to express their ideas, discuss and respond to other people's comments. For example, the group discussed which 8 locations were selected for shooting among 20 locations. Team members can express their thoughts and give opinions on other people's ideas. This topic does not have to be resolved in the discussion board, it can provide space for discussion and prepare for video conferencing.

After the group members discussed and commented on the discussion board. There will be fewer opinions and more consensus at the meeting. Contradictions will become more apparent. The meeting was discussed using video conferencing, and the team leader controls the process and process of the entire meeting. Everyone has a 'hands-up' button in their chat interface, and the group members can click on it to speak. If there are too many raises, the team members will line up, which means that the person who raises his hand will wait for others before he or she finishes their speeches.

9) How do group members share their research findings?

Notes (Shared Files) provides a platform for teams to share resources. The reason for this design is that the team members need to share some files, including materials, links and videos were taken during the competition. Therefore, whenever they find useful information, they can upload the data to the shared file. This can also help them better understand each other's resources.

The second point is that when the photographer takes a video, he or she can upload the video. In this way, other members can also check and comment. For example, when a photographer goes to Chinatown to shoot a video, he can return to his home to upload videos and photos after shooting enough videos. Other team members can see these files in Notes (Shared Files). Then they can create a topic in the discussion board to discuss which video is great and which videos need to be re-shooted. Because the video may be large, all the transmissions will waste a lot of resources and time. So we don't think to upload them immediately is a good idea. Notes (shared files) can help group members store resources and provide enough information for meetings.

10) Is it possible that all group members are located in different places?

It is possible, since they might live in different places in the city and they have their own jobs. Even they can get together to shoot and communicate, but they may be not able to meet often. When they are at home, they need to communicate through the platform and work together to make the video. In other cases, the team members will be in different cities, and even a few people are in that city. Then they will use more instant message and video conferencing for discussion. We believe that photographers should be in the subject cities, and they can use video conferencing to communicate on the shooting process. The most extreme case is that after a person has created a group, he or she does not need the help of others. This is possible so that he or she will not have collaboration but he or she can still communicate with others in the discussion section of the competition part.

11) How do they settle down the routes of visiting those scenes? And when? How do they achieve co-referencing and pointing?

During the outline making process through video conferencing, if the team wants to collaborate to decide a route/order of shooting different scenes, they can click [Notes] to open the shared folder, create a new document file in the shared folder, and then add the map in that document. Users can drop a landmark icon where they want to go on the map (See Graph K). They achieve co-referencing by the landmark icon and their color-coded cursors. Only the current speaker can drop or remove a landmark icon, which ensures control of turn taking. Through inside map function, the time spend on each place and traveling can be calculated easier to help them prepare the detailed outline for filming since they need to decide the lighting of the film at each scene.

C. problems related to community and collaboration lectures

Use illustrative examples to make your discussion concrete.

12) How do group members schedule their meetings?

They schedule their meetings by using calendar which enables them to show their availability. The process for determining the meeting time is as follows. The founder first uses the calendar to determine a suitable time and then asks in group chat whether the time is available for everyone. If a member thinks he or she can't participate, he or she can tell a different opinion in the group chat. The team leader can find another time according to the calendar. Different members may have different situations. Because the initial group was created based on time and the applicant needs to communicate with the team leader, we believe that each group can find a suitable time to meet. If the team has no way to find it, let the most people attend the meeting. After several exchanges, the team leader will determine a meeting time and add it to the announcement.

13) How are tasks divided and assigned among group members?

Create tasks list.

It is decided by team members in the communication or meeting. People can have their own to-do list and they can also see others. When they finish the tasks, they can upload some resources and comments about this, which can help others to understand Your work. To-do-list is mainly divided into two parts of group and individual. This design allows the separation of large plans from individual plans. Everyone can make changes to the plan, and the change record is also recorded here to prevent member modification errors. At each meeting, the team members discuss the tasks assigned to each person. Task assignments can be assigned based on time and area of expertise. This is also a collaboration.

14) How do group members collaborate to create an outline/script of their video project?

They will make an outline/script of their video project during a video conference. This makes team members make decisions more collaboratively since people tend to be more focused and engaged in the video conference than any other forms of online communication. If a disagreement between team members happens during a video conference, they will negotiate it during a video conference. If a disagreement between team members happens before or after video conference, they will create a topic in Discussion to discuss it first and solve the disagreement during the next video conference. The advantage of using a video conference to solve disagreement is great time efficiency and a high level of engagement. During a discussion, if a team member explains something not very clear, there could be a misunderstanding and confusion among other team members. By video conference, other team members can question it immediately and this team member could explain it in details and justify the decision. The reason why WeVideo also has Discussion as a complementary tool to solve disagreement is to fill the gap between two video conference for time efficiency. For example, after video conference, one team member thinks that he or she finds a better route to film; However, the next video conference is scheduled in next two weeks since unfortunately they are all very busy in next few days. Create a topic of this in Discussion could help the team members to discuss it at a different time at their convenience in advance of a video conference, and therefore they can save time during a video conference.

15) How do they decide the scenes they are going to put in their video?

The scene selection is divided into two steps. The first step is scene selection during outlining [see outline]. Group members do research individually, post resources they found on the Notes (a shared folder) and use discussion board and video conference to reach an agreement. The second step is scene selection during video editing. Since group members are editing the video together, they will negotiate what scenes should be putted in immediately. If a group member finds a better scene later after video conference, he or she can create a topic on Discussion and all group member will be involved in the discussion in their convenience. In the next visual meeting, they will go through the discussion and reach an agreement.

16) How do they split the work when they are filming?

If there is more than one person locating in the city of promotional film or if there are some team members want to travel to the city of promotional film, they can discuss it through Group Chat's instant messages to determine the time to meet and film together. They will follow the outline made by the whole group to negotiate the types of equipment they need to carry. After they meet up, they will follow the route in the outline to film collaboratively. All the questions and suggestions will be given immediately through face-to-face conversations.

17) How does this platform achieve version control?

When you open a file, it will always display the most current version. The system will keep a record of who added what, who delete what and when the changes are made. Users can see the previous version by checking the edit history. (See Graph P). For version history of video, it will highlight the section that is changed and the highlight colors are color coded too. To check edit history, right click the file and then click [view edit history]. For the time when they are not having video conferencing, they can also edit the text files, shared notes, and video in the shared folder ([Notes]), by navigating through [Home page]-->[Notes]-->The file you want to edit. Records of all the edition were made will be saved in the Version History. Users can see previous versions by clicking the tabs under the Version History column. Group members can click [restore this version] to make the file display "this version"(call it version A). After clicking [restore this version], they won't lose the versions created after version A. The system will generate a new version that is the same as version A to be the current version.

18) How do they solve disagreement? For example disagreement on the content of the video and disagreement on the filming angle.

If there is a disagreement on the content of the video during the video conference, they will immediately negotiate it and solve it during a video conference. If there is a disagreement on the content of the video before or after video conference, they will first create a topic in Discussion where all team members can post their preferences and reasons at their own convenience (Like Forum). Then at the time of video conference, they will go over everyone's preferences and reasons and reach an agreement during the video conference. The reason why WeVideo also has Discussion as a complementary tool

to solve disagreement is to fill the gap between two video conference for time efficiency. For example, after video conference, one team member thinks that he or she finds a more suitable music as the background music; However, the next video conference is scheduled in next two weeks since unfortunately, they are all very busy in next few days. Create a topic of this in Discussion could help the team members to discuss it at a different time at their convenience in advance of a video conference, and therefore they can save time during a video conference.

- 19) How do you handle version control of the shared Notes and video? How are different version of video saved?

When you open a file, it will always display the most current version. The system will keep a record of who added what, who delete what and when the changes are made. (See Graph P). For version history of video, it will highlight the section that is changed and the highlight colors are color coded too. Previous versions are saved in the version history in the time order. Group members can use the name of the change-maker and time as indexes to find the previous version. Records of all the edition made are saved in the Version History. Users can see previous versions by clicking the tabs under the Version History column.

- 20) How do they collaborate to edit their video clip? How do you solve turn taking when you are editing video together?

The Editing video clip is mainly divided into two parts: The first is that the members modify the video at the video conference, and the second is that the members modify the video at home. The first is collaborative. Below we will introduce the collaboration and turn-taking contained in the video clip.

Group members can take turns to edit the video together through video conference. (See Graph M) This is an online version of iMovie, just like Google Docs. Again, each group member's cursor will be color coded. For edition, one person a time Only two persons can edit at the same time. When the team member is editing, other team members can see his cursor and how he or she is making an edition, as he or she talks and explains his Ideas. If a group member wants to edit the video, he or she can click [raise hand] icon and wait until it is his turn to talk and edit the video. (From the explanation of features.)

As for turn-taking, the team members can perform an orderly chat and video clip as described above. When others are talking, other team members have problems and can raise their hands and start waiting. The speaker may click the button again to end his turn and then give the right to speak to the questionable member. After the team member has finished his question, the power to speak can be returned to the previous speaker. This can solve the different opinions in the video conference. After each member expressed his opinion and discussed it in the group, the team could get a more complete video.

VI. Reflections:

Each student in your group should individually write a set of reflections. Be sure to label the reflections so we know who wrote what. Don't wait until the last minute to write these reflections. Write a draft of them early in the project and revise them as you go along.

- a. What did you learn about developing technology-mediated collaborations in an online community?
- b. How is the face-to-face collaboration of the term project different from the virtual collaboration of the homework assignments?
- c. How well did your team collaboration work? If you could rewind the project, how would you have changed the collaboration within your team? How well did the technology support your work? What technology support was missing? What would you do next? What would you have done differently?

Shumin's reflection:

- a. Technology-mediated collaboration in an online community helps people connect with more people around the world and allow more people to collaborate together. However, there are a lot of problems to solve when people collaborate online. Physical and visual barriers change the dynamics of communication and group collaboration by disabling the ways that we get used to using to help with communication and group collaboration, for example, co-referencing. It is important to identify the problems that appear because of those changes and provide suitable alternatives to achieve fluent communication and collaboration.
- b. I feel more connected with my group member when we collaborate face-to-face than communicate or writing our project report online. I know more about how they are doing their work, what they think about an idea that I propose, and how our ideas work together as a whole. We get to know more about each other by having side talks, joking, and sharing what happened in our life. But in virtual collaboration, things are kind of vague and I feel more unsure.
- c. I think our team collaboration works well in general. In the beginning, our group progress is kind of slow and we are behind our schedule. But later on, we divided and assigned tasks so that each of us clearly knows what each of us should do. If I could rewind the project, I will make sure everyone has the same understanding of the ideas of the project regularly and checks in with my group members' progress more frequently to see if they need help. In this way, we might make progress at a faster pace. Google doc helps us develop our draft well. And I used Maqups to create all the graphs we wanted in our project.

Frank's reflection:

- a. In this assignment, I learned that the development of a technology-mediated collaboration in an online community can be very helpful in helping people break the limitation of

location. In our project, this collaborative filmmaking platform can be used for people from different areas to work on one film project together. Nevertheless, there are some collocated collaboration strategies needs to be changed due to the lack of workspace awareness, team cohesion, etc. Therefore, during our designing phase, I learned how to eliminate some negativities of online collaboration by designing some mechanisms for our platform.

- b. In this term project, I feel I am more connected with my group mates. In homework assignments, I did not feel any connection with my teammates since I have no idea about who they are except their names. But in the term project, the team bonds tightly together. We know each other very well. Virtual collaboration helps us enhance our team awareness, workspace awareness, and team cohesion. It makes our collaboration more efficient.
- c. I believe my team collaborates well. If I can rewind the project, I would like to try a different form of communication. For instance, if we did not use a lot of online communication. We meet in the library for working on the project, which is not that efficient because of the cost of transportation for a meeting. We should use more video chat or instant message for discussing issues. Google Drive helps us a lot during the developing process. We used it for writing outlines and storing files.

Tian's reflection:

- a. Technology-mediated collaborations help people who are farther away to connect, which can help people better collaboration. But because it is in the online community, people may have more differences, and disagreement is a very important issue. In our project design, we use video conferencing to improve the cohesiveness of the entire team and the efficiency of problem solving.
- b. Face-to-face collaboration can make discussions more efficient. When I was using a virtual collaboration of the homework assignments this semester, I was only replying to questions and discussions within the group on the platform. But such communication has a limited effect because the comments and responses provided during the online discussion are slow. We can only hear a few suggestions and it is time to submit the assignment. Face-to-face collaboration brings the entire team together. We know each other very well. A better team atmosphere and a more positive attitude make the whole process awesome.
- c. I think the collaboration of our team is very good. Our project process includes proposing ideas, identifying topics, considering feasibility, designing the overall structure, design details, and unreasonable modifications. Our team uses Google doc to write documentation and meets weekly for F2F discussions. When there are different opinions, we will solve the problem in time. If I can play back the project, I hope that we can confirm the request with the teacher more, to prevent the problem of no collaboration in the project, and let us waste some time. We should also design a to-do-list to manage the entire process because sometimes we have a meeting and found that there are not too many problems to solve. We used Google doc to help us develop drafts better and

designed our interface using Maqups. I don't think there is a lack of technical support. We can use more video calls, which is more efficient at the remote

Zhiheng's Reflection:

- a. I learned how to develop a technology-mediated collaboration in an online community. The first thing is to think about a situation where technology could help people achieve higher performance on collaborative work. This is important because in many situations there may not exist many collaborative works. For example, in our first draft of term project, we are thinking about an alcoholism online support group platform to help alcoholism quit alcohol. However, it is almost impossible to think of a collaborative work which they need to do for quitting alcohol. The second thing is to develop interesting functions which should promote communication and collaboration among a group of people. In our first draft, we developed an online platform which enables people to do a video conference and make notes at the same time. However, it is not interesting since people can use Skype and Google Docs to achieve similar consequence. Therefore, in the final draft, we came up with a situation that markets on filmmakers and we designed a collaborative tool that nobody had ever made before. I also designed functions for floor control and version control which I learned from the class.
- b. The face-to-face collaboration of the term project is very different from the virtual collaboration of the homework assignments. Face-to-face collaboration is better than virtual collaboration in terms of giving a concise and deep review. In face-to-face collaboration, people are all co-located and they can immediately ask questions and give explanations. However, in the virtual collaboration, there exists a problem of co-reference and people might have some misunderstanding on the content of the design, and therefore it increases the difficulty of communication. Virtual collaboration is better in exchanging ideas than face-to-face collaboration. In the assignments, students can access every other student's work at any time and any locations and this help them gather ideas and learn from others. However, in face-to-face collaboration, it is hard to exchange ideas with other people since they need to consider availability.
- c. We all worked very hard on our term project and our team collaboration work did very well. We mainly used face-to-face communication to discuss the ideas and details as a group and split work with a detailed schedule by Google Doc. We did our own part of work at home and use the instant message to discuss details when we were not available to meet. If I could rewind the project, I would not change the way we collaborate. However, I feel it would be better if we did all parts of the term project together because I believe face-to-face communication is more efficient to solve disagreement and eliminate misunderstanding. We used Google Doc and Instant message and I think the technology is very helpful. Instant message helped us communicate and schedule meetings, and Google Doc allowed us to edit the documents together with a version control.