Group Project Part 3: User Interface Prototypes
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PART 1 - Horizontal Prototype

- brief explanation of your horizontal prototype

In our horizontal prototype we have designed a presentation screen with a theatre-like analog view for wherein the student can interact with the professor through the mode of audio/video. Furthermore, we have also created a taskbar above the screen which consists of three options; close, menu and Chatbox denoted by symbols respectively. Upon clicking the Menu or Chatbox, the user can seamlessly access the class materials or communicate respectively. We have implemented chat for seating availability in the bottom portion of the user interface just below the interactive screen that is visually appealing to the user. Alongside depicting which seat is occupied or available this seating feature would also allow students to post reactions in the form of symbols/emojis (such as hand emoji to depict nm doubts, numbers to categorize a queue. This could potentially be a game-changing feature for online lectures for the very reason that it lays the foundation for a much more interactive user interface while attending lectures which can inspire more attendance and active participation.

- design rationale (how things evolved from Part 2 paper prototype)

We formulated our set of reasonings towards creating this horizontal prototype after interviewing fellow students in Part 2 of the project and observing their responses. The best customer service is when you listen to the customer's qualms with consideration and act on it in the most efficient manner. We had already done the listening part, in this design we strove to accomplish their requirements beside making a user efficient interface.

One of the absolute requirements was the inclusion of a Chatbox which we have allocated above the presentation screen for accessibility. Difficulty in communication was one of the major concerns spoken about during the interview. Through Chatbox, students can chat/discuss and post questions (with the added option to post anonymously and upload screenshots) and can directly message or DM their classmates. We wanted to create a design that would boost communication amongst class members and we achieved that by hitting all the points – Anonymous option would allow the shy students to communicate without fear, DMs would save us trouble of trying to find an alternative source of contacting our classmates.

Another concern raised by one of the interviewed students was inability to easily access class materials such as notes, assignments within the class. They had to open multiple tabs which not only was frustrating but also risked closing the live lecture. To tackle this objective, we decided to add a menu option on the taskbar on top of the presentation window. This would allow students to easily access the links to class materials without even having to leave the class, subsequently impacting participation of the class.

It can be observed from the context of use in the second part of the project that students would be more engaged if the user interface was visually appealing and interactive which is essentially where our seating feature comes into play. We derived our approach for the seating availability upon the basis of watching a movie and booking a ticket. Unlike the orthodox view of video conference we created the presentation screen in a theatre mode with seating right below the screen. We took it a level further by allowing the user to change their sign/symbol of their occupied seat such as ✋, 😮 and 😂 . This would allow the students to react as they are being taught side-by-side. They could 'raise hand' when in doubt, marvel at facts or even fake laugh at the professor's joke. Not only will this allow the professor to perceive how the students are responding to the concepts or teachings but also increase student engagement within the course.

Above all, while setting up our logic behind these designs we always kept in mind the struggles and concerns raised by the interviewed students and withdrew some form our own experiences as well to create a design that would be efficient, interactive, boost communication and be engaging to both groups.

Vertical Prototype and Design Rationale (How things evolved from Part 2)

In the vertical prototype we designed a side panel where a student can interact with other classmates and professor by clicking the icon on the top right corner. After a side panel opens it shows 3 different tabs to communicate i.e, Chat, Question and Direct Message (DM). In the Chat tab, individuals give their opinions, react and write, according to what is going on in the class. With the help of Question Tab, one can post a question and others can reply by clicking the reply button on the right side of any question. And the last but not the least DM tab, where students can discuss privately with other friends by searching the name of the student on the search bar. This implementation will potentially increase class participation and engaging within the students.

After interviewing the people in part 2 we found that they were having difficulty in communication in their respective learning platforms (like canvas, blackboard, moodle, etc). That is why we find it a big weakness of the system design which needs to be improved. By considering the responses we tend to find that the inclusion of a Chatbox is an absolute requirement.

One of the major strengths of the chatbox is the DM feature where one can directly chat with other fellow students by searching the name on the search bar. Alongside chatting one can send pictures/videos and Voice Chat by clicking the microphone button. Another strength is that if someone has a question or doubt, one can post it on the Question tab, where anyone present there can give his answer to the question. The standalone question tab allows for easy access and organization of questions asked in class, free from the cluster of random messages existent within the chat tab and other current on the market applications. Considering individual privacy, our chat box also gives the user an option of showing name depending on if they want to show name or hide from others, because there might be some people who don't feel comfortable while saying something which is viewable by the whole class. Chat is separated because it will be the responses of the student during the class. For example, If the instructor asks a question verbally that "Does Moon have water" then students can give their opinion with an option whether or not to show name.

After critically thinking as we did cognitive walkthrough there could be two things which may be taken as weakness:

1. 'Show name' option can be a weakness. Take for example, anyone can write anything whether it is good or inappropriate within the chat and no one (instructor) can realize who did that in order to take action. However, In future versions, we can make it so that on the instructor screen they can see names regardless of setting in order to maintain discipline in class.

2. DM at some point could also be one weakness because of students who are more interested in chatting with others than focusing on the lecture. For instance, there are two friends who went to a party last night but they didn't have time to talk to each other so during the lecture their focus can change from important lecture to discussing what happened last night. However, if one is determined to score good grades will take out the benefit from this feature rather than misusing it.

The overall design of the chat box is very smooth and easy as one feels it while using the chat box. All the options/features work very well in the chat box. However, following are the features/options that can be put as future work/needs improvement that requires more thought and more work with users:

1. Unsend and Edit options for the text/answer sent/uploaded in DM, Chat and Question. For example, if someone sent a text accidentally, For user control and freedom they should have the ability to unsend/edit the text.

2. DM to more than one person (Flexibility and efficiency of use). For example, If a student wants to send a message to multiple people at one time, then this option would be very useful.

3. Share option for the Question (Flexibility and efficiency of use) For example, If a student wants to share the question to other classmates, then this option will further engage participation.

To sum up, this design was formulated by the responses of the interviewees. All the interviewees were concerned with the communication which we focused on our design work. The main purpose and reason of focus for this portion of application is to provide an organized, easy to access place for students to communicate in. The Chat Box feature will definitely boost communication and participation in the class.

Cognitive Walkthrough

The users will be students who are making progress towards their degree and are taking online classes. These users will have been experienced with learning already and they will even have online education experience due to covid-19 restrictions.

Overall Task: Attend a CMPT 363 class, broken down into smaller mini tasks:

TASK 1: Open Classplex and enter the CMPT 363 classroom and describe to the entire class how you are currently feeling

ACTIONS: Once Classplex is open, click Access on the CMPT 363 lesson. In the bottom right of the screen is a row of which can be used to describe how you are currently feeling. By clicking an emoji, the corresponding emoji could be seen lighting up in where your seat is supposed to be located

TASK 2: Open Classplex and enter the CMPT 363 classroom and anonymously ask a text question to the class

ACTIONS: Once Classplex is open, click Access on the CMPT 363 lesson. Click on the right facing arrow in the top right to open the chat function. Click on the question tab to navigate into the question domain. Identify the show name button of the chat function. See if the button is turned off if not click on the "show name" option and turn it to off. Type out your question and click send. The question could be seen in the chat logs

TASK 3: Open Classplex and enter the CMPT 363 classroom then send any person "seated" next to you a private direct message

ACTIONS: Once Classplex is open, click Access on the CMPT 363 lesson. Following this you need to click on the seat next to the red seat (your seat) to view the profile of the student. In the profile would be the dm button. Clicking on the DM function directs you to a private message page with that person. Type the desired message into the chat box and click the up arrow to send the message.

TASK 4: Open Classplex and enter the CMPT 363 classroom then ask your professor a question using your voice without being anonymous

ACTIONS: Once Classplex is open, click Access on the CMPT 363 lesson. Following this you need to click on the "show name" option and turn it on, after clicking on the microphone button in the bottom left and ensure it is not muted. Click the hand icon in the bottom right and you will be placed in the queue waiting for the professor to acknowledge that you have a question

TASK 5: Open Classplex and enter the CMPT 363 classroom then access your lecture notes

ACTIONS: Once Classplex is open, click Access on the CMPT 363 lesson. Identify the two horizontal bars icon in the top right of the screen. A list of options would appear. Locate the Lecture notes option and click into it to be redirected to the lecture note page. Find the desired lecture note and click the link to be directed into it.

Summary:

Through our cognitive walkthrough, we have found that Classplex has great usability for users with very minor issues which could impact the users experience. To begin, Task 1 is straight forward and presents no usability errors at all, an "Access" button is clear to enter the classroom, however in the case the user clicks access on the wrong class, there is not a clear "back" button to return to the class selection page, thus this could be fixed. The emoji selection is displayed clearly in the bottom right of the screen and can easily be spotted and clicked . You can clearly see your progress(accessing class, then seeing your seat emoji change). Adding on, in task 2, we ask to anonymously send a question to the class, and since the "show name" button is clearly displayed to the user with its status on or off at all times, we conclude that we can see progress towards getting the task done. Furthermore, upon being anonymous, all we must do is click the visible "question" tab and ask a question and the task is complete, however to improve error prevention for the user, we could implement an "unsend" feature which in the case the user forgets to turn the show name feature off could allow the user to unsend and correct that mistake. Adding on, in task 3 it is a very easy task with no room for error, once you click on a person seated next to you, you can simply click dm and send them a message easily, therefore there

are no outstanding issues here. To continue, in task 4, it is very easy to spot the raise hand button in the bottom right and your status in the queue is immediately visible and similarly to become not anonymous it is very simple to click show name and your name status is immediately visible therefore, there are no major usability issues in this task . In the final task, we can clearly see that a user would be able to make progress and complete this task; however, we could make this portion slightly better. "Lecture notes" is hidden behind a 3 horizontal bar menu and this could be an annoyance to look for a user thus, to further improve our design we could make the lecture notes button more clear or have a more clear way of looking for it to complete this task. Overall, through our cognitive walkthrough we have found all our tasks allow the user to make progress, complete, and provide the user with the expected result and thus our design has only slight annoyances.