Group 9

CCT485

Benett Axtell & Amna Liaqat

Final Report

TEAM MEMBERS

Yao (Amie) Zheng – 1002447122

Si (David) Wu – 1001226979

Patrick Tan - 1002567493

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Executive Summary

Chosen Problem Area

The initial idea for the project revolved around creating a platform that helps students join or create events. This platform would let students find events local to their campus and find the nearest and upcoming events across a variety of hobbies/interests. Ideally, the focus of the platform would be to provide a hub for students to create or join events for more niche hobbies/interests (Movies, Music, Study-groups, or Sports). The goal of the platform is to help students connect with classmates in similar interests, strengthen the social life on the university campus and provide incentive for students to engage in campus events.

Summary of Findings

In this project, we conducted 4 studies over the course of the semester. As mentioned above, we started with creating a platform for student events around the university campus. After preliminary research in our first two weeks, we found that current platforms such as Facebook, Instagram and Twitter all have relative success to finding events. But what we found is that the each of these platforms, have different issues that make the process of finding events non-enjoyable and just not pleasant.We decided to focus on improving different functionalities and designs implementations for our final product. The most important finding on our research was the idea that students are just not motivated to engage in social activities around campus. In the next 4 studies over the course of the semester, we researched and tested different incentive systems that would hopefully make social events more engaging. We found which reward systems were most preferred amongst our participants, then tested these incentives on a low-fidelity prototype. After receiving feedback from user-testing we were able to refine our prototype into a high-fidelity, in which was modelled after the different suggestions of design and functionalities in our participatory design study. We found that participants were more focused on a minimal design but also contained critical information of the event details. It was suggested to make sure that we do not overcomplicate the process of joining events, but make it intuitive and enjoyable. Then most important, we tested which reward system is most favourable amongst our participants, and we found that our badges were generally the most preferred. The incentives play a key part into improving the user behaviour and social events. Thus, we can conclude from our findings that incentives have a positive influence user interaction and our application.

Final Design Outline

The final design of our product Event Tune is a pretty straight forward event application. The design consist of 7 major screens; login, discover, map, search, event page, profile and badges. Our main priority of the design was to create a simplistic layout but was able to display the key information of events without having to click into them. Most of the final design was refinement from our wireframe which was user-tested in our participatory design and improvements of current platforms. These suggestions were our design principles of our high-fidelity prototype, and is what we wanted to structure our final product around. Each page had a different purpose in providing an improved experience in finding events, where most of the attention is towards the profile and the badging system. The final product design was laid out in wireframes and quickly transitioned into realistic graphics that would represent what Event Tune should look like. It was slowly implemented piece by piece in the last week of the course's semester and project.

Problem Area and Analysis of Preliminary Observations

Finding events is challenging for most students because the process of looking for an interesting event is unintuitive and time-consuming. There is no singular hub that contains all upcoming events around/in campus. Thus, making students research through different social medias to see what is happening. Just because a student doesn't find an event they were looking for, does not necessarily imply the event does not exist. The students could be searching the wrong sites and or term. With this process, students will need to know exactly which sites to check, network or be in different clubs/groups, just to know about the different event opportunities. Events should be made more publicized and general to one hub. Events should not be hard to find, so the process can be improved in usability.

Preliminary Informal Observations

Participant #1: The participant is Asian and a recent graduate currently working as a developer for a software company. They were given the task of finding a school-related event that they were interested in. They used a laptop to search up "UTM events" using Google and was returned with a few events that Google had catered using their algorithms. None of the events sparked interest for the participant and he decided to use his phone to look for events on Facebook. He was frustrated with the usability of Facebook and could not find any interesting events using the search bar, he eventually found the events tab and was interested in Facebook suggested event being a protest against OSAP which was relevant enough for him.

Participant #2: The participant is first year undergraduate student at UTM. She was asked to find events available on campus that she may be interested in. She walked to the CCIT building to look for posters on walls that may include events. Finding none, she went to the student center to look for events. None of the events posted at the student center interested her so she gave up.

Participant #3: The participant is a third-year undergraduate student at McGill. He was asked to find events available at his campus that he may be interested in. He first logged into his school email and went through his inbox to look for potential events that were sent to him. After that, he searched his school's subreddit to see if any events were interesting. Finally, after skimming through both his inbox and the subreddit, he settled on a computer science networking event.

Analysis of Preliminary Observations

Based on the preliminary observations, we found that there were diverse ways to search for events on campus. Those alternatives included Facebook, school email, Reddit, and physically walking around campus to look for event posters. These different ways that proved mostly futile illustrate the ambiguity and difficulty in finding campus events in general. To compare, if you didn't know something, everyone would tell you to "google it." In our observations, there didn't seem to be any ideal or tried and true method to search for events. Secondly, there seemed to be difficulty finding events that were interesting to the participants. They did not know exactly what type of event they were searching for, but it was evident through non-verbal cues that most of the advertised upcoming events were unsatisfactory.

Contextual Inquiry Protocol

Preliminary questions

Questions that will be asked prior to conducting the research, this is to help with analyzations and finding potential correlating patterns.

> Are you an active member of any clubs on campus? If so, which one(s)?
> How many hours a week outside of classes do you spend on campus?
> Do you work on campus?
> Do you use any social media and if so, which ones the most often? *

Context

*Note: Depending on social media that the participant uses, use ____ to find ____ event

Task 1

You are a struggling student on campus looking for an event that offers free food today. How do you search for a free food event? You may use any resources available to you. Please employ the think aloud method.

Task 2 (Conditional)

If participant gives up easily (i.e. gives up trying to find an event after exhausting all resources within 1m30s): Look for any event for today that sparks your interest, this can be local to campus or outside.

Survey questions

Questions that will be asked post-study, this is to help with analyzations and finding potential correlating patterns.

What year are you in? What program?

Are you an active member of any clubs on campus? If so, which one(s)?

Do you attend events on campus? If so, approximately how many do you attend per semester?

How actively do you seek events on campus?

Contextual Inquiry Field Report and Analysis

The contextual inquiry was performed with 6 participants that are students at the University of Toronto Mississauga. With the formative study, we were able to find key insights to user patterns and motivations whilst seeking upcoming events on campus. There are 3 main themes that were similar, found across each participant; lack of motivation in participating in events, using

Facebook's search as the primary resource, and apathy for events overall. These themes will further help develop our medium fidelity, by building fundamental design requirements to help create an intuitive process in creating interest and enthusiasm for and seeking events on the university campus.

Of the small sample size of 6 participants, the majority opted to use their mobile smartphone or computer as the primary resource as a solution to both *Tasks 1* and *Task 2*. With their phone or computer, each participant decided to complete the tasks with the services of Facebook and Google in parallel. We noticed that every participant ended up using Facebook in some way or form. With only 2 of the participants being able to successfully find an event for *"free food"*, shows that Facebook requires the user to know what exactly to search for. This introduces a common pain point throughout each participant, of what specifically should they be searching. Participants became limited to Facebook's services, even though in the post-study questionnaire, they were asked if they use any other social media regularly. Looking at a sample of two participants in *Figure 1*, we see that participants were commonly using other social media like Instagram, Twitter, or Snapchat but not using them in the tasks. This is important to the analysis because it shows that the seeking process should not be complex making students jump from service to service just to look for an event. This suggests that students prefer to look at events under one common hub, by the assumption that participants only used Facebook and did not opt-in seeking on any other social media platform.

Figure 1: Sequence model of two participants in the study, highlighting their platform(s)

P2 Sequence: Searching for "Free Food" Event

INTENT: Join a campus event, that is offering both free entrance and food to eat

TRIGGER: Event for today only

1. Contemplates to use phone or desktop computer
2. Decides to go with phone for primary resource
3. Googles student center (Thinking it would be the most reliable source)
4. Browses student center website
5. Goes to Events page
6. Scrolls through past and upcoming events
7. Finds a resourceful link, and read into details
8. Decides event meets the criteria of free food, and selects it for the task

Platform(s): Facebook, Twitter, Instagram, Reddit

P4 Sequence: Searching for "Free Food" Event

INTENT: Join a campus event, that is offering both free entrance and food to eat

TRIGGER: Event for today only

1. Contemplates to use phone or desktop computer
2. Decides to go with computer for primary resource
3. Uses Google to search for Facebook UTM
4. Opens Facebook UTM page
5. Browses to Events page
6. Quickly browses through populated list
7. Clicks on various events and read into detailed description
8. Selects most adequate event

Platform(s): Instagram, Facebook, Snapchat

The second recurring theme throughout the study was the participants explicitly stating that they are just generally non-interested or motivated to actively participate in events. This was an interesting occurrence in the pattern because it allowed insight on the type of student who generally participates in events. Of the six participants, two were active members of a club. In reference to *Figure 1*, we found that the participants that were not in a club tend to be quicker in going through the tasks given to them, whether they failed or completed the task. In contrast, the two participants who were in clubs took a longer time, and therefore knew the process of finding specific events is not always immediate.

Continuing on the idea where if the student is more active in university clubs, they are more likely to participate in events. We found that if they are exposed to previous clubs or current clubs, they are more likely to check their events first. In reference to *Figure 2a - P3 Sequence: Searching for "Any Interesting" Event*, the participant would view their current club, to check for upcoming events and was also present in *P6 Sequence: Searching for "Any Interesting" Event*. This allowed us to gather insight on how the participants would generally look for events that would interest them. It is important to note that a viable solution needs to effectively display a curated list of events that would fit each student uniquely. As mentioned earlier, by *Figure 2b* we can see that the students who are more inclined to search events were present in a club or

group. Based off our post-study questionnaire we wanted to ask participants how often do they attend events. This is to help find correlations between students who are active and inactive both student clubs/groups. You can see in *Figure 2c* that the two participants who participate in more than one event in a semester were the participants in a current club. Finding out if a student is in a club with classmates of similar interests will lead to insight on the how likely the chance they will participate in similar events. In other words, one of the goals for our app is to create a platform of events relevant to their interests. In order to help ease the process of finding enjoyable events, the app should present events that are relevant to the student's interests or hobbies.

Figure 2a: Sequence models of two active participants in school clubs

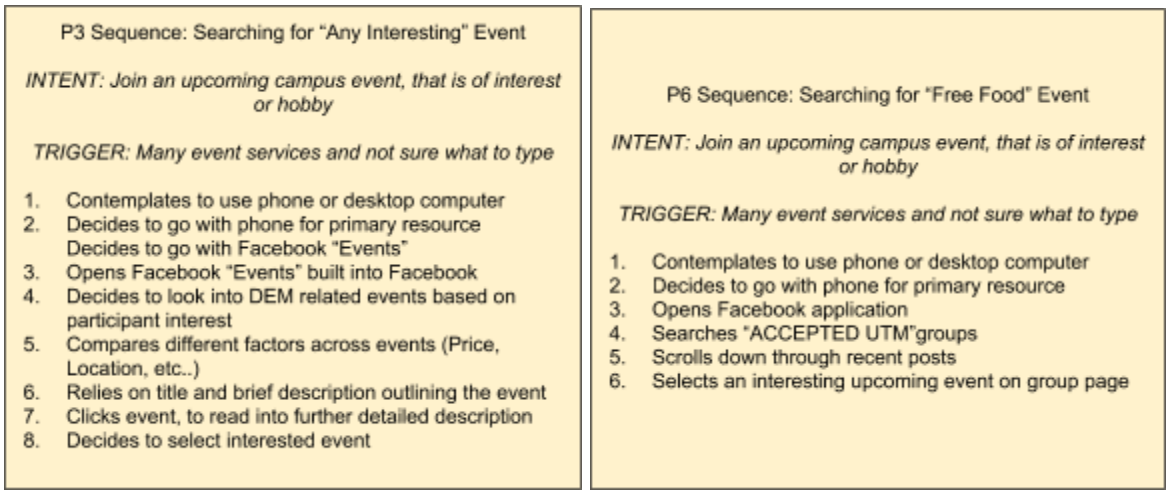


Figure 2b: Likert Scale - 1 being inactive to 5 being actively, of how likely is the student seeking events.

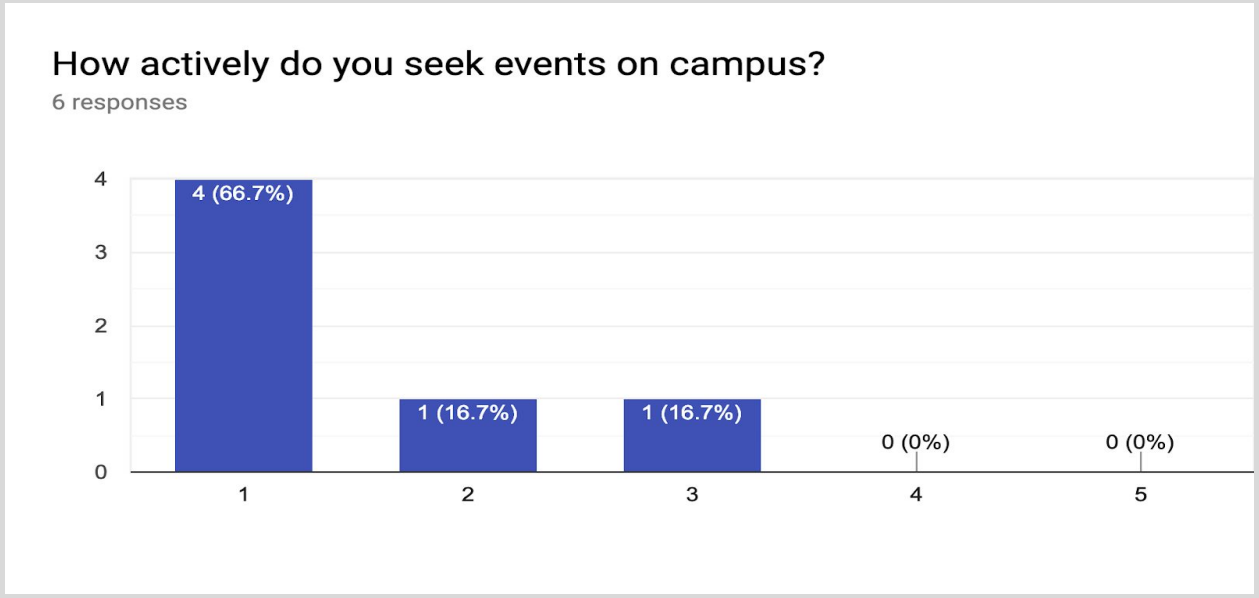
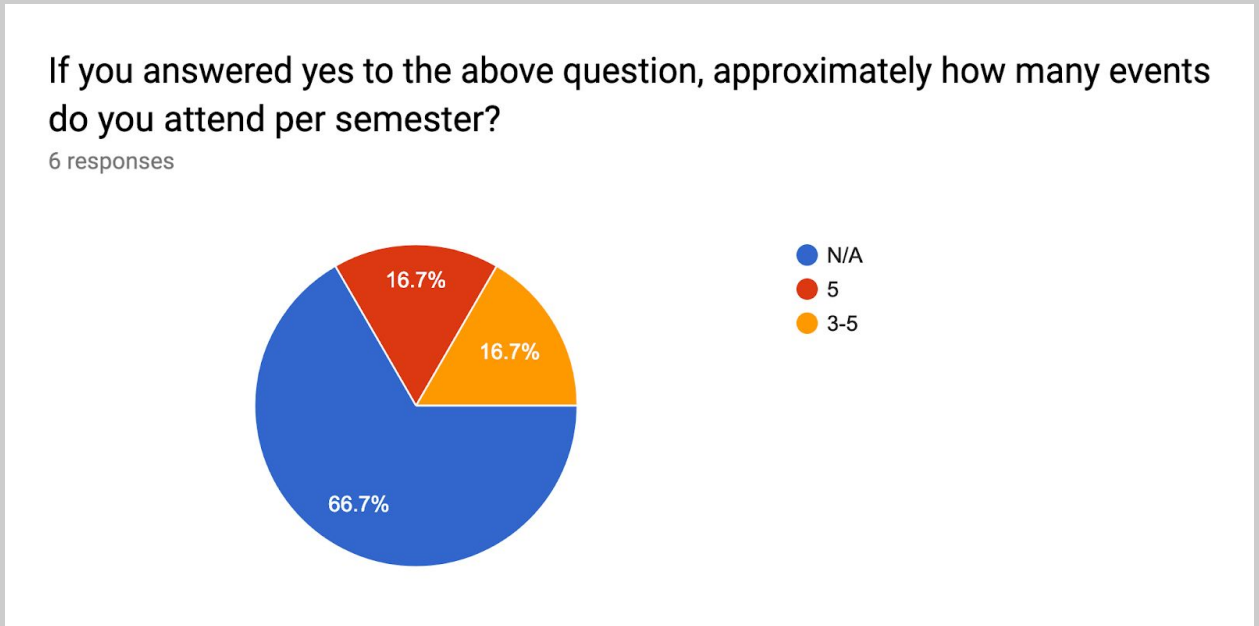


Figure 2c: The two participants who attend events each semester were the same ones who are active members of a club/clubs.



The last main theme we identified in the analysis was that participants generally had a small attention period when searching and viewing events both *Task 1* and *Task 2*. Looking at *Figure 3a* we can see that each participant went through each task in a quick manner and each participant averaged a total task time of 158 seconds. With the small sample size, this suggest that students only focus on the first dozen posts that are displayed. If the relevant event that they are interested in does not appear in the first few seconds of the searching process, there is a likely chance the student will give up and no longer look to participate in an event. This is evident by observing their struggle in searching the proper keyword and criteria whilst finding an event. In reference to the *Sequence Models*, many students Googled UTM events in hope to find events that offered "free food" for *Task 1*. The participant ends up with vague and generalized search results, that do not help refine their needs to the goal. We can see in *Figure 3b* that the pattern of minimal time spent on each task indicate failure in completing the task. This pattern demonstrates that students have a critical period while looking for an event that are of interest. Improving search and filter capabilities will help eliminate the turnover rate, by promoting more events that are related to the searched query.

Figure 3a: Bar graph displaying each participant's total time of experiment

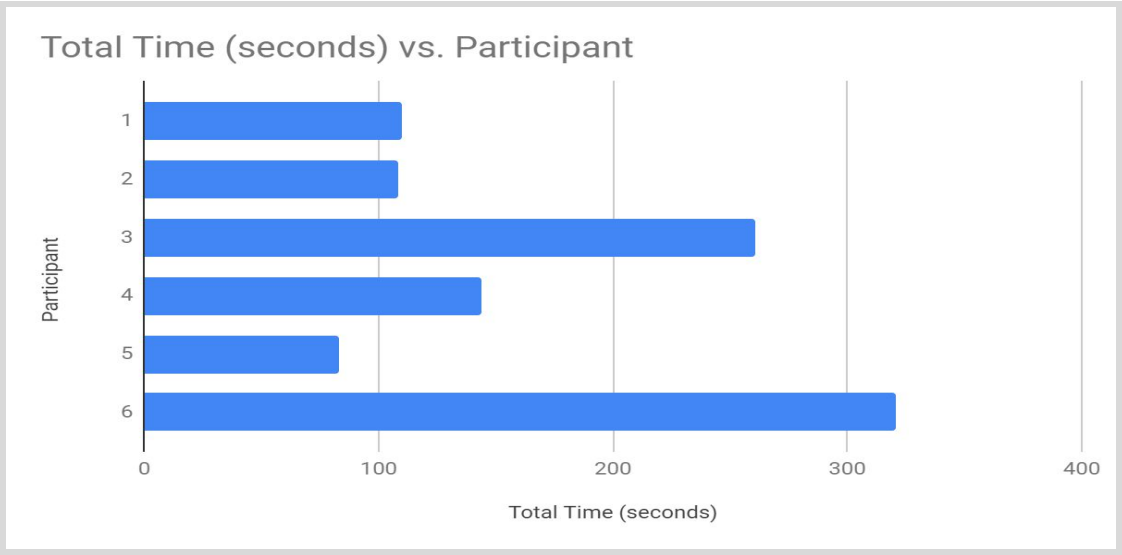
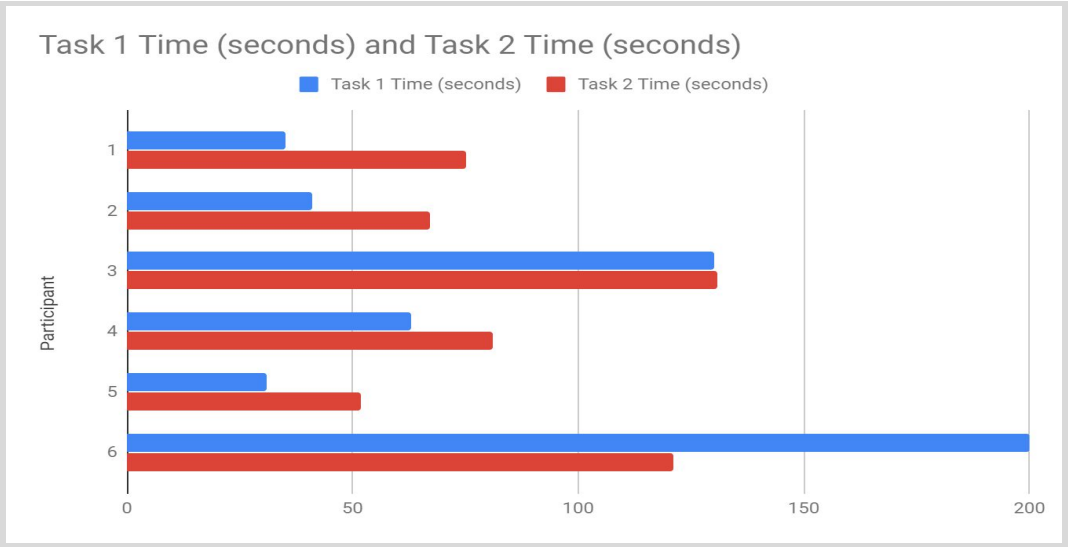
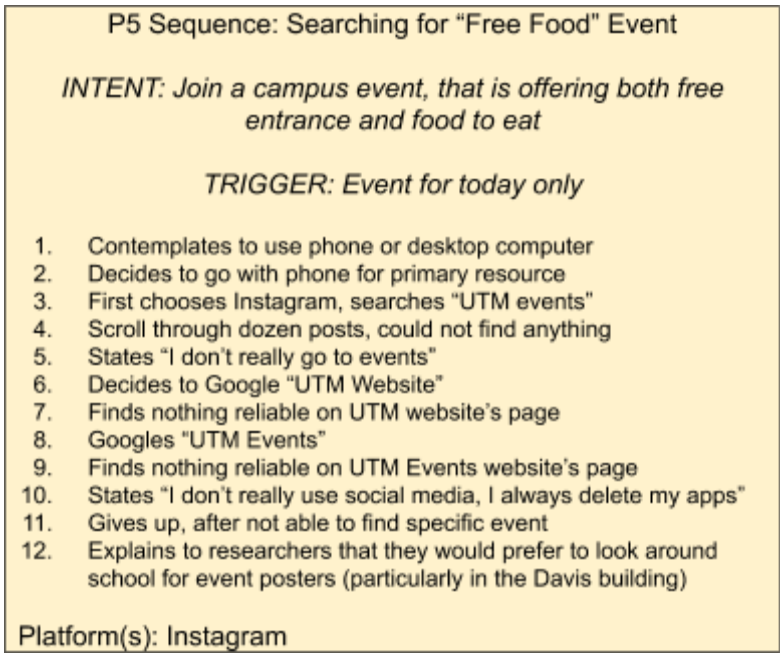


Figure 3b: Bar graph displaying each participants total time per task



A couple other findings in the analysis were that of the six participants, one participant still preferred traditional methods in finding campus events. Looking at *Figure 4 - P5 Sequence: Searching for "Free food" Event*, you can see that the participant would generally still walk around school boards and view. This is important for developing the solution and understanding the target audience. For instance, developing a mobile application would exclude students like this particular participant. Then the seconding finding was only one participant would refer to friends as an outlet to find events.

Figure 4: Sequence model of Participant who uses traditional methods



Takeaways

From the analysis, there are a few takeaways that are important to developing a successful prototype of a solution. Although, the formative study was a small sample size, the takeaways are formed around this study and any additional research would help refine the issues of event finding. With that said, the major takeaways from the analysis are:

- Lack of Motivation
- Students' focus and critical period
- Students' primary resource and service

With these, we can focus on creating proper design requirements that would help improve the experience of finding events on campus. Building off these takeaways, potential design requirements for the prototype are;

- Ease of searching and filtering events

- Incentive system (Gamification)
- Minimal, but captivating design
- Student network connection
- Classmate and friend event suggestions

Each requirement is aimed to help users become more inclined in finding events. The solution is to help students become motivated, and join events that genuinely interest them and create new connections with fellow classmates and similar interests.

Preliminary Design and Justification

In Contextual Inquiry field report and data analysis, we examined the different themes and patterns that were shared across participants. After analysis, we found three prominent themes that should be addressed in the prototype solution. These themes were:

- Lack of motivation
- Participant's focus and critical period
- Participant's primary resource and service

We found that the majority of participants did not have to motivation to search for and/or participate in any events, whether of interest (Task 2) or a specific interest (Task 1). It was important that the prototype implemented a feature that would help increase motivation, like incentives or applying a gamification system.

It was also found that participants would generally lose focus within the first few seconds of seeking events. This observation indicates that the prototype should be concise and deter from irrelevant information to the user. From the study, we were able to understand that participants show loss of interest as they progressively browse events. This is similar to behavioural patterns of Google searching, where it is most common to only view the results of the first page and

subsequent pages are irrelevant to the user. So, for students to participate and explore events, it should be in their similar interests to prevent turnover rate and uninterest.

Lastly, it was found that the most commonly used social media service was Facebook, even though in the post-study questionnaire results we found that the participants regularly used social media services like Twitter, Snapchat, Reddit, Instagram and LinkedIn. This created the problem of participants only finding events that were only entered through Facebook. To help improve the overall experience in finding events is to help eliminate the process of searching numerous services. It should be made convenient and intuitive for the user. We learned that the user should not have to spend majority of time collecting different sites or platforms to search for an event; all the information should collectively be in one hub. This will help eliminate the biases towards certain services and help gain exposure across different platforms and give them a platform to promote their events in a singular hub.

Pain Points

Below are pain points we have discovered in our contextual inquiry, that were developed by our major themes;

- No incentive or motivation to search for and participate in events
- Being unsure of what words to search for
- Too many social media platforms to pick from to search on
- Irrelevant or past/former events clogging up search results
- Taking too long to search for an event

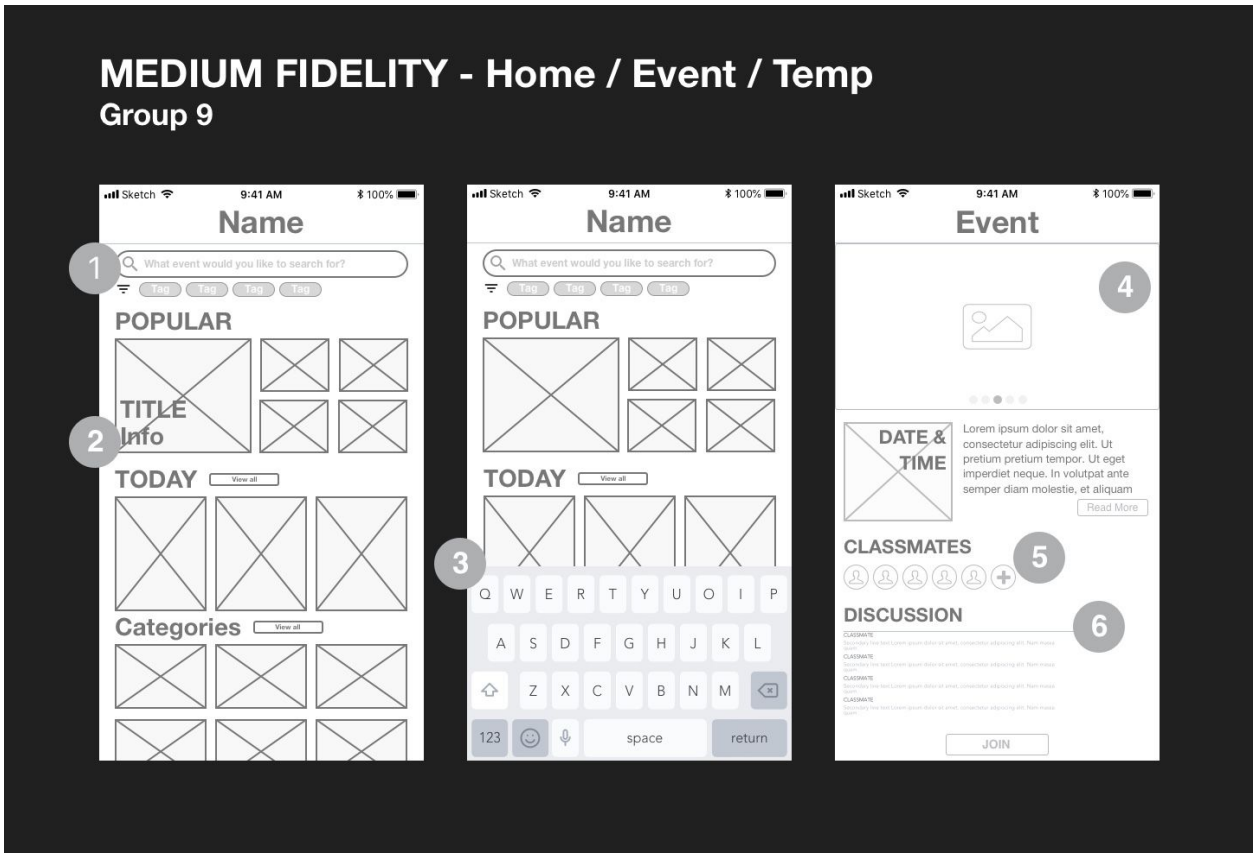
Design Requirements

After going through the contextual inquiry and its data analysis, we developed the following list of design requirements:

- **Incentive system (Gamification)**: users can earn rewards through joining and hosting events - implementing this system could potentially motivate users to become more active in the community, and join more social events. A reward system of badges could incentivize the users to join often in university events. Having different levels of badges and tiers will help set goals for the user, leading to more social activity on campus.
- **Keyword and filtering options**: users are able to specifically search certain criteria based on their interest - giving users predefined popular tags to help narrow down results and eliminate irrelevant interests. Having specifics restrictions like location, price, club/group, friends, or categories to help narrow down the search query.
- **Profile system**: users can create a display showcase of different interests and hobbies. This is to help further develop the incentives by allowing users display badges and push users to participate often in events to acquire rewards. It is also for any social media connections, like school network implementation or Facebook, Instagram or etc. This would also help find classmates with similar interests and who is attending what event.
- **A mobile application**: the majority of the participants from our contextual inquiry used the phone as the primary device in finding events. It makes sense for the platform to be on the most commonly used device, so it can help the majority of our target audience. The design should be a responsive design across various different mobile devices.
- **Card based design** and **curated events feed**: Our study found that the participants were unable to stay focused on finding interesting events. The design of the events should be redesigned in a way where it is minimal yet captivating. Making use of strong visuals and bold titles to deliver enough information to the user while remaining visually appealing. Similarly, the curated events would to help improve the overall experience in finding events. Eliminating irrelevant interests of the user and creating a populated list of events related to liked

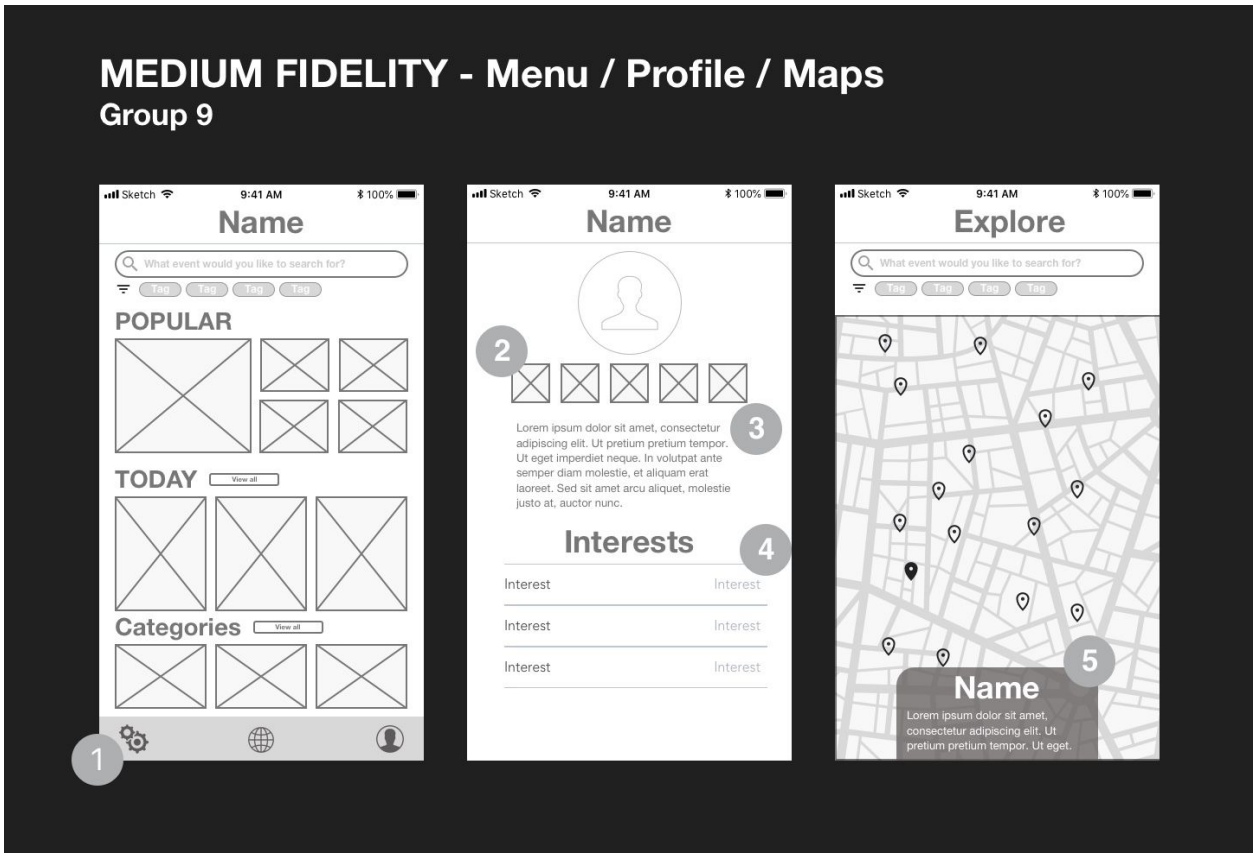
hobbies/interests from a “get-to-know” questionnaire. It should be known that if the list of events are generally of similar interest to the user than there will be more of a likelihood for them to participate and less turnover rate of skipping events.

Medium Fidelity

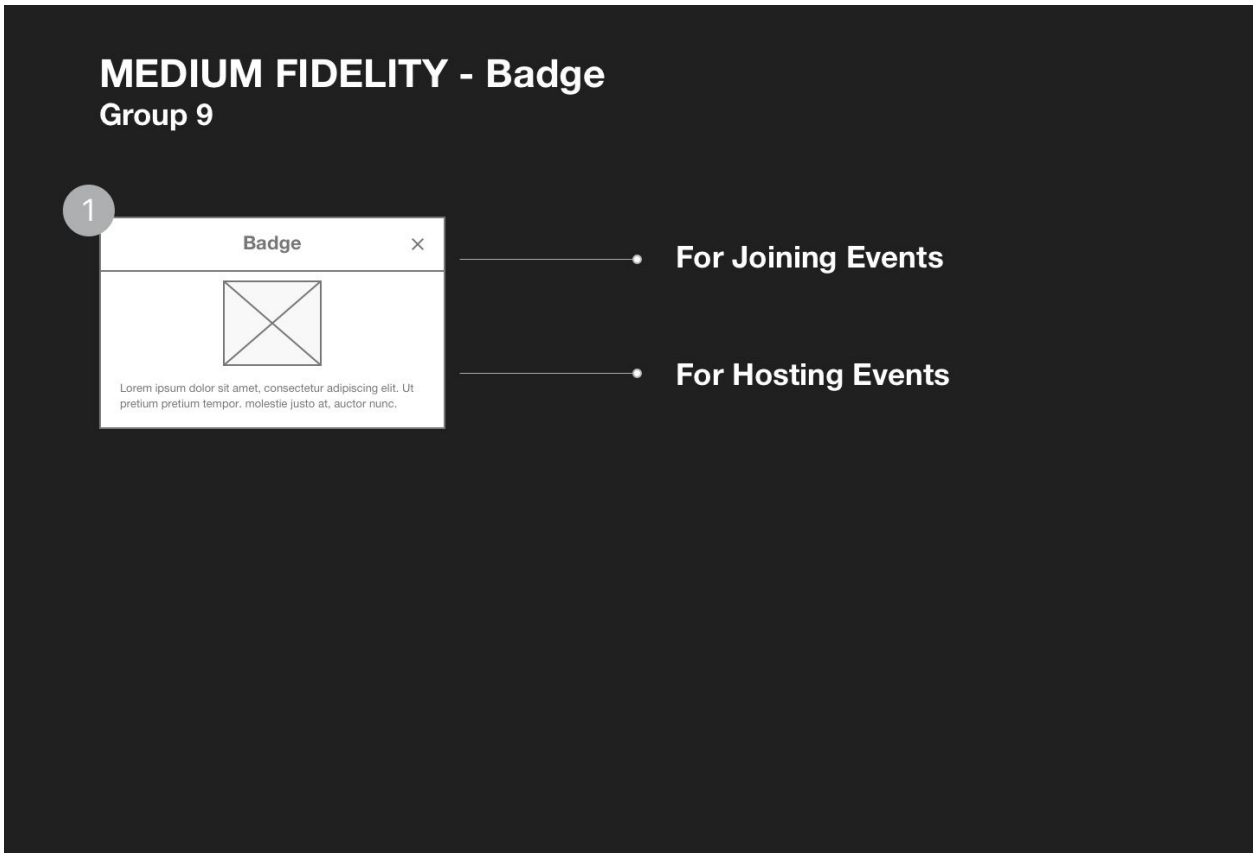


1. **Search and Filter** - A combination of a search and filters help optimize searches for the most relevant results
2. **Event Cards -** Event cards are displayed with each other to indicate to users they can interact with them, with a bold title and brief event info (date, location)
3. **Keyboard prompt -** This will appear when users interact with a function that demands a text input. E.g. Search Bar

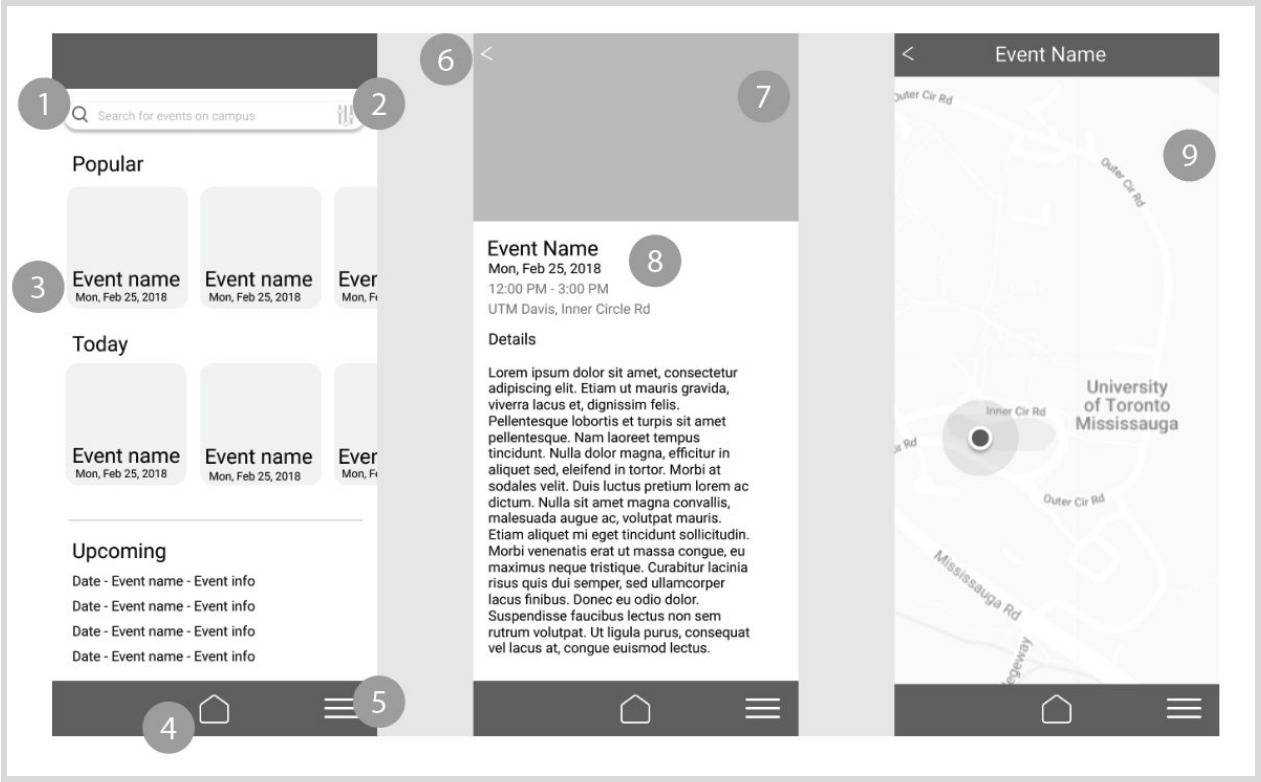
4. **Visual banner (slider) -** The image of the **Event Card** will expand into this visual banner where more relevant images can be browsed by sliding
5. **Attending classmate list -** Profile images to indicate who and if they are attending
6. **Event discussion -** Comments and further information regarding the event can be found here



1. **Global Menu Bar -** This bar changes interfaces to either the Home, Profile, or maps
2. **Profile Badge Display -** Badges indicate various achievements or accomplishments for the user
3. **Profile Bio -** This section allows for other viewers to get to know the user
4. **User Interests and Hobbies -** This is an extension of the bio
5. **Map View -** The map view is a visual alternative to viewing and discovering events through searching



1. **Badges -** Users earn badges through various forms of involvement in events



1. **Search bar -** search for events in this bar
2. **Filter -** tap to filter through types of events
3. **Event card -** basic event info including name of event and date
4. **Home button -** takes back to home page
5. **Settings/more options -** opens up more options for user such as settings, or support
6. **Back button go back a page**
7. **Event graphic/relevant image -** hosts can upload a relevant image for their event
8. **Event details and more info -** more details about the event including time, date, and location
9. **Map view -** The map view shows the location of the event

Participatory Design Protocol

Summary

The participatory design will be conducted on Wednesday, March 13th, 2019 in CCT2150 for the class CCT485. In this formative study, classmates will be the participants to test our low-fidelity design and provide feedback on what they expect in a final product, in terms of both design and functionality. Each experiment will consist of an introduction, low-fidelity analysis, brainstorm, and design/functionality survey.

Procedure

1. **Introduction - Introduce the participant to the study**
    a. "Good afternoon, I am *[Researcher 1]*, and these are my fellow researchers; *[Researcher 2 and 3]*. Today, we will be asking you to test different design and functionality that may be used for our final product, a *Campus Event Finder*.
2. **Consent Form - Ask the participant to fill out the consent form**
    a. *[Researcher 1]* will ask the participant to please review the study's consent form and sign at the bottom.
    b. "Please review this consent form for the Participatory Design study, it will outline how your data will be both used and observed in the duration and post-study.

       If at any point you feel threatened or wish to not pursue any further with the study, you may withdraw at any time. Any data that was collected in the study will be **DESTROYED** and not be used for the final report.

       If you have any further questions, please ask now."

3. **Preliminary Questions - Ask the participant preliminary questions prior to starting the experiment**

a. “We would like to begin by asking a couple of questions in regards to you, is this okay?

Are you currently a member of a student club or group on campus, if yes which one(s)?

If yes, how active are you? 1 being not very active at all to 5 being very active

Which platform do you use to find any social events on campus or outside of campus?”

4. **Task 1 - Begin task 1: Participant reviews the Low-Fidelity prototype**
   - **a.** *[Researcher 1] will provide the participant with a copy of the low-fidelity prototype*
   - **b.** “Please take a couple of minutes to view the low-fidelity prototype that is provided in front of you.

     Can you please indicate what you enjoyed about the low-fidelity prototype?

     [Researcher 2 and 3 take down notes]

     Thank you, can you please indicate what you disliked about the low-fidelity prototype?

     [Researcher 2 and 3 take down notes]

5. **Task 2 - Begin task 2: Participant reviews preferred platform to look for events**
   a. “Please use your primary device and open your preferred social platform to find events

   In the next couple of minutes, please go through the platform you have chosen and find different design and functionality decisions that you **enjoy** as a user.

   [Researcher 2 and 3 take down notes]

In the next couple of minutes, please go through the platform you have chosen and find different design and functionality decisions that you **dislike** as a user.

[Researcher 2 and 3 take down notes]

6. **Task 3 - Begin task 3: Participant will be asked to answer a design/functionality severity survey**
    a. "We will now briefly ask for your opinion on the priority of the designs and functionalities you enjoyed in both task 1 and 2.

    [Participant is given a list of items to order in priority]

    Besides the features that were present in this experiment, do you have any other suggestions that you as a user expect?

    [Researcher 2 and 3 take down notes]

7. **Conclusion - Thank the participant for their time**
    a. "Thank you *[Participant]* for taking the time to join us for our participatory design study. As written in the consent form, your data will be confidential and not be identified in the final product. For compensation, here is *[Cosmin Buck]* for participating in today's study.

    Do you have any final questions before we are finished?"

Participatory Design Report and Analysis

In the participatory design study, we asked participants to help formulate design solutions for our final product implementation. In brief, we got the participants to analyze our proposed wireframe of the event application and then do the same thing but with their preferred platform. After completing both tasks, we asked them to complete a severity survey of the features they saw in both designs. Here is where we were able to discuss their thought process of what designs were enjoyable and were not, whilst using the respective design.

In total, we had 4 participants who helped brainstorm different ideas for the final product. Below you can find the different suggestions upon their analysis of both tasks.

Likes	# of Votes	Dislikes	# of Votes
Bright colors (Visually appealing stimuli)	1	Lack of critical info on cover cards (i.e. Date, Location, Time)	2
Cover images (Thumbnails)	2	Excessive scrolling	1
Mobile application (Portable)	1	Too much information, long and wordy	3
Filter functionality	4	Poorly designed cover photos	2
Search functionality	1	Filter a lot of events, and not finding any of interest	2
Friends attending	1	Random event that is inconvenient, or unrelated (Hosted in another city, etc…)	2
Event manager (schedule)	4	Non-incentives, prizes or food	2
Category section	3	Details within event page	1
Map view	4	Keywords, abbreviations or search acronyms	4
		Displaying interest on profile	4

Analysis

From the listed suggestions, we were able to find important features that we were missing in our implementation but also areas that could be improved in current platforms. Our measurement for

the suggestions were based off number of recurrences in the survey. The number of times the same or similar-like design suggestions was presented, we added it to a tally. If the suggestion was commonly voted amongst the participants, the severity of the design feature is said to be high, where as if it were least voted between the participants, then it's severity is low. Finding the similarities between the participants is a good indication of what is either working or not with the certain design choice.

That being said, we found that the filter system between both tasks were highly recommended from the participants. Meaning it is important that we let our users have refine controls that let them search their desired interests. Also on the analysis of designs that were liked, we found that our map view was highly suggested from each participant. The participants found that map and pin view, is a nice quality of life change than looking at a list view. They also noted that this design is easier for narrowing down your scope, for instance only looking for events at the library or the gym. From one of our participants, they suggested that the map view is also key for showing users current events around them, users would be able to quickly open the map and see which pins are around their location. Similarly, we found that the event manager (Facebook) was highly rated in task 2 of the study. We definitely took this suggestion with high priority because we were missing some sort of event management system in our wireframe design. Thus, it made sense why this design feature was found important across all of our participants because the application revolves around joining events, but they cannot be managed. Some other notable suggestions but not common amongst the participants were; bright colors - eye appealing and "fun" design, friends attending - knowing which classmates are going, and homepage of wireframe - good organization, with popular, upcoming and categories. Many of these suggestions were taken into consideration for our high-fidelity prototype, and further tested.

Similarly, we did the same measurement but for disliked design features in both task 1 and 2. Here we found that users heavily dislike the search functionality not because of the actual design of the search functionality but the idea of what to search. The participants suggested that searching for what their interests are is a hard task, and unsure of what to exactly search for. Different participants suggested maybe having suggested tags, or interests that can help lead users in finding their interest. Other suggestions were prior to starting the application, users can fill out a get-to-know, listing different interests. In which that can help curate a refined feed of interests. We found that all the participants were confused about the interests on profile page in the wireframe. It seem unrelated to the idea of joining events, and more so a social media. Participants suggested having a schedule instead or refined reward system. Besides the two, most of the participants found in task 2 (using their preferred platform) that the information was overwhelming, cluttered and lacking in information. It was suggested to focus on creating an effective, minimal but intuitive event feed page that users will enjoy to browse through. It was pointed out the design could be cards, or list format but this design is crucial to the enjoyment for

the users. Pointing out that if finding an event is unenjoyable and tedious then the overall user experience is going to lack. Lastly, different suggestions like card designs for the home page, removal of unrelated events and event info were all said by different participants that could be redesigned in both wireframes and the preferred platform (Facebook). We use the list of dislikes as a starting point for our high-fidelity by refining the feedback of the dislikes in the wireframe but also incorporate things that were enjoyable in Facebook designs like attending friends and categories.

Takeaways

The main takeaway from this study and report is that we were able to understand what was currently working in our wireframe and find areas that need improvement. Here we were able to eliminate functionality that just not make sense to the participants and in which would not translate well to the average consumer. It was also important to test user's current platforms to find what they particularly like about their design and what does not work. Here we can gain insight on how we can improve their functionality and integrate it into our product. Fixing the mistakes of current platforms and incorporating it into ours will give our application the edge over competitors, especially if the issues are coming directly from their own user base. It will be important to make the suggested critiques from the suggestion survey, so we can test the actual functionality in our high-fidelity prototype.

Focus Group Assessment Protocol

Goals

The goal of the Focus Group study is to measure the efficiency and usability of our proposed application to help students find events on campus. We are measuring the time of completion of each task and will be comparing it to the initial study with Facebook Events. We are also observing to see if the incentives we created will affect the motivation of users selecting certain events over others. We hope to see the application improve the 3 E's: efficiency, ease, and enthusiasm of finding events.

Tasks

Task 1a: (~3 minutes)

> The participant will be asked to log into the Campus Event Finder application. They will then be tasked to search and join a "Drop-In Study Group - Study Session" for the class

CCT485. The participant will check the location, time and friends attending for this event. After looking at the necessary details, the participant will join the event, and subscribe for future information of the event

Task 1b: (~3 minutes)

The participant will be tasked to find the nearest event happening using the map finder function of the application. The participant will then check the details of the event and will then be asked to join the event.

Task 2: (~3 minutes)

The participant just finished their *League of Legends LAN Tourney* event in CCT2150. To gain meaningful reputation, the event hoster is requesting ratings and reviews of attendee's experiences. As bonus, the host is giving away a limited edition UTM eSports Badge to participants who upload a photo or short video to the event page (ie. photo/video taken at the event). Obtain this badge and display it on the user profile.

Procedure

Introduction - Introduce the participant to the study (~30 seconds)

a. "Good afternoon, I am *[Researcher 1]*, and these are my fellow researchers; *[Researcher 2 and 3]*. Today, we will be asking you to test different design and functionality that may be used for our final product, a *Campus Event Finder*. We are focusing on the engagement of the student body and are aiming to improve the student involvement across campus"

Consent Form - Ask the participant to fill out the consent form (~1 minute)

a. *[Researcher 1]* will ask the participant to review the study's consent form and sign at the bottom.
b. "Please review this consent form for the Focus Group study, it will outline how your data will be both used and observed in the duration and post-study.

If at any point you feel you wish to not pursue any further with the study, you may withdraw at any time. Any data that was collected in the study will be **DESTROYED** and not be used for the final report.

If you have any further questions, please ask now."

Task 1a or 1b - Participant will be asked to perform either task (3 minutes)

[Researcher 1] will provide the participant with a copy of the functional prototype.

1a. "Using the event finding application, please search and join a related 'Drop-In Study Group - Study Session' for class CCT485 at 5pm. Make sure there are no conflicts with your schedule and check the event in your profile"

[Researcher 2 and 3 take down notes]

1b. "Using the event finding application, please find the nearest CCT485 study group happening on campus using the map-event finder. Make sure there are no conflicts with your schedule and check the event in your profile"

[Researcher 2 and 3 take down notes]

Task 2 - Participant will asked to perform "Incentive" task (3 minutes)

a. "You just attended the *UTM eSports League of Legends Tourney*. The host is giving away a limited edition UTM eSports Badge to participants who upload a photo or short video to the event page (ie. photo/video taken at the event). Please obtain the UTM eSports badge and display it on your profile

[Researcher 2 and 3 take down notes]

Post-Study Questionnaire - Ask the participant to complete the questionnaire (~5 minutes)

a. "Please refer to the desktop computer and fill out the short Google Survey, asking about the experience of the experiment and the prototype

In of the task, we got you too find an event that is offering a limited badge that can be obtained for your user profile. How did you find the badge system rewarding? Does the badge give you more of a reason to attend events?

Thank you, our goal of our product design is to create an event application that will help students become more involved on the local campus. With integration of a reward system - badges, we look to compensate users for attending or hosting events. We hope to find that when users are able to gain meaningful reputation, it will drive a positive involvement with students."

Conclusion - Thank the participant for their time (~1 minute)

b. "Thank you *[Participant]* for taking the time to join us for our Focus Group study. As written in the consent form, your data will be confidential and not be identified in the final product. For compensation, here is *[Cosmin Buck]* for participating in today's study.

Do you have any final questions before we are finished?"

Focus Group Field Report and Analysis

Some of the main categories of issues we found from the focus group were: functionality, aesthetics, usability, and information. We will go over each specific issue under these categories and the suggestions proposed by users to address these issues.

Functionality

- Filter a lot of events but not finding any of interest
    - *Proposed suggestion*: different categories on main page catering to different interests
    - Including default or suggested categories can help users figure out what they may be interested in since we found through our studies that a lot of the participants weren't even sure what they were looking for.
- Keywords, abbreviations, or search acronyms
    - *Proposed suggestion*: improve on search engine optimization
    - We will improve on the search engine - currently it is case sensitive when searching for certain terms. In the future, we will implement and improve on the search engine optimization. This is a crucial element to our design since it is one of the main points to our event finder app.

Aesthetics

- Poorly designed cover photos
    - *Proposed suggestion*: include a solid or semi-solid bar at the bottom on the cover photos with the event info overlaid so it is easier to read
    - The original design did not have information on the event cover photo. This was an oversight in our design - we did not anticipate the fact that some event hosts may upload photos that do not contain any information about the event or that some may not upload a photo at all. Adding in the a small panel at the bottom of the photo with some basic event info would help users quickly decide if they are able to attend or not, depending on the listed time, date, or location.

Usability

- Excessive scrolling
    - *Proposed suggestion*: include event cover photos where you can scroll horizontally instead of always vertically
    - It can be repetitive to constantly only scroll down. Breaking that repetition with horizontal scrolling in appropriate places can help interrupt that monotony.
- Random event that is inconvenient, unrelated (eg. in another city)
    - *Proposed suggestion*: in settings, user can change the location range of events shown so that they are more relevant
    - Irrelevant events are often found to be annoying to users. Allowing users the option to customize the types of events they see can help to counter this issue. Events that are relevant to users will be more appealing and avoid the frustration of finding a great event that they cannot attend.
- Non-incentives, lack of prizes or food
    - *Proposed suggestion*: add incentives directly to the app with clear information and direction to achieve prizes
    - Implementing incentives directly into the app encourages users to engage and participate more in events on campus. This will increase campus social life overall, benefiting both the campus, clubs, and students.
- Displaying interest on profile
    - *Proposed suggestion*: show what kind of things a user is interested in and display it on the profile
    - Allowing a user to display information about what they are interested in on their profile can lead to meeting more friends with similar interests. This would help increase student engagement and campus social life.

Information

- Lack of critical info on cover cards (ie. date, location, time)
    - *Proposed suggestion*: include important event information on the cover card (ie. date, location, time)
    - Including basic event info would help users quickly decide if they are able to attend or not, depending on the listed time, date, or location.
- Too much information on event page; long and wordy
    - *Proposed suggestion*: make effective use of the space - event information should be clear and concise
    - Clear and concise event information are critical in ensuring users receive the proper and appropriate amount of details about an event. Unnecessary details can be left out to ensure the quality of each event detail is up to standards.
- Lack of details within event page
    - *Proposed suggestion*: make effective use of the space - event information should be clear and concise but not lacking in detail
    - Similarly to "too much information on event page", not enough details can also be the downfall of our app design, especially considering how our app is centered around providing information about events to users.

Affinity Diagram

Main Issues with App Interface			
Functionality	**Aesthetics**	**Usability**	**Information**
Filter a lot of events but not finding any of interest	Poorly designed cover photos	Excessive scrolling	Lack of critical info on cover cards (ie. date, location, time)
Keywords, abbreviations, or search acronyms		Random event that is inconvenient, unrelated (eg. in another city)	Too much information on event page; long and wordy
		Non-incentives,	Lack of details within

		prizes or food	event page
		Displaying interest on profile	

A/B Testing Protocol

Goals

The goal of the A/B Testing is to measure which design functionality would be more preferred on our target audience. Being that our focus of the application is to connect students on local campus by events, we are looking to improve how events are being published and promoted. Our idea is to create an incentivized system or gamification to help persuade students to join more events on campus. The A and B functionality we are testing is a cumulative badge system that rewards users with real-life prizes and a point-level system. We are observing which of these systems will be in the best interest for the students, and improving the social life on campus.

Tasks

Task A: (~3 minutes)

> The participant will be asked to log into the Event Tune. They will then be asked to check their badge progress for the ICCIT Council Reward. They are still short two more events, so they will be asked to join two more events hosted by ICCIT Council, and then claim the reward from the ICCIT Council group page.

Task B: (~3 minutes)

> The participant will be asked to log into Event Tune. They will then be asked to look at their current rank and points accumulated. Then they will be instructed to check the

leaderboard for a regularly scheduled event by UTMSU Council. Then will be asked to check the weekly challenges to earn new points towards leveling.

Procedure

Introduction - Introduce the participant to the study (~30 seconds)

a. "Good afternoon, I am *[Researcher 1]*, and these are my fellow researchers; *[Researcher 2 and 3]*. Today, we will be asking you to test the functionality of our final product, Event Tune. We are focusing on the engagement of the student body and are aiming to improve the student involvement across campus"

Consent Form - Ask the participant to fill out the consent form (~1 minute)

a. *[Researcher 1]* will ask the participant to review the study's consent form and sign at the bottom.
b. "Please review this consent form for the A/B Testing study, it will outline how your data will be both used and observed in the duration and post-study.

If at any point you feel you wish to not pursue any further with the study, you may withdraw at any time. Any data that was collected in the study will be **DESTROYED** and not be used for the final report.

If you have any further questions, please ask now."

Task A - Participant will be asked to test badge system + incentive (3 minutes)

[Researcher 1] will provide the participant with a copy of the functional prototype.

a. "Using Event Tune, please log into the application and find the ICCIT Council group page. Look at your progress for the next reward you are available for and

join events to obtain it. Unlock your reward through the group page and find the reward on your profile."

[Researcher 2 and 3 take down notes]

Task B - Participant will asked to test point system + ranks (3 minutes)

a. "You have attended numerous events using Event Tune, and you want to check your rank. Go to profile and see your progress for your current rank and points accumulated. You go to UTMSU events often, please check the UTMSU group page and check the event leaderboard. Please finish one of the weekly challenges to obtain more points"

[Researcher 2 and 3 take down notes]

Post-Study Semi-Structured Interview - Interview the Participant with a couple of question (~5 minutes)

a. "In the task we just got you to do above, we asked you to use Event Tune's reward system. You were able to briefly see the opportunities the rewards provide and how to get them.

How did you find the implementation of the reward system we have integrated into Event Tune?

[Participant Answers]

Was there anything missing from the reward system that you expected?

[Participant Answers]

Do you see the reward system shown in Event Tune being intriguing to the student body? Improving the student-event activity on campus?"

[Participant Answers]

Conclusion - Thank the participant for their time (~1 minute)

b. "Thank you *[Participant]* for taking the time to join us for our A/B Testing. As written in the consent form, your data will be confidential and not be identified in the final product. For compensation, here is *[Cosmin Buck]* for participating in today's study.

Do you have any final questions before we are finished?"

A/B Testing Field Report and Analysis

The A/B testing was performed with 10 participants that are students at the University of Toronto Mississauga. With this formative study, we had 5 participants partake in each of the tests. The studies main goal was to identify user motivations when handling our reward systems, with the A/B tests we had two systems to test out whos details will be outlined below. The study overall offered key insights to user motivations and habits when operating through the rewards systems and the overall design of the application. There were 2 main pain points that were identified with each participant, the first of which is their natural tendency to navigate through the use of the hamburger icon to the home page, and the second would be their confusion regarding the placement of the search function. These identified pain points and the conclusive results of the A/B testing will help further develop our final design.

Of the 5 participants from each testing session, the majority people from each participant group all found themselves navigating through the application through the hamburger icon rather than the fixed menu bar at the bottom of the app screen. Task A and B both required navigation to the profile which required users to open up the hamburger menu, the menu however also offered users the option to navigate to the home screen which ultimately became the participants go to option to reset their workflow. Another common pain point amongst participants was the confusion regarding the search function, this was mainly due to us using a filter icon rather than the generic search icon that is found on any other application.

Figure 1: A/B Post Test Survey Q1

On a scale from 1 - 5 how incentivizing is our rewards system for your interest in finding and participating in events?

Participant	Badges	Points
1	4	4
2	4	4
3	4	3
4	5	3
5	4	3

Figure 2: A/B Post Test Survey Q2

On a scale from 1-5 how likely do you think student-event engagement would improve on campus using our application?

Participant	Badges	Points
1	4	4
2	4	3
3	4	4
4	4	3

5	4	3

Due to the nature of A/B testing and being limited to 10 participants in total there being non-ordinal, we will be using the Friedman test to calculate whether or not the likert data presented in Figures 1 and 2 have any significance in terms of results.

Calculating the data collected from Q1 of the survey, we began by making significance level of $\alpha = 0.05$ and plugging in sum of Ranks Badges (8.5) and Ranks Points (6.5) into the Friedman's Test and calculated the p-value to be .37109 which is not significant at $p < 0.05$. This concludes a null hypothesis which is unfortunate as this means that there is no conclusive evidence as to which incentive system is statistically better. For Q2 of the survey we did a similar approach with $\alpha = 0.05$ and plugging the Ranks Badges (9) and Ranks Points (6) into the test once again. The calculated p-value this time was .17971 which was once again no significant at $p < 0.05$. Concluding another null hypothesis meaning that both surveys were unfruitful in terms of statistical confidence.

Despite no statistical confidence within our tests, the non significant returns we have been receiving are inconclusive due to the nature of non-parametric tests with a small sample size. Going forward we need further research regarding the users feelings and opinions between the two reward systems. However, we have reason to believe that our badge system is more effective than our points system due to prior research regarding the intricacies and nature of the two systems.

With that being said, we know a reward based system and or incentives are very influential to the user base because of prior research that has been done. Creating incentives that rewards users for becoming more active and interacting with the application is known to be successful in terms of

creating a positive growth in user engagement. Research done by Professor Ashton Anderson from University of Toronto - *Steering User Behaviour with Badges*, has shown the positive effects when integrating reward-like systems into user-interaction. Again as mentioned above, testing on larger sample sizes and new participants (unexposed to previous tests), I think we would find results proving that either of our proposed reward system would be beneficial in improving student engagement with social events amongst campus.

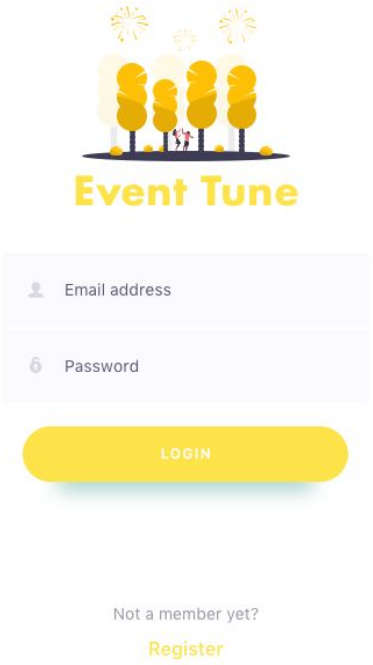
Professor Ashton Anderson - Steering User Behavior with Badges:

http://www.cs.toronto.edu/~ashton/pubs/www-badges.pdf

Final Design

After all the research, and formative studies that was conducted. It all leads to our final product which we have called Event Tune. After building upon feedback after each design study, we were able to refine the issues into a working mockup. We wanted to make sure over the course of the project, we remained focus on the improvement of student involvement around the university campus. So, while designing different iterations and testing current platforms, we put priority on implementing incentives for student engagement. As mentioned above, A/B testing was our last study to compare the preferred reward system that would be integrated into the final product. It was evident that the users preferred the badge system and as you read further, you will notice that our final product has integrated the badge system. So in this section, we present our final product Event Tune, and its key features.

Login

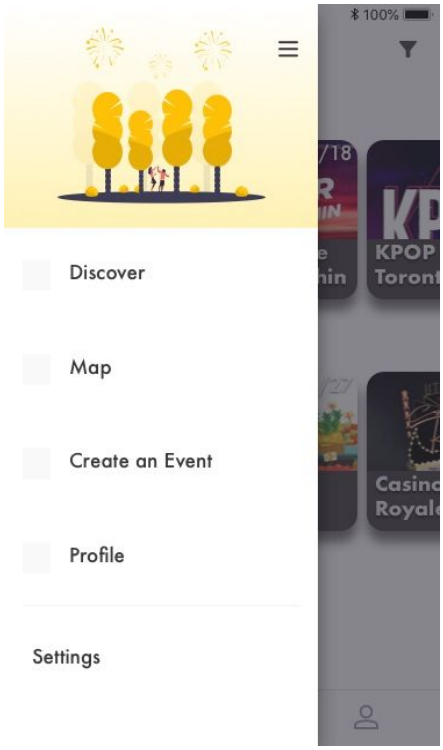


The login is a very minimal page that users are asked if they have not logged into the application before or non-registered.

The registration page would be identical to login but adding confirmation to both fields seen, and name request.

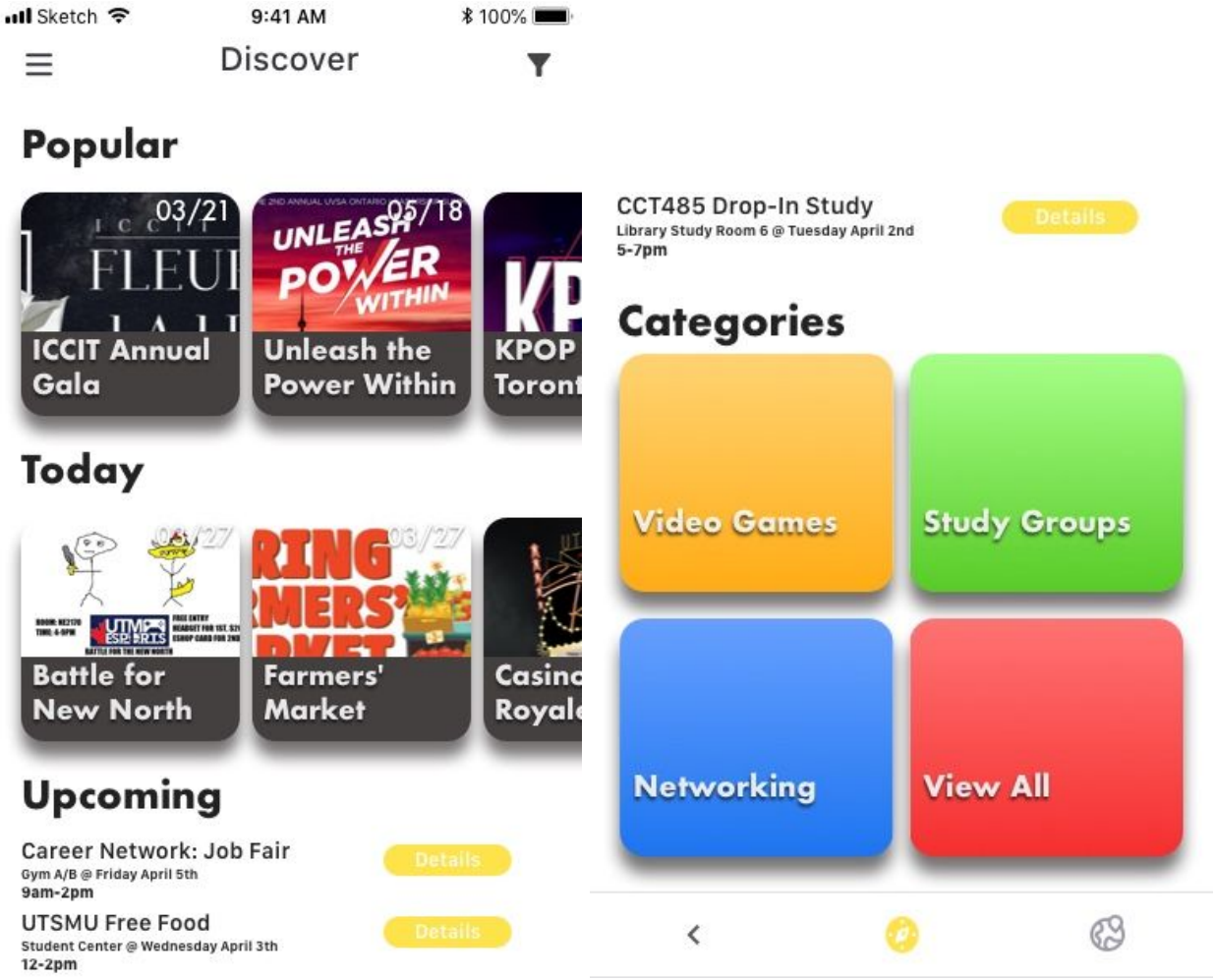
The main color you will see from here on out is the bright distinctive yellow. We aimed to create a lighter feel to the application, and yellow is an uplifting color unlike darker shades. We hope that the brighter color is more visually appealing to the users (Although, dark mode users will not like this!)

Menu



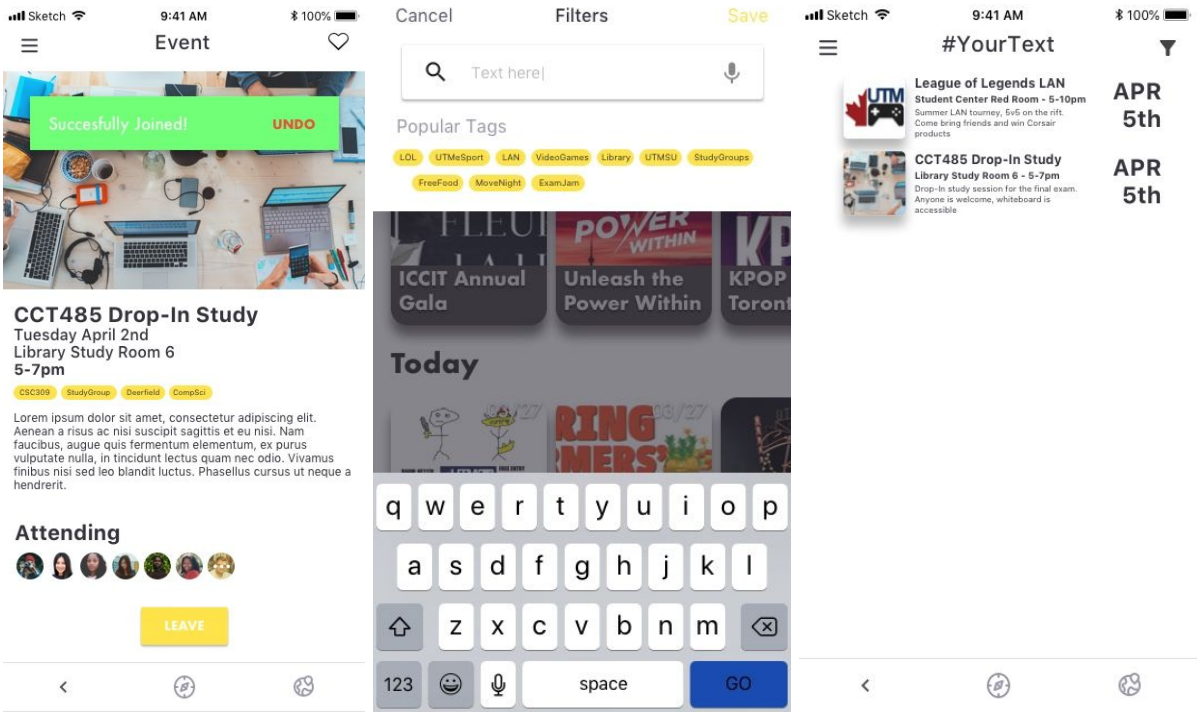
The menu is a simple slide to view, that is available on all screens. It is important to give users control in which page to navigate too. We did not want users to become stuck on any given page, so we wanted to implement a navigation menu that lets the user access each of the application's functionality from one click.

Discover



The discover page is the main page the user will see while using the application. We took into consideration to make the page visual-centric and split into different sections. Here we implemented one of our suggestions from the participatory design - categories from Facebook. It is important that we let users have a choice in filtering their content. We really wanted to focus on letting users explore their interests but not overwhelm them with unrelated information. We had 3 distinct categories that we thought were important to “events”. Being it is an explore page, these sections help create a broad scope of the potential events users can join, but also remain under a particular range (i.e. Popular amongst students, events for only today). Again, the main focus of the page is for users to become interested in reading into the events, so the thumbnail image alongside bolded titles and dates are used to be minimal but appealing designs. In which hopefully illustrates brief information of the hosted event.

Event Page & Search

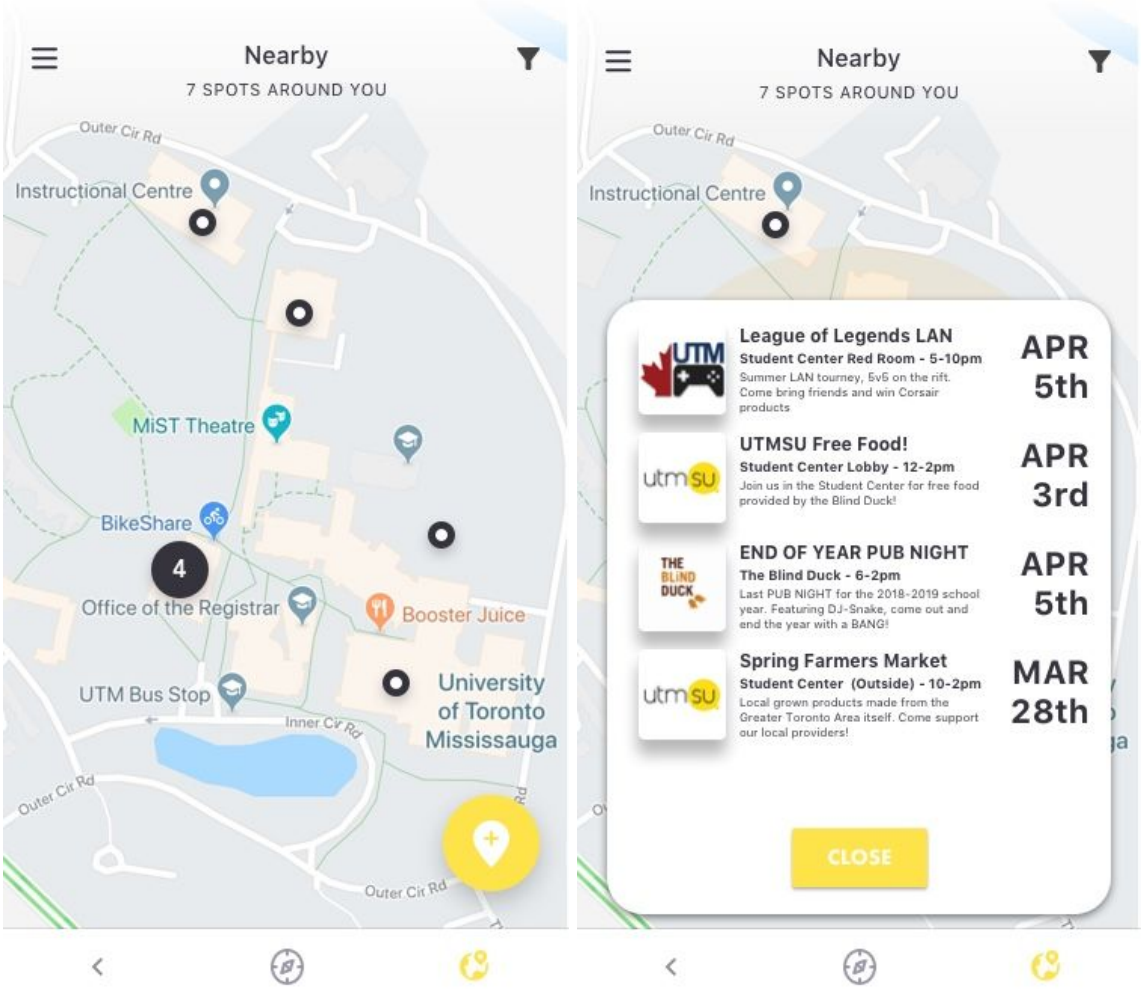


The event page shows details about the event: title of event, date, location, time, description, tags associated, and who is attending. It is organized top-down so that the user's eyes naturally flow to the bottom of the page.

Our search and filter function allows users to find exactly their interest they are looking for. If they are unsure, we implemented a feature called popular tags, in which shows the latest search tags that the community has been using.

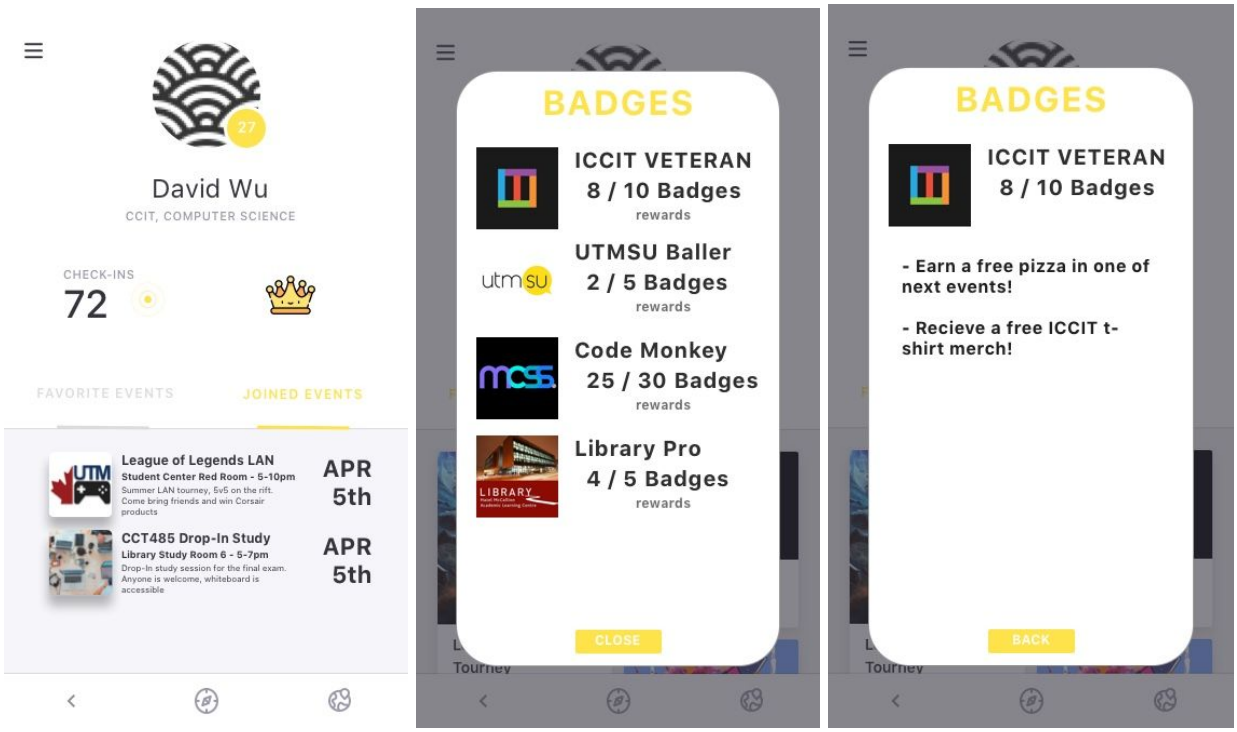
After the search, results are narrowed and become refined to their search query. This view utilizes both images and list format, focusing on delivering the critical information to user without having to click into the event to find what it is about.

Map View



The map view is a fairly simple Google map integration. Here you will be able to quickly see pins (events) that are currently around you. Pins can stack depending on how events are at that location. This way is superior to finding events local to the users exact location, rather than searching for the location in the search results. Similarly, you will be able to filter results from the map view, only displaying certain tags and etc...

Profile & Badges



Our main feature in Event Tune is the profile system, which we have integrated badges into. The profile displays simple information like your currently joined events, favourited events and number of event check-ins. Most importantly, it gives user access to their badge progress screen. We found that badges were the most favourable incentive when trying to get users to join events. Here users can earn badges depending on the different group events they had join previously. Each group that signs up will offer different vouchers and gifts as incentives for joining their events around campus. Users can track their progress, and redeem their gifts or vouchers through this screen.

Closing Thoughts

We believe our application can definitely be more refined for future work. Additional research and studies will help justify why incentives and reward-like systems will affect user behavior in a positive manor. Unfortunately, due to small sample sizes and maybe repetitive participants, we were getting the same answers. Our final design, really wanted to focus on creating an incentive system and we believe badges alongside with vouchers and gifts would create a positive influence amongst student engagement. Besides the incentives, the design itself is event oriented and does not become overwhelming for new users. Event Tune aims to help make the process of

finding events enjoyable, by suggesting liked interests from survey and popular among students. Most importantly, we hope that the badges are a big selling point, for students joining events.

Appendix

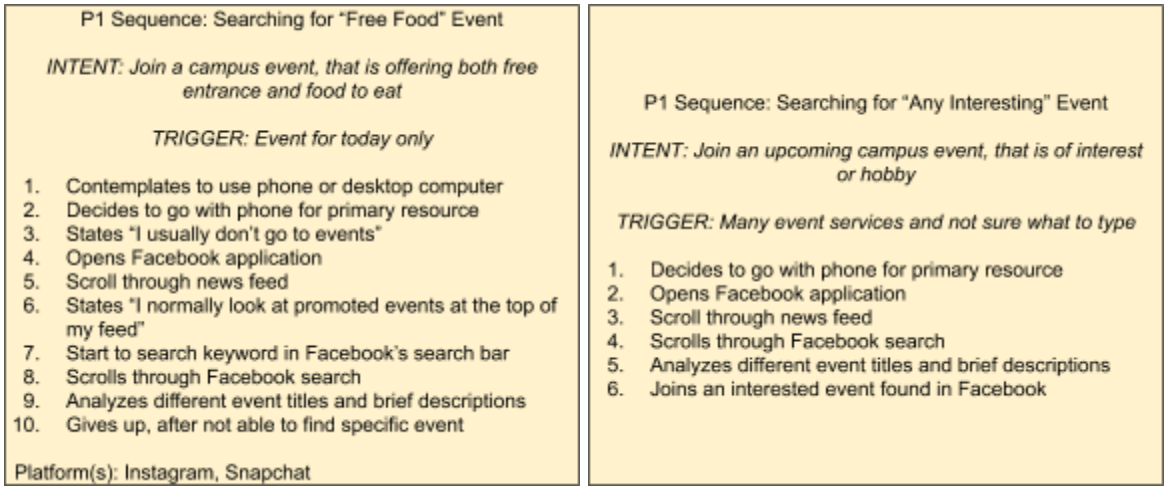
Please refer to the Google Drive link below that contains the Studio Transcript and Contextual Inquiry Protocol:

https://drive.google.com/open?id=1uJBxV0UWLftZvsgBTX0-OrEndQVBZqPD

Please refer to the Google Survey link below to view Post-Study Questionnaire questions:

https://docs.google.com/forms/d/1iCoNXg5Ge8cVfTOQ6hKuflChb4-YmnGZ70p0jteEu7I/edit#responses

Sequence Models for each participant:



P2 Sequence: Searching for "Free Food" Event

INTENT: Join a campus event, that is offering both free entrance and food to eat

TRIGGER: Event for today only

1. Contemplates to use phone or desktop computer
2. Decides to go with phone for primary resource
3. Googles student center (Thinking it would be the most reliable source)
4. Browses student center website
5. Goes to Events page
6. Scrolls through past and upcoming events
7. Finds a resourceful link, and read into details
8. Decides event meets the criteria of free food, and selects it for the task

Platform(s): Facebook, Twitter, Instagram, Reddit

P2 Sequence: Searching for "Any Interesting" Event

NTENT: Join an upcoming campus event, that is of interest or hobby

TRIGGER: Many event services and not sure what to type

1. Decides to go with phone for primary resource
2. Searches "UTM eSports" in Google
3. Redirected to Facebook group
4. Browse recent posts in group feed
5. Looks for upcoming events (Usually looking at the most recent posts)
6. Decides to give up - after not finding an upcoming event after the initial scroll
7. Suggests that he will ask his friends and peers for any events

P3 Sequence: Searching for "Free Food" Event

INTENT: Join a campus event, that is offering both free entrance and food to eat

TRIGGER: Event for today only

1. Contemplates to use phone or desktop computer
2. Decides to go with phone for primary resource
3. Decides to use Facebook events service
4. Opens Facebook "Events" built into Facebook
5. Look in upcoming events and browse through list
6. Uses previous knowledge of events, to help determine an adequate event for free food
7. Looks into Career Fair event based on previous experience
8. Read into detailed description
9. Join the event

Platform(s): Facebook, Instagram, Snapchat

P3 Sequence: Searching for "Any Interesting" Event

INTENT: Join an upcoming campus event, that is of interest or hobby

TRIGGER: Many event services and not sure what to type

1. Contemplates to use phone or desktop computer
2. Decides to go with phone for primary resource
   Decides to go with Facebook "Events"
3. Opens Facebook "Events" built into Facebook
4. Decides to look into DEM related events based on participant interest
5. Compares different factors across events (Price, Location, etc..)
6. Relies on title and brief description outlining the event
7. Clicks event, to read into further detailed description
8. Decides to select interested event

P4 Sequence: Searching for "Free Food" Event

INTENT: Join a campus event, that is offering both free entrance and food to eat

TRIGGER: Event for today only

1. Contemplates to use phone or desktop computer
2. Decides to go with computer for primary resource
3. Uses Google to search for Facebook UTM
4. Opens Facebook UTM page
5. Browses to Events page
6. Quickly browses through populated list
7. Clicks on various events and read into detailed description
8. Selects most adequate event

Platform(s): Instagram, Facebook, Snapchat

P4 Sequence: Searching for "Free Food" Event

INTENT: Join an upcoming campus event, that is of interest or hobby

TRIGGER: Many event services and not sure what to type

1. States "I usually don't go to events"
2. Opens Facebook UTM page
3. Go to Events tab
4. Browse populated list of events
5. Read into different events and join most interesting one

P5 Sequence: Searching for "Free Food" Event

INTENT: Join a campus event, that is offering both free entrance and food to eat

TRIGGER: Event for today only

1. Contemplates to use phone or desktop computer
2. Decides to go with phone for primary resource
3. First chooses Instagram
4. Scroll through dozen posts, could not find anything
5. States "I don't really go to events"
6. Decides to Google UTM Website
7. Finds nothing reliable on UTM website's page
8. Googles UTM Events
9. Finds nothing reliable on UTM Events website's page
10. States "Doesn't really use social media"
11. Gives up, after not able to find specific event
12. Suggests, that they would look around school for event posters (Particularly Davis building)

Platform(s): Instagram

P5 Sequence: Searching for "Free Food" Event

INTENT: Join a campus event, that is offering both free entrance and food to eat

TRIGGER: Event for today only

1. Contemplates to use phone or desktop computer
2. Decides to go with phone for primary resource
3. First chooses Instagram, searches "UTM events"
4. Scroll through dozen posts, could not find anything
5. States "I don't really go to events"
6. Decides to Google "UTM Website"
7. Finds nothing reliable on UTM website's page
8. Googles "UTM Events"
9. Finds nothing reliable on UTM Events website's page
10. States "I don't really use social media, I always delete my apps"
11. Gives up, after not able to find specific event
12. Explains to researchers that they would prefer to look around school for event posters (particularly in the Davis building)

Platform(s): Instagram

P6 Sequence: Searching for "Free Food" Event

INTENT: Join an upcoming campus event, that is of interest or hobby

TRIGGER: Many event services and not sure what to type

1. Contemplates to use phone or desktop computer
2. Decides to go with phone for primary resource
3. Opens Facebook application
4. Searches "ACCEPTED UTM"groups
5. Scrolls down through recent posts
6. Selects an interesting upcoming event on group page

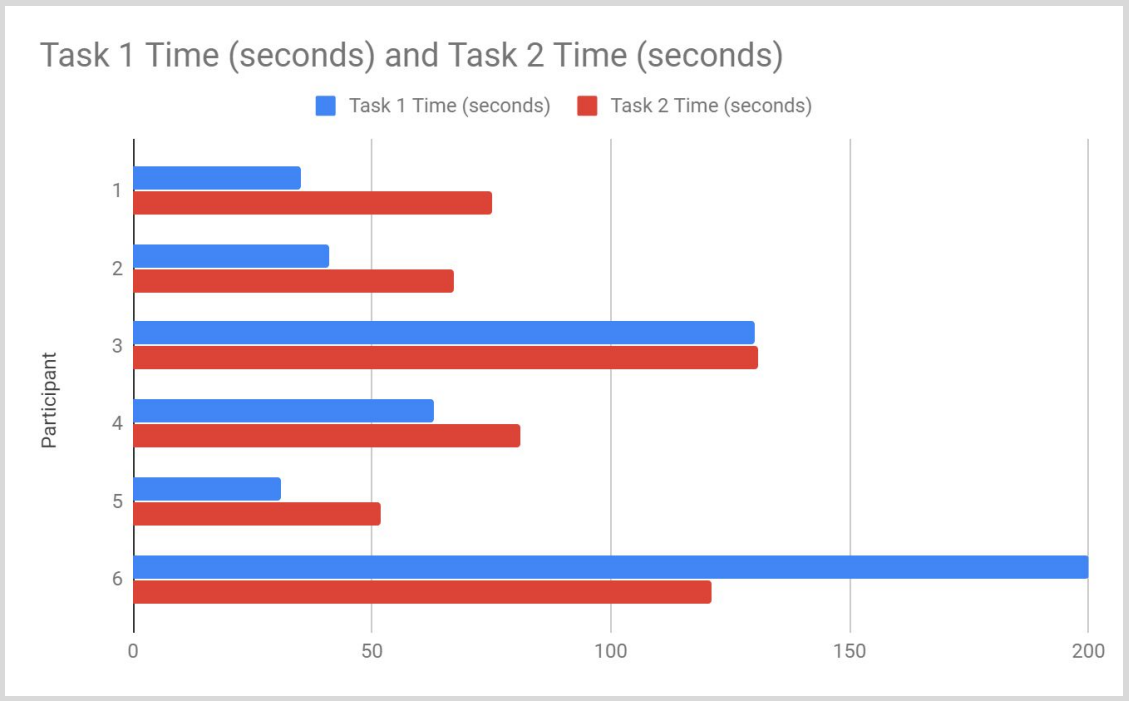
P6 Sequence: Searching for "Free Food" Event

INTENT: Join an upcoming campus event, that is of interest or hobby

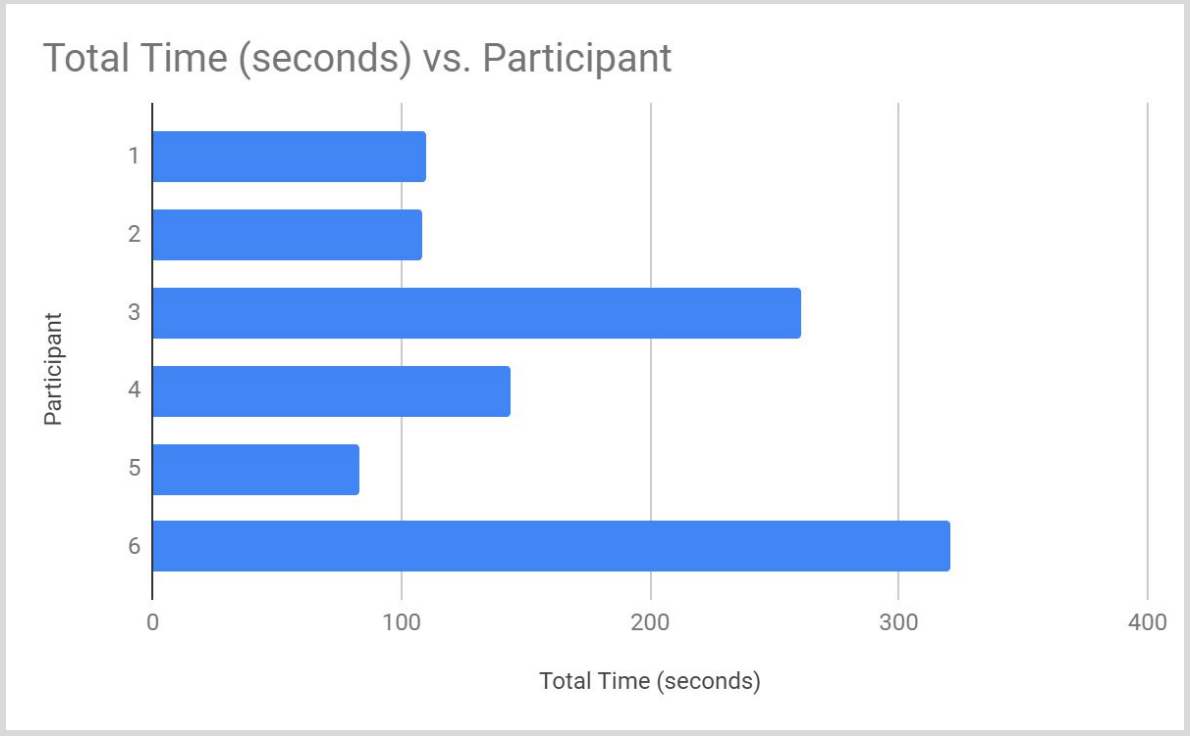
TRIGGER: Many event services and not sure what to type

1. Contemplates to use phone or desktop computer
2. Decides to go with phone for primary resource
3. Opens Facebook application
4. Search ACCEPTED groups
5. Browse through recent posts
6. Join any interesting upcoming event on group page

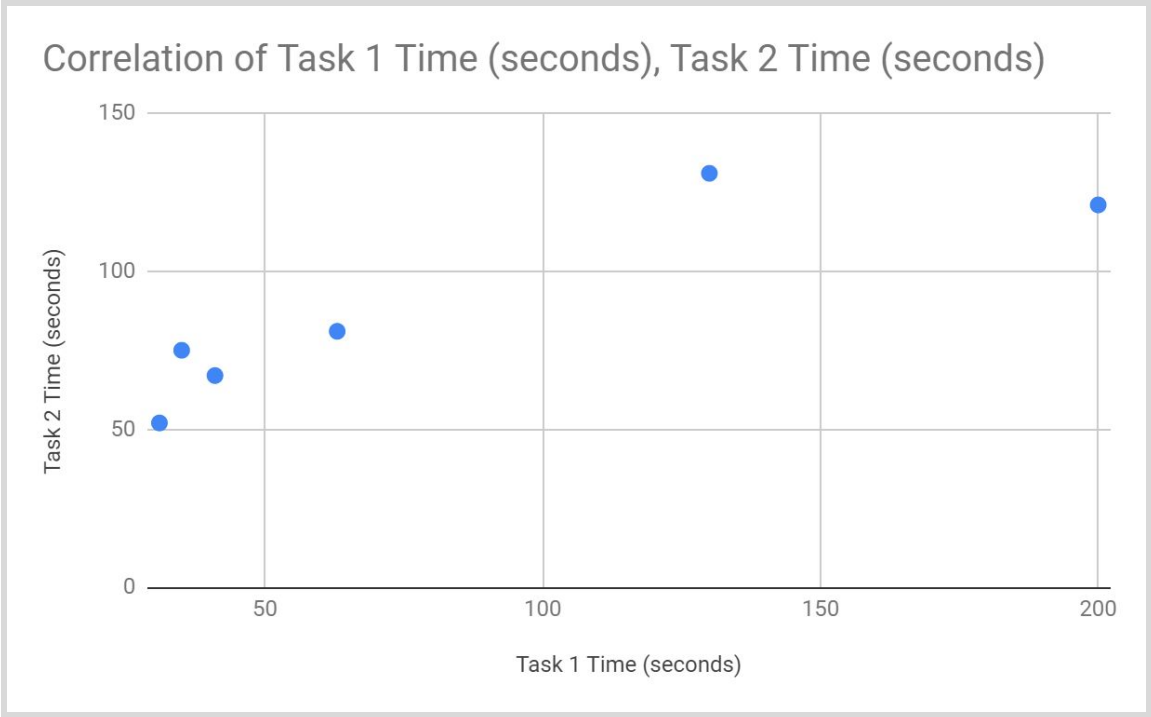
Graphs and Charts for visual data representation:



Comparison of task 1 and task 2 times between participants. Notice how 5 of the 6 participants spent more time on task 2.



Comparison of total time spent on both tasks by each participant. Participants 3 and 6 were the only ones who are active members of a club and also took the most time on the tasks.



A generally positive correlation of time spent on each task.

Google Survey - Focus Group Assessment Post-Study Questionnaire

Please refer to the Google Survey link below for a link to the post-study questionnaire:

https://goo.gl/forms/rwBQ6PjpdEav3Ai43

Please refer to the Google Drive link below for a link to the A/B and Focus group transcripts:

https://drive.google.com/drive/folders/1CVZjTytW9dNg8naJUOTTH7hq8Y50il4B?usp=sharing