A8

CSC318
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Equitech

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Executive Summary

In this research study, we were testing the usability of our high-fidelity prototype called "equitech". Our prototype was created on Atomic.io and models a web application that allows users to search for organizations and volunteer positions based on their personal preferences.

This research study consisted of user interviews with **six participants** with ages ranging between **18 - 23**. They were asked interview questions, before and after viewing the prototype, based on their interests in using the application and their reactions based on their experience with our prototype. Participants were also given **3-5 tasks** to complete from our list of tasks in our research instruments and proper procedure was followed in terms of providing consent forms and providing a research protocol.

The average **System Usability Scale** (SUS) score between the participants was **88.89%** and the average of the **Task Analysis** results was **85.42%**. Both of these numbers indicate a positive response towards the prototype.

Throughout this research study, we found that users generally had a clear understanding of what our service (equitech) provides. There was positive feedback about the high level purpose of our features such as creating an account and searching.

Most of the confusion that users had with the prototype was relating to more specific aspects of the prototype that can be fixed. These challenges were not connected to the high level flow of the application rather the specific functionality of certain buttons.

Research Method

Users were asked to complete a series of tasks on the prototype in order to test out all the major features of the prototype. They were provided minimal help to complete a task in case any confusion occurs. Assessments were made on how efficiently a user completes a series of tasks. The usability testing at all times consisted of two people from our team- one interacting with the participant and the other making observations and collecting data. Data collected consisted of how effectively a user was able to complete a task on a scale of Success(S), Partial Success(PS) and Failure(F). Additional notes were made on each task in which the participant had Partial Success/Failure which included details of what went wrong in a particular task. Participants were recruited via social media and also through approaching students at various locations at the University of Toronto St. George campus.

The tasks completed by the participants first started by testing out features relating to a user profile. This involved signing up to the application, entering relevant information and as a result create an account. Once the participant set up an account, they were asked to edit profile information. The second half of the tasks involved testing the search features of the Equitech prototype. Participants were asked to search for both organizations and volunteering positions and in the process also test out the messaging service.

Analysis on the data involved cross referencing the data collected with the screen capturing and the audio recordings. Further analysis on the data involved building graphs based on interesting patterns found during the testing. The data collected also assisted in determining how effective the prototype was for a particular participant.

Participant Demographics Summary

When researching the problem space and diving deeper into the target population, we found 2 target audiences. From observations in the volunteer sector we found that one of the largest target audiences, that was interested in volunteering, was the age group between 35 and 44. From questionnaires and interviews we found another large age group is between the ages of 18 to 25. Using this information we thought it best to find participants between the ages of 18 to 25 because of accessibility and also they are are a bit more active in the online community. We actively tried to find participants that fit this description while also those who are looking or will eventually look for volunteer opportunities.

We managed to test a total of 6 participants. The average age of all participants is 20.33 and the median was 20. There were 5 men and 1 woman that were tested and they all currently go to the university of toronto. Out of the 6 of them there was 1 first year student, and 5 third year students. Our goal, when we tested these individuals, was see if our target audience likes the platform and will use it in the future. Many of the participants were not actively looking for volunteering opportunities, and in fact only 1 individual is actively looking.

However, 5 out of 6 participants are already committed to other causes, or interested in volunteer causes. All 6 have had previous volunteer experience . Because of this, we are confident that the revelations that we have discovered are reflectant of the entire target population, with the exception of lack of women participants .

Findings and Design Implications

The simplicity of the design is what many users seemed to like. The interface wasn't hard to understand and getting to the end goal of applying to be a volunteer was easy. Many, if not all users, said they would use the interface because of the ease of use.

The general feedback for Sign Up was positive. The participants found that the information they were asked to provide was relevant. One user suggested that we add educational background as a field in their profile. However, we decided that for a Minimum Viable Product and to cater to people who also do not have higher education (high school students) we would not add this field.

Users found the profile related pages difficult to navigate due to the lack of back buttons. Furthermore, some users did not notice the "Save changes" button at the form when they were asked to edit their profile. In the search functionality, an issue the users faced was that they were not able to switch between searching for organization pages and position pages. The mode switching tab was not noticeable near the search bar.

MAIN CHALLENGES

Note: we interpret the GOOD severity rating as meaning that the challenge is not relevant to our research findings.

Number	Severity (HIGH, MEDIUM, LOW, or GOOD)	Page(s)	Challenge Description	Solution
1	MEDIUM	Profile edit	When making a change to their profile, once users had completed the change they would click "next" many times until they exited the profile page.	Add a "Finish" button that takes the users back to the home screen.
2	GOOD	Search	Users often attempted to use the search bar as if it was	N/A This is a limitation of the prototyping

			functional, and needed to be directed to use the filters.	software.
3	HIGH	Search	Users often did not notice the Positions/Organizations toggle button, which made them search for the wrong results during testing.	Add the current mode as large text at the top of the search page, and add a 'switch modes'
4	Low	Sign Up	A couple Users weren't sure what to put in personal bio. They didn't know what they should enter and what it will be used for	Add in small text under personal bio "a brief description of yourself that organizations can see. Any additional information that you would want organizations to know can be added".

Challenge #1

Before:

After:

Comments:
We added a Finish button on the side of the screen that takes the user to the home page. Also, we removed the Next button from the final profile page since it does the same action as the Finish button. The other Next buttons remain.

Challenge #2

Before:
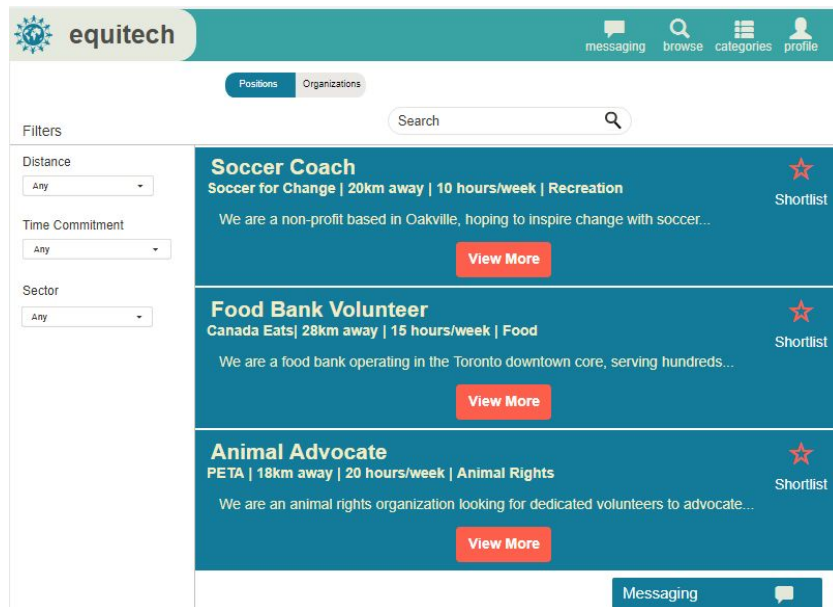
After:
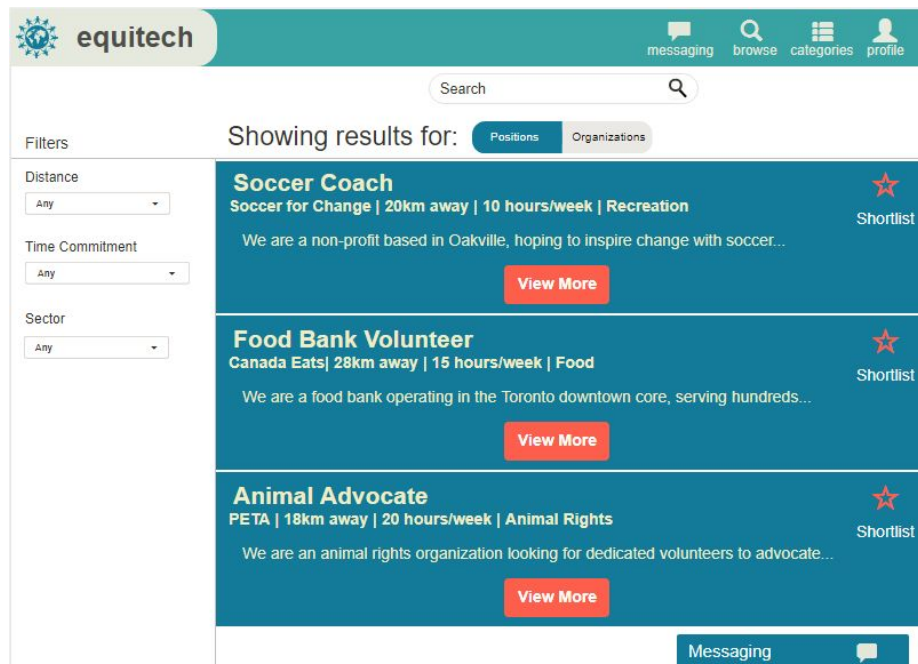
Comments:
We made the toggle button larger, changed the position, and added some text to further clarify what the button does.

Challenge #3

BEFORE:
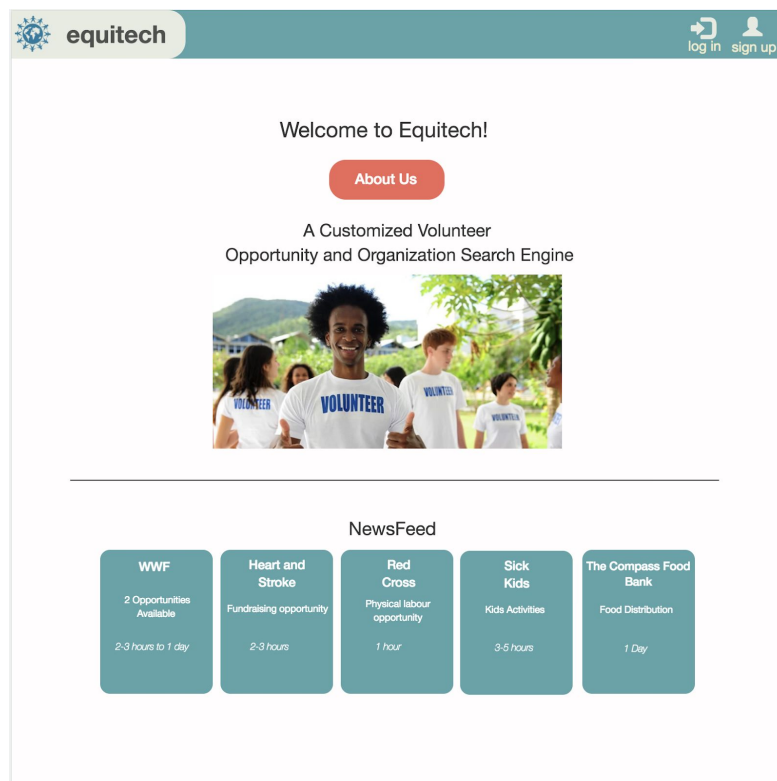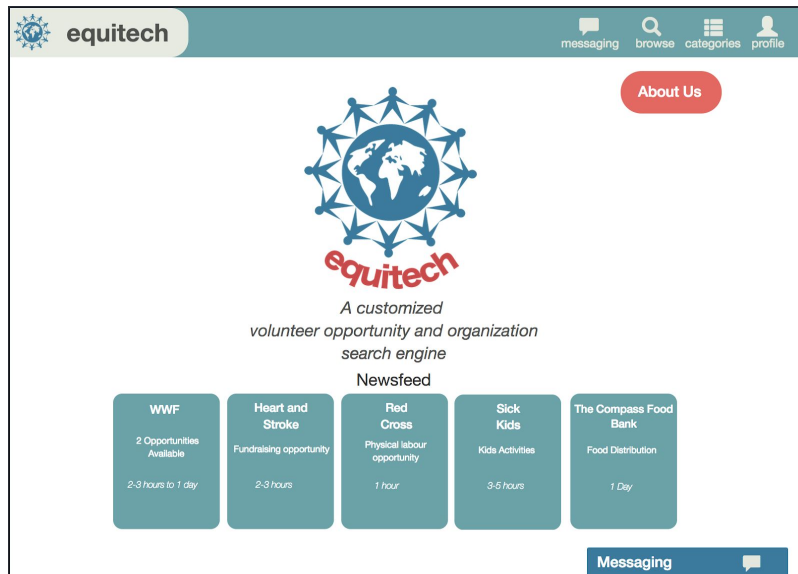
AFTER:
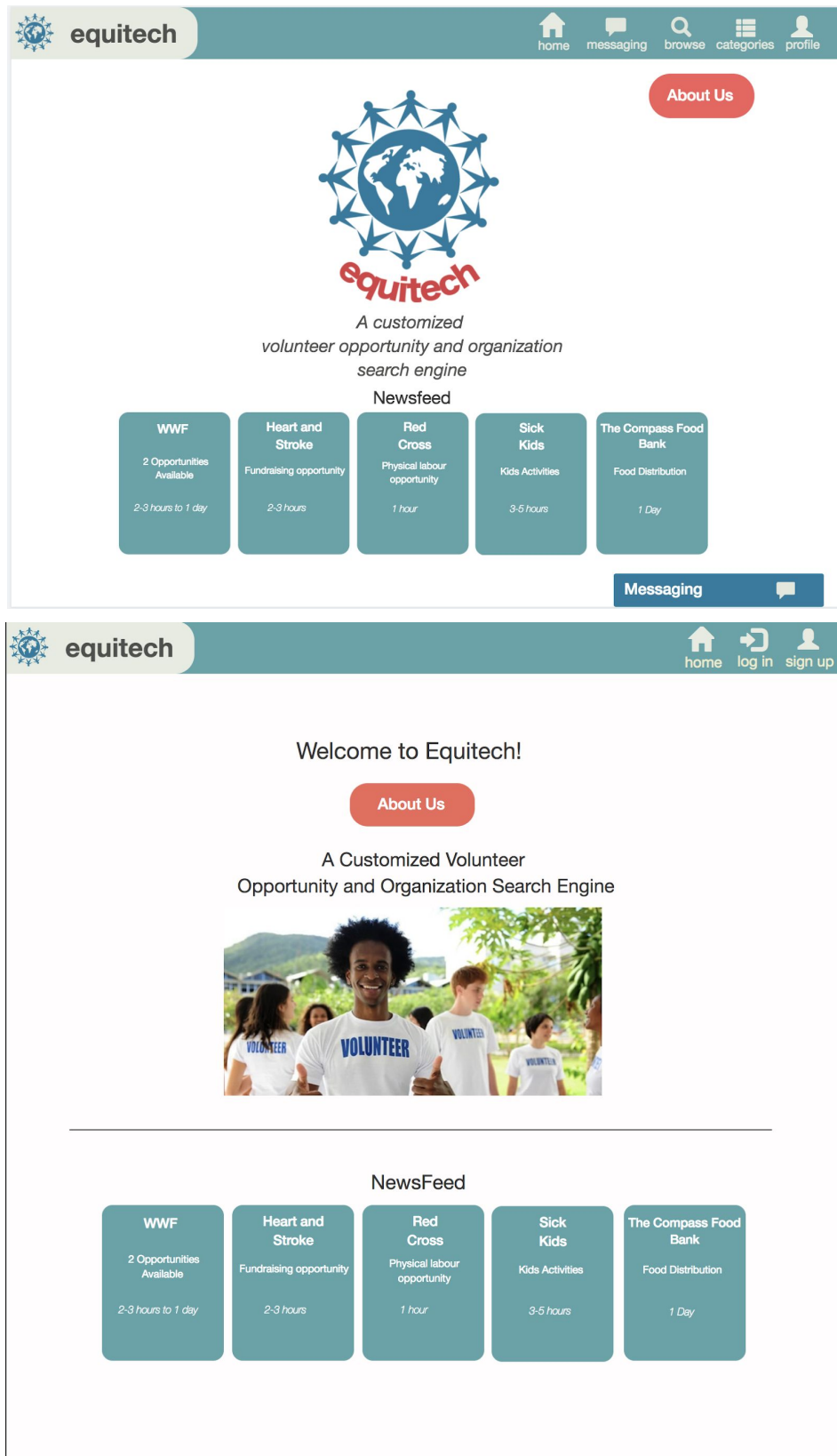
COMMENTS: While the equitech title in the upper left hand corner leads to the home page, we felt that this might not have been completely intuitive. Therefore we added another home button that was clear.

Other Findings

Task Analysis

Grading the Tasks:
A success is worth one full point (S)
A partial success is worth 0.5 points (PS)
A fail is worth 0 points (F)
Each is graded for how many tasks they perform and each set of tasks is varied from 4 to 5 tasks.

A Task Analysis example:

Participant #1

Sign Up: S

Editing Profile: PS

Check Messages: S

Organization Search: PS

Position Search: S

4/5 80 %

Task Analysis Results

SUS Test (Post Testing Questionnaire):

1: Strongly Disagree, 2: Somewhat Disagree, 3: Neutral, 4: Somewhat Agree, 5: Strongly Agree

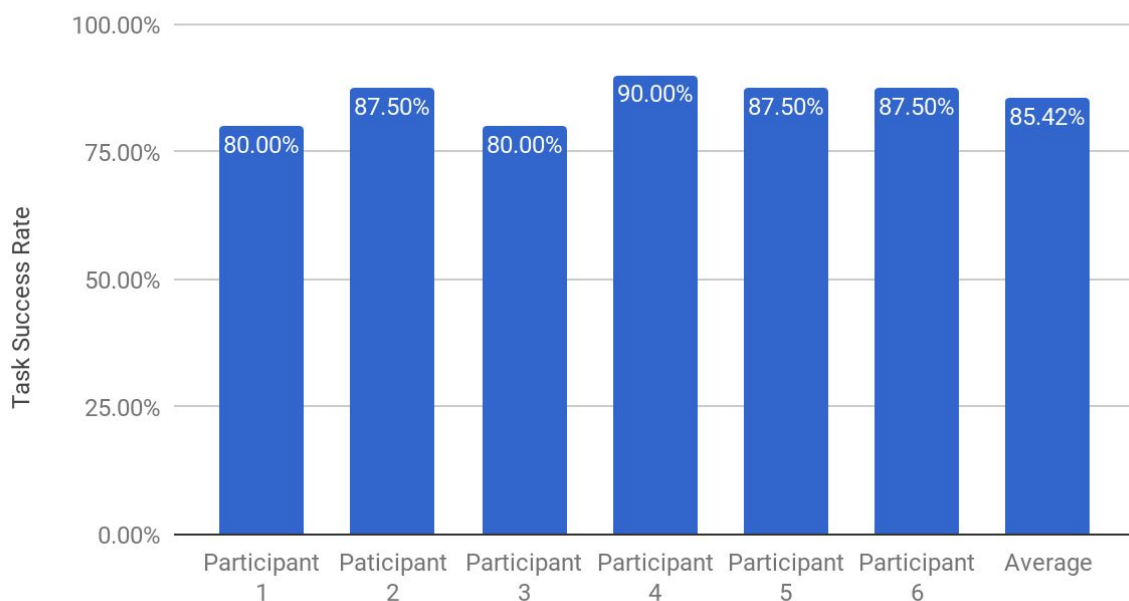| Statements (Rate from 1-5)	1	2	3	4	5
I think I would like to use this system to find volunteer opportunities (+)					X
I found that the information asked about me during sign up was adequate and relevant(+)			X		
I found the website easy to navigate(+)					X
I thought there was too much inconsistency in the website(-)		X			
I felt confident using the website(+)				X	
I found the website cumbersome to use(-)					X

SUS Questions

Modified SUS Test.
for all positives each result is (num) - 1
for all negatives questions each result is 5 - (num)
Positives and negatives are labeled above in the chart.
We do have more positive questions then negatives but we feel this is still be a good measure of performance.

the most one could scores is all 4s: so 6 x 4 = 24
the least one could score is 0

The above example is scored as followed:
Row 1: 5 -1 = 4
Row 2: 3 -1 = 2
Row 3: 5 -1 = 4
Row 4: 5 - 2 = 3
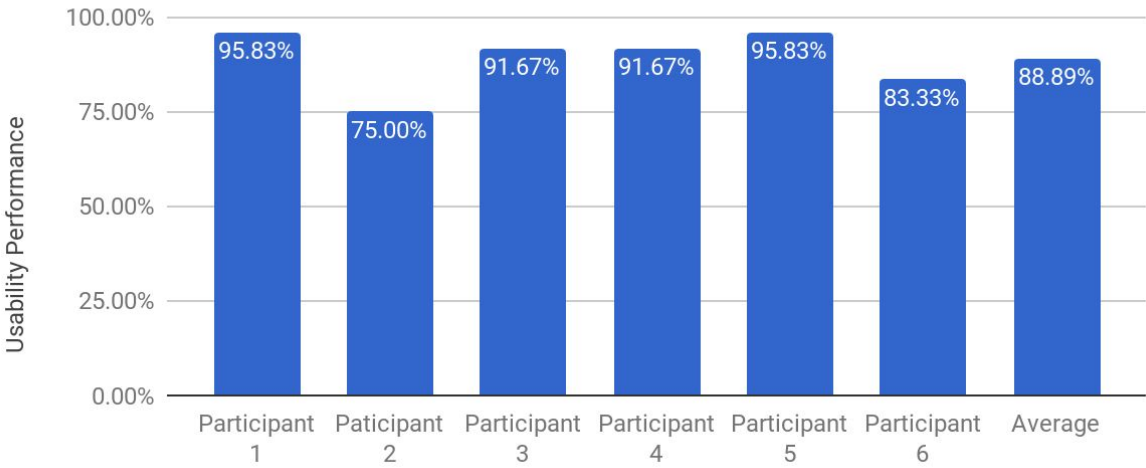Row 5: 4 -1 = 3
Row 6: 5 -1 = 4
Total = 20/24 = 83.33%

We rated our performances out of a score of 24. For example if an individual scores a 20 on the questionnaire then we get 20/24. We then multiply by 100 which is 83.33 % usability score. The higher the percentage the better the usability result is. Ie (how well the prototype is and how users respond to it.

System Usability Scale Results

Research Limitations

Our research is limited in several ways, many resulting from the limited scope of this course. Firstly, the prototyping software that we used, Atomic.io, is not ideal for complex interactions such as searching. In fact, many of our participants tried to use our search bar, only to find out that it was not fully functional. With Atomic, creating a truly functional search bar would be as difficult as creating the real thing. Because of this limitation, we were not able to test our search functionality fully. There were also several small expectations that users had that we were unable to reproduce in our prototype. For example, users expected drop down menus to close upon selecting an option, but this was not feasible to implement given Atomic's limited possibilities for user interactions.

Secondly, our participant demographics would ideally be more varied. We tested on a small subsection of our target audience. We wanted to test on people with past volunteer experience. Our participants fit this description, but they are all University of Toronto students around the age of 20. They were also mostly men. For this reason, our findings are not very generalizable. Given more time and resources, it would be better to test on a more varied participant group, including fringe cases like the elderly and disabled people.

Finally, we set out to include non-profit organizers in all facets of our design process due to their expertise in volunteer engagement, but relationships with non-profit organizers became difficult to maintain given the fast pace of this course. Although our previous research has benefitted from the feedback of non-profit organizers, our subsequent research has not. As a result, much of our findings may not be useful in real world volunteer engagement.

Reflections

In general, we found that our main assumptions about our prototype were not particularly altered by our user testing. Instead, the user testing revealed small-scale problems in our prototype. Throughout the process of designing the prototype, one problem we faced initially had to do with navigating between different pages, for example not being able to navigate back to a previous page due to lack of back buttons. Additionally, we initially made the logo in the top left as a link to access the home page. After further testing, we noticed that it was not as intuitive as we thought. In our final prototype we ended up adding a home page icon on the navbar of the prototype.

Starting with the registration process in the prototype, the initial assumption was that the user would continue to enter their information one page after the other. However after further introspection, we realized that we were not able to move back to a page in the registration process in case the user wanted to edit, which hampered the flow in terms of navigation. On further pilot testing, we realized that having back buttons on each page of the registration benefited the user in case they wanted to refer to a previous page.

With respect to the search functionality, we have two searching modes: positions and organizations. After testing, many of the users did not notice that one could switch modes between organization and position. We decided to emphasize the mode changing and put it right in the center along with text "Showing results for" so the user is sure of what they are searching for.

The application process went through some changes as well through the iterations of the prototype. Initially we kept the description of a volunteering opportunity and the application on different pages. However, on further testing we realised that a user should be able to view the opportunity and apply at the same time instead of toggling back and forth between pages. In the final prototype we kept both processes on the same page.

Testing Video Clips

- [Clip 1](#)
- [Clip 2](#)
- [Clip 3](#)

Project Calendar

Date	Activity	Participants	Details
Jan 9th	Group forms and brainstorming	Everyone	Brainstorm ideas for problem space
Jan 12th	Deciding a problem space	Everyone	Decided on a problem space and deciding research goals
Jan 15th	Finalizing A1 submission	Everyone	Editing and submitting required documents
Jan 28th	Working on compiling research	Everyone	Write research summary, fill in experience maps
Jan 29th	Finalizing A3 submission	Everyone	Edit summary, finish experience maps, submit assignment
Feb 2nd	Begin working on A4	Everyone	Went over requirements for assignment, filled out Design Requirements and started on the Short Form Creative
Feb 3rd	Discussing Design Requirement	Everyone	At this time we were realizing the confusion that we had over what each requirement meant so we emailed the TA for clarification.
Feb 4th	Working on Design Requirement/Short Form Creative		We went over each of the requirements and re-worded

	Brief		everything. We also decided to divided general key personas we chose last day, so we can individually
Feb 5th	Finalizing A4 submission	Everyone	Choosing which key scenarios and key principles to put into our Short Form Creative from our Working Documents
Feb 6th	Begin working on A5	Everyone	Meeting in tutorial/lecture to start thinking about the next iteration.
March 1st	Decided workflow and prototyping platform to use, and divided the work.	Everyone	Used Atomic.io to build the prototype
March 3rd	Worked together on prototype.	Ismael, Justine	
March 5th	Finalized prototype.		
March 12th	Recorded and reviewed pilot test feedback	Everyone	In-class
March 13th	Made changes to the prototype and research instruments as per the pilot test feedback. Made submission.	Everyone	Meeting together, half of us fixed the prototype and the other half fixed the research instruments.
March 22nd	Conducted studies	Ismael, Som	
March 23rd	Conducted studies	Justine, Robert	

March 24th	Worked on study report document	Everyone	
March 26th	Finalizing submission	Everyone	

Appendix: Supplementary Information

Participant #1

Date of Birth: September 3rd, 1997, Age:20

1. Has a basic understanding of websites
2. Currently not on the lookout for volunteer opportunities
3. Interested in social causes related to advocacy and groups in the performing arts

Task analysis: S= Success   PS= Partial Success   F= Failure

Sign up : S
   Comments: Smooth process

Editing profile: PS
   Comments: Missed the "Save Changes button". The participant simply changed the info in the text box and continued to the home page.

Check messages: S
   Comments: Used the messaging shortcut tab available at the bottom of the page

Organization Search: PS
   Comments: Was not able to switch modes between organization and position available at near the search bar. Was able to use the filters adequately and contact the organization.

Position Search: S
   Comments: Was able to find the position/organization mode and apply filters successfully and also apply for a position.

Feedback: Post interview Questions

1. Found the prototype interesting and easy to use.
2. The one change the user would have liked to change is in the search functionality where the user is asked to switch modes between organization and positions. A potential solution that the **user provided is maybe adding that as a filter.**
3. The user also provided feedback about the profile information asked. The participant was of the opinion that the there should be more information asked relating to interests so that better search results can be given.
4. Another feedback given was that there were not enough back buttons on the profile related pages.
5. The participant would use the prototype if they were looking for volunteering opportunities.

Questionnaire

1: Strongly Disagree**, 2:** Somewhat Disagree, **3:** Neutral, **4:** Somewhat Agree, **5:** Strongly Agree

Statements (Rate from 1-5)	1	2	3	4	5
I think I would like to use this system to find volunteer opportunities					X
I found that the information asked about me during sign up was adequate and relevant					X
I found the website easy to navigate					X
I thought there was too much inconsistency in the website	X				
I felt confident using the website				X	
I found the website cumbersome to use	X				

Participant #2

Age:
February 23rd 1999, aged 18

Education
student: Life Sciences
1st year of study
attends University of Toronto

basic understanding of internet websites: yes

Volunteer Experience/Interest

interested in volunteering: Yes

currently looking for volunteer opportunities

causes he is interested in: environmental causes

Task Analysis Success = S , Fail = F, Partial Success = PS

Signing Up: S
Pretty Straight forward, filled in this information and continued to the homepage

Changing City from Toronto to Mississauga: S
Quickly went to his profile and changed Oakville to Mississauga without problems

Check Messages: S
Went right to messages without problems

Search for Organization that is close by and reflects environmental goals: PS
This is a partial success because he managed to put in the right Filters but didn't see the positions and organization toggle. After pointing it out afterward he quickly found the right organization that was environmental and close by and then clicked message

Error Found: toggle between positions and organizations unseen

Post Questions Revelations:
- Enjoyed using the prototype, pretty easy interface to use.
- Suggestions: Be more specific with personal bio, tell the user what this will be used for and ask what we are looking for.
- For occupation have both a occupation input that specifies "Full Time" "Part-Time" "Student" and under it has a description input of the actual job or education.
- Would use the application, "seems like a good system"
- Another Change: Make Organizations/Positions bigger
- Biggest Change you would want: Occupation Change -> have both Occupation drop down with different options and also a job description box

Participant #3

1. Date of birth: November 3rd, 1997, Age: 20
2. Has a basic understanding of using websites.
3. Not on the lookout for volunteer opportunities.
4. Causes of interest: Youth/arts

Tasks

Task analysis: S= Success   PS= Partial Success   F= Failure

Sign up : S
   Comments: Found education field unclear. Took some time to come up with a bio.

Editing profile: S
   Comments: Forgot to click save changes.

Check messages: S
   Comments: None

Organization Search: PS
   Comments: Did not notice Positions/Organizations toggle button, so they looked at positions instead of organizations at first.

Position Search: PS
   Comments: Again forgot about the Positions/Organizations toggle button, so they looked at organizations instead of positions for a few moments.

Feedback: Post interview Questions

1. Didn't look like a website, because of the size of the screen.
2. Found the search bar not being functional to be an issue.
3. Would use the application if they wanted to volunteer.
4. It was clear how to proceed on all the pages. Moving from messaging back to browse was difficult.
5. Something like hobbies or what they are studying would have helped more in the sign up process. Essentially the information should be more specific.
6. They would just change the screen size to be bigger.

Questionnaire

1: Strongly Disagree**, 2:** Somewhat Disagree, **3:** Neutral, **4:** Somewhat Agree, **5:** Strongly Agree

Statements (Rate from 1-5)	1	2	3	4	5
I think I would like to use this system to find volunteer opportunities					X
I found that the information asked about me during sign up was adequate and relevant			X		
I found the website easy to navigate					X
I thought there was too much inconsistency in the website	X				
I felt confident using the website					X
I found the website cumbersome to use	X				

Participant #4

Age:
August 5th 1996, aged 21

Education
student: majoring in policy science and history
3rd year of study
attends University of Toronto

basic understanding of internet websites: yes

Volunteer Experience/Interest

interested in volunteering: Yes

not currently looking for volunteer opportunities

causes he is interested in: community work: our region program coordination, a lot of charity work, in terms of helping those who are struggling, locally or internationally,

More interested in collecting funds and coordination. Not interested going to other countries, but helping out with logistics.

Task Analysis Success = S , Fail = F, Partial Success = PS

Signing Up: S

Pretty Straight forward, filled in this information and continued to the homepage

Changing City from Toronto to Mississauga: S
Skipped over the page initially but quickly found city on the basic information page soon after and clicked saved changes as well when done. This is considered a success
Error found: text box for city overlaps with the input box, thus some parts of clicking the input box don't allow editing

Check Messages: S

Search for Organization that is close by and reflects environmental goals: PS
This is a partial success because he successfully went to the search page and entered the correct search parameters but he didn't see the change tab of positions and organizations. So he searched for positions and applied to the positions. He successfully applied to a positions but he didn't find get to the organization page as instructed. However lack of clear instructions could have caused this, as the instructor didn't catch this mistake right away either. When the instructor made clear that it was an organization he found it right away. So I think this can be considered a partial success.

Error Found: some small clicking issues with drop down lists when searching, however may be because at the time the computer was overheating, but if not this will be looked into.

Search for Position that is close by and reflects environmental goals: S:
This is considered a success because he did do this right away and it was easy for him to perform, even though he did it thought the previous task, he still would have gotten the same result if I said positions over organizations.

Post Questions Revelations:

- Editing and Drop down list had issues. Drop down list was exactly clicking right. With editing the text box for a couple sections where overlapping the input box so Mohammad couldn't click the input box.
- He would use the application even if the drop down and editing were somewhat bothersome. If fixed it seems like he would definitely use it. He likes the simple design and easy to use system. Its quick and easy. Time Effective
- He said it was easy to use and go forward.
- Suggested users after creating a profile, they could be able to link a Resume, Cover Letter, or other documents.
- The Changes he suggested would be the option to include other documents. Also he suggested a change to the homepage as he prefers the tab options on the side rather then the top. He says it's more clear and each have their own space.

Participant #5

Date of Birth June, 1994, Age:23

1. Has a basic understanding of websites
2. Currently not on the lookout for volunteer opportunities
3. N/A

Task analysis: S= Success   PS= Partial Success   F= Failure

Sign up : S
  Comments: Smooth process

Editing profile: PS
  Comments: The user was confused that they had to navigate through the entire profile again although they only changed their city.

Position Search: PS
  Comments: Tried to use the search bar and had issues with the drop down arrows in the filters.

Feedback: Post interview Questions

1. The user found the UI to be very clean, intuitive and simple to use.
2. The user found the toggle and dropdown of the search portion to be difficult to use and also the profile edit confusing because they had to navigate the entire profile to change one thing.
3. They would use the application if they decided to volunteer.
4. Found most of the profile to be relevant.

Questionnaire

1: Strongly Disagree**, 2:** Somewhat Disagree, **3:** Neutral, **4:** Somewhat Agree, **5:** Strongly Agree

Statements (Rate from 1-5)	1	2	3	4	5
I think I would like to use this system to find volunteer opportunities					X
I found that the information asked about me during sign up was adequate and relevant					X
I found the website easy to navigate					X

I thought there was too much inconsistency in the website	X				
I felt confident using the website				X	
I found the website cumbersome to use	X				

Participant #6

Date of Birth July 24th, 1997, Age:20

1. Has a basic understanding of websites
2. Currently not on the lookout for volunteer opportunities
3. Doesn't know

Task analysis: S= Success   PS= Partial Success   F= Failure

Sign up : S
   Comments: Smooth process

Editing profile: S
   Comments: Used the Equitech home button to navigate back.

Organization Search: PS
   Comments: Tried to use the search bar and could not toggle between Organizations and Positions

Feedback: Post interview Questions
1. Recognized the product as something to do with volunteering because of the logo.
2. Not really, but the user was stuck on the toggle between Organizations and Positions. They wish that the font was larger for that button.
3. They would use the application if they decided to volunteer, because everything is accessible and they can message people.
4. They appreciated the fact that some parts of the profile were optional.
5. The participant would use the prototype if they were looking for volunteering applications.

Questionnaire

1: Strongly Disagree**, 2:** Somewhat Disagree, **3:** Neutral, **4:** Somewhat Agree, **5:** Strongly Agree

Statements (Rate from 1-5)	1	2	3	4	5
I think I would like to use this system to find volunteer opportunities					X
I found that the information asked about me during sign up was adequate and relevant					X
I found the website easy to navigate					X
I thought there was too much inconsistency in the website	X				
I felt confident using the website				X	
I found the website cumbersome to use	X				