Overview

For our second assignment, we decided to explore an idea previously explored from a business perspective by one of our team members. This idea was part of an initiative of the Canadian Blood Services (CBS) to take employee-generated ideas and examine the potential impacts of such a proposal on its products, processes or procedures. One such idea that came about as a result of this initiative was the use of Bluetooth beacons in the organization to improve efficiency, effectiveness, and experience in a variety of different areas, including logistics, marketing and data collection. The delivered report proposed a strategy for implementing Bluetooth beacons on a broad level, including ideas of a prototype system from a high-level technical perspective.

We decided to investigate one specific implementation of this idea for design and prototyping: a beacon-enabled mobile application for re-booking blood donation appointments. The application would be pre-installed on a user device, and would trigger notifications when near a Bluetooth beacon based on the minor identification number of each beacon. The ideal use case of this application would be to trigger a notification from a Bluetooth beacon after making a donation, when the donor is finished their donation and goes to a reception room to recover. The donor would then be able to select the notification, and easily re-book a future visit through a simplistic interface. This proposed use case is, of course, merely a suggestion that would be subject to change as a result of the requirements gathering and prototyping processes.

From the problem statement of the previous report, several key statistics are provided that identify the relevance of such an application. The average age of CBS donors is only "slightly younger" than 49, the average age of CBS employees. Targeting a significant younger demographic was a goal identified by CBS, and could be accomplished with a more streamlined donation experience. This also ties into their second goal of reducing visit durations, ideally reducing a typical 90 minute visit to 45 minutes or less. Finally, it hoped by the CBS that a beacon-enabled rebooking application would increase rebooking rates. We believed that these reasons identified a strong motivation for exploring this idea, and that interesting findings could be found in the design process.

Participant Description

Given the information provided from the previous beacon integration report, we decided to identify youth in the 19-25 age demographic as our target users. Our rationale for this is that conventional methods of re-booking and obtaining information would still exist, meaning that older donors uninterested in the technology could opt for their traditional experience. As this project was proposed with the explicit goal to target a youth demographic, we felt that it was appropriate to focus our design and prototyping according their needs and desires of the project.

Interview Script

As defined by our project requirements, we designed a brief, semi-structured script to guide our initial needfinding sessions. Our goal from these interviews was to ask questions that would allow us to explore various opinions of our interviewees on the following topics:

- Attitude towards the project
- Current approach to what our project hopes to improve (donating blood)
- Any ideas of potential areas of improvement with the existing process
- What they would like to see as a result of this project (if we're working on something, what would they like to see as the result of our work, if anything?)
- Any other ideas or thoughts about the project that could provide direction towards an effective product design

In order to gather information on these key topics, we devised the following script:

1. Meeting with interviewee/Introduction - Describe purpose of project and the interview, provide background information and obtain appropriate consent.
2. Proceed to ask the following questions (allowing roughly 2 minutes per point for related discussion):
   - "What do you think of donating blood in general?"
   - "How would you normally approach donating blood?"
   - "Do feel that there's any aspect of the current process that could be improved upon? (Be it registration for donating, the actual donation process, or any other related aspect.)"
   - "Given our project's objectives and goals, what would you like to see as the end result of our work? How would you envision interacting with our prototype, and how could we design it in a way desirable to you?"
   - "Was there anything we missed in our discussion you'd like to ask or mention?"
3. Close the interview with a small debrief and mention of thanks to the interviewee.

Interview Results: Filip

- "What do you think of donating blood in general?"

    Takes too much time. Isn't convincing/not experience you want to have. Always gets screened by questions which takes like 20mins -- which is not really a physical thing (why isn't it being done on an iPad or something like that?)

- "How would you normally approach donating blood?"

    Would hope you could do it online on a website or something -- no way I'm not doing it on a website.

- "Do feel that there's any aspect of the current process that could be improved upon? (Be it registration for donating, the actual donation process, or any other related aspect.)"

    How you sign up, overall experience, ease of use (quick, online/app, easy to use), reminders on an app (sync it to my calendar), thank you/welcome emails, maybe some statistics about donating blood, social media (facebook/twitter/instagram), some sort of blood score -- how many time you've donated/how many lives you've affected, **show the impact you're making**

- "Given our project's objectives and goals, what would you like to see as the end result of our work? How would you envision interacting with our prototype, and how could we design it in a way desirable to you?"

    When you open app, just have a button to 'donate blood today/make an appointment", a nice colour scheme, willing to wait about 15mins, button to call over nurse, app shows you "with the blood you donated: this is # people saved", show "blood score", minimize number of steps to log in and donate blood, keep it simple.

- "Was there anything we missed in our discussion you'd like to ask or mention?"

    This app would make me and others want to donate blood more.

- Additional Notes:

    Only donated blood once a few years ago back in school.

Interview Results: Guelor

- ○ "What do you think of donating blood in general?"
    - Overall experience, enjoyed doing it(Toronto) -- done it once (2012)
    - But **setting up an appointment** at the clinic was a **downside** especially when busy(**too many steps:** set up the appointment, taken to a different room, got a token number and waited 45 min to an hour to donate the blood). 2 last step : was taken into the final room, was given food and asked several questions regarding to how he felt.
    - Also did not like the feeling of drowsiness
    - Wished the he can donate blood on the same day he booked the appointment
    - (maybe reduce the time it takes to donate by having every user of the app fill up a form when they sign up)

- ○ "How would you normally approach donating blood?"
- He would prefer setting up the appointment online, so he will get all the necessary paper works done with, does not mind waiting on the queue when he arrives to the appointment

- ○ "Do you feel that there's any aspect of the current process that could be improved upon? (Be it registration for donating, the actual donation process, or any other related aspect.)"
    - most annoying thing he found was that he kept getting bombarded by phone call to donate blood, he ended up blocking canadian blood services number
    - Registration process should be automated(doesn't mind waiting for 30min at most to donate)
    - Think that the uses of nurse for assistance with the form and also the information that he was given by the nurse after donating blood could be automated or shown on the application(Was in a good state of mind to be able to use his device right after donating blood)

- ○ "Given our project's objectives and goals, what would you like to see as the end result of our work? How would you envision interacting with our prototype, and how could we design it in a way desirable to you?"
- Sign up process should not be integrated with booking an appointment forms
- Profile creation should be very simple process (example sign up with facebook, google, or username, password and email)
- Want to be able to book the appointment without having to fill up the online form(if user forgot to fill up the form the application should notify him before the appointment date that he has not filled up the form, if uses still chooses not to fill it up, user can also fill it up in person)

- Show the number of time user has donated blood on the application(user want to be able to share number of time donated blood to facebook, thinks that user should not be prompted for this. Also user won't mind if user can share their day of donating blood to social media).
- Profile: setting includes forms, facebook share,
- Main Menu : All the appointment ever booked and future one, cancel appoint option,
- Notification: received message includes if you booking was denied due to medical reason(assuming the form was filled online or offline), integration of google calendar if there's is a conflict with the booking, reminder info such as getting a good sleep before the appoint and getting a good meal beforehand.
- His focus is to minimize human communication because it takes to much of your time, because you have to call them, message, which can take up to much time.

○ "Was there anything we missed in our discussion you'd like to ask or mention?"
    - n/a

○ Additional Notes:
  n/a

Interview Results: Ryan

- ○ "What do you think of donating blood in general?"
- - Really good thing that people are willing to donate blood
- - Believes at there is a serious need of the service
- - Shouldn't be mandatory to donate blood
- - When signed up through a school blood drive: simple form completed, blood typed one week in advance during class by CBS staff, travelled by pre-arranged bus to CBS. Experience was smooth and described as easy, however the participant believes this was only due to it being a school-arranged event.

- ○ "How would you normally approach donating blood?"
    - i. Call and set up an appointment with CBS, participate in the donation process through conventional means.

- ○ "Do feel that there's any aspect of the current process that could be improved upon? (Be it registration for donating, the actual donation process, or any other related aspect.)"
    - i. Not really, participant thinks it works fairly well. Participant has not booked a subsequent appointment with CBS.

- ○ "Given our project's objectives and goals, what would you like to see as the end result of our work? How would you envision interacting with our prototype, and how could we design it in a way desirable to you?"
    - i. Focus on making the donation booking process easier
        1. Reminders
        2. Online signup
            a. Through calendar? (See days conveniently for booking)
        3. Dynamic push notifications for alerting users of specific blood types of an increased demand for their specific blood type.
        4. Allows social media interaction (i.e. Facebook post - "I just donated blood, you should sign up too!")
        5. Be able to complete medical background forms on the day of the appointment, and review/sign upon arrival for their appointment.
        6. Cancel booked appointments (booked through any means, app/phone/in-person) through the app.

- ○ "Was there anything we missed in our discussion you'd like to ask or mention?"
    - i. N/A

- ○ Additional Notes:
    - i. CBS has a preference for donations based on blood type (all are welcome, but some blood types are more in-demand than others, subject to qualities and current demand).

Affinity Diagram/Key Requirements

Upon completion of our initial need finding interviews, we analyzed our results and developed the following affinity diagram:

From developing our affinity diagram, we were able to identify several key requirements for the design of our prototype:

1. Participants expressed a strong interest in a **convenient registration and appointment booking processes**. It makes sense then that to address our participants needs, all interactions with the application should involve a minimal number of steps. Simplifications (registration and sign-in with Google/Facebook open authentication), automation (GPS location for nearest clinic), and efficient design (calendars for date selection) are key considerations in accomplishing this requirement.
2. Participants consistently expressed a strong desire to **share their blood donation activities over social media**. While some recommendations would be unethical to implement (such as sharing personal information on social media

without explicit user consent), it is clear that offering simple sharing of visit-related information should be accessible by users of the application.

3. It is clear that target users of the application would want most of their interactions with the CBS to be done through the app itself and not through phone calls or paperwork. In order for the app to be effective, **functionality should be contained solely within the app itself** whenever possible. That is, appointments and medical information should be all accessible from the application, and should not involve any external interaction (such as phone calls or e-mails).

4. Furthermore, the app should be designed as a **sole point of communication with the CBS** (aside from in-person communication on the day of the visit). Users expressed a desire to have notification updates pushed to their mobile device through the app, and to be able to contact nurses through in-app buttons. These interactions must be balanced carefully however, as excessive notifications and phone calls were identified as causes of negative user experiences.

Low-Fidelity Prototypes

As part of our next steps towards the development of our prototype system, we developed two separate low-fidelity prototypes for receiving feedback to be used in shaping the final design of our product.

The first prototype is called Mimic, a catchy name given to reflect its focus on quick, intuitive interactions to accomplish the major use cases of the application. Our focus when designing this prototype was to minimize the number of steps required to complete any action, meaning that users could quickly complete their intended tasks without becoming frustrated and exiting to another activity. This is also important for retaining potential donors, as a registration or booking process that is too time-consuming result in lost donations and possibly negative word-of-mouth.

To fulfill the key requirements of our prototype, Mimic was designed to only require **10** taps to book an appointment, including account registration and appointment booking. Only 3 screens and one confirmation pop-up are needed to book an appointment, and only 2 screens are needed if a user is already signed in. In order to facilitate proper ease of use and minimize errors, Fitts' law was taken into careful consideration when considering button positioning and spacing of menu options. The main menu was simplified into three distinct options, with a lower button available for connecting with a nurse to discuss medical questions and concerns. A confirmation pop-up is presented in the appointment booking screen, where users are presented with the details of their appointment and asked to confirm. If a mistake is made, users can easily manage and cancel their appointments through the distinct "Manage My Appointments" screen. Registration buttons are also large and distinctly coloured, allowing users to quickly differentiate between the available options.

To further facilitate ease of use, we opted to promote the use of Open Authentication (OAuth) through Google and Facebook sign-in services for creating and managing user accounts. Since users can opt to provide details through a Google/Facebook sign-in, we can collect those details and use them to establish a profile and save users the effort of completing redundant registration forms. The opportunity exists to configure a screening step where staff can review new accounts that are created before they're permitted to book appointments, but we have excluded that from this prototype. OAuth also allows us to enable persistent logins, meaning that users can open the app with their credentials as they please, and be inconvenienced only by a single button-press if they are required to sign in again. An extra benefit to this account management method include the elimination of username/password combinations (better security, less account management headaches for the end user).

Finally, appropriate visual design elements were used to make the application feel pleasant and comfortable to use. The interface was designed to be simplistic, with every icon, button, or line of text serving a distinct purpose in the application. Colour was effectively picked to highlight important parts of the interface, such as key menu items and buttons. Buttons were placed in intuitive locations, such as the back button in the top-left, title on the top, and confirmation buttons at the bottom of the screen on the border. Larger fonts were used when possible to increase readability, and also used to highlight titles as well as other important text. The Gestalt principles were also carefully considered in the organization of this prototype's interface. The date and time pickers were grouped together for proximity, and the use of similarity was used in the main menu to distinguish main functionality from help and support options.

We feel that the Mimic prototype will excel at streamlining the blood donation process, due to our focus on making key use cases as simple as possible, and limiting clutter of unnecessary buttons, items, or actions. The "My Donations" screen of the application allows for fun tracking of a user's donation history, as well as the ability to share their progress on social media. The implementation of the always-accessible help button, as well as in-app instant messaging with nurses means that all user needs should be self-contained within the app. Meeting all key requirements with an effective, clean interface should be a recipe for success for the Mimic prototype.

Our second prototype is called "Simplistic", named after our focus on a clean, simple interface that is designed to be more widely accessible. Our goal with Simplistic was to offer some contrasting design choices and elements compared to Mimic. First, we tried to combine as many interactions as possible, reducing confusing menu options and combining features. We included help and support as a button in the registration process, rather than as a dedicated menu option, and also included the option for social media interaction at the end of the appointment booking process.

Unlike Mimic, we eliminated the Open Authentication registration process and opted to use a traditional e-mail/form-based signup. This provides Simplistic with several advantages, such as improved privacy for users (users are aware of all information they provide in the registration process), and greater support towards users who do not use OAuth-supported web services. This allows anyone with an e-mail address to register an account with our application. We can still enable persistent logins to allow for user convenience, and implement a password recovery system if users forget their login credentials.

Our focus when designing Simplistic's user interface and overall theme was to keep designs simple, reduce distractions, and increase accessibility. We kept menus simple, large, and free of colour for those with potential vision difficulties or colour blindness. We also ensured that the minimalist theme was retained throughout all screens of the application, and that a consistent visual look was kept throughout all menu.

We felt that the Simplistic prototype would be a great opportunity to explore some more radical design aspects and see what works and what doesn't. Of course, some of these ideas are taken farther than they perhaps should be, but a careful critique of why exactly those ideas might not work so well would help us greatly in achieving our goal of a simple, easy-to-use interface. There were possibly unique advantages in the e-mail-based user authentication system, and the collection of user information during the appointment-booking process rather than after it may have been be preferable to clients. Overall, we considered the Simplistic prototype to be a great prototype to test our ideas.

Prototype Sketches

Mimic

Simplistic

Storyboard - Mimic

Mary downloads the app, and registers with her Google account. She wants to book an appointment, so she goes to book an appointment, then configures her appointment. She confirms, and her appointment is confirmed!

Cognitive Walkthrough

In order to determine which of our two prototypes would be best for further evaluation, we evaluated them through a cognitive walkthrough process. We established our key tasks as follows:

- Register an account
- Book an Appointment
- Share your appointment on social media
- Manage your existing appointments
- Get in touch with a nurse

Our key findings with the Simplistic interface is that it was generally a usable application, but had a couple of critical flaws. Social media sharing and the ability to contact a nurse only existed at the appointment confirmation screen, which would mean that users would only be able to access these features by booking an appointment. This design decision had two glaring flaws, the first of which being that the steps for accessing these activities was hidden at best, and users would only find the functionality if they stumbled across it by using another feature of the app. The second flaw was that in order to interact on social media or contact a nurse, you would have to **book another appointment** just to be able to access these menu options! You would have to book the "fake" appointment, get to the appointment confirmation screen, then select the "contact us" button in order to access the support screen. If you wanted to later make a post to social media through the app, you would have to share the details of the **fake** appointment (not even the original one), and if you wanted to do both you would have to book two fake appointments! Needless to say, these flaws resulted in a failure for the social media/contact a nurse tasks.

In general though, account registration and booking were positive experiences, and all responses from user actions could easily be interpreted correctly. We identified several optimizations to the prototype, including a redundant login button on the splash screen. We reasoned that the login screen could be implemented on the splash screen, and that a registration button could be included if the user did not have an account. This would allow us to remove an extra screen from the login process, and simplify the user experience. We also suggested the inclusion of a password reset button on the splash screen, for helping users recover forgotten passwords.

Our overall assessment of usability was that the application was rough, with several barriers to smooth functionality that would impair the application's usefulness. We were able to see that it was easy to learn the app's menus and functionality, but many changes would need to be done to create an appealing, fluid prototype.

Our assessment of Mimic was more positive, where we were able to perform most of our key actions intuitively. The only observable flaw was a difficulty in accessing social media sharing, which was located in the "My Donations" menu. We found that it was useful to share your newly booked appointment right after booking it, and that it was unintuitive to find it afterwards. Our recommendations were to rename the "My Donations" menu to something that indicated social media functionality, and to implement the option for sharing to social media from the appointment confirmation dialog box. The rest of the application was considered excellent, and passed our cognitive walkthrough. Given the effective design of the application, overall usability was found to be high, and the design supported easy learnability.

Our final decision as a result of our cognitive walkthrough was to accept the Mimic prototype as our prototype to proceed with in further evaluation. We felt that the more polished interface would support a better user experience, and we encountered less errors and difficulties when performing the key tasks. With menus and buttons that incorporated more design concepts and techniques, the user interface was more enjoyable to use and felt lively to interact with.

Furthermore, the Mimic prototype was more comprehensive, with more functionality that worked as expected and was considered important to the overall experience. For example, elements such as the help icon available throughout the application would enable users to seek information and find features they were having trouble locating (such as searching for social media functionality, or calling a nurse). This was a piece of functionality we found was important to the application and added useful functionality that was excluded from the Simplistic prototype. The implementation of a comprehensive contact menu (including instant messaging, e-mail, and phone options) is another example of an added feature beyond the Simplistic prototype that added value to the user experience. These factors were all considered as supporting reasons for our decision to proceed forward with the Mimic prototype.

Interview Results

Iteration 1

Participants were asked to work through our designs (created on Balsamiq) with evaluators using the Wizard of Oz technique. Using the interview script above participants were asked to complete multiple tasks. Logging into the application caused trouble for some participants. Originally the design contained a label enclosed in a box with rounded corners. From the participants perspective the label was visually similar the actual log-in/register buttons. As a result the participants would select the label thinking it would log them in.

The main menu page was clear and concise to the participants. They were able to quickly parse through the menu and understand where each option led them next. The text itself was considered clear by the participants and the images were also helpful in establishing where each menu item would lead the participant. The biggest complaint was the 'Talk to Nurse' menu

option. The button was styled differently than the rest of the menu options, and participants did not understand why and did not enjoy the style of the button aesthetically.

The manage appointment screen was also generally enjoyed. Some participants did mention that they wanted to be able to clearly identify the locations where Canadian Blood Services operates. Entering the date and time did was generally enjoyed and familiar to participants.

Further on the complete forms dialog after booking an appointment made sense and was easy to use for users. The generally interpreted the menu correctly and made the correct assumption that it not only kept current appointment information but also kept information about previous appointments.

Overall iteration 1 was generally positive. We did continue to do some major overhauls to the application, we changed the labelling for the 'Talk to Nurse' button and redesigned the register screen.

Iteration 2

Some of the changes made for iteration 2 are pictured below:

As you can see the 'Talk to Nurse' button was redesigned to match the rest of the main menu.

Before

After
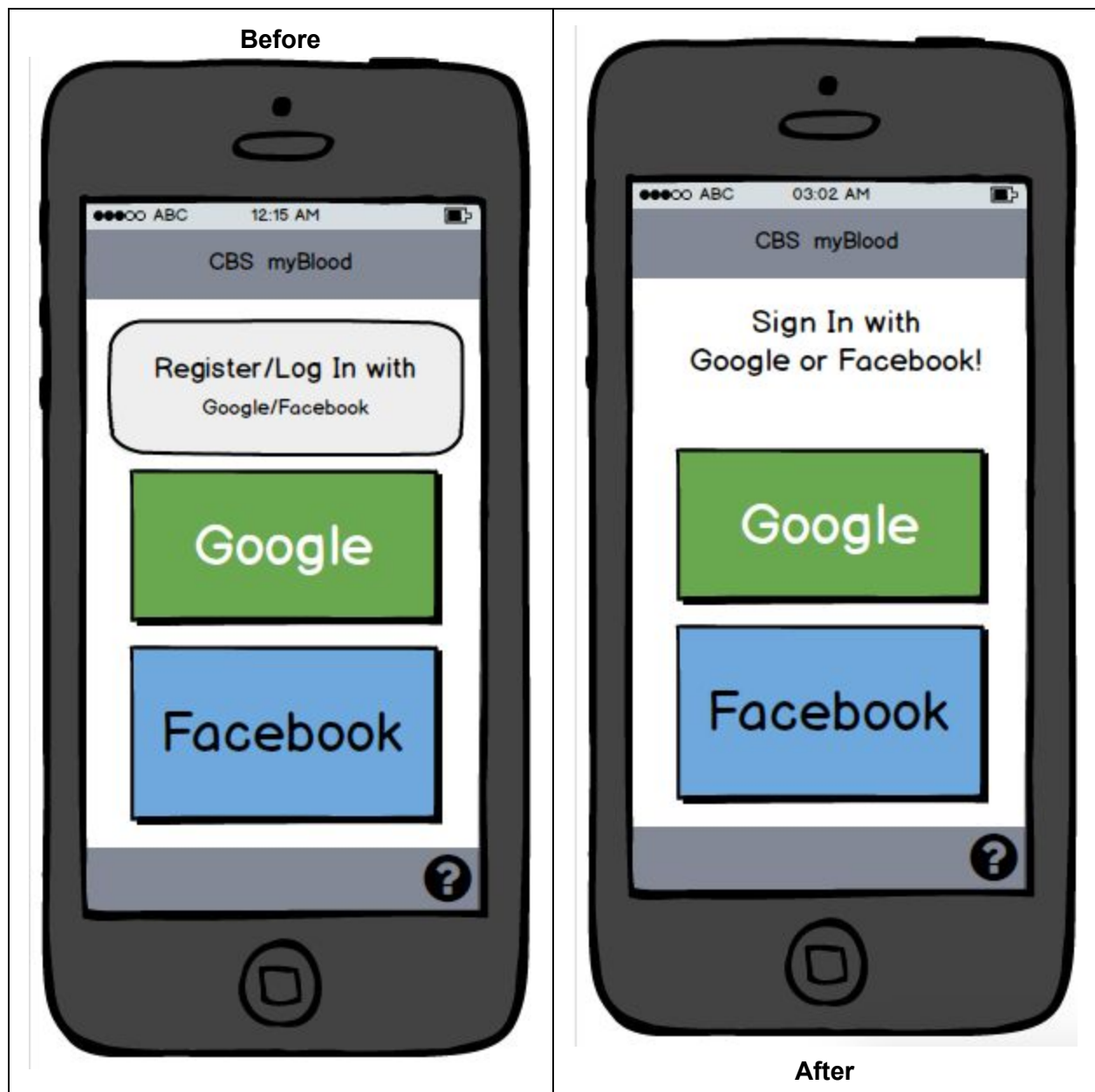
The registration page was redesigned to be more clear and concise. Help ease the confusion for users.

Iteration 2 testing was successful. Participants greatly enjoyed the new additions. The changes were successful in reducing the number of complaints mentioned in the first design iteration. No participants were confused by the the registration page label and participants were pleased with the main menu's new uniform design.

However, users were not happy with the manage appointment screen. Participants did not enjoy that the map was the only screen that allowed users to select their location and requested that a simple selection list would be displayed underneath. This was implemented in this iteration and for the high fidelity prototype.

Before	After
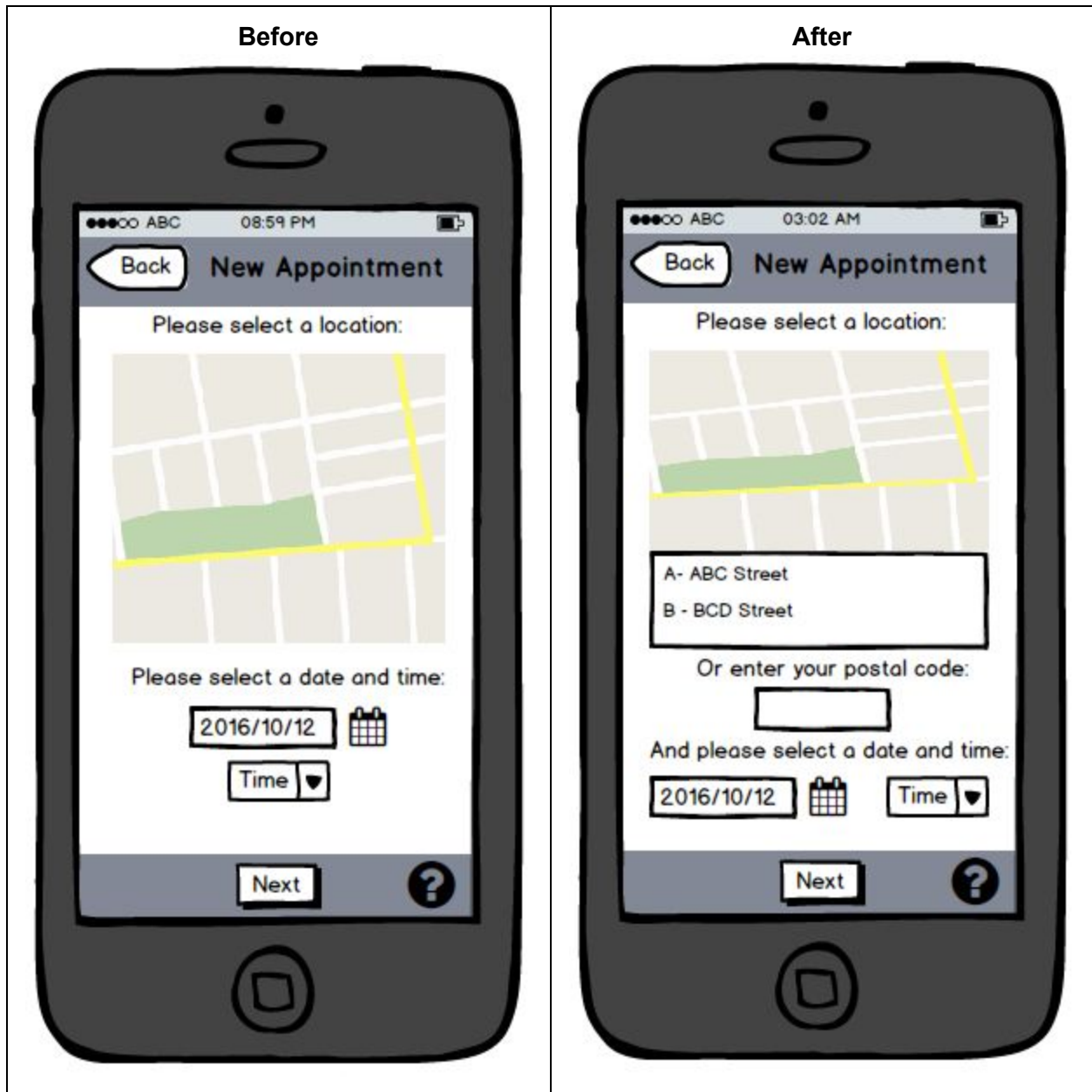
Design Document

Based on our experiences with the low fidelity prototypes and the interviews conducted, we decided to go with a very simplified design approach by eliminating hidden menus such as having a hamburger bar where a user would have to click it to be able to open the side menu to navigate to different part of the application. The reasoning for this is that through our interview with Carleton students we learned that students and potential users wanted to be able to see all their options in a single view windows without having to poke around the application. Students indicated that they don't want any learning curve to be involved with the app, especially when filling up forms and navigating the application. Due to this the need to reduce the amount of click involved to complete a specific task was very well thought of, we opted for a simple login by using OAuth for authentication and authorization, by doing this we eliminated the possibilities of user having to memorize yet another password, instead they can login to app with a simple click of a button using their facebook account or google account.

We also decided to go with a three primary color scheme, red being our app primary color which was used for all the button options which also happens to be Canadian Blood Services primary color, and also we decided to go with blue for the toolbar, and a simple white for the background of the menus. By using red as the main color for the navigation option, it allowed the eyes to easily pick out the different option presented.

used for all the navigation options and blue being the tool bar

Platform Notes

The Application Architecture is built using Ionic Framework which is a free open source technology for building mobile applications. Which is a library of mobile-optimized HTML, JavaScript, CSS Components, gestures, and tools for building highly interactive apps. Parts of the application were also built alongside Sass which is optimized for AngularJS.

The app was made possible through the use of Browserify. The architecture of the project is based on AngularJS which uses the MVC pattern, and many other components of AngularJS.

For this project we decided to modularize the ionic project by having every view within its own distinct directory, containing the view, the controller and other JavaScript required for that component. This promotes modular architecture, allow the code base to be more easily modified and agile.

To run the application, we need to set up our environment for building the app with the current release of Ionic. Ionic targets iPhone and Android devices (currently) it support iOS 7+, and Android 4.1+. However, since there are a lot of different Android devices, it's possible certain devices might not work.

To start, you'll need to use the command line in order to follow this guide and you must have **OS X** in order to deploy on an iPhone, so **OS X** is recommended if possible.

If you are on **Windows**, make sure to download and install **Git** for Windows (https://git-scm.com/download/win) and optionally Console2 (https://sourceforge.net/projects/console/). You will be executing any commands in this guide in the Git Bash or Console2 windows.

Before we start we need to install **Node.js**, it's an open-source, cross-platform runtime environment for developing server-side web applications. We will be needing it to install our modules that depend on it. To install node for your system visit (https://nodejs.org)

Once Node.js is installed we will need to install a few dependencies, using node.js package manager:

$ **npm install --global gulp-cli** (gulp is a toolkit that helps you automate tasks)
$ **npm install --save-dev gulp**
$ **npm install -g browserify**   (Used for bundling all our JavaScript dependencies)
$ **npm install napa**   (A helper for installing repos without a package.json with npm.)
$ **npm install -g jshint**   (A tool that helps to detect errors and potential problem in JS code)

First, we will go and install the most recent version of **Apache Cordova**, which will take our app and bundle it into a native wrapper to turn it into a traditional native app.

To install Cordova, make sure you have **Node.js** installed, then run

$ sudo npm install -g cordova

Drop sudo from the above command if running on Windows. Depending on the platforms you wish to run the app on, you'll need to install platform-specific tools.
Visit the folowing link for platform specific guide for Android (http://cordova.apache.org/docs/en/3.4.0/guide/platforms/android/index.html#Android%20Platform%20Guide), and
IOS(http://cordova.apache.org/docs/en/3.4.0/guide/platforms/android/index.html#Android%20Platform%20Guide)

Linux

If you are running a 64-bit version of Ubuntu, you'll need to install the 32-bit libraries since Android is only 32-bit at the moment. **$ sudo apt-get install ia32-libs** If you are on Ubuntu 13.04 or greater, `ia32-libs` has been removed. You can use the following packages instead:

$ sudo apt-get install lib32z1 lib32ncurses5 lib32bz2-1.0

If you are running 64-bit version of Fedora you'll need to install some 32-bit packages:

$ sudo yum install -y glibc.i686 glibc-devel.i686 libstdc++.i686 zlib-devel.i686 ncurses-devel.i686 libX11-devel.i686 libXrender.i686 libXrandr.i686

Windows

Windows users running on Android: You'll want to make sure you have the following installed and set up.
NOTE: Whenever you make changes to the PATH, or any other environment variable, you'll need to restart or open a new tab in your shell program for the PATH change to take effect.

Java JDK

Install the most recent JAVA JDK
(http://www.oracle.com/technetwork/java/javase/downloads/jdk7-downloads-1880260.html)
(NOT just the JRE).

Next, create an environment variable for JAVA_HOME pointing to the root folder where
the Java JDK was installed. So, if you installed the JDK into C:\Program Files\Java\jdk7, set
JAVA_HOME to be this path. After that, add the JDK's bin directory to the PATH variable as
well. Following the previous assumption, this should be either %JAVA_HOME%\bin or the full
path C:\Program Files\Java\jdk7\bin

Apache Ant

To install Ant, download a zip from (http://ant.apache.org/bindownload.cgi), extract it,
move the first folder in the zip to a safe place, and update your PATH to include the bin folder in
that folder. For example, if you moved the Ant folder to c:/, you'd want to add this to your PATH:
C:\apache-ant-1.9.2\bin.

Android SDK

Installing the Android SDK (http://developer.android.com/sdk/index.html) is also
necessary. The Android SDK provides you the API libraries and developer tools necessary to
build, test, and debug apps for Android.

Cordova requires the ANDROID_HOME environment variable to be set. This should
point to the [ANDROID_SDK_DIR]\android-sdk directory (for example c:\android\android-sdk).

Next, update your PATH to include the tools/ and platform-tools/ folder in that folder. So,
using ANDROID_HOME, you would add both %ANDROID_HOME%\tools and
%ANDROID_HOME%\platform-tools.

Install Ionic

Ionic comes with a convenient command line utility to start, build, and package Ionic
apps.

To install it, simply run:

$ sudo npm install -g ionic

Configure Platforms

Now, we need to tell ionic that we want to enable the iOS and Android platforms. Note: unless you are on MacOS, leave out the iOS platform:

$ ionic platform add ios

$ ionic platform add android

If you see errors here, make sure to follow the platform guides above to install necessary platform tools.

Running the app

Once the above is done try building and running the project (substitute android for ios to build for IOS instead):

- Using the command line change directory to the root directory of the project then run the following commands
- **$ npm install**
- **$ gulp**

 To run the code on emulator

$ ionic build android

$ ionic emulate android

To run the app on a real device, make sure you have your devices connected to your computer via usb and make sure developer option is enable and usb debugging is enabled. Then run the following command

$ gulp

$ ionic run android

Help Documentation (User Manual)

Getting Started

Welcome to the Canadian Blood Services myBlood mobile application! This guide exists to help users find useful information about how to navigate the app and use its features. To get started with using the app, you can find it on the Apple App Store or Android Play Store by searching "CBS myBlood", and downloading the application to your mobile device. To launch the app, select the "CBS myBlood" application from your list of installed apps on your phone.

Registration

Registering an account is easy! If you're opening the application for your first time, you'll be presented with a login/registration screen. Simply select your preferred sign-in method, and approve the sign-in request from Facebook or Google and you'll be ready to use the app!
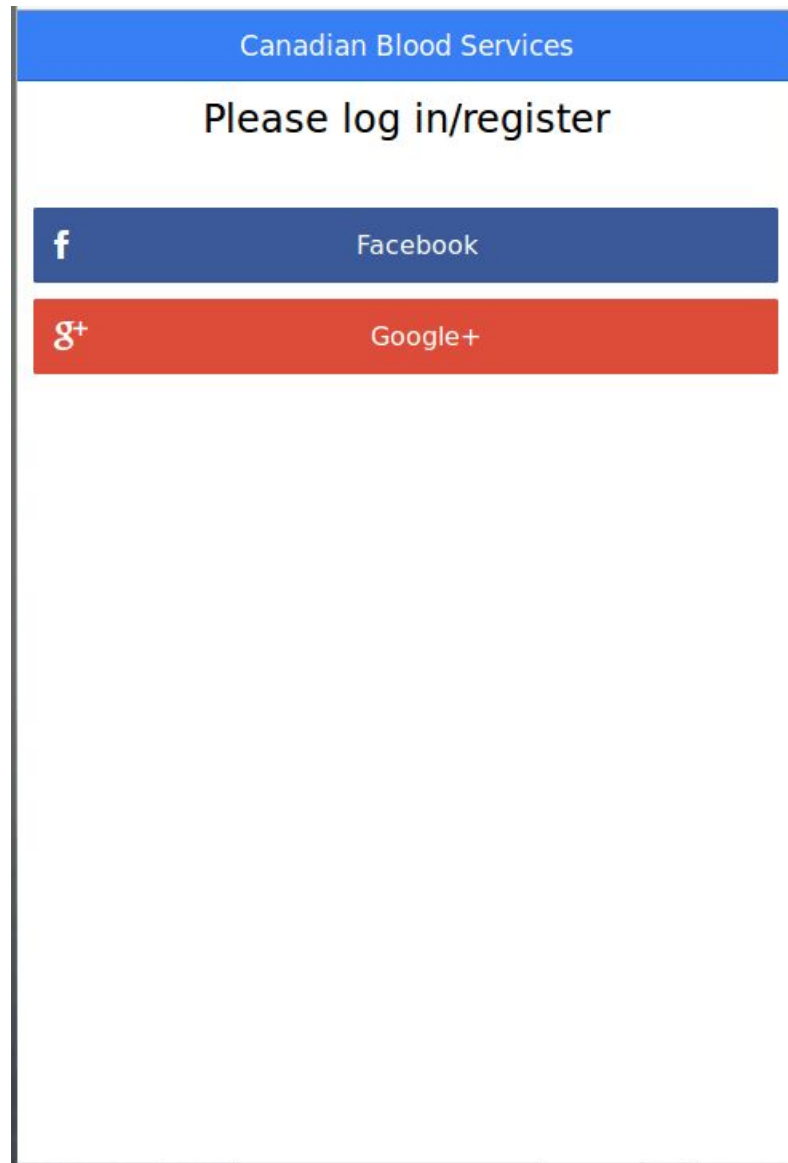
Main Menu

Once registered and logged in, you'll be presented with a main menu. From here, you can book an appointment, manage your existing appointments, track your donations, or talk to a nurse all by selecting the appropriate option. You can also use the back button to navigate to the back of the app.
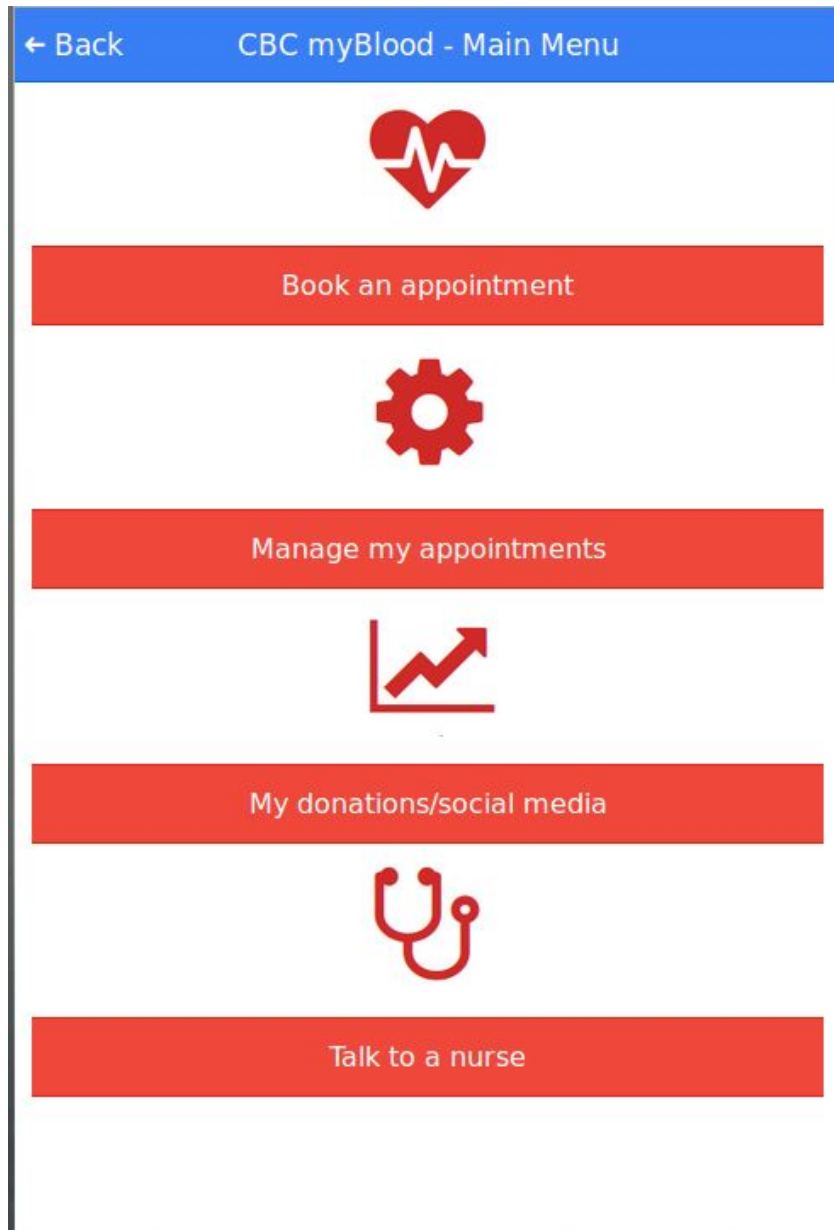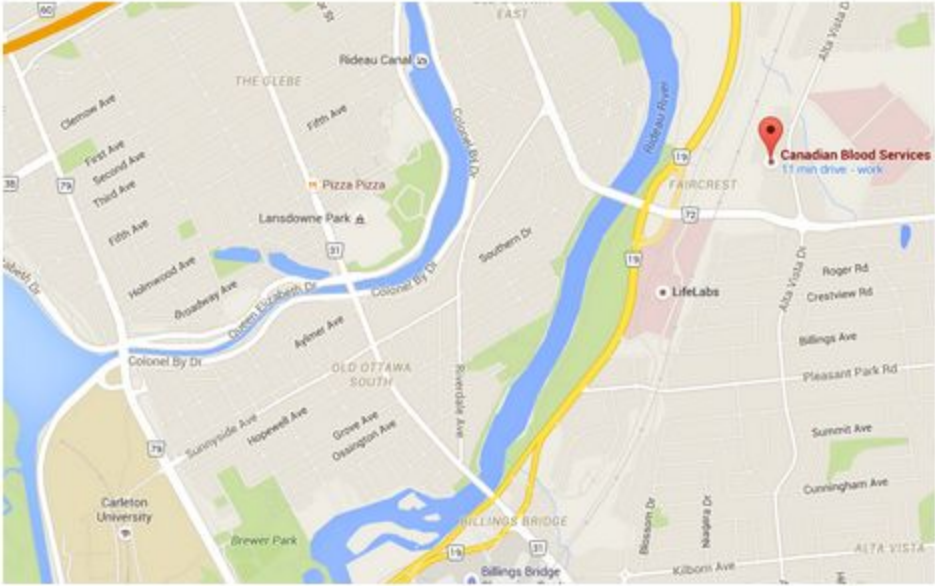
Book An Appointment

You can book an appointment by selecting "Book an appointment" from the main menu. This will take you to the New Appointment screen, where you can select your desired location, as well as the date and time you wish to donate. Once finished, click "Next" to confirm your details.

Manage My Appointments

You can manage your appointments by selecting "Manage my appointments" from the main menu. This will provide you with access to details on each of your appointments, including any medical documentation necessary for the processing of your appointment. To complete a form for a desired appointment, select the right appointment from the drop-down menu, complete the remainder of the form, and press "Complete form".

My Donations/Social Media

You can track your donations by selecting "My donations/social media" from the main menu.This page allows you to view information about your donations, as well as those of everyone so far during the year. You can track your progress, and share information with your friends, encouraging them to donate as well!
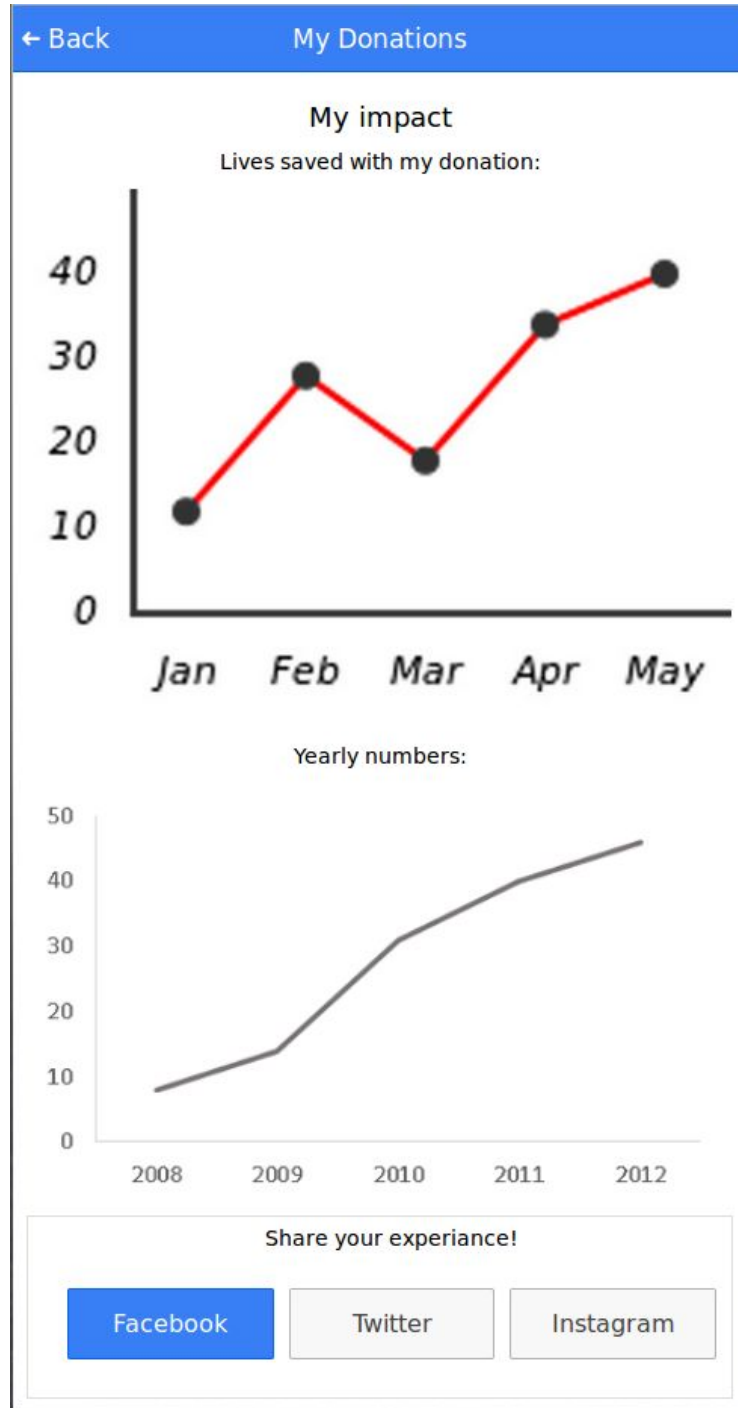
Talk to a Nurse

If you have any medical questions, you can get in touch with a nurse by selecting "Talk to a nurse" from the main menu. From here, you can opt to contact them by phone, e-mail, or in-app instant message, which will put you in touch with a registred CBS nurse via the chosen communication method.
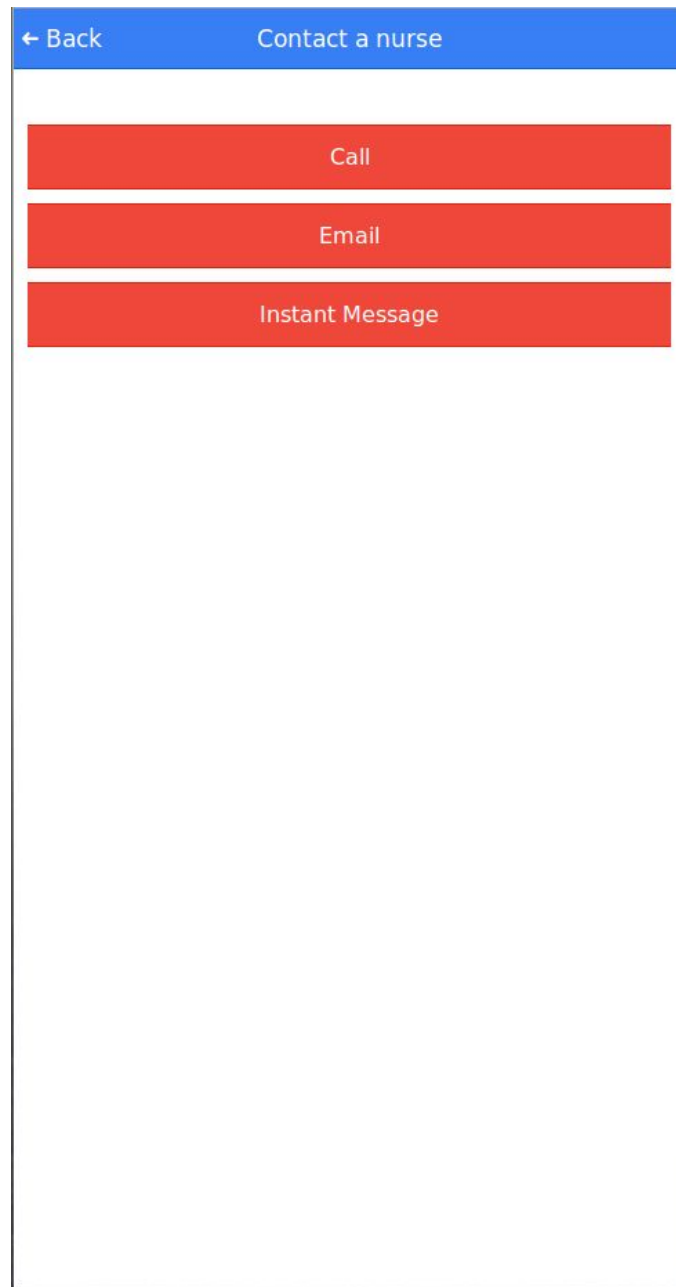
Heuristic Evaluation: Ryan

Problem 1: No Appointment Cancellation
- Problem because users can't cancel appointments!
- Severity: 4 (Critical) - Users can't cancel appointments, which will result in a lot of frustrated phone calls. Unfortunately, due to Problem 1 those calls will be going to nurses, not technical support (hence the usability catastrophe).

Problem 2: Missing Help Icon (from last low-fidelity prototype)
- Problem because users should have a quick, reliable way of accessing help throughout the application
- Severity: 3 (Major) - Since this is our only point of access to system help (we don't want nurses being called because of technical problems), it would be important that they be included.

Problem 3: No Share Option on Appointment Confirmation Screen
- Problem because it's inconvenient to not have the option readily accessible from the appointment confirmation screen (as voiced by prototype demo participants)
- Severity: 2 (Minor) - Feature is still accessible via My Donations, and it does not impact core functionality or the overall purpose of the app.

Heuristic Evaluation: Filip

Problem 1: Users cannot fully manage their appointments.
- Problem because users will need to be able to edit and cancel their current appointments.
- Severity: 4 (Critical) - An application like this **needs** to have proper appointment management. This would need to be a core feature of the application.

Problem 2: Lack of a help button throughout the application
- Problem because users may need help navigating or clarifying things during the process, currently they are able to ask nurses over the phone but with this new process they should be able to get their answers in app.
- Severity: 3 (Major) - Users need to be sure they are going through the application correctly and accurately.

Problem 3: Medical forms can be unclear and may need a help button
- Problem because users may not be 100% clear on what the questions are asking. (i.e. low blood pressure at any point in your life or only in the last year?)
- Severity: 1 (Minor) - Since this is information is going to trained medical professionals and because users can interact with nurses through the app, the questions can be clarified at a later point.

Heuristic Evaluation: Guelor

- Problem 1:(Critical) Missing an Alternate sign-up option for user who dont have facebook or Google account.

- Problem 2: (Major) User were not able to delete their booked appointment or change it to a different date.

- Problem 3: (Minor) Having a text based representation of the address
- For our menu for finding Clinic nearest you we had a visual representation of the nearest clinic on Google map but as was pointed out through our interviews with student we forgot to add a secondary option as a list view of all the nearest Clinic in text format.

Heuristic Evaluation: Summary

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- Problem 5:(Critical) Missing an Alternate sign-up option for user who dont have facebook or Google account.

- Problem 6: (Minor) Having a text based representation of the address
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Workload Distribution Summary

Guelor: (The code base), 4a, 4b, 4c

Filip: 3b, 4a, 4b, 5, 6

Ryan: 1a, 1b, 1c, 2a, 2b, 2c, 3a (participation), 3b (participation, interviewing), 4b (support coding, didn't write majority of code), 4c, 5a, 6a.