(App logo still pending)

LLU "Health Hearts at Home" App Software Requirements Specification (SRS)

Version 1.1

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1 INTRODUCTION

1.1 PURPOSE

Software Engineering students from California State University, San Bernardino will be developing an application. CSE 455 students will work alongside Loma Linda University School of Public Health as well as Loma Linda's Children's Hospital Nursing to provide a mobile application to support the needs of caregivers of children with Congenital Heart Disease. Through this document, the CHD iOS team will define the app's functionalities, limitations, requirements, and objectives to deliver our client, Vanessa Ayer Miller, the requested application.

For 10 weeks, our team will work with the client until the desired app functionality is met. The goal of the team is to set the base for the new app which will have several pages which the user can navigate through. These pages will contain helpful information to provide caretakers of children with Congenital Heart Disease convenient access to information and tools they may need or want to use. We will only be focusing on building the framework for the launching the app for iOS.

1.2 SCOPE

This application will provide the caretakers of children with CHD easy access to informative pictures, videos, documents, links, and outside information. As well as contact resources to their doctors, maps of the hospital for ease of access, reminders, and calendars. For the first iteration of this app we will primarily be focusing on setting up the infrastructure of the application.

The infrastructure for this app will include the standard pages. We will work the Home page, Contacts page, Helpline page, and Track Your Child page. The Home page is essential to the development of the app for it will be the one to tie all the sub sections together and will be the parent node to which all the pages can iterate back to. These will be fully functional with back buttons. The second prototype will include a presentation of an English/Spanish button.

1.3 DEFINITIONS, ACRONYMS, & ABBREVIATIONS

- **LLU** - Loma Linda University
- **CSUSB** - California State University, San Bernardino
- **CHD** - Congenital Heart Disease
- **Mobile app** - Mobile Application
- **iOS** - iPhone Operating System
- **UI** - User Interface
- **Swift** - Swift is a general-purpose, multi-paradigm, compiled programming language developed by Apple Inc. for iOS, macOS, watchOS, tvOS, and Linux.
- **CSE** - Computer Science and Engineering
- **SRS** - Software Requirements Specification
- **Xcode** - The integrated development environment (IDE) from Apple that is used to create, compile and test Mac OS X and iOS (iPhone/iPad/iPod) applications.
- **QA** - Quality Assurance

1.4 REFERENCES

- Xcode – https://developer.apple.com/xcode/
- IEEE SRS Std 830
- Loma Linda University Medical Center - https://medical-center.lomalindahealth.org/

1.5 OVERVIEW

The goal of the product will change accordingly to what the client asks for. UI will change over the course of time with the implementation of ideas, and limitations. Any possible limitations will be discussed in the requirements section and further analyzed.

2 OVERALL DESCRIPTION

2.1 PRODUCT PERSPECTIVES

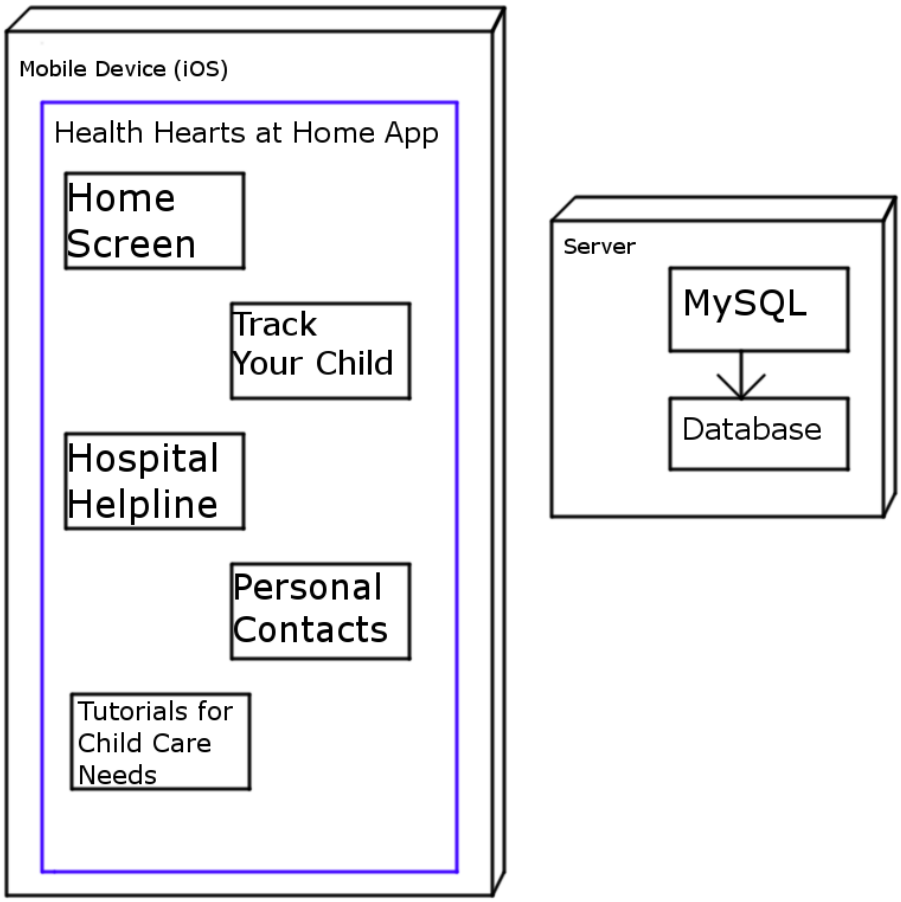
The mobile app will provide a "one stop shop" style of app that will provide the users with information and support to caregivers. The client wants the application to be able provide everything that is needed for the user, from a tracker for the child, to hospital helplines, to tutorials for child care including documentation and videos.

Health Hearts at Home will provide an essential tool for the parents and caregivers, and will be informed by the Hospital on the benefits and uses of the app.

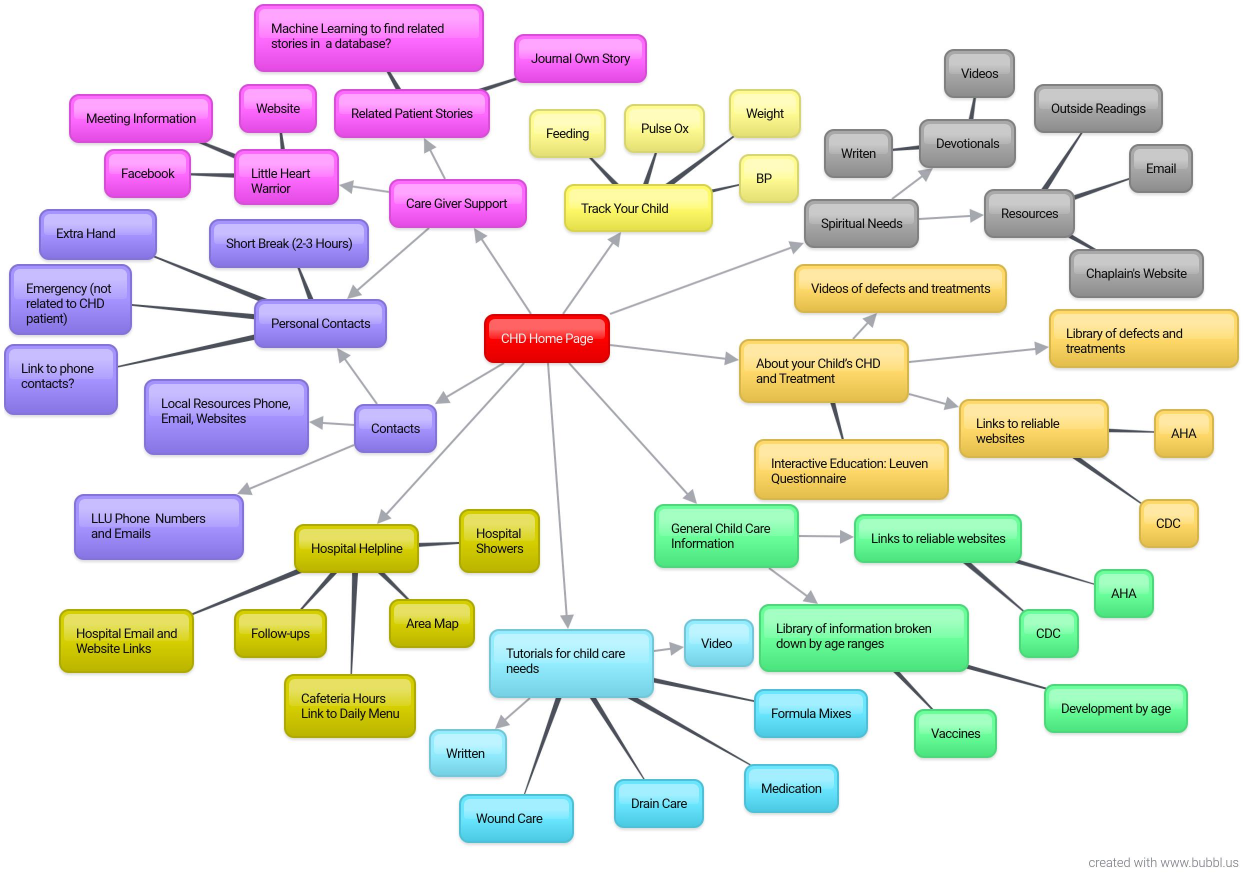
The app will be first developed for iOS, with the intent of being ported to android later in development. As well as provide an English and Spanish version of the app.

2.1.1 SYSTEM INTERFACE

The application's first development will be built using Xcode. The mobile app will have several pages that will pull from a database. From the database, documentation and videos for tutorials/information, maps and contact information of the hospital, will be pulled.



2.1.2 USER INTERFACE



For our prototypes, we will be working on the Home Page, Track Your Child, Hospital Helpline and Contacts.

Interface:

This is the detailed version of the user interface, as the goal for the final product. The user will load into the home screen and will see 8 main options that can load into multiple other screens. The options will be provided in a list displayed on the home screen. To transverse back to previous screens, there will be a back arrow on the top left.

2.1.3 SOFTWARE

- Xcode – for the iOS version
- Android Studio – for the Android version
- Photoshop
- Server set up by the CSUSB Team

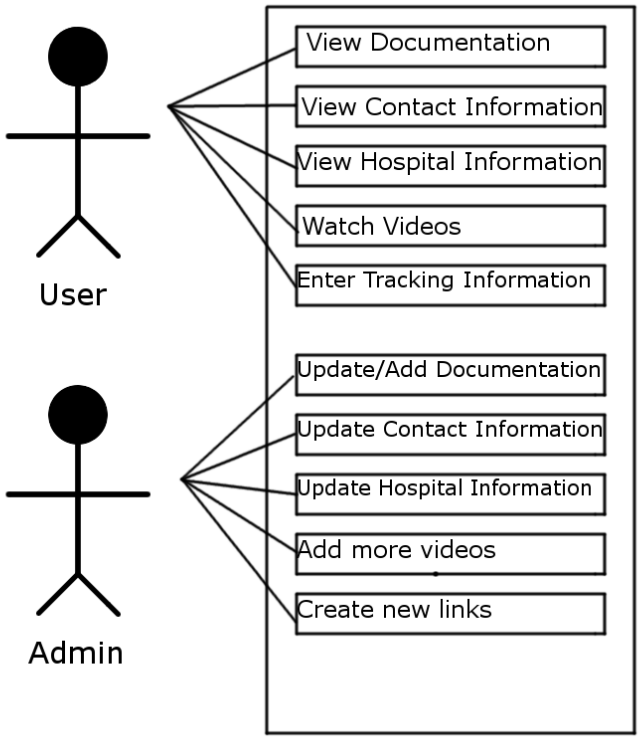
2.1.4 MEMORY

The mobile will not be memory intensive, as all the documentation and videos for the tutorials will be kept on the database. While the tracking information for the child, entered by the user, will be saved to the phone.

2.1.5 RUN-TIME

When the app is downloaded, the app will only be running during the time of active use by the user.

2.2 USER/ADMIN FUNCTIONS



2.3 USER DEFINITION

The user is a parent, or caregiver, that wants fast access to medical information, especially about Congenital Heart Disorder, and a way to track their child's health performance. The application will be available on the App Store once the application is completed and given the approval from Loma Linda Children's Hospital (LLCH). LLCH will be in charge of updating the user with critical information during and after development.

2.4 CONSTRAINTS

The first release of the application will only be available for Apple devices (e.g. iPhone, iPad, and iPod Touch). However, after the first release we will immediately start the development for the Android version of this application. The system requirements for the android version will be available as soon as the development team approaches this final phase.

2.5 ASSUMPTIONS & DEPENDENCIES

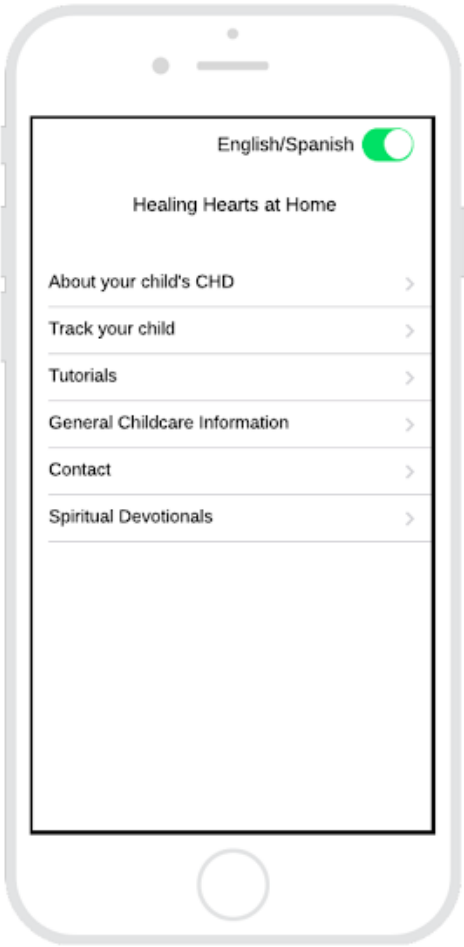
The development team assumes the user has access to the Internet in order to download and use the application. Additionally, an email address will be required from the parent to register their child on the application. Future updates will be necessary to provide the user with the latest information for their child's care; hence, someone who is knowledgeable with either platform (e.g. iOS or Android) will be needed to maintain and update the application.

3. SPECIFIC REQUIREMENTS

3.1 EXTERNAL INTERFACE REQUIREMENTS

3.1.1 USER INTERFACES

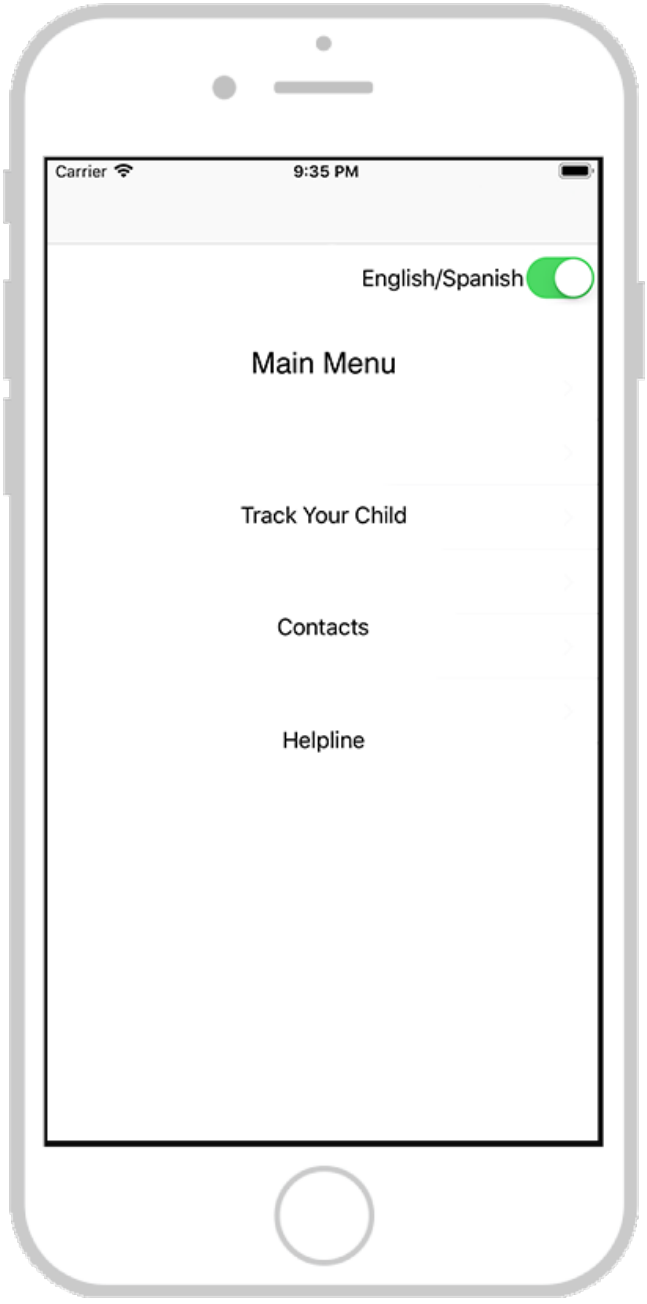
This section we show how the user will interact with the app and what is shown to the user. There will be a toggle switch in each of the sections in the app, that will allow the user to switch between English and Spanish.



(sample of client's proposed idea)

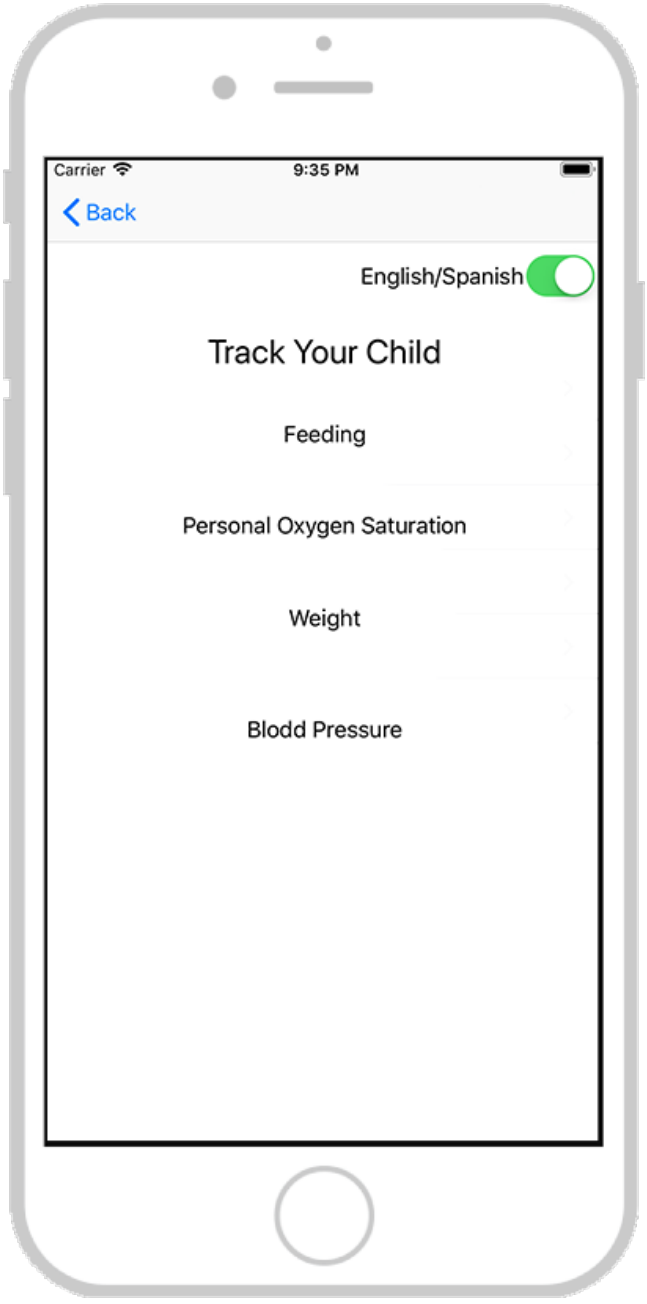
3.1.1.1 MAIN MENU (HOME PAGE)

Upon opening the app, the user will have quick and easy access to navigate between the sections of the app.



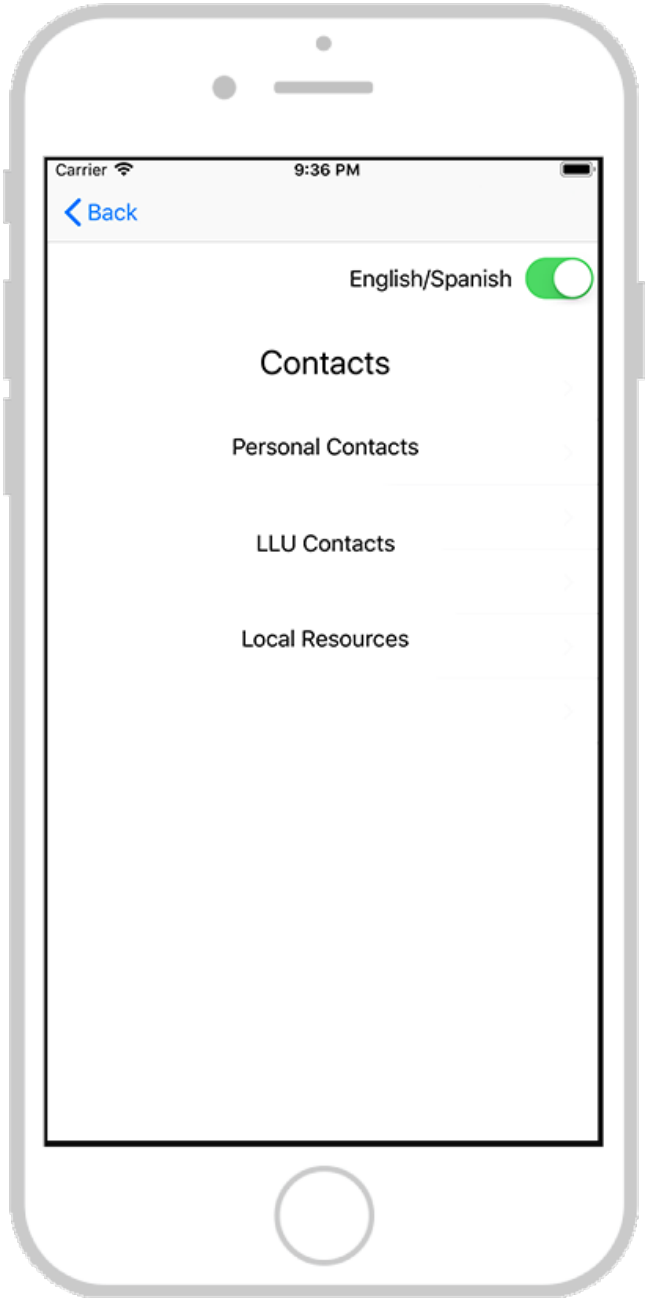
3.1.1.2 TRACK YOUR CHILD

In this section, the user can input information about their child. Such as, weight, feeding schedules, etc.



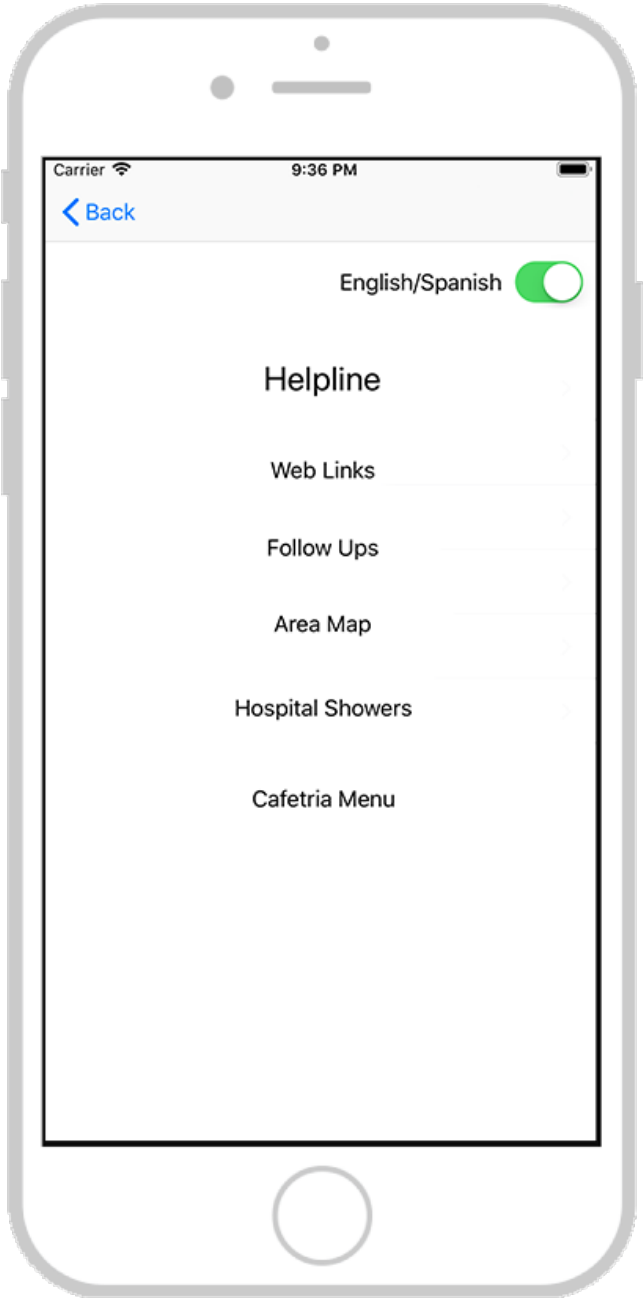
3.1.1.3 CONTACTS

On this page, the user can find contact information and input their own contacts as to create a sort of fast and readily available network.



3.1.1.4 HELPLINE

On the Helpline page, the user will be able to find links that will redirect the user to the information needed.



3.1.1.5 TUTORIALS

This page contains tutorial videos and guides for the user to see.

3.1.1.6 GENERAL CHILDCARE INFORMATION

This page contains further information about childcare and other information regarding the child's needs and development.

3.1.1.7 ABOUT YOUR CHILD'S CHD

This section will contain information about Congenital Heart Disease (CHD) of the user or user's child.

3.1.2 HARDWARE INTERFACE

The app will first be available on iOS devices through the App Store. In the future, the team plans to expand for android devices as well and have the app available on the Play Store.

3.1.3 SOFTWARE INTERFACE

The app will have a database that will have information stored. In the database, the information will be what the user has inputted into the app, such as their child's information, equipment, contacts and etc. and thus needs to be well secured. The database will also contain the documentation, videos and links that will be used in the app.

3.1.4 COMMUNICATION INTERFACE

Internet access is needed for the app to be downloaded. Using cellular data or connection to WiFi is needed to have access to certain content in the app. However, some pages do not need access to the internet to be able to use once downloaded. Although videos, and URLs may require internet access.

3.2 FUNCTIONAL REQUIREMENTS

Below is a detailed list of functions the client wants to see implemented on the app. Such function will facilitate the users' ability to navigate through the application as well as provide the desired need. These functions are intended to make the application more practical and user friendly.

3.2.1 HOME PAGE

3.2.1.1 OPENING SCREEN

Upon startup, the application will display the "Health Hearts at Home" logo as well as any other logos of affiliates such as Loma Linda University.

3.2.1.2 HOME SCREEN

The home screen will contain the main menu. This menu is composed of the 8 options than can load into the screen. Such options include "Care Give Support", "Track your Child", "Contacts", "Hospital Helpline", "General Child Care Information", "About your Child's CHD and Treatment", "Spiritual Needs", and "Tutorials for Child Care Needs" (not necessarily in this order).

3.2.2 TRACK YOUR CHILD

One of the more important pages, the "Track Your Child" page allows the user to be able to monitor their child's routinely care. Such as inputting information about the weight, feedings (date, time, amount, breast/bottle), and oxygen saturation. Also record the equipment the caregiver is using to tend to their child.

3.2.3 CONTACTS PAGE

The contacts page will list LLU phone numbers as well as emails. It will too contain local resources phones, emails, and websites. Another feature will be the users' accessibility to personal contacts and their own health care providers.

3.2.4 HOSPITAL HELPLINE

The hospital helpline page will contain information that is readily available to the user. In it they can find hospital email and website links, cafeteria hours along with a link to the daily menu, area map, and hospital showers availability.

3.2.5 ENGLISH/SPANISH TOGGLE

The language toggle will be a switch incorporated into the top right corner of every screen. This way, the user can have access to it no matter in what section or screen of the app he is. The function of this switch is to allow the user to be able to toggle back and forth between two languages, English and Spanish, to choose whichever they feel more comfortable with and are better able to comprehend what they are reading.

3.2.6 BACK BUTTON

This button will act as the standard iPhone back button. Its job is quite simple, when the user presses it, the app will take the user back to the previous screen. That way, if the user is deep in a section of the app, they can always go back to the parent screen or all the way back to the home screen using this button without getting lost in the pages. The back button will be found on the top left of every screen except the Home Page of the app.

3.3 PERFORMANCE REQUIREMENTS

This program should be able to run on most version of Apple iOS and will eventually be downloadable from the App Store. Functions of the program are primarily basic data retrieval so it will not be processing intensive.

3.4 DESIGN CONSTRAINTS

All coding will be done on Apple machines using Xcode. The client has specified several different pages and I/O's available to user as well as a few UI/UX models that contain their preferred colors and user environment.

3.5 SOFTWARE REQUIREMENTS

3.5.1 RELIABILITY

The program will be constructed incrementally, one function at a time with extensive testing in between both on an emulator and loaded into a physical device running different iOS versions. The QA team will also be keeping track of progress and performing similar testing to ensure reliability.

3.5.2 AVAILABILITY

For the first several versions of the program, it will only be available on a private server controlled by the CSUSB Server Team. Later however, it will be uploaded onto the App Store for user download. Eventually it will also be available on android devices in the Play Store to reach more in need.

3.5.3 SECURITY

3.5.3.1 SYSTEM

The server team will provide a secure server for the needs of the project app

3.5.3.2 DATA

Those with admin access will be the only ones able to view and access sensitive information such as that regarding specific clients and their children along with personal information.

3.6 TESTING REQUIREMENTS

3.6.1 unit testing

The development team will continuously be testing the project as they implement more and more individual functions. The team will make sure all the functions are working properly to obtain desired results.

3.6.2 INTEGRATION

Once the functions are doing as they are intended, then the team will integrate the functions and connect all the building blocks as so the pages are coherent and the user is able to easily navigate through the screens.

3.6.3 ACCEPTANCE

The project team is partnered with a QA team to run the app and put it through rigorous and thorough testing. Once its approved and meets the standards with no bugs, then it will be given the green light to be launched in the App Store.

3.7 DOCUMENT APPROVAL

Vanessa Ayer Miller (client)