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Software Engineering Focus

Final Deliverable

Project Title:
NuMom (Keeping Mothers and Infants Healthy)

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Abstract

This document presents the information necessary to gain a good understanding of the current state of NuMom (Keeping Moms and Infants Healthy) after the Fall 2023 Capstone II development cycle. NuMom is an application for both Android and iOS devices made with the intent to provide free and easy access to prenatal and postnatal learning resources to low-income, minority mothers, who have been found to regularly have reduced access when compared to other populations. Besides providing features such as location searching and document/immunization/appointment recording, the resources provided by this app include but are not limited to: growth milestones, feeding, safe sex practices, STDs, applying to help programs, etc.. The application is fully translated between English, Spanish, and Haitian Creole to ensure larger populations can access support systems for mothers and children alike. Throughout this semester, the development team of three people has put a focus on resolving any existing front-end bugs or glitches which were hindering user experience. Certain dependency related constraints were also worked on; such as: upgrading Expo version from 48 to 49, and downgrading to Node.js version 11 in order to fix certain React.js issues.

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Introduction

Current System

The current system consists of a mobile app with support for both Android and iOS devices. Users can sign up for an account within the app to gain access to a variety of useful features. This includes the ability to search for clinics and shelters, learn about feminine sexual and reproductive health, and keep track of important vaccination records, documents, and appointments. The application's target audience is new mothers from low-income minority households and/or single mothers.

Purpose of New System

The primary objective was to focus mainly on front-end bug/issue fixing-testing-finding rather than adding new functionality or features. Some adjustments were made to existing dependencies in order to fix some smaller compatibility issues. More specifically: Expo version was upgraded from 48 to 49 and Node.js version was downgraded to 11. The idea was to keep the app very stable in its current state to prepare it for a new TestFlight release and that further modifications can be made by the next Capstone students working on this project. A major part of the focus was to make the app more user-friendly.

User Stories

The following section provides the detailed user stories that were implemented in this iteration of the NuMoms project. These user stories served as the basis for the implementation of the project's features. This section also shows the user stories that are to be considered for future development.

We would like to note that our user stories stayed the same throughout each sprint because that is what was assigned to us by our mentor. The actual issues/stories were developed as we went through each sprint:

- *User Story 1: Look for glitches or inconsistencies in NuMom.*
- *User Story 2: Create issues on Github to outline those issues.*
- *User Story 3: Work on resolving the issues (either the new ones or existing ones).*
- *User Story 4: Create pull requests for each issue.*
- *User Story 5: Review each pull request and approve for merging.*

Below are the specific issues we resolved throughout the semester:

Implemented User Stories (Specific Issues Worked On)

USER STORY ID	BELONGS TO	DESCRIPTION	ASSIGNEE
#01	Developers	Review Pull Requests for each Sprint	All members
#02	Developers	Post a new issue to GitHub	All members
#03	Developers	Task #1: Welcome Fall 2023!	All members
#678	Developers	Adjusted the visual inconsistency by changing the width of the questionsDropDown on SettingsScreen.jsx (only for Android).	Victor
#685	Developers	Re-format the female condom do/don't page	Jocelyn
#680	Developers	Text are not aligned in the facilities page	Jose
#611	Developers	Get rid of unused import files	Victor
#592	Developers	Improve password screen feedback	Jocelyn
#677	Developers	Loading clinics is slow	Jose
#667	Developers	Missing to add translations in English, Spanish, and Creole for MedicaidScreen.jsx	Victor

#681	Developers	Remove/Edit necessary data from Firebase DB	Jocelyn
#694	Developers	Remove option to toggle map on/off, should always be on	Jose
#698	Developers	Checking the infant Date of Birth	Victor
#691	Developers	Fix padding for STD awareness information	Jocelyn
#688	Developers	Forgot password padding is wrong/unaligned	Jose
#707	Developers	Change the icons in immunization to match the rest of the app	Jocelyn
#701	Developers	Scrolling through clinics and shelter ends too early	Jose
#706	Developers	The setting icon in the homepage is unaligned	Victor
#710	Developers	Clinics loading slowly, fix again	Jose
#708	Developers	Add icons to the Medicaid checklist	Jocelyn
#713	Developers	Add translations for the description of shelters	Victor

Pending User Stories

User Story ID	Belongs to	Description
#695	Future Developer(s)	Sorting appointments by date
#696	Future Developer(s)	Go back to appointment screen after clicking “save”
#717	Future Developer(s)	Change input text color on add references page
#718	Future Developer(s)	Add a reference to the fields that are not visible to identify what should be put into them
#719	Future Developer(s)	Missing translation for the title in some components
#693	Future Developer(s)	Fix phone number formatting on references page

Project Plan

This section describes the planning that went into the realization of this project. This project incorporated the agile development techniques and as such required the sprints to be planned. These sprint plannings are detailed in the section. This section also describes the components, both software and hardware, chosen for this project.

Hardware and Software Resources

The following is a list of all hardware and software resources that were used in this project:

iOS Device	Android Device	Software
iPhone 14 Plus	Google Pixel 4A	Visual Studio Code (React.js/Node.js)
iPad (8 th Generation)		Github.com
iPhone X		Github Desktop
		Firebase

Sprints Plan

The product owner chose the following user stories to be done during **all sprints**. They are ordered based on their priority.

- Look for glitches or inconsistencies in NuMom.
- Create issues on Github to outline those issues.
- Work on resolving the issues (either the new ones or existing ones).
- Create pull requests for each issue.
- Review each pull request and approve for merging.

Sprint 1

Initial steps: The team met with Jean Hannan and Eduardo Morales to discuss what to expect and plan out the semester for continuing the development of nuMom.

User Story 1 – Task 1: Welcome Fall 2023!

- *Install expo, run the app, and make the first pull request on the repo to make sure everyone can access the app.*

User Story 2 – Look for glitches or inconsistencies in NuMom.

- *During the meeting with Eduardo Morales, one of our first tasks was to post a new issue. This is relevant for all sprints since we were instructed to post one new issue per person per sprint.*

User Story 3 - Create issues on Github to outline those issues.

- *Issues found:*
 - *Issue #678 Adjust visual inconsistency for SettingsScreen.jsx (Android)*
 - *Issue #685 Re-format the female condom do/don't [age*
 - *Issue #680 Texts are not aligned in the facilities page*

User Story 4 - Work on resolving the issues (either the new ones or existing ones).

- *Issues worked on:*
- *Issue #678 -> Fixed a UI inconsistency which only seemed to be an issue with the Android version. (Victor)*
- *Issue #685 -> Re-formatted the female condom do/don't screen to make it more visually appealing. (Jocelyn)*
- *Issue #680 -> Re-aligned the texts in the facilities page to make the UI more visually appealing. (Jose)*

User Story 5 - Create pull requests for each issue.

- *Issue #678 -> PR #683 (Victor)*
- *Issue #685 -> PR #686 (Jocelyn)*
- *Issue #680 -> PR #684 (Jose)*

User Story 6 – Review Pull Request for each Sprint

- *This story is relevant for all sprints since the team needed to review all pull requests before merging.*

Sprint 2

User Story 1 – Look for glitches or inconsistencies in NuMom.

- *This is relevant for all sprints since we were instructed to post one new issue per person per sprint.*

User Story 2 - Create issues on Github to outline those issues.

- *Issues found:*
 - *Issue #693 Fix phone number formatting on references page.*
 - *Issue #691 Fix padding for STD Awareness information*
 - *Issue #687 Drop down menu out of screen when opened.*

User Story 3 - Work on resolving the issues (either the new ones or existing ones).

- *Issues worked on:*
- *Issue #611 -> Removed unused imports from most of the components to enhance code readability. (Victor)*
- *Issue #592 -> Added weak password alert and checker to improve security. (Jocelyn)*
- *Issue #677 -> Fixed the clinics to load faster and improve user experience. (Jose)*

User Story 4 - Create pull requests for each issue.

- *Issue #611 -> PR #692 (Victor)*
- *Issue #592 -> PR #690 (Jocelyn)*
- *Issue #677 -> PR #689 (Jose)*

User Story 5 – Review Pull Request for each Sprint

- *This story is relevant for all sprints since the team needed to review all pull requests before merging.*

Sprint 3

User Story 1 – Look for glitches or inconsistencies in NuMom.

- *This is relevant for all sprints since we were instructed to post one new issue per person per sprint.*

User Story 2 - Create issues on Github to outline those issues.

- *Issues found:*
 - *Issue #695 Sorting appointments by date.*

- *Issue #696 Go back to appointment screen after clicking “save”*
- *Issue #698 Check the infant date of birth.*

User Story 3 - Work on resolving the issues (either the new ones or existing ones).

- *Issues worked on:*
- *Issue #667 -> Added Spanish and Haitian Creole translations for the Medicaid Screen and its checklist. (Victor)*
- *Issue #681 -> Sorted and cleaned up clinic and shelter information on Firebase. (Jocelyn)*
- *Issue #694 -> Fixed map to always appear throughout the app. (Jose)*

User Story 4 - Create pull requests for each issue.

- *Issue #667 -> PR #697 (Victor)*
- *Issue #681 -> NO PR. Changes done on Firebase. (Jocelyn)*
- *Issue #677 -> PR #700 (Jose)*

User Story 5 – Review Pull Request for each Sprint

- *This story is relevant for all sprints since the team needed to review all pull requests before merging.*

Sprint 4

User Story 1 – Look for glitches or inconsistencies in NuMom.

- *This is relevant for all sprints since we were instructed to post one new issue per person per sprint.*

User Story 2 - Create issues on Github to outline those issues.

- *Issues found:*
 - *Issue #702 Bottom of the Shelter’s info gets cut off.*
 - *Issue #701 Scrolling through Clinics/shelter ends too early.*
 - *Issue #706 The settings icon on the homepage is not centered correctly.*

User Story 3 - Work on resolving the issues (either the new ones or existing ones).

- *Issues worked on:*
- *Issue #698 -> Fixed the regex expression in the Settings so that it checks for a valid DOB for both the user and the infant. (Victor)*
- *Issue #691 -> Fixed the padding and margin for the Menu component to improve UI. (Jocelyn)*

- *Issue #688 -> Fixed the padding issue for the forgot password. (Jose)*

User Story 4 - Create pull requests for each issue.

- *Issue #698 -> PR #704 (Victor)*
- *Issue #691 -> PR# 703 (Jocelyn)*
- *Issue #688 -> PR #705 (Jose)*

User Story 5 – Review Pull Request for each Sprint

- *This story is relevant for all sprints since the team needed to review all pull requests before merging.*

Sprint 5

User Story 1 – Look for glitches or inconsistencies in NuMom.

- *This is relevant for all sprints since we were instructed to post one new issue per person per sprint.*

User Story 2 - Create issues on Github to outline those issues.

- *Issues found:*
 - *Issue #713 Add translation for the description of shelters.*
 - *Issue #708 Add icons to medicaid checklist.*
 - *Issue #710 Clinics loading slowly.*

User Story 3 - Work on resolving the issues (either the new ones or existing ones).

- *Issues worked on:*
 - *Issue #706 -> Fixed the margins of the settings button for better visibility. (Victor)*
 - *Issue #707 -> Changed the icons and spacing for a more modern UI. (Jocelyn)*
 - *Issue #701 -> Fixed the scrolling problem on the clinics page. (Jose)*

User Story 4 - Create pull requests for each issue.

- *Issue #706 -> PR #712 (Victor)*
- *Issue #707 -> PR #709. (Jocelyn)*
- *Issue #701 -> PR #710 (Jose)*

User Story 5 – Review Pull Request for each Sprint

- *This story is relevant for all sprints since the team needed to review all pull requests before merging.*

Sprint 6 (Last Development Sprint)

User Story 1 – Look for glitches or inconsistencies in NuMom.

- *This is relevant for all sprints since we were instructed to post one new issue per person per sprint.*

User Story 2 - Create issues on Github to outline those issues.

- *Issues found:*
 - *Issue #719 Missing translation for the titles of some components.*
 - *Issue #717 Change the input text color on add references page.*
 - *Issue #718 Add a reference to the fields that are not visible to identify what should be put into them.*

User Story 3 - Work on resolving the issues (either the new ones or existing ones).

- *Issues worked on:*
 - *Issue #713 -> Added the Spanish and Haitian Creole translations on Firebase for the descriptions and times of shelters. (Victor)*
 - *Issue #708 -> Added Icons to the Medicaid checklist. (Jocelyn)*
 - *Issue #694 -> Fixed loading of the maps and clinics to be faster. (Jose)*

User Story 4 - Create pull requests for each issue.

- *Issue #713 -> PR #715 (Victor)*
- *Issue #708 -> PR #716. (Jocelyn)*
- *Issue #710 -> PR #714 (Jose)*

User Story 5 – Review Pull Request for each Sprint

- *This story is relevant for all sprints since the team needed to review all pull requests before merging.*

Sprint 7

User Story 1 – Record demos of NuMom until we choose a finalized version..

- *All members worked on recording the demos of NuMom.*

User Story 2 - Merge all remaining issues that have been worked on.

- *All members worked on merging the remaining pull requests.*

User Story 3 - Work on individual posters.

- *All members worked on completing their individual posters.*

User Story 4 - Work on group document.

- *All members worked on completing the final group document.*

User Story 5 – Prepare the final deliverable

- *All members worked on completing the final deliverable.*

System Design

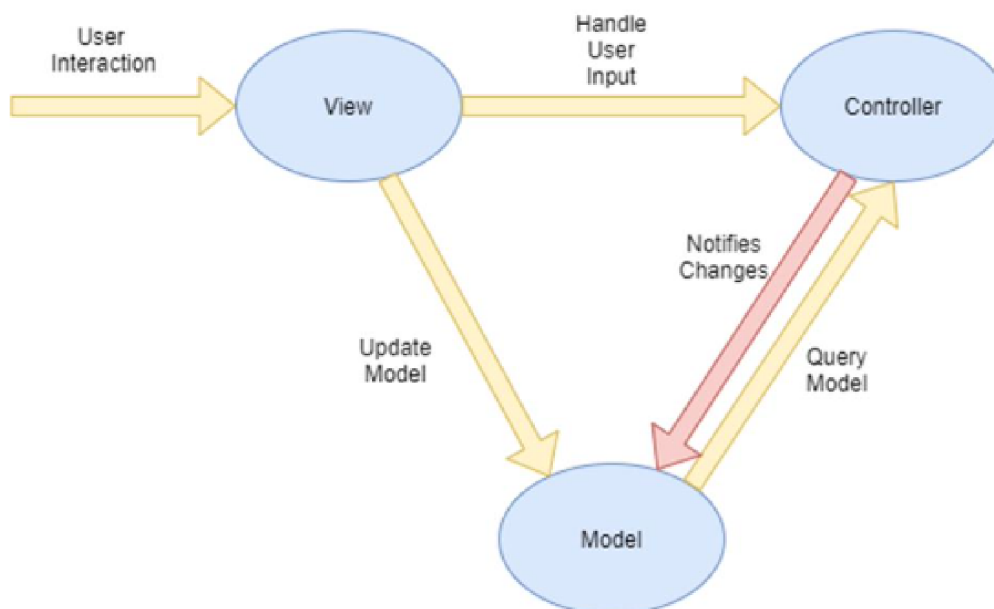
This section contains information on the design decisions that went into this project. The architecture patterns are outlined and explained. The entire system is shown in a package diagram and the subsystems are explained. Finally, the design patterns used in the project are discussed.

Architectural Patterns

Model-view-controller, popularly known as MVC, was the pattern that we employed. The application was separated into three sections using this structure:

- View - displays the information to the user, the user interface (UI).
- Controller - handles the user's inputs.
- Model - contains the core functionality, logic, and data of the application.

The data model, user-facing information, and control information were all intended to be contained in this MVC. Because it permits code reuse within the application, this design pattern is effective.

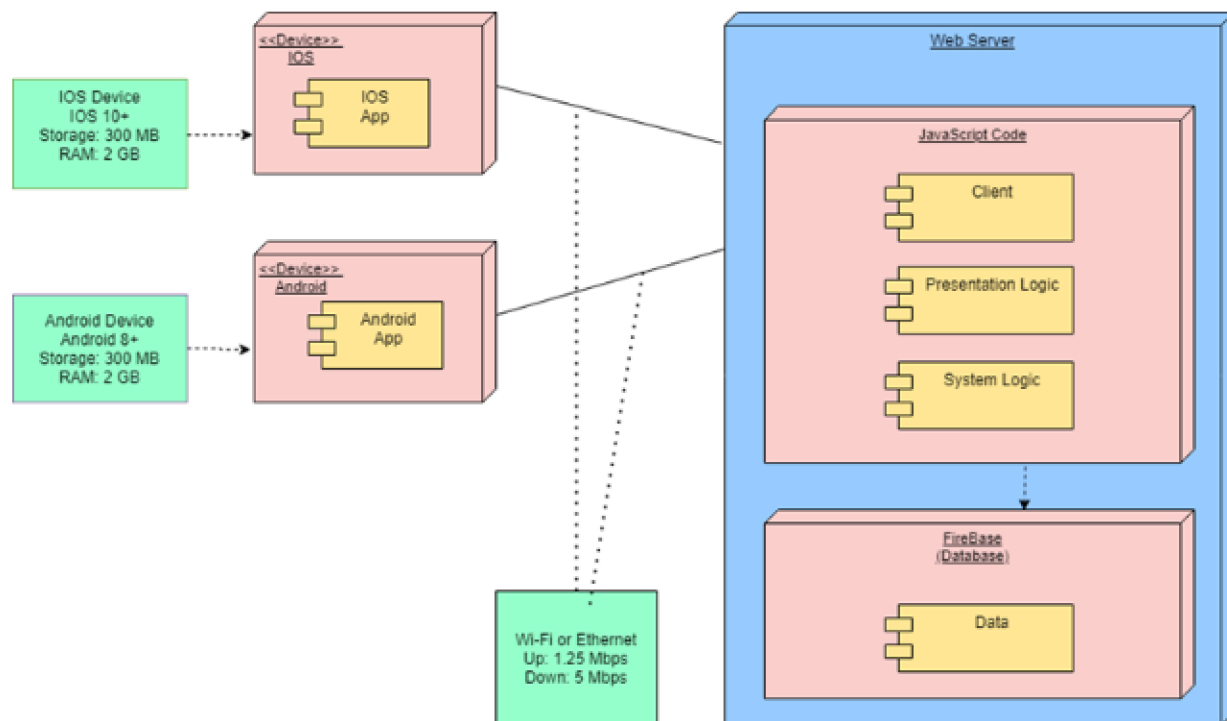


- View- displays the information to the user, the UI
- Controller- handle the user input
- Model- contains the core functionality and data

System and Subsystem Decomposition

The app was built with React Native and deployed with Expo packages and scanned a given QR code with the Expo GO app. Source code and assets are available in the src folder of the project, as well as the translation files for the English, Spanish, and Creole versions of the app. To replace class inheritance, we used React Hooks throughout the program. React Hooks is similar to class inheritance, but it has functions passing returns that are used anytime a component is called within another component.

Deployment Diagram



Design Patterns

- *Facade*: The app uses a Facade design pattern to represent the UI in a user-friendly way without exposing the logic of the system to the user.
- *Singleton*: The app uses a Singleton design pattern to maintain only one instance of Firebase, with only one global access point to avoid instantiating the database API multiple times.
- *Iterator*: The app uses the Iterator design pattern to display multiple buttons, as well as display the Clinics and the Shelters.
- *Chain of Responsibility*: In the app several components delegate access of functions to other components which use a chain of responsibility design pattern.

System Validation

As a team, we verified our issues/stories using Visual Studio Code running locally using Expo. Our knowledge of git allowed us to easily create pull requests and test the changes made by other members. Our changes were made on new branches pulled from the development branch to ensure we do not break anything. Before we could merge pull requests, we needed two reviewers to ensure correct functionality of the code.

Glossary

API: Short for Application Programming Interface. a set of functions and procedures allowing the creation of applications that access the features or data of an operating system, application, or other service.

Authentication: The process of confirming if the user is who the user says it is.

Cloud Functions: Cloud Functions is a server-less execution environment for building and connecting cloud services.

Dependencies: is a broad software engineering term used to refer when a piece of software relies on another one.

Expo: Expo is a platform that allows you to develop and quickly iterate on applications that are based in React Native and JavaScript.

Feature: A capability that the software offers

Framework: A basic structure underlying a system, concept, or text.

IDE: Short for Integrated Development Environment. is a software application that provides comprehensive facilities to computer programmers for software development.

Product Owner: The person responsible for guiding changes and talking to developers about things that need to be modified on a software.

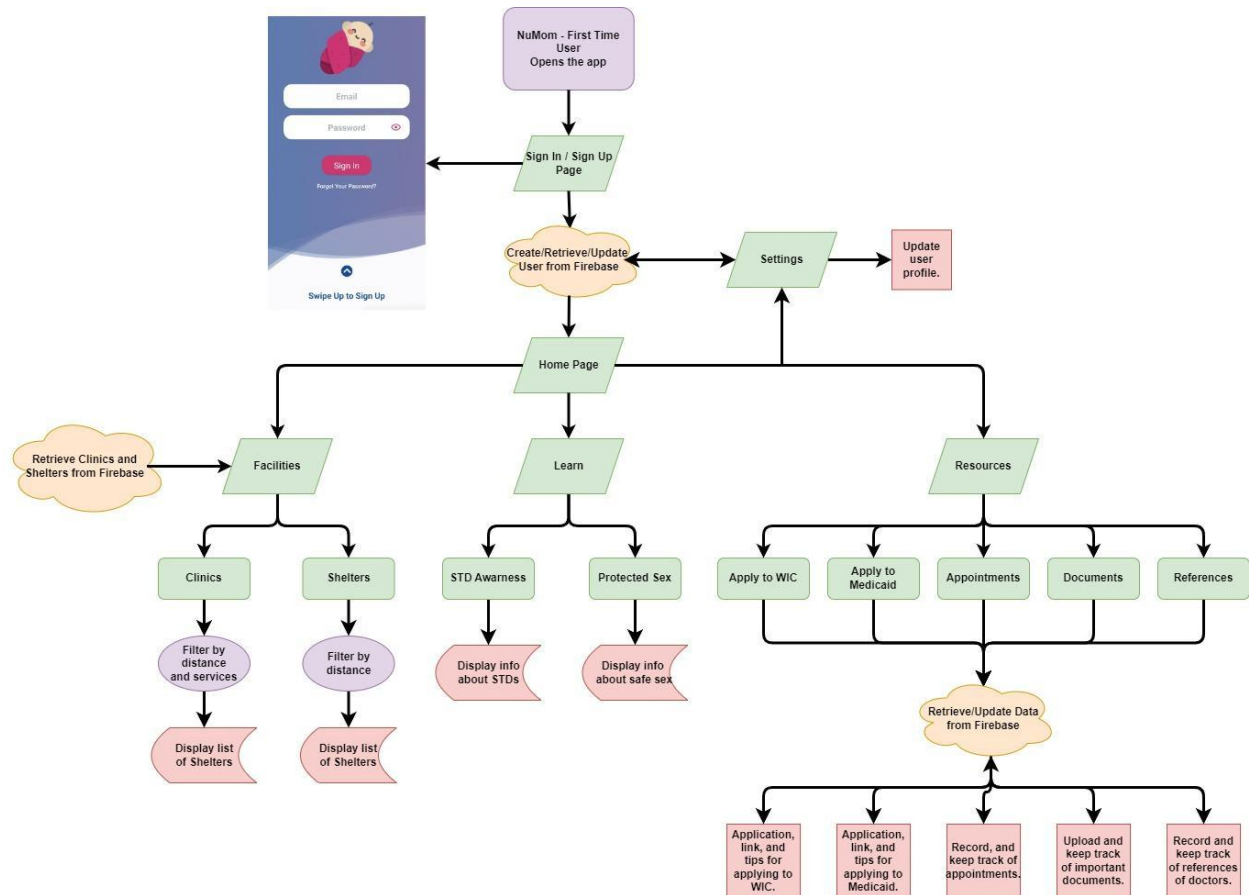
TestFlight: is an online service for over-the-air installation and testing of mobile applications, currently owned by Apple Inc. and only offered to developers within the iOS Developer Program

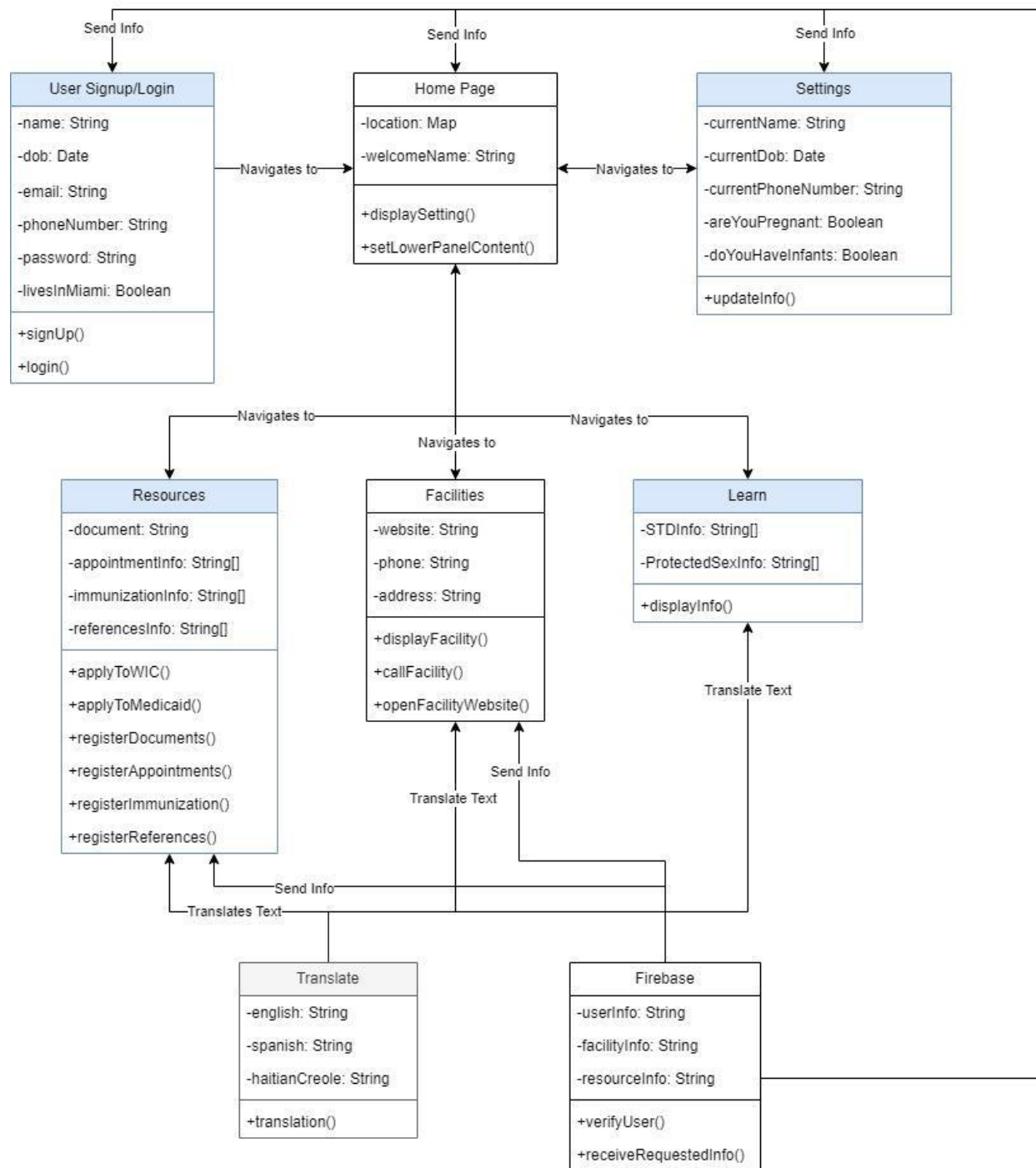
UI: Short for User Interface. Is the display on which the user interacts.

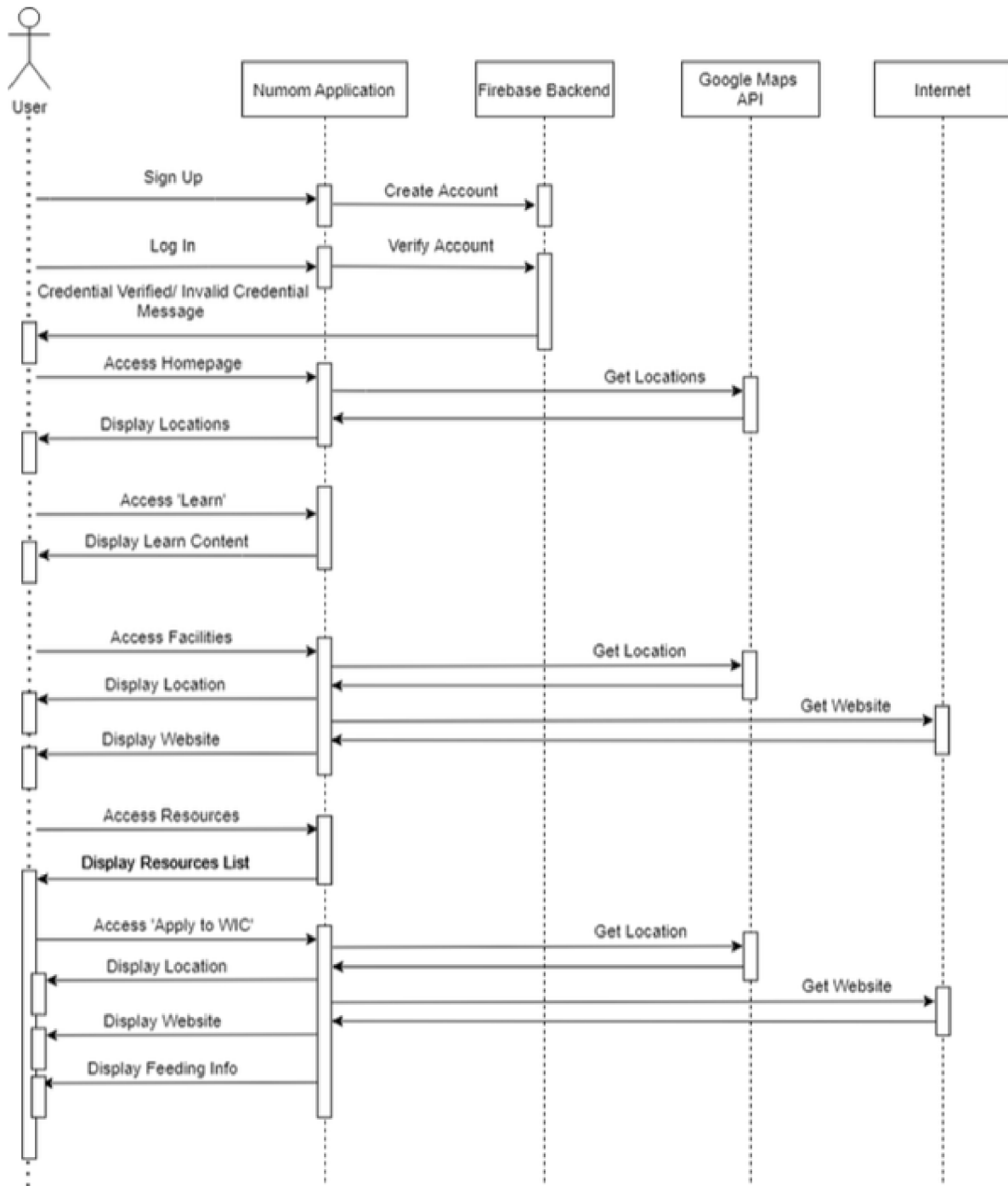
UML diagram: Is a diagram based on the UML (Unified Modeling Language) with the purpose of visually representing a system along with its main actors, roles, actions, artifacts or classes, to better understand, alter, maintain, or document information about the system.

Appendix

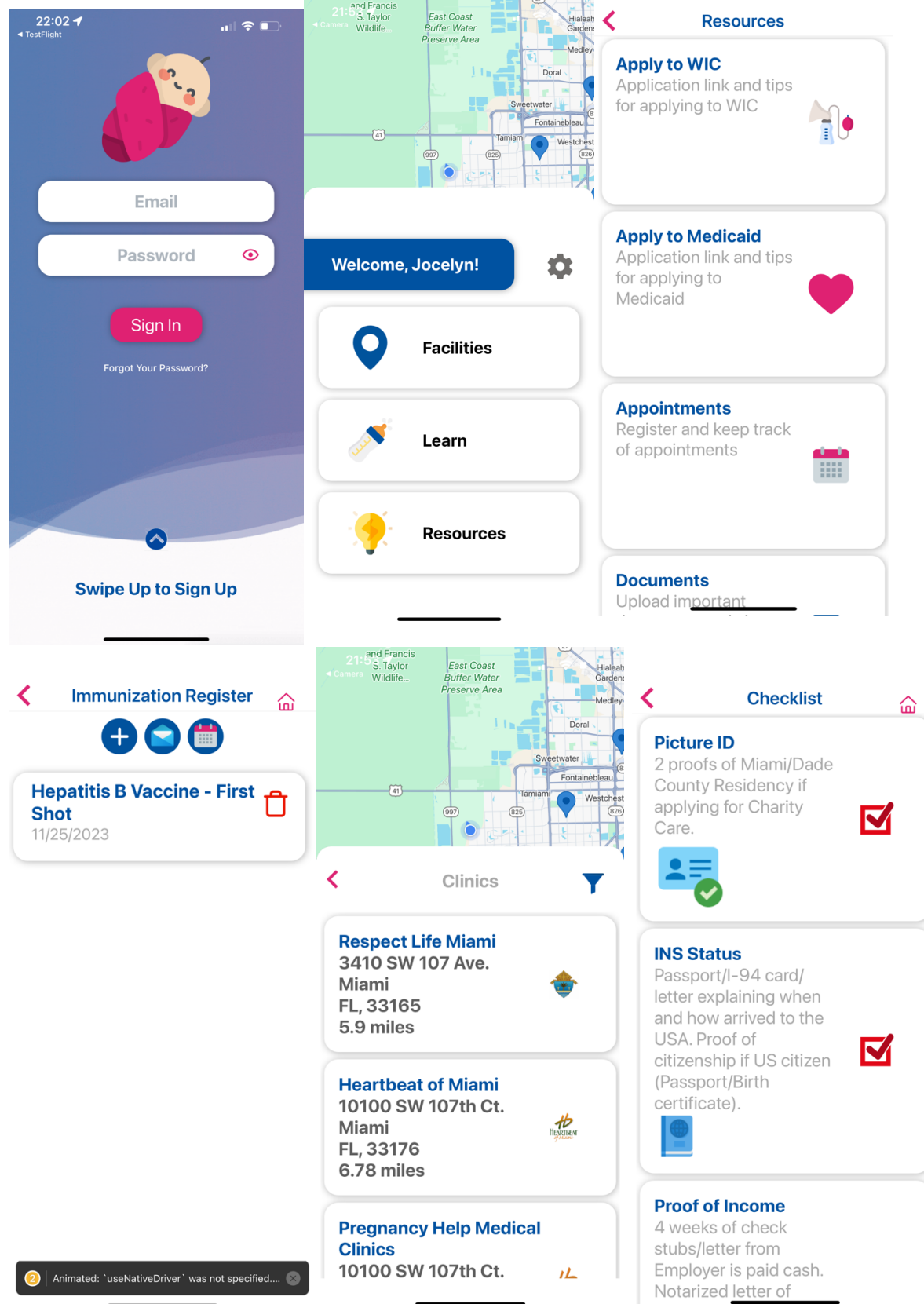
Appendix A - UML Diagrams







Appendix B - User Interface Design



Appendix C - Sprint Review Meeting Minutes

We would like to note that our user stories stayed consistent throughout the sprints because that is what was assigned to us. The actual issues/stories as mentioned above were developed as we went through each sprint.

Sprint 1 Review Meeting Minutes

Attendees: Jocelyn Rodriguez, Victor Rojas Hernandez, Jose Baez

Start time: 02:00 PM

End time: 02:30 PM

After a show and tell presentation, the implementation of the following user stories were accepted by the product owners: All.

- User Story 1: Download necessary technologies
- User Story 2: Join the Github repo for NuMom
- User Story 3: Connect to the app
- User Story 4: Test the app, functionality, and connections

The following ones were rejected and moved back to the product backlog to be assigned to a future sprint at a future Sprint Planning meeting.

- No user stories have been moved back to the product backlog at this time.

Sprint 2 Review Meeting Minutes

Attendees: Jocelyn Rodriguez, Victor Rojas Hernandez, Jose Baez

Start time: 12:30 PM

End time: 01:00 PM

After a show and tell presentation, the implementation of the following user stories were accepted by the product owners: All.

- User Story 1: Look for glitches or inconsistencies in NuMom.
- User Story 2: Create issues on Github to outline those issues.
- User Story 3: Work on resolving the issues.
- User Story 4: Create pull requests for each issue.
- User Story 5: Review each pull request and approve for merging.

The following ones were rejected and moved back to the product backlog to be assigned to a future sprint at a future Sprint Planning meeting.

- No user stories have been moved back to the product backlog at this time.

Sprint 3 Review Meeting Minutes

Attendees: Jocelyn Rodriguez, Victor Rojas Hernandez, Jose Baez

Start time: 5:30 PM

End time: 6:00 PM

After a show and tell presentation, the implementation of the following user stories were accepted by the product owners: All.

- User Story 1: Look for glitches or inconsistencies in NuMom.
- User Story 2: Create issues on Github to outline those issues.
- User Story 3: Work on resolving the issues.
- User Story 4: Create pull requests for each issue.
- User Story 5: Review each pull request and approve for merging.

The following ones were rejected and moved back to the product backlog to be assigned to a future sprint at a future Sprint Planning meeting.

- No user stories have been moved back to the product backlog at this time.

Sprint 4 Review Meeting Minutes

Attendees: Jocelyn Rodriguez, Victor Rojas Hernandez, Jose Baez

Start time: 10:30 AM

End time: 11:00 AM

After a show and tell presentation, the implementation of the following user stories were accepted by the product owners: All.

- User Story 1: Look for glitches or inconsistencies in NuMom.
- User Story 2: Create issues on Github to outline those issues.
- User Story 3: Work on resolving the issues.
- User Story 4: Create pull requests for each issue.
- User Story 5: Review each pull request and approve for merging.

The following ones were rejected and moved back to the product backlog to be assigned to a future sprint at a future Sprint Planning meeting.

- No user stories have been moved back to the product backlog at this time.

Sprint 5 Review Meeting Minutes

Attendees: Jocelyn Rodriguez, Victor Rojas Hernandez, Jose Baez

Start time: 6:30 PM

End time: 7:00 PM

After a show and tell presentation, the implementation of the following user stories were accepted by the product owners: All.

- User Story 1: Look for glitches or inconsistencies in NuMom.
- User Story 2: Create issues on Github to outline those issues.
- User Story 3: Work on resolving the issues.

- User Story 4: Create pull requests for each issue.
- User Story 5: Review each pull request and approve for merging.

The following ones were rejected and moved back to the product backlog to be assigned to a future sprint at a future Sprint Planning meeting.

- No user stories have been moved back to the product backlog at this time.

Sprint 6 Review Meeting Minutes

Attendees: Jocelyn Rodriguez, Victor Rojas Hernandez, Jose Baez

Start time: 6:00 PM

End time: 6:30 PM

After a show and tell presentation, the implementation of the following user stories were accepted by the product owners: All.

- User Story 1: Look for glitches or inconsistencies in NuMom.
- User Story 2: Create issues on Github to outline those issues.
- User Story 3: Work on resolving the issues.
- User Story 4: Create pull requests for each issue.
- User Story 5: Review each pull request and approve for merging.

The following ones were rejected and moved back to the product backlog to be assigned to a future sprint at a future Sprint Planning meeting.

- No user stories have been moved back to the product backlog at this time.

Appendix D - User Manuals, Installation/Maintenance Document, Shortcomings/Wishlist Document and other Documents

User Manual

When the user first launches the application, they are greeted with the Login page. On this page, the user can log in to their account, and there is a "Forgot Password" button that will take them to another page where they can enter their email address to reset their password. There is also a "Swipe up to Sign Up" option, which takes users to a welcome page before prompting them to enter their name and birth date. During the signup process, the user is asked for previous information in order to gain access to the application, as well as any other information required to create an account. The app will enroll the user in the SMS messaging service during the sign-up process. The user should receive a text message shortly after creating their account.

When they log in, they are taken to the homepage, where they are greeted by the app and see five things: a map with available clinics, a cog for the settings page, a 'Facilities' tab, a 'Learn' tab, and a 'Resources' tab. When the user presses the cog, they will see account-related fields such as their phone number, date of birth, name, and answers to questions such as "Do You Live in Miami?", "Are you Pregnant?", and "Do You Have Any Infants?" They can change these

at any time and save their changes at the bottom of the page. The user can log out of the website from the upper right-hand corner of the Settings page. This is the only way the user can completely log out of the app.

The user can then exit the Settings tab and return to the homepage, where they can click on the Facilities page, where they are given two options: "Clinics" and "Shelters." When the user clicks the "Clinics" tab, they will see a list of clinics sorted by proximity. The clinic's name, address, and distance from the user's current location are displayed to the user. The user can filter the list of clinics at the top of the page by distance (five, ten, and fifteen miles) or by services (abortions, free materials, and immunization). The shelters can also be filtered by distance. The user can tap on a specific location to get the location's website, phone number, and services offered if it is a clinic.

After returning to the homepage, the user may proceed to the "Learn" page. The Learn page provides the user with two tabs: "STD Awareness" and "Protected Sex." The "STD Awareness page" lists the diseases that can be transmitted through unprotected sex. The user can view information on the symptoms, the testing procedure for diagnosis of said STD, treatment for the STD, the consequences if the STD is left untreated, and when it is safe to begin sexual activity for each STD. There is also a button that links to outside government sources if the user wants more information.

The "Protected Sex" section emphasizes safe sex and makes use of female condoms as a safe sex resource. At the top of the page, there is a brief explanation of what a female condom is and a picture of one. On this page, the user can choose between two options: "Female Condom Do's and Don'ts" and "How to Insert and Remove a Female Condom." The "Female Condom Do's and Don'ts" section instructs the user on how to use female condoms properly, essentially what to do and what not to do. The Dos are listed at the top, while the Don'ts are listed at the bottom. "How to Insert and Remove a Female Condom" walks the user through the process of inserting a condom step by step. This page explains how to use condoms, care for them, and dispose of them properly.

The user can then exit the Learn tab and return to the homepage. When the user clicks on the "Resources" tab, a list of tabs appears, including "Apply to WIC," "Apply to Medicaid," "Appointments," "Documents," "Immunizations," and "References."

When the user navigates to the "Apply to WIC" page, he or she will see a "Checklist," "Feeding," "Locations," and "Website." The Checklist page allows the user to enter the following information needed to apply for WIC: "Family members" - Each member applying for WIC; "Proof of Income of all family members" - Salaries, child support, alimony, foster care payments, interest withdrawn, unemployment, and so on. The Feeding tab informs the mother about the feeding guidelines for infants aged 0 to 12 months. By scrolling, the user must select the correct age range for the infant. Each age range includes information on infant food options and alternatives, and each food option has a graphic icon showing what types of foods pertain to it. When the user reaches the bottom of the list, additional information on foods to avoid for infants and important notes for the mother are provided. The Location tab displays a list of WIC

facilities in the user's general vicinity and can be filtered by distance like the other maps. The Website tab takes you directly to the WIC home page.

The "Apply to Medicaid" tab will take the user to a page that includes a link to the Medicaid site, a checklist of items to bring to their Medicaid appointment, and a locations tab that contains nearby Medicaid offices, like the "Facilities" tab, but for Medicaid locations. By going to the "Appointments" tab, the user may be able to add and remove appointments, as well as rename them. The user can add appointments by clicking the plus (+) sign at the top of the page. Once entered, the data is saved in the Firebase system and is ready to be viewed. In order to sync their appointments, the user will be prompted for access to their device's calendar. To delete an appointment, simply tap the trash can icon next to the appointment details.

The "Documents" tab works similarly to the "Appointments" tab, with the main difference being that the user can upload an image, crop it, and then click "OK." The user will then be presented with an input box in which to name the file. These files will be immediately saved in the cloud via Firebase and can be viewed on the documents page.

Users are greeted at the top of the "Immunizations" page with three buttons: a plus (+) sign to add to the Immunization Register, an envelope to send an email of the immunizations listed on the page, and a calendar icon. By tapping the plus sign, the user will be taken to a page where they can enter the type of immunization their child received, the dosage, the date, and any other information. The envelope generates an email for each immunization listed on the Immunization Register using the user's primary email address. Finally, the calendar icon will take the user to the "Immunization Schedule," where they can view their child's immunization history and check off any new immunizations. The list is arranged according to the infant's age, starting at birth and going up to 2 months, 4 months, etc. There is a list of immunizations received under each age group. The Immunization Schedule's list of immunizations is automatically checked off as the user adds immunizations to the Immunization Register. This gives the user a simpler alternative for keeping track of their child's immunizations.

The "References" tab is the user's last option. At the top of the page, the user will see a plus (+) sign where they can enter details for a financial or medical reference. Once entered, the data is immediately available for viewing on the references page after being stored in Firebase. Every reference has a trash bin button, like the "Appointments" tab, allowing the user the ability to remove the reference.

Installation/Maintenance

Step 1:

- Install git on your computer <https://git-scm.com/downloads>
- Install Node.js (comes with npm) <https://nodejs.org/en/>

Step 2:

- Download Visual Studio Code from your browser through:
<https://code.visualstudio.com/download>

Step 3:

- Open Visual Studio Code and select get from version control; from the dropdown, select git. A link will be requested where you will input the following link:
<https://github.com/edumorlom/moms-infants-healthy.git>

Step 4:

- After the project is cloned in your computer you will be able to access it from your command line interface. After that, go to your project from the terminal by using “cd” and going to the folder where the project is in.

Step 5:

- Install all the backend node dependencies and expo by running the following commands in the root directory:
 - npm install --global expo-cli
 - npm install && expo install

Step 6:

- You must now download the firebase api key file and place it into the /src directory in your local repository. In order to obtain this file, you must contact NuMom Lead Mentor, Eduardo Morales for it at edmorales.97@gmail.com

Step 7:

- Install the expo go client on your mobile device (or install an Android/iPhone simulator on your computer):
 - iOS: <https://apps.apple.com/app/apple-store/id982107779>
 - Android:
<https://play.google.com/store/apps/details?id=host.exp.exponent&referrer=www>

Step 8:

- Once everything is completed, use the command within the root folder “npx expo login” in order to login with the Credentials of the expo account with permission. This will be provided by your mentor if they do not give your expo account access.
- (Moving forward with expo 49 the command “expo start” will no longer work use “npx expo instead”)
- A window will open in your default browser with a QR code to be scanned with your phone. The application now will show up in your phone on the application of the expo client.

Step 9:

- Once the expo login is set up, use the command “npx expo start” in order to start expo. A QR code will appear to be scanned with your phone. The application now will show up in your phone on the application of the expo go client.

Step 10 (optional):

- You can run expo on a virtual device on your computer, which allows further testing on additional devices. View the following links to get started for either iOS or Android:
 - iOS: <https://docs.expo.io/workflow/ios-simulator/>
 - Android: <https://docs.expo.io/workflow/android-studio-emulator/>

Shortcomings/Wishlist

- Add animations and/or other UI improvements so that the user experience becomes more engaging and visually appealing.
- Add more icons throughout the app
- Adding more information such as what body changes to expect after having a child
- Add more shelters since there are more clinics than shelters provided.
- Better optimization for the Android version.

References

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- [5] React Native Documentation. (n.d). retrieved September 14, 2023 from: <https://facebook.github.io/react-native/docs/getting-started/>
- [6] Expo Documentation. (n.d). retrieved September 14, 2023 from: <https://docs.expo.io/versions/latest/>
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- [9] WIC application. (n.d.). retrieved September 14, 2023 from: <https://www.fns.usda.gov/wic/wic-how-apply>