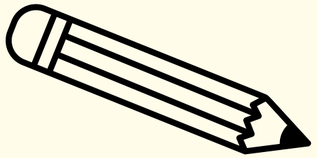


Low-fi Prototype!

CS147

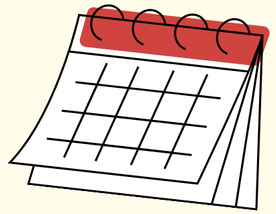
CheckUp

Abbie, Angela, Delali, Susan

CheckUp!

Care on your Calendar

Value Proposition



Problem

Many working professionals **forget to schedule** their necessary healthcare appointments in the midst of **heavy workloads and long workdays**...

Can CheckUp make it easier for this demographic to check-up on themselves?

Solution

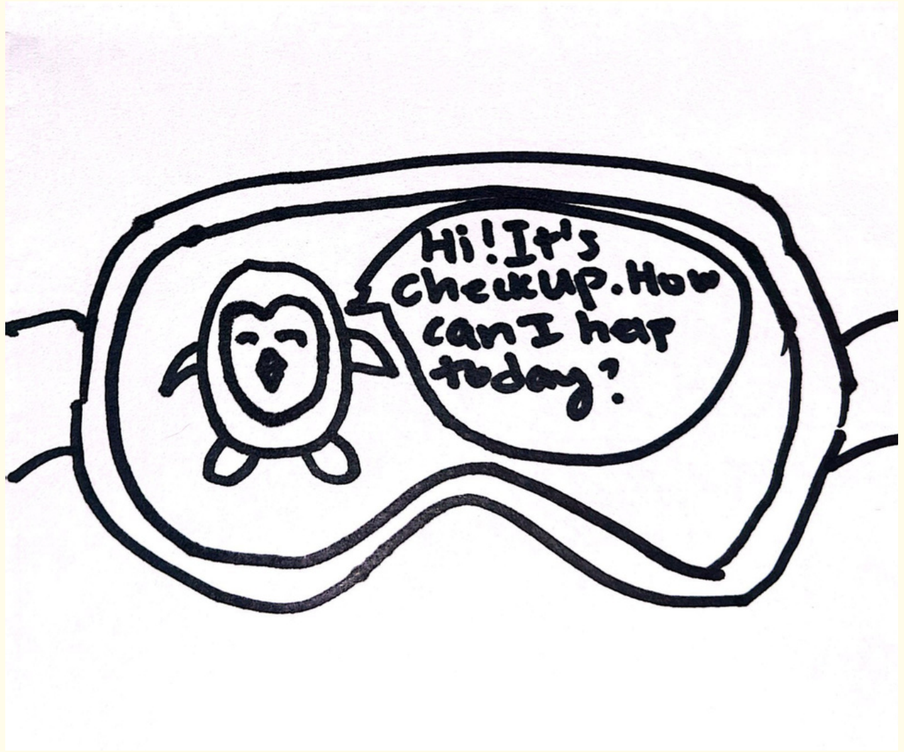
An app that **integrates with the user's digital calendar** to find **mutual availabilities** with in-network, nearby physicians. Scheduling an appointment with a doctor who fits your **personal needs and preferences** is now as easy as 1-2-3!

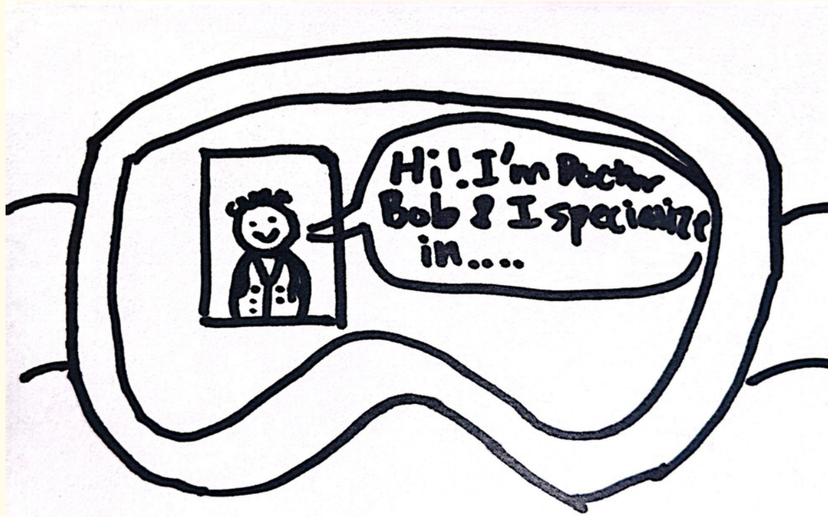
Agenda

1. Exploring Different Realizations
2. Selecting our Design
3. Creating + Testing Prototype
4. Analyzing the Results

Concept Sketches

Exploration 1

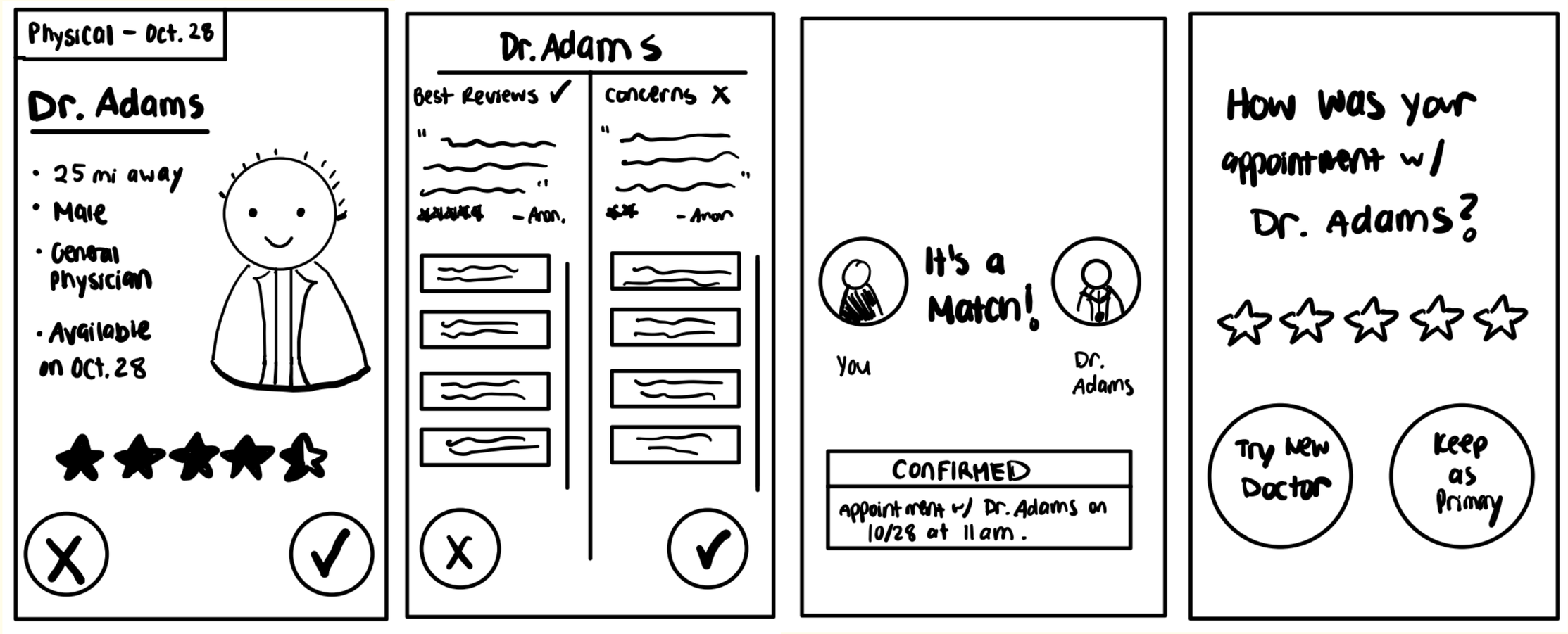




AR/VR Solution

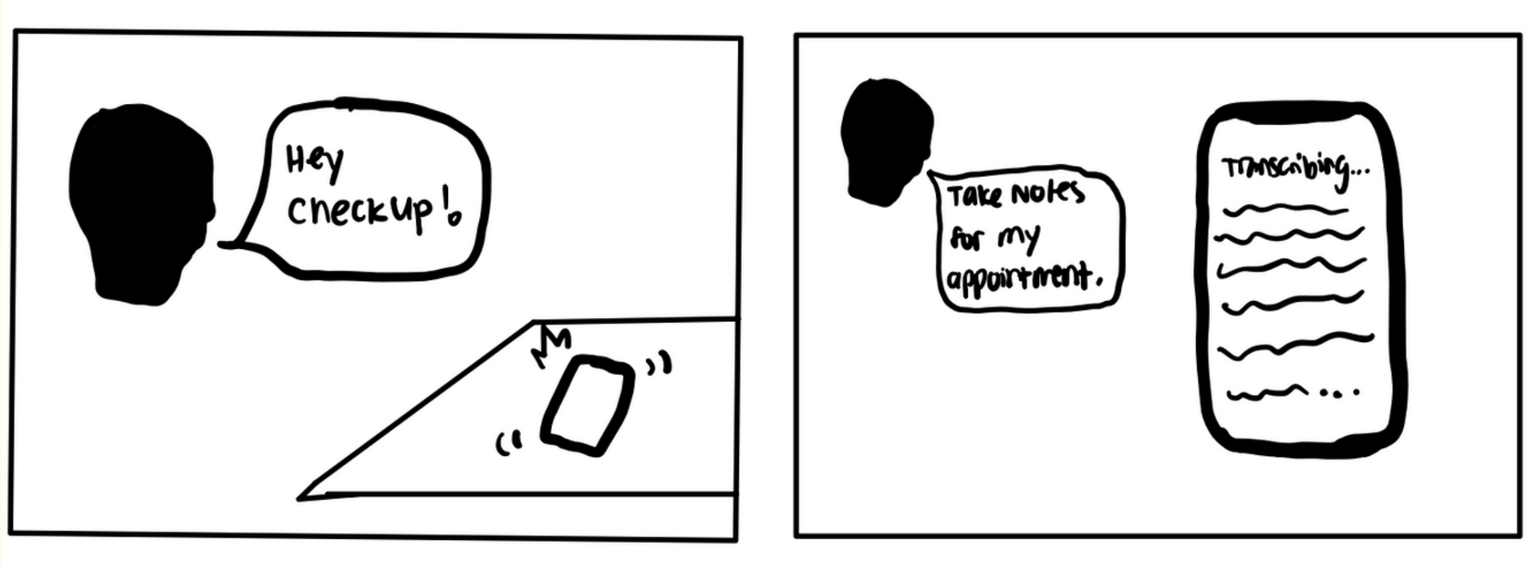
Exploration 2

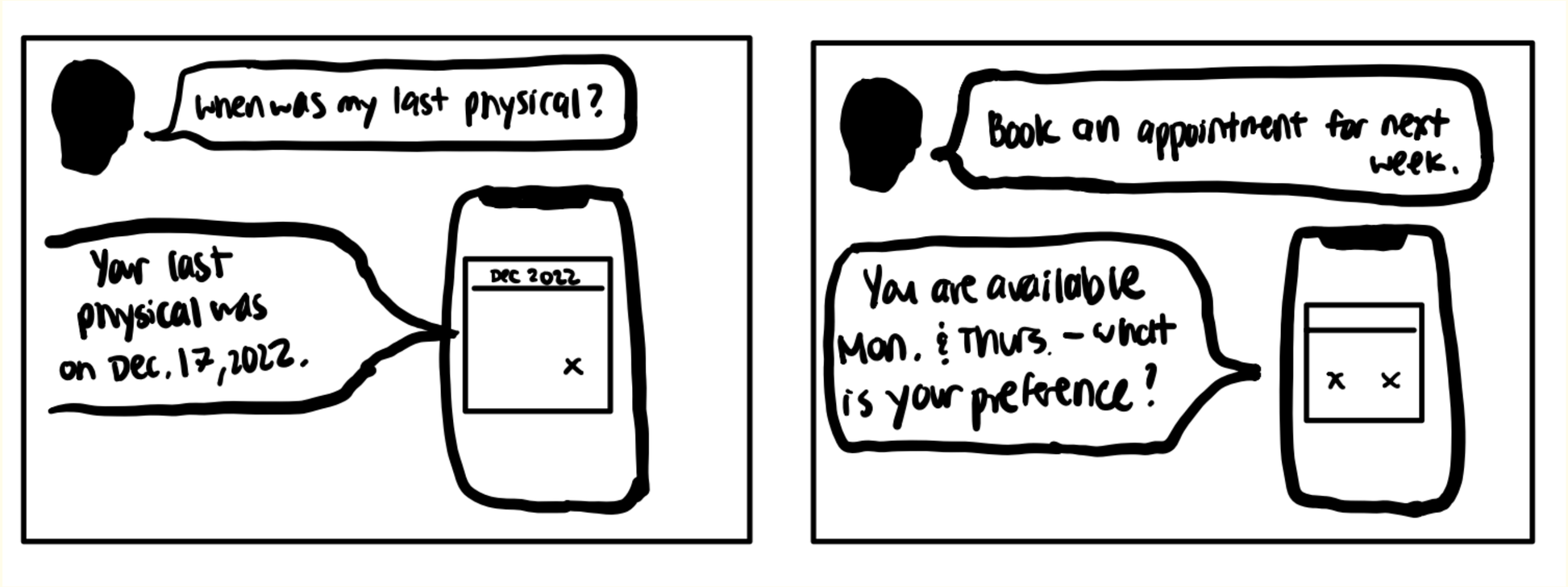
Gamification of Doctor Selection



Exploration 3

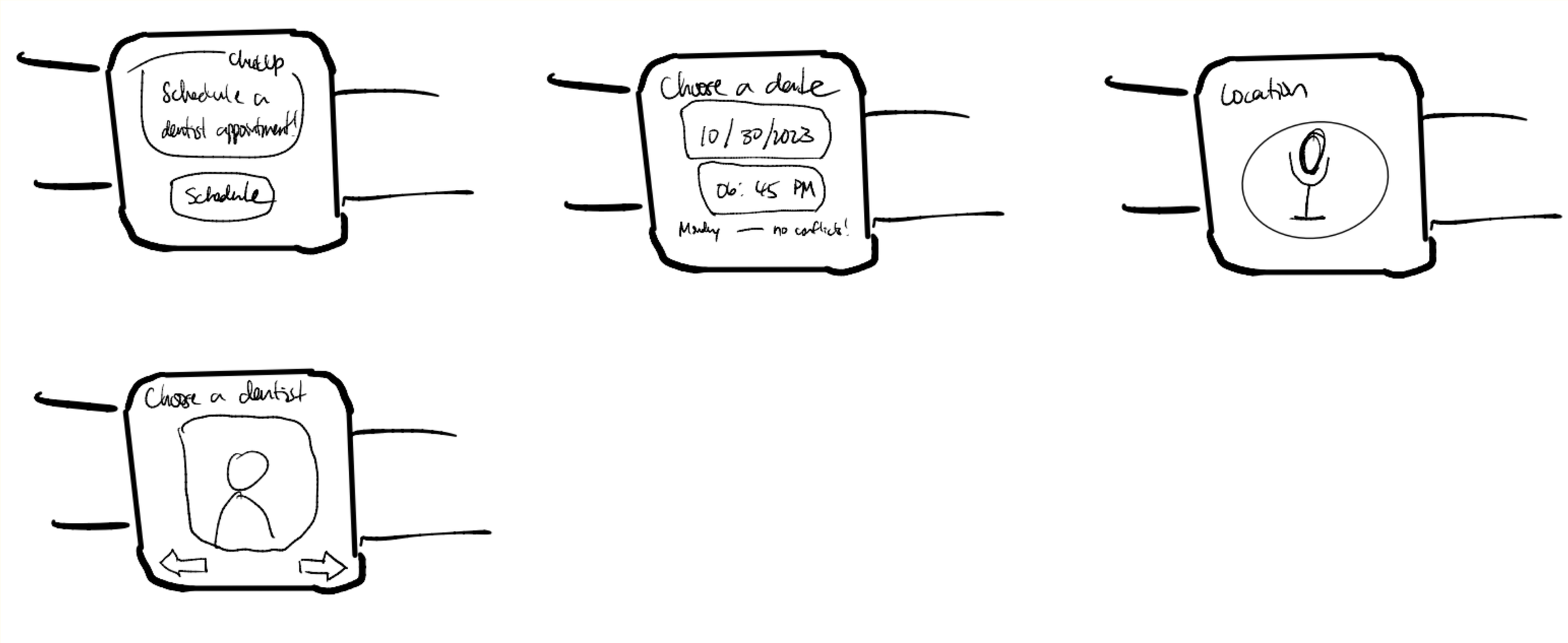
Voice-Activated CheckUp





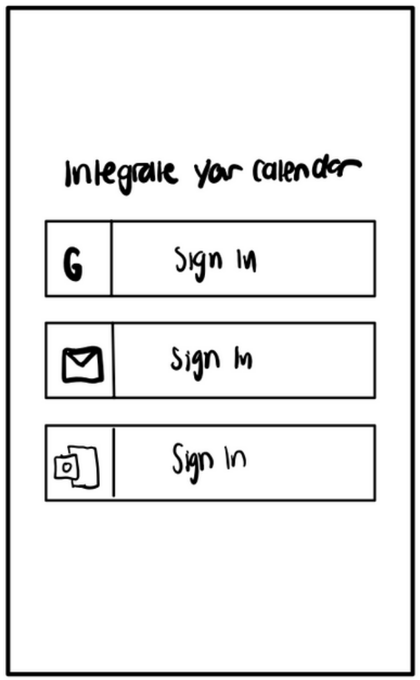
Exploration 4

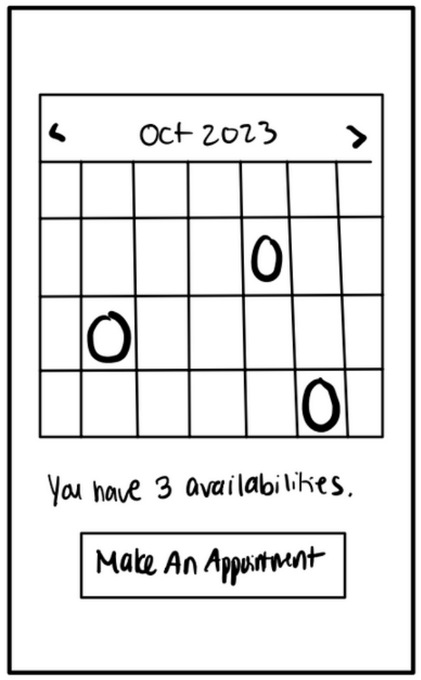
CheckUp as a Wearable

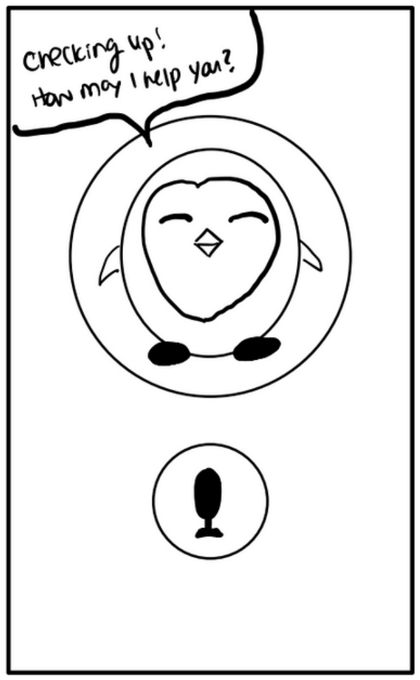


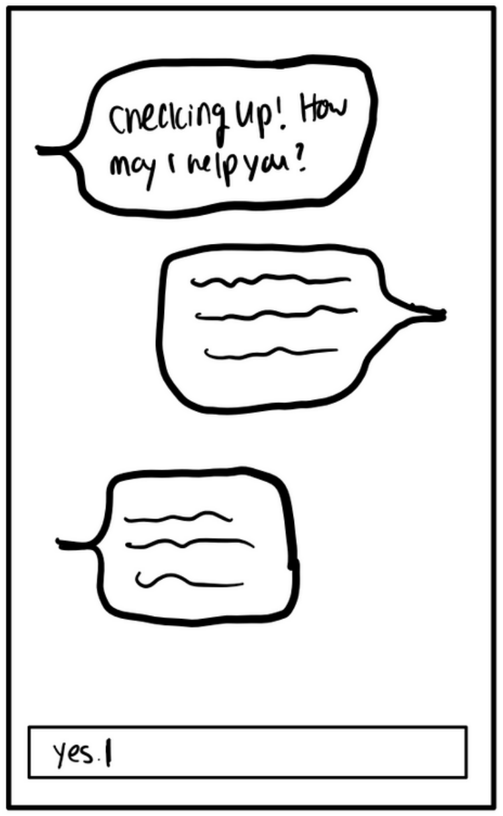
Exploration 5

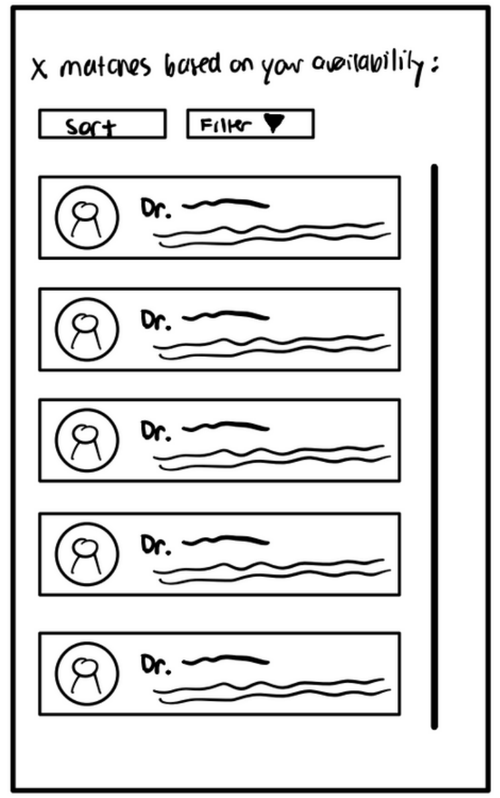
Mobile App w/ 3rd Party Calendar Integration







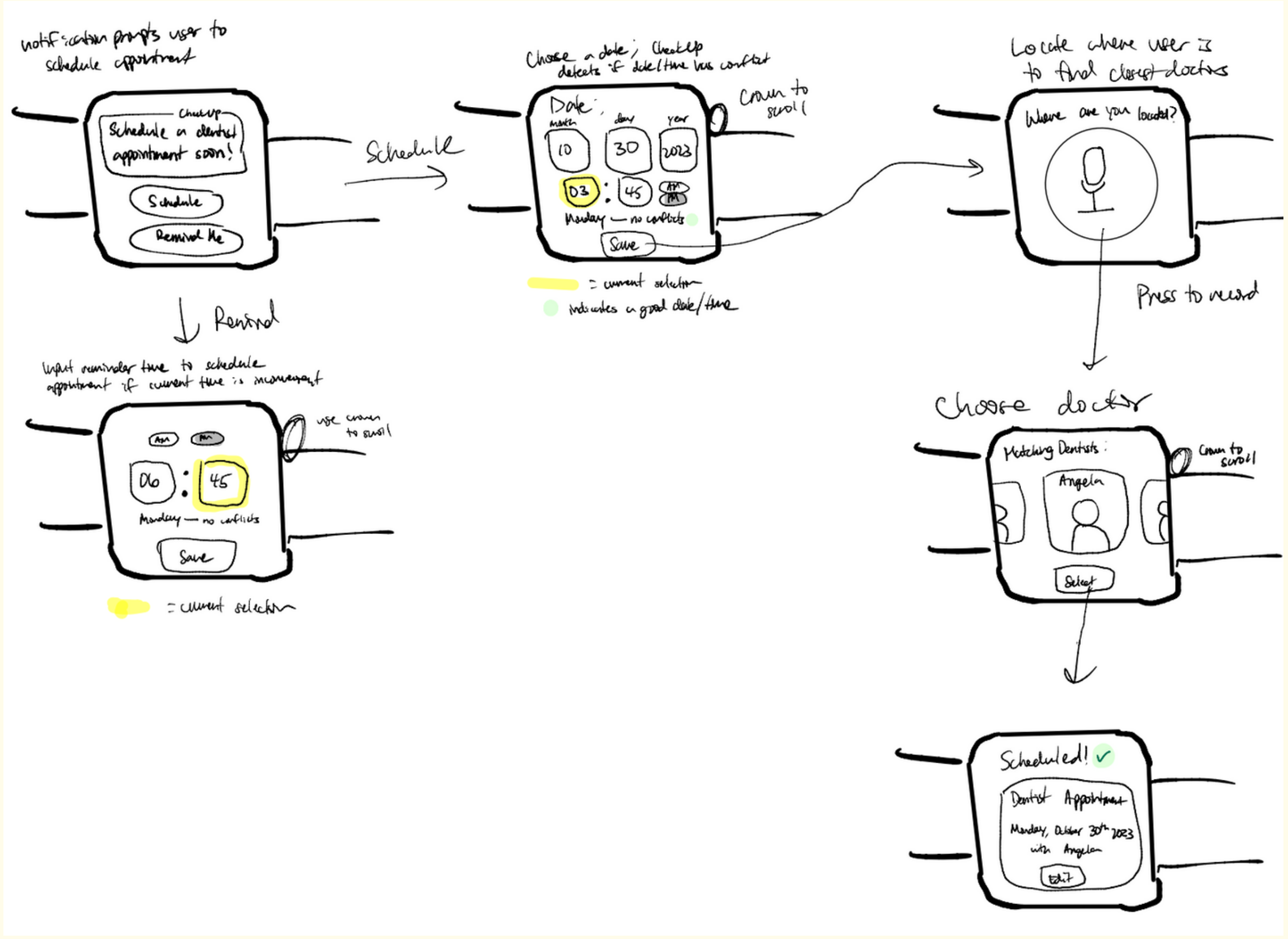




Top 2 Realizations

Realization 1

CheckUp as a Wearable



Workflow:

1. Notification alert to schedule an appointment
    a. Alternatively, set a reminder to schedule later
2. Scrolling to set time and date
3. Siri-esque recording to capture user's location
4. Scrolling to select doctor
5. Confirmation screen

Wearables

Pros

- **Continuous Monitoring:** Allows for real-time health alerts and prompt booking of appointments
- **Integrations:** Utilizing existing health tracking abilities to make data-driven decisions
- **Access:** Quick access to wrist to set up appointments, making it easier to access a simplified workflow

Cons

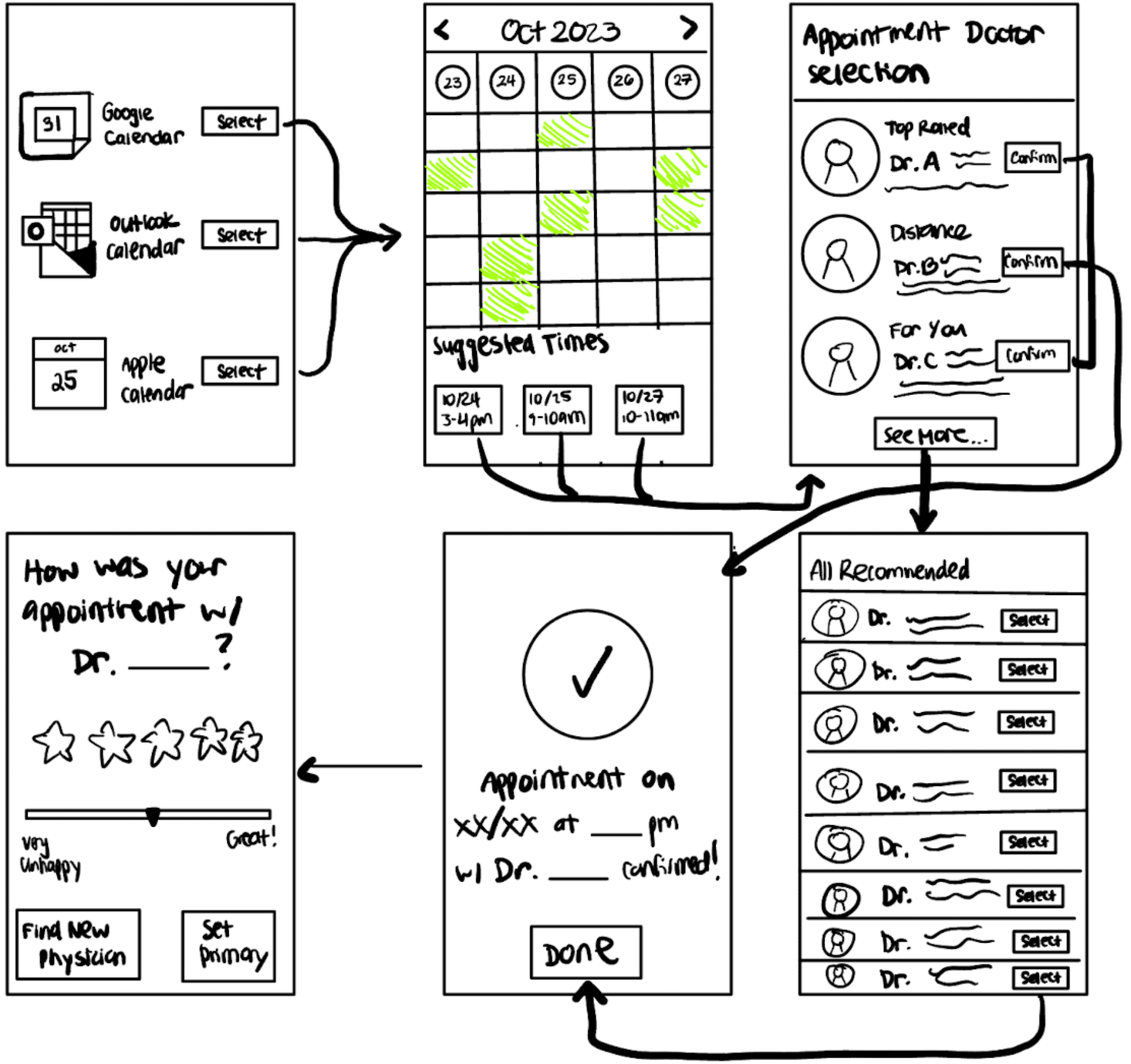
- **Limited Screen Space:** Causes lack of detail on important screens, especially for complex tasks
- **Less Storage/Processing Power:** Could affect app performance and speed negatively
- **User Base:** Not everyone owns a wearable compared to a smartphone

Realization 2

Mobile App

Workflow:

1. User integrates their digital calendar
2. Appointment times suggested based on mutual availability with physicians
3. If the user does not have primary point of care, they select one from CheckUp's personalized suggestions
    a. Option to see all recommended
4. After appointment occurs, user has option to find new physician or keep the physician as their primary



Mobile App

Pros

- **Widespread Adoption:** Almost everyone owns a smartphone, large user base
- **Detailed User Interface:** Large screen space allows a variety of complex tasks (such as inputting doctor preferences) to be displayed
- **Storage/Processing Power:** Allows for better app performance and more features (such as integrations w/ other apps, taking images, and chats)

Cons

- **Requires Active Engagement:** Need to open phone then open app to begin booking process, sometimes inconvienent
- **Less Health Integration:** Less diversity/capability of health tracking abilities than wearables
- **Distractions:** Too many other apps/things to do on phone may distract user from booking appointments

Our Top Pick...

Selected Interface

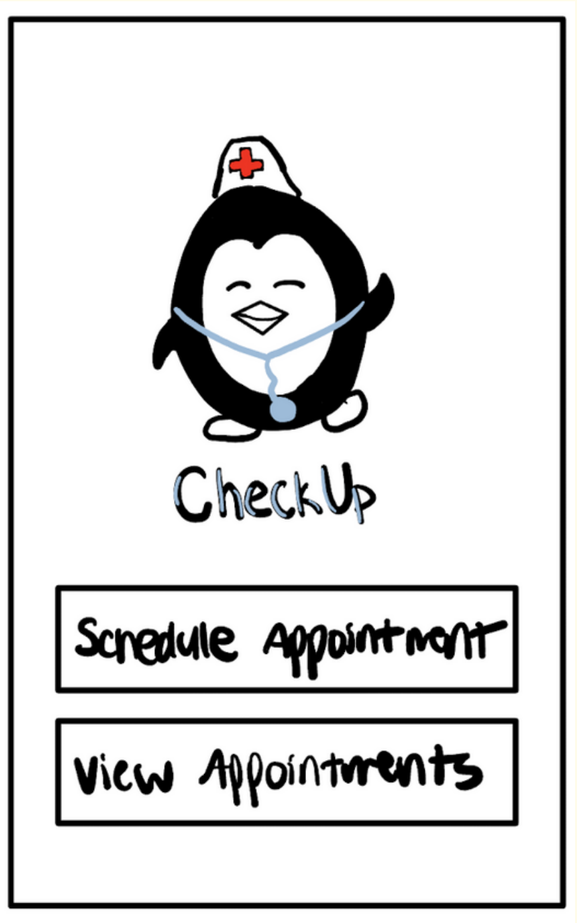
Mobile App!

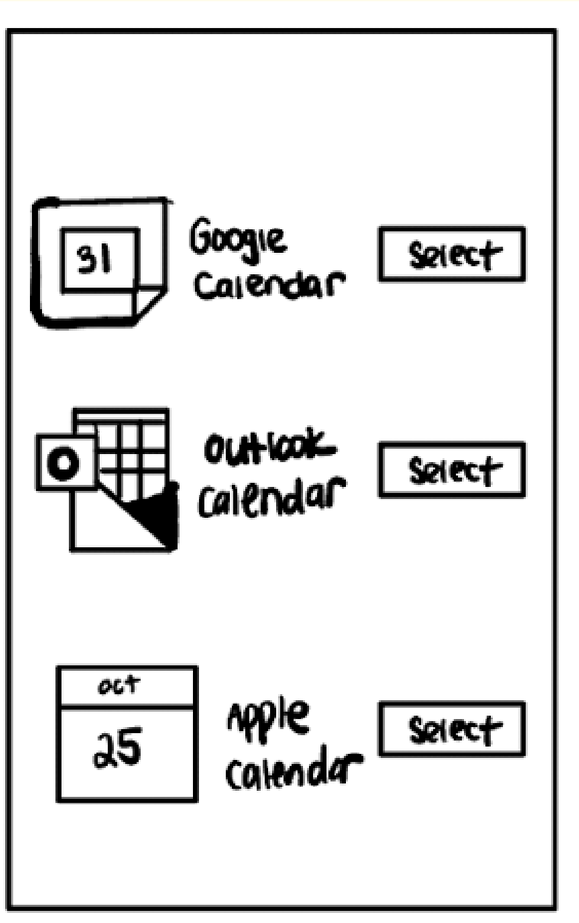
We believe wearables cannot overcome:

- **Hardware limitations**
- **Limited calendar app compatibility**
- **Limited adoptability**

A mobile interface provides:

- **Real-time access** to all calendar app data
- **Higher processing speeds** for personalized recommendations,
- **Larger, more comprehensive UI** for a **streamlined process of finding** the right care for our users.





Rationale

Data

- Apple watches sold (2022): ~54 million units
- iPhones sold (2022): ~**225 million units**

Findings

Apple Watch has **half the amount of storage** as iPhone (32 vs 64 GB)

Difficult to capture large amounts of visual information on such a **small interface**

Constraints

Lacks the ability to **automatically sync** with external calendar apps

Users can only take **pictures** when synced with a remote iPhone (insurance card feature)

Why Our Solution

The main benefit of wearables in the healthcare space is the real-time tracking of health data. However, providing appointment recommendations based on health data could be viewed as a breach of **data privacy**. Additionally, its small **physical limitations** make it difficult to carry out essential functions like reading about physician options and taking pictures.

Low-fi Prototype

Construction

Materials

Paper + Sharpie

Operation

Switch between screens by hand

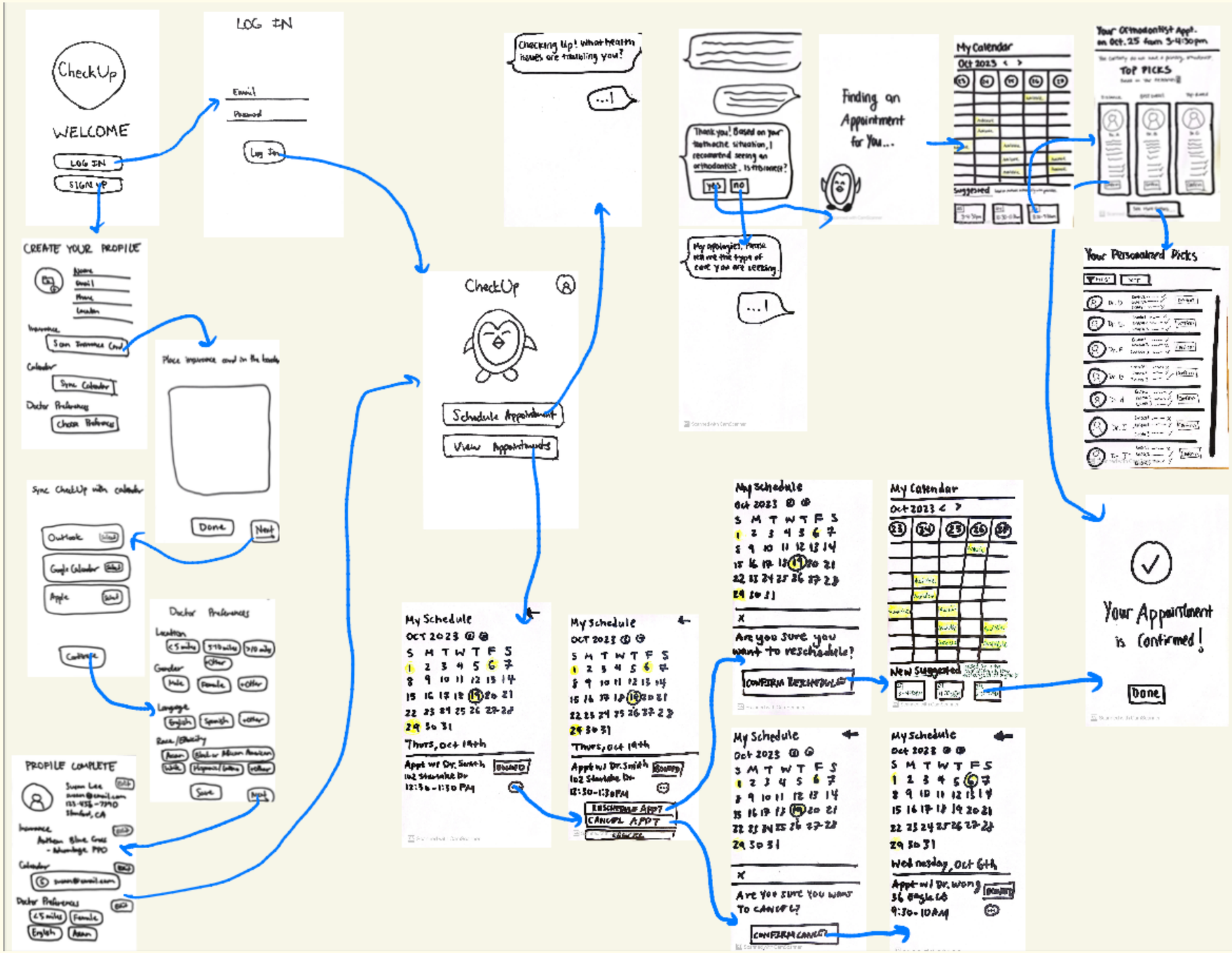
Features

- Onboarding section
- Wish to schedule section (simple)
- Appointment scheduling section (moderate)
- View/edit/cancel appointment section (complex)

Interactions

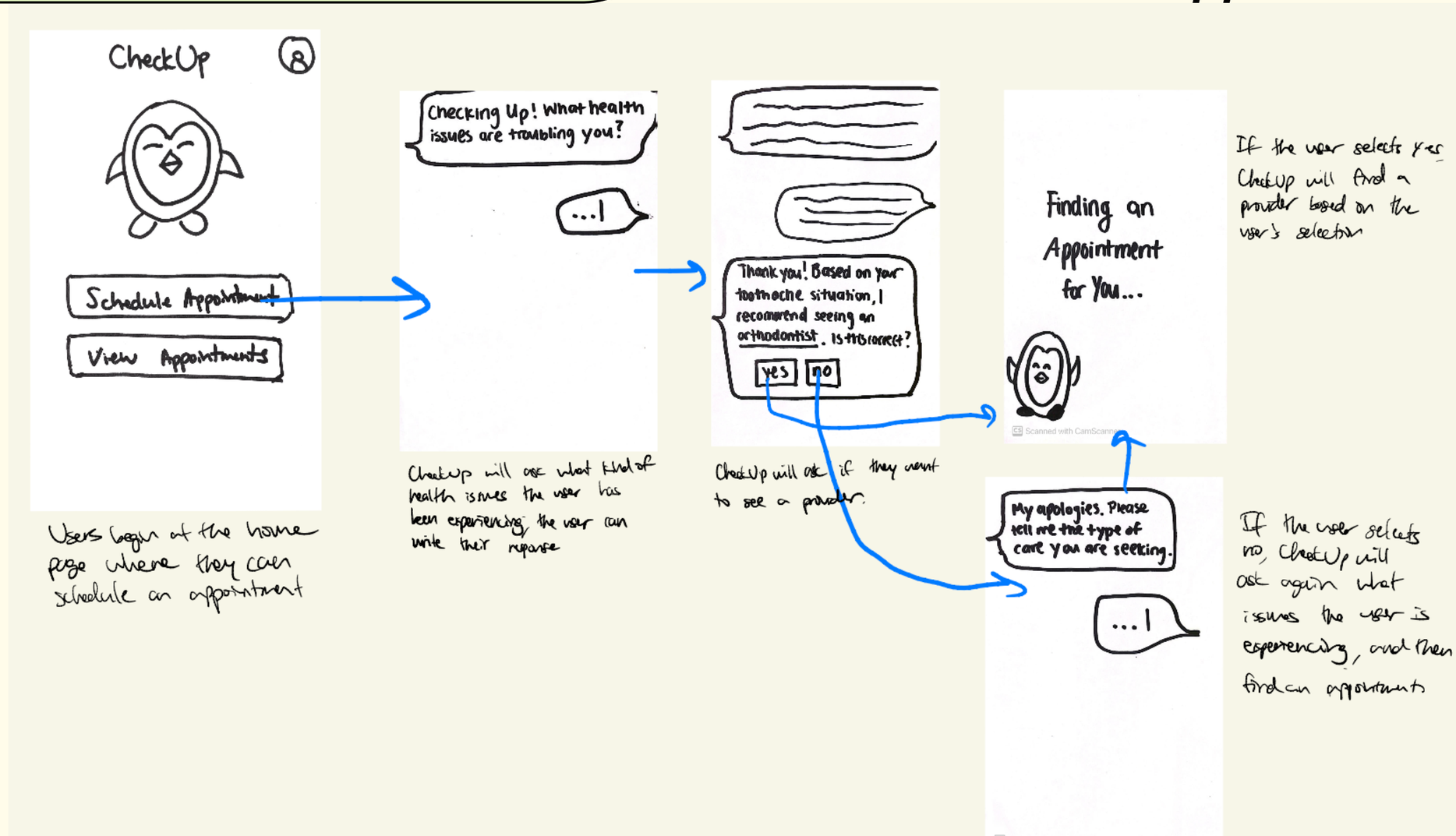
- Button taps
- Scrolling
- Keyboard/chat

Low-fi Prototype



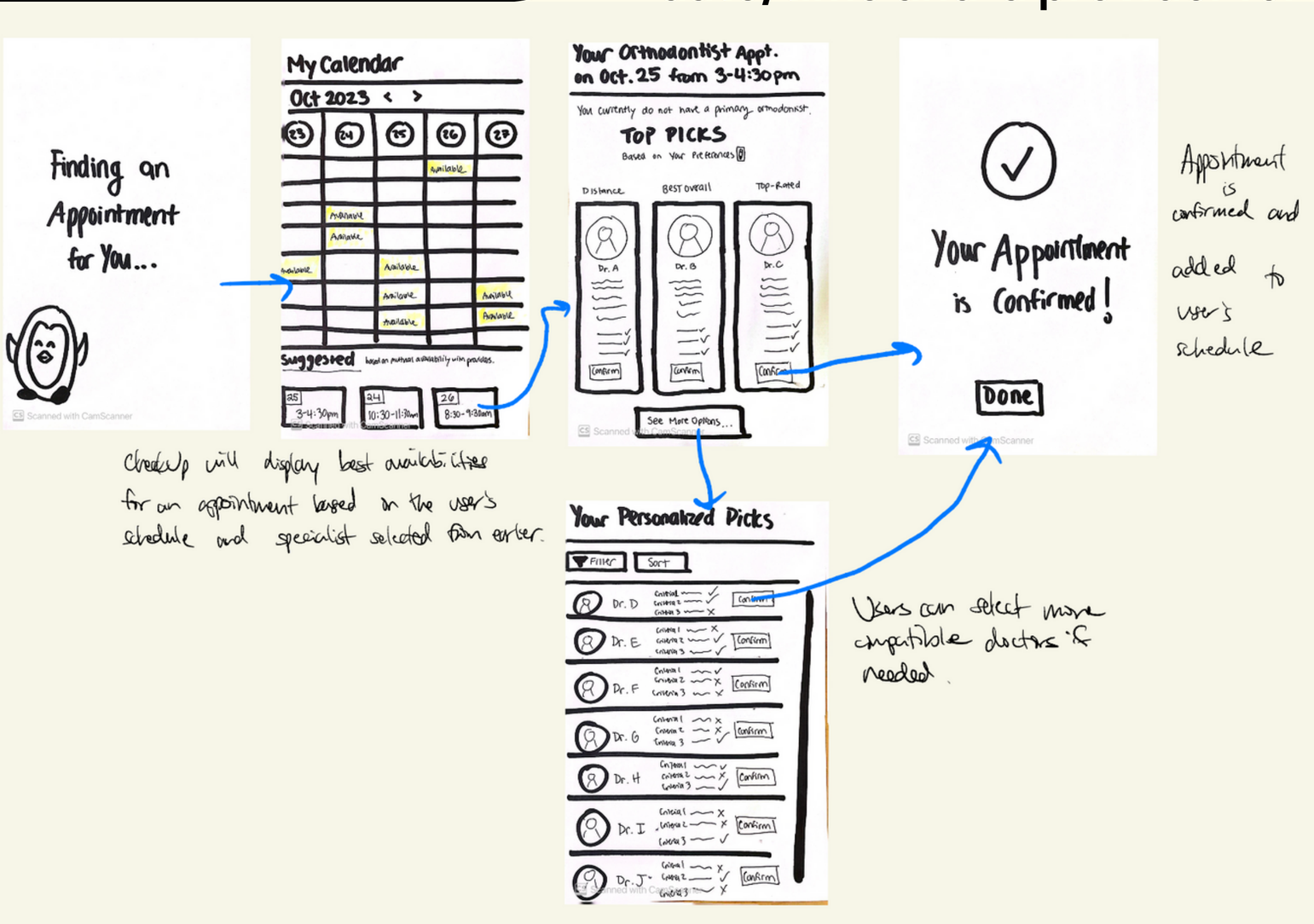
Simple Task Flow

Users can communicate with CheckUp that that they want to book an appointment



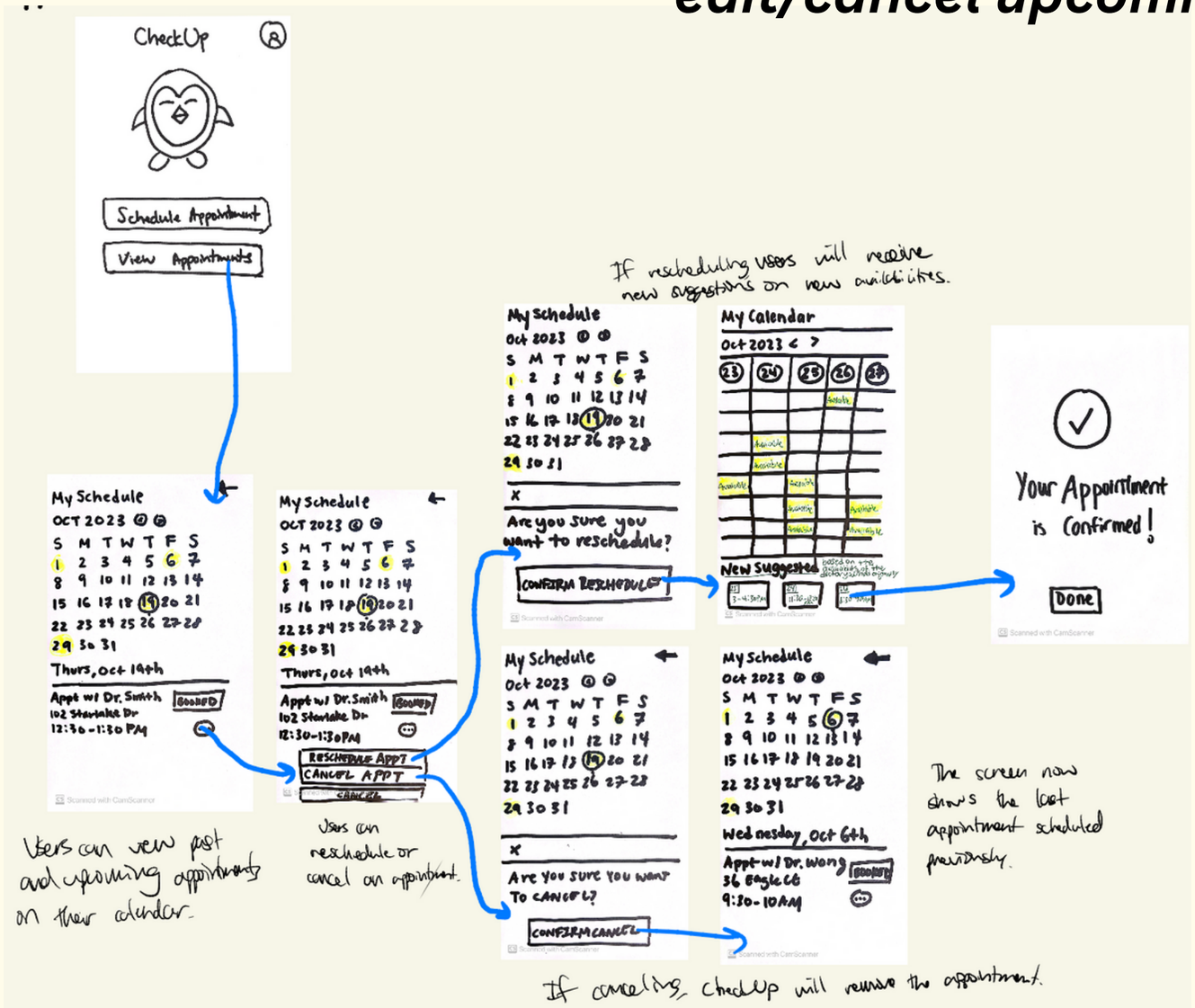
Moderate Task Flow

CheckUp connects with user's calender to suggest user's best availabilities, and users select the best date/time and a provider for their appointment.



Complex Task Flow

Users can view past and upcoming appointments and edit/cancel upcoming appointments.




Testing!

Participants

Kathleen Chitty

Age: 30
Youth Group Coordinator

Crawford Stevener

Age: 41
Minister

Kevin Kishimoto

Age: 58
Head of Metadata Services at Music Library

Kathleen

Age: 21
SJSU Student

Ryan Suh

Age: 20
Stanford Student

Recruitment:
Local church, Tressider coffee shops. Nearby universities

Compensation:
Sharing our experience in CS 147 thus far :) (and coffee)

Environments

SJSU

Braun Music Library

Tressider

Y2E2 Coupa

Procedure/Apparatus

Apparatus:

Paper prototype (22 screens) were hand-drawn based on our 3 tasks.

Process:

Paper prototype was organized into piles based on the 3 main task flows. Screens were manually handed to the participant based on their interaction with the prototype. We continued to lay out screens on the table until all papers/task flows were exhausted.

Team Roles

Abbie

Facilitator, Filmer

Angela

Facilitator, Note-Taker

Delali

Computer, Note-Taker

Susan

Facilitator, Driver :)

Usability Goals

Ease of Use: *How easily can users navigate the experience on their own?*

- Measured by number of misclicks

Usefulness: *Would users actually use our app? Is there user-solution fit?*

- On a scale of 1-10, how likely are you to use this?

Intuitive Interface & Workflows: *Are workflows logical? Are there missing steps?*

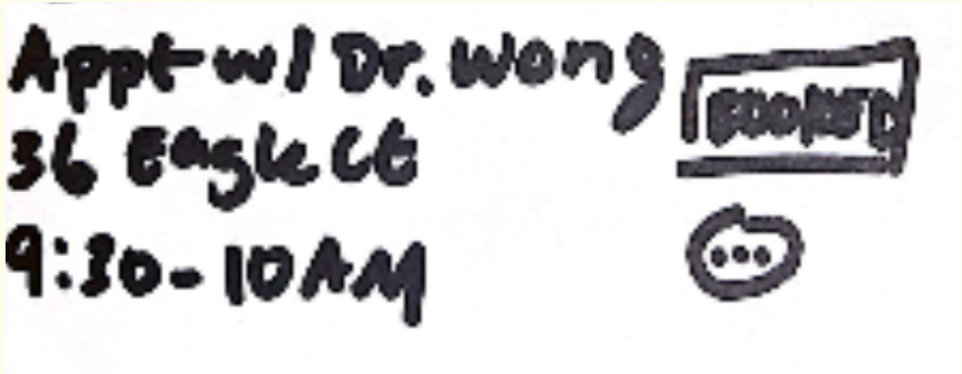
- Number of questions asked/confusions

Testing Results

Process Data

All Participants

- Were confused by the **(...) button** in the view calendar page
- Wished that it was more clear what the difference was between the **next and save buttons** on the setting up profile pages
- Did not use the “See More” button on the doctors page
- Thought the user experience was overall **intuitive** and **easy-to-use**



Process Data

Key Insights

- 3/5 users thought we could make it more clear that ***calendar integration was necessary*** for the functionality of the app
- Most users chose the doctor that was ***“Best Overall”***
- The UI was a bit ***too cluttered*** in some places (such as selecting doctor preferences and on the recommendation pages)
- One user gave a particularly useful insight: she didn’t know what to do at the set-up because ***she doesn’t have insurance***

Bottom Line Data

Usability Goals

Our users gave the likelihood of using this app **an average of 9.4/10**, stating that booking appointments would take them **under 2 minutes** everytime

We counted around **3-4 misclicks per person**, mostly located in the next/save buttons and the 3 dots button area

The number of questions ranged from user to user, but some only asked **2-3 questions** while others asked **10+ questions**

Other Observations

- One user pointed out that he has certain events saved in Outlook and certain events saved in GCal: wished for ***multiple calendar integrations***
- Users wanted to be able to ***select multiple boxes*** on the doctor preferences page
- On an iPhone, the 3 doctor cards could be too small. A ***“Tinder” swiping UI*** was suggested instead to. browse different doctors
- Make the chat more informative (can they type whatever they want?): potentially use ***suggested prompts***

Achievement

Overall, we achieved usability goals well...

Task 1: Very intuitive and **easy** for our user to complete. It was straightforward and clear to book an appointment.

Task 2: CheckUp did a lot of the mental work of finding a good time and narrowed down doctors by **clearly defined categories** for the users, **everyone achieved this task.**

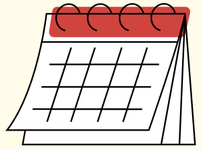
Task 3: Resulted in some **significant confusion** with the use case of certain **buttons**, such as the three dots, leading the user to hesitate when canceling/rescheduling

Discussion

Implications

- It is important for the user experience to be **extremely clear and intuitive**. Reliance on the user's knowledge of other apps is not always sufficient enough (ie assuming using the three dots in the corner to explore more options)

- There is a significant portion of our potential user base that **wants access to a tool like CheckUp but uses a paper calendar**



- The **ease** of the user's experience with CheckUp will rely heavily on the **accuracy of doctor availability**

Edits

- More **intuitive** onboarding process (getting rid of Done button, making some parts optional for people who would rather do it later)
- Making the **rebook/cancel** appointment part more clear and obvious to the user
- **Adding option** for if you already have doctor in mind or have one through insurance (skip doctor preference selection when scheduling appointment)
- Adding an option to **scan in your paper calendar** onto our app (rather than syncing a digital calendar

To Be Revealed...

- **How** doctors interface with CheckUp (the ease of syncing their calendars and availabilities to our app)
- **How** our users feel about the frequency of the CheckUp notifications
- Because it is a lofi prototype, we cannot really **gauge the level of sincere trust** the user has for our service

Thank you!

Appendix

1. Full Pros + Cons List
2. Full Low-fi Prototype
3. Script
4. Organized log of testing notes

Wearables

1

Pros

- **Continuous Monitoring**
- **Integrations**
- Personalized experience
- Potential hands-free operation through voice command
- Safety/immediate alerts for healthcare emergencies
- Reduced screen time
- More hygienic

Cons

- **Limited Screen Space**
- **Less Storage/Processing Power**
- **Limited User Base**
- Durability concerns (less life than a smartphone)
- No camera feature
- Cost (high-end wearables to support CheckUp could be expensive)
- Limited user input
- Difficult set-up
- Dependency on smartphone for certain features
- Interference with certain medical devices

Mobile App

1

Pros

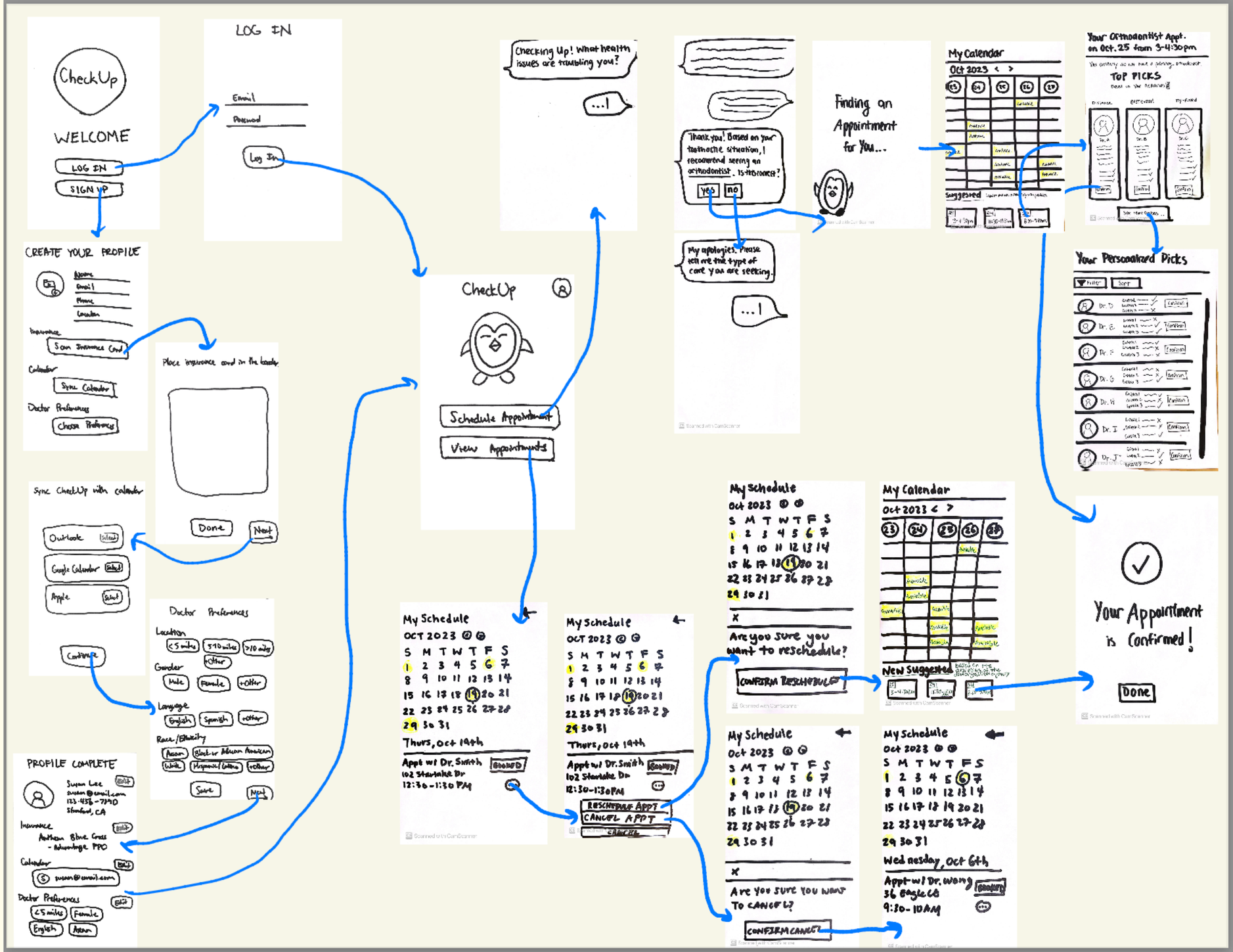
- **Widespread Adoption**
- **Detailed User Interface**
- **Storage/Processing Power**
- More potential for beautiful UIs
- Ease of updates
- Camera utilization
- Multitasking (switching between different apps)
- Intergration with different apps (such as calendar apps, map apps, and other healthcare apps)

Cons

- **Requires Active Engagement**
- **Less Health Integrations**
- **Distractions**
- Needs Internet connection
- Privacy concerns
- Physical limitations (need to hold and open phone)
- Less immediately accessibility (especially if phone is silenced)
- Inconsistent user experience across Android and iOS
- Health effects (longer screen exposure)

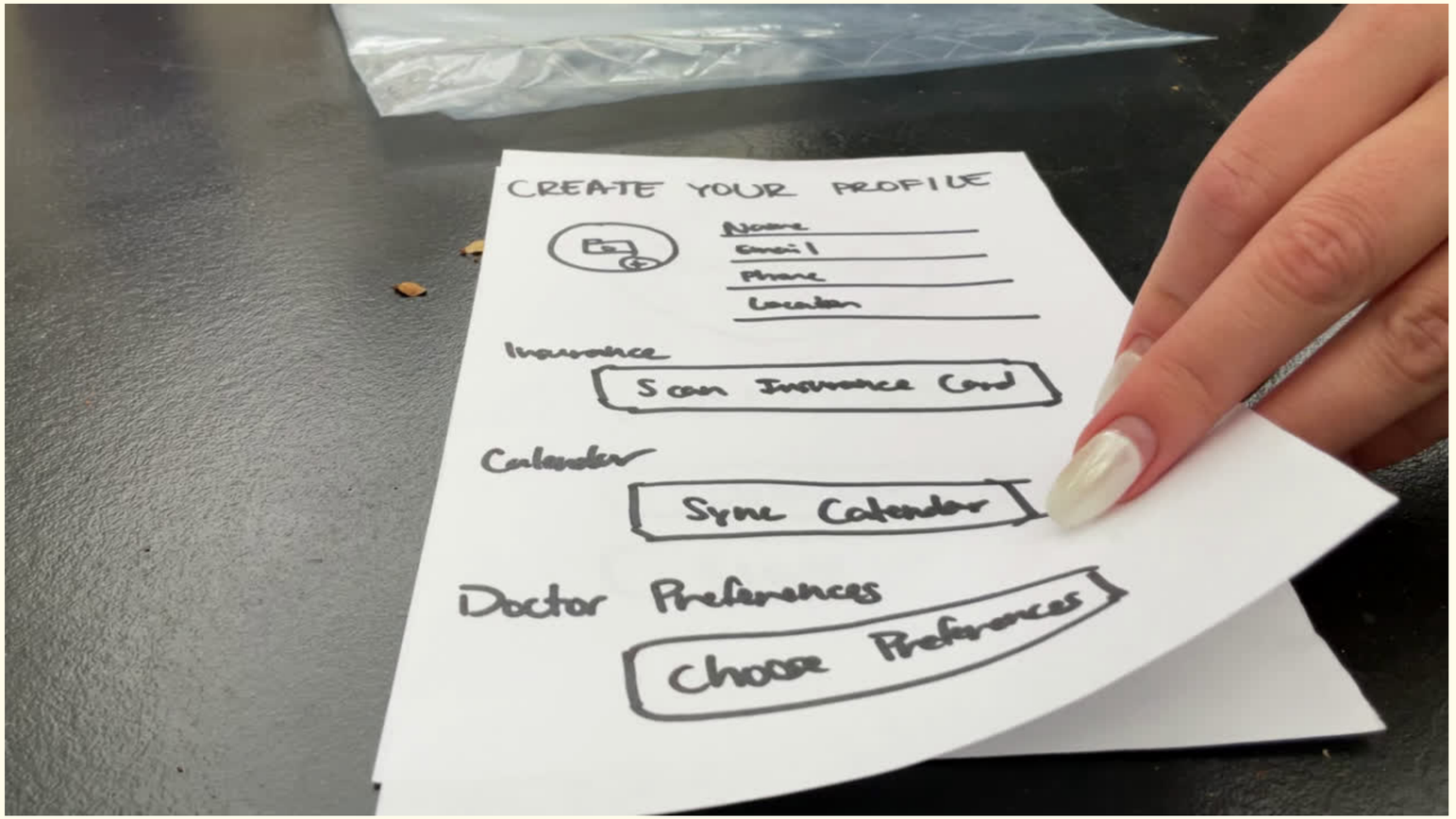
2

Low-Fi Prototype



2

Low-Fi Prototype Process



3

Script

Facilitator: “Hello! Thank you so much for taking the time to try out our paper prototype for a healthcare app we are designing this quarter. The goal is to help people find time to seek quality care in the midst of busy schedules and working hours. To use our prototype, treat each page as if it is its own interactive phone screen- feel free to press whatever buttons you see on the paper! Upon pressing a button, we will feed you the next paper screen, similar to how clicking buttons on your phone brings you to a new screen! For our purposes today, you are engaging with our app with the pre-existing condition of a toothache. Are you ready to begin?”

Facilitator: “We would love to begin the prototype experience with the signup process. Feel free to think out loud as you engage with the screens!”

Facilitator: “Great! Now, we would like you to schedule an appointment.”

Facilitator: “Now that you booked an appointment, try and navigate to the functionality of rebooking the appointment.”

Facilitator: “That is the end of our prototype! We hope you enjoyed it. How likely are you on a scale of 1 to 10 (10 being most likely) to use this app? What are some things you liked/disliked?”

4

Incident Log: Kathleen

Incident	Severity (1-4)
app excluded her scenario: “I don’t have a digital calendar...is there an option for me?”	4
hesitated at the rebooking: Attempted to click “Booked” instead of the “...”	3
hesitated at personal preferences: “I don’t really care about the race and gender of my physician- can I put that?”	2

4

Incident Log: Crawford

Incident	Severity (1-5)
First intuition was to log in vs sign up, even though no account had been made	2
Hesitated when looking for the appointment editing button (three dots) “I think this is it... right?	4
Found the rescheduling workflow challenging / confusing	3

4

Incident Log: Kevin

Incident	Severity (1-5)
Didn’t know how to cancel/reschedule appointment. “What am I supposed to click for this?”	5
Hesitated at clicking “Done” or “Next” for the insurance scan page.	3
“I already have a primary doctor so I wouldn’t want to select a new one” (when selecting doctors after appointment confirmation)	2
“I don’t really have any specific preferences when it comes to a doctor. Is there a way to skip this?”	2

4

Incident Log: Kathleen (SJSU)

Incident	Severity (1-5)
Cofused when only clicking “Next” after scanning insurance card didn’t proceed to the next step. “Wait am I supposed to click Done first?”	4
Hesitated when figuring out what to click to reschedule or cancel appointment. “I guess it would be the three dots?”	3
“Is there a way to skip parts of the onboarding process and just go straight to the appointments after creating my profile? I don’t think preferences are that important to me.”	2
“Am I supposed to type something?” (when interacting with chat interface to book appointments)	3

4

Incident Log: Ryan

Incident	Severity (1-5)
Confused when clicking save/next when doing insurace card/calendar set up. Really disliked those two buttons.	5
Understood the 3 dots but didn’t think it was intuitve	3
While making his doctor preferences, he said that he wanted to select multiple buttons (I’m comfortable with male and female doctors) and wanted more clarification on what distance meant (is it inclusive of the other distances?)	4