

A5: Sketching, Low-fi Prototyping & Pilot Usability Testing

FitBud

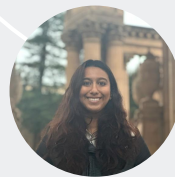


Our Team



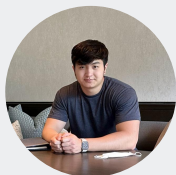
CHRISTELLE

Junior
Computer Science
Santa Cruz, Bolivia



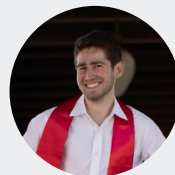
AKANSHYA

Junior
Computer Science
Mountain View, CA



ETHAN

Senior
Computer Science
Palo Alto, CA



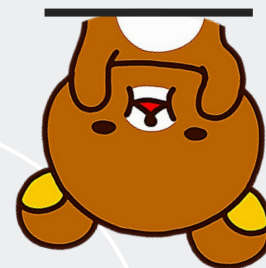
JAKE

Coterm
Computer Science
San Carlos, CA



FitBud

Your new pal, here to make
fitness **fun** and **easy**



Problem

People, regardless of their current fitness levels or social fitness preferences, **don't actively try to change** their fitness-related habits without support as it requires a lot of **activation energy, effort, and planning** to make it consistent.

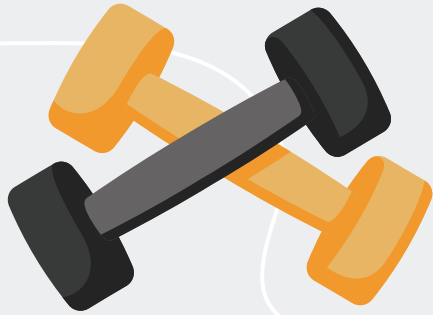
Problem

People, regardless of their current fitness levels or social fitness preferences, **don't actively try to change** their fitness-related habits without support as it requires a lot of **activation energy, effort, and planning** to make it consistent.

Our app provides you with a gamified **virtual workout buddy** that **schedules** your workouts, keeps you **accountable**, and **accompanies** you through your workout - **adapting** to your needs and making it easier to exercise.

Solution

WHAT WE WILL TALK ABOUT...



01 Design Process

FitBud concept sketches

03 Lo-Fi Prototype & Testing

Creating our Low-Fidelity Prototype and testing it

02 Chosen Interface Design

What our final interface design was and why

04 Results

Discussion of our test results

01.

DESIGN PROCESS





Let's talk...

Concept Sketches!

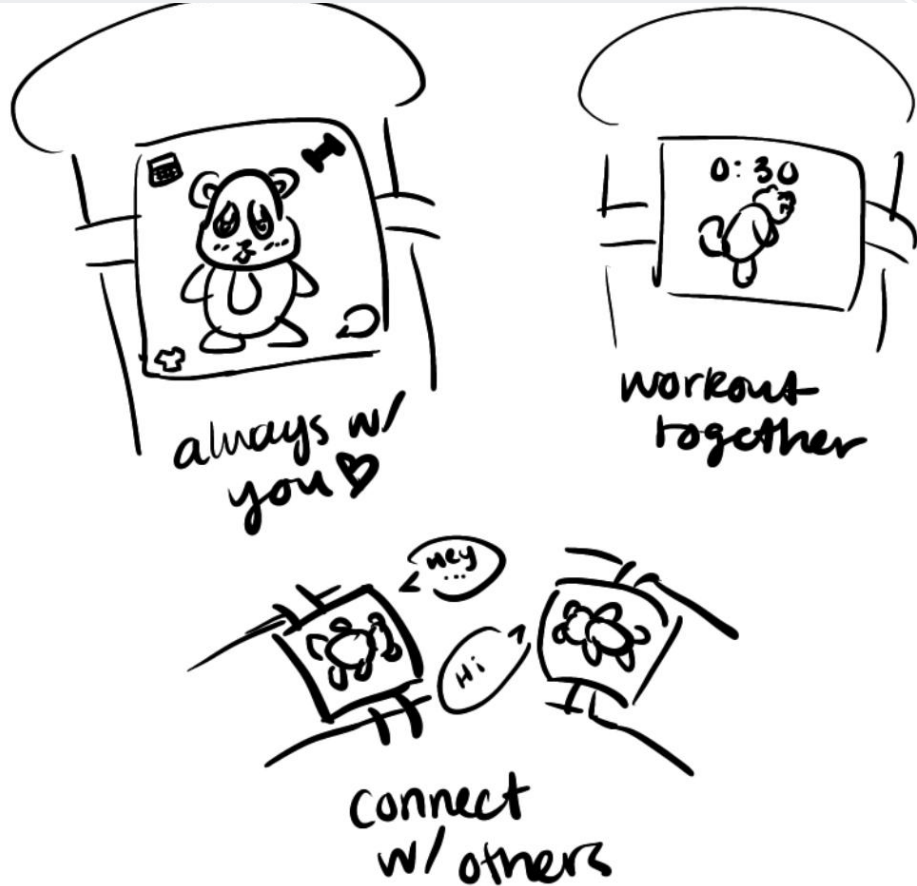
Let's start simple

Mobile App



What about this...

Wearable



I think maybe!

AR



Buddy in
your environment



Buddies can meet
each other
IRL!



customize
Buddy in your
room? OMG



Buddy helps
you watchout for
obstacles!

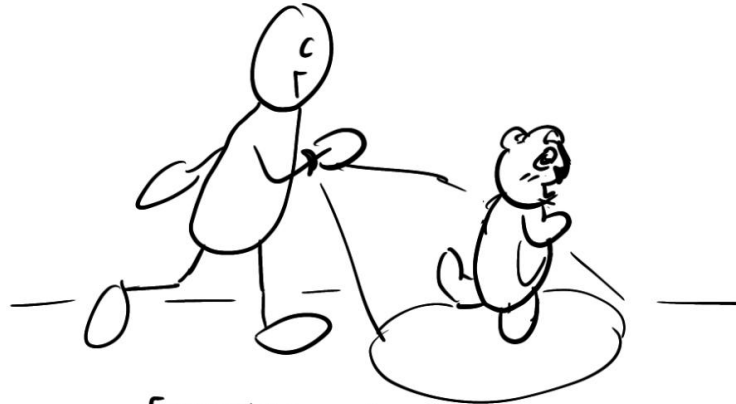
Kind of outrageous...



You call
holographic
Buddy!



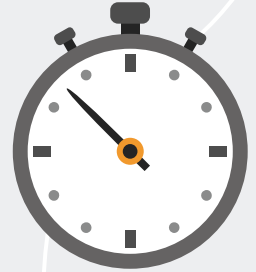
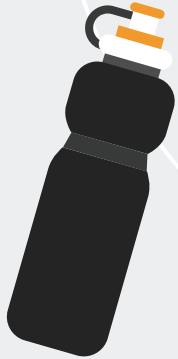
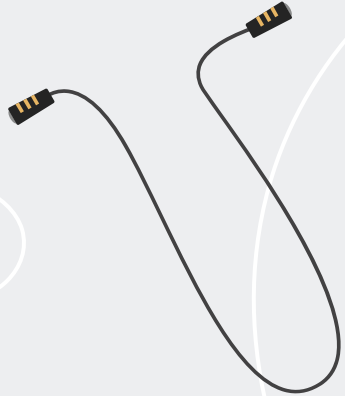
Wristband that
can summon holographic
Buddy



Exercise w/ your
holographic Buddy!

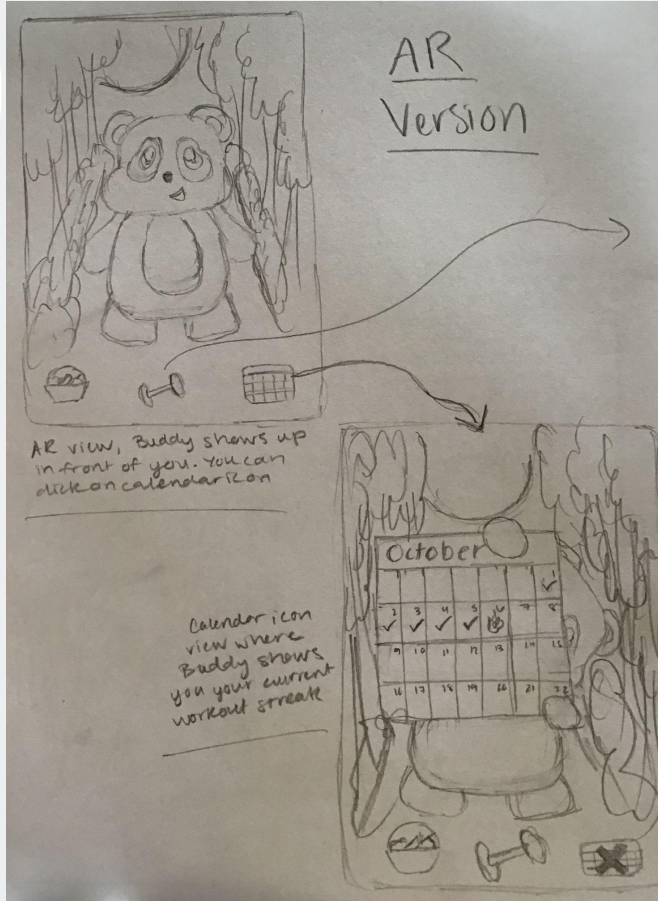
Hologram

TOP 2 DIVERSE REALIZATIONS

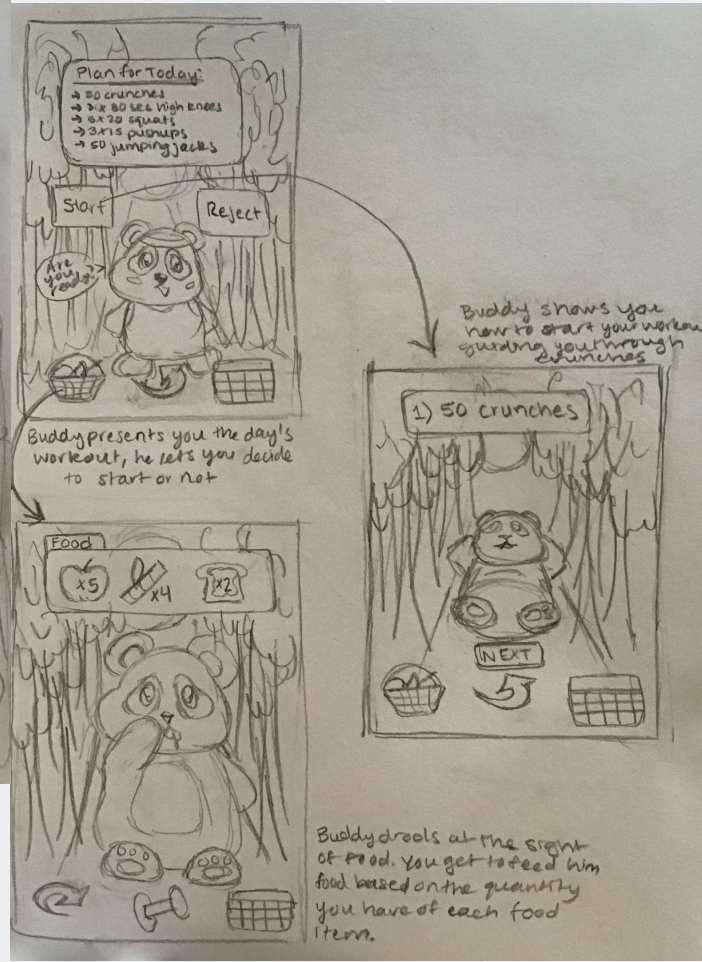


Fleshed out:

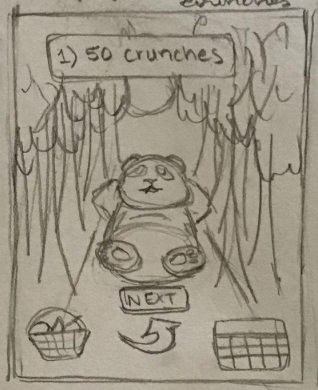
AR



AR
Version



Buddy shows you how to start your workout guiding you through exercises



AR

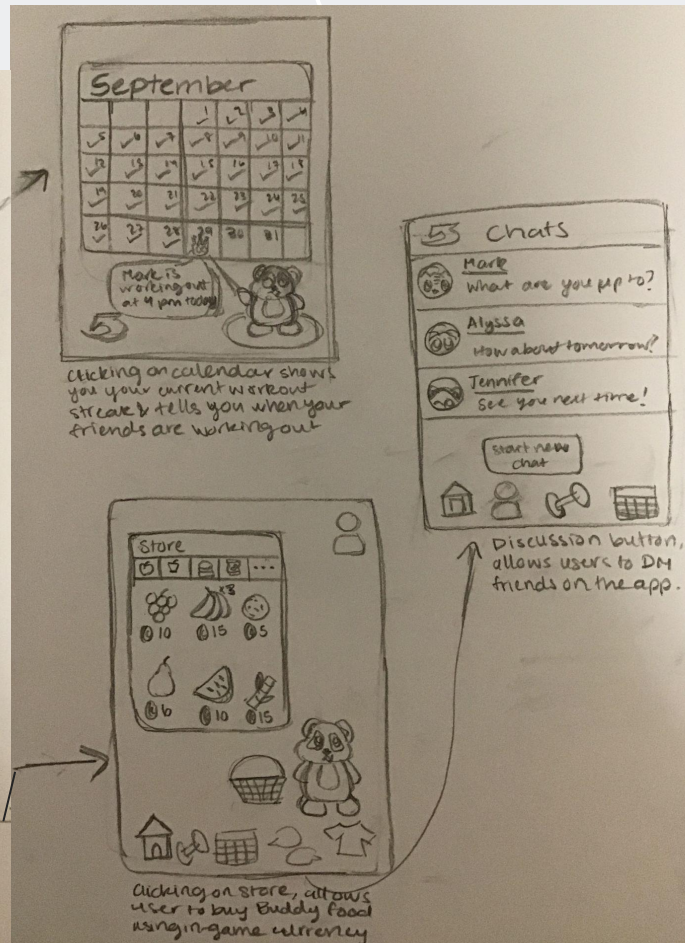
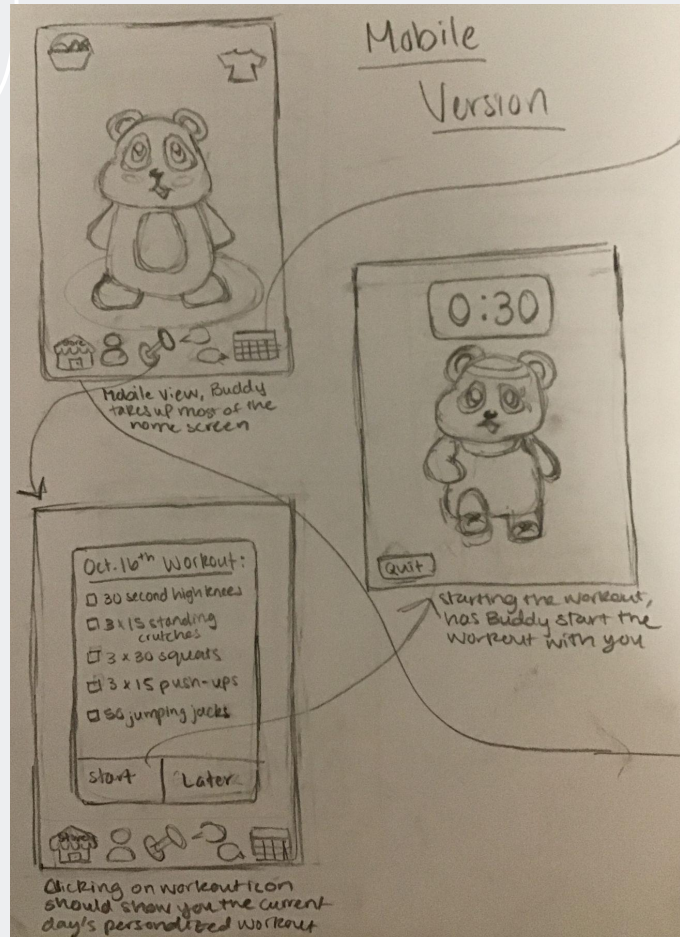
PROS

- Could feel more real as it appears in your environment
- More interactive makes it for an experience more like that with a personal trainer
- Can also be used to change the location if desired (background)

CONS

- May be **difficult** to do it outside if not working out in your room
- Get **too absorbed** in your phone and ignore the real world (Pokemon Go effect)
- Requires **a lot more power** in terms internet connectivity and storage
- People **aren't too familiar** with the format and may not like it

Fleshed out: Mobile App



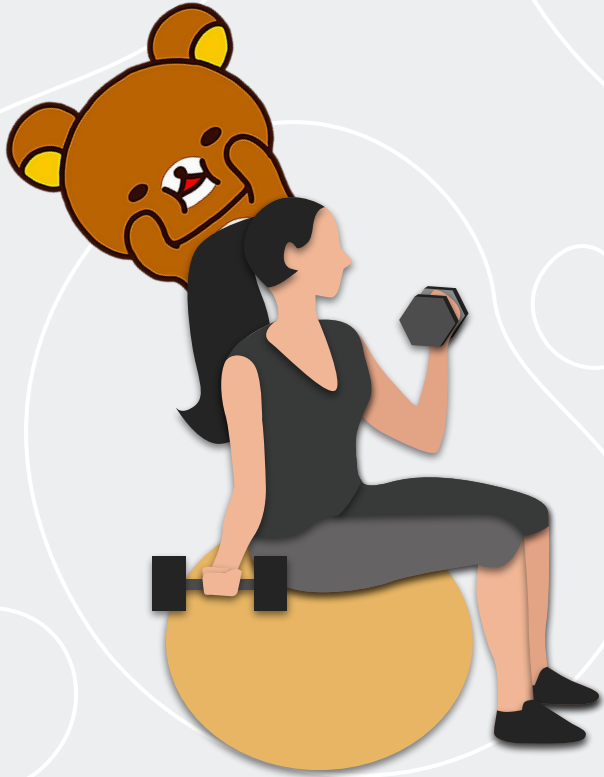
MOBILE APP

PROS

- **Very accessible as most people have a smartphone now**
- **Convenient to use at any point**
- **People are generally more willing to try new apps**
- **Allows us to combine many features - visual, audio, chat, etc.**

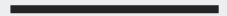
CONS

- Might feel **less immersive** and **interactive**
- **Can be problematic** as phones have a lot of notifications and other apps - might be distracting for the users



02

CHOSEN INTERFACE



OUR WINNER...

MOBILE APP

WHY MOBILE APP?



AR

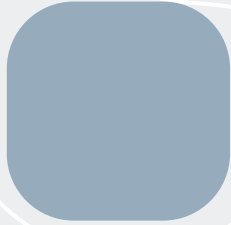
Although AR could be a cool and fun platform, it comes with several ethical implications and could possibly put people in **danger** aside from it being **costly**.

MOBILE APP

A mobile app can be just as innovative and fun for a user and could be **used at all times** despite internet connectivity. **Customization** and **preference changes** is yet another plus



WHY MOBILE APP?



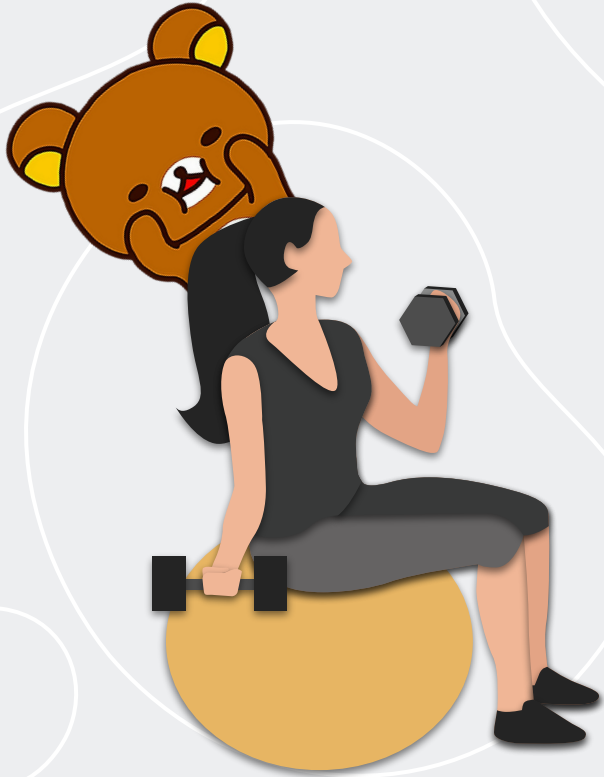
AR

Although AR could be a cool and fun platform, it comes with several ethical implications and could possibly put people in **danger** aside from it being **costly**.

MOBILE APP

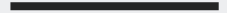
A mobile app can be just as innovative and fun for a user and could be **used at all times** despite internet connectivity. **Customization** and **preference changes** is yet another plus





03

LOW-FI PROTOTYPE



Settings

change

Name: _____

Birthday: _____

Email: _____

Primary fitness goals

Workout duration

Preferred days of the week

Calendar

Calendar Sync

Apple iCal

Google Calendar

Calendar

Octo

Calendar +8

Oct 14

Time: 10:00 AM

Location: Home

Event: Cardio

Duration: 30 min

Time

Add Friend

Find Friends

Search: _____

Friend: _____

Add Friend

Ellen

Level 2

Pending Workout Request

Accepted!

Challenges

Workout at home

Send 1 workout report

Customize Daily

Complete today's workout

Share your progress

Fitbud

Returning User?

Log In

New User?

Sign Up

Fitbud

Sign Up

Name: _____

Birthday: _____

Email: _____

Username: _____

Password: _____

Confirm Password: _____

Next

Fitbud

Sign Up

Cancel any reservations, you may lose some out of all ready

1 Day

3 Days

7 Days

1 Week

FitBud

2 x 30

Squats

Quit

Pause

Skip

Level 2

Pending Workout Request

Accepted!

Mark

Workout Scheduled

Time: 10:00 AM

Location: Home

Cancel

Mark

Send Workout Request

Confirm

Cancel

Fitbud

Welcome Back!

Username: _____

Password: _____

Login

Level Up!

Today

80 jumping jacks

30 sec high knees

30 sec squats

30 sec plank

30 sec side planks

Completed

2 x 30

Squats

Quit

Pause

Skip

Are you ready to get started?

Next

You have completed today's workout!

Next

Ellen

Level 2

Pending Workout Request

Accepted!

History

Oct 21 Workout

Oct 20 Workout

Oct 19 Workout

Oct 17 Workout

Oct 16 Workout

Oct 15 Workout

Oct 12 Workout

Oct 11 Workout

FitBud

Starting Workout!

2 x 30

Squats

Settings

change

Time of day

Workout environment

Injuries

View History

Today

80 sec high knees

30 jumping jacks

3 x 15 standing crunches

3 x 15 plank-ups

3 x 30 squats

Start

Wardrobe

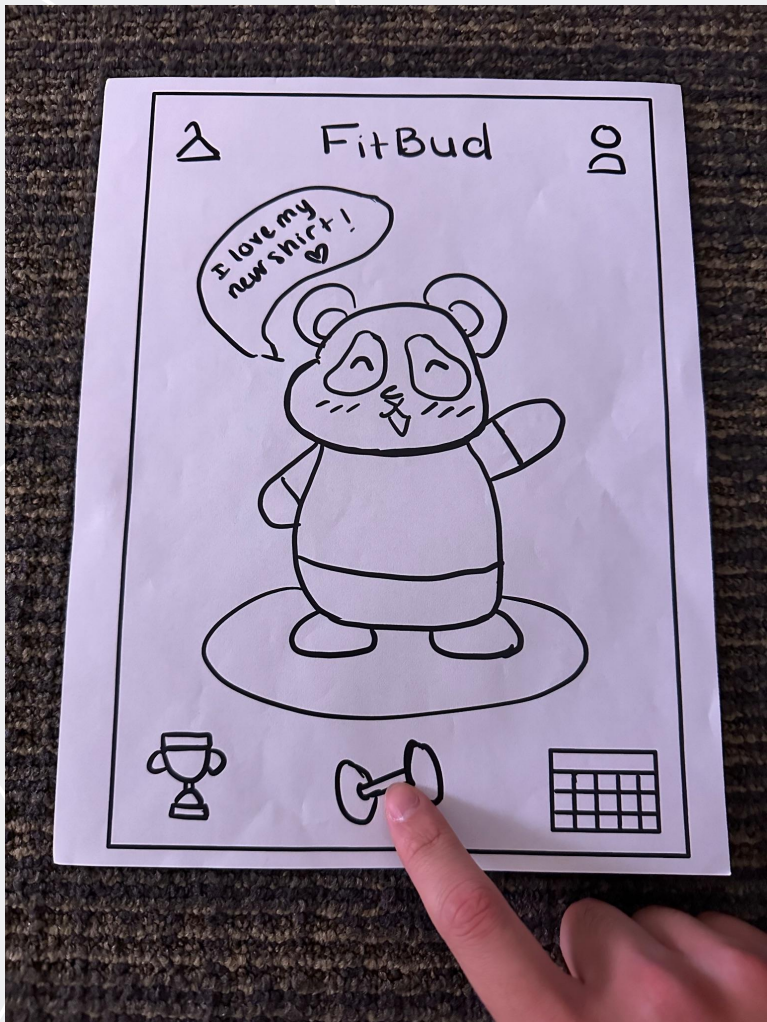
80 sec high knees

30 jumping jacks

3 x 15 standing crunches

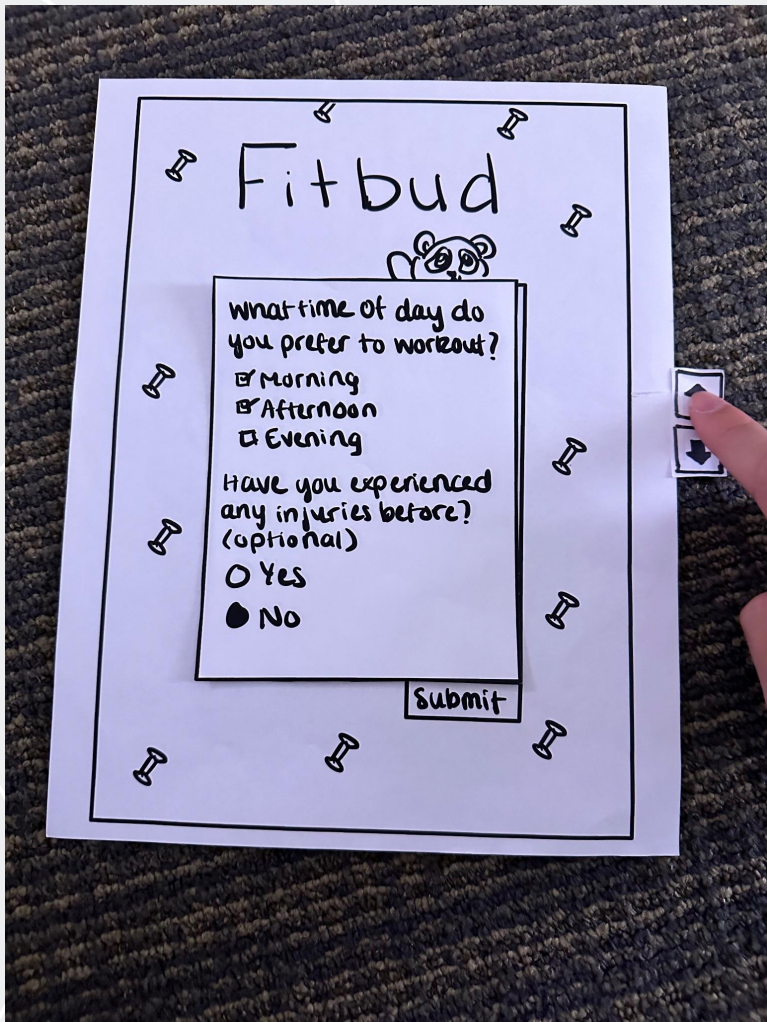
3 x 15 plank-ups

3 x 30 squats



Tap to click

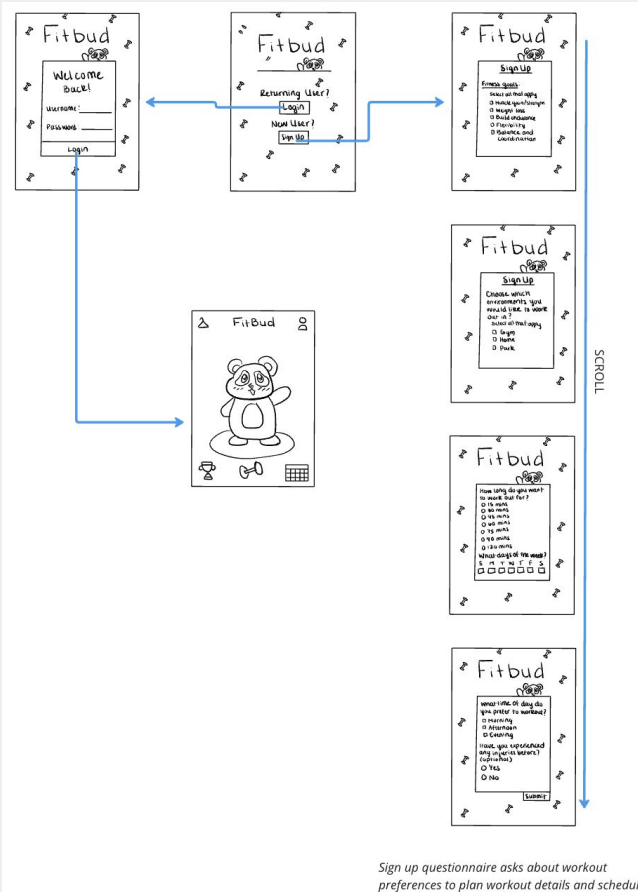
Tap to click on icons and menu items



Scroll

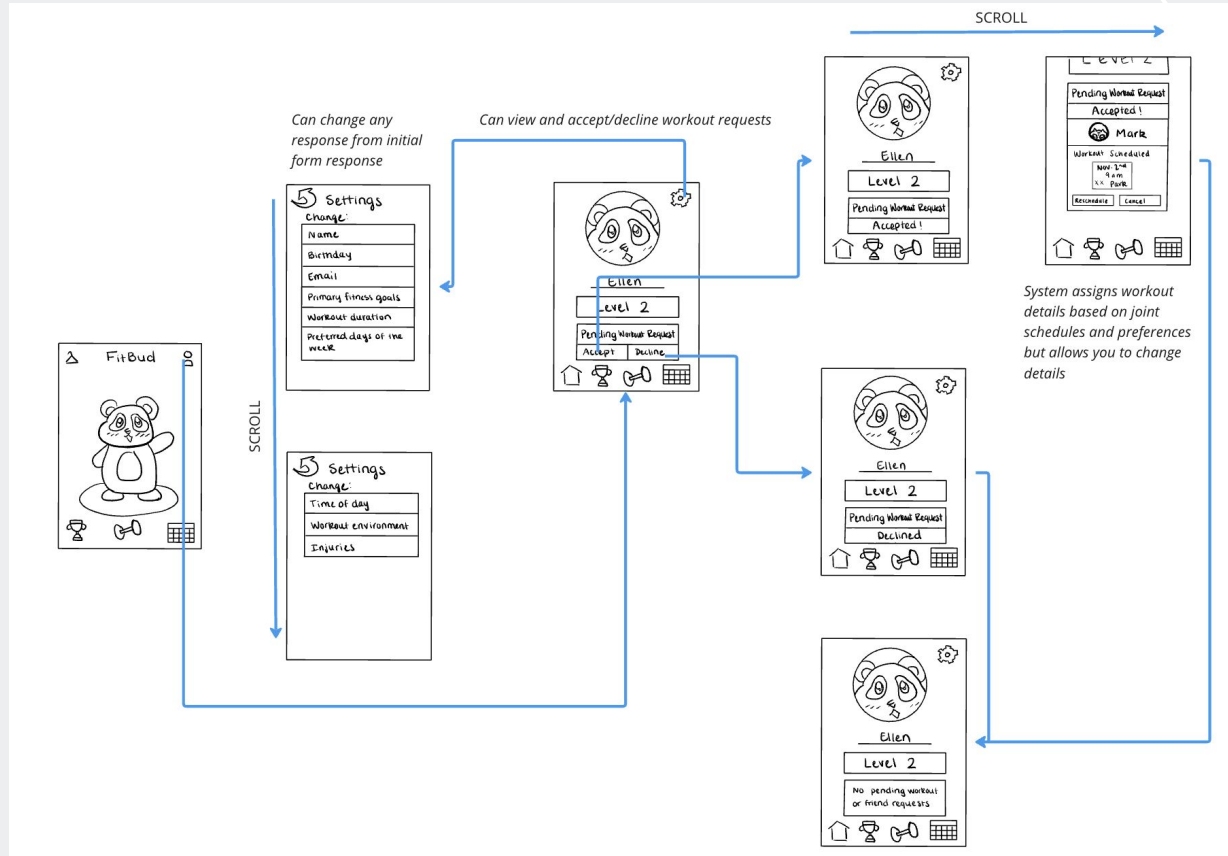
Scroll through menus

Sign Up/Log In

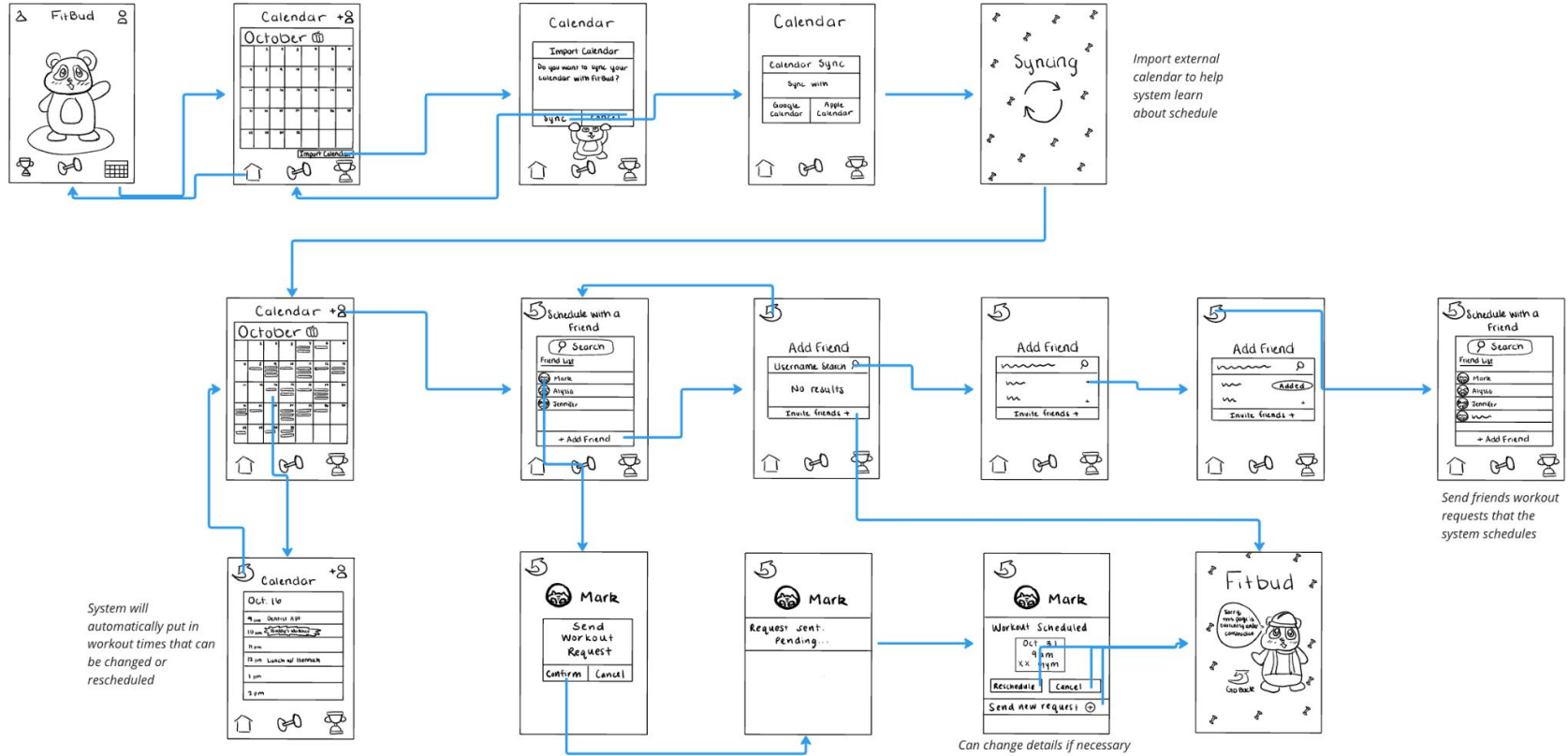


Sign up questionnaire asks about workout preferences to plan workout details and schedule

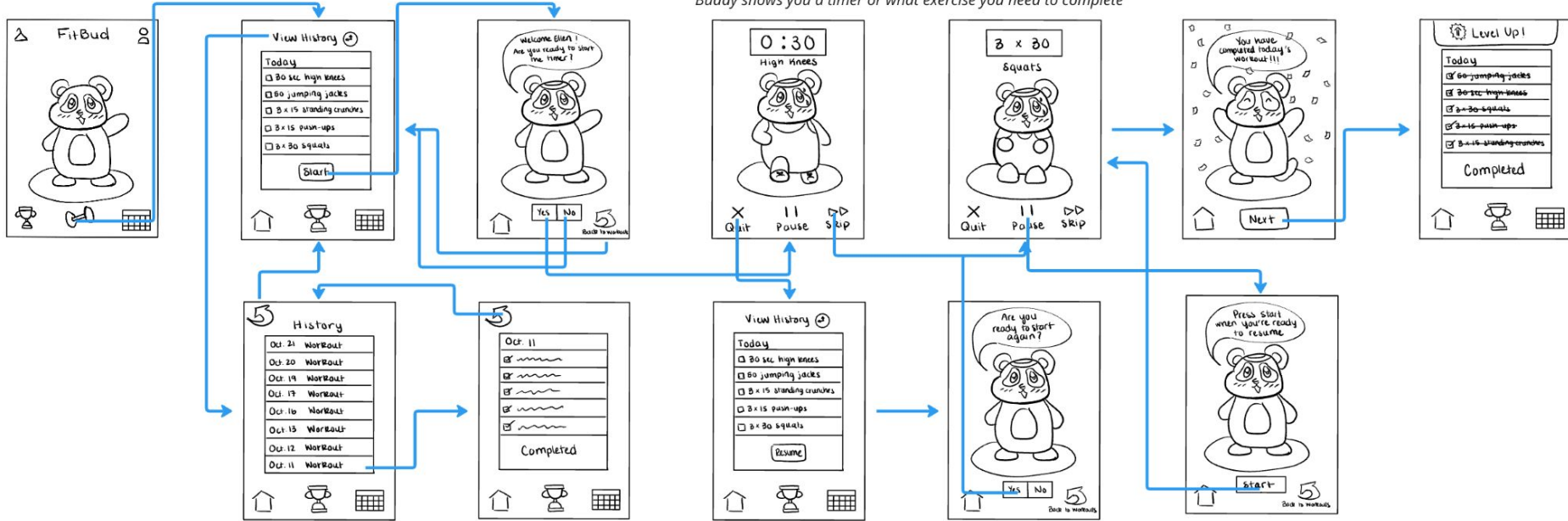
User



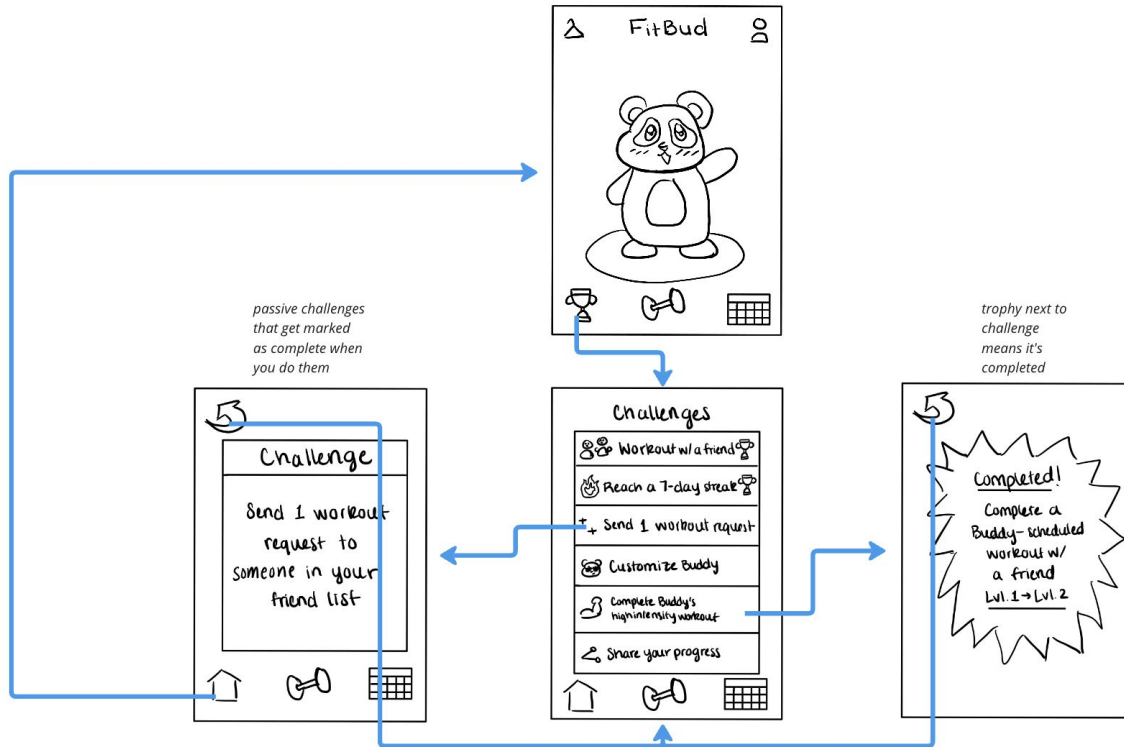
Calendar



Workout with Buddy



Challenges



Customization



some outfits are locked until you reach higher levels by working out and completing challenges

selecting an outfit puts it on Buddy

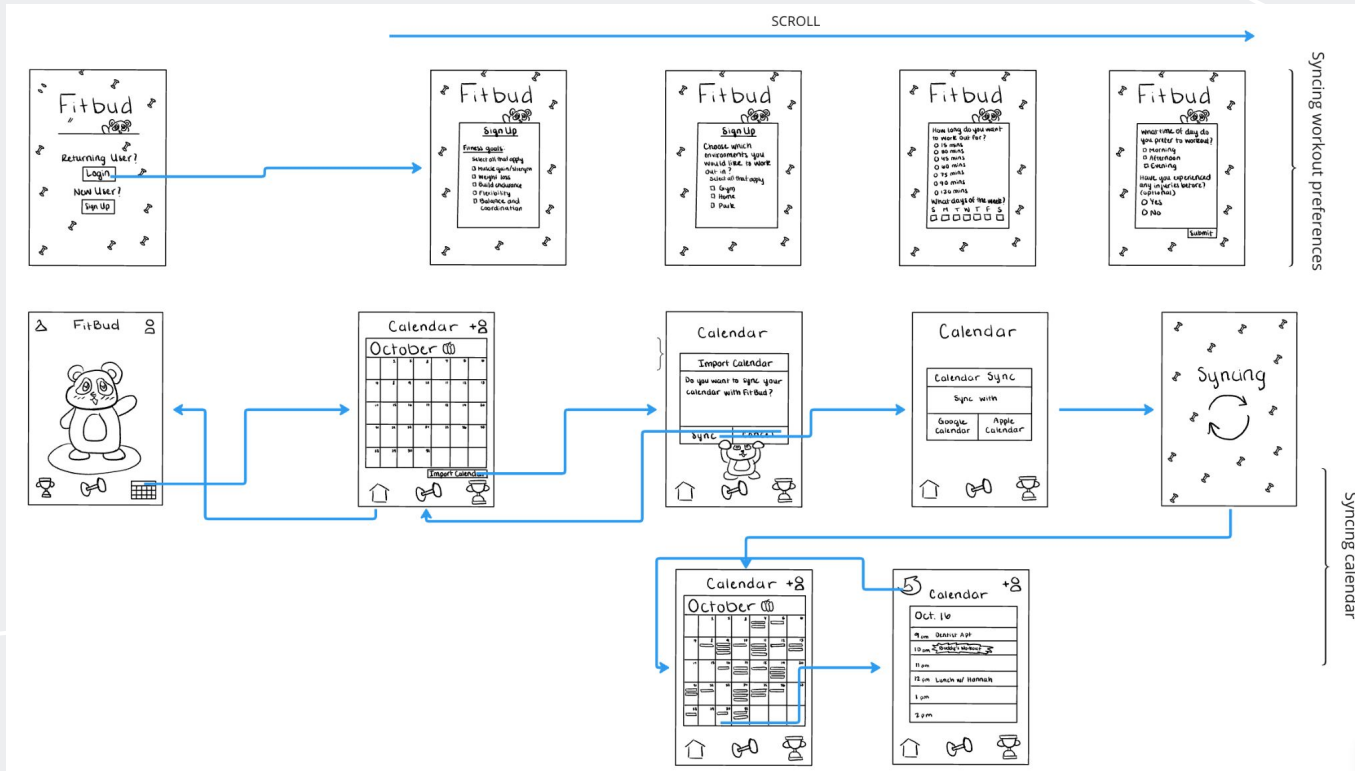
New home screen

3 TASK FLOWS

SIMPLE, MODERATE, COMPLEX

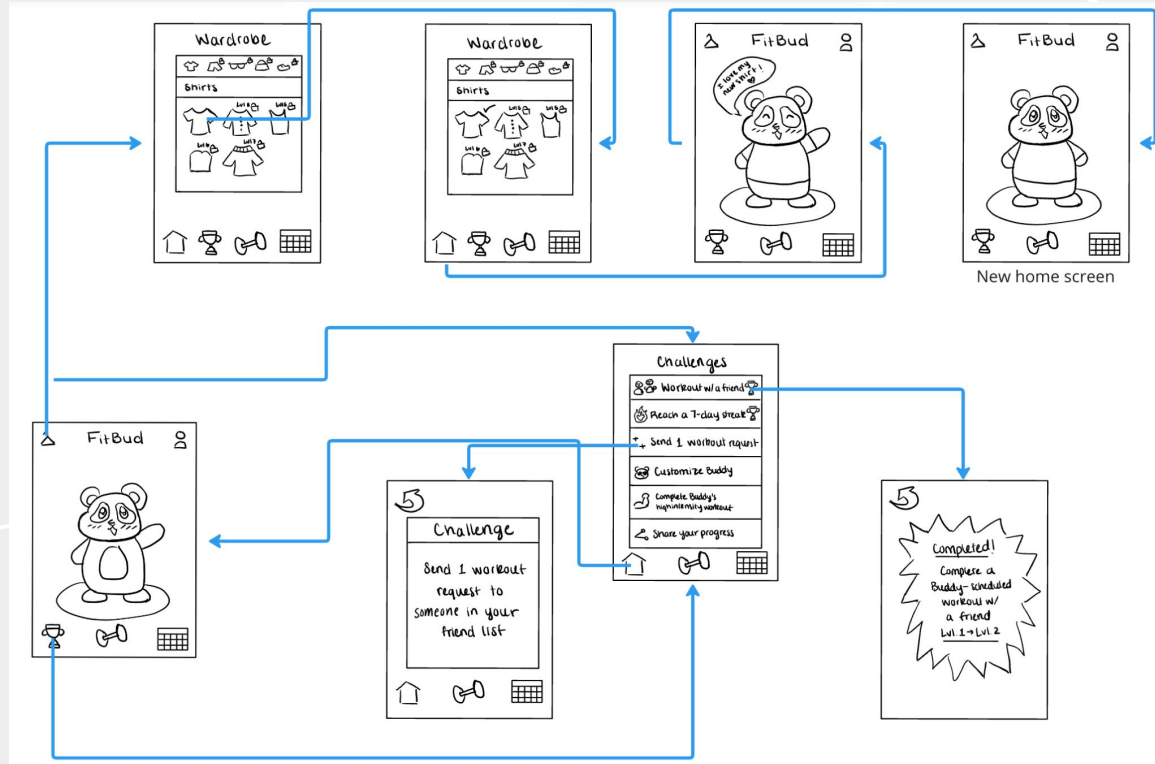
SIMPLE TASK

Create a workout plan in an environment accessible to me and schedule that works for me



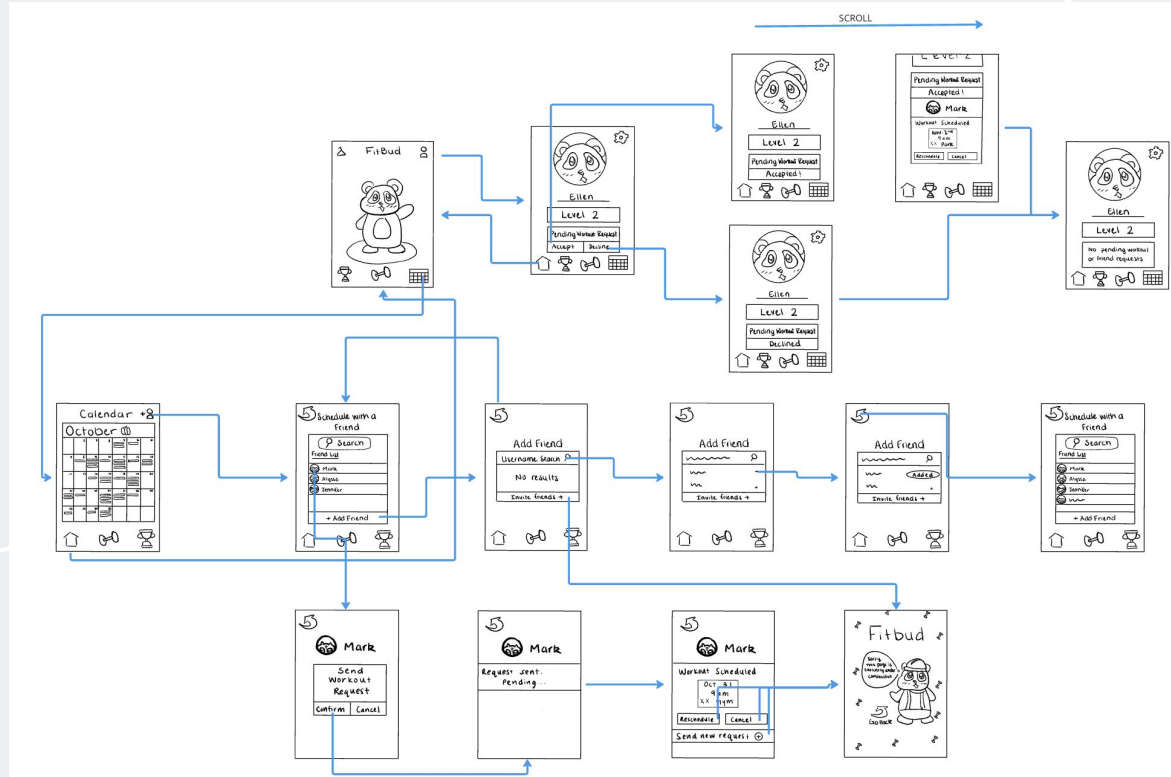
MODERATE TASK

Have an accountability and reward system based on my commitment to fitness



COMPLEX TASK

Connect with friends who are also exercising





USABILITY TESTING



Stina

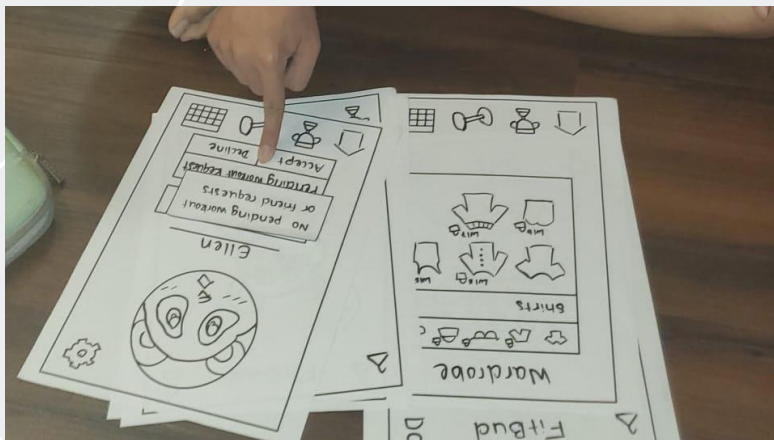
27, Apple Genius Bar Employee
Occasionally works out



Juan

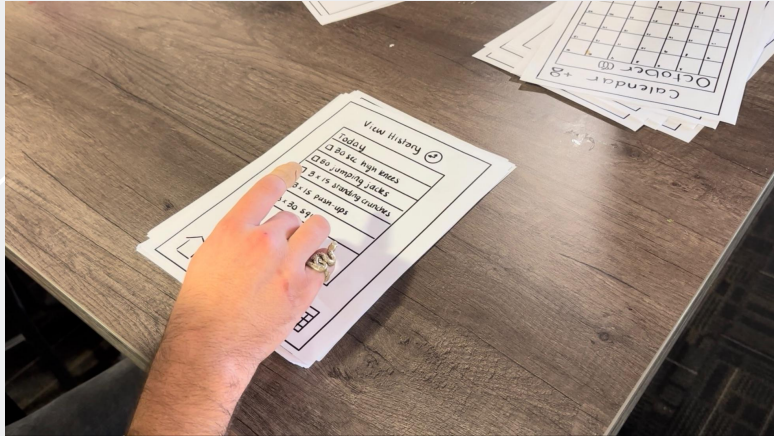
24, Mr. Sun employee

Does not workout



Lucas

25, Google Software Engineer
Moderate gym attendee w/ physical
trainer



Christian

25, Jamba Juice worker
Does calisthenics (push-ups, sit-ups) at
home



Mariia

34, Bible study volunteer
Frequent walker but little other physical
activity

ENVIRONMENT & APPARATUS



ENVIRONMENT

Laid down prototype on a table/flat surface so participants could try prototype out



APPARATUS

Created paper prototype and manually responded to actions

TEAM MEMBER ROLES



CHRISTELLE

Computer



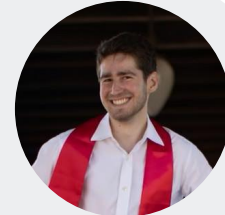
AKANSHYA

Facilitator



ETHAN

Greeter/Observer



JAKE

Observer/Assistant
Computer

Procedure

1

Introduction

Who we are and what the experiment is about

2

Context

Give participant context about our app and its purpose

3

UI basics

Demonstrate how to interact with app

4

Tasks

Present user with tasks we want them to complete

5

Execution

Allowed user to find their way to the tasks with as little guidance as possible

6

Final thoughts

Asked participant for thoughts on our app and areas of improvement

USABILITY GOALS

&

KEY MEASUREMENTS

Usability Goal #1: Efficient

Tasks take **little time** to complete

UI takes **little time** to navigate

Key Measurements

Average time taken to complete tasks
should be **under 2 minutes**

Usability Goal #2: Fun

User **enjoys** working out with the app
more than without
Buddy is **motivating** and
rewarding

Key Measurements

We want users to express joy at least
once when interacting with their
buddy (i.e. smile, laughter, or
comment that shows their enjoyment)

04

RESULTS



PROCESS DATA

- Every participant
 - had trouble finding **workout history**
 - view history button didn't look like a button even when found
 - confused workout history in “workouts” with the calendar
 - struggled distinguishing “add friends” and “invite friends” features

PROCESS DATA

- 3 participants
 - found it **difficult to distinguish** between completed and incomplete challenges
 - weren't sure how to finish a specific exercise in the workout (with no timer)
- 2 participants
 - pointed out workout requests contained **no information**
 - were confused as to what they were accepting in a workout request

OTHER OBSERVATIONS

- Users expressed a desire for:
 - Ability to view other users' profiles
 - Ability to edit workouts (adding/removing exercises, adding rest times, etc.)
 - Ability to import multiple calendars
 - Ability to talk to buddy (click on him for advice, fun fact, etc.)
 - More interesting challenges
 - XP bar for leveling up and more clarity as to how the level system works
 - Ability to save outfit changes for buddy
 - Static icon positions

BOTTOM-LINE DATA

- Each task took an **average of 1-2 minutes to complete**, with the exception of viewing workout history, which had an average of 9 minutes
- Users had an **average of 0-1 misclicks when completing tasks**, with the exception of viewing workout history, which had an average of 8 misclicks
- Users made an **average of 1-3 expressions of joy** when using the prototype, especially when **exercising** with their Buddy and **customizing** their Buddy

TASKS & USABILITY GOALS

- Simple task achieved usability goals quite well
 - Setting up profile and importing calendar was simple and users generally completed them in under 1.5 minutes
- Moderate task has some room for improvement
 - Challenges were not very motivating and were more passive, few expressions of joy were made during these portions
 - Interacting with and customizing Buddy should be more prominent, as users made the most expressions of joy while doing so
- Complex task achieved goals, but had separate issues
 - Completed in under 2 minutes
 - Couldn't see from whom the workout request was received
 - Couldn't view others' profiles

FINDING IMPLICATIONS

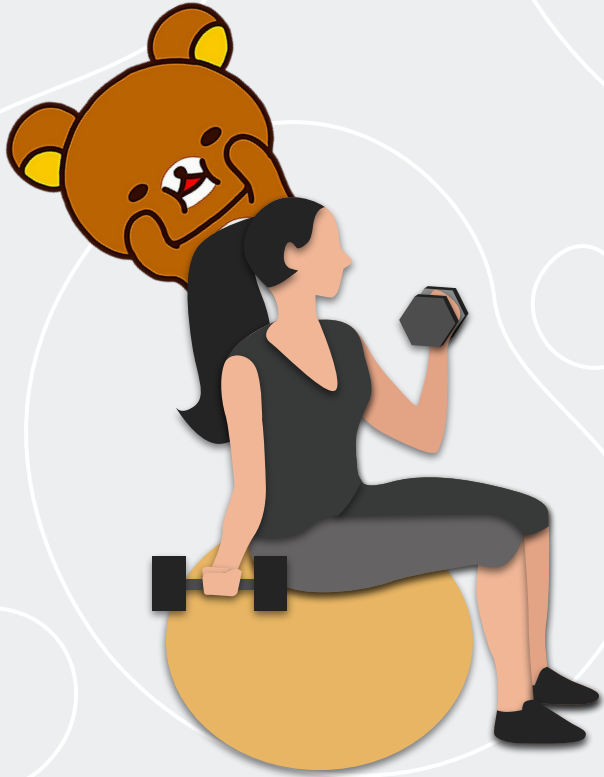
- Users enjoy interacting with a virtual Buddy, and it should be intertwined with every feature/task
- Features should be accessible from multiple places if logical (users struggled to find workout history)
- Users want to know as much information as possible about other users they interact with on the app

FUTURE DESIGN CHANGES

- **Improve interface mobility**
 - Make workout history accessible from the calendar
 - Make relevant features accessible from their corresponding challenge page
 - Make separate tabs for complete and incomplete challenges
- **Buddy's prominence and interaction clarity**
 - People enjoy interacting with their buddy, so buddy should have a constant presence
 - Save changes to any changes made to their buddy

FUTURE DESIGN CHANGES

- **Social interaction less confusing/ominous**
 - Display more information about who workout requests are from
 - Let users view their friend's profiles
- **Static icon positions**
 - Icons like home, workout, calendar should not move around
 - Highlight when one is selected instead
- **Workout Flow**
 - Make it clear how to progress to next exercise or make changes to provided workout plan



05

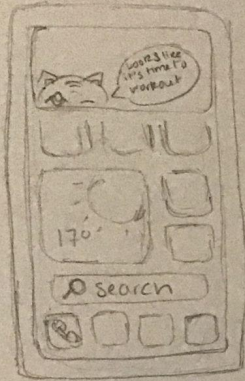
Appendix

SHORTCOMINGS OF USABILITY TESTING

- Failed to tell us if users would actually even download the app
- Difficult to know if all “expressions of joy” were actually about Buddy/the app (ex. smile)
- Hard to understand if all task complications or misclicks were due to first-time app use or just a poorly designed feature

Initial Sketches

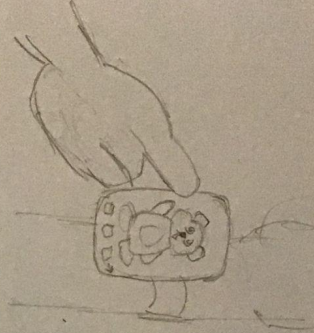
Widget



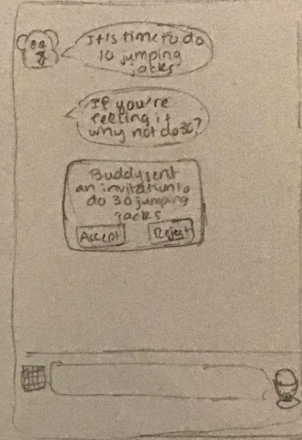
Widget



Talking
App



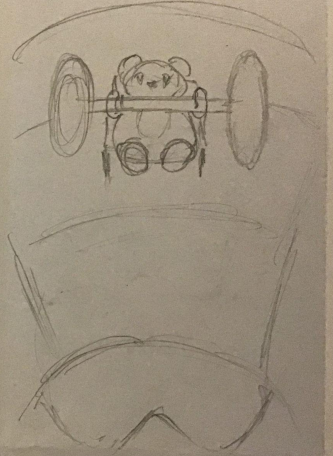
Wristband



Chat Bot



AR



VR

AR (continued)

PROS

- **Buddy can demonstrate exercises on real-life equipment**
- **Seeing buddy in projected in real life could be fun**
- **Ability to feed/dress up/pet Buddy in AR like in Pokemon Go**
- **Buddy could do exercises together with user**

CONS

- Might take too much time, gymgoers would think user isn't actually working out
- Might be more distracting than motivating
- Could overcomplicate the app – we want it to be simple and efficient
- Computationally expensive and difficult to implement

MOBILE APP (continued)

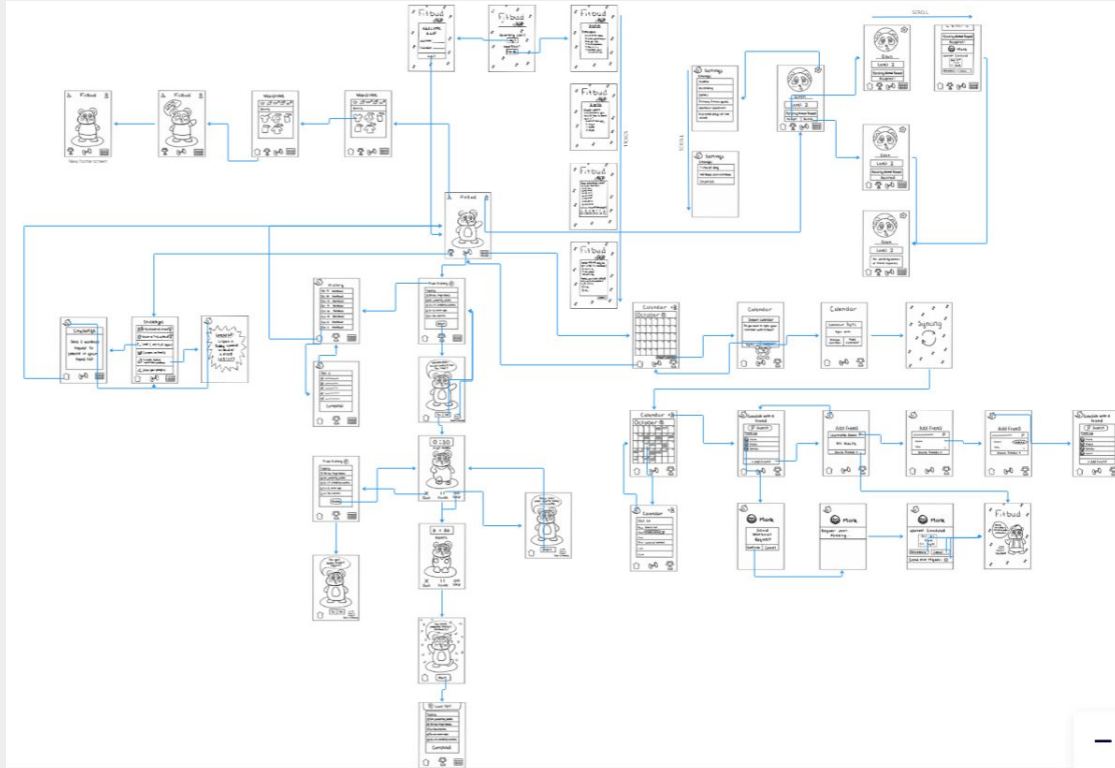
PROS

- **It's what people are most familiar with**
- **Could interface with other apps (maps to find workout locations, calendar to import, etc.)**
- **Low barrier to entry**
- **Easiest to implement/develop for**

CONS

- Might result in users being on their phones a lot in the gym, something that is frowned upon
- Could be distracting and cause accidents (e.g. if someone is looking at their phone while running)
- Not the most innovative – might have competitors

PROTOTYPE BIRD EYE VIEW



LINK: <https://tinyurl.com/489d6uep>

TESTING SCRIPT

Hi, we are Stanford students taking a class on user research, user design and interaction, and prototype testing. We are currently looking to test one of our app prototypes. Our app is an app that can allow you to workout with a virtual buddy, and schedule workouts with friends. Before jumping in, we will demonstrate how to use the prototype.

Demonstrate how to press buttons and use scrolling feature.

Next, we will be asking you to complete some tasks. Please try to navigate through the app prototype to the best of your ability

Ask the following questions:

- First we would like you to sign up for the app, and then sign in.
- Can you check your workout history for October 11?
- Can you complete today's workout with your buddy?
- Now we would like you to import your calendar and check your schedule for October 16.
- Add a new friend and schedule a workout with Mark.
- Can you check a challenge that you have completed?
- Can you complete the "customize your buddy" challenge?
- Respond to your workout request
- Can you tell us what you liked and disliked about this prototype experience?

CRITICAL INCIDENT LOG (STINA)

User struggled to fill in the options before clicking next when signing up	1 (more to do with the format of the prototype)
User navigated to the calendar when asked to check workout history	3
User went through the workout in the process of trying to find the workout history	3
User understood how to go through the workout and the instructions provided by the screen	0
Very easily was able to find a friend and schedule a workout	0
Even after demonstration, was struggling with the scroll button	1
User did not easily understand that the trophy represented completed challenges	1
User struggled to find what to do next after outfit customization for her Buddy	2
Exclamation point for notification made it easy for user to identify workout/friend requests	0

CRITICAL INCIDENT LOG (JUAN)

User struggled a lot to find the workout history	3
User was able to successfully and easily import the calendar	0
User saw the view history button multiple times but failed to recognize that it was a button	3 (but may also have to do with the format of the prototype)
User was unsure how to show that you've finished an exercise and didn't understand the skip button (exercise or workout?)	3
User found the schedule after importing fairly intuitive	0
User was easily able to identify where challenges are located	0
User was confused when they encountered a challenge as in they weren't sure how to go about completing it	3
User struggled to add friends if not already in the calendar tab	2
User believed the reschedule button was schedule	1

CRITICAL INCIDENT LOG (LUCAS)

User was not sure what he was accepting when they got a workout request	3
User navigated to the calendar when asked to check workout history	2
User was confused by the 'accept' button being on the right instead of left	2
User was able to go through workout and finish it	0
Very easily was able to find a friend and schedule a workout	0
User understood how to use scroll buttons for different pages	1
User understood that challenges were represented by the trophy	0
User understood that customizing buddy required selecting an outfit and then going to home page	0
Exclamation point for notification made it easy for user to identify workout/friend requests	0

CRITICAL INCIDENT LOG (CHRISTIAN)

User did not instinctively use the scroller	2
User navigated to the calendar when asked to check workout history	3
User did not realize that the "view history" text was a button, seemed to think that it referred to the current page	2
User attempted to checkbox specific workouts that he wanted to complete during a session (which is not currently a feature)	1
User was able to go through workout and finish it	o
User understood that challenges were represented by the trophy	o
User understood that customizing buddy required pressing the clothing hanger	o
Exclamation point for notification made it easy for user to identify workout/friend requests	o

CRITICAL INCIDENT LOG (MARIIA)

User navigated to the calendar when asked to check workout history	3
User attempted to select a date on calendar without importing calendar	1 (perhaps this should simply trigger import calendar prompt)
User was able to go through workout and finish it	0
Was able to find a friend and schedule a workout	0
User understood that challenges were represented by the trophy	0
User attempted to go to the customization screen by selecting the customization challenge	1 (this should probably be an option)
Exclamation point for notification made it easy for user to identify workout/friend requests	0