



parbon

Take control of your carbon footprint.

Low-fi Prototyping & Pilot Usability Testing

Transportation & Mobility Studio

February 2022

Jiwon L., Jack C., Adi S., Victor L.

Our Mission

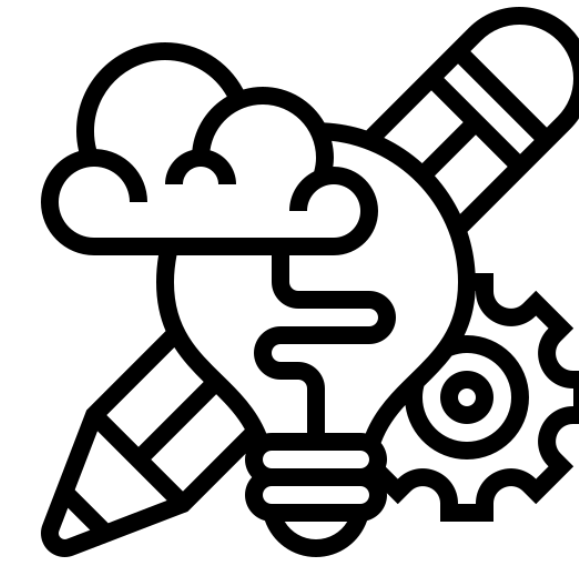
To provide a collaborative, simple platform that allows individuals to share, understand, and offset their own carbon footprint.

Our Value Proposition

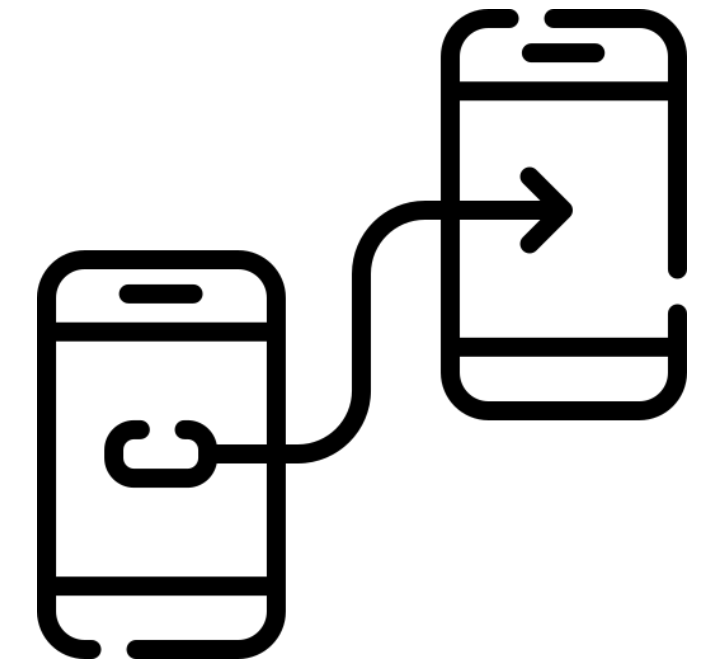
Take control of your carbon footprint.

Overview

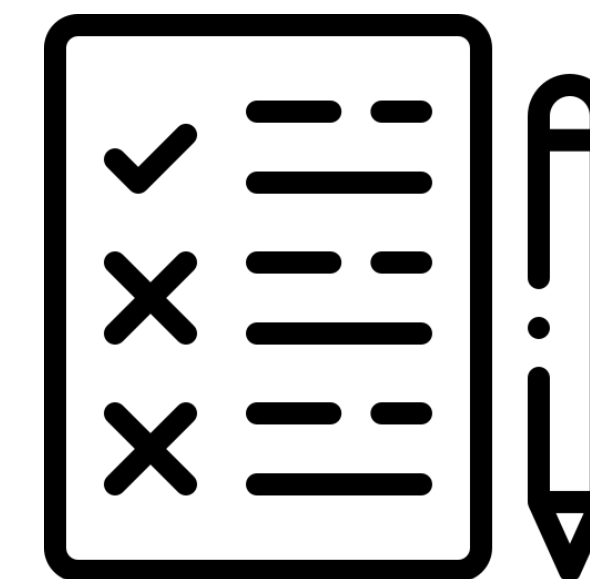
1. Preliminary Design and Selection Process



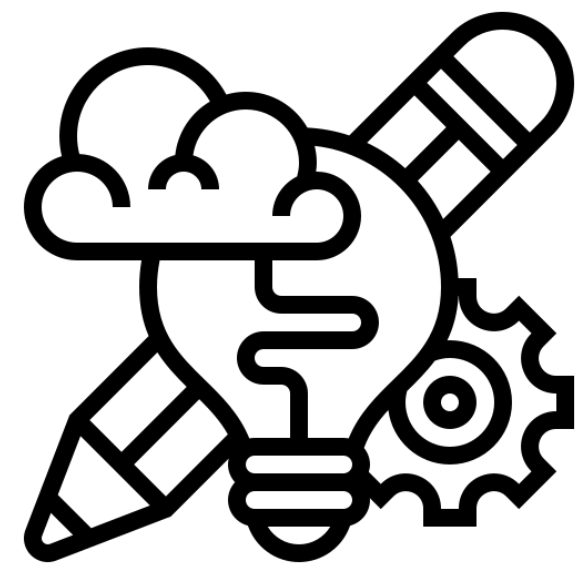
2. Low-Fi Prototype



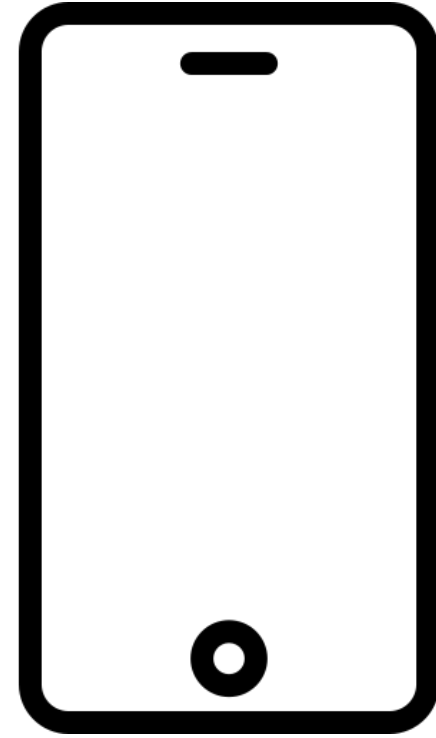
3. User Testing Methods & Results



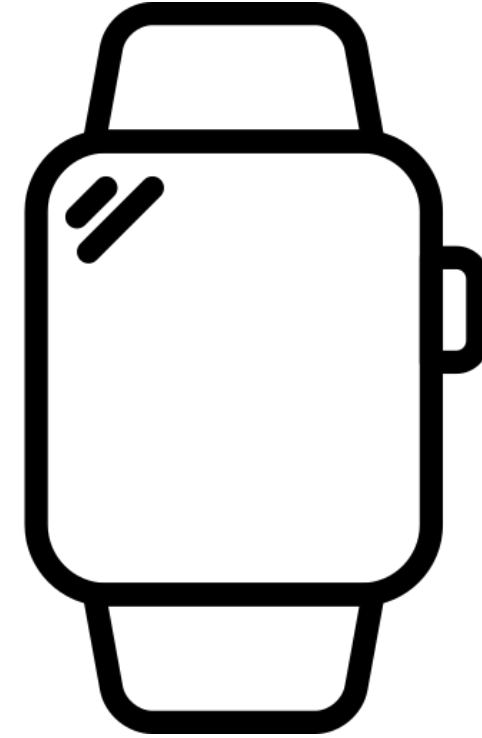
Preliminary Design and Selection Process



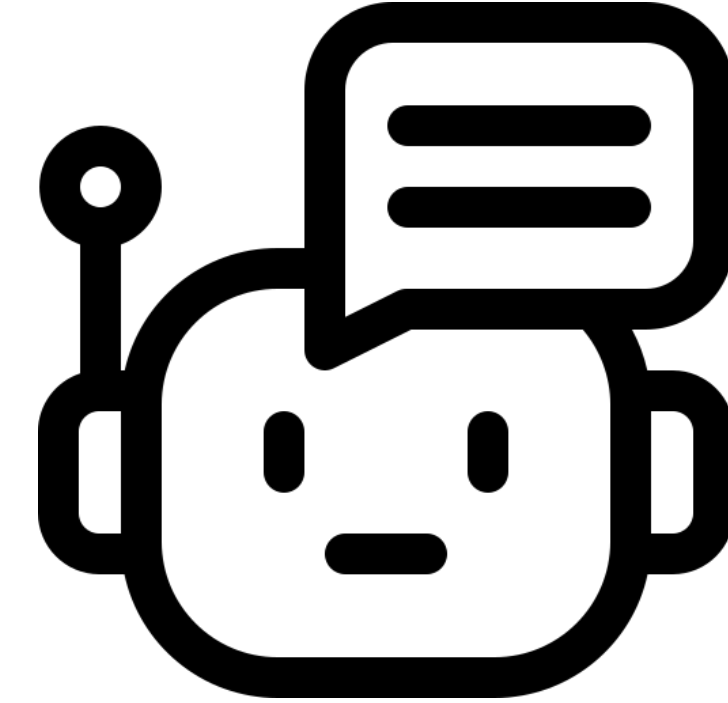
First Ideas



Mobile App



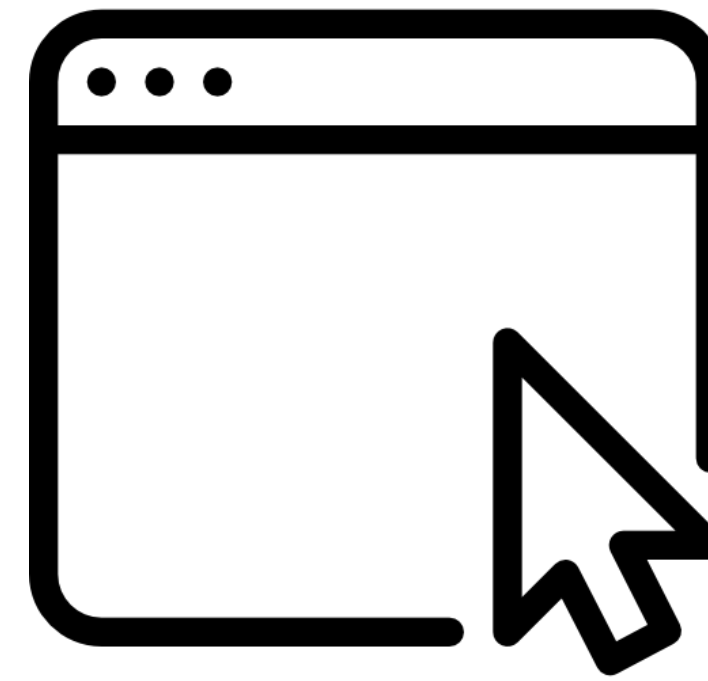
Wearable



Chatbot

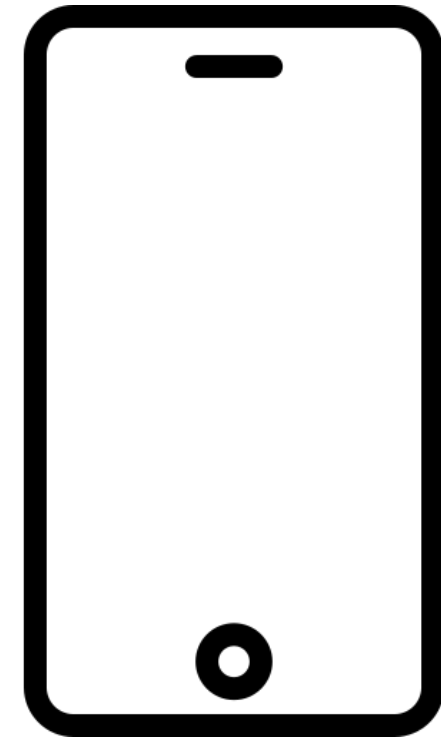


Carplay



Browser Extension

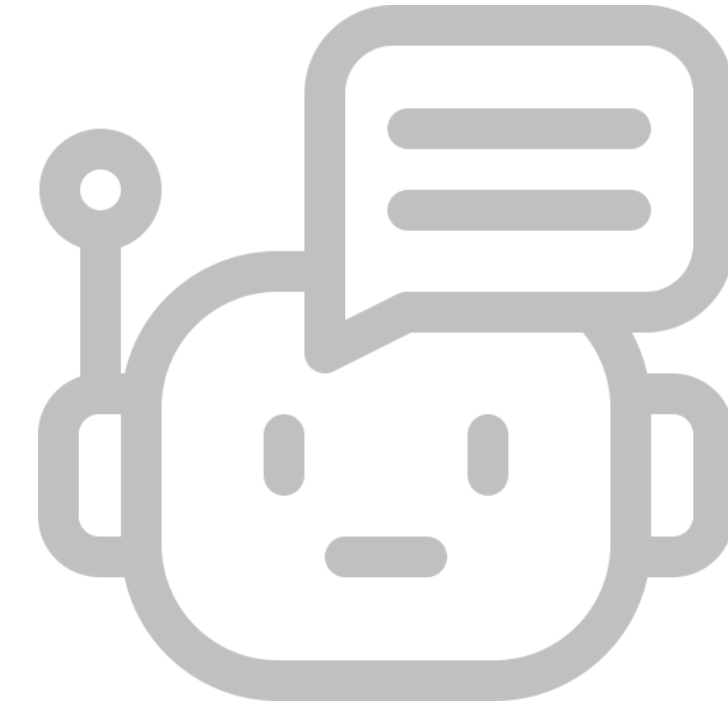
Focused Exploration



Mobile App



Wearable



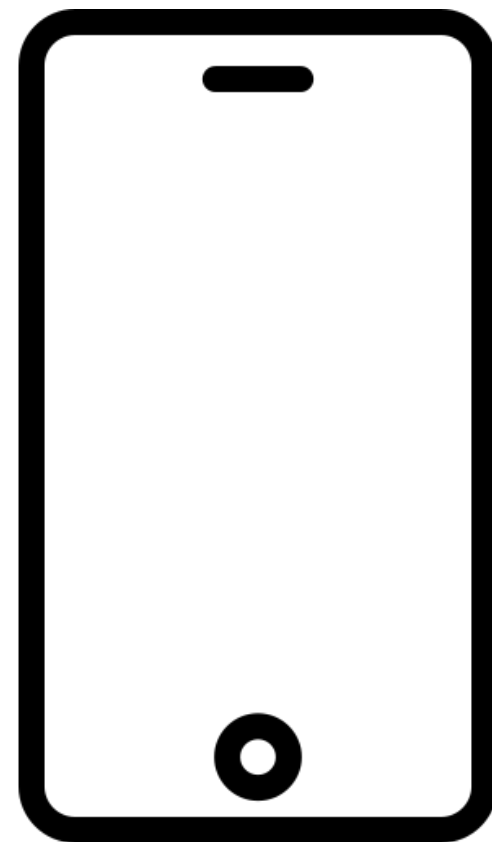
Chatbot



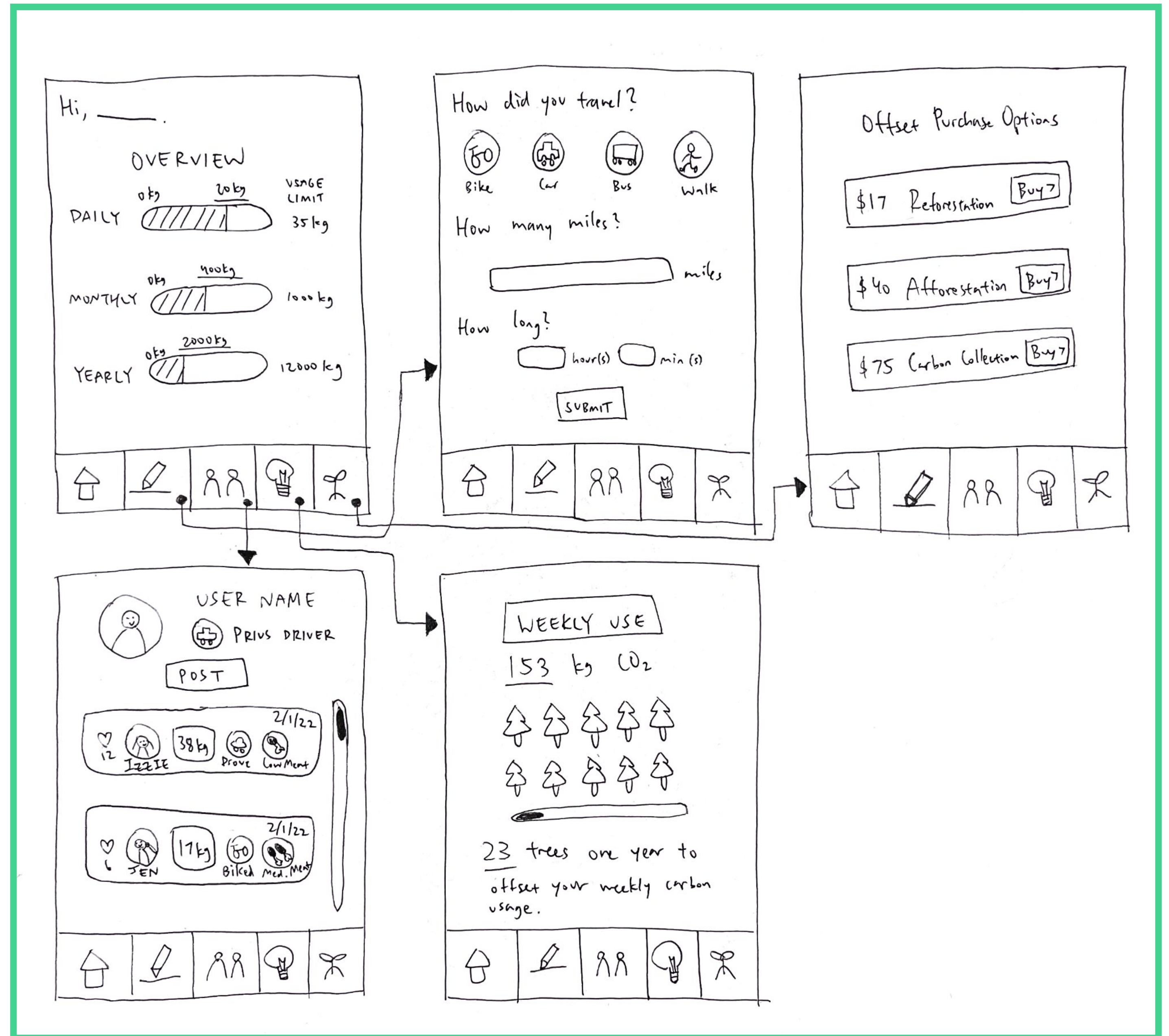
Carplay

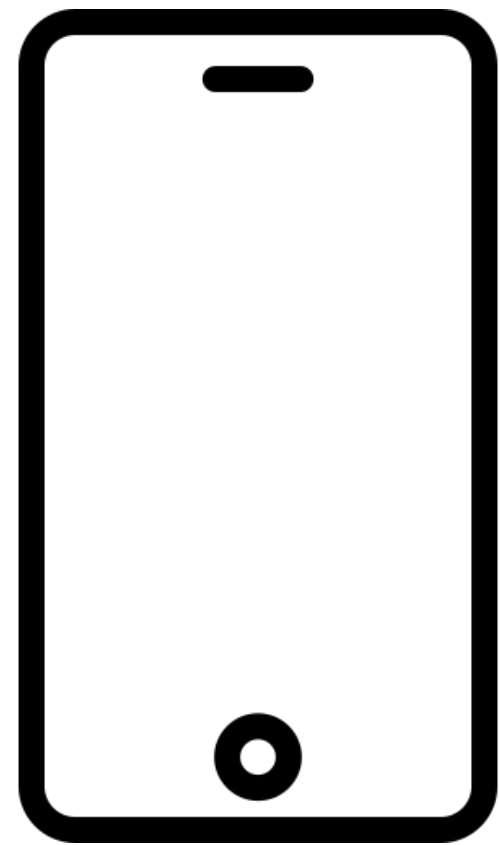


Browser Extension



Mobile App Storyboard





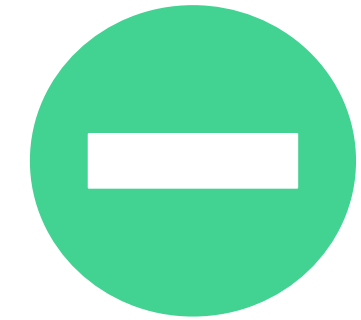
Mobile App Pros and Cons



**Smartphones
are popular**

**High
accessibility**

**More versatility
with recording**

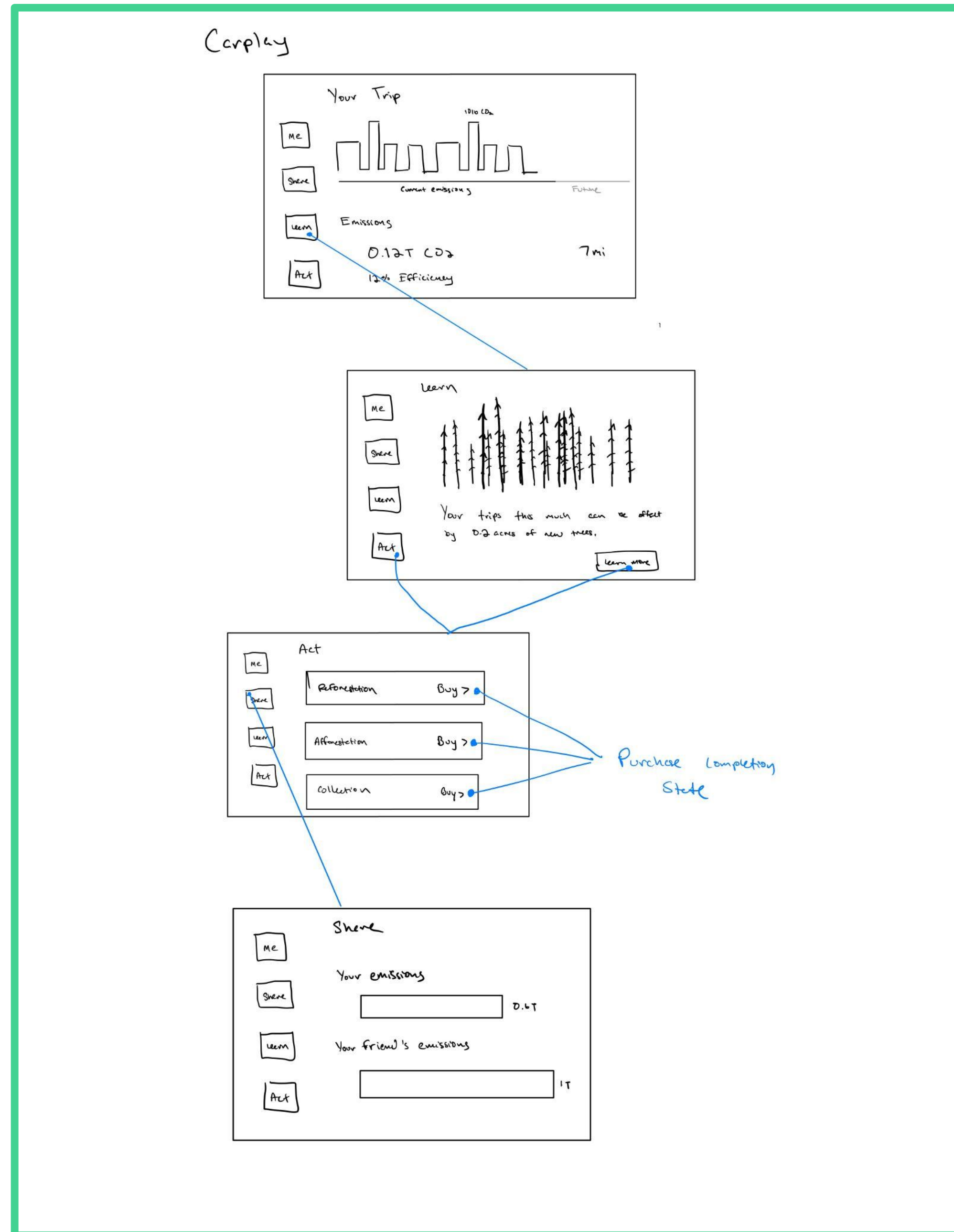


**Needs time and
effort**

Another app



Carplay Storyboard





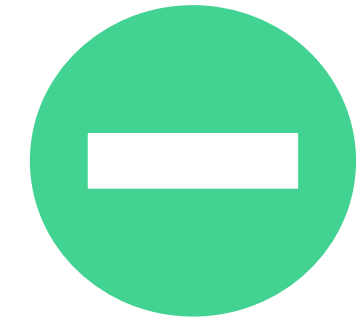
Carplay Pros and Cons



**Accessibility
within the car**

**Requires less
work/time**

**Low friction of
integration**



**Constricted to
personal cars**

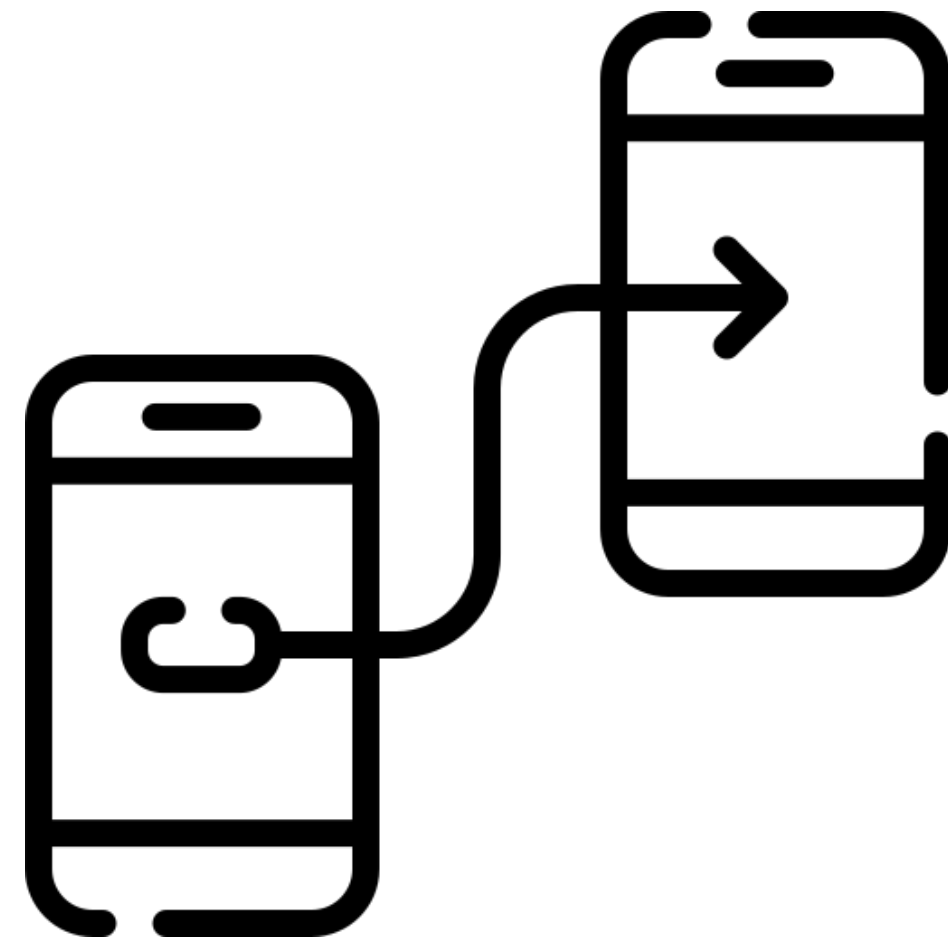
**Not accessible
to activities
outside
commuting**

Selected Interface

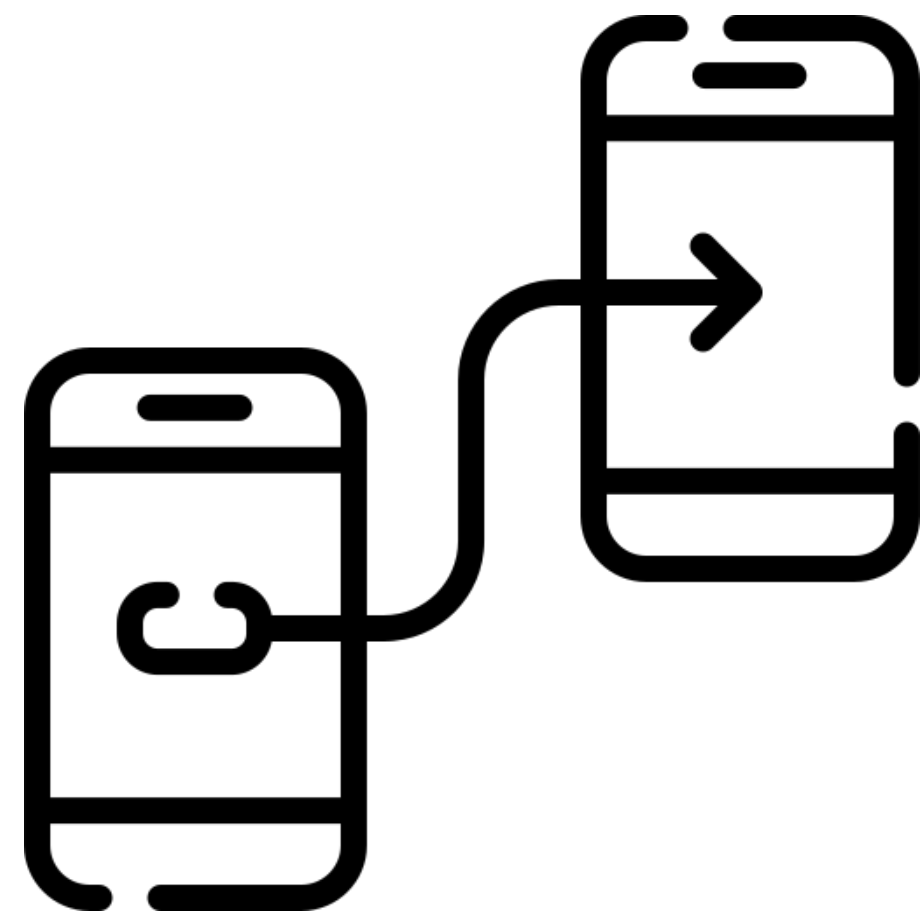


Mobile App

Low-fi Prototype



Low-fi Prototype



Hi, Victor.

OVERVIEW

DAILY: 25kg
WEEKLY: 200kg
MONTHLY: 1000kg
YEARLY: 12000kg

Home | Track | Share | Learn | Act

TRACK YOUR USAGE

What type of meat?
Beef, Chicken, Pork, Fish

How much?
Low (0.4-0.7kg), Medium (0.7kg-1.0kg), High (1.0kg+)

Home | Track | Share | Learn | Act

How did you travel?

Car, Bus, Train, Walk

How many miles? _____ miles

How long was the travel?
Home, Office

Home | Track | Share | Learn | Act

UNDERSTAND YOUR USAGE

DAILY → 2130kg
WEEKLY → 170/200kg
MONTHLY → 901/1000kg
YEARLY → 12201/12000kg

Home | Track | Share | Learn | Act

TIMEFRAME USE

X Kg CO₂

X TRAVEL one year to offset your (TIMEFRAME) Carbon usage

Home | Track | Share | Learn | Act

YOUR METRICS TODAY

Feb 1, 2022

Total usage TODAY: 21kg

ACTIVITIES: TRAVEL, FOOD

Home | Track | Share | Learn | Act

YOUR METRICS TODAY

Feb 2, 2022

TRAVEL

Today I...
Bike, Walk, Drive, Other

Home | Track | Share | Learn | Act

YOUR METRICS TODAY

Feb 2, 2022

FOOD

Today I ate...
Beef, Chicken, Pork, Fish, Veg, Fruit, Other

Home | Track | Share | Learn | Act

YOUR METRICS TODAY

Feb 1, 2022

FOOD

Today I ate...
Beef, Chicken, Pork, Fish, Veg, Fruit, Other

Home | Track | Share | Learn | Act

YOUR METRICS TODAY

Feb 1, 2022

ACTIVITIES: TRAVEL, FOOD

Home | Track | Share | Learn | Act

YOUR METRICS TODAY

Feb 1, 2022

ACTIVITIES: TRAVEL, FOOD

Home | Track | Share | Learn | Act

Act

Daily: 0.6T CO₂

Weekly: 4.2T CO₂

Monthly: 16.8T CO₂

Home | Track | Share | Learn | Act

Options

0.6T CO₂

517 Reformation Buy

540 Reformation Buy

516 Reformation Buy

580 Carbon Collection Buy

Home | Track | Share | Learn | Act

Reformation

\$17

Project Details

Image View

Home | Track | Share | Learn | Act

Carbon Collection

\$80

Project Details

Image View

Home | Track | Share | Learn | Act

Confirmation

0.6T CO₂

Congrats! You have successfully offset 0.6T CO₂. We are certain that you're making your carbon usage.

Share

Home | Track | Share | Learn | Act



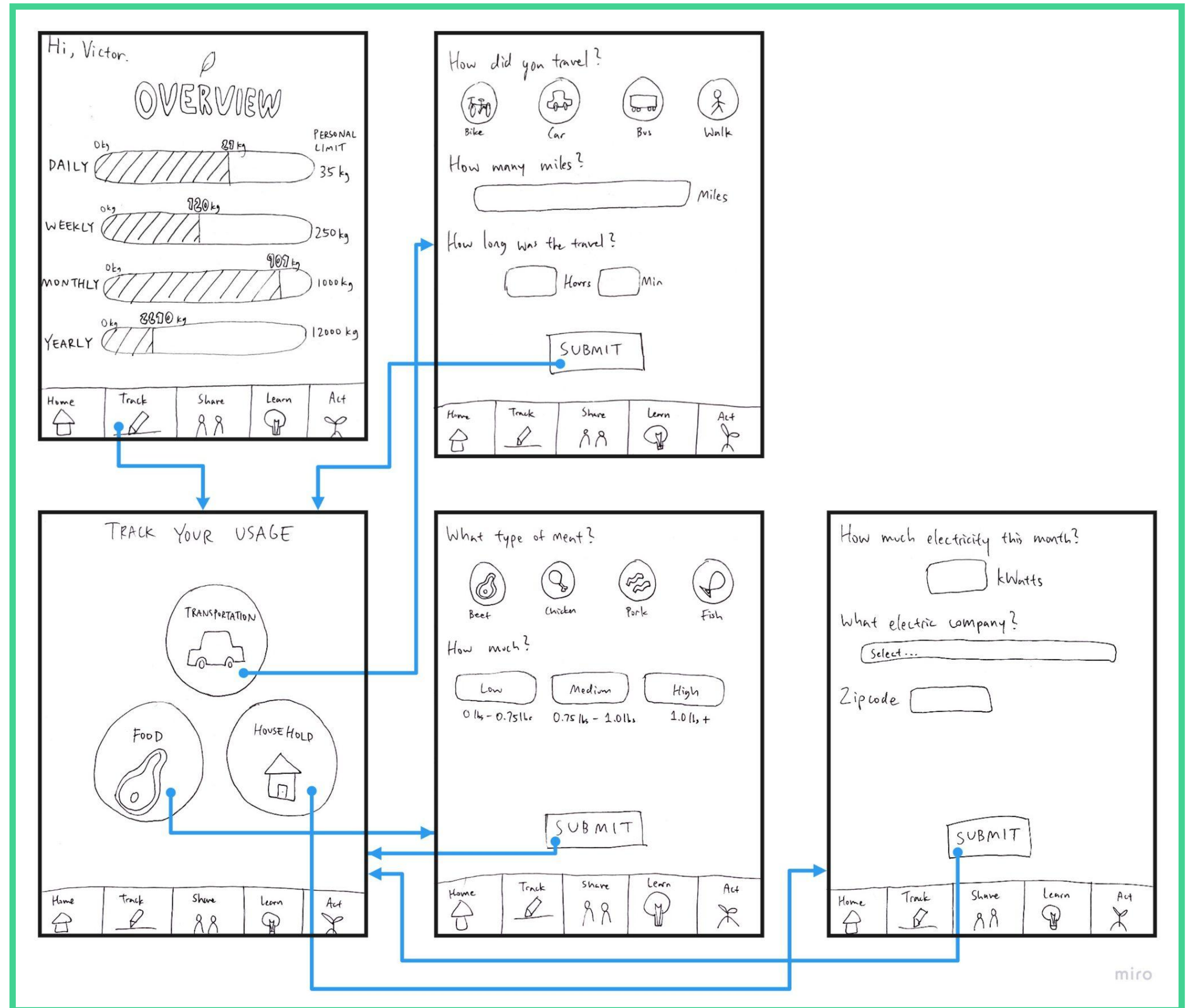
Simple Task

Log your personal carbon emissions data.



Log and track carbon usage through:

- Transportation metrics
- Food metrics
- Household metrics





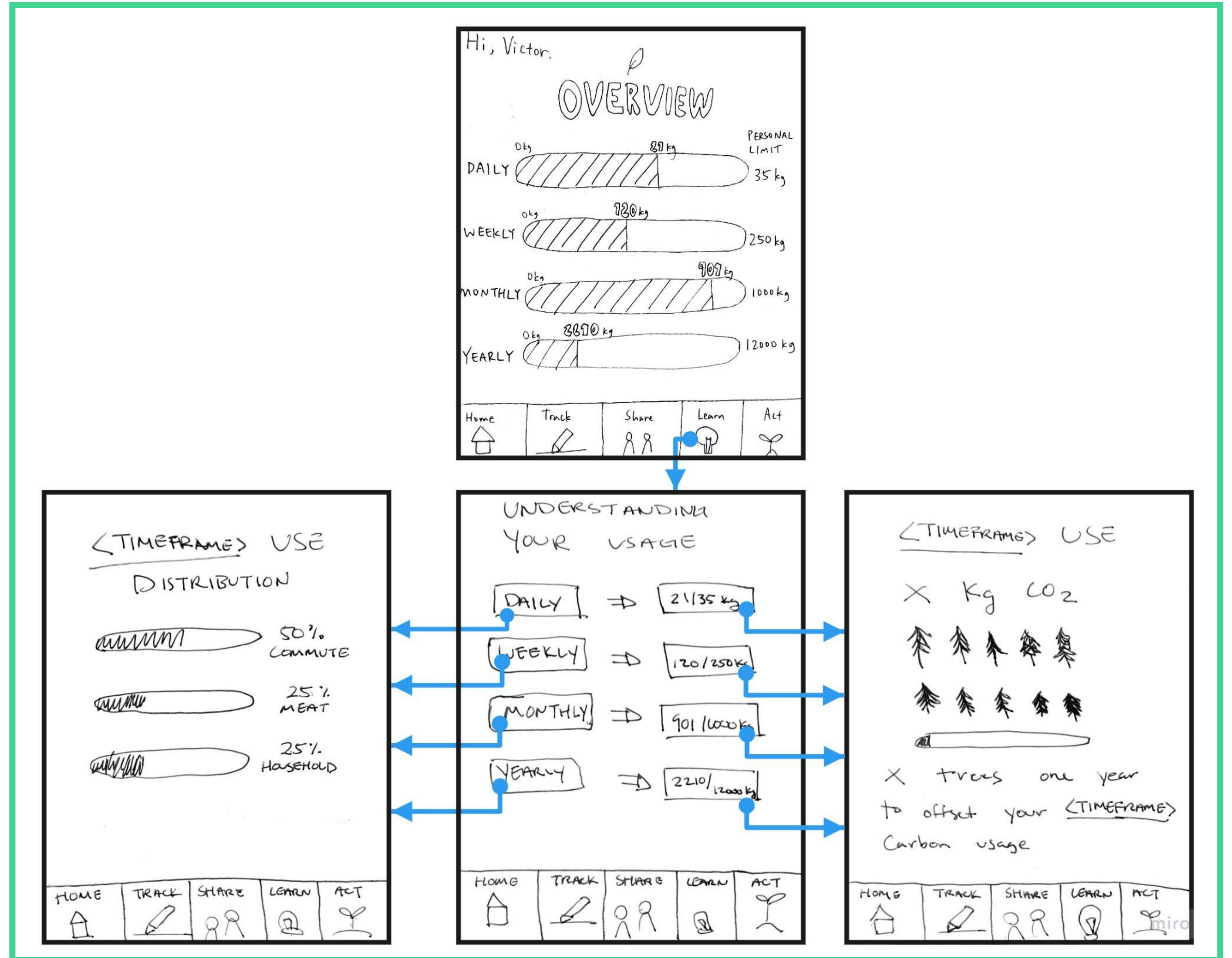
Moderate Task 1

Visualize how your emissions compare to more tangible data.



View data on:

- Usage over time
- Amount of offset needed to counteract usage





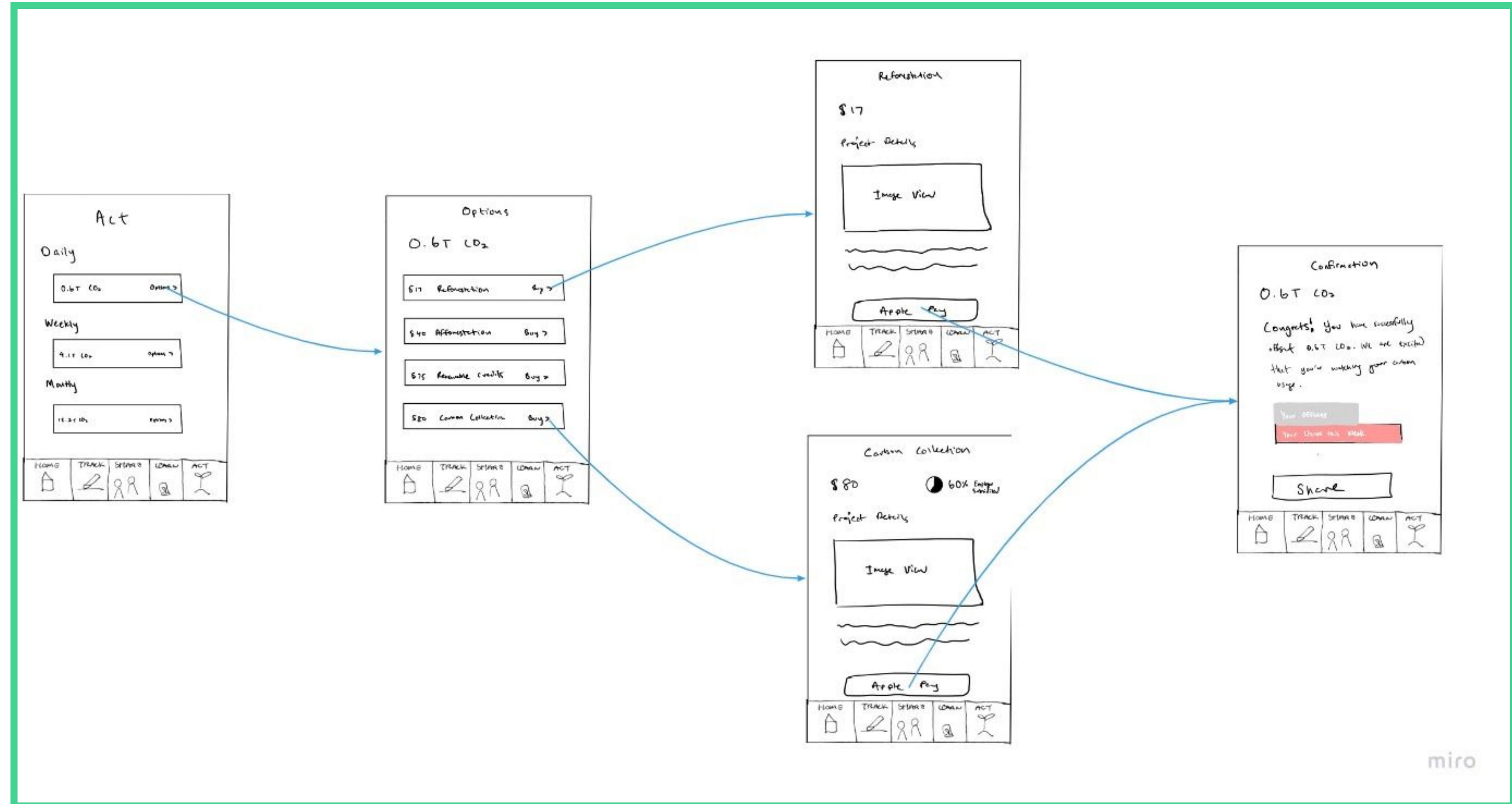
Moderate Task 2

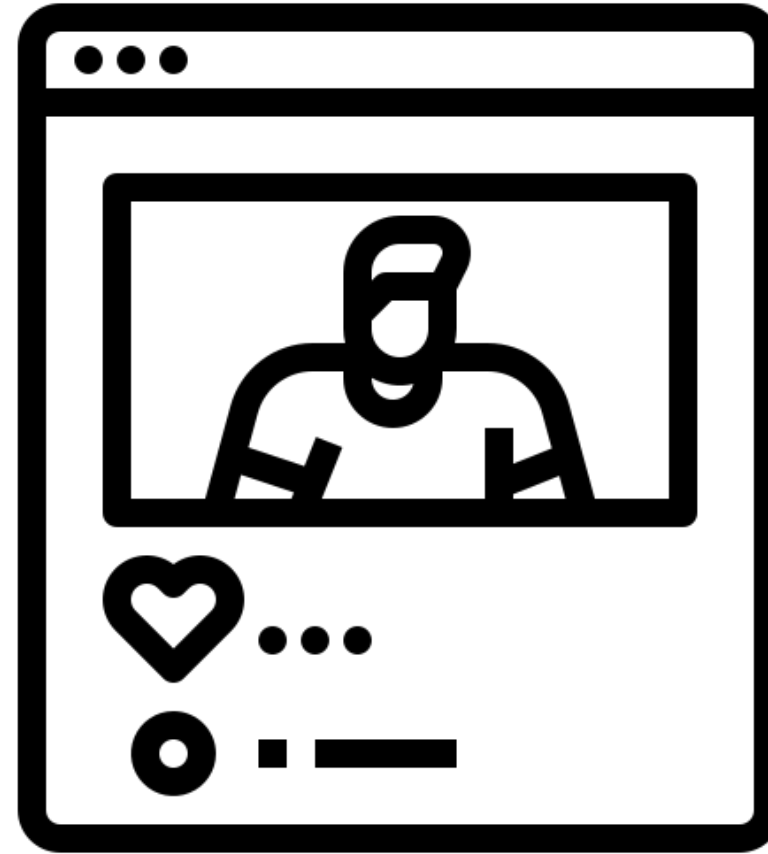
Purchase carbon offsets to counteract your emissions.



Buy carbon offsets based on:

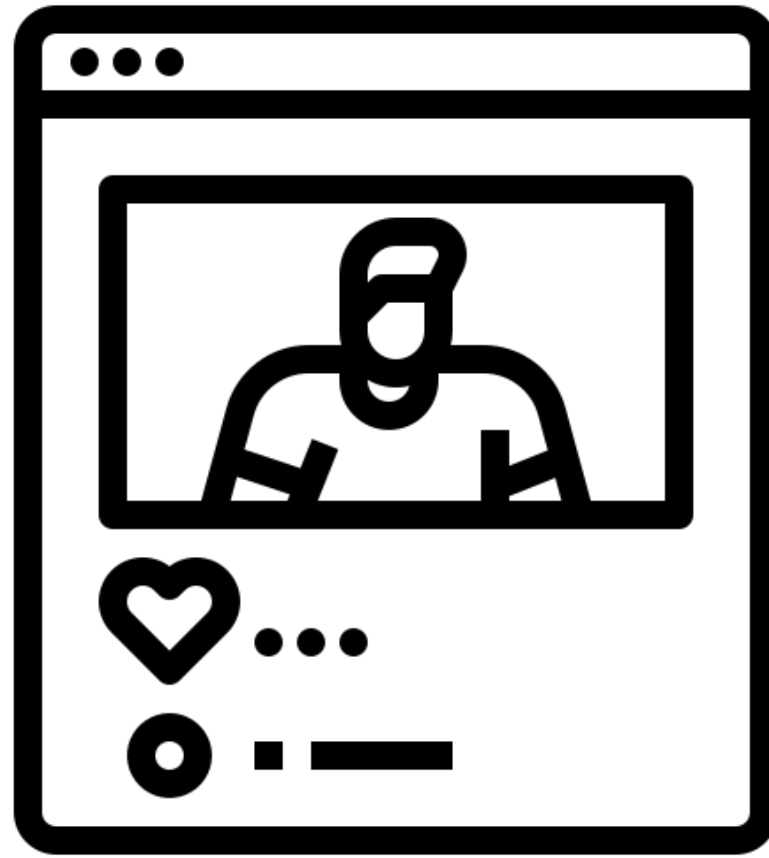
- Time period to offset
- Type of offset
 - reforestation, afforestation, etc.



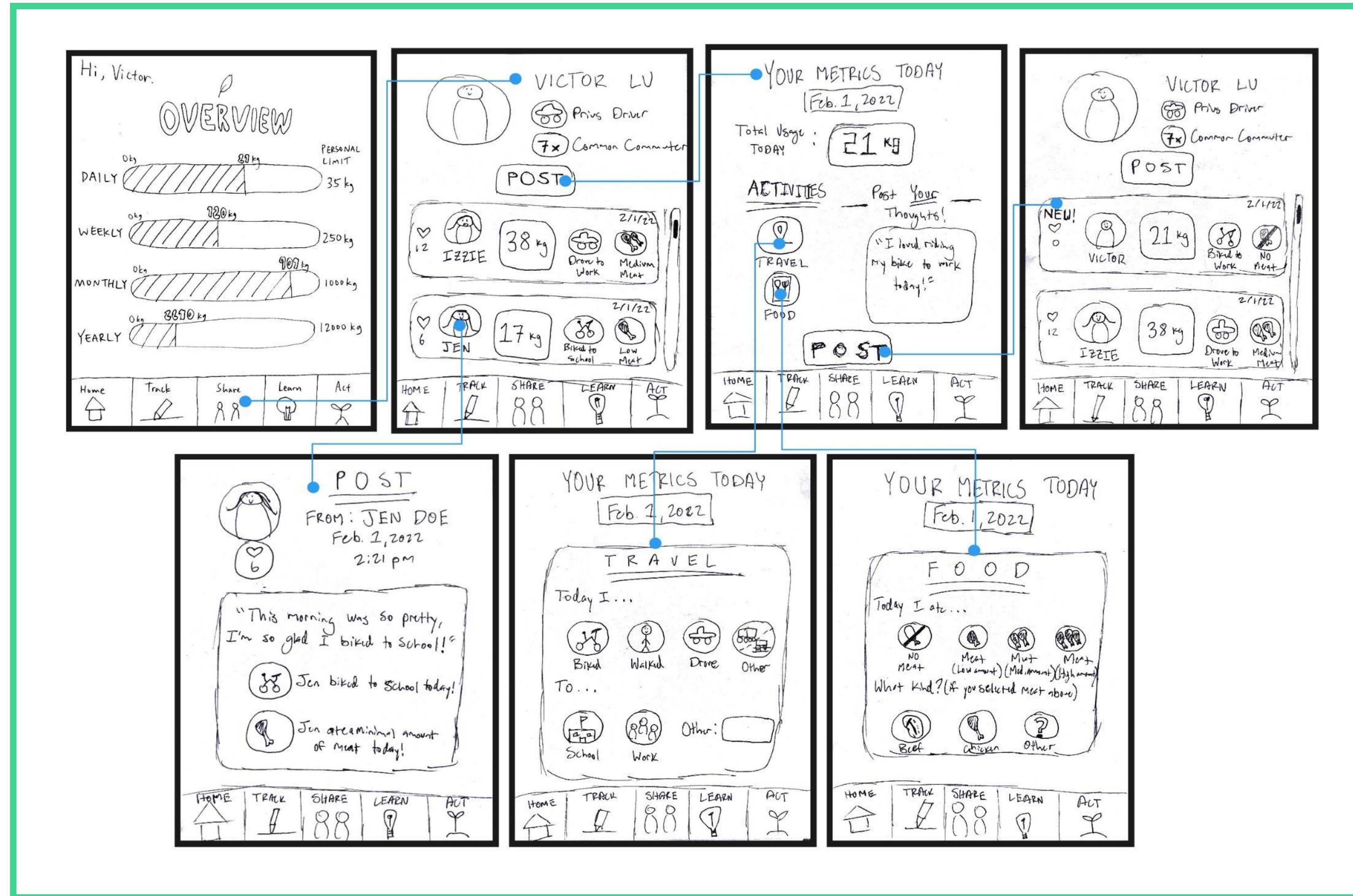


Complex Task

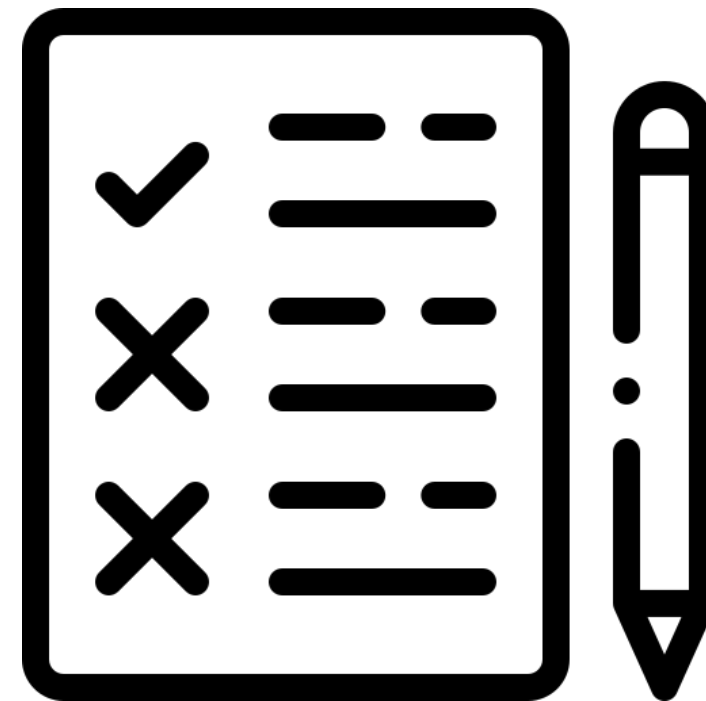
Post your carbon metrics to share with friends and family.



- Build sustainability community through:**
- **Sharing your own daily metrics**
 - **Viewing others' metrics**



User Testing



Experimental Method

Roles

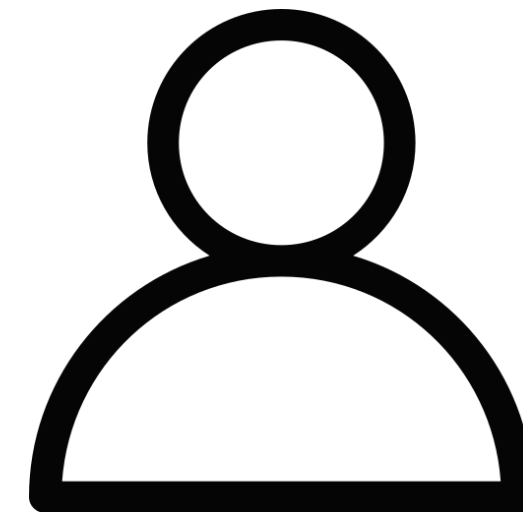
Greeter: Adi

Facilitator: Jiwon

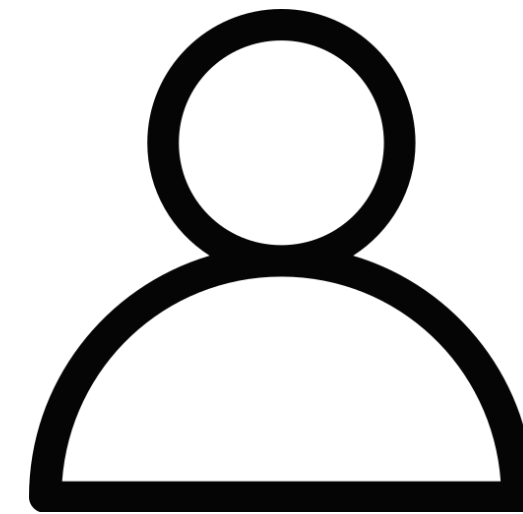
Computer: Jack

Observer: Victor

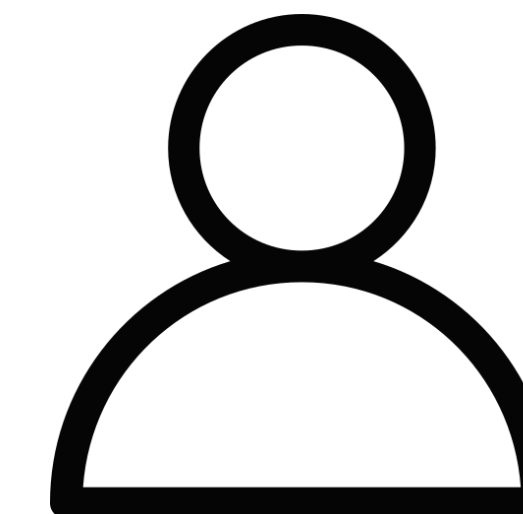
Participants



Participant 1
UI Designer
~20 y/o



Participant 2
Backend Programmer
~30 y/o



Participant 3
Political Science Student
~20 y/o

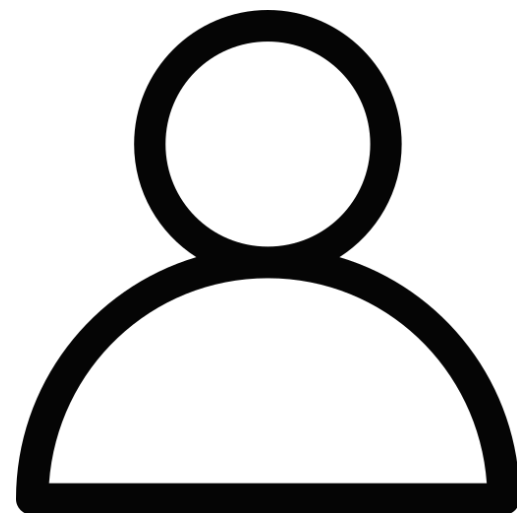
Experimental Method

- 2 interviews over Zoom, 1 in-person
- Put our prototype on Figma
- Observed their interactions w/ prototype



Results: Positives

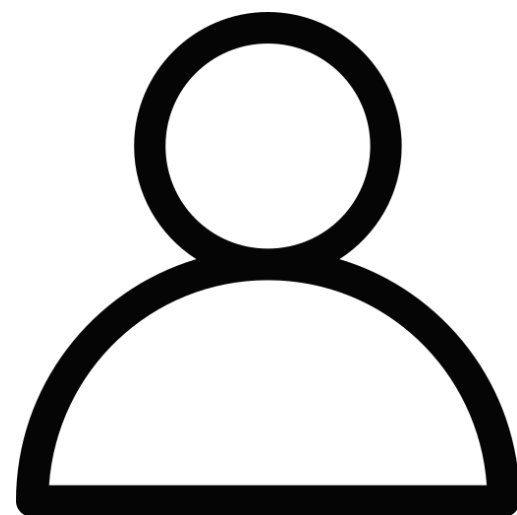
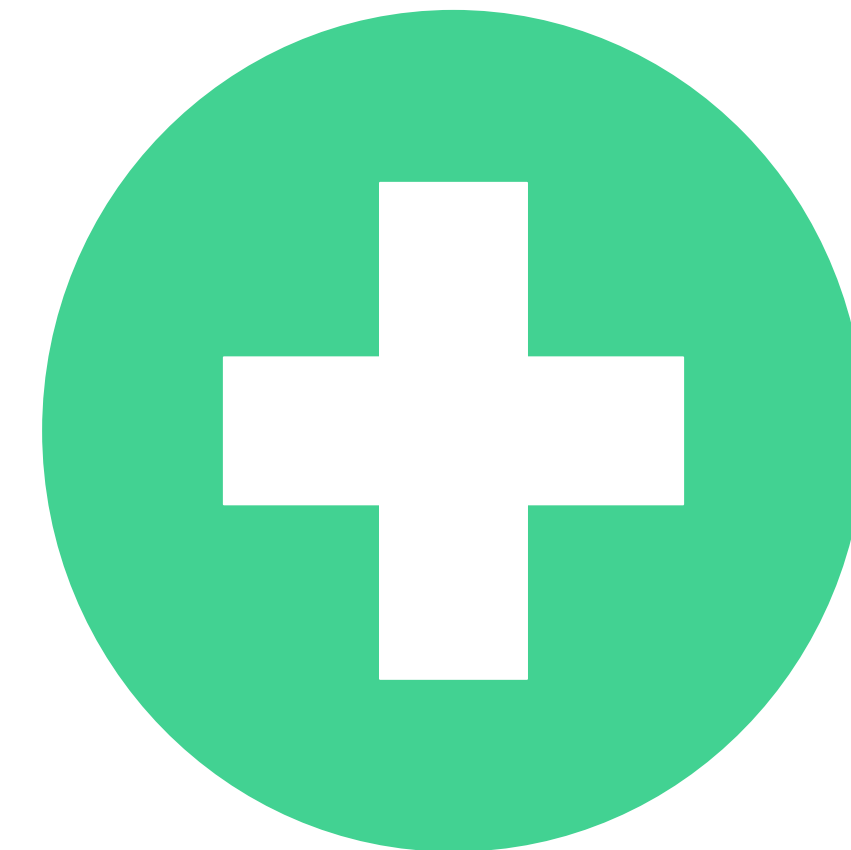
All participants felt some degree of enjoyment sharing their posts with their friends



“I do like the concept of seeing my carbon numbers versus my friends, it makes those numbers mean a lot more to me” - Participant 2

Results: Positives

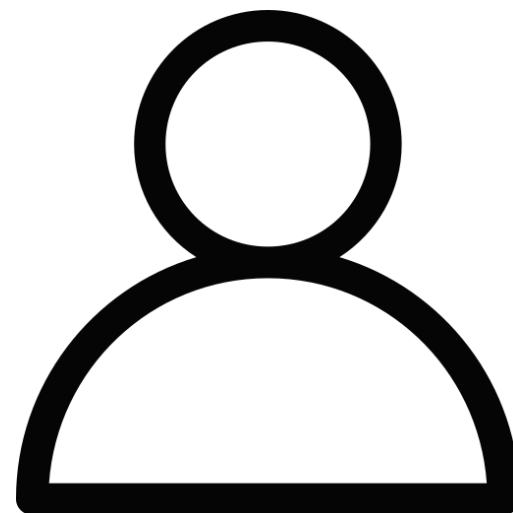
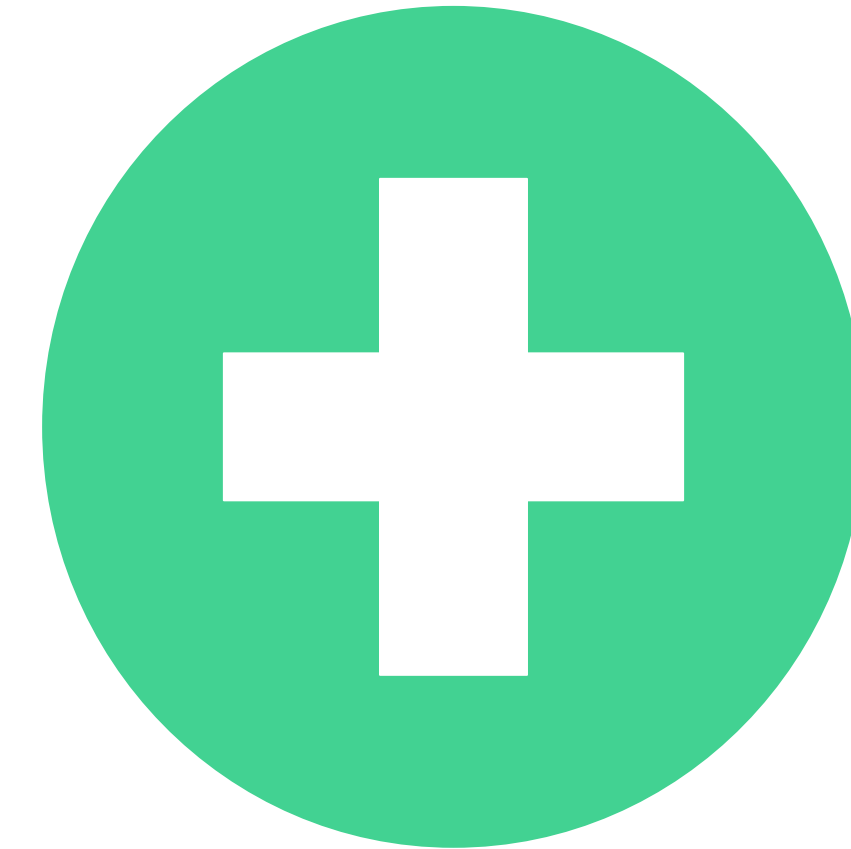
Overall flow from one screen to another made sense to participants



“Overall, this makes sense to me, it’s like many of the other apps I use.” - Participant 1

Results: Positives

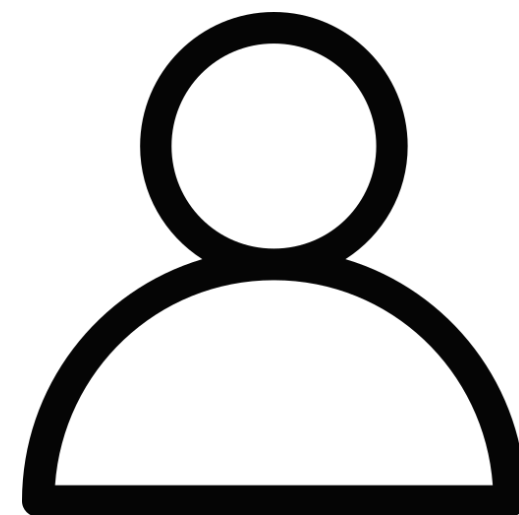
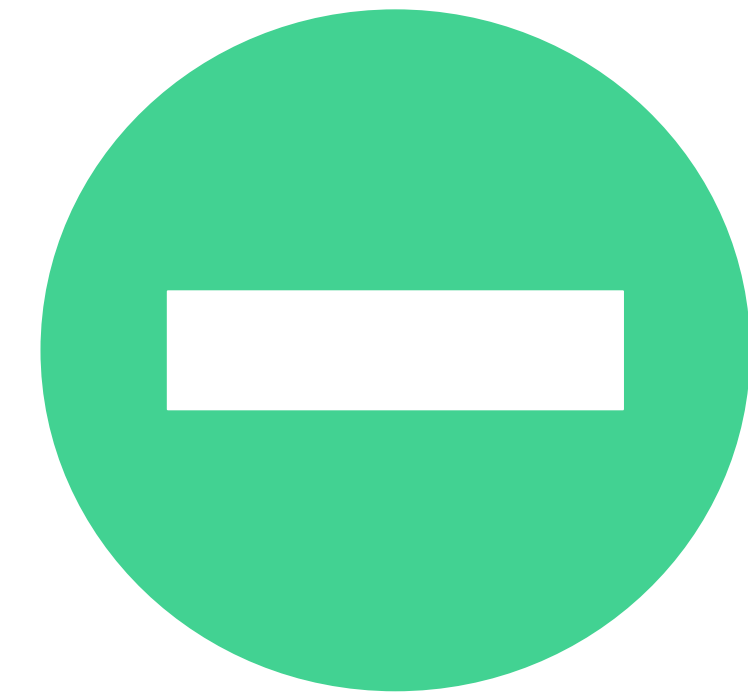
UI of the Complex “Share” task was intuitive and understandable



“I like how I’m able to share how I got to work and what I ate, and also see what my friends did the same day” - Participant 2

Results: Negatives

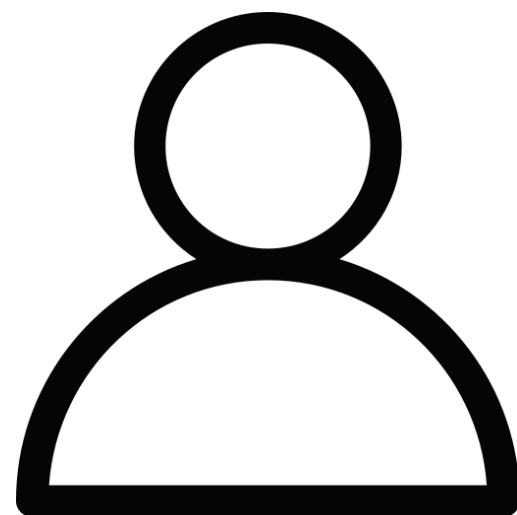
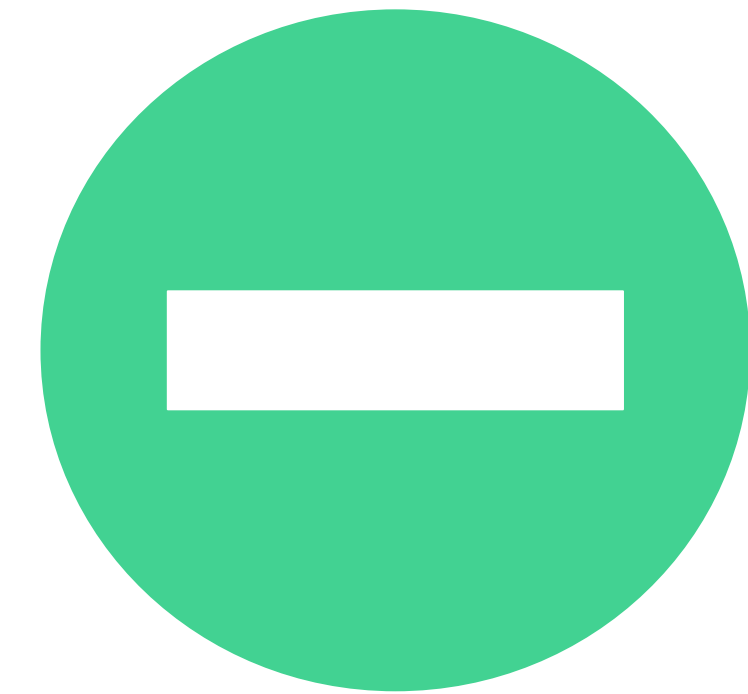
Visualization of information in Learn section was not most tangible/understandable



“I don’t really understand how my numbers translate to this screen. This needs more clarity...”
- Participant 3

Results: Negatives

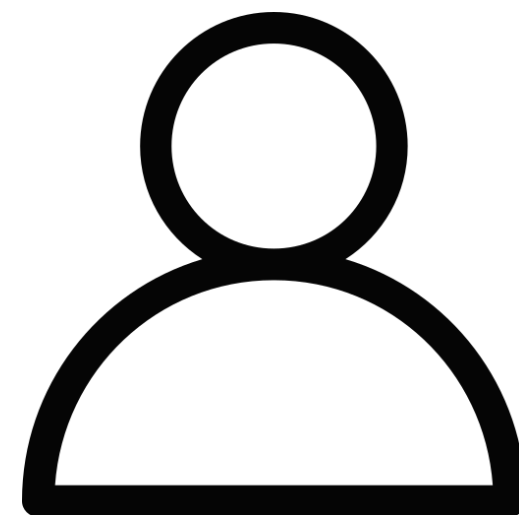
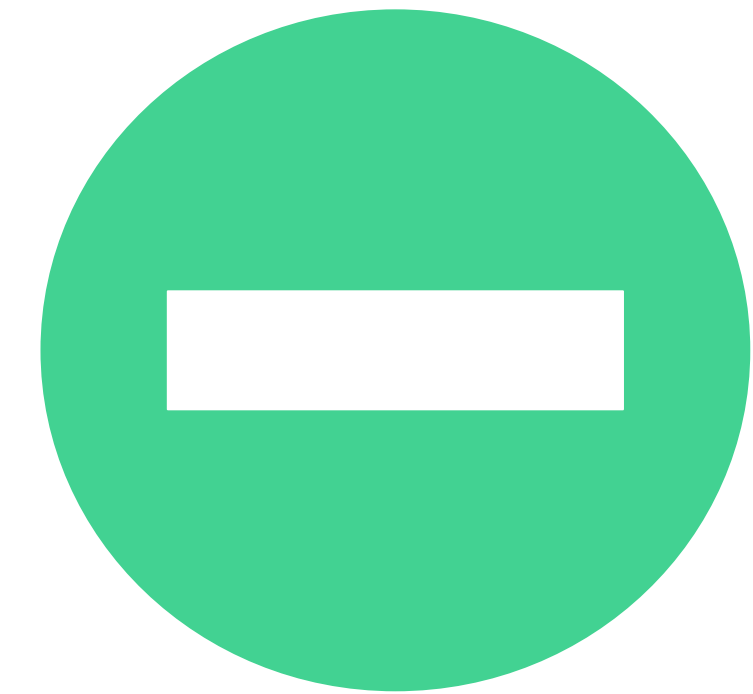
Visual elements around food usage were not applicable for a vegetarian participant



“These icons aren’t really veggie friendly... they’re all just chicken drumsticks” - Participant 2

Results: Negatives

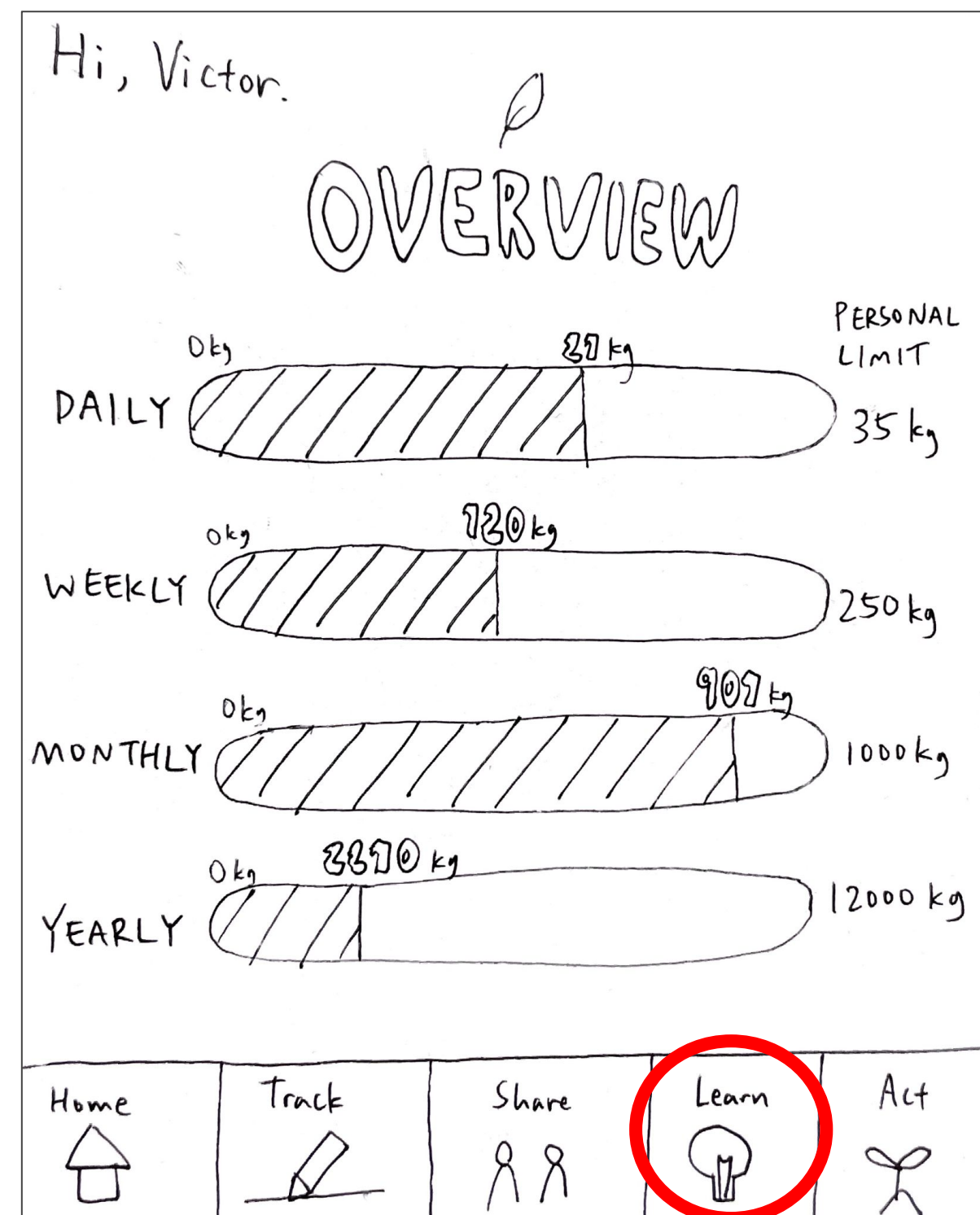
Electricity usage is difficult to track, especially when thinking about it daily



“Not really sure how I can log my electricity usage on a daily basis – I don’t even know where to get that information” - Participant 3

Suggested UI Changes

Change the wording on the navigation bar from “Learn” to “Interpret” or “Understand”



Suggested UI Changes

Visually disable the submit button in the Track section

What type of meat?

Beef Chicken Pork Fish

How much?

Low Medium High

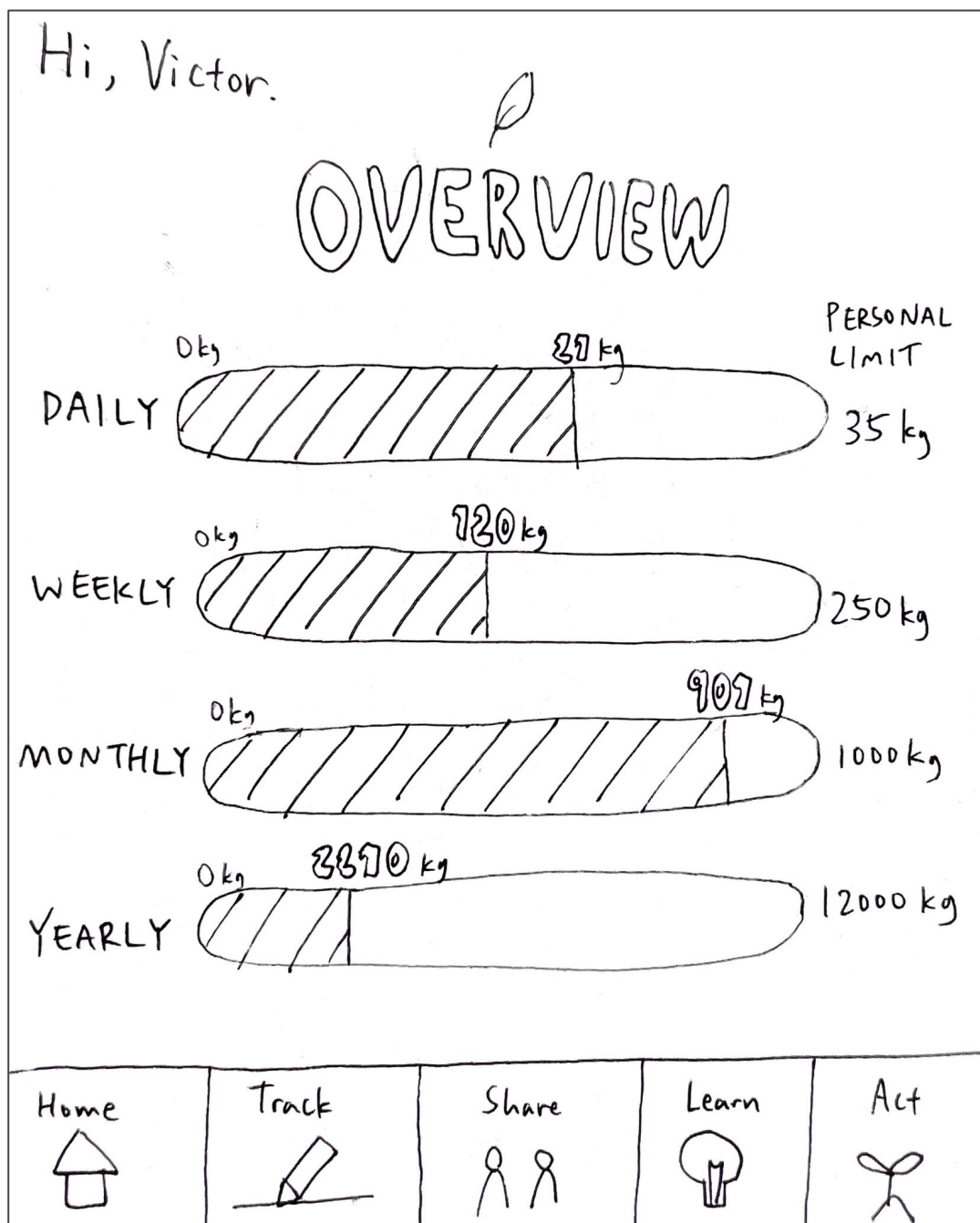
0 lbs - 0.75 lbs 0.75 lbs - 1.0 lbs 1.0 lbs +

SUBMIT

Home Track Share Learn Act

Suggested UI Changes

Include an onboarding feature to explain concepts such as carbon offsets, how often you are expected to fill in data – things a new user may not know about



“Hi, welcome to Parbon! Here is how you will take control of your carbon footprint...”

Summary

Overall flow from screen to screen is intuitive

Visualizations and information in the **Learn section** need to be made more tangible

Need to make sure **tab-to-task connection** is clear

Explain **carbon offsetting** in a simple way