

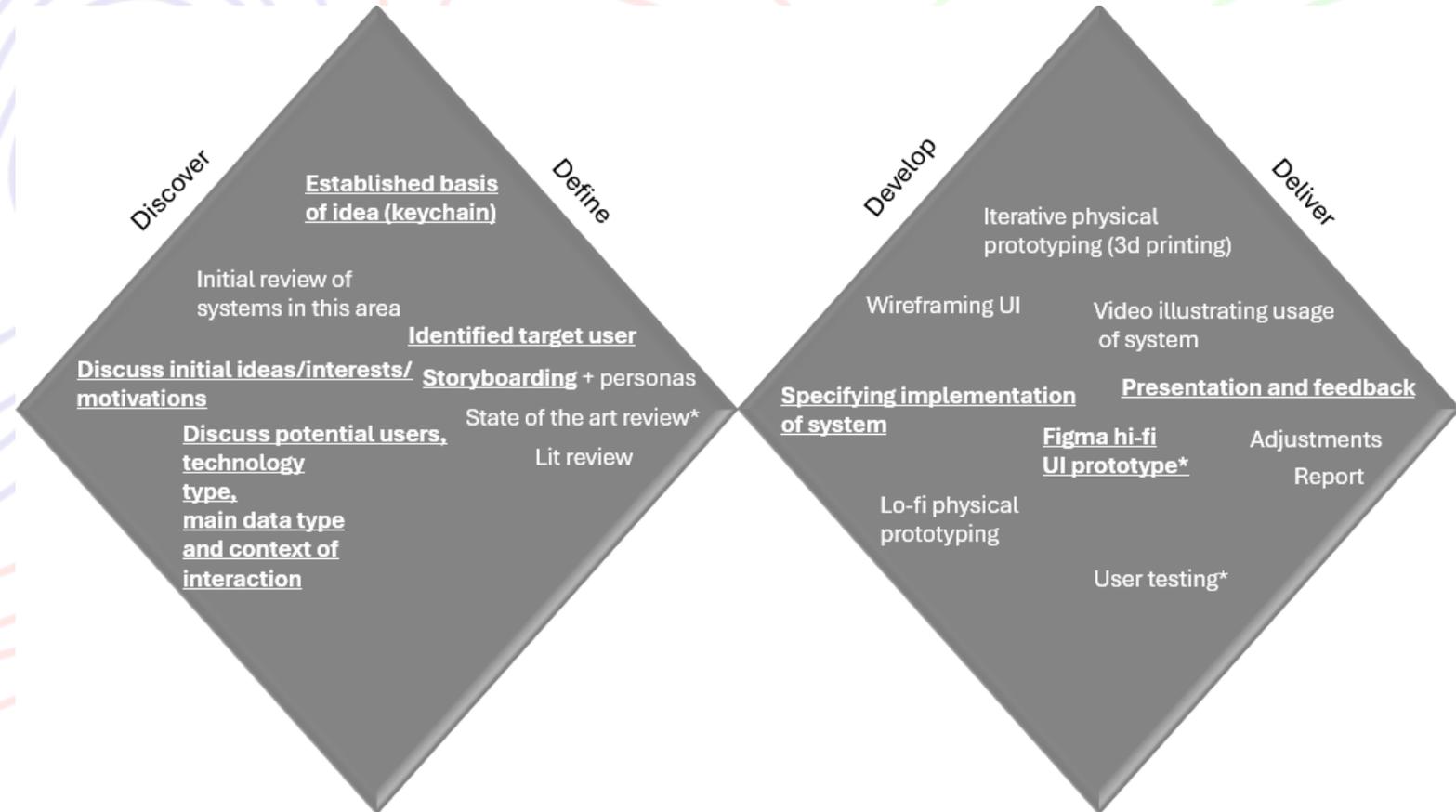
Introduction

blue = reflection/rationale on/of methods.

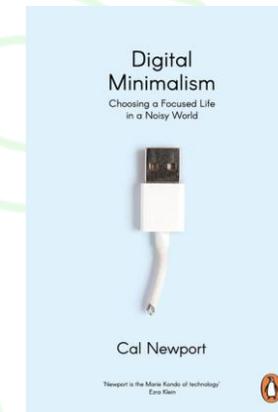
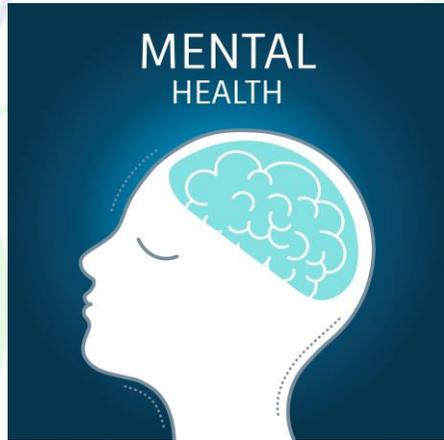
Underlined = my primary contributions

This double-diamond diagram reflects the structure of our process when working to the brief “living well with data”.

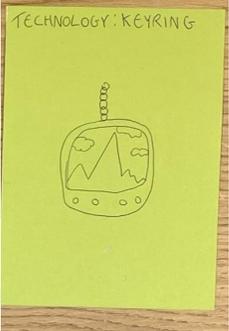
I contributed most to initial ideation and UI design.



Initial Ideas



Discussion



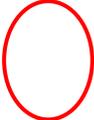
Card methods useful in combining dissonant ideas to think outside of typical patterns.

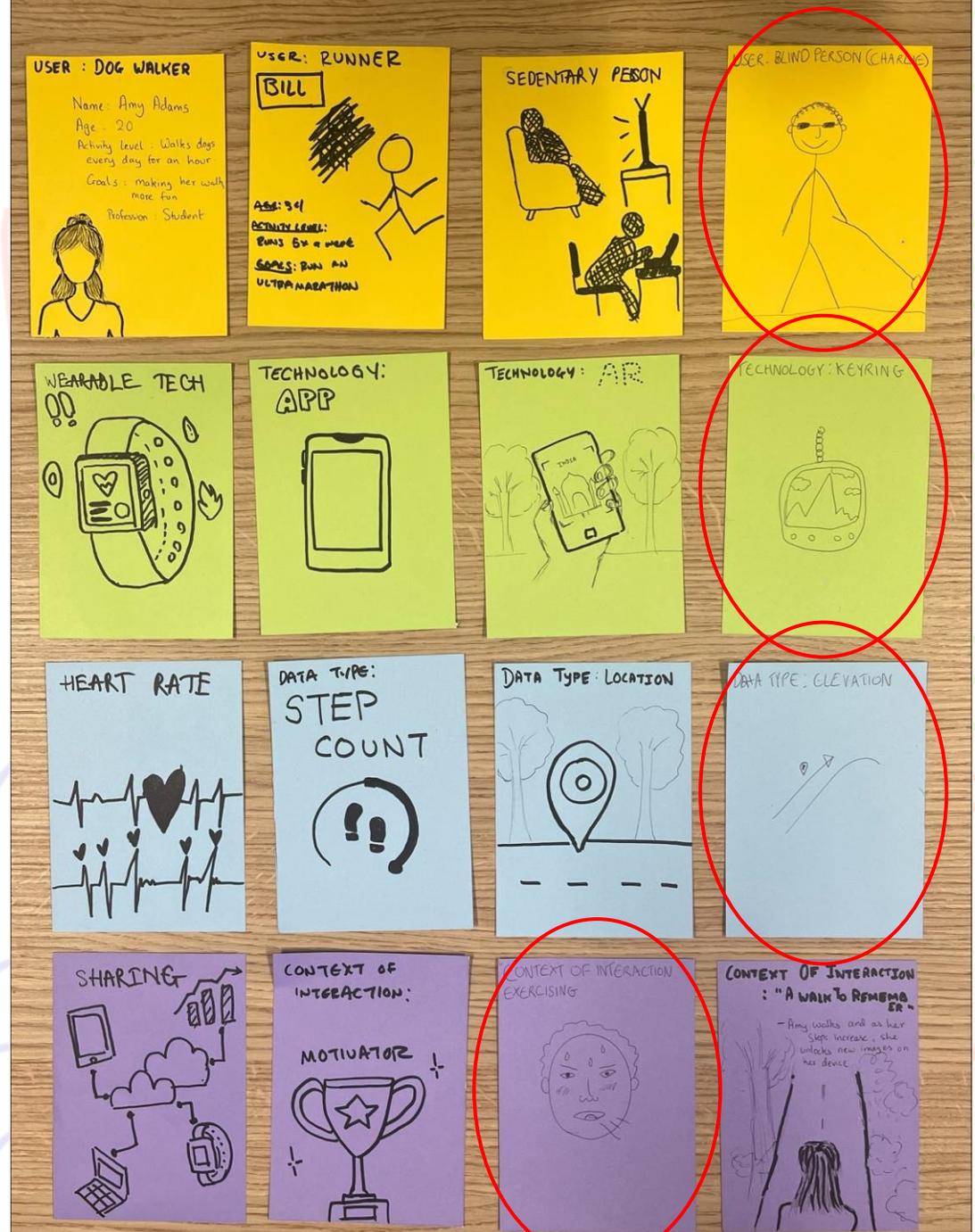
Keyring device to move away from ubiquitousness of smartphones for mindful usage.

Make it fun!



David Chatting
Tutor

 = my contributions



Early State of the art Review



Small screen devices suitable for images.



- Recording
- Sharing
- Tracking



- Navigation
- Emergency
- Tracking



Google Maps

- Navigation
- Information
- Advice



- Enhance
- Access
- Achievement
- Visualisation

We chose these 3 systems since they are ubiquitous and represent different ways data might be used for exercise.

(Research into Digital Keyrings)

Bold = my thoughts



Conducting this research was familiar to me from my undergraduate dissertation, and I consider looking at user reviews of similar products invaluable.

"Casing cheap quality"

Screen good size

"Defective"

Lots of digital keyrings outdated like this one.

"Detected virus"

Lack of trust towards device

"Large for keyring but can see pics better that way"

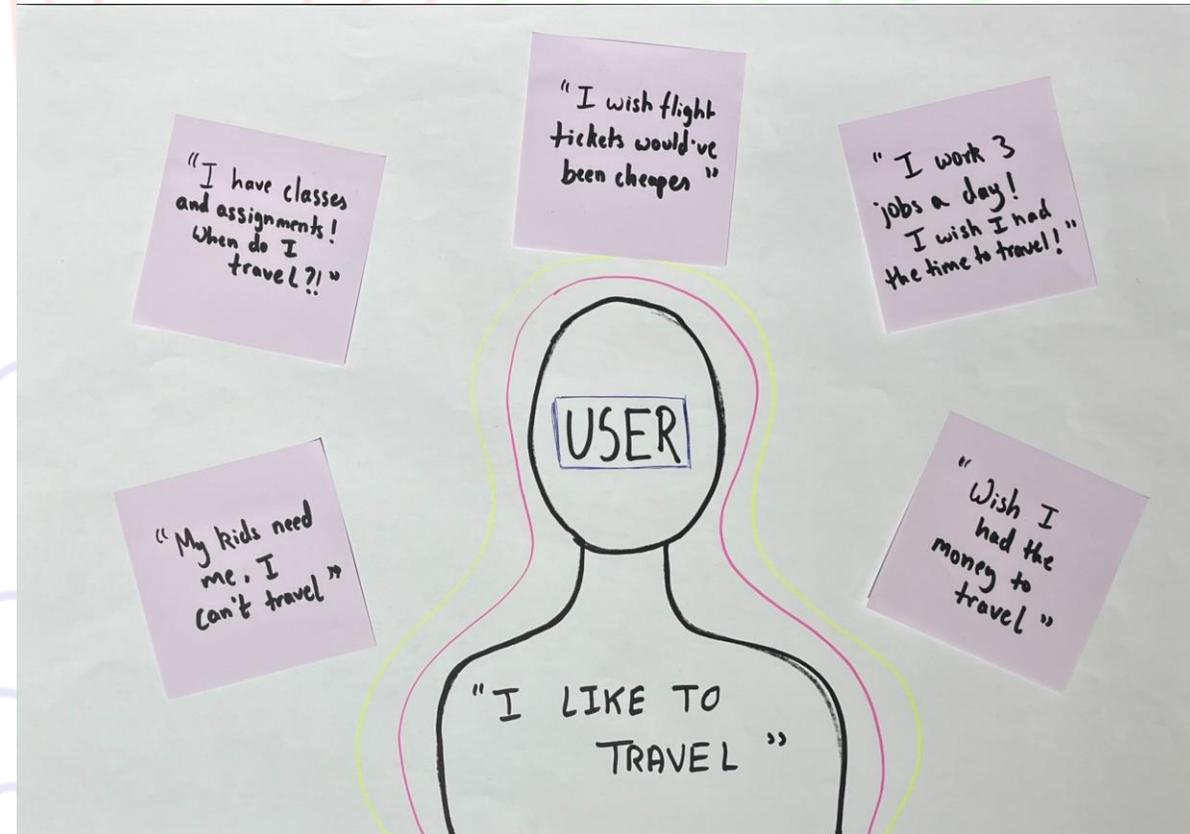
Identify Target User

How can active users better “live well” using data?
(enhance).

1 problem – lack of access to travel e.g. time/money/work.

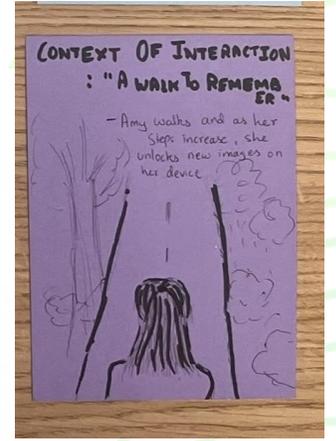
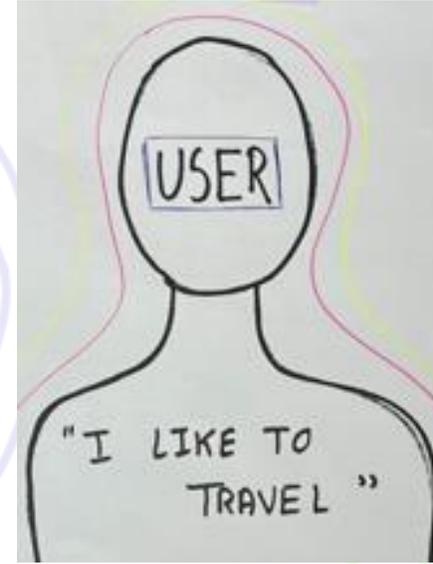
Repetitive, mundane routes instead e.g. commute.

Provide *experience* of travel to these users?

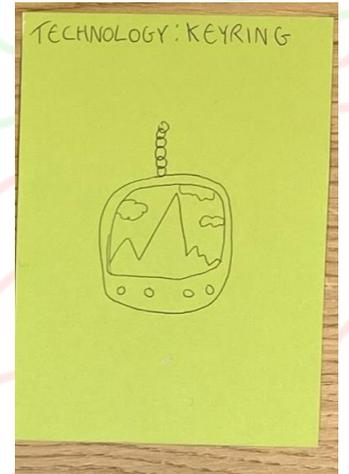


The Idea

I proposed the idea of a digital keyring that tracks users' activity, and abstracts this to progress on a chosen virtual route, showing images to convey the experience of travel and accompanying sense of accomplishment.



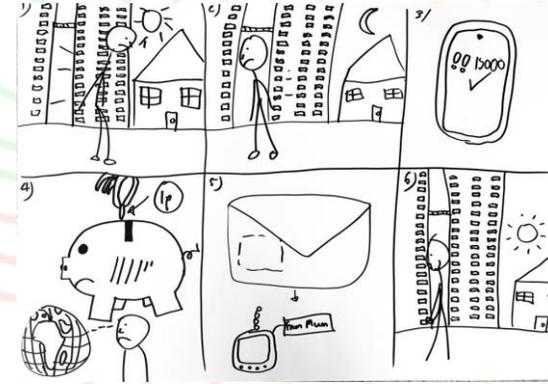
TravelTag



Storyboarding and (Basic) Personas

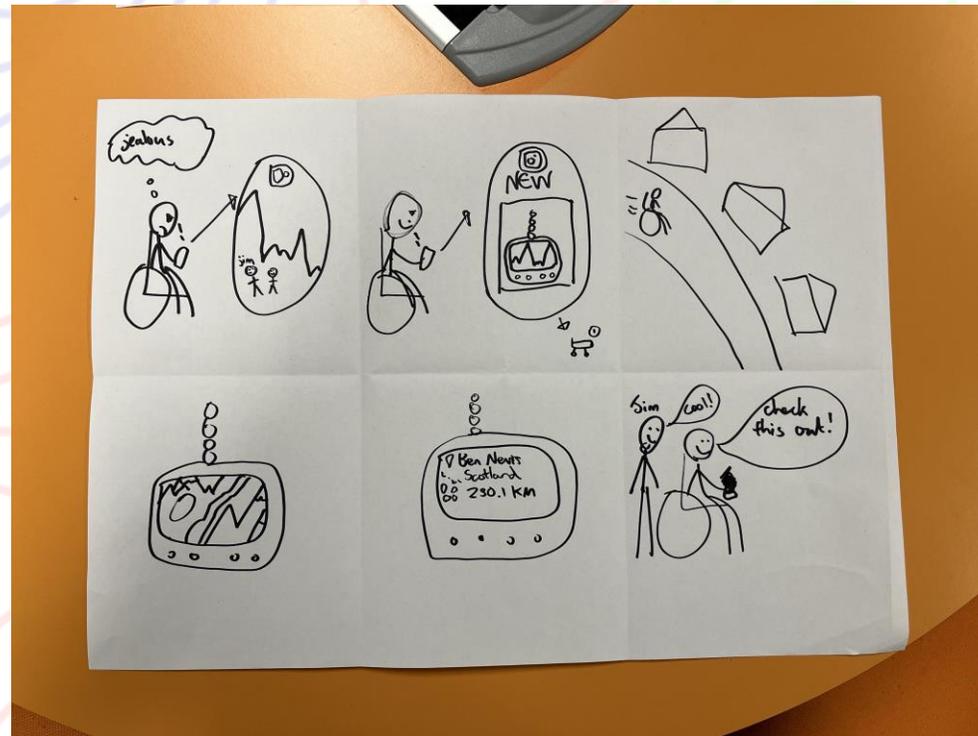


Enhancement of existing routine



Device should be cheaper than travel.

We chose storyboarding as a method of exploring how different users may use our concept varyingly.



GPS must be included, as just accelerometer would exclude wheelchair users.

Literature Review



Travel is a fundamental right
Technology key in improving access to travel

Articles

Outdoor recreation in exergames: a new step in the detachment from nature?

Johan Öhman , Marie Öhman & Klas Sandell
Pages 285-302 | Published online: 25 Feb 2016

 Cite this article  <https://doi.org/10.1080/14729679.2016.1147965>



Exergames purport dubious messaging about nature – existing only for human recreation and benefit.

WORK IN PROGRESS



A Study on Pokémon GO: Exploring the Potential of Location-based Mobile Exergames in Connecting Players with Nature

Authors:  Morva Saaly,  Derek Hagg,  Devin B Toms,  Ibrahim Eltahir,  D. Scott McCrickard [Authors Info & Claims](#)

CHI PLAY '21: Extended Abstracts of the 2021 Annual Symposium on Computer-Human Interaction in Play • Pages 128 - 132
<https://doi.org/10.1145/3450337.3483481>

Game must fit within everyday life.

In-game accomplishments and exploring key

Original article

The effects of a bike active video game on players' physical activity and motivation

Denis Pasco^a  , Cédric Roure^b, Gilles Kermarrec^c, Zachary Pope^d, Zan Gao^d

Exergames can be used to increase “situational Interest” factors.

Enhances experience of exercise through gamification.

frontiers in
PUBLIC HEALTH

EDITORIAL
published: 27 June 2014
doi: 10.3389/fpubh.2014.00066



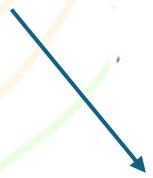
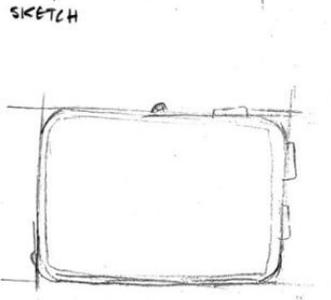
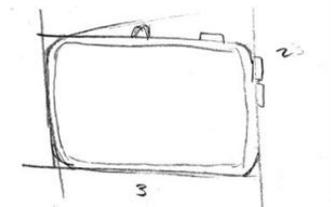
Emerging technologies to promote and evaluate physical activity: cutting-edge research and future directions

Dan J. Graham^{1*} and J. Aaron Hipp²

Potential to use tech like GPS for active games outside of home.

Lo-Fi Prototyping

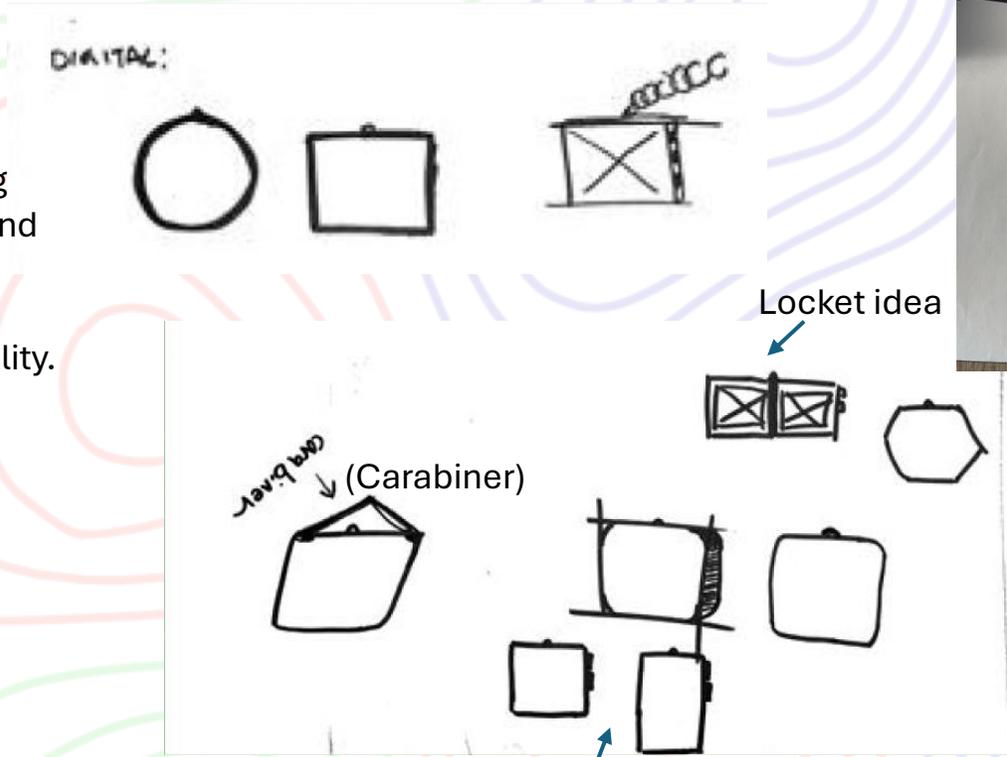
TRAIL TAG



inspiration from real-world objects.



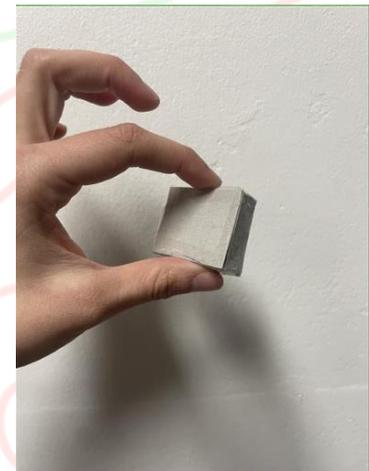
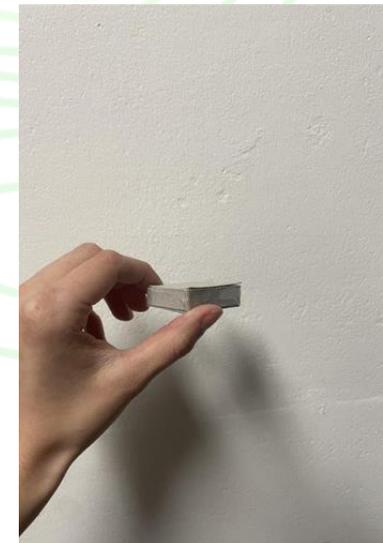
Locket idea



Experimenting with shapes and sizes for ergonomics And functionality.

Rough size and shape were determined.

This physical prototyping was useful, since it was difficult to progress with high-fidelity concepts without dimensions of device.



Progress

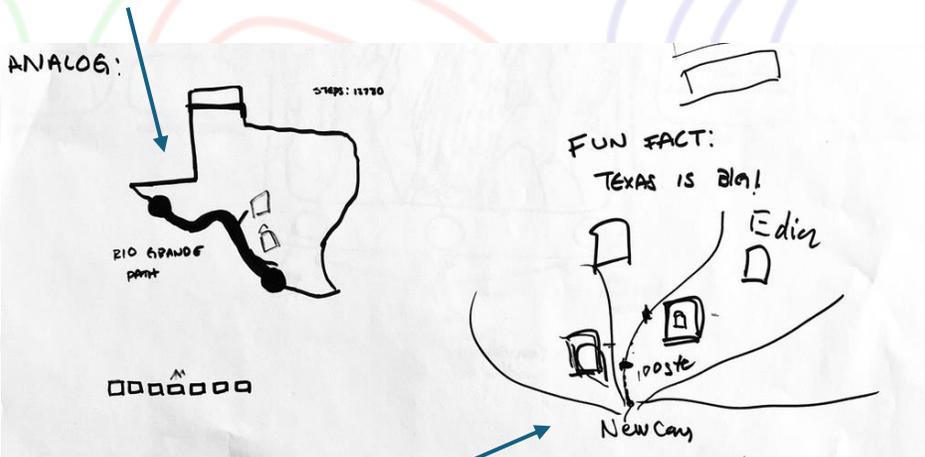
Portrait or landscape?



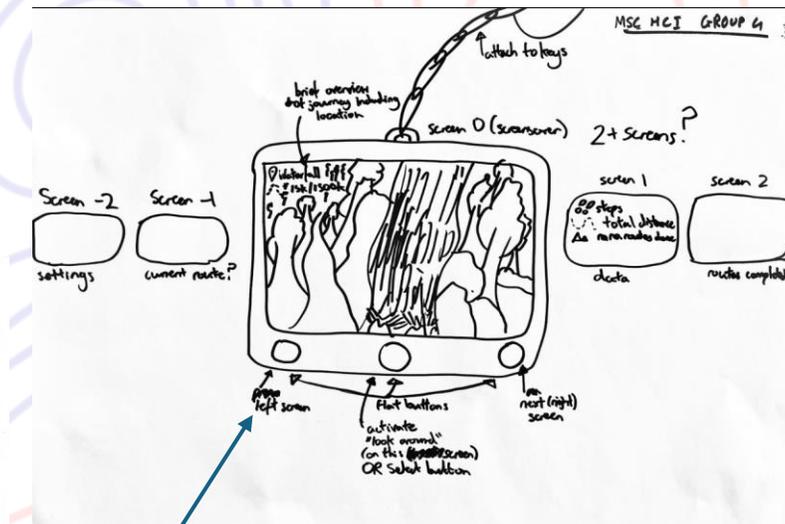
cont.

First focusing on a lo-fi prototype we could better define our idea, without investing time/effort into complex design. e.g.*

Display route too – clear view of progress

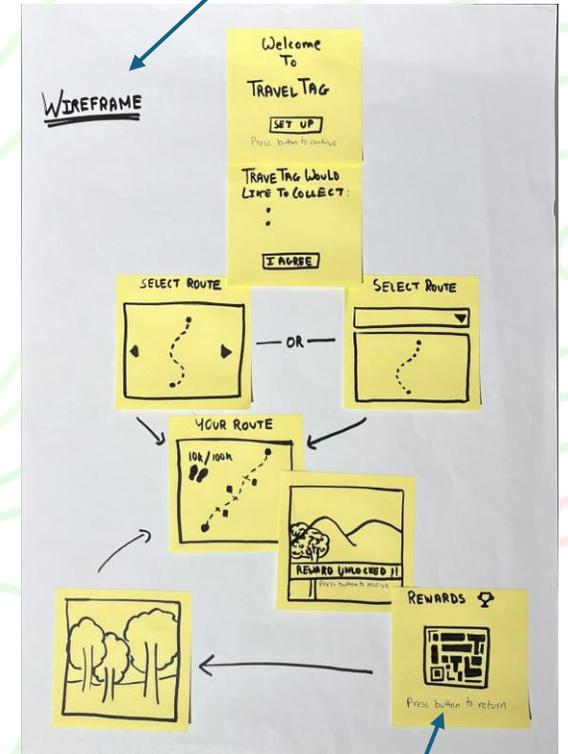


*Adding multiple directions overcomplicates.



I proposed multiple screens, to separate the core of the device from the gamification aspects. This draws from slow technology principles as the user can mindfully reflect on their journey through images, but still have the freedom to engage with the device's capabilities.

Post-it note wireframing allowed us to gain idea of how device could flow.



Tutors advised against rewards, simplicity better.

Detailed state of the art review

We could see advantages and disadvantages of systems, and where we could utilise or address these.

Competitor Analysis (State of Art Review)

What are the things that provide a leg up?



Tracking performance (steps count, heart rate, etc.) → help build performance analysis

Sharing achievements → Address real today's needs → socialization and foster interpersonal connection



- Wearable product → small and easy to carry out

- Tracking performance

- User friendly interface for a small wearable product



provide immersive virtual traveling experience

Application is free to download

- can be used by people with limited mobility

Disadvantages

Where might drawbacks exist?

- cloud-based application → data privacy, data breaching concerns

- Doesn't include people who have limited access to exercise

- Focus on assisting people's activity rather than motivating them

- cloud-based application → data privacy, data breaching concerns

- Doesn't include people who have limited access to exercise

- Focus on assisting people's activity rather than motivating them

Expensive Hardware Requirement

Expensive advanced technology setup requirement (VR)

Difficult to use outdoors → potentially dangerous for users who may become unaware of their real-world surroundings

Personas

Persona 1



Laura

"Busy Professional and Aspiring Traveler"

- 32
- Female
- Marketing Manager
- Newcastle upon Tyne
- Single, no children

Bio

Laura works a demanding job in marketing and often finds herself sitting at a desk for long hours. She's always wanted to travel more, but her work schedule and the cost of travel make it difficult. She tries to keep active by walking her dog in the evenings, but her busy days often leave her feeling exhausted, and she struggles to stay consistent with exercise. Laura wants a way to stay motivated to walk more, without needing to set aside extra time for traditional fitness routines or travel.

Interests

- Travel and exploration
- Health and fitness (but on her terms)
- Gamification and Rewards

Goals

- Maintain fitness
- lose 10 lbs
- stay active despite a busy schedule

Needs and expectations

- A way to track her steps and progress throughout the day without needing to leave her traditional desk.
- Motivation to move more, even while doing everyday activities.
- A sense of accomplishment and excitement. She likes "earning" or achieving something meaningful, even if it's just with her daily walk to the office or grocery store.

Pain points and frustrations

- Long hours at work
- limited time for exercise
- doesn't have time for real travel

Persona 2



John

"Retired Teacher with Limited Mobility"

- 58
- Male
- Retired Teacher
- Fenham
- Married, 2 adult children

Bio

John is recently retired and has found himself with more free time, but his mobility is limited due to arthritis. While he's committed to maintaining his health, he often struggles with motivation and feels limited by his physical condition. He loves the idea of "traveling" and exploring new places, but his arthritis makes it difficult for him to physically travel far distances. He's looking for a way to stay active, have fun, and engage in activities that give him a sense of accomplishment without overwhelming his physical limitations.

Interests

- Technology for Seniors
- Gentle Exercise and Mobility
- Community and Family

Goals

- Improve mobility
- Increase daily activity
- Maintain a healthy lifestyle as he ages

Needs and expectations

- A way to track and encourage gentle movement throughout the day, even if he's not able to go on long walks or exercise routines.
- A feeling of progress and excitement without overexertion.
- Activities that make him feel connected to the world and the sense of exploration, even if it's virtual.

Pain points and frustrations

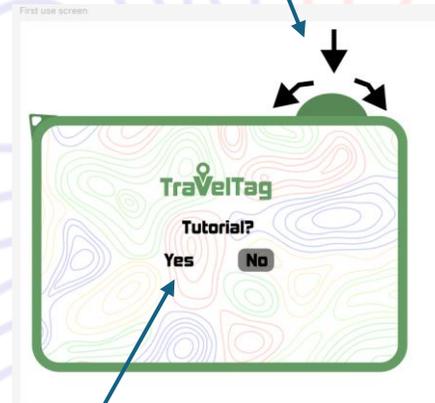
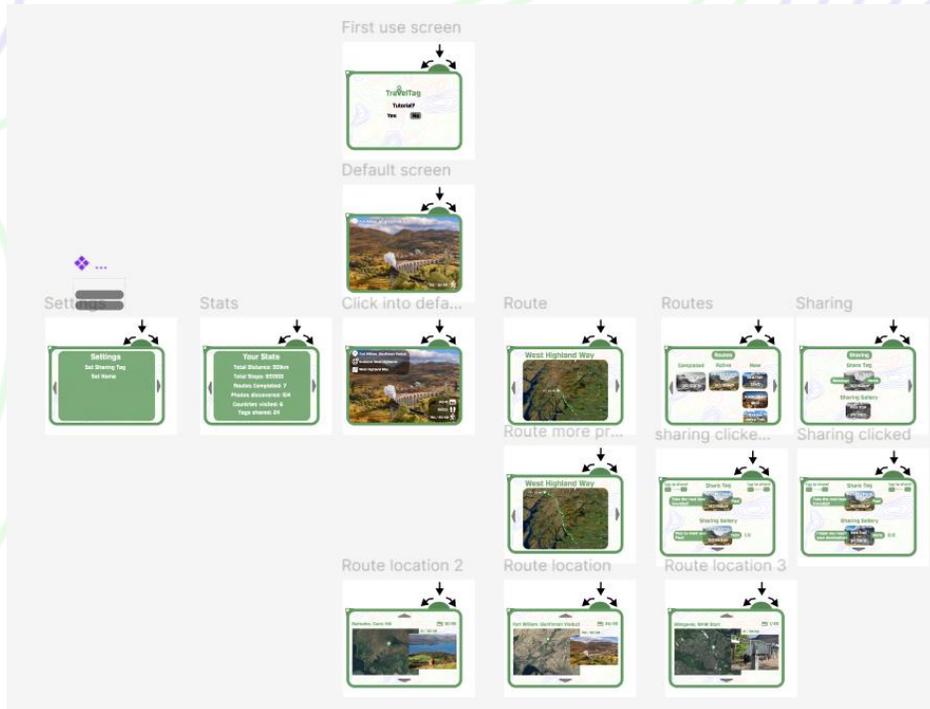
- Mobility issues due to arthritis
- long periods of sedentary activity
- limited ability to travel

UI Design

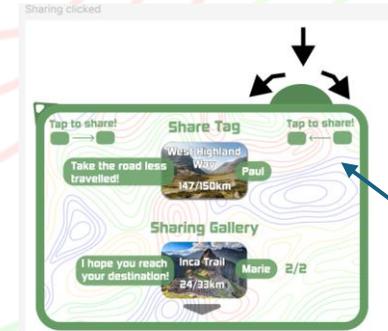
UI designed around single rotating button.



This always-on display screen encourages mindful usage (no interaction/attention required).



tutorial is essential since device has lack of external consistency for user.



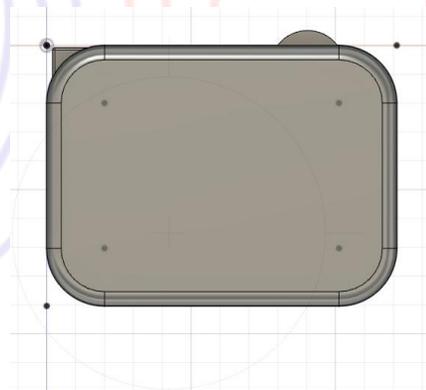
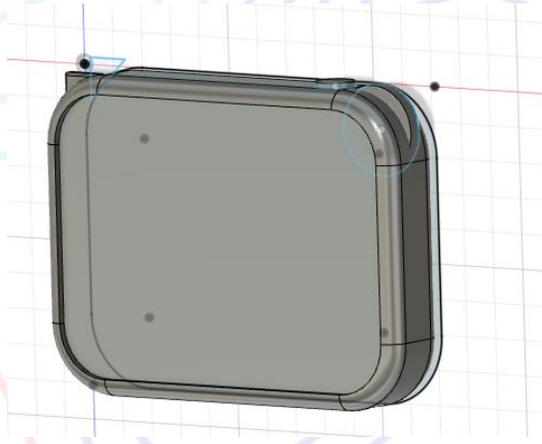
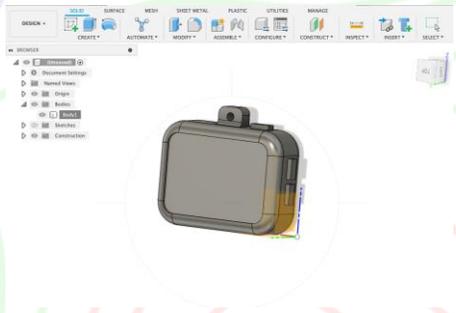
face-to-face sharing continues metaphor of travellers meeting on journey.



The user can view their progress across entire route to further contextualise their exercise, increasing enjoyment.

I've had much experience with Figma, and was happy to head this aspect of the project. the "interactions" feature was especially useful for testing.

3D Prototyping



Physical comparison was one benefit of 3d printing.



Progress

+3:2 ratio

+3 button layout

- frame width

- less obtrusive attachment

- bezel width reduced

- 2 button layout (cog)

cog = better single-hand usage

+ position of cog changed

- 1 button layout

cog on top = better stability

Video

Making a video helped to communicate our idea.



User yearns to travel, but must go to university.



They bring device with them.



Commuting



When they go to use their keys, the picture has updated. This enhances the student's commute, and contextualises travel (sense of achievement)

<https://youtu.be/rcoloKRNiTI?si=QnTM-ixM4BcjuGBa>

User Testing

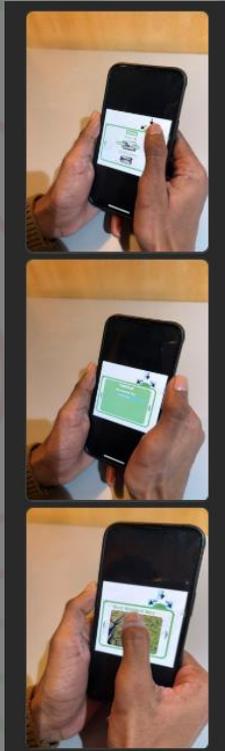
Testing the 3 aspects separately helped not overwhelm the participants, elucidating better feedback.

UI testing

Screen size too small?

Scrolling will need learning, not intuitive.

Liked ease of 1-button navigation.



Physical design testing

1-button layout interesting.

Preferred the new, sleeker design.



Concept Testing

Participant 1

Device good to reduce phone screentime.

forgetting about device when “newness” wears off?

concept better as a phone app?

Participant 2

Found concept confusing

Depressing if user reminded they're not in appealing location.

Critical Reflective Account

Positive

Everyone had set roles so no conflict.

Groups based on interests - confluent on initial direction.

No group member lacked contribution.

Negative

Struggle to work efficiently as kept revisiting concept itself since unsatisfied, when should have committed and spent time developing and improving.

Difficulty implementing concepts from module.

UI could be more detailed.

Could review more similar systems like kinomap.

Future Work

Develop programmed prototype.

More user research

Hi-fi physical prototype (screen, working buttons).