

meco

The new way of creating habits

DE0972 – Final Project
2018

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0. Brief

0.1 Brief analysis

Aim and deliverables

The aim of this module is pretty much the same as in Personal Project 01 from the previous semester – to provide evidence of intellectual achievement, skills and creative techniques, appropriate to the holistically thinking graduating designer and an ability to critically justify and evaluate the work.

Similarly to the previous brief, in this semester we are required to come up with an idea, create a prototype into a completed project and to write a document critically justifying the approach and methodology taken (or finalise the concept from the previous semester). In either case, we must communicate and present the prototype in a professional manner – via a video or a working prototype.

What are the learning outcomes?

- Apply comprehensive analytical research to complex design issues and topics leading to holistic design-related outputs or solutions.
- Demonstrate the ability to research all relevant considerations for interactive media design, and make effective use of this research throughout a design process.
- Produce, present & communicate design solutions to a professional, highly creative standard to specialist and non-specialist audiences.
- Reflect on, evaluate and respond to feedback in relation to own performance and identify personal strengths and needs and accept personal responsibility.
- Devise a working prototype that demonstrates an innovative solution to a design problem.

What does it mean to me?

As I decided to discontinue the previous project about media management system oriented on student and researchers due to a lack of interest and room of significant improvement, I have to come up with a brand new idea for this project.

Also, learning outcomes coupled with a gathered feedback from Personal Project 01 set very clear requirements for the idea – it should have research potential, have a definite design object and have a potential for an impressive prototype to demonstrate. Previously, I had some problems with the last one, so I need to be more careful with time management this time.

Also, all this means that the project should lay in an unfamiliar but interested for me niche to produce outstanding analytical research and be not too complicated from a design point of view to affording both product iterating and feedback gathering from a target user audience. Seems like a lot of fun (no).

0.2 Initial ideas

The fact that I don't want to continue working on a previous project doesn't mean that the earlier ideas aren't good for this module. Most of them satisfy all my personal requirements regarding research and prototype. However, not all domains are the best fit for this module.

Machine Learning & Big Data

Although that it's a fascinating subject, usually all projects in this area don't have an outstanding design solution. It happens for one straightforward reason – Machine Learning is a back-end technology that usually offers a more efficient version of current services and apps unless it applies to a brand new unseen idea, which I, unfortunately, don't have in my brain.

Augmented Reality

After a long time after invention, I still haven't come across of useful commercial appliance in consumer-oriented products except for game industry. The latest AR-Stickers from Google and Apple just confirm my personal belief that some technologies aren't for everyone.

Wearable technologies

Although this domain seems quite interesting for me, the final prototype I can produce can't be very impressive for one simple reason – it should be small (because no one wants to wear a 1-kg device on the wrist), which

is hard to produce with my current skills in programming and physical computing.

IoT device

This one seems the most promising because the domain satisfies all requirements – there is plenty room for research, the design solution could be exciting, and the prototype isn't impossible to produce.

The next generation of ...

Although it's personally the most interesting subject from my point of view, it may require a much more extensive skill set that I currently own and may be unpredictable in time completion estimating due to a complexity of the problem.

So, what does this mean to me?

It seems that IoT domain is the best fit for this module according to requirements. However, the ideas from the previous module aren't inspiring, so there is a need in an additional brainstorm session.



0.3 The new brainstorm

As not all IoT ideas on the previous page were inspiring, I decided to run a brainstorm session and come up with new ones. Later, I divided them into different categories and removed everything that seemed to me not good enough. In the result, I ended up with four categories, each of which has at least one idea that seems to me quite promising.

Future – Individual API

During numbers of personal talks with friends about ecosystems and competition between mono-product and large companies (such as Spotify, Apple (Music) and Google (Music)), the problem of not owning your personal data raised a few times. But what if you'd physically own a database or a list of your favourite music, games, mockups, preferences, notes and other things, which are currently held by companies and tied to a particular product?

Smart Home – Cheap smart controllers

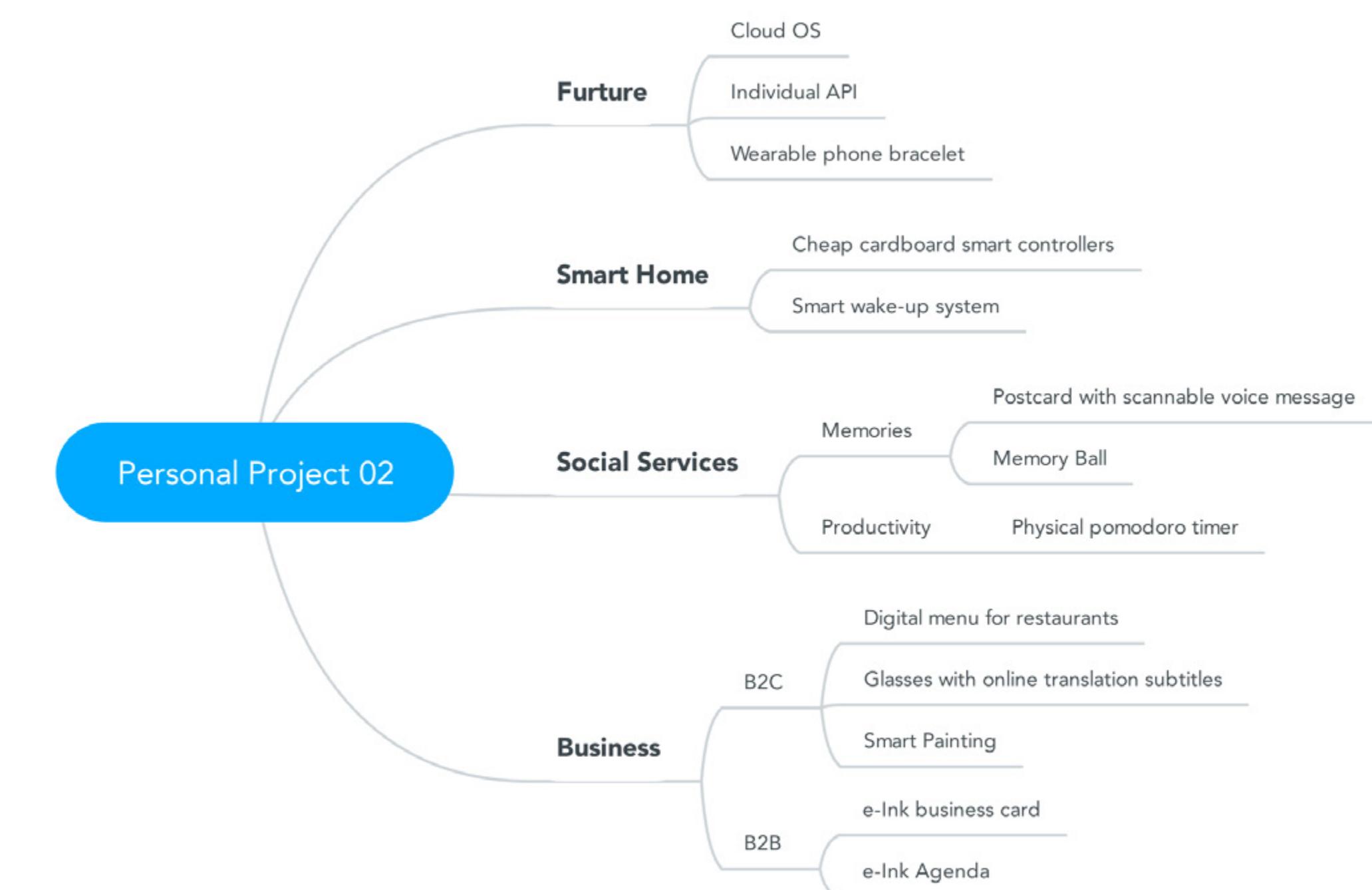
Smart Home is an obvious evolution of consumer home appliances, but the problem is that it's not a cheap pleasure to have it. But what if there would be an inexpensive universal device which can transform your old 'dump' appliance into a smart one?

Social – Memory Ball

Memories are probably the most valuable parts of our life. That's why we take photos of our important events, record videos or send postcards. However, nowadays all these media are digital, which you have to organise, store and spend time finding them. What if there would be a device, which can play all your memories without a need to organise them or searching them for hours?

Business – Glasses with subtitle projection

As a movie fan, I love to watch TV and films in original language. However, as a non-native speaker, sometimes it's quite difficult to follow and understand all dialogues, mainly if they contain jargons. But what if there would be glasses with built-in subtitles projection so I can read them without forcing others to distract on them (because subtitles really distract from the movie sometimes)?





1. Research

1.0 Idea description

Chosen idea

In the result of the brainstorm, I came up with a few ideas and decided to stop on Smart Home category, particularly on ‘cheap cardboard smart controllers’ idea for a few simple reasons:

- This is a product I’d buy myself
- I can produce a decent prototype
- It seems to be based on a real-world problem



What is the problem?

The main problem is the price tag of smart home solutions, which are out on the market. For example, to install only a lighting for one room a user has to spend around £150 ([Philips Hue Starter Kit – 3 x Philips Hue E27 Colour Bulbs, 1 x Hue Bridge, 1 x Dimmer Switch – £159](#)). To completely settle one smart room, a user should spend around £500.

Another problem is that usually people are not allowed to modify anything in rented accommodations, especially students in student halls.

Not surprisingly that there are tons of Arduino and Raspberry Pi project around home automation topic. However, to be able to assemble all these projects, a user required a basic programming knowledge. Also, usually these projects don’t look pretty in the final result.

What is the solution?

But what if there would be affordable, pre-assembled and easy-to-install device that doesn’t require any programming skills to set up and is temporary?

So, the idea of smart home controllers is about giving the ability to all people who rent an accommodation of easy install an add-on onto their standard appliances in order to make either automatically or remotely controlled by a smartphone.

The main values it provides for the end-user should be:

- Affordable
- Universal
- Temporary

Concept in a nutshell

An affordable and easy-to-install temporary device that transform standard home appliances and controls into smart ones.

1.1 Market overview

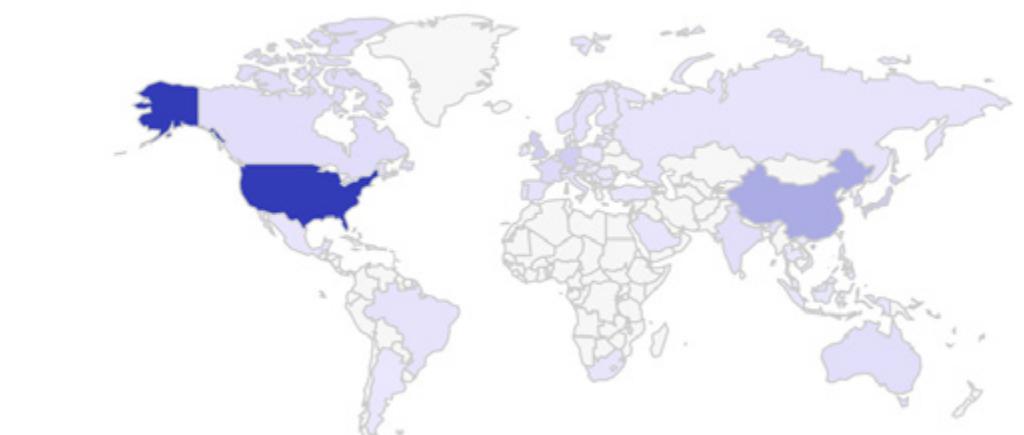
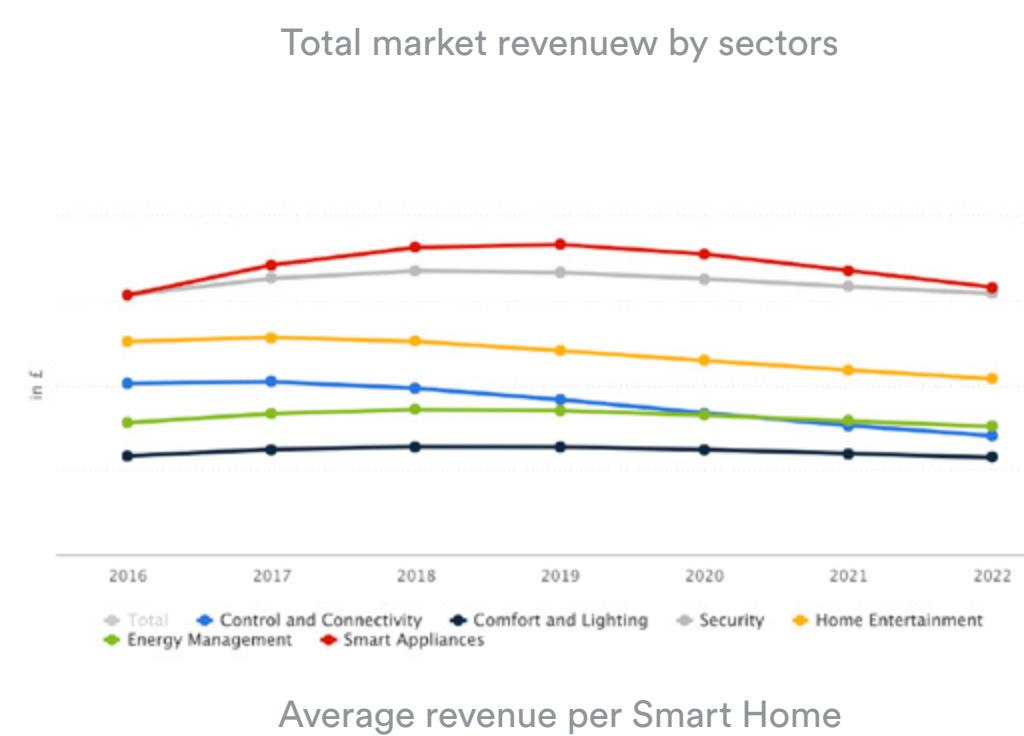
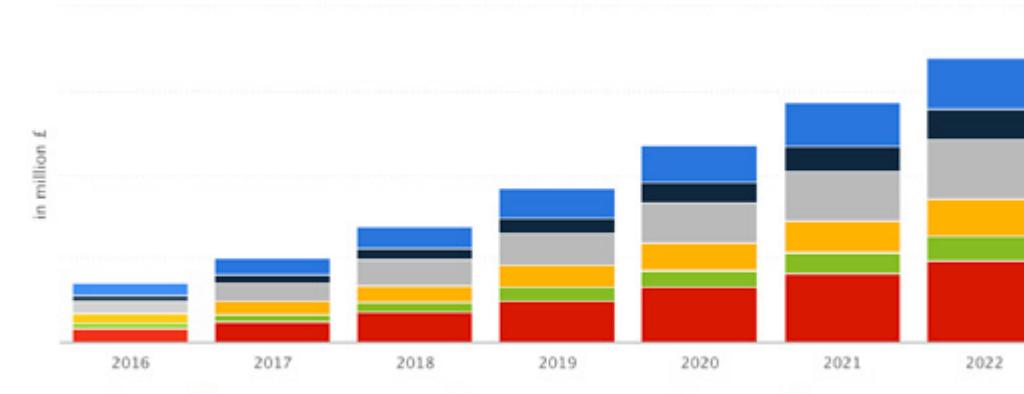
Is this a large market?

To understand if it's a profitable idea, I decided to review the market. Also, it should provide me a better understanding of the industry and give a basic idea validation.

After a brief study, I collected a few useful insights, which are presented on the right.

Insights

- Top 5 countries for Smart Home industry are USA, China, Japan, Germany and UK
- The forecast for smart home products going to grow (the revenue is expected to be £34,695m in 2018 and 2018 to £92,348m in 2022)
- On average, the revenue per active household is currently around £105
- Average revenue per Smart Home is expected to remain on relatively same level in 2022 (only Control and Connectivity segment is expected to decrease).
- The average revenue per active household in the Control and Connectivity segment amounts to £98 in 2018



Global market volume in comparison by continents

What does it mean to me?

The insights suggest a few important things:

- The idea of a cheap smart home device may be interesting for the market
- The market has a large volume, especially in the US. Probably, it's better to orient on US market first
- The market is growing so the product should find or create its niche and offer additional values in order to be successful
- The final retail price should be lower than £24.5 to be attractive to users

1.2 Contextual research

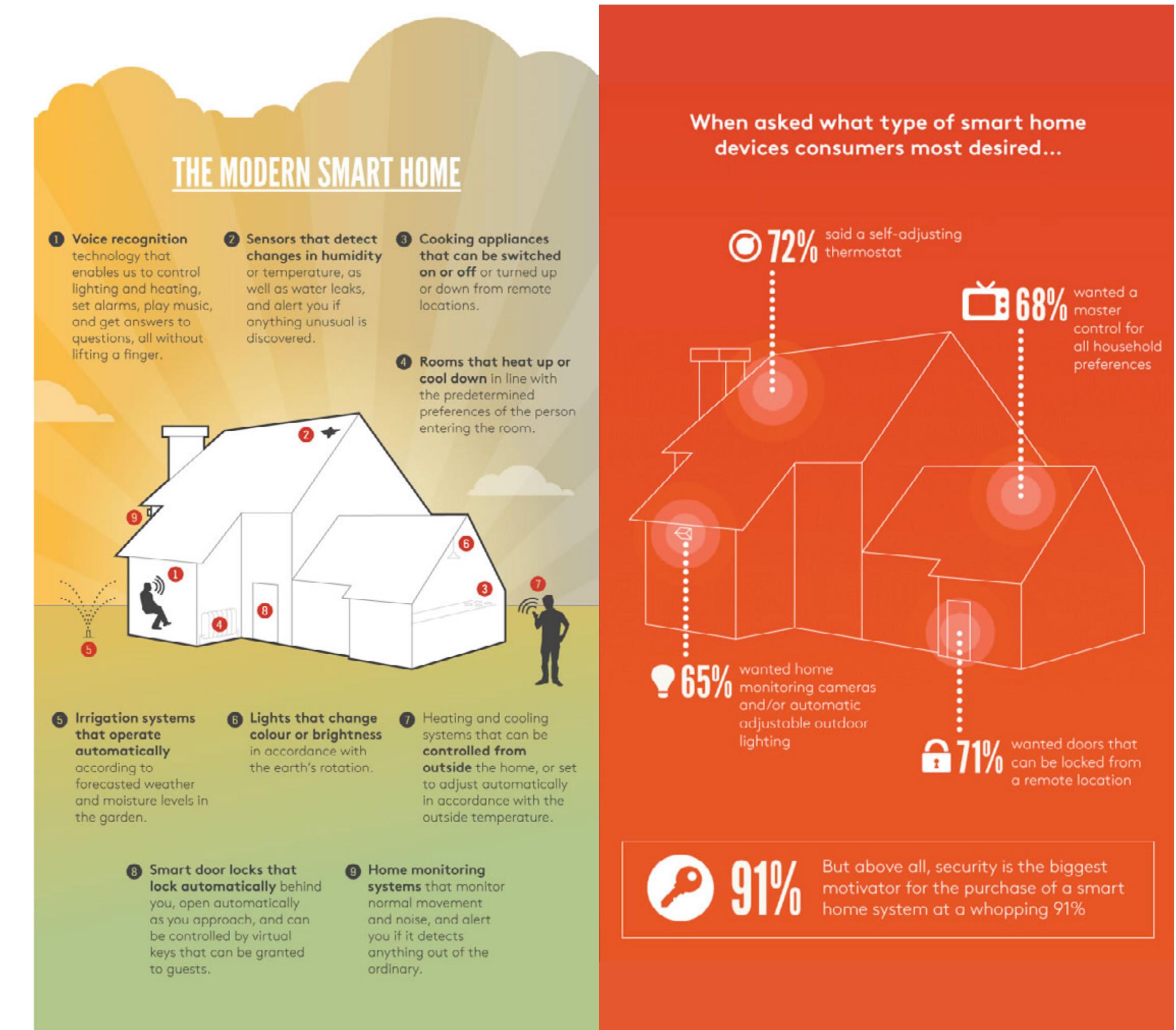
What are the biggest issues?

After getting a brief overview of the market, it was time to move onto exploring people opinion about smart home systems as well as what the smart home actually is. It should give me a better understanding of user pain points and needs, their concerns and the overall context around smart home devices.

From different sources across the internet such as Reddit, niche forums and various reports and studies, I discovered a few interesting thoughts which people have regarding home automation.

Overview

First things first, I decided to understand how people define 'smart home', what do they mean by this broad term. The infographics by [Jeff Desjardins for Visual Capitalist](#) is the best summary of smart home device categories overview I found. Also, the infographic provides very valuable information about user needs and what they find the most important.



Insights

- Currently, the vast majority of the smart home audience are ‘early adopters’ and purchase smart devices from curiosity
- Not all automated solutions actually save time and don’t require user input
- Installation of integrated or complex commercial smart home products such as a thermostat or smart lighting isn’t necessarily an easy task
- The vast majority of DIY Smart Home projects and solutions consider having at least intermediate level of programming and assembling experience
- By using devices from one ecosystem, there is a chance that user have to stick to single brand or manufacturer to be able to connect all devices into one network

- According to GFK study, 91% of consumers are aware of the term “smart home”
- Almost one half (47%) think it will have more impact on their lives than wearable devices (31%)
- Security, energy and entertainment are the smart home benefits UK consumers find most appealing
- People have huge concerns about privacy and don’t completely trust smart home systems, especially which are cloud-based and voice-controlled

What does it mean to me?

- Students (initial target audience) may be not the best audience as it seems that the product can’t become a mass-market one. It’s better to focus on smart home enthusiasts, geeks and early adopters
- Although security is the most desirable niche, the best niches where I can offer a valuable solution (because no one will actually trust a cheap door lock from cardboard) is the energy segment which means that the product should be adopted for thermostats, radiators and conditioners
- The product should respect the privacy. It could become a unique selling point

1.3 Competitor analysis

What to expect?

After gathering a few insights from contextual research and shaping the concept, I decided to analyse competitor to understand which added value can the device offer to a potential customer. Also, this analysis should give additional insights into minimum required functionality.

First, I started reviewing traditional competitors, the list of which is presented below, but all of them have a different approach and solve completely different problems in comparison to what I'm aiming to achieve. Based on this observation, I decided to review other projects in similar areas.

Key players on the market:

- Nest Labs (U.S.)
- Honeywell International (U.S.)
- Assa Abloy Group (Sweden)
- Acuity Brands(U.S.)
- Johnson Controls (U.S.)
- Schneider Electric SE (France)
- United Technologies Corporation (U.S.)
- Samsung Electronics (South Korea)
- Crestron Electronics (U.S.)



MicroBot Push

<https://microbot.is/push/>

MicroBot Push is a device that enables pressing virtually any type of button that humans can press using a smartphone.

Key features

- Installs in less than a minute
- Works remotely
- Controlled by voice command
- Has a built-in timer and scheduler
- Can be calibrated and adjusted
- Integrates with smart home ecosystems and automatisation services such as IFTTT

Disadvantages

- Limited usage
- Not always fits the interior



LittleBits Smart Home Kit

<https://shop.littlebits.com/products/smart-home-kit>

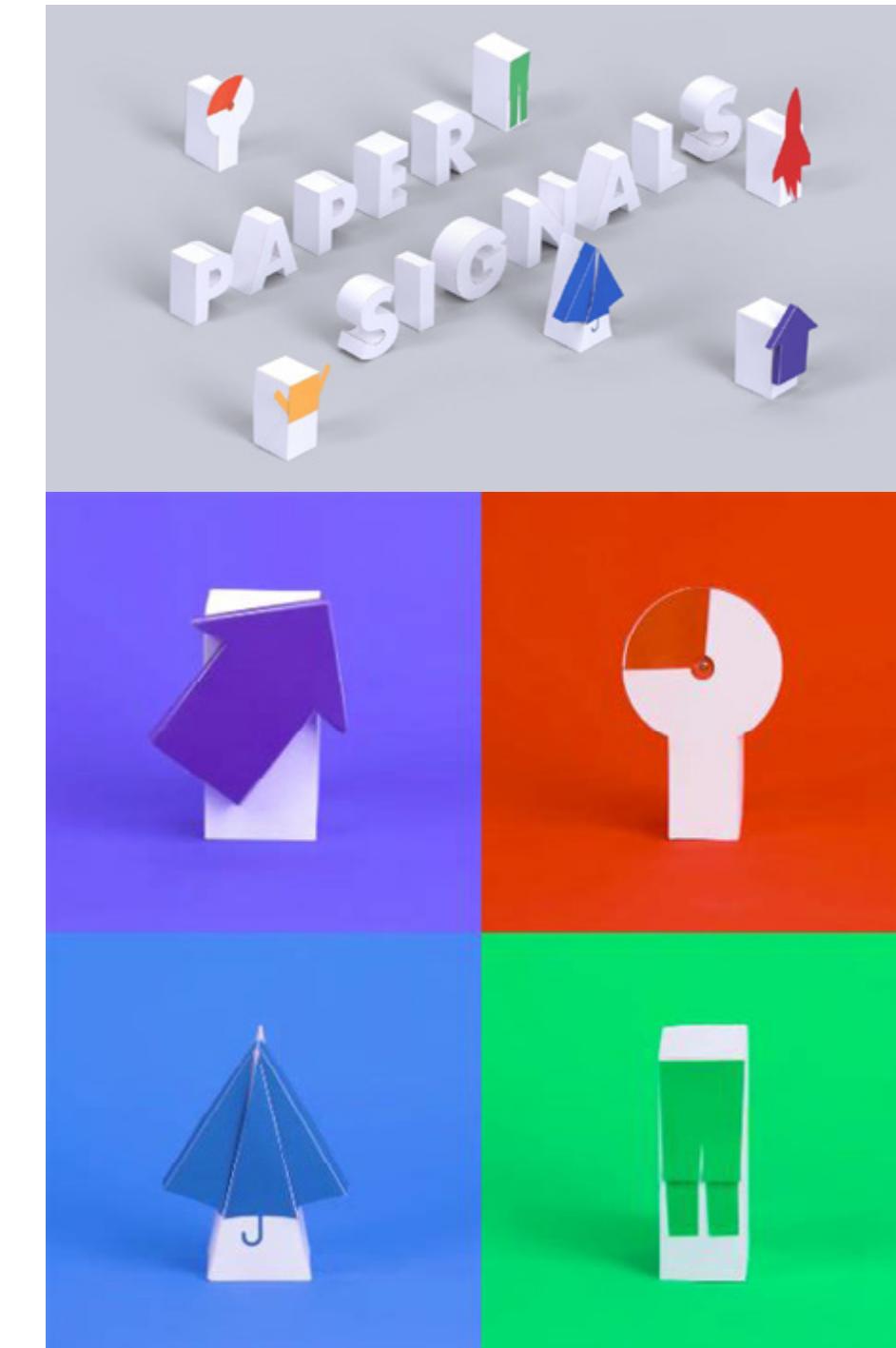
Sensor-based DIY kit, primarily focused on kids audience to learn the basic programming skills through designing smart home controllers.

Key features

- Easy-to-use and easy-to-assemble
- Programmable and reusable
- Controlled by a dedicated mobile app
- Sync with other smart devices
- Integrates with IFTTT

Disadvantages

- Expensive (\$99 - \$249)
- Doesn't fit the interior
- Positioning itself as a toy



Paper Signals by Google

<https://papersignals.withgoogle.com/>

Paper Signals are build-it-yourself voice-controlled objects which display changes of different states such as a weather.

Key features

- Open Source software
- Free printing cut-out template
- Controlled by voice commands
- Customisable

Disadvantages

- Require basic programming skills
- Has no useful appliance
- Required a smartphone with Google Assistant



Nintendo Labo

<https://labo.nintendo.com/>

Nintendo Labo is a gaming and construction toy platform developed by Nintendo and used as an extension for the Nintendo Switch video game console.

Key features

- Create added value to the primary product
- Expands standard game controls
- Offers unique user experience
- Customisable

Disadvantages

- Expensive (from \$69)
- Has durability concerns

What does it mean to me?

After reviewing a few projects from different areas which have one idea in common (repurposing standard objects and providing added value for relatively small price), I came up with a few additional ideas which gave a shape to the concept:

- The enclosure should be made from cardboard or other cheap self-printed materials which gives the ability to customise and personalise the device as well as enables it to fit the interior
- The device should be capable to offer new functionality with software updates to provide unlimited appliance
- The device should have integrations with IFTTT, Apple Home and Google Home and should sync with other smart home devices

1.4 User research

What's next?

The next logical step after collecting and analysing information about the market, context and competitors was user research. By that time I already shaped my idea into a more solid concept based on insights gathered from previous research and formulated a few hypotheses that needed to be verified:

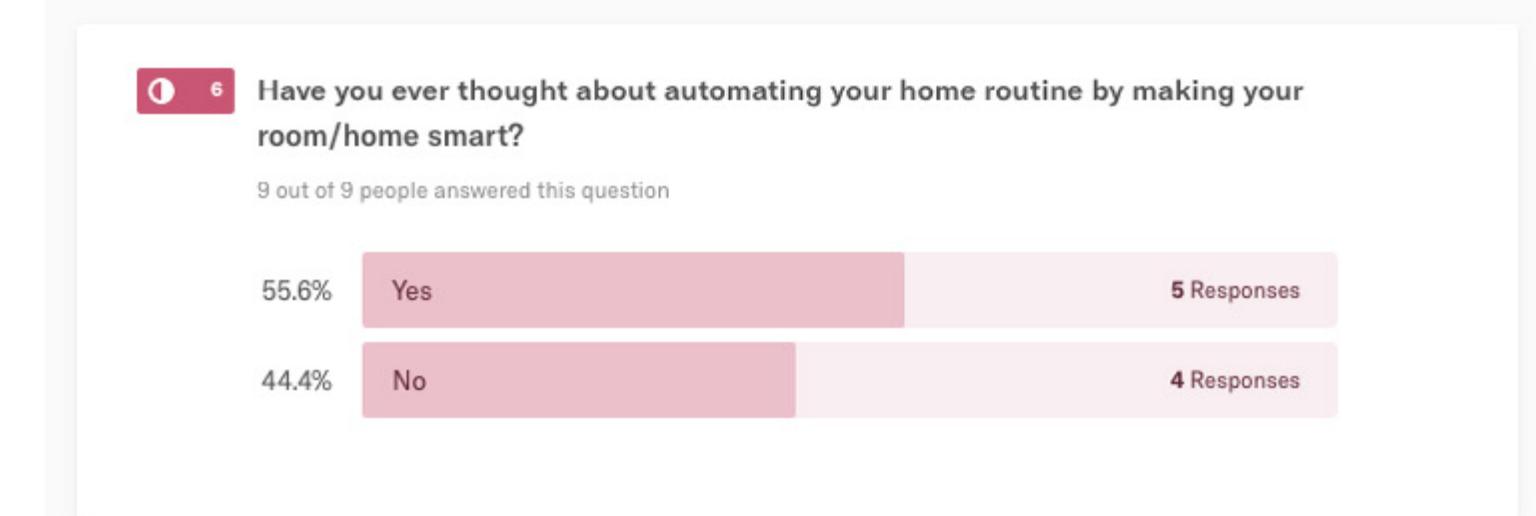
- In general, people use similar light switches and appliances
- People still have analogue (not sensor) appliances' controls
- People want to automate their routine tasks
- People want to change or replace some appliances or elements in their environment, but this isn't allowed by a landlord or tenancy agreement.
- People like to spend time customising and personalising their environment and belongings

The survey

If the first two hypotheses can be validated just by looking at the best selling products on Amazon, Wilko and Home Depot (and yes, they have been validated), the three remaining statements had to be confirmed directly by users. For this purpose, I create a short survey.

Unfortunately, I managed to get only 9 responses, which is too little to objectively validate my hypothesis, but nonetheless:

- Most of the people (55%) want to automate routine tasks, but 44% of people don't consider any home automation
- Heating and Cooling devices, as well as lighting, is the most personalised appliances in the room
- People are willing to spend time on customisation their living space



More insights

Due to the lack of responses, I decided to go back to desk-based research and find more useful insights about typical user behaviour and their opinion about smart home. After hours of web browsing I found a few more papers and studies which gave me the next insights about users pain points:

- Although 50% of responders said that they are excited about the possibilities of smart home, this means that 50% are not.
- 71% of responders worry that smart home technology own a lot of personal information which mean that it may be leaked or compromised
- 57% of responders fear that the technology still has too many bugs
- 49% of responders said that devices failing to work properly together increased stress in their lives

Even more insights

Also, I have discussed the idea of the cheap smart home add-on with people with different background and occupations and only a few of them expressed an interest in this concept.

Not surprisingly, those who were interested in the idea work in IT industry and are so-called early adopters. On one hand, it means that the target audience chose correctly, on another hand – I started getting doubts because usually, these people can afford either expensive commercial smart home devices or building their own version of a smart home using Raspberry Pi or W.

Another valuable insight I received during personal conversations is that people are not concerned about repurposing the device as they would probably simply replace it with the newest generation after a while.

What does it mean to me?

The conducted user research validated my hypothesis and gave me more insights into user behaviour and targeted audience.

Although a few representatives of target audience expressed an interest in the concept, it became clear that functionality cannot act as a unique selling point due to the fact that geeks and tech enthusiasts can build the same device using Arduino or Raspberry Pi platform.

Due to this fact, I have to concentrate on next areas to provide sophisticated added value:

- Overall design (outlook)
- Complete automatisation
- Integrations with different 3rd-party services and devices

1.5 Finalising the idea

How did idea change

During the research phase, I learned a lot about the smart home industry. Obviously, during this time my idea changed quite a lot based on obtained insights. In the final result, the core idea remained the same, but I managed to shape it into a solid fact-based concept, which is presented below.

Initial idea

An affordable and easy-to-install device focused on students that transform standard home appliances and controls into smart ones.



An affordable and easy-to-install temporary device focused on early adopters that transform standard heating and cooling appliances into smart ones with strict privacy policy.



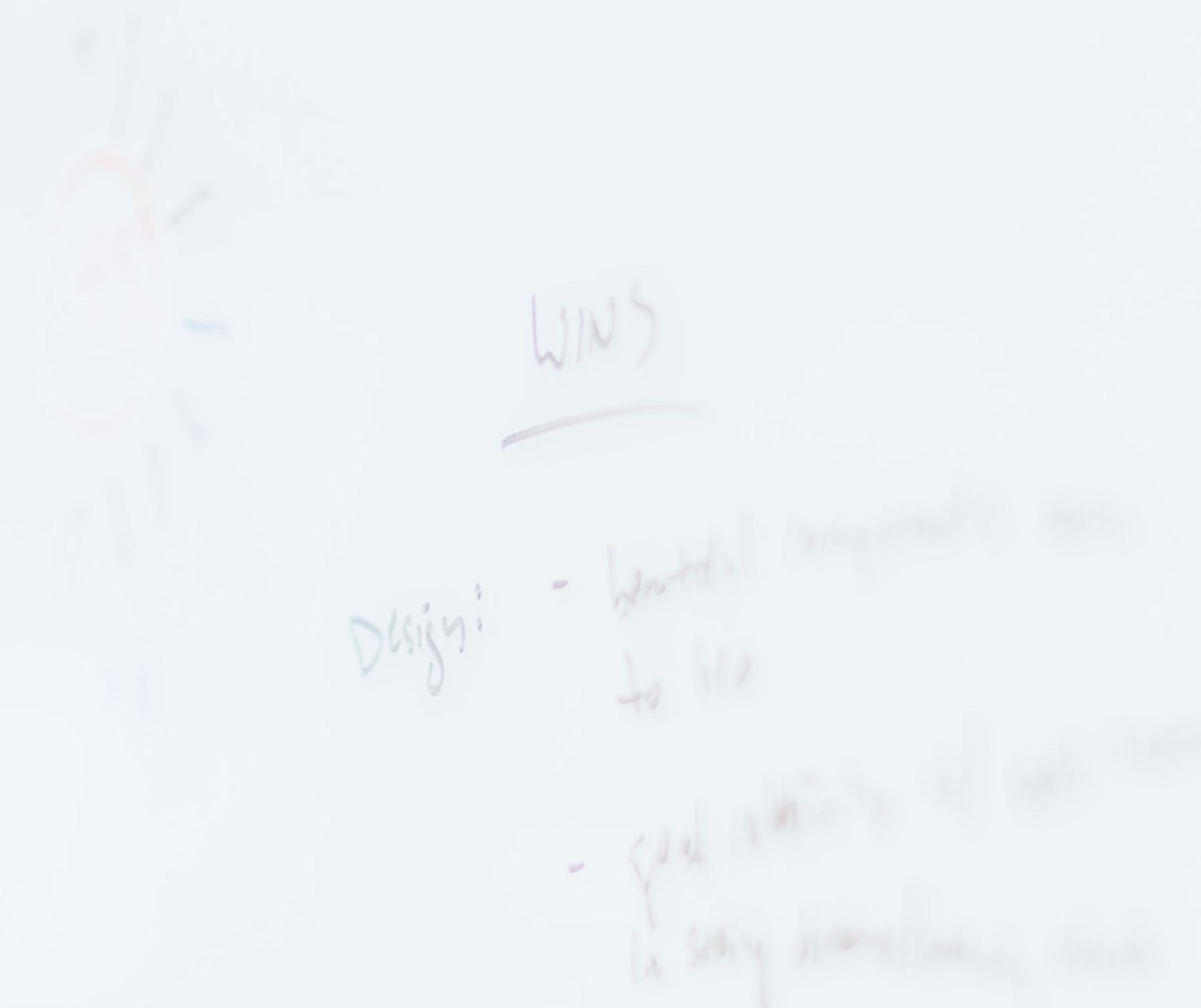
An affordable, repurposable and easy-to-use temporary device from self-printed materials focused on early adopters that transform standard heating and cooling appliances into smart ones with strict privacy policy.



Final idea

An affordable, well-designed, personalisable and easy-to-use automated device from self-printed materials focused on early adopters that transform standard heating and cooling appliances into smart ones with various integrations into 3rd-party services and ecosystems as well as strict privacy policy.

2. Concept development



2.0 Defining all aspects

What's important?

During the concept development phase, John gave us an exercise which helped us defining all aspects of the project and discover potential problems in advance.

The outcome of the finished exercise, the whole point of which is to identify key project focus, risks, target audience, implications, novelty and required skills in order to see the bigger picture and pick a direction and move towards it.



What does it mean to me?

During the exercise, I discovered potential problems which are related to my skill set, in particular, the lack of JS knowledge and experience with 3rd-party apps API as well as the potential problem with 3D printing facilities.

Also, it helped me to define all implications the final device could have, which may serve as additional selling points.

2.1 Device applying thoughts

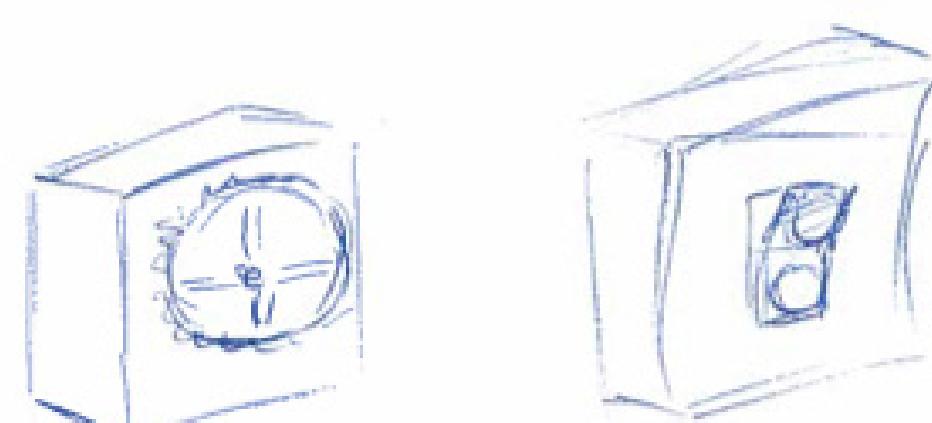
Where can it be used?

Based on the research insights, I decided to focus on heating and cooling devices in the first place. In order to cover all types of these devices, I had to come up with a universal mechanism which can work with all types of appliances controls which can be divided into three main categories:

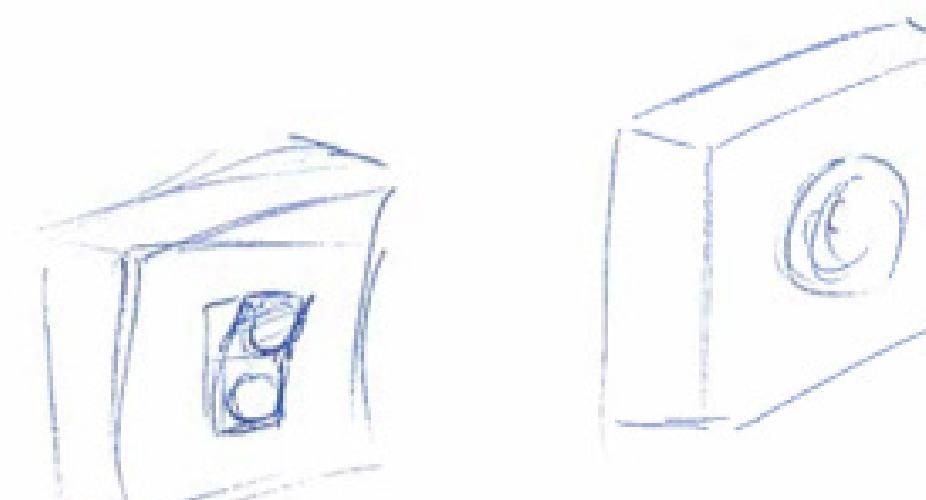
- Switchers →
- Rotary knobs →
- Buttons →
- Switch (for switchers)
- Rotate (for Rotary knobs)
- Push (for buttons)

After hours of brainstorm, I ended up with no solid idea, so I decided to create three different mechanisms which would suit the selected appliance:

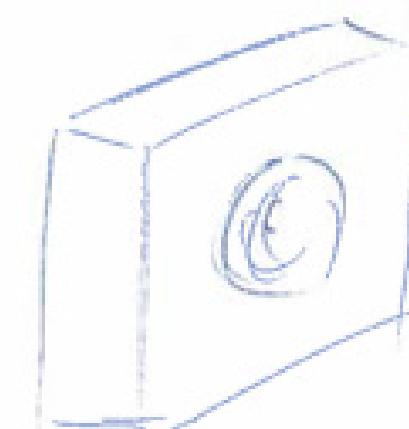
(2) Mechanism



1. Spin/Rotate



2. Push/switch



3. Click



Switch

- Outlets
- Fans
- Air conditioners
- Air purifiers



Rotate

- Light dimmers
- Thermostat
- Heaters and radiators
- Kitchen appliances



Push

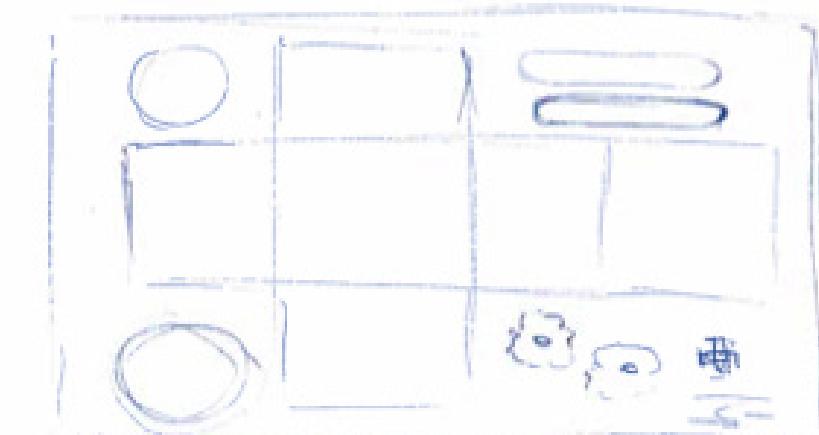
- Different consumer electronics
- Fans
- Air conditioners
- Air purifiers

Where can it be housed?

Obviously, the device cannot consist of pure mechanism only, it needs an enclosure. In order to provide the best experience possible, I decided to offer users to choose one of three materials for the case, which will be delivered as a cut-out plate (like [Ugears](#)):

- Plastic (paid option)
- Durable cardboard (paid option)
- Self-printed PDF (free option)

(1) Case



1. Paid+ = plastic
2. Paid = Nice cardboard
3. Free = PDF file

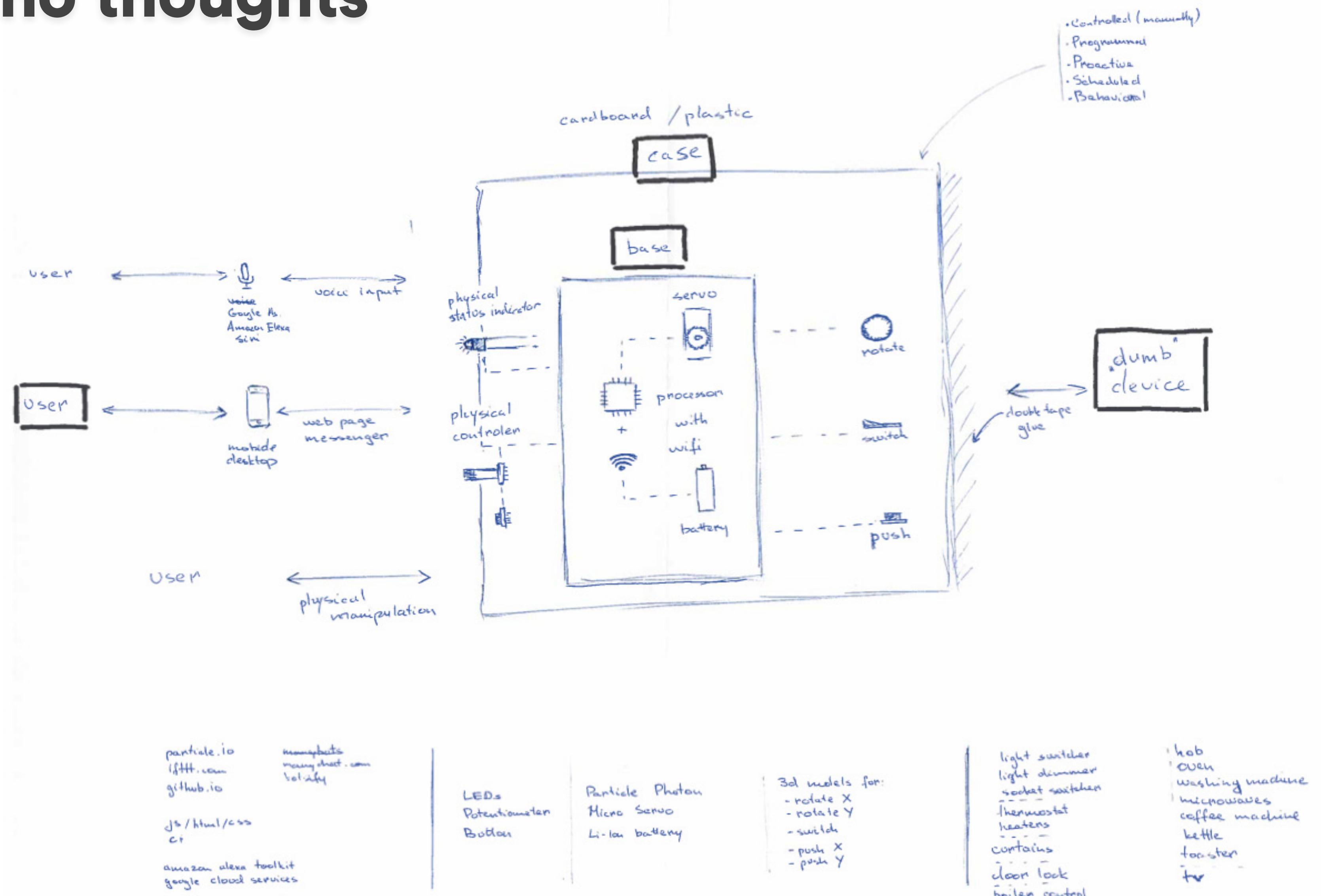
2.2 Initial Arduino thoughts

What does the device consist of?

After defining purpose and functionality of the device, I started thinking about ways of implementation. First, I draw a scheme of interaction between smart device and user as well as between device and “dumb” appliance in order to define which modules do I need for the prototype.

Due to prototype simplicity, I decided to focus on Rotate mechanism first. In order to make it work, I need:

- Arduino-like microcontroller
- WiFi module
- Toothed ring (like [this one](#))
- Servo motor
- Rotary encoder
- Buttons
- LED
- Battery
- Hosted web page



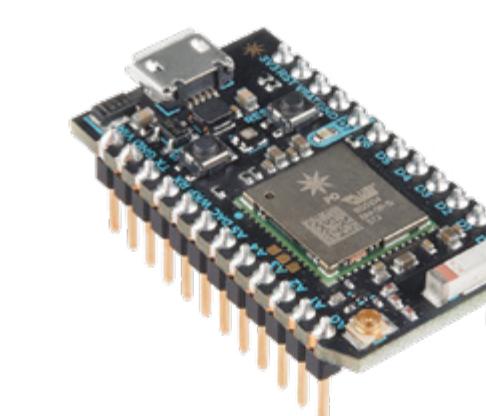
How does it work?

The Rotate device should be stuck to a body of a regular appliance such as radiator or thermostat by double tape or superglue in order to servo motor can rotate a toothed ring attached to the regular appliance's rotary knob.

The servo motor which controlled by Particle Photon ([new Arduino-like microcontroller](#)), can be also remotely controlled over the internet (requires [web page](#)). Therefore, the main reason why I have chosen Particle Photon microcontroller over Arduino is that it has built-in WiFi module and offers intuitive Webhooks integrations

The rotary encoder is a backup manipulation method when the microcontroller lost the WIFI connection. The button also servers for service purposes only and may be used to reboot the microcontroller in the unlikely event of processing fault.

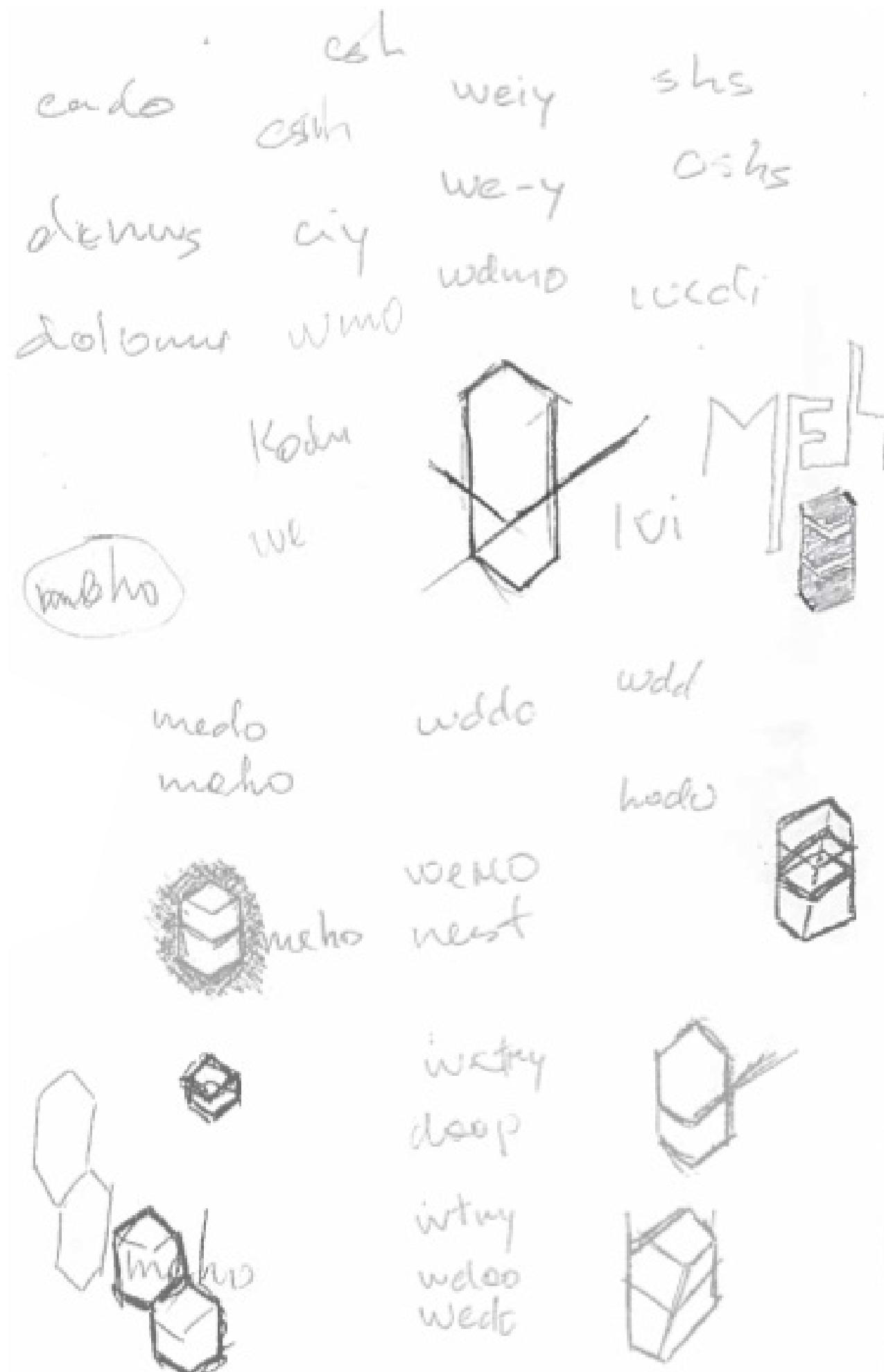
The primary purpose of the last element – LED – is a visual feedback for the user.



2.3 Initial branding thoughts

How about a name?

During the research, I spent a bit of time to come up with a name for the project. In the name, I wanted to reflect two main elements – ownership (mine) and home. Short brainstorm session ended up with a short but clear name – **meho**.

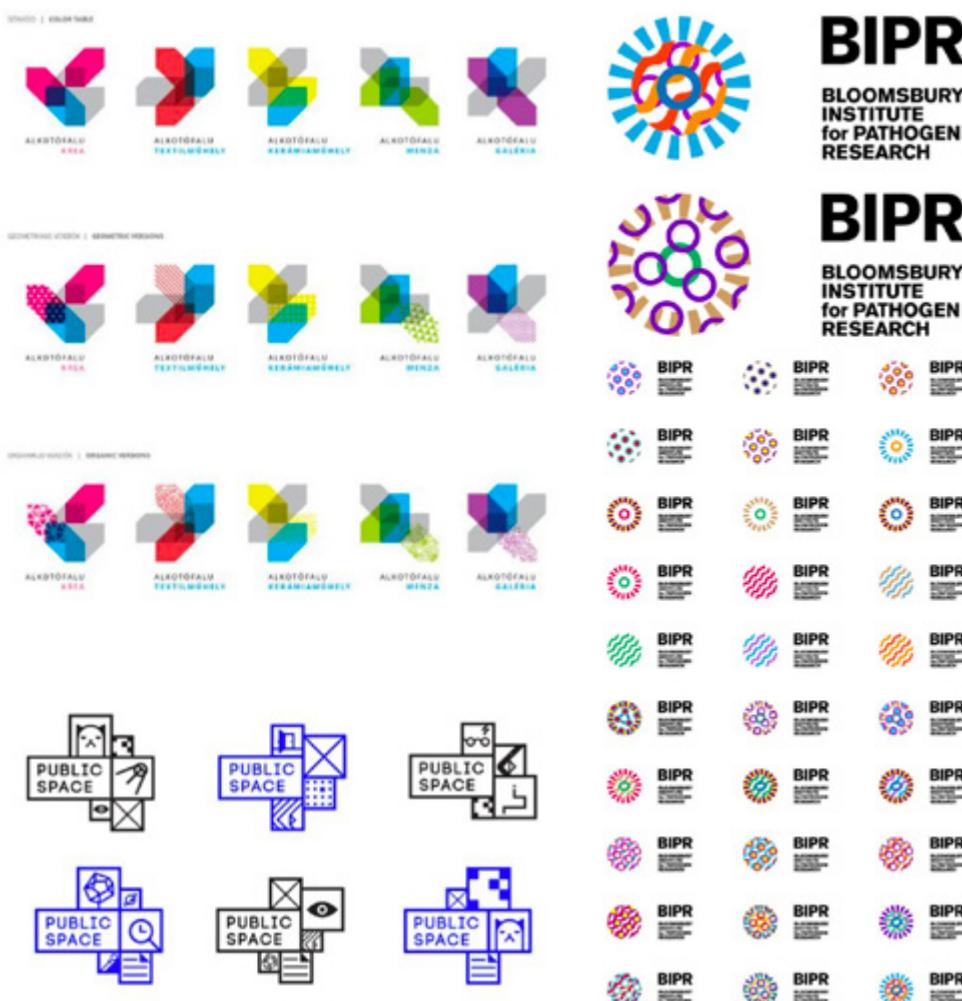


mine + home
=
meho

How about a logo?

The next step was to design a logo. Again, I didn't spend a lot of time on this as at that stage of the project, the logo and brand identity wasn't the highest priority. However, due to a nature of the initial idea, I wanted to reflect the universality of the device so I tried to make logo adaptive.

In the end result, I came up with the idea of combined shapes, inspired by various projects with similar branding goals.



make it
smoke



make it
awake



make it
hot



make it
modern

2.4 Midterm feedback

What is the biggest area for improvement?

During the midterm presentation, I received a few useful feedbacks which helped me understand what should I do next.

First of all, not all people get the idea, not all people like the idea. Not all people think that this is the real-world problem which I'm trying to solve. Probably, they're right to some extent, but nobody thought in 1960's that they'll need a laptop someday.

In any way, this is a good signal that the way I communicating the idea may be not the most optimal and definitely is not the clearest.

Also, the second most important feedback I received was from John – he asked what my design object is and what I'm actually going to design in the final result. The problem was that I didn't really know because at that point of time the only thing I could create was a simple web page to control the microcontroller (and to be honest, there is almost nothing to design – only one slider and a few toggle icons).

After a while, when I reviewed the whole project trying to understand where are the most critical touch points from the user perspective, I defined the next design objects which this project could offer to me (and, unfortunately, the list did not cause any enthusiasm):

- Enclosure outlook design
- Packaging design
- Web page design
- Community website design

What does it mean to me?

Based on the received feedback coupled with insights gathered during the user research, it was clear that the project needs big changes.

One of the ideas was to adopt the project for kids, which would transform it into a direct competitor to LittleBits Smart Home Kit. However, it would require spending a significant amount of time on studying children behaviour and related contextual research.

The second idea was adding sensors to the circuit to make the system truly smart and automated, but this will lead to ruining easy-to-install and easy-to-use principle.

The third idea was to completely change the idea and start from the blank page. This was an extremely risky idea, but (as always) the most attractive.

Having reviewed all the facts I decided that the last idea is the best decision in this situation.

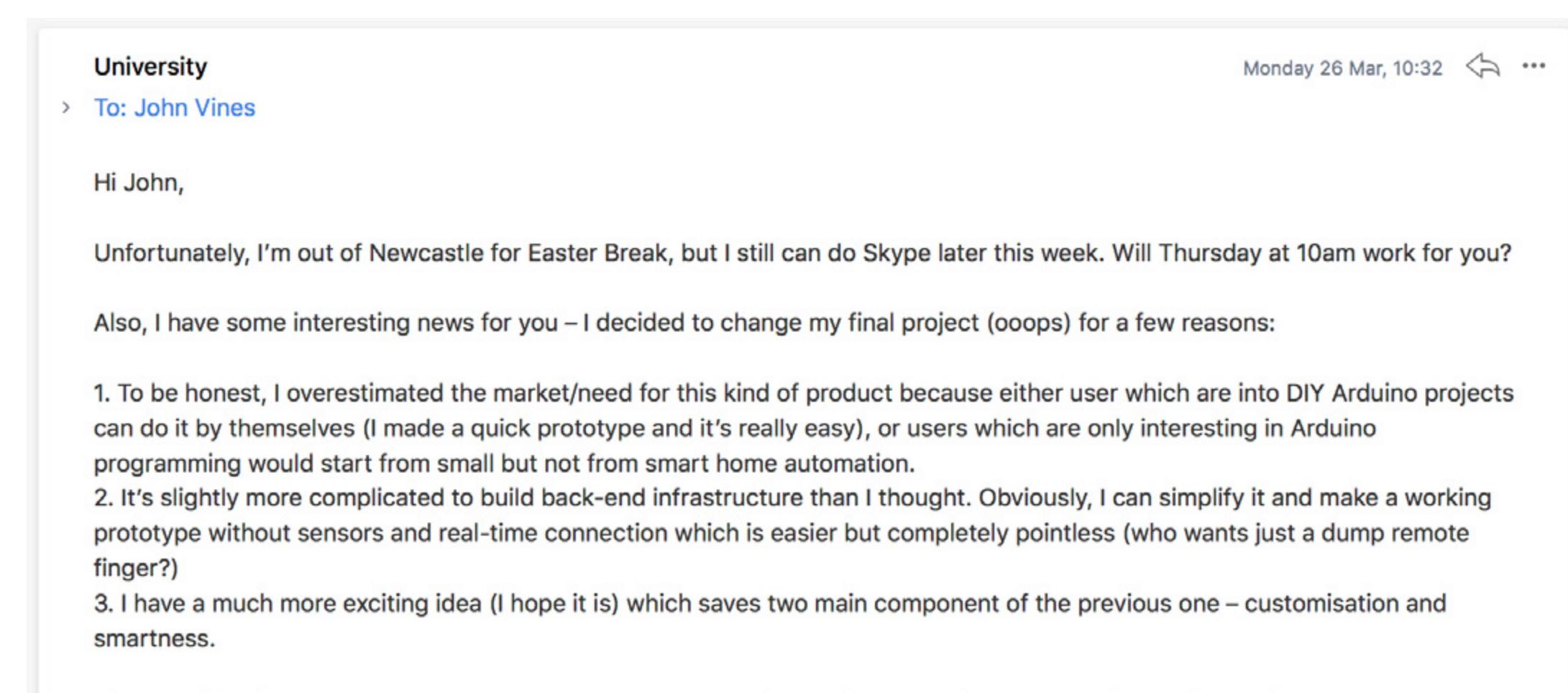
2.5 Changing the idea

Traditions are traditions

So, according to my ancient tradition started in the first year, I decided to change the idea in a middle of the semester.

I believe that there are enough reasons to change the idea to more broad one, where two main selling points (smartness and personalisation) have remained.

Additionally, the new idea offers much more defined design objects as well as more usual and demonstratable prototype opportunities.



What does it mean to me?

Considering the fact that to the final presentation left around 40 days, I had to move fast and spend the time wisely.

Also, the strict time frames mean that some stages of my typical process such as branding and information structure should be minimised or completely sacrificed.

Additionally, big concerns were related to the risk of prototype failure as it may take much more time than I expected. However, I'll still have a few weeks to do some additional work for the graduation show.

3. Research (the new one)



3.0 New idea description

Chosen idea

I was coming across this a few times during my second and third year but never had a chance to fully explore it and find a solution, which would help myself. Having just a few weeks left to my final presentation in university, I decided that I'll do it now or never.

The idea is very simple in its aim, but extremely difficult in execution – to overcome procrastination which every one of us has in one form or another. This is the perfect scope of work because within this project I can target a wide range of people and offer them a simple solution toward the goal at the same time.

What is the problem?

The main problem is the avoidance of doing a task that needs to be accomplished. Sometimes, procrastination takes place until the “last minute” before a deadline.

In this particular project I'm aiming to tackle one of many examples of procrastination – getting out of the bed in the morning without browsing Facebook, Instagram, Twitter or any other mobile app in the bed, or, alternatively, reading news or watching morning TV show while having breakfast.

Probably everyone is facing with this at list once in while because otherwise there would be no articles such as “how to build productive morning routine“ around the web.

What is the solution?

But what if there would be an affordable and convenient device that would guide you through your morning to make sure you'll no be late? Just like the mother saying to kids “eat faster, we have to leave soon“ every morning during the breakfast, but electronic equivalent.

So, the idea of smart alarm system is about overcoming morning procrastination for people who are always late because they think they still have 2 more minutes. The main values the system can provide to those people are:

- Affordable
- Reliable
- Smartness
- Personalised

Concept in a nutshell

A smart alarm device designed to build your morning routine which you cannot turn-off.

3.1 Market analysis

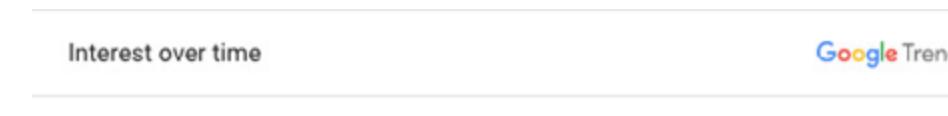
The market without market

The problem with this idea is that it's clear that there is an interest in overcoming procrastination and building more productive mornings. However, there is no market research about morning routines, leading companies offering solutions for this kind of people or forecasts predicting the growth of the market (or at least I couldn't find them).

Nonetheless, I need to do a basic validation of the problem to make sure that I'm not making it up. In order to do so, I simply used what everyone does when interested in some particular topic – Google, but slightly in a different way.

According to Google Trends, there is a continues interest in building productive habits and morning routines. Also, as it can be seen from graphs, the interest raised after 2013 and no significant declines since then.

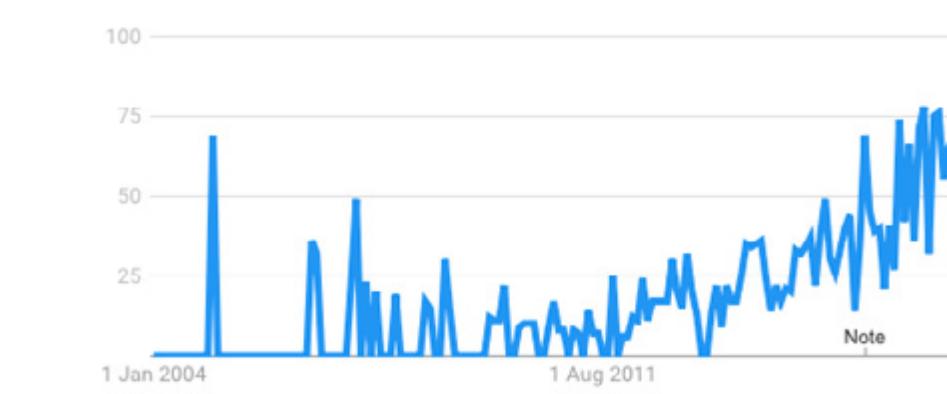
Additionally, I checked the search volume via Google Adwords, which provide an insight into the approximate number of search queries per month. Based on the numbers, I can say that there is an continues interest in building morning routine and habits, which indirectly validates the existance of the problem.



● how to build a habit

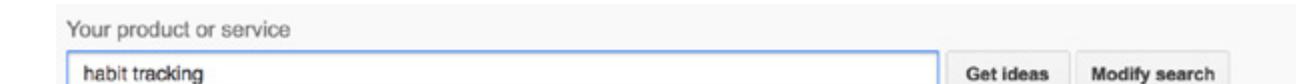


● habit tracking



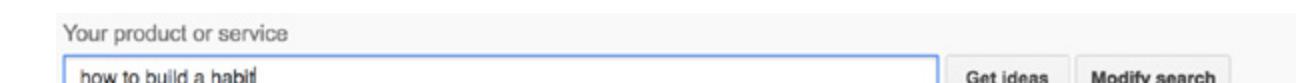
Search volume trends

Average monthly searches



Search volume trends

Average monthly searches



Search volume trends

Average monthly searches



3.2 Contextual research

What is morning routine?

After validating an interest in the problem I decided to tackle, the next step was to learn more about the problem itself. So I started reading about building morning routines and searching for related studies related.

From the studies, it appears that morning routine, as well as any other ritual such as evening routine, productivity flow or even procrastination, is a deeply psychological set of habits formed during a life which eventually becomes typical behaviour.

Usually, these rituals are formed unconsciously and performed automatically with lower brain activity comparing to similar conscious actions.

Additionally, as the [study by Philippa Lally](#) shows, on average the habit forms during 66 days of regular repeating an action (but in some cases, it may vary from 18 to 254 days based on different factors).

In the page footer, there are a few references to trustworthy digital magazines as well as studies and reports about behaviour, habits and procrastination which helped me understand better the nature of the problem I'm going to tackle.

Habit - Wikipedia

14-18 minutes

A habit (or wont) is a routine of behavior that is repeated regularly and tends to occur subconsciously.^{[1][2][3]}

The *American Journal of Psychology* (1903) defines a "habit, from the standpoint of psychology, [as] a more or less fixed way of thinking, willing, or feeling acquired through previous repetition of a mental experience."^[4] Habitual behavior often goes unnoticed in persons exhibiting it, because a person does not need to engage in self-analysis when undertaking routine tasks. Habits are sometimes compulsory.^{[5][6]} New behaviours can become automatic through the process of habit formation. Old habits are hard to break and new habits are hard to form because the behavioural patterns which humans repeat become imprinted in neural pathways,^[6] but it is possible to form new habits through repetition.^[7]

When behaviors are repeated in a consistent context, there is an incremental increase in the link between the context and the action. This increases the automaticity of the behavior in that context.^[8] Features of an automatic behavior are all or some of:^[9]

- efficiency
- lack of awareness
- unintentionality
- uncontrollability

Formation[edit]

Habit formation is the process by which a behavior, through regular repetition, becomes automatic or habitual. This is modelled as an increase in automaticity with number of repetitions up to an asymptote.^{[10][11][12]} This process of habit formation can be slow. Lally *et al.* (2010) found the average time for participants to reach

Even this post took much longer than it should have, because I spent a bunch of hours doing things like seeing [this picture](#) sitting on my desktop from [a previous post](#), opening it, looking at it for a long time thinking about how easily he could beat me in a fight, then wondering if he could beat a tiger in a fight, then wondering who would win between a lion and a tiger, and then googling that and reading about it for a while (the tiger would win). I have problems.

STUDENT AFFAIRS TODAY

MANAGING YOUR OFFICE

7

Create a powerful morning routine in 5 steps

Do you frequently hit snooze when your morning alarm sounds, then feel harried and rushed?

When you contemplate waking up earlier, do you counter the idea with a firm “I’m not a morning person.”

Laura Vanderkam, author of *What the Most Successful People Do Before Breakfast*, argues that reworking all 168 hours of the week to re-create your time management plan can be too overwhelming for many people.

Instead, she suggests focusing on the area of your day where she believes you have the most control: the early-morning hours.

Read on for five ways you can create a powerful morning routine that can help replace your harried and rushed feelings with a positive, centered mindset for the day ahead:

1 Identify what matters most. Vanderkam suggests zoning in on what matters most to you. She argues there are three typical “highest-value activities” that you might wish to incorporate into your morning routines: nurturing career, family, and self. If you spend all of your time at work putting out fires, with no time to work on that project proposal, start at sunrise. Do you work long hours and sometimes miss out on quality time with your children? Consider making mornings family time. Finally, many people enjoy the peace and quiet of dawn to develop a spiritual practice.

2 Notice your willpower. Each morning, assuming we've had a good night's sleep, we wake up recharged. Think of this as starting the day with a full tank. With each decision we make, for every crisis we avert, our willpower tank slowly drains. “We all have 168 hours a week, but not all hours are equally suited to all things,” Vanderkam writes. Put high-priority tasks that require a lot of willpower (e.g., starting a meditation routine, jogging, writing first) in your daily routine, when your tank is full. For most people, if you wait to engage in challenging tasks until the end of the day, you might talk yourself out of things you intended to do because you are running on empty.

3 Track your time. If you want to start a new healthy habit or routine but feel like you don't have time, completing a time log might reveal that you spend hours per day online or watching TV that could be freed up for exercise or other activities. Many time logs are available for download online. Print one out and try tracking your time for at least one day, but ideally for one week. Review your log and notice how you spend your time. Better yet, do

this activity with a trusted friend and exchange time logs for a more objective opinion on your time usage. What priorities are getting lost in the shuffle? You might want to incorporate those into your morning routine.

4 Use a habit tracker. A habit tracker is another concrete way to analyze your time usage and add some power to your mornings. Create a list of three things you'd like to do each morning. Then, create a grid next to your list with the days of the week. If you complete the task, mark that day with an “x.” Consider this free, printable daily habit tracker: <https://www.clementinecreative.co.za/reach-goals-free-printable-habit-tracker/>. Tracking each day is a form of reward for sticking with your habit and will help you to monitor your progress.

5 Balance consistency and flexibility. “Life changes,” Vanderkam writes. “Routines can change, too.” If you have children living at home, morning routines will shift with the passage of time. An injury could cause you to modify your exercise routine. You might finish a project and decide to focus your morning routine on stress-relieving activities as you prepare for the next project. The best morning routines will have a balance between consistency and flexibility. Tinker with your routine until you find one that works for you. Stick with it and commit to making positive changes in your life. But as life changes, allow your routine to change, too.

This was adapted from an article by Karen Costa that appeared in *Women in Higher Education*, also published by Jossey-Bass, A Wiley Brand. For more information on that publication, please go to <http://whe.wiley.com/>. ■

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Routines: Comforting or Confining? | Psychology Today

Journal of Experimental Psychology: Applied
2000, Vol. 6, No. 3, 171-182

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0883-3256/00/\$00.00 DOI: 10.1037/1076-892X.6.3.171

People Focus on Optimistic Scenarios and Disregard Pessimistic Scenarios While Predicting Task Completion Times

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University of British Columbia

Task completion plans annually resemble best-case scenarios and yield overly optimistic predictions of completion times. The authors induced participants to generate more pessimistic scenarios and examined completion predictions. Participants described a pessimistic scenario of task completion either alone or with an optimistic scenario. Pessimistic scenarios did not affect predictions or accuracy and were consistently rated less plausible than optimistic scenarios (Experiments 1-3). Experiment 4 independently manipulated scenario plausibility and optimism. Plausibility moderated the impact of optimistic, but not pessimistic, scenarios. Experiment 5 supported a motivational explanation of the tendency to disregard pessimistic scenarios regardless of their plausibility. People took pessimistic scenarios into account when predicting someone else's completion times. The authors conclude that pessimistic scenario generation may not be an effective debiasing technique for personal predictions.

At one time or another, many of us have smirked while passing a vacant lot with a weather-beaten sign announcing that a new supermarket will be "Opening Soon!" Such unwarranted optimism also pervades people's predictions of their task completion times. People tend to underestimate how long they will take to finish academic, household, and laboratory tasks (Buehler, Griffin, & MacDonald, 1997; Buehler, Griffin, & Ross, 1994; Bryant, 1997).

The goal of the present research was to examine the bases of people's overly optimistic forecasts, with a view to encouraging less optimistic and possibly more accurate predictions.

People often base their predictions on scenarios that depict the progression of the present to the future (Buehler et al., 1994; Buehler, Griffin, & Ross, 1994; Griffin, Dunning, & Ross, 1990; Kahneman & Tversky, 1982; Kleinmuntz & Schonmaker, 1993). Several lines of research suggest that such scenario thinking may contribute to overly confident and optimistic predictions. First,

although the future is almost always uncertain, people typically generate only a single or very limited number of scenarios (Griffin et al., 1990). Second, people generate scenarios that reflect their hopes and preferences. For example, when reporting scenarios about task completion, people focus on how they will successfully accomplish their objectives; they generally fail to consider the possibility of setbacks or delays (Buehler et al., 1994). Third, there is evidence that the content of scenarios affects people's beliefs about the future. When individuals are instructed to imagine or explain the occurrence of a particular event, they become more convinced that it will occur (Koehler, 1991).

If people are unrealistically confident and optimistic because they generate a single, hopeful portrayal of the future, the cure seems obvious: Encourage individuals to think about possible futures that differ from the ones that they most prefer. People may then conclude that the future is more uncertain than they had imagined and form less optimistic, and possibly more accurate, forecasts. Such a strategy could prove ineffectual, however, if predictors are motivated to perceive their futures in a positive light and consequently view negative futures as implausible and unworthy of serious consideration. Thus, it is not self-evident that asking individuals to consider alternative futures would be an effective debiasing technique.

Past research on the impact of contemplating alternative outcomes is equivocal. Bryant (1997) tested whether participants first reported a pessimistic or optimistic prediction before estimating when they would actually complete a task. This manipulation had no effect on people's forecasts or accuracy. Research investigating the influence of prompted generation of reasons for or against a favored hypothesis has also produced mixed results. In their first experiment, Kortaj, Lichtenstein, and Frischhoff (1980) found that individuals who generated reasons both for and against their hypothesis exhibited less overconfidence than participants in a no-

Ian R. Newby-Clark, Michael Ross, and Derek J. Koehler, Department of Psychology, University of Waterloo, Waterloo, Ontario, Canada, N2L 3G1. This article was revised from the Social Sciences and Humanities Research Council of Canada.

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Stop Making New Goals—Create Habits Instead

6-8 minutes

Jay Koppelman/AdobeStock

Source: Jay Koppelman/AdobeStock

The scenario: You declare a change you want to make to achieve the results you desire. You eagerly set a goal and plan the steps. You tell yourself this time, you will commit to your goal.

Then you go back to days full of urgent emails and texts; projects falling behind; messes to clean up; fires to put out; agendas, lists and people who need to be heard out.

You think about your goal between frantic interruptions, but the

Check for updates

Innovation

Using Circle Time Books to Increase Participation in the Morning Circle Routine

Lisa A. Simpson and Kevin Oh

As she went through the calendar routine that day, Ms. Becker watched one of her young students pick at a small spot on his shirt over and over while another student sat and giggled; a third child had left the circle altogether and was being rounded up by one of the teaching assistants. Ms. Becker, a special education teacher for young children, thought to herself, "We've been in school for 8 weeks, and I would have thought the students would be participating more by now. Every day I go through the calendar and the weather, and it is like pulling teeth to get them involved. The student leading the activity seems to really enjoy it, but in the meantime no one else seems to be paying attention. There has to be a better way. What I'm doing now doesn't seem to be working, and even my teaching assistants are getting discouraged."

The students in Ms. Becker's kindergarten special education class included Jeffrey, Neil, and Victoria. All three had difficulty using language to convey meaning. They showed some ability to maintain focus when given tasks to do with their hands, but displayed minimal attention in teacher-led group activities. Not surprisingly, these were the three that had the most difficulty with the morning circle routine. Even with their learning struggles, Jeffrey, Neil, and Victoria all really enjoyed looking at books and were showing emerging literacy skills. As Ms. Becker began to think about how she might increase participation in the morning circle routine, she thought about how she might incorporate her students' strengths and preferences into the solution.

Using Assistive Technology With Young Children

Many preschool, kindergartens, and first-grade teachers conduct a morning circle activity to start the day. Typically, children sit close together, often on the floor or special rug, and are expected to attend to the teacher in whole group instruction. The teacher might have a child or two come to the front to lead the calendar routine, post the weather, present the letter of the day, or engage in another similar activity. The remainder of the class follows along and may participate in choral response or singing. Typical morning circle routines can be a difficult activity for young children with disabilities to navigate without proper supports.

Assistive technology (AT) enables young children with disabilities to more effectively access their environment, thus facilitating the development of social-emotional, communicative, and cognitive skills (Dugan, Campbell, & Wilson, 2006; Judge, Floyd, & Jeffs, 2008; Langone, Malone, & Kinsley, 1999). Both low-tech tools (e.g., pencil grips, raised line paper, picture or symbol communication books, single message communication devices) and high-tech tools (e.g., electronic speech generators, motorized wheelchairs, touchscreen computers) have been shown to be useful in increasing the participation of young children with disabilities in classroom routines (Campbell, Milbourne, Dugan, & Wilson, 2006). Current research indicates that the use of AT can greatly enhance participation in the learning environment for children with disabilities.

How They Form And How To Break Them : NPR

Sources: Wikipedia (about [habits](#) and [procrastination](#)), [Why Procrastinators Procrastinate](#), [Routines: Comforting or Confining?](#), [Stop Making New Goals—Create Habits Instead](#), [Habits: How They Form And How To Break Them](#), [Using Circle Time Books to Increase Participation in the Morning Circle Routine](#), [Create a powerful morning routine in 5 steps](#), [People focus on optimistic scenarios and disregard pessimistic scenarios when predicting task completion times](#), [DIGITAL BEHAVIORAL DESIGN](#),

How does a habit work?

When behaviours are repeated in a consistent context, there is an incremental increase in the link between the context and the action or in other words – creates a habit. This increases the automaticity of the behaviour in that context. Features of an automatic behaviour are all or some of:

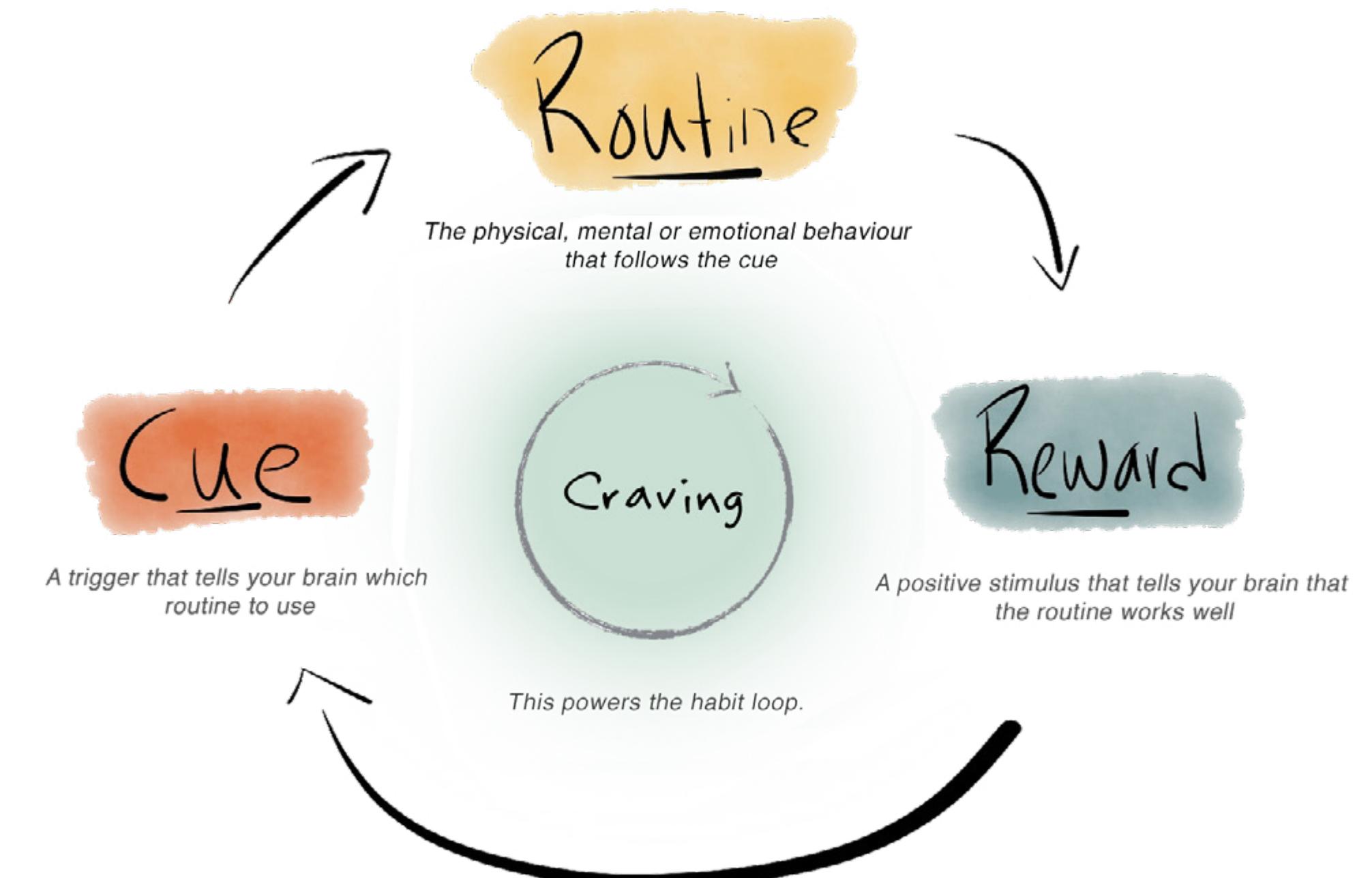
- Efficiency
- Lack of awareness
- Unintentionality
- Uncontrollability

I found the explanation of this process in the book *The Power of Habit* by Charles Duhigg, where he illustrates the process and explains that each habit loop consists of three main components:

- Cue (trigger)
- Routine (action)
- Reward

The cue can be divided into a few main categories:

- Location
- Time
- Emotions
- Last action
- Nearby people behaviour



Also, I found another interesting fact, which has a direct impact on the habit-forming process.

Endorphins (the hormones of happiness) usually release every time after you got a reward, but if it's a formed continues habit, a small amount of endorphins release right after

the trigger tells the brain to start performing a routine which explains why it's hard to break already formed bad and unhealthy habits such as smoking.

What does it mean to me?

The insights gathered from the market and contextual research gave me a better understanding of what the problem is and the way of tackling it.

Instead of focusing on designing a solution for procrastination and focusing on creating morning routine, it seems a better idea to focus on habit creation process in general.

Also, based on the habit-forming process I formed a few hypotheses which need to be validated in order to define user pain points, needs and goals.

3.3 User research

Who are the users?

After forming a short list of hypothesis, I had to validate them in order to understand what kind of product people need. Considering the previous experience of the unsuccessful survey I decided to interview a few people who may have procrastination problems directly instead of asking everyone on the web.

Unfortunately, I had no physical or digital records of the interview due to the fact that all of them were informal and were conducted in a way of friendly conversation. However, I managed to validate some of my hypothesis and based on gathered insights, I create typical user personas.



Jacob Smith

USER PERSONA #1

Occupation CTO

Age 28 years old

Bio Jacob is a CTO in a small startup company which means that he has a lot of responsibilities and always is under stress. Often he has to skip the lunch in order to finish an urgent task. Also, he has a minor chronic disease so has to take medicine each morning but sometimes he forgets to do so.

Goals

- Don't forget to take medicines each morning after breakfast
- Don't forget to eat at least a small snack for lunch
- Spend less time on unproductive activities and tasks

Pain points

- Can't predict his schedule and workload
- He is always late in the morning



Jessica Pearson

USER PERSONA #2

Occupation Marketing manager

Age 26 years old

Bio Jessica is in charge of marketing and social network communication at mid-size IT company. Sometimes she is so excited by the work so she has to force herself to continue working. Also, she believes that spend too much time in bed every morning browsing Instagram after waking up.

Goals

- Train a will to get out of the bed
- Want to spend less time on choosing what to wear
- Don't snooze the alarm clock every morning

Pain points

- Procrastination (don't recognise it as a problem)
- Habits don't last for long
- Lack of motivation



Matthew Lloyds

USER PERSONA #3

Occupation Student

Age 21 years old

Bio Matthew studies film production at Northumbria University and in free time takes freelance video editing jobs which usually have strict deadlines. Due to this overload, he has unregular sleep patterns and unbalanced nutrition which has an impact on his productivity.

Goals

- Create a more regular sleep pattern
- Find a better work-study-life balance
- Eat healthier home-made food instead of ready meals

Pain points

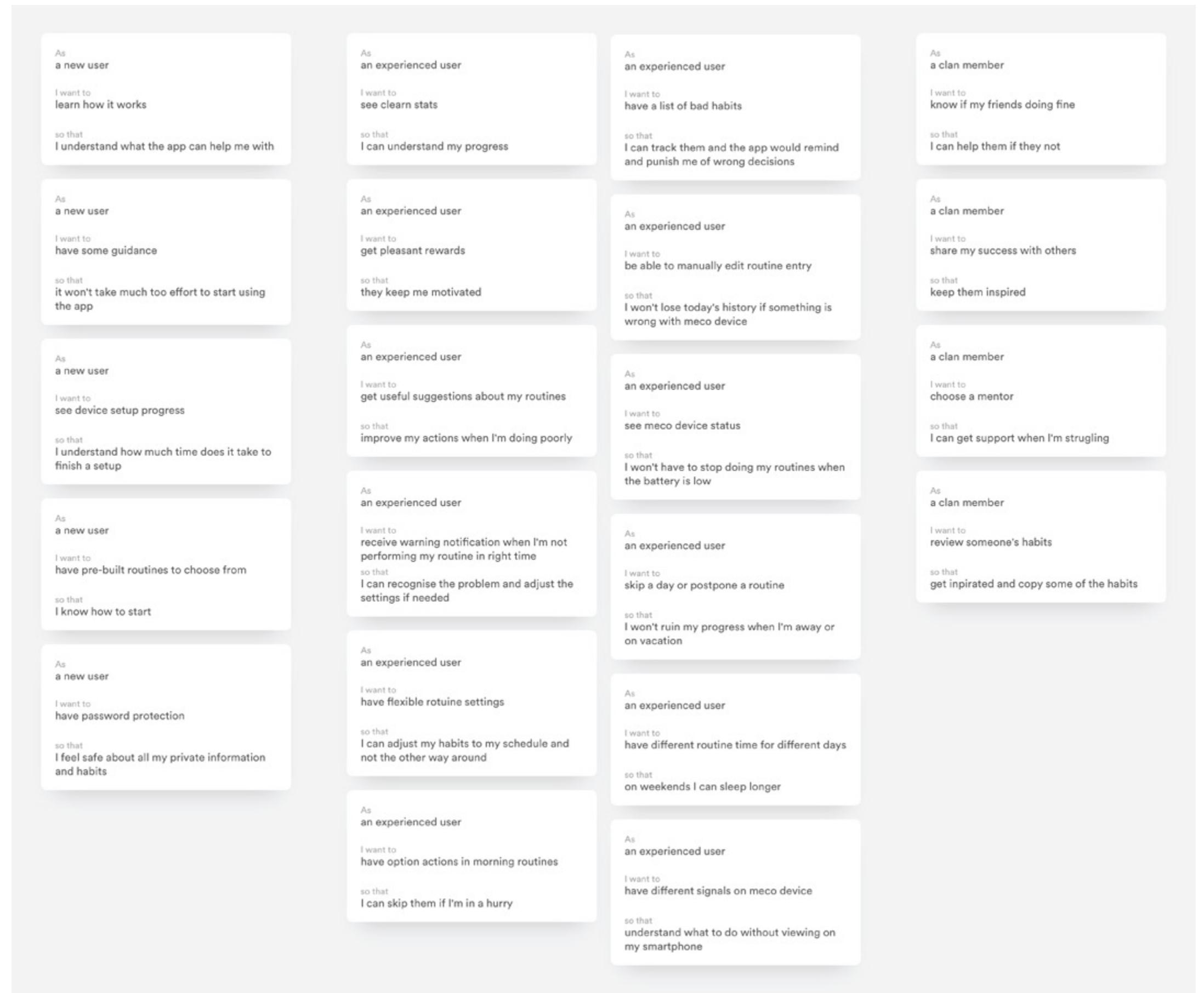
- Reminder apps don't work and he stays late at night
- Can't see the result of using nutrition apps and gives up quickly
- Can't follow Pomodoro productivity methodology that actually works best for him

What do users want?

After defining user personas, their goals and pain points it was time to summarise all information and transform it into needs. This should give a clear understanding of required features and would help to shape the app structure.

In this particular situation, I decided to divide users into two different categories – new users and experienced users for one simple reason – they have different needs. Later on, I added the third category – the clan member user (explained later in section 4.2).

Based on these categories of users, I translated all their goals and potential needs in user stories which suggest what user may expect from the app.



What does it mean to me?

The conducted user research helped me to define initial app structure which covers the most important user needs.

Additionally, developed user personas and user stories will serve as an argument for the wireframing and design development process in cases where the issue will have two or more solutions. These materials should define what people need and how the solution should work, which subsequently, helps to choose the most suitable solution.

Also, the insight gathered from this study developed the idea further by reviling more facts about the problem I'm aiming to solve.

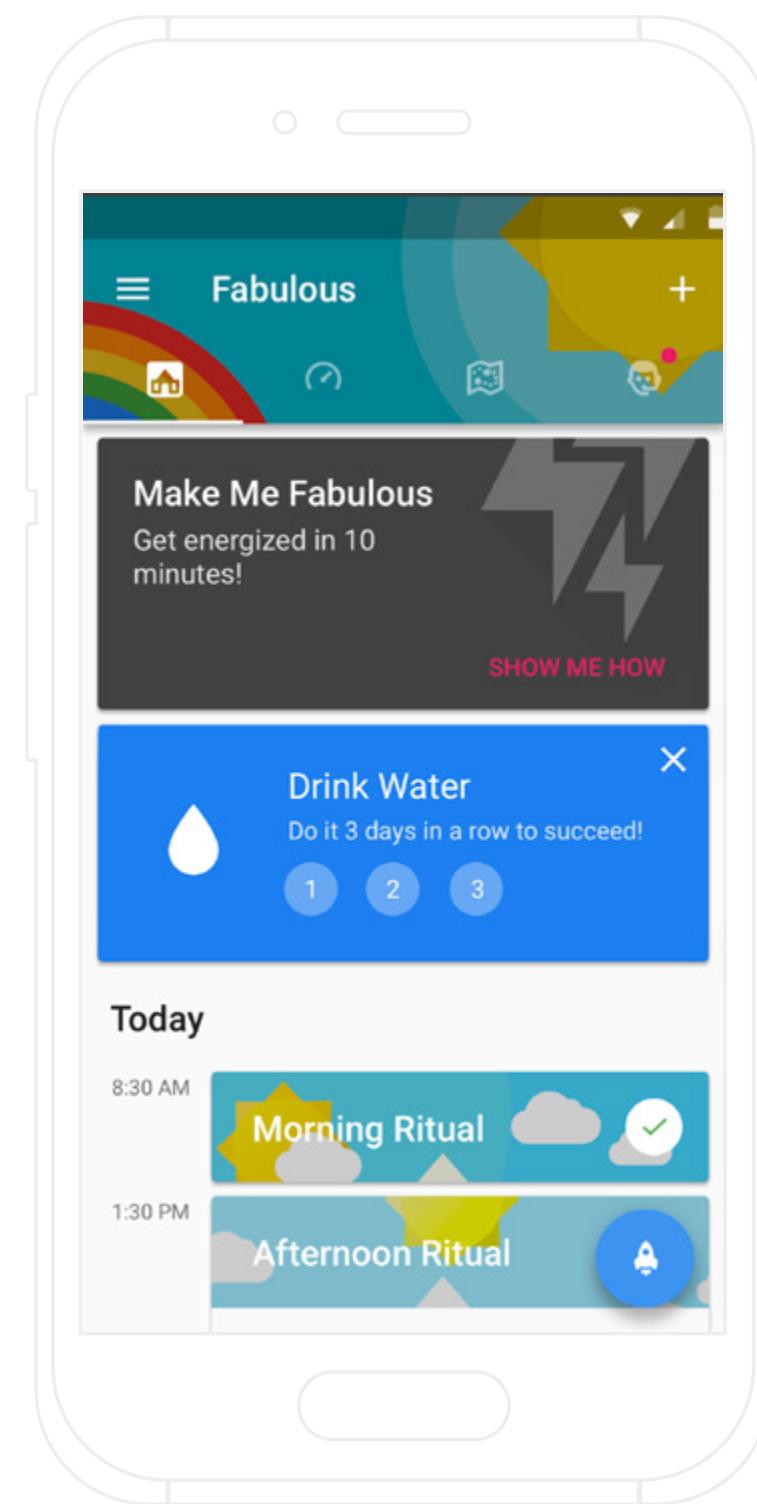
3.4 Competitor analysis

What to search for?

After understanding how habit creation process work and gathering a few additional insights from contextual and user research, I decided to analyse mobile apps made for building and tracking habits.

This should give me a better understanding what people expect to see in the similar app, what are the common design patterns and which added value can I offer to a potential customer.

Although there is a huge number of habit tracking apps focused on kids audience, I haven't included them in this analysis as they have slightly different goals.



Fabulous

<https://www.thefabulous.co>

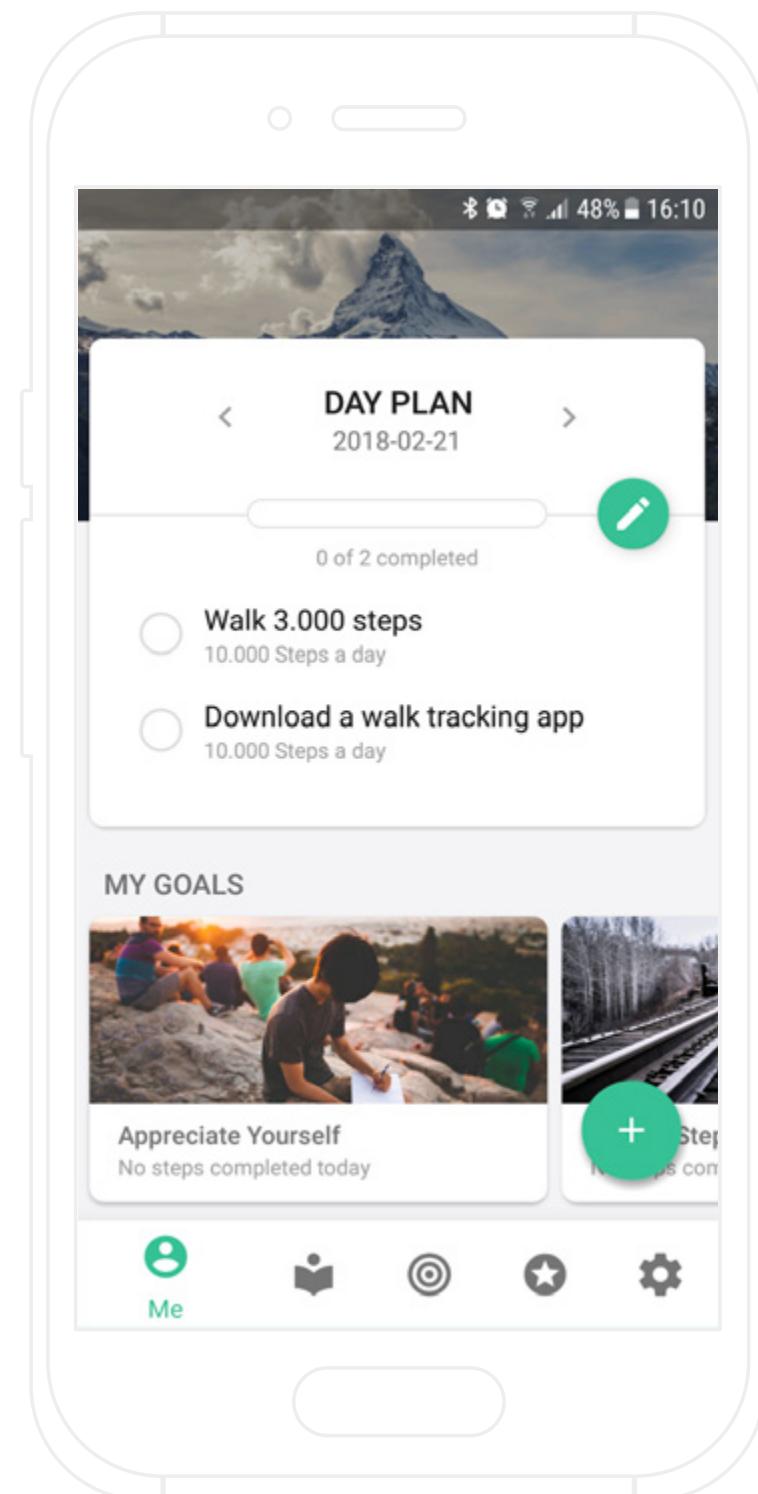
Fabulous is a science-based mobile app made in storytelling style that helps building healthy rituals to achieve goals.

Key features

- Beautiful design and brand identity
- Pre-built step-by-step programs
- Guided meditations and meditation music
- Gentle smart reminders and guidances
- History and success rate review
- Daily and monthly schedule review
- Option to hire personal 1:1 human coach

Disadvantages

- Large limitations in free version
- Complex app structure



Remente

<https://remenete.com>

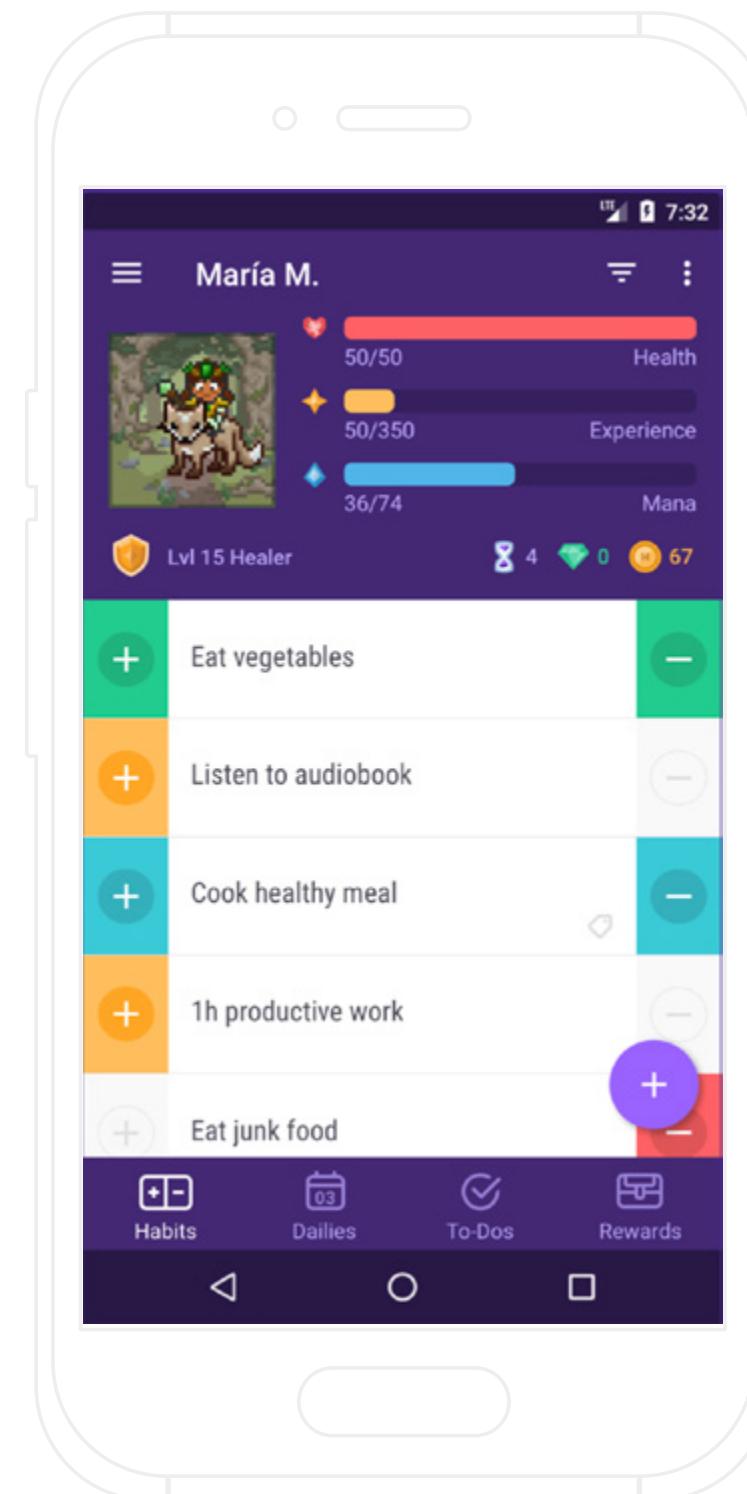
Remente is a goal and action oriented system of personal development tools created to help focus and learn how to be organised and more productive.

Key features

- Mood journal
- Goal setting guides
- Gallery of goal plans templates
- Life assessment tool based on The Wheel of Life principle
- Daily planner for to-do's and long term goal actions and tasks
- Curated collection of articles and exercises about every aspect of life
- Crossplatform apps (iOS, Anrdoid, Web)

Disadvantages

- Poor statistic information
- Limited daily planner functionality



Habitica

<https://habitica.com>

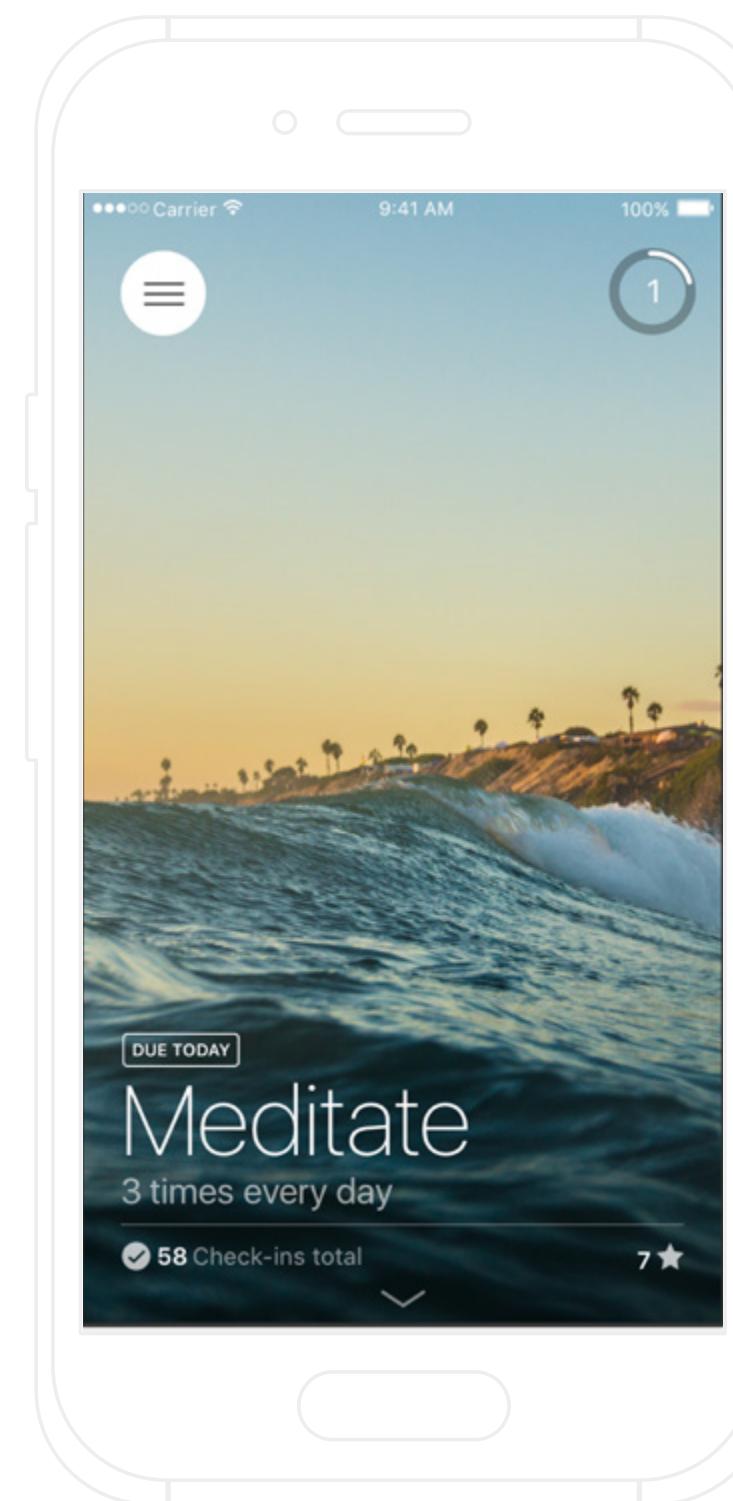
Habitica is a self-improvement web application with game mechanics overlaid to help the player keep track of and remain motivated to achieve their goals in a way of RPG game.

Key features

- Gamification-based mechanics
- Pre-built programs based on interests
- Uses socialising as a motivation and rewarding tools
- Integrates with many services
- Is an Open Source project with free API
- Crossplatform apps (iOS, Anrdoid, Web)

Disadvantages

- Poor statistic information
- Designed for very targeted audience
- The system lacks triggers in Trigger-Routine-Reward habit creating cycle



Today

<https://neybox.com/today>

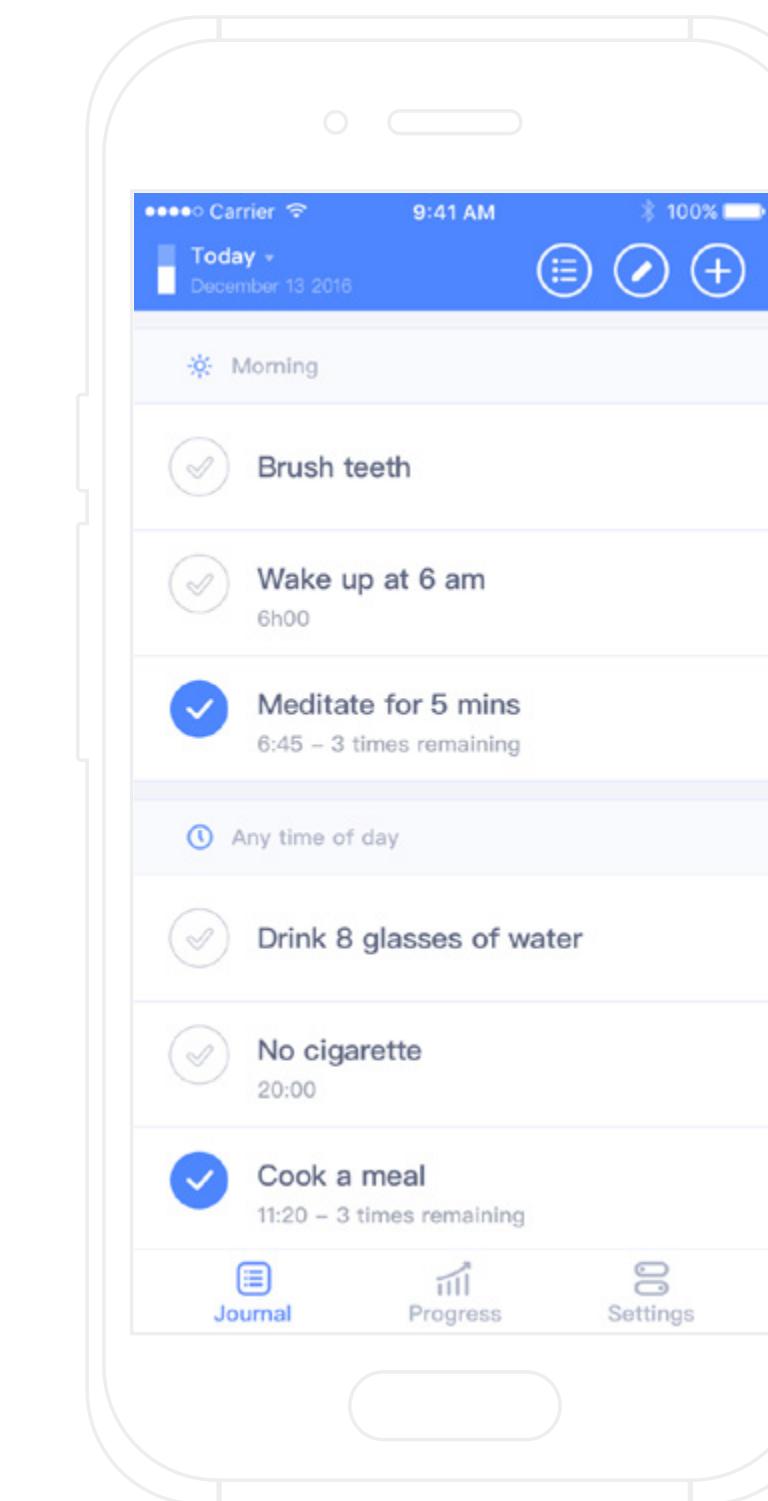
Today is a habit development and tracking app focused on fitness and health routines.

Key features

- Streak calendar and reach stats
- Apple Health and custom charts
- Milestones, counters and todo lists
- Private journal with photos and notes
- Guided meditations
- Customizable reminders
- Apple Health integration

Disadvantages

- iPhone only
- No pre-built habits



Habitify

<https://habitify.me>

Habitify is a powerful habit tracker which motivates to lead a more productive life.

Key features

- Simple habit list, only show what's due in a specific time
- Rich habit stats
- Today widget
- Flexible Scheduling and reminders
- Uses badges as a reward system

Disadvantages

- Apple devices only
- No pre-built habits

What does it mean to me?

The conducted competitor analysis gave me a much better understanding what is out there and what people used to see in their habit tracking app.

However, by reviewing all these apps, I discovered one major problem all of them have in common. They use notification as a cue to trigger the routine, but according

to Charles Duhigg's book, the best way to trigger a routine is to have a unique cue, which is associated with that particular routine. Unfortunately, nowadays phone notifications

are universal trigger used by all apps on your phone. This fact may explain why one of the interviewees has a problem sticking to habit using one of the viewed apps.

3.5 Finalising the idea

So what am I going to design?

After the research phase has been finished, I decided to write down how the idea transformed from the original to the final one. In addition to gained insights, I was continuously asking my friends to provide a feedback and to share their thoughts about the concept in order to see what I have missed.

Below you can see the change history and the questions which have been asked by potential users and myself during the idea discussion.

Initial idea

A smart alarm device which you cannot turn off.

→ A smart alarm device designed to help building your morning routine by ringing one minute before the time runs up and you cannot turn it off.

→ A smart device designed to help building your typical routine by notifying you when it's time to go to the next stage of your routine.

Final idea

→ A smart physical companion designed to help track, build and improve your habits by visual and audio signals so you can do more in less time (and never be late again too).

Questions

- Why is this a problem to get to bed earlier?
- What if I have a partner which has a different wake-up time?
- What does stop you from getting back into bed after turning off the alarm?
- Why do you focus only on building morning routine?
- What if something changed during performing the routine?
- What is the actual problem I'm solving?
- Do people really need a morning routine?
- What if I had a bad sleep and I want to skip some steps of the routine?

- What if I finish the task earlier? How should it know what is the minimum and maximum time for the task?
- It would be a great tool not to stack on Facebook while drinking coffee so I don't rush in the morning.



4. Concept development (the new one)

4.0 Concept applying thoughts

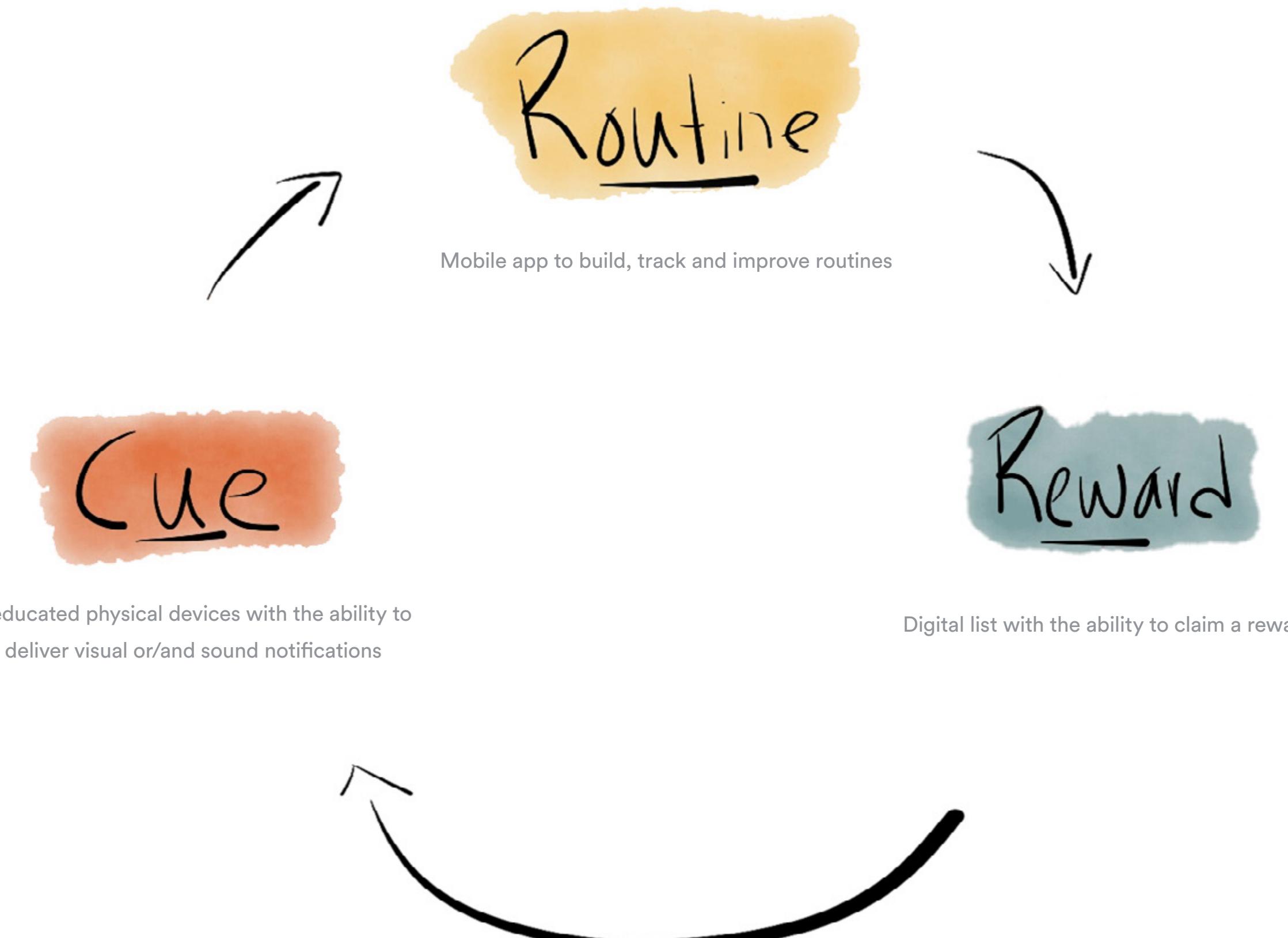
What is the USP?

After the idea has been finalised, it was time to move onto executing it and implementing the idea in life.

From the research phase, it has become clear that the product should have a unique selling proposition which other competitors don't have – dedicated cue, which would trigger a routine or an action.

Additionally, the product should have other advantages in order to pop out along similar products and be more attractive to a user:

- It should be affordable
- It should be reliable
- It should be smartness and proactive
- It should be personable



The challenge

After defining all primary product characteristics, I started thinking how can it be implemented in real life.

However, it would make sense not only to create a dedicated cue but also a mechanism of forcing a user to start doing the routine. This method should be working almost always no matter what the conditions are – is a user in a bed, just busy or simply want to avoid the routine.

How can it be made?

The best solution which I could think of was the usage of NFC technology (small RFID stickers [like this](#) and RFID reading device). If the user should walk to a specific place to confirm that he started performing the routine – there is much lower chance that he will not actually do the action.

After a few hours of brainstorming, I decided to concentrate on three particular concepts of the cue and start thinking how it can work towards triggering a routine.

For each of them I highlighted the biggest pros and cons which should help me to decide the winner and choose a concept to work with.



Phone case

Although I think that smartphone cannot be a good trigger (because user can turn it off to avoid doing the routine), the case for the smartphone can be one.

Currently, there are a few smartphone cases with additional built-in battery offering all various function such as displaying incoming calls notification, reading NFC cards or even adding a second e-Ink screen.

However, the cons of this solution are that the case is attached to the phone, which may be a distraction element doing some kinds of routine focused on productivity.



Smart watch

The second concept is using a smartwatch as a trigger. Most of the modern smart watches already have a built-in NFC reader, which makes it a convenient way of verifying triggering the routine.

In comparison to a smartphone, smart watches don't have so much functionality and cannot serve as a distraction. Also, people already using this device for NFC-based payment (such as Apple Pay or Google Pay), which makes it more usual and familiar to people.

However, similarly to phones, the battery in smartwatches also can suddenly die, which want makes this concept as reliable as I would like to have.



Anistress ball

The last idea is a simple antistress-like object, which has only one function – confirm the start of the routine.

Due to its simplicity, it doesn't require a large battery and can last in stand-alone mode for days. Also, it can be made from a customisable material which would enable users to express their self.

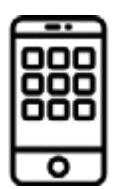
However, because it has only one function, carrying this device with you all the time is a habit to some extent. In order to make the experience more convenient, it should have some kind of sticky surface to be attached to a bag. Alternatively, it should notify the user if the paired smartphone is too far away from the device.

The decision

Eventually, I decided to stick to antistress ball concept because I believe that habit trigger should be as reliable as possible and cannot afford having a died battery at some unexpected point in time.

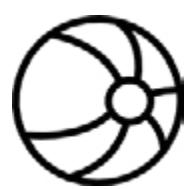
Obviously, the device should be accomplished with an app to create and track habits. Also, in order to maximise device battery life, all calculations should be done on the external device, in this case – smartphone.

After this thoughts, I decided to define main functions and goals which each of this two objects should have.



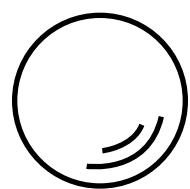
Mobile app

- Track general performance
- Display most important stats
- Create and track routines
- Create and offer rewards
- Suggest improvements and bits of advice
- Set up and manage the trigger device



Trigger device

- Verify routine or/and action start
- Track routine or/and action duration
- Notify about routine start
- Notify about next action in routine
- Notify about remaining time



RFID Sticker

- Store information about assigned action

4.1 Use cases

How can it be used?

When main functions of each part of the system are defined, the logical step is to understand where it can and where it cannot be used.

So I decided to write a few use cases, which would serve as a quick test in the decision-making process on design development stage. As all habits start with a cue, it makes sense to divide them into next categories:

- Time-based
- Location-based
- Action-based

Time-based habits

- Daily routine
- Hydration
- Taking medicine
- Taking classes
- Doing fitness
- Self-educating
- Taking a break
- Activity change reminders
- Pomodoro technique

Location-based habits

- Fitness
- Grocery store visits
- Self-education
- Work routine

Action-based habits

- Daily routine
- Hydration
- Taking medicine
- Doing fitness
- Work routine
- Self-educating
- Meeting routines
- Activity change reminders

What does it mean to me?

These use cases are the only one that fit the system abilities, but they clearly show that the cue works better with a time-based and action-based habits.

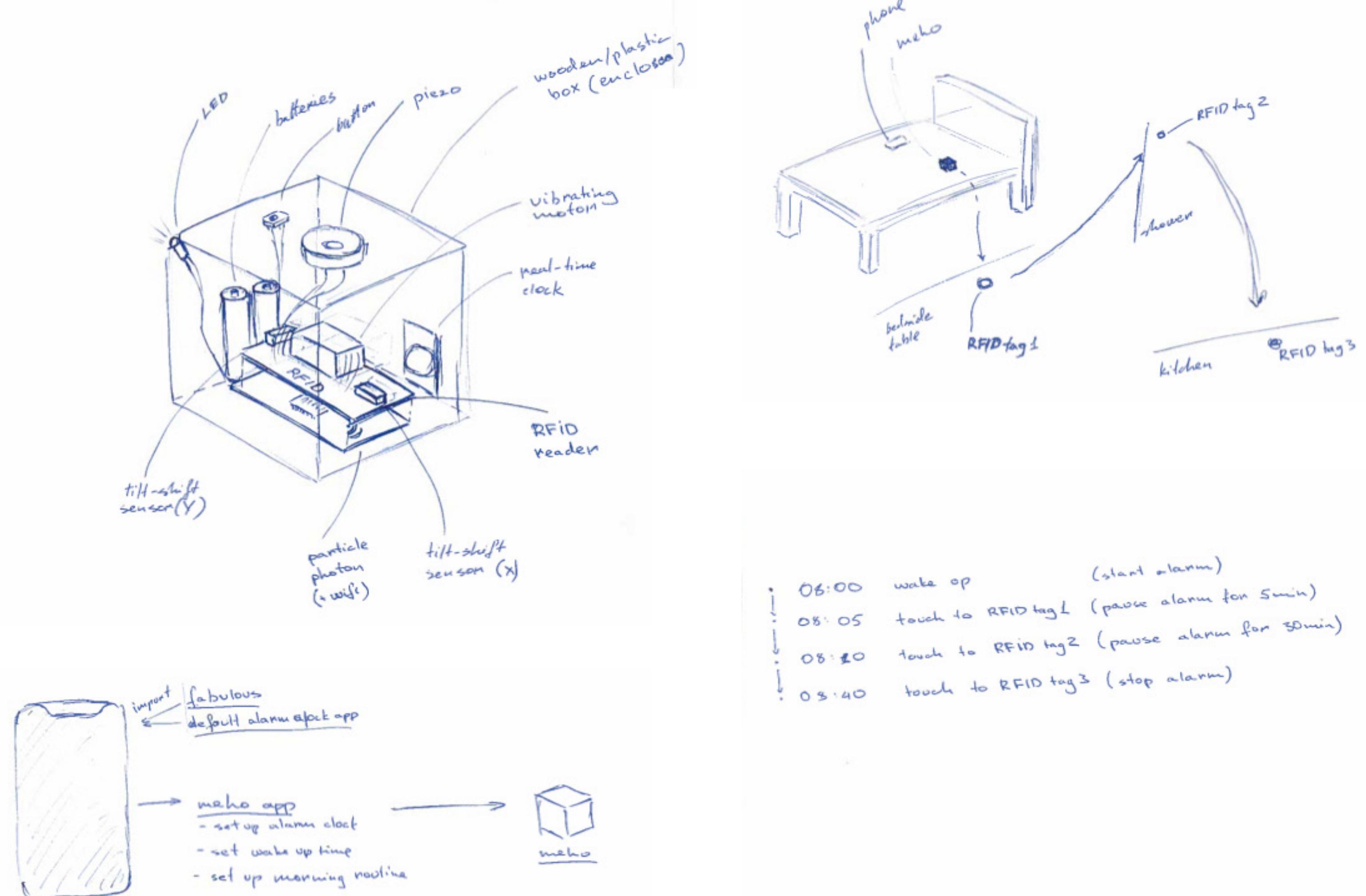
By taking this into account, the app should be paid more attention to this kind of habits in order to provide the best experience possible.

4.2 Initial prototype thoughts

What does the device consist of?

After defining purpose and functionality of both the device and the app, I started thinking about ways of implementation. Eventually, after consultations with Tommy, I defined all components required to make an excellent prototype:

- Particle Photon (with built-in WiFi)
- RFID reader
- Real-time clock module
- Tilt-shift sensor
- Vibration motor for tactical notifications
- Piezo buzzer for sound notifications
- RGB LED for visual notification
- Regular button for device reboot
- Battery for device autonomy



4.3 Initial app features thoughts

What does the app consist of?

As I wrote earlier, the device cannot exist by itself and all settings, calculations and heavy functionality should be handled on a more efficient device such as a smartphone.

After defining main goals of the app on [page 42](#), I started thinking about additional features (besides the main ones, which are already defined and will be described later on in design development section) the app could have:

Karma

Gamification usually has a positive impact on engagement with the app, so I decided to reward users for using the app and repeating habits regularly with karma points. Also, these points are the easiest way of taking a reward.

Smart suggestions

By applying Machine Learning algorithms, the system can analyse user's habit performance and proactively suggest what can be improved and what can be adjusted.

Clans

Habitica, the social habit tracking app I reviewed in [section 3.4](#), is built around social gamification. Also, language learning apps such as Duolingo and Lingualeo also allow users to create clans so they can compete with each other. I believe it may have a positive impact on engagement rate.

Integrations

As the competitor analysis showed, not all apps have integrations which means that it may be a large advantage. Also, by implementing integrations into the system, the user will get the ability to create action-based routines grounded on data imported from default (such as Clock and Calendar) and 3rd-party apps (such as Github or Google Docs).

Flexible routine settings

In order to cover as much trigger categories as possible, the routine will have very flexible settings. The system will offer user to select a trigger that suits his routine start the most:

- Time (start at 8:00 am)
- Location (start when I arrive at work)
- Action (start after I had a meeting)

Features

- clans
 - leaders board
 - karma points (can be used as a rating)
 - integrations with G-Cal, Todoist, Wunderlist, Trello, IFTTT
- work offline access
- success rate
 - daily / monthly view (for stats only)
 - today / upcoming / someday [or] habits / dailies / todos
- bubble
- optional habits
- today schedule
- touch / hold modes (for RFID tags)
- flexible routine start
 - location tracking
 - autostarting routine groups
 - awake detection
 - create routines based on interests on onboarding
- streak counter
- badges as a reward
 - if (time) / when (action) habit logic + after (time-repeating) key

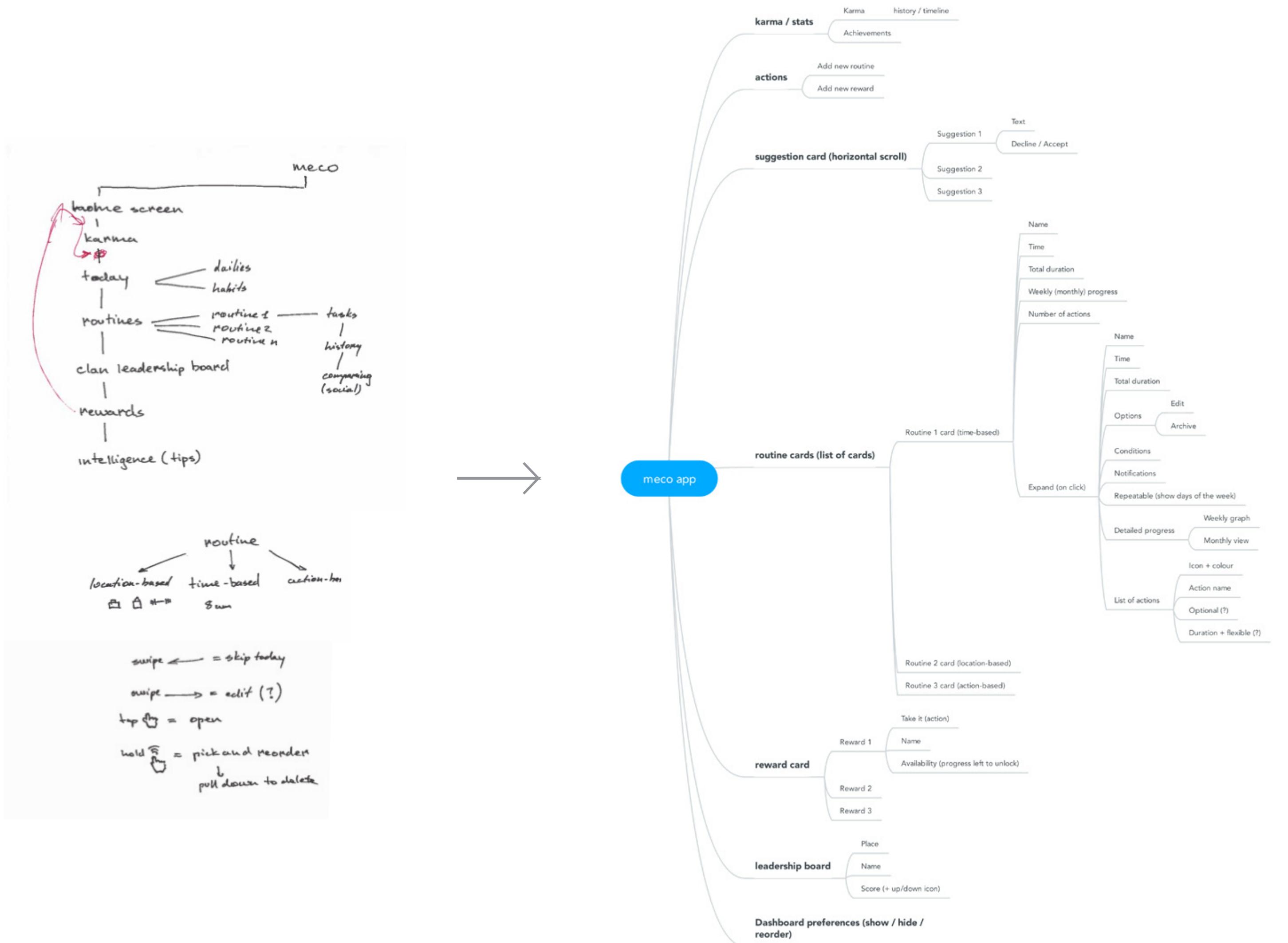
4.4 Initial app structure thoughts

What does the app consist of?

After the key app features have been defined, I decided to organise them into a logical order.

Considering that the app will be used just to review the progress and to claim a reward, I decided to organise all information it in dashboard-like structure using tiles.

This would give the user the ability of quick overview of all aspect of the app and, if needed, go deeper by expanding a particular section or a tile.



4.5 Branding

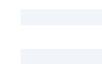
No time to explain, design a logo

As I said in [section 2.5](#), due to time limits I have to minimise all works which aren't extremely important. Branding as I believe is exactly this kind of work which is not essential for this project.

Based on this thoughts, I spent only a few minutes coming up with a new name – meco. Similarly to the previous name, it consists of two words – “mine” and “companion”.

On the logo, on the another hand, I spent a bit more time. This time I decided to make it without a sign, just simple slightly adjusted typography. This is made in order to fit the icon size so that it can be used as a launching icon for the app.

mine + companion



meco

meco MECO meco me^{co} me^{co}

process

result

meco MECO meCO me^{co} me^{co} meco

meco MECO meCo me^{co} ▼▶▶▲

5. App design development



5.0 Sketches

First things first

Taking mobile app goals, initial features thoughts and the structure as a basis, I moved onto designing basic wireframes in order to get a better understanding how the app's layout should look like.

Although I already mentioned that the original idea was to layout all elements on one long dashboard-like page, I decided to explore an option of diving them into three different tabs. However, this layout wasn't the best choice because users would have to switch between today/routines and timeline/statistic tabs.

Eventually, I decided to go with the original idea of one long page with tiles, where each tile can be expanded to a full-screen page with all additional information about selected routine or reward.

Also, I tried to test these wireframes with my flatmates to get early feedback, but unfortunately they were confused due to the fact that not all elements were self-evident.



5.1 Wireframes

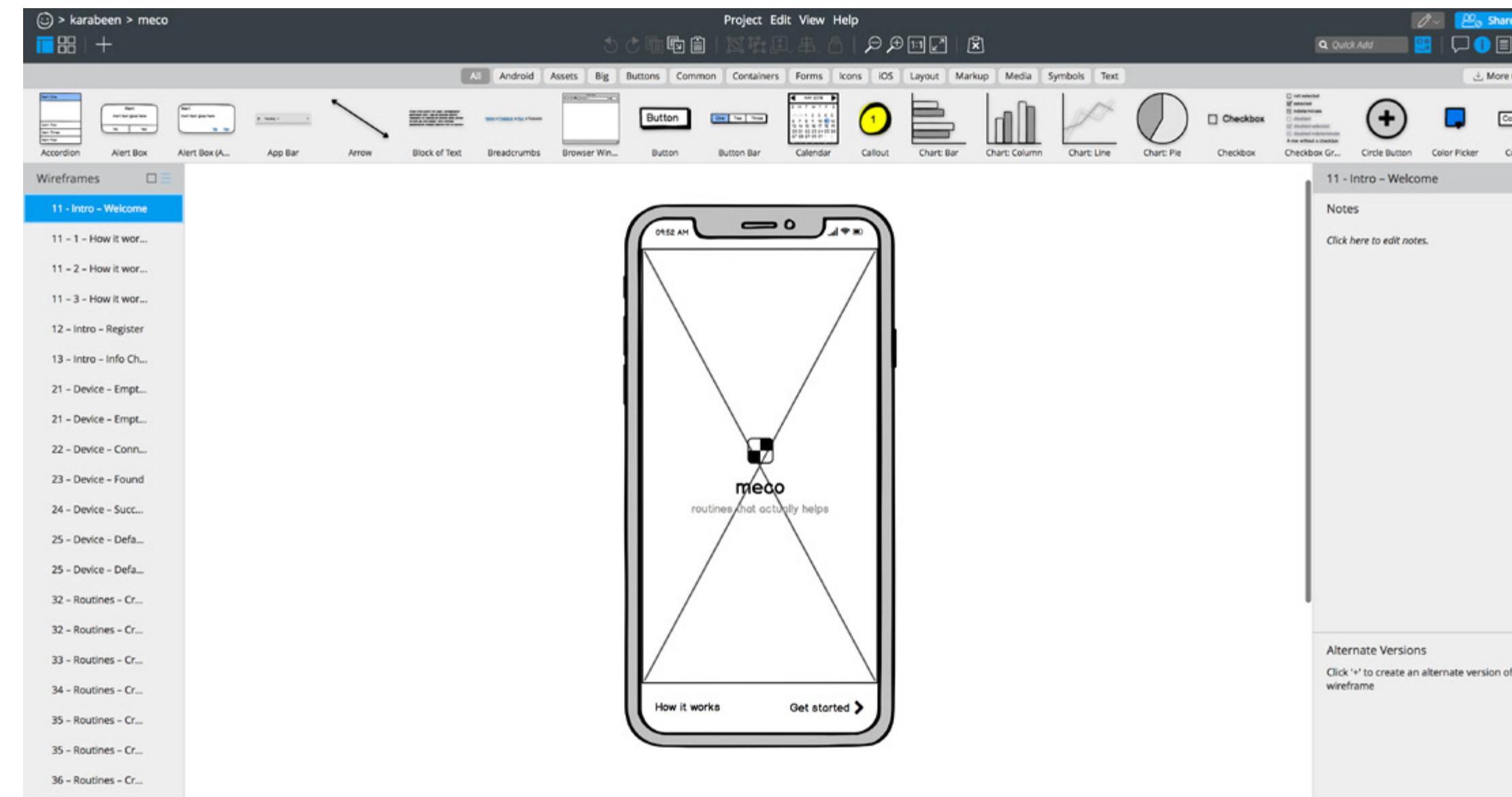
Made to test

To communicate the idea more clearly and to get early feedback from my flatmates, I decided to transfer all sketches into low-fidelity wireframes.

To do so, I used cloud software service called [Balsamiq](#) which offers a basic wireframing tool with the rich library of pre-made elements.

Soon enough, I designed the first interaction of low-fidelity wireframes which were ready for testing.

In these wireframes, I tried to focus on overall userflow rather than on layout and usability and was ready for the second iteration from the beginning.



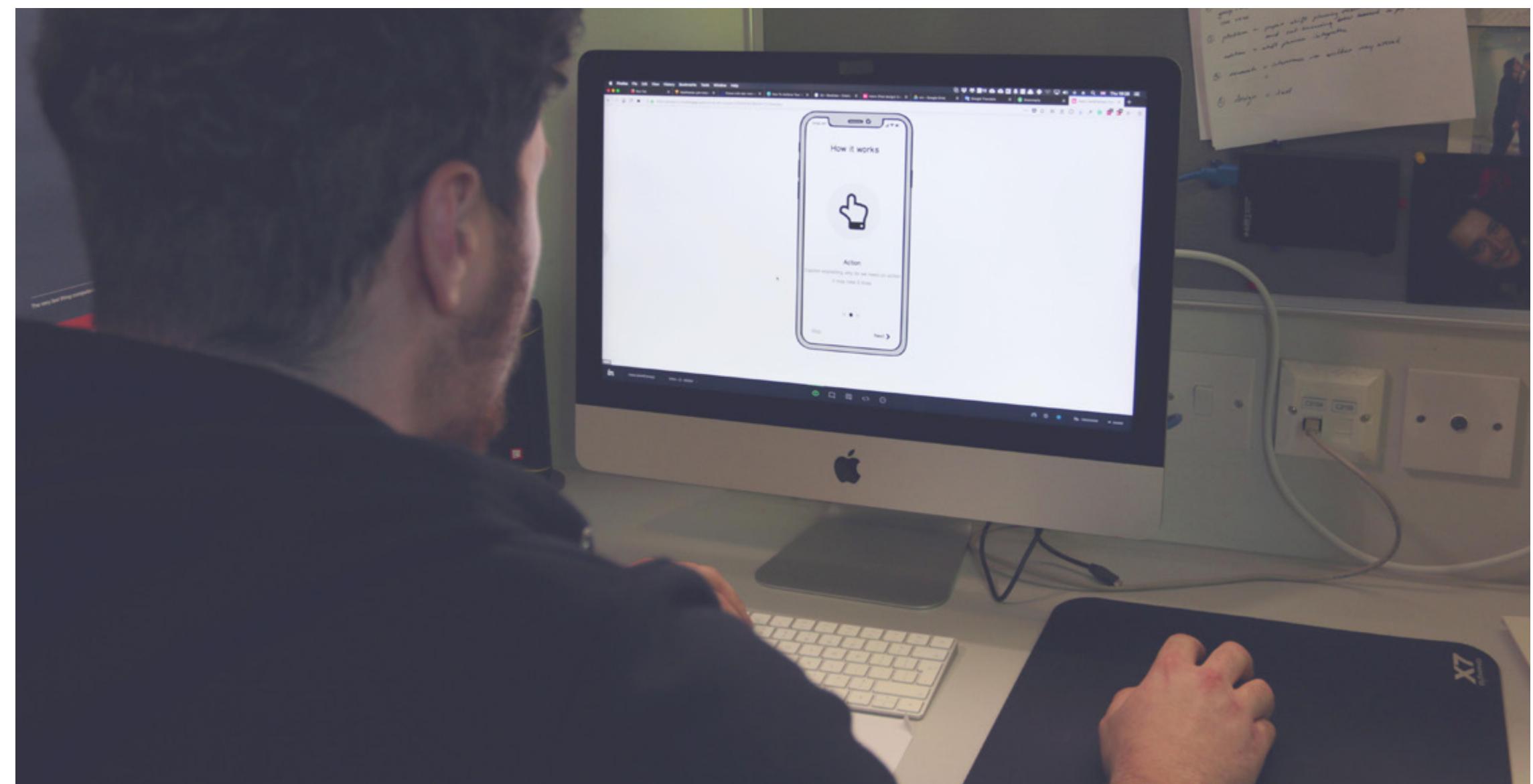
Used to improve

In order to make the user testing as smooth and objective as possible, I exported all Balsamiq screens and uploaded them to Invision, where the interactive prototype has been created.

Next, I asked a few of mine flatmates to come and test the prototype by completing a few

simple tasks and commenting aloud everything they think during the process.

This gave me the clear understanding what people expect to see and helped me to define final app structure.



Onboarding user flow

Based on user stories defined in [section 3.3](#), I decided to start building wireframes from the beginning – from onboarding process.

The series of screens after the welcome one explains how the habit creation process works and how meco device-app pair can help to build long lasting habits.

After the user has learned more about the methodology behind the habit creating, the

app would offer to create an account (using email address or Facebook account). This is essential as after this step the user has to pair his meco device which should be linked to a defined account in order to work.

The pairing process itself is automated and intuitive. The only two actions required to do by the user is to turn on the meco device and hold the power button while the phone is trying to connect and create a pair.

First issues

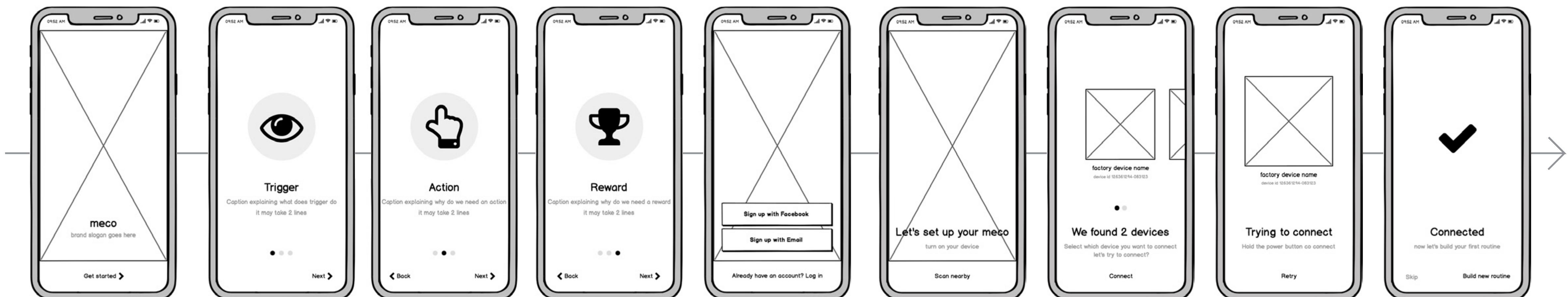
Although I thought that the onboarding process is very intuitive and straightforward, during the user testing it was proved the opposite.

The vast majority of participants said that they didn't expect to see explaining screens after clicks on "Get started" button.

Also, they were confused by seeing two available meco devices during the pairing

process. As they mentioned, discovering more than one meco device nearby during the pairing process will be very rare (the judgement was based on their previous experience of setting up Apple Watch and Fitbit fitness tracker).

Overall, it was very useful feedback, based on which I decided to review the whole onboarding userflow to make it reflect user expectations.



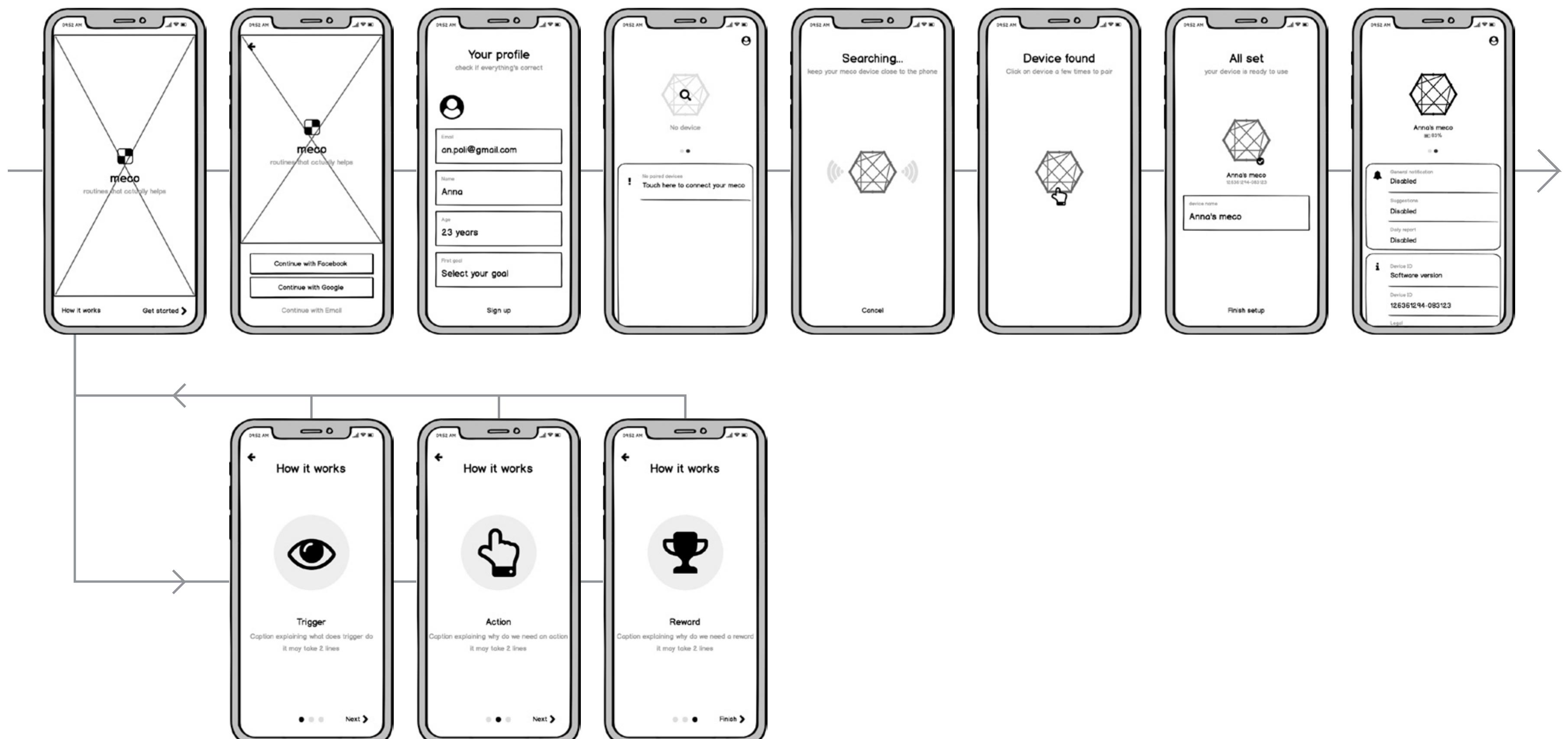
Onboarding userflow v.2

Based on feedback gathered through user testing, I decided to make habit creation process optional. Also, I added back button so the user can return to welcome screen at any point.

Next, I added the ability to review and edit user profile after signing in with a Facebook account just in case when the user wants to use another email address for registration.

The meco device pairing process remained almost the same, but the layout changed dramatically and move the focus from text instructions to visual guidances (because users don't want to read the text carefully).

Also, after finishing the pairing process, user redirects to device settings screen to offer him adjust notification settings straight away.



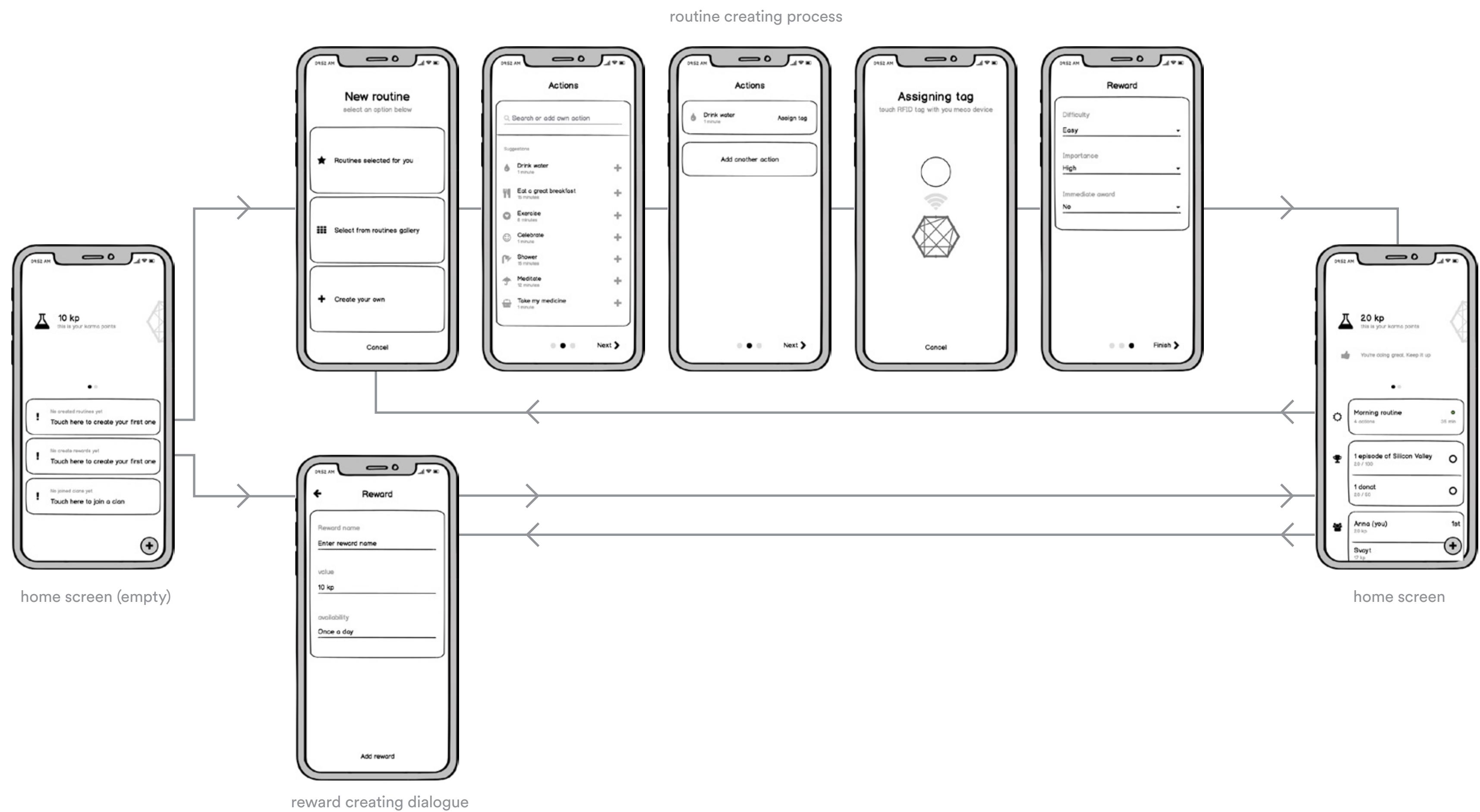
Routine and reward creation

Next step was to design habit and reward creation userflow.

After pairing and setting up the device, users go to home screen where he sees warning messages offering to create routine and reward.

By clicking on “create new routine” user opens routine creation process which consists of the next steps:

- Selecting an option of how to create a routine (the system can choose for you, user selects from prebuilt routines or creates a routine from scratch)
- Selecting actions and adding them to the routine (system automatically suggests the most relevant actions)
- Assigning RFID tag to a particular action
- Selecting how many karma points the user will get after completing the routine



On another hand, reward creation process is much more simple and consist only of one screen. Basically, it's as simple as adding milk to a shopping list.

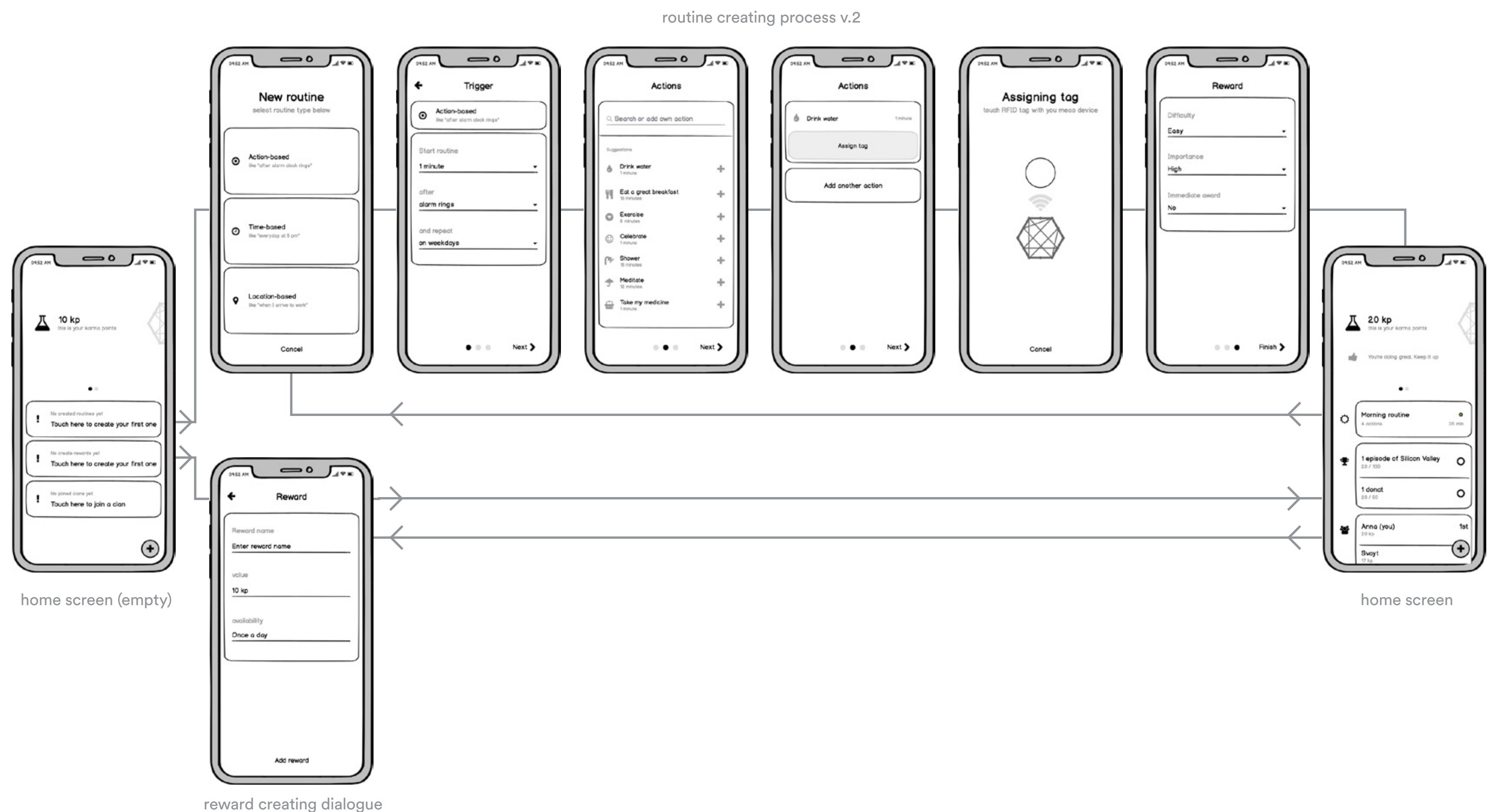
Routine creation v.2

After another session of user testing, I understood that the routine creation process doesn't reflect the initial idea of diving all routines in three trigger type defined categories as well as doesn't cover previously defined user stories.

The new routine creation process now consists of the next steps:

- Choosing the type of trigger
- Setting up the trigger conditions
- Adding actions to routine
- Assigning RFID tag
- Setting a reward for completing the routine

Although I removed the step of selecting the way of building a new routine, it didn't have any negative effect on overall user experience. To compensate automatically selected routines, the new smart suggestion will be introduced.



5.2 Design iterations

Home screen

After getting a positive feedback from user testing, I moved onto the main screen of the app – the home screen. This screen, probably, has seen the most changes during the project.

The main goal I set for this page is to display only the most valuable information to a user and hide everything else.

The next few pages will show design iteration of the main screen of the app and the thoughts behind these changes which were based on personal judgement and quick user testing.

The same approach I applied almost to every screen of the app, but just to illustrate the process only the home screen will be shown in the documentation, otherwise it will take pages. All designs (including additional comments) can be found [here](#).

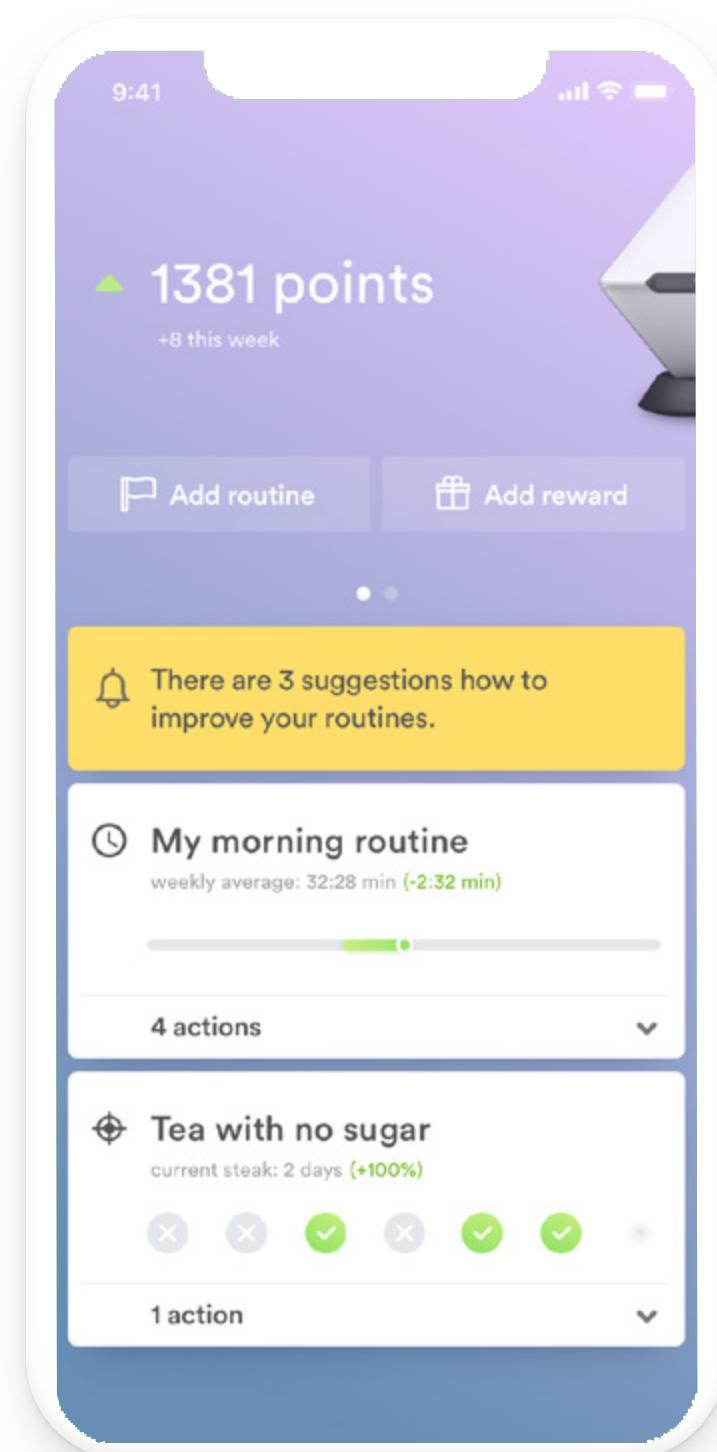
The final design screens and all additional comments can be found [here](#).

Karma

Karma points reflect user's progress in general to keep him motivated.

Smart suggestions

By tapping on this message, user opens a dialogue box offering to make small changes in timing, action duration or others to improve some particular routine.



Home screen v.1
(initial design)

Swipe right

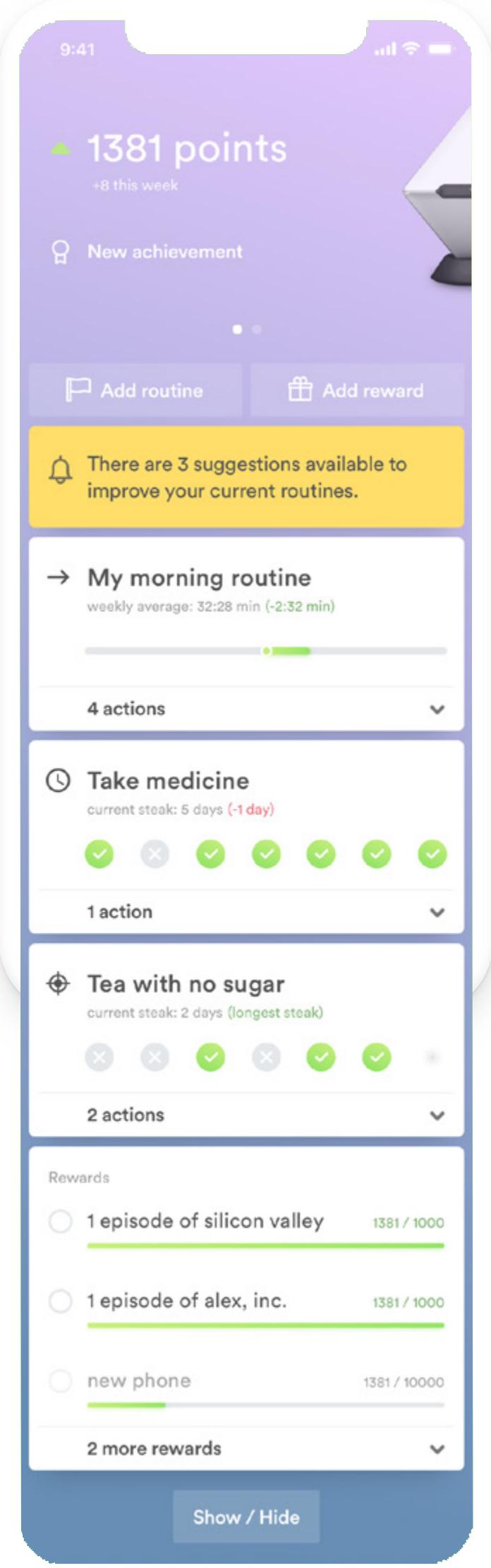
By swiping to the right, user can open device setting page with all information about the device

Quick add

Quick add buttons are made for easy and fast routine or reward creation

Routine cards

Each routine card represents some bits of information such as type of the routine (location- / time- / action-based), name and current achievements as well as number of actions inside the routine and recent progress graph to illustrate user's progress

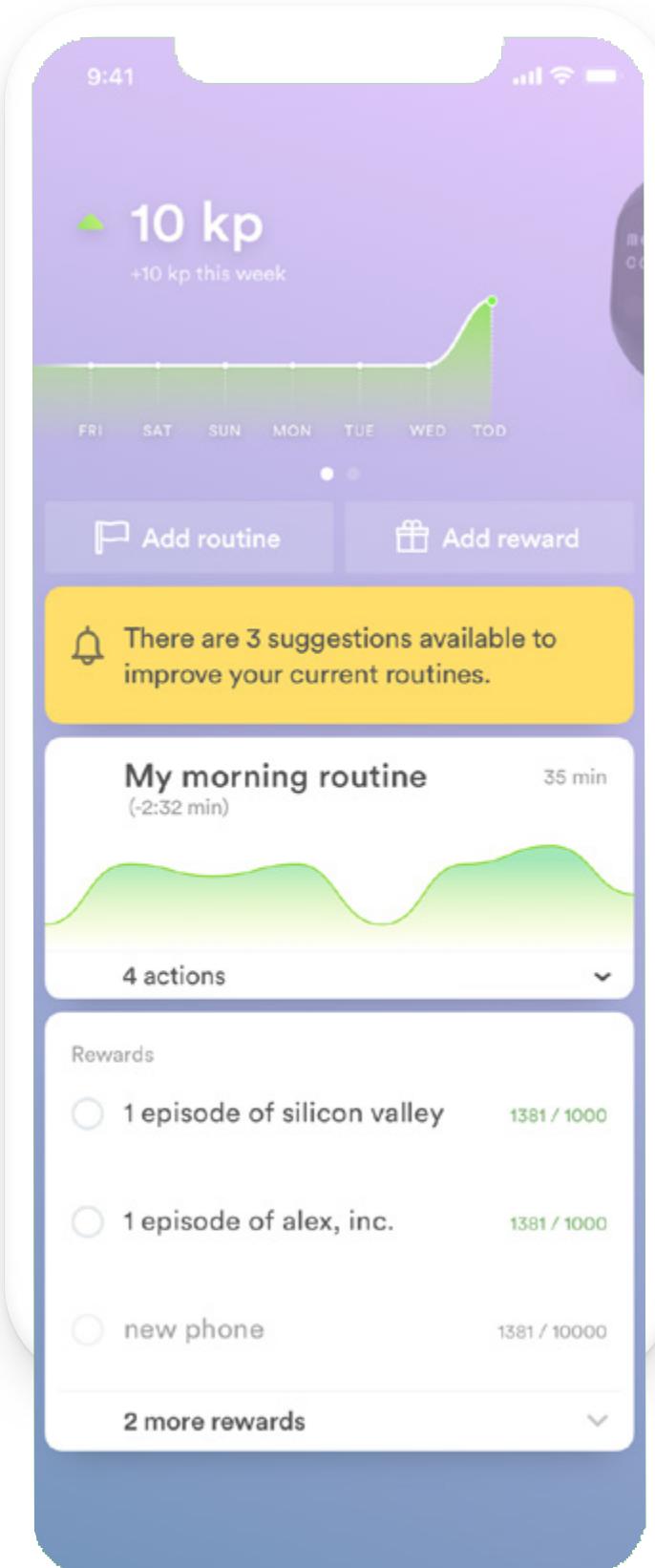


Achievements

App will congratulate a user with new achievements by show small icon below the karma points

Quick add

Quick add buttons were moved closer to the main home content in order to group related elements.



Home screen v.3

Rewards card

Added new rewards cards which shows which rewards are currently available to the user.

Show / Hide button

User can show or hide some cards from the home page to personalise the experience.

New graph

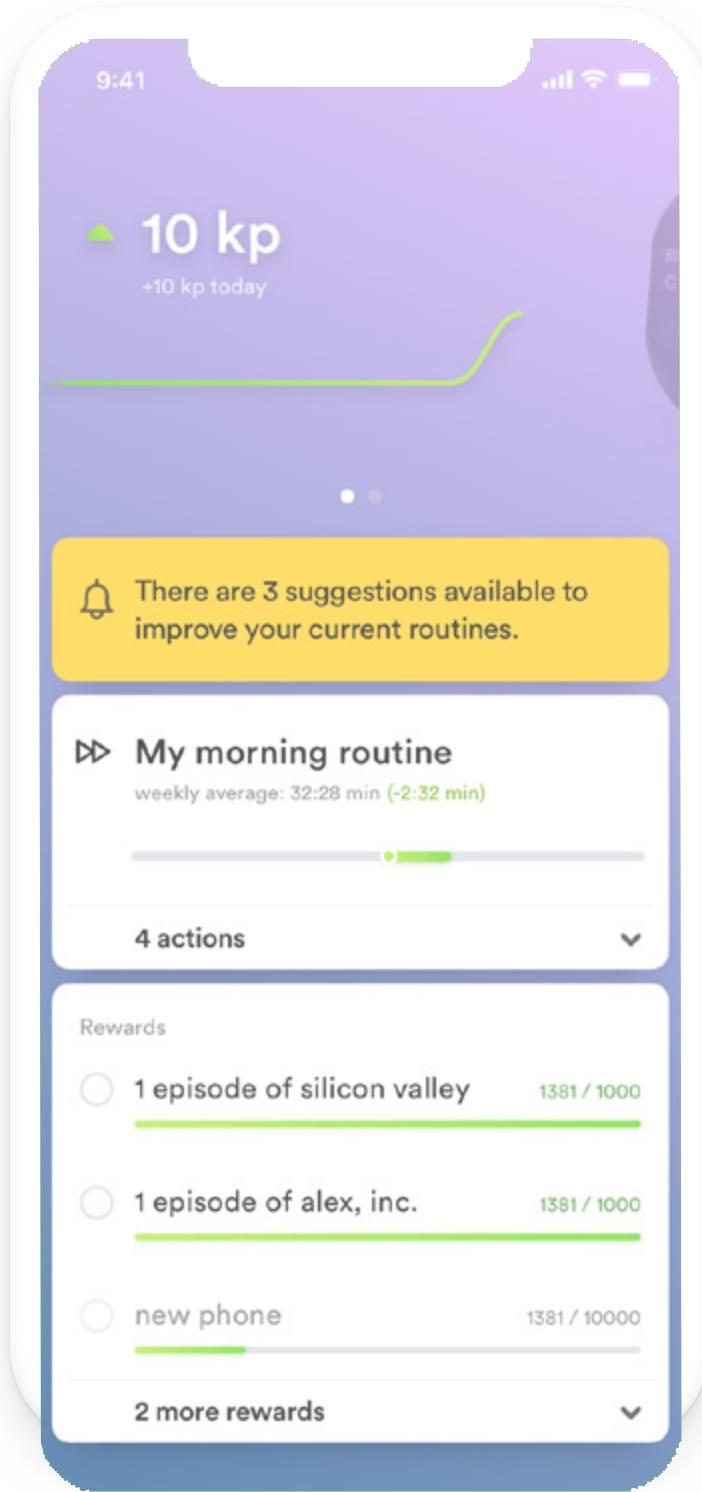
The achievements have been replaced with a graph to represent user's current progress in a more visual way.

Routine cards

Experimenting with an information displaying style and elements layout.

Rewards card

The progress bar has been removed to make the list cleaner.



Improved graph

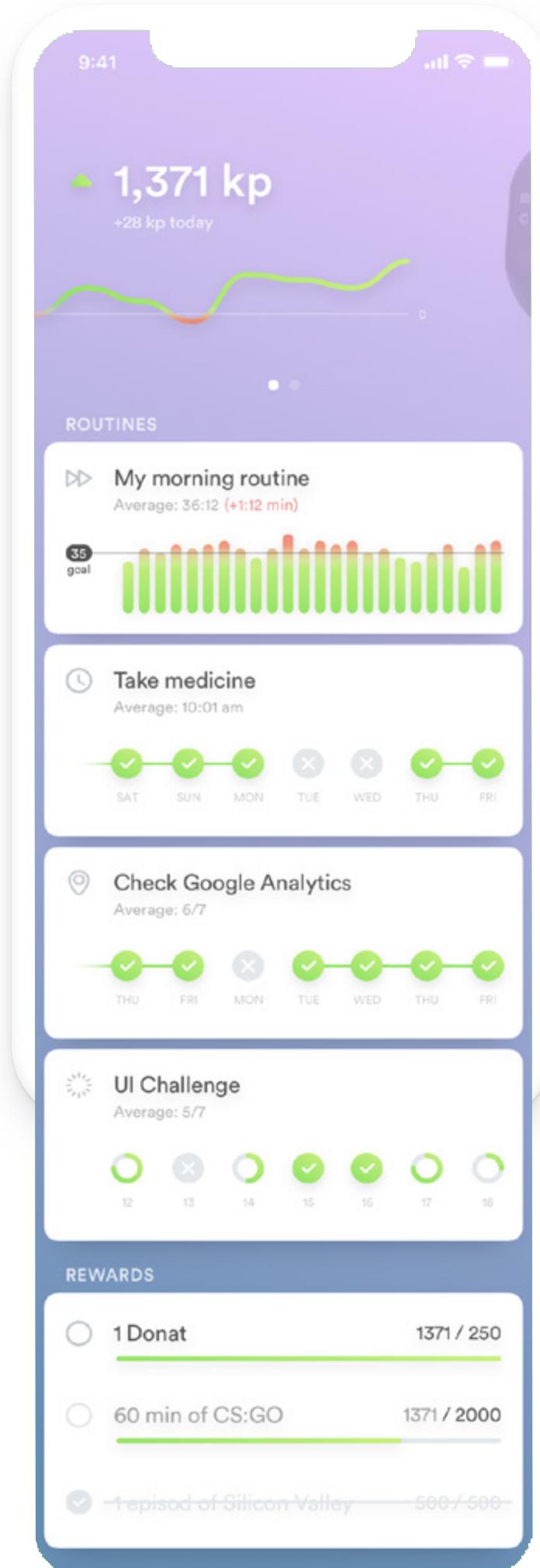
Removed all cluttering information from the graph to make it visually lighter.

Quick add

Removed quick add buttons as the user testing show that they confusing users and distract from the main information. Now user can add new routine or reward only from routine/reward page.

Rewards card

Bringing back the progress bar due to user testing feedback.



(final design)

New graph

Improved the visual representation of the graph and added the zero line for better informability.

Routine cards

Improved routine card layout and graphs presentation.

Rewards card

Improved rewards layout to make the cost of the reward more noticeable.

Interaction

Another challenging thing I was trying to achieve was a seamless and natural interaction with different objects.

Because the home screen is basically a long page with various information elements, I decided to divide it into three different sections, which will be separated during the page scroll:

Karma section (normal state)

This is a standard view where the main focus is attracted to karma points and overall progress graph.

Routines section (on-scroll section 1)

The next section is the routines one. When the user starts scrolling the page, all routines tiles expand to show how many actions does each of them have. Also, to create a better navigation experience, the dates slider appears on the top of the page.

Rewards section (on-scroll section 2)

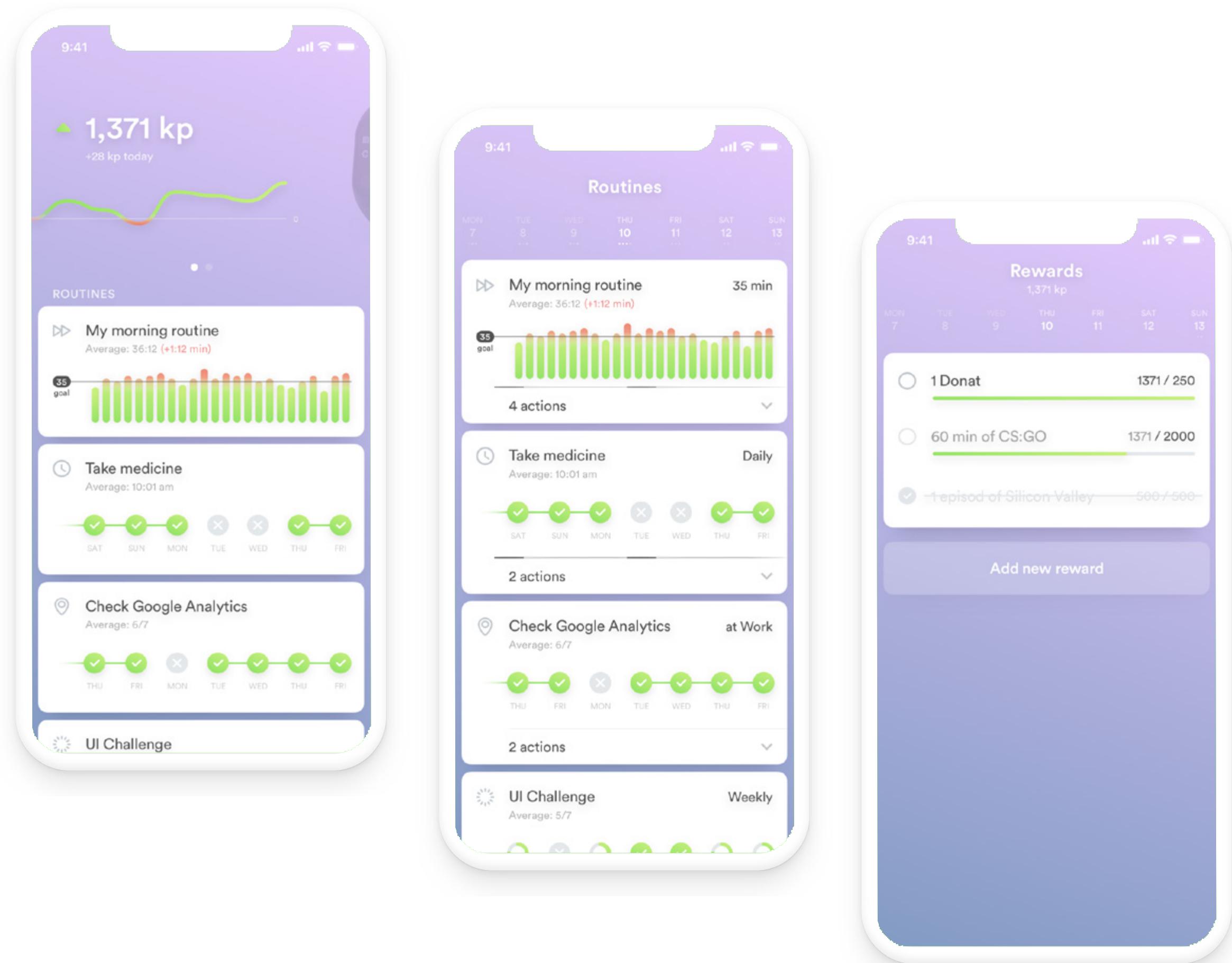
Similarly to the previous section, reward section has all the same elements and behave the same as routines. To just to this section, the user has to scroll all routines all the way through the end, after which rewards will appear from the bottom of the screen.

Where is the clan section?

During the user testing, many users didn't understand what is it all about and suggested to move it somewhere else from home screen as it makes more sense to them to have an action (routines) and reward on one screen and everything else on the another as it is with the action/reward and device settings.

Based on this, I decided to remove the section completely, as it isn't the key feature of the system and without it, the app doesn't lose its identity and key functionality.

Maybe later on, I'd add this feature back (based on user activity), but for now, it makes more sense to keep the app as simple as possible.

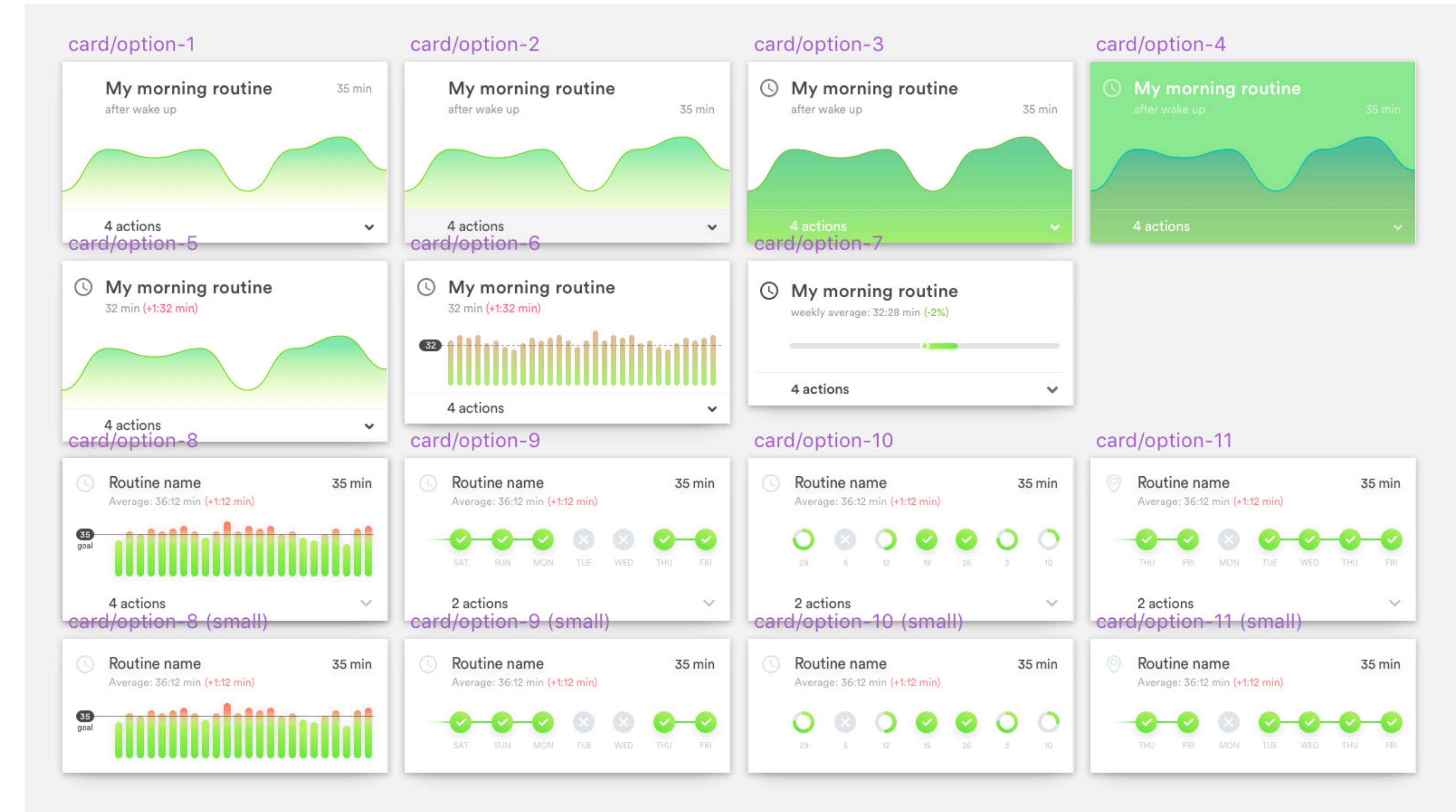


Watch how this interaction works [here](#).

Element designs

Also, I tried to make each element to pop out, which ended up with a number of different design. Only the routine card had 11 different versions before finalisation.

All other elements also experienced a lot of dramatic changes based on user testing feedback. The vast majority of these changes were related to accessibility and readability issues, which I believe is the highest priority in this particular situation.



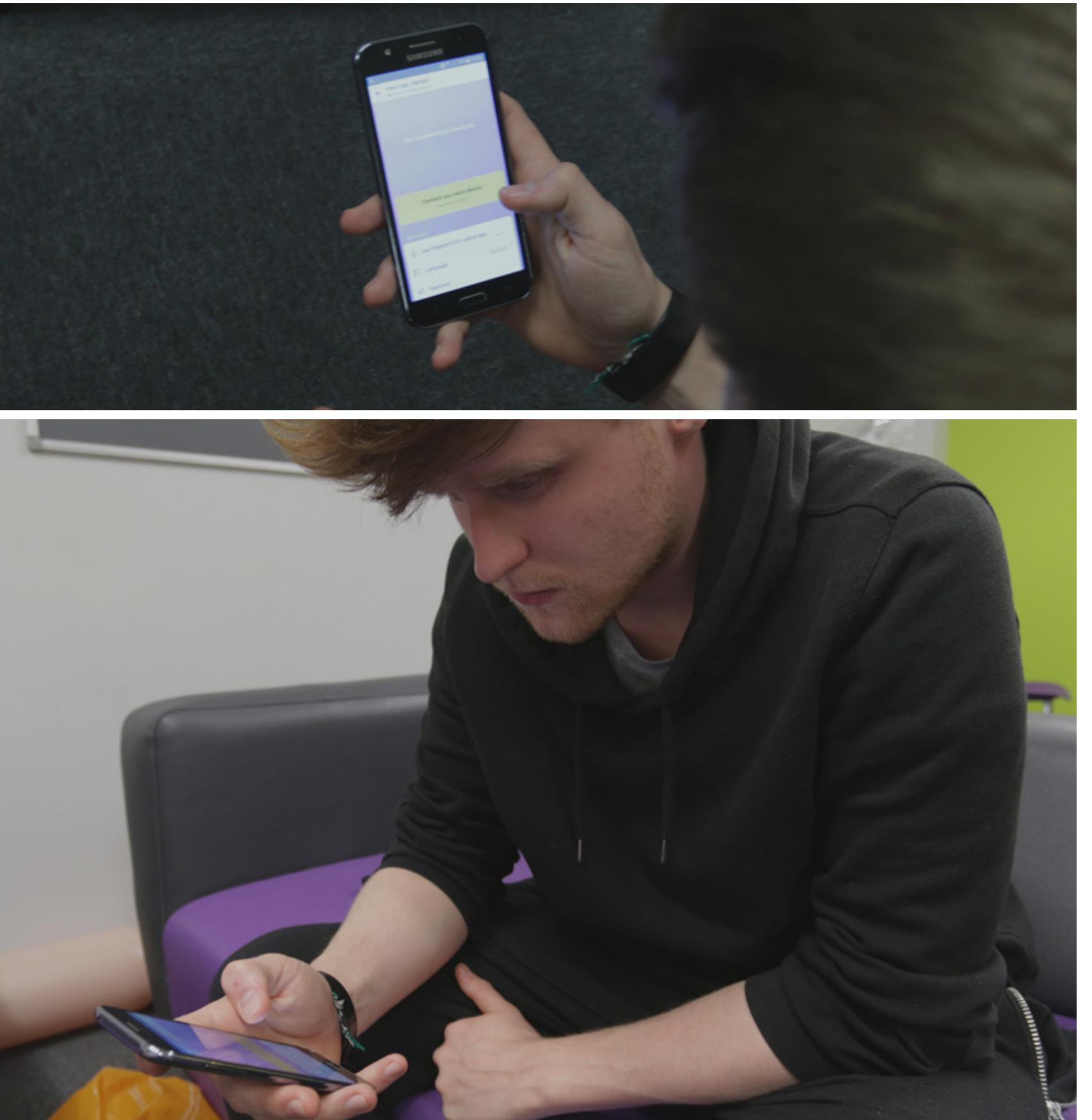
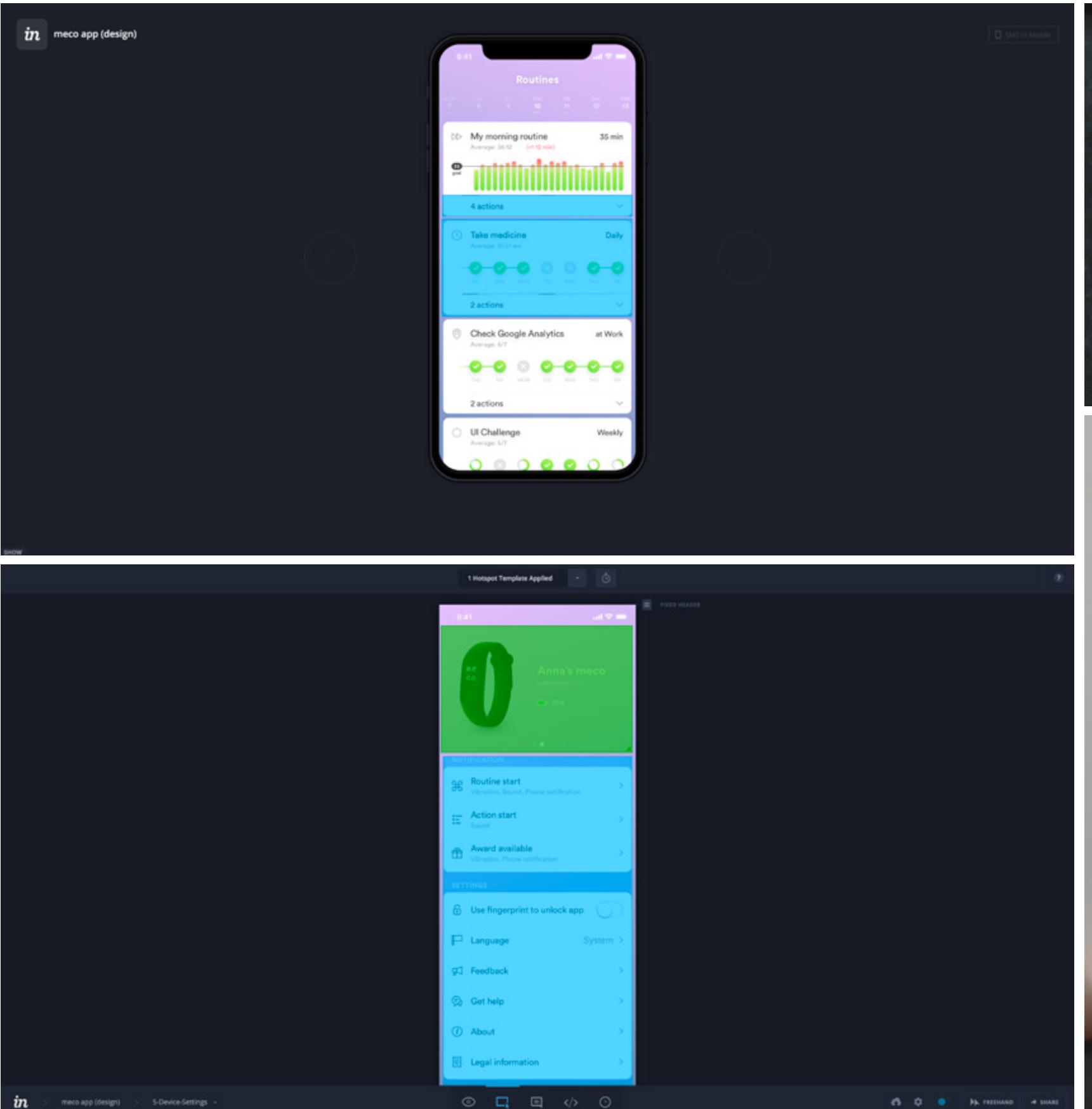
5.3 Prototype

In InVision we trust

The easiest way of creating an interactive prototype, in this case, was to use InVision.

By creating this prototype, I was able to test all my solutions with my flatmates and friends to see if they are self-evident and understandable. The users found this way of communicating the idea and design extremely easy and efficient as they had to add a webpage to their home screen on their own phones only once and didn't have to install any additional software.

The final version of the prototype can be found [by clicking on this link](#).



5.4 Animation

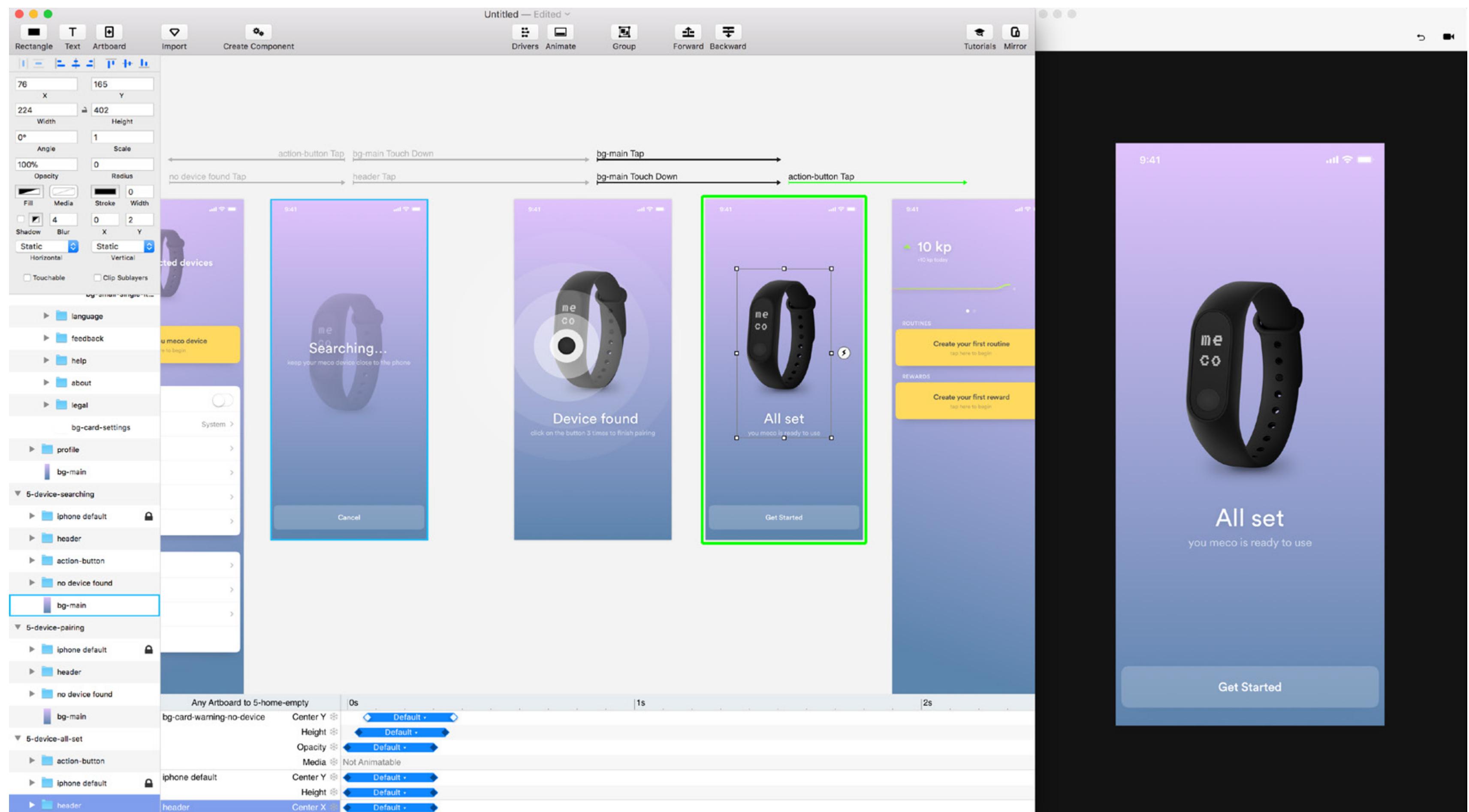
What is this for?

Due to the very limited InVision page transition animations, I decided to create another prototype using Principle.

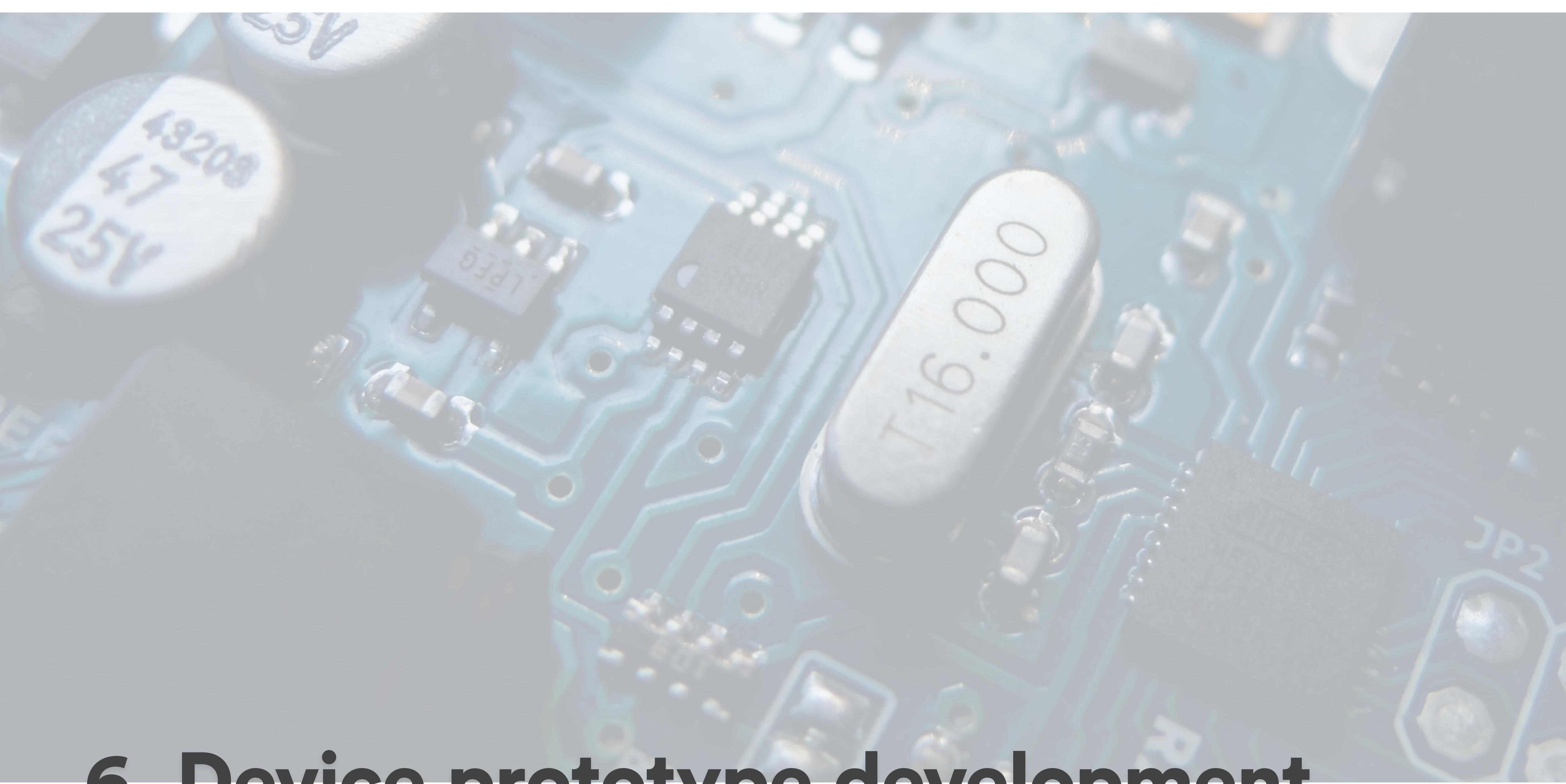
However, the purpose of this prototype was not to test things out, but to show the interaction and animations of the app, as quite a lot of screens using intuitive and helpful animation which helps to understand what is happening on the screen.

Additionally, this enabled me to add this animation and step-by-step demonstrations into my final video, which improves the communication of it.

Recorder pieces of on-screen animation and screen transitions can be found [at this link](#).



6. Device prototype development

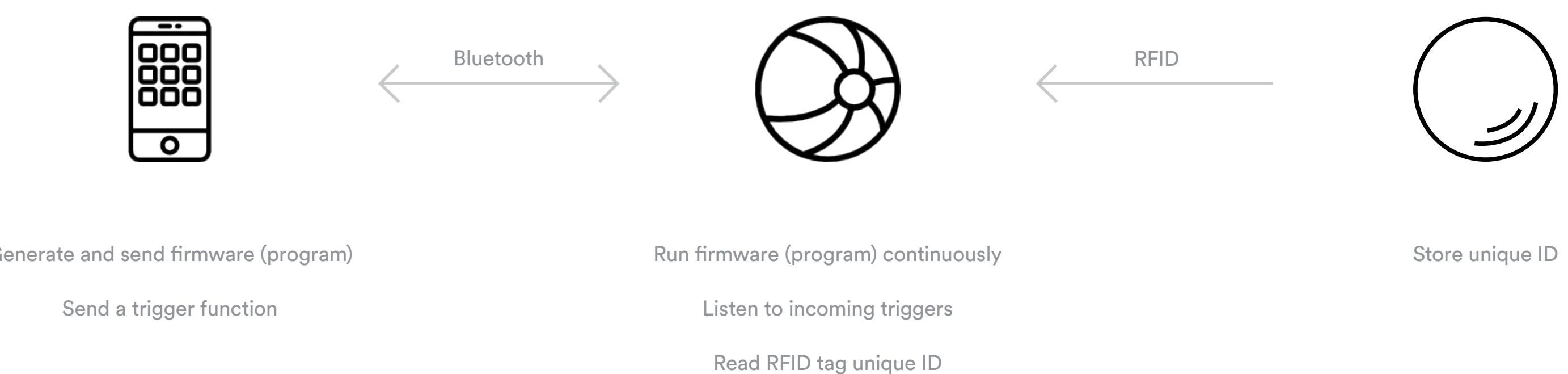


6.0 Workflow

How does it work?

The whole interaction between objects in the system is very straightforward. After when everything is set up, the system works in a next way:

- The app generates and sends special firmware file to the device each time new routine added. It contains all triggers function, action durations and assigned RFID sticker IDs.
- In case if it's not a time-based routine, the app tracks location and actions in order to send a dedicated trigger function so the device can start running a routine
- In this time, the device runs received firmware continuously and listen to incoming triggers (current time or location/ action trigger send by app over bluetooth)
- After the routine started, the device simply counts down from the user-defined number (f.e 180 seconds) to $-\infty$ (minus infinity). If the countdown was interrupted by reading a correct RFID sticker, the last number will be stored in device memory and will be sent to the app during the next synchronisation.



6.1 Making it work

The first problems

After I found a few examples of connecting RFID module to Particle Photon, I decided to test it out.

However, it wasn't that easy. I faced various tiny problems which took a lot of time to solve. Usually, the problem was extremely stupid and completely unexpected:

Broken cable (2 hours wasted)

First, I could see the particle photon because of a broken cable. Although the cable was powering the microcontroller.

Node.js issue (4 hours wasted)

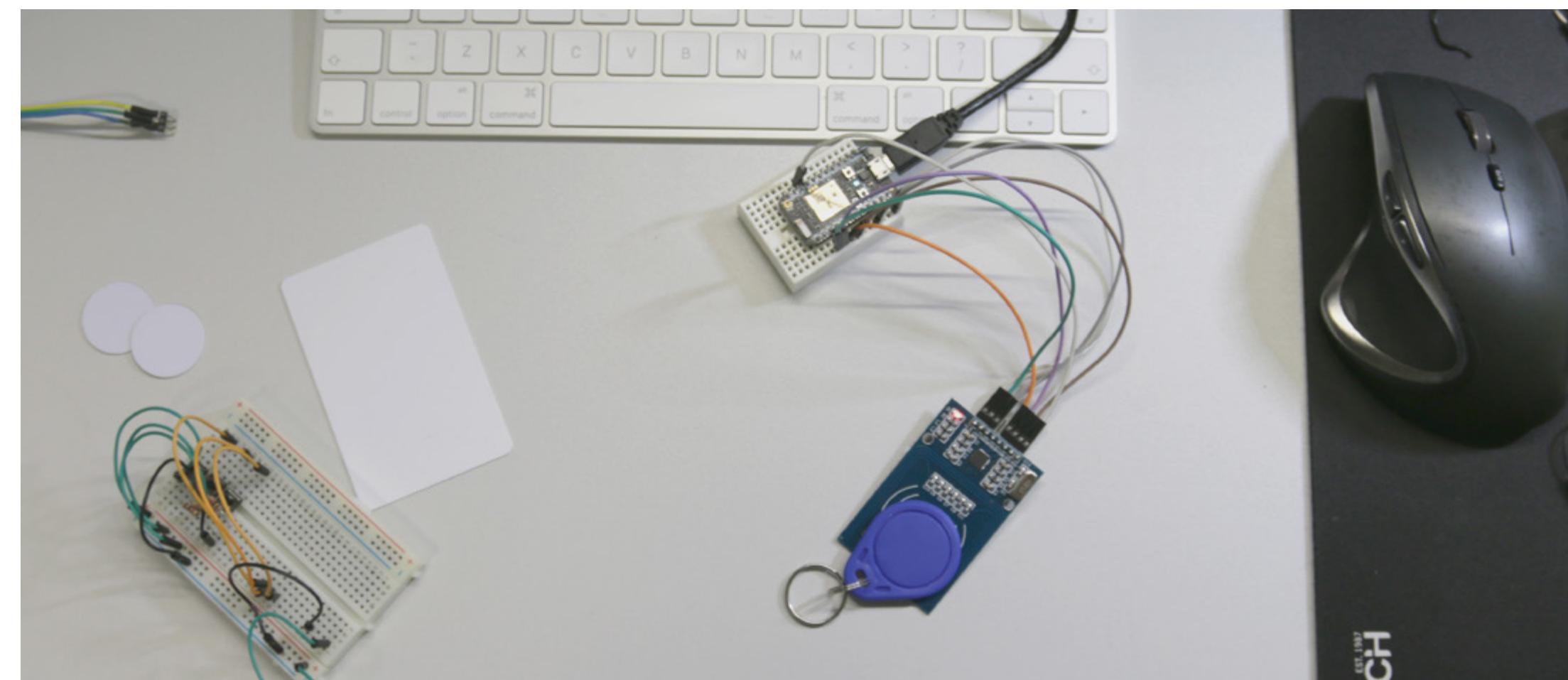
To open serial monitor for debugging the code, I had to install Particle CLI (Command-line interface) which relays on Node.js. The problem was that I had an outdated and faulted version of Node.js. 4 hours wasted and more than 10 components reinstalled.

RFID module (1 day wasted + delay)

The RFID module didn't want to work. I tried lots of different things because visually it seemed to be fully working. However, I ended up ordering a new module which worked fine.

While I was waiting for the new RFID module, I decided to replace it with physical buttons to write another piece of code which does not rely on this module. Fortunately, it worked fine and I was able to move onto finalising my designs and preparing everything for the final presentation.

However, the functionality of this early prototype wasn't very explanatory and impressive so I decided not to demonstrate in on final presentation and spend more time on app design instead.



```
rfidtest.ino      rfid.cpp      RFID.h
47 #define SS_PIN  A2 // Some pin used as hardware SPI (SS)
48 #define RST_PIN  D2
49
50 /* Define the pins used for the DATA OUT (MOSI), DATA IN (MISO) and CLOCK (SCK) pins for SOFTWARE SPI ONLY */
51 /* These may be same as hardware SPI or listed in comments */
52 #define MOSI_PIN  D3 // hardware SPI: A5
53 #define MISO_PIN  D4 // hardware SPI: A6
54 #define SCK_PIN   D5 // hardware SPI: A3
55
56 /* Create an instance of the RFID library */
57 #if defined(USE_SOFT_SPI)
58   RFIID RCS22(SS_PIN, RST_PIN, MOSI_PIN, MISO_PIN, SCK_PIN); // Software SPI
59 #else
60   RFIID RCS22(SS_PIN, RST_PIN); // Hardware SPI
61 #endif
62
63
64 void setup()
65 {
66   Serial.begin(9600);
67
68 #if defined(USE_SOFT_SPI)
69   /* Enable the HW SPI interface */
70   SPI.setBitOrder(MSBFIRST);
71   SPI.setBitOrder(MSBFIRST);
72   SPI.setClockDivider(SPI_CLOCK_DIV8);
73   SPI.begin();
74 #endif
75
76   /* Initialise the RFID reader */
77   RCS22.init();
78 }
79
80 void loop()
81 {
82   /* Temporary loop counter */
83   uint8_t i;
84
85   /* Has a card been detected? */
86   if (RCS22.isCard())
87   {
88     /* If so then get its serial number */
89     RCS22.readCardSerial();
90
91     Serial.println("Card detected:");
92
93     /* Output the serial number to the UART */
94     for(i = 0; i < 4; i++)
95     {
96       Serial.print(RCS22.serial[i],HEX);
97     }
98   }
99 }
```

Starting everything over again

After the final presentation, when new RFID module has arrived, I tried to adjust button-controlled sketch and make it work with the RFID stickers.

Unfortunately, it wasn't that easy due to lack of RFID library documentation. Eventually, after a few hours of developing and replacing the library with the improved one from someone's Github project, I managed to finally read an RFID sticker ID.



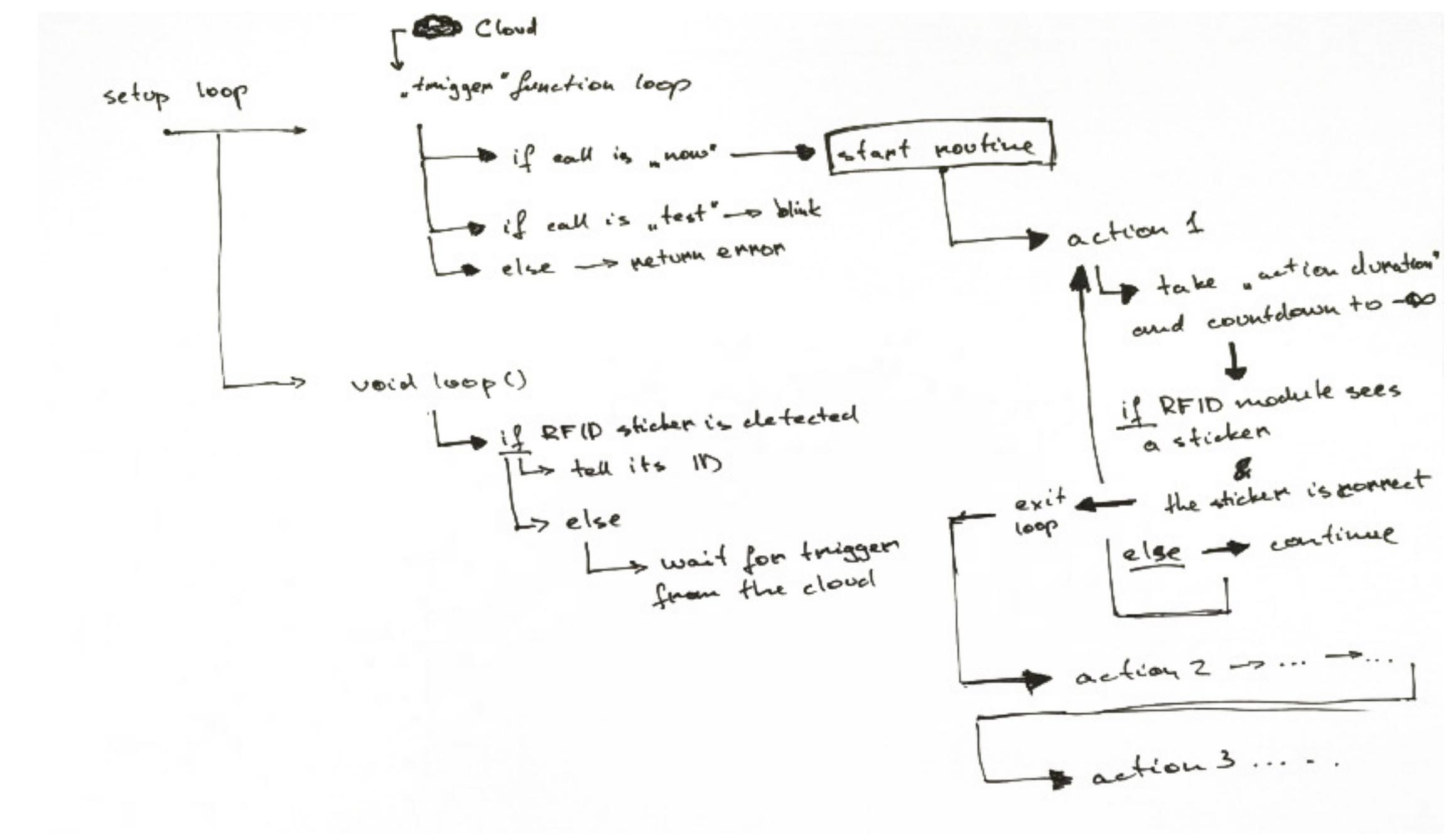
The next problem I faced was that originally the countdown timer was triggering by the press of the button. However, to make it work as planned, RFID stickers had to stop the countdown, not to start it. To do so, I had to change the logic of triggering timers and change almost lines of code, so I started from scratch.

To trigger a routine I decided to use Particle Cloud platform, which allows sending functions call directly from a web page.

When this function call gets to Photon via WiFi, it triggers a dedicated loop, where one after another starts countdown timer loops. To abort the countdown and jump to the next loop (action inside the routine), I have to place a specific RFID sticker.

Below you can see the sketch workflow. Also, the demo video can be found [here](#).

The final code is available on Github [here](#).

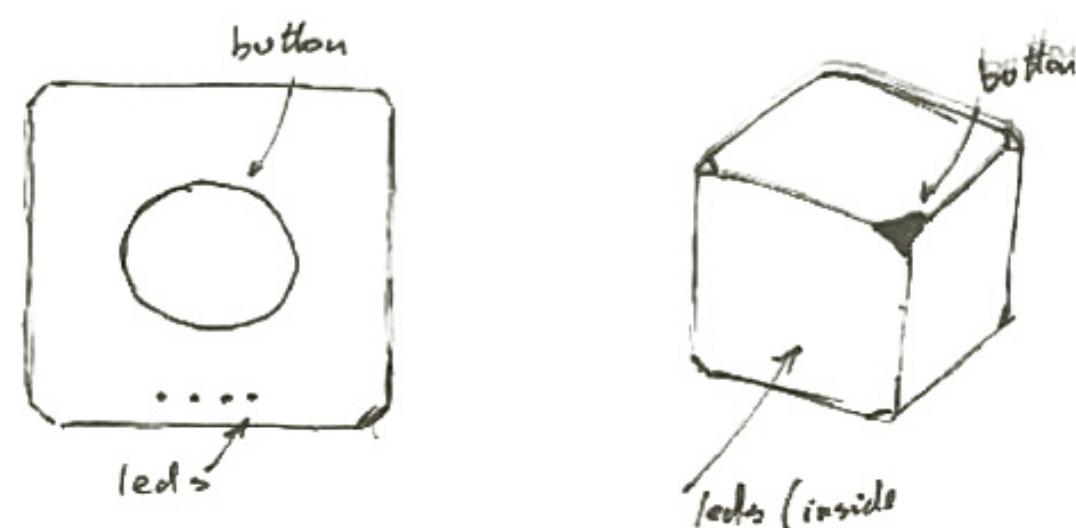


6.2 Enclosure and form factor

A cube

While I was waiting for new RFID chip, I decided to think what enclosure the device may have. The initial idea was to put all electronics inside a small cube with a large button in the middle and LEDs to visually communicate with the user.

However, as soon as I made this cube from a regular paper I realised that people may accidentally press the button while grabbing the cube from a table, for example. So I started searching for other, more convenient form factors for this kind of devices.



Almost a cube

After a while, I remembered that already saw a device with very similar goals which I'm trying to achieve.

[Timeular](#) managed to come up with a unique shape, which can be also customised and personalised as well. So I decided to take their form factor and apply it to meco device.

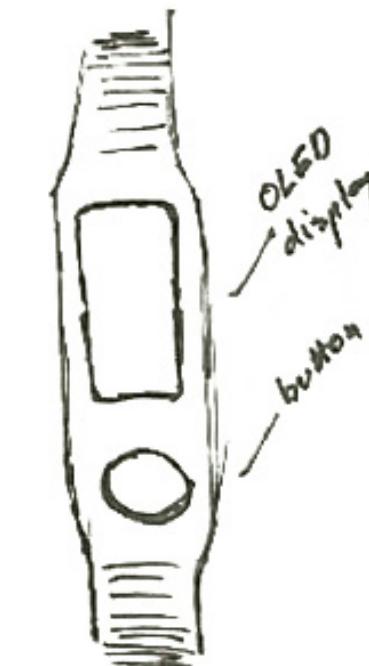
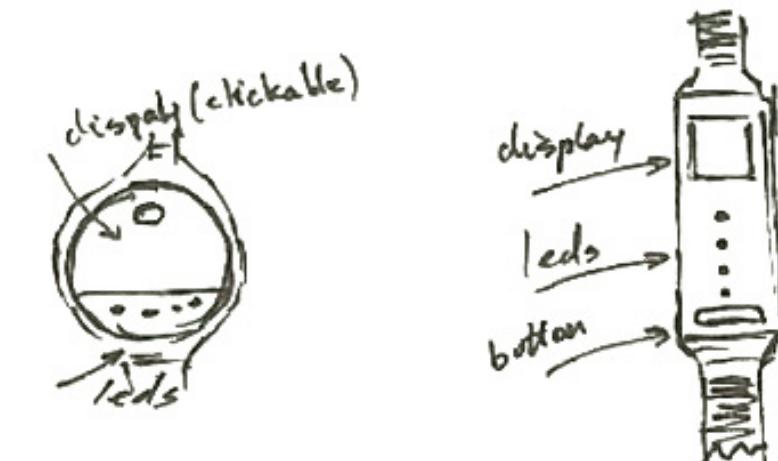
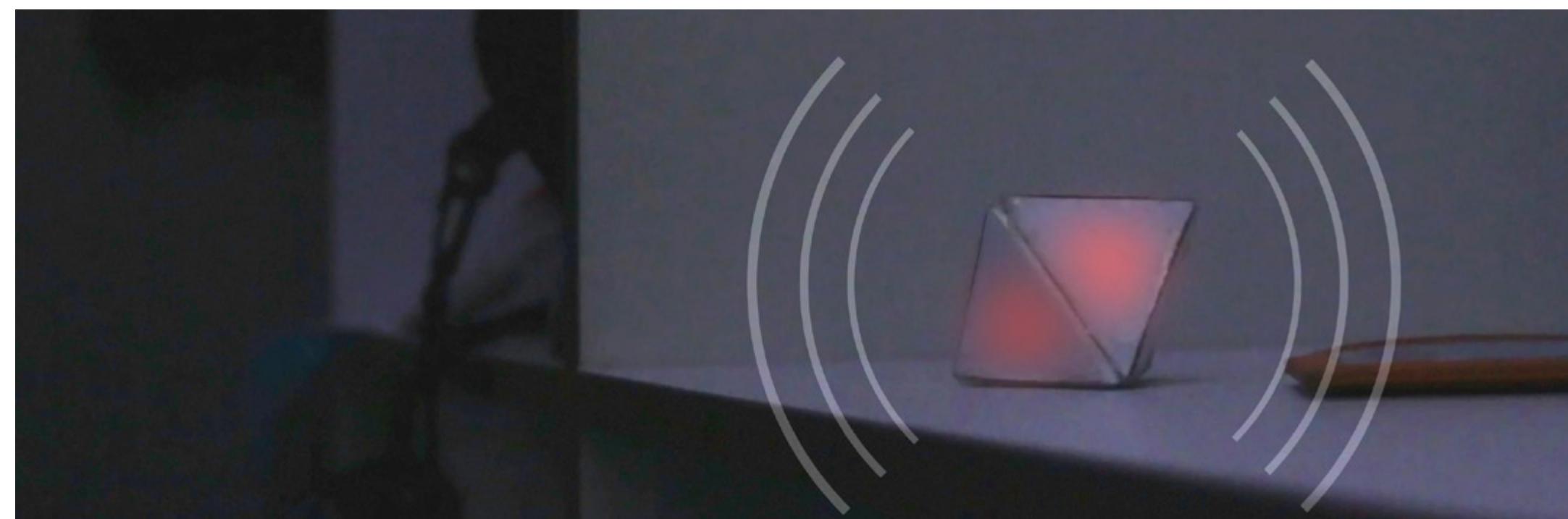
I made a cardboard prototype in order to see if it's really more convenient and usable compared to the cube. From my personal feeling, I can say that it definitely is.

Final presentation feedback

However, during the presentation, another idea came to my head after a question "so.. the user has to carry this device with him al the time?".

What if I can change the enclosure and make it more attractive and fashionable? What if the device would look like a wristband? After a few more sketches, I decided to make meco device look just like a Fitbit tracking device, which user can wear on this wrist without noticing.

Obviously, I won't be able to make the final prototype that small, but 2x or 4x size should be enough to explain how it works.



6.3 Visual communication

The problem

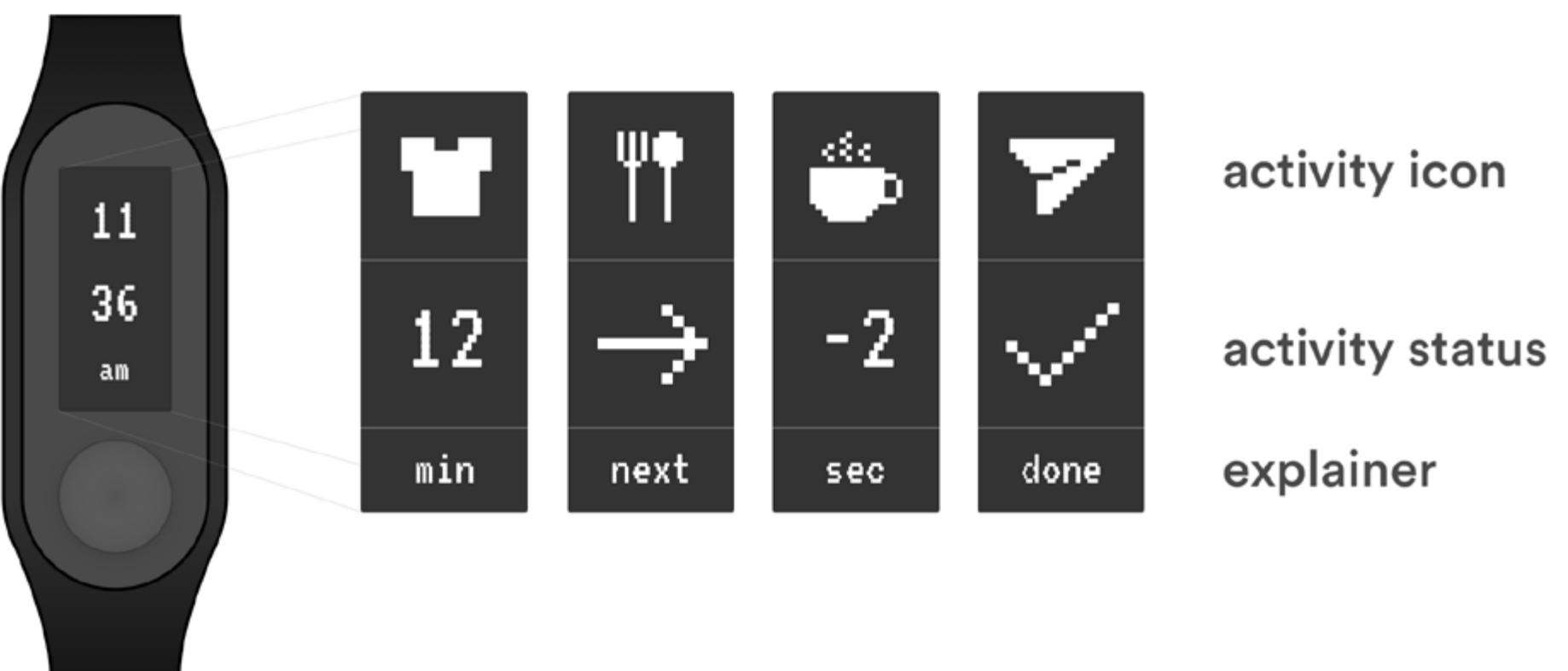
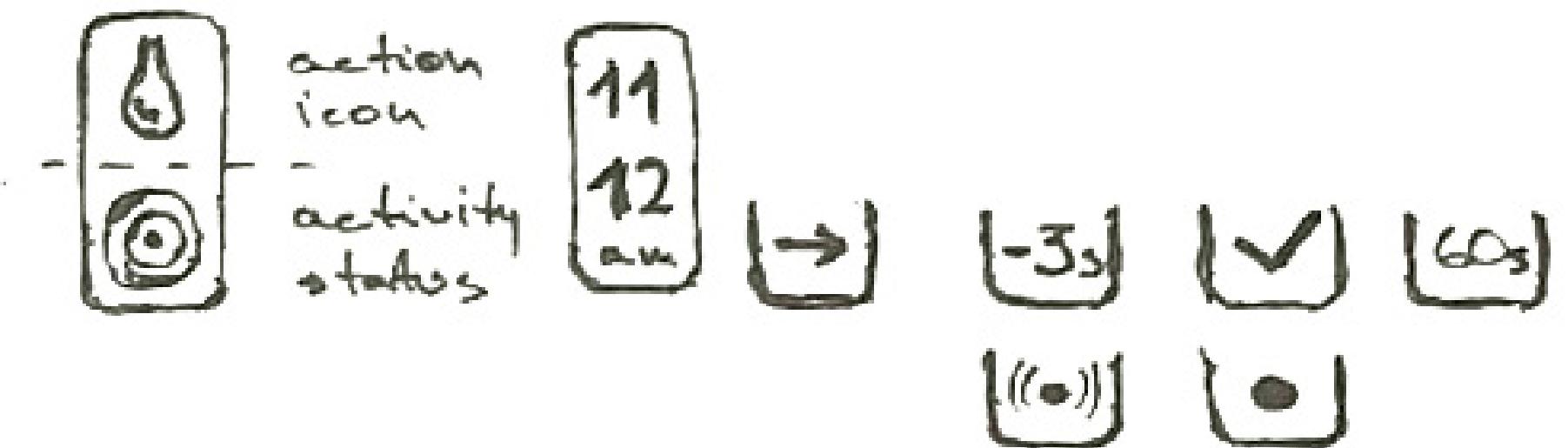
During the work on new form factor, I realised that the device lacks visual communication. Although it changes the colour based on how much time the user has to finish an action, it cannot tell which action goes next. This may be critical in cases when it's a new habit and the user didn't remember all actions of the routine yet.

The solution

The most oblivious and efficient way of solving this problem is adding a screen to the device. Besides showing the icon of current or next task, it also can show how much time in minutes or seconds does user have to finish the action.

Additionally, in standby mode, the display may serve as a simple watch displaying the time.

Although the idea of showing incoming notifications is very attractive, it may significantly reduce the battery life, which respectively minimises the reliability of the device (and this is one of the most important selling points). So in the end, I decided not to include this feature in the final product.



6.4 Demo video

How to explain what meco is

In order to explain how the prototype helps to trigger a routine, I decided to film a short story that shows the main problem – procrastination – and how exactly the same situation could be improved by using a meco device.

To illustrate the problem I chose my personal weakness – the morning routine, where I spend too much on social networks and other distracting and unproductive activities.

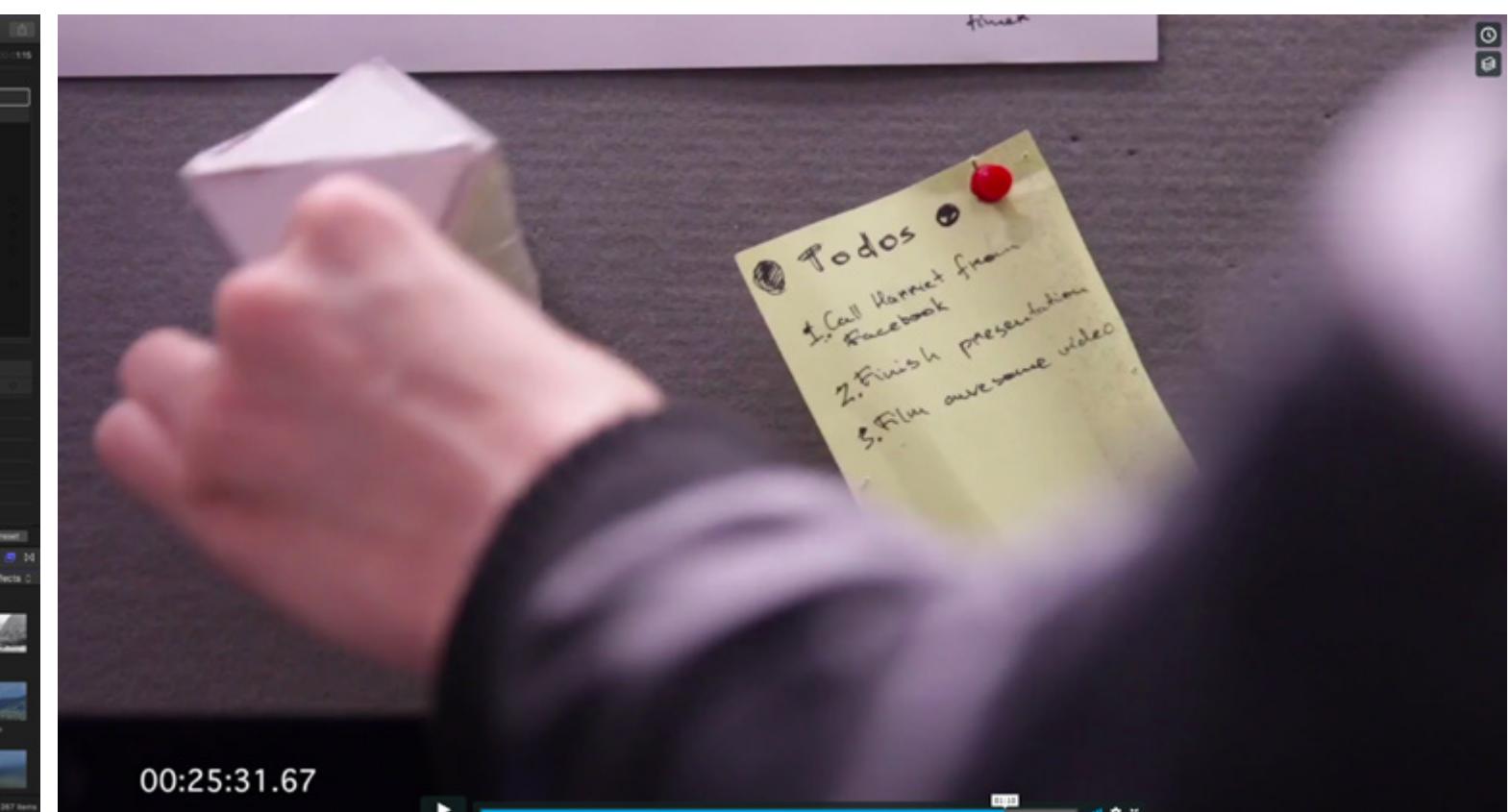
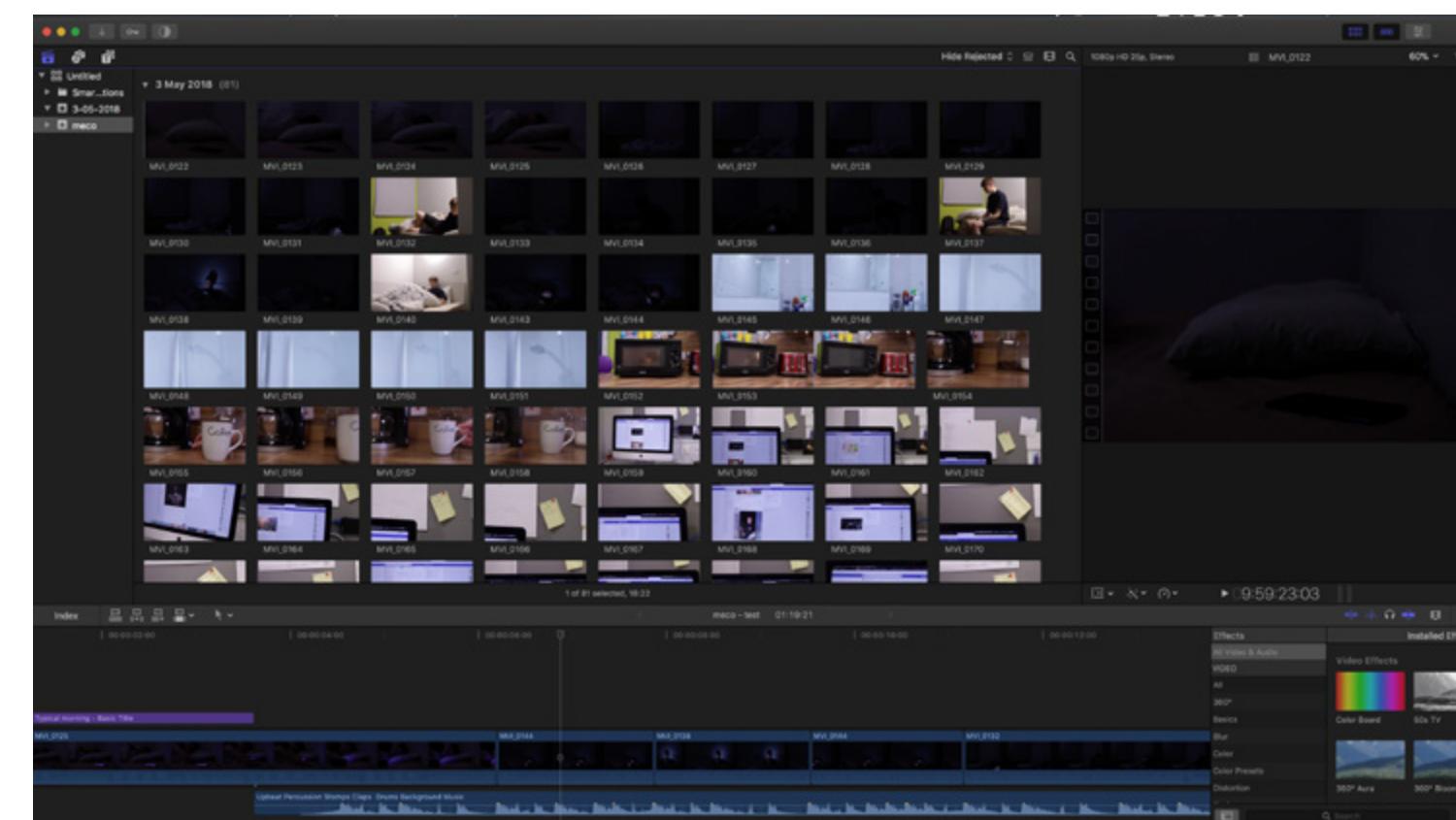
What happened in the result you can watch by [this link](#).

Feedback

Although the video explains the main advantage of the meco device and illustrates in what way it actually helps overcome procrastination, it didn't show what is behind the scenes – this is the feedback I got by showing the draft version of the demo video.

Based on this, I decided to refilm the whole video and dedicate more screen time not only to meco device usage but also to routine creating process and main meco app features.

Another reason of refilming the video is the form-factor change. To make it more visually explained, I bought Mi Band 2 which served as an inspiration for the actual meco device look. I believe that using the most visually similar object to meco device should provide a much better understanding of the experience of product usage.



6.5 Next steps

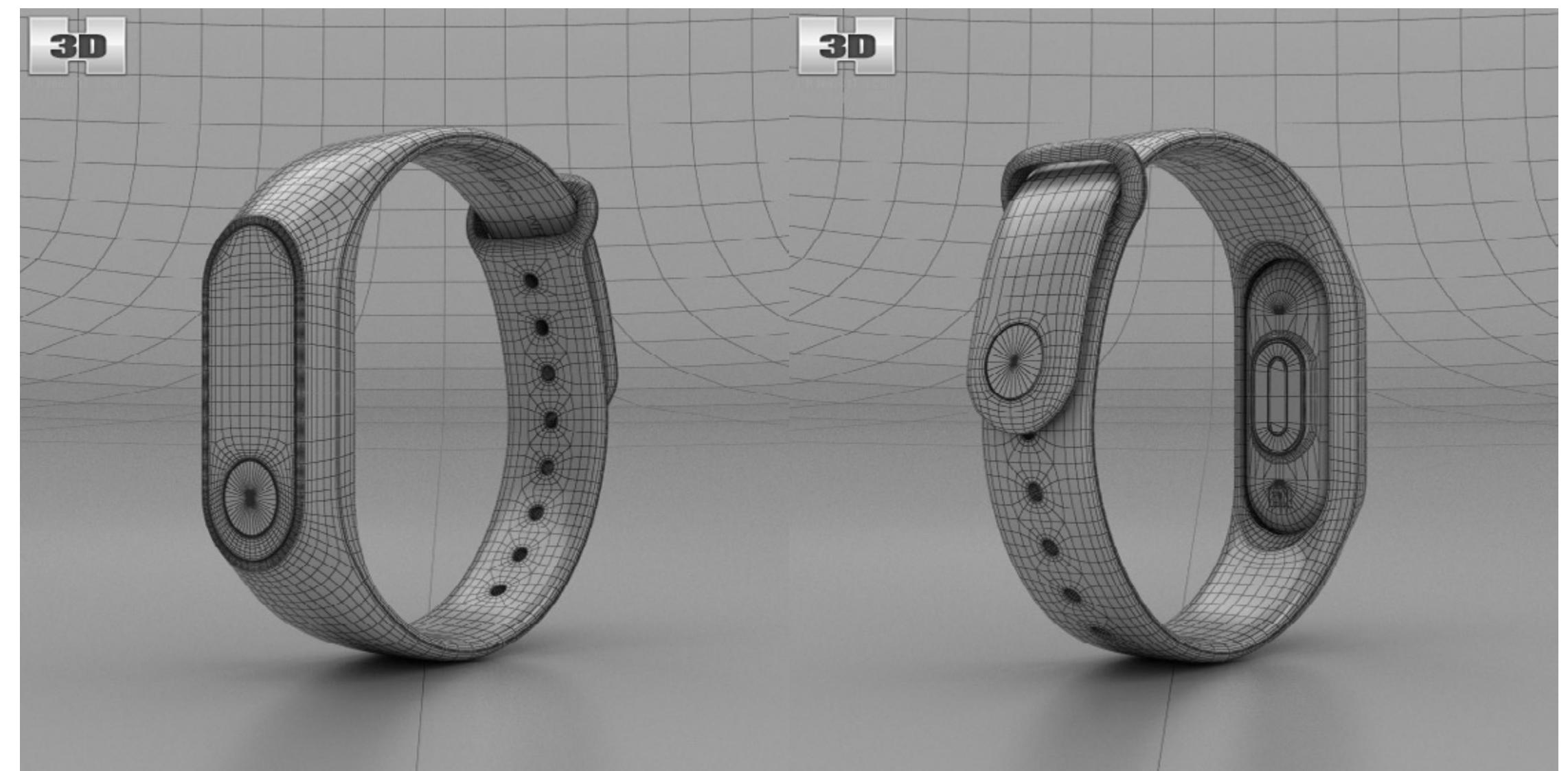
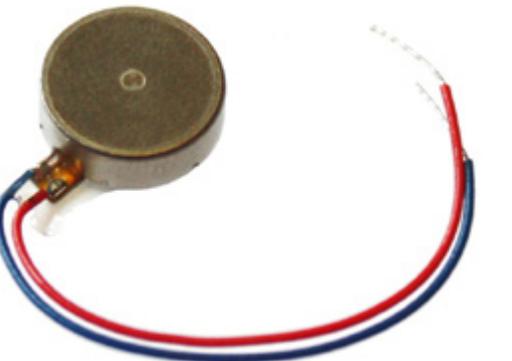
What is the plan?

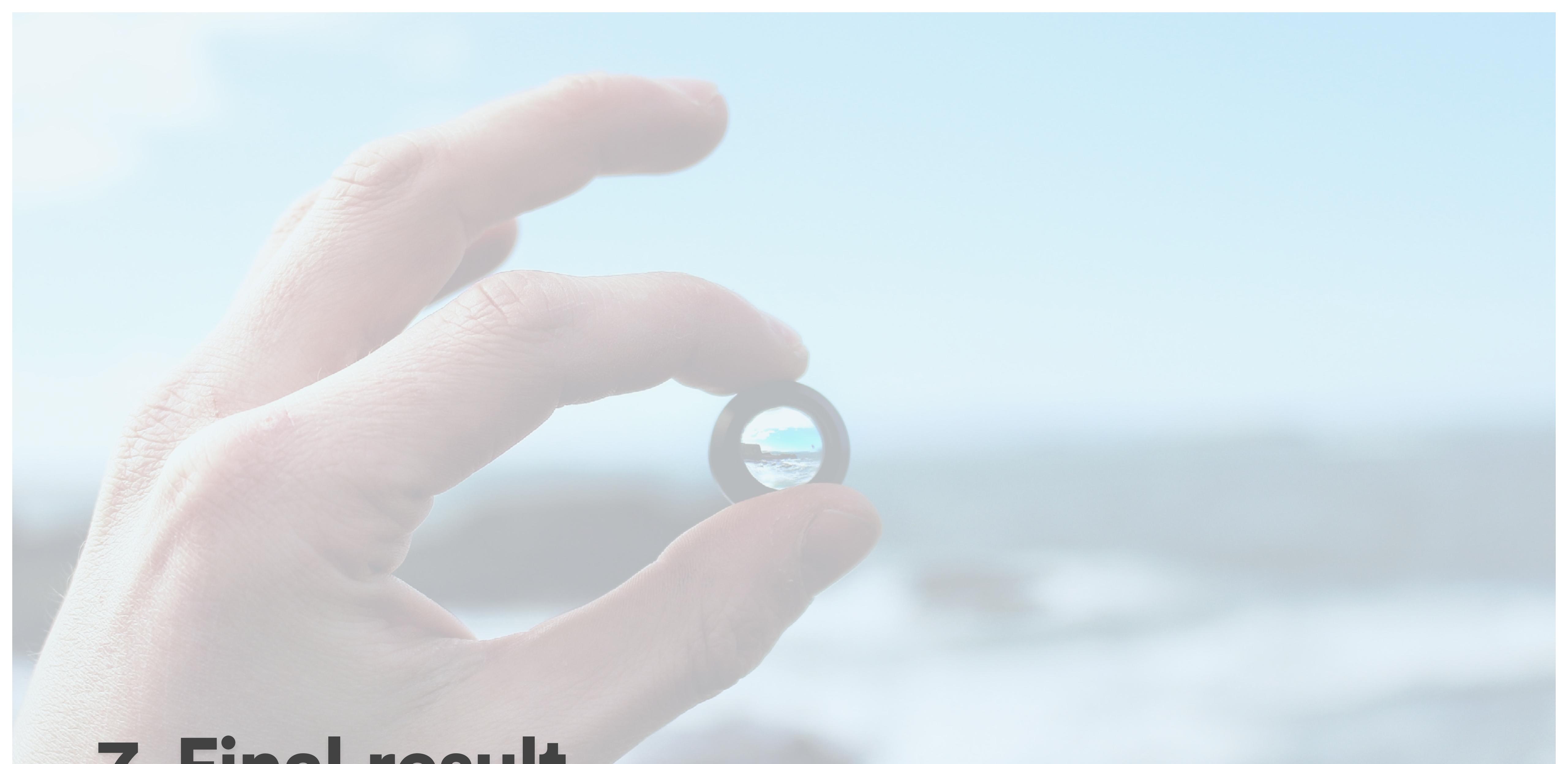
Due to the lack of time and the delay caused by fault RFID module, I didn't manage to complete the prototype until the submission deadline to the extent I was aiming to.

However, I'll continue working on the prototype afterwards to add lacking components such as a display for visual communication, vibration motor for tactical experience and a button for snoozing notifications and turning on and off the screen.

After all components are in place and work properly, I'm going to 3D print the enclosure so it the prototype will take the finished view.

To do so, I already found a suitable 3D model to edit and ordered all remaining components.





7. Final result

7.0 meco device

The biggest problem of building habits and routines – the cue – is now solved with the meco device, which will trigger the user to do the action.

The reliability of the device, long battery life and ability to pick a band that suits user's personal style coupled with the unique appliance of RFID technology makes it not only a great tool against procrastination but also a personal companion that helps the user become better and more productive.

Due to its flexibility, meco device can be used as a trigger for all different kinds of habits, from location- and time-based to action-based routines.

To see the example of meco device appliance, review the interactive story by [this link](#).



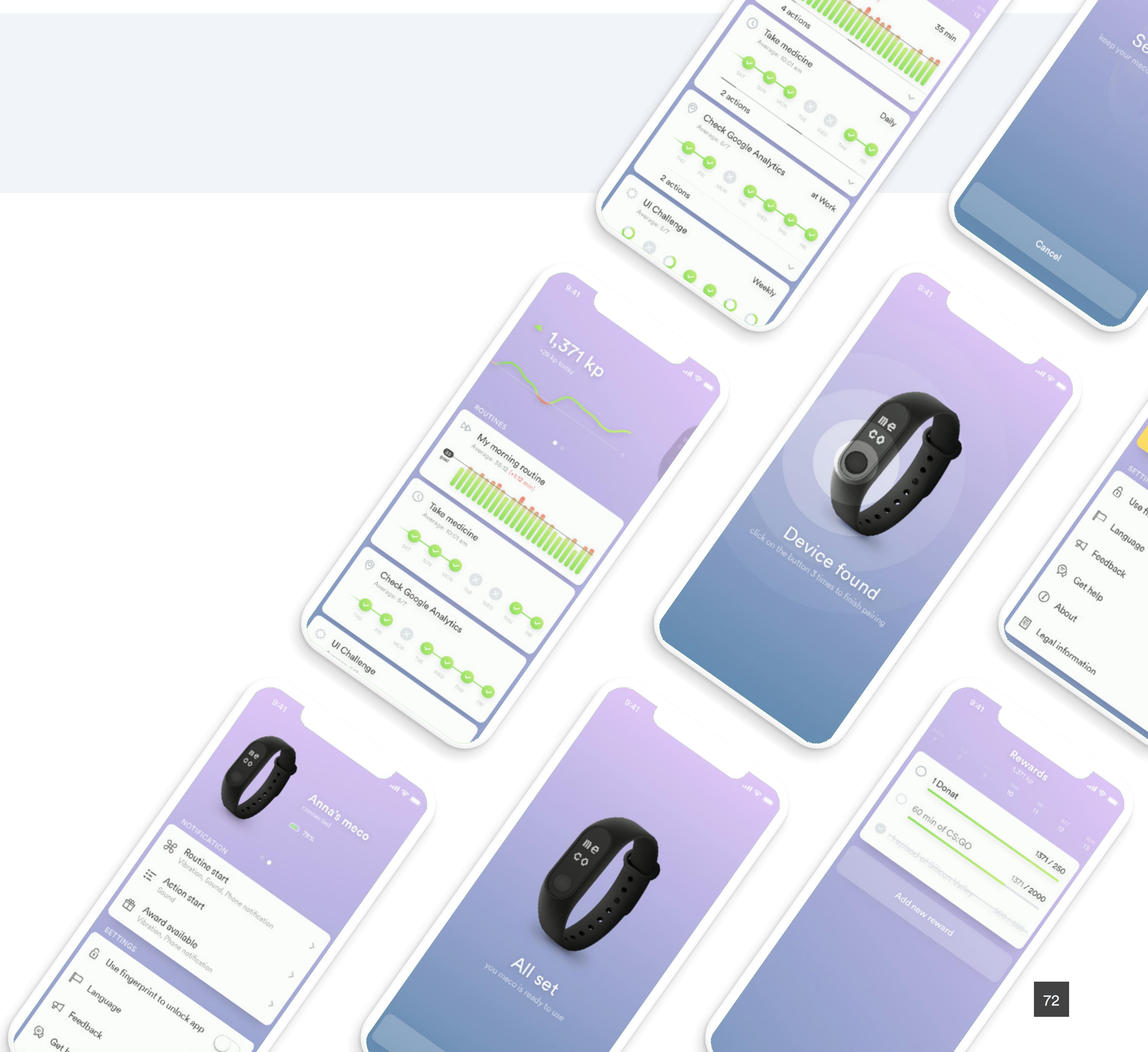
7.1 meco app

In the result, meco app appears to be not just a companion app, but a control panel of all user habits built on top of different trigger types. With this app, user can create, track, improve and review the habit creation process.

Along with proactive suggestions and useful tips, routines becoming more enjoyable and easy to stick in a long-term perspective.

Additionally, rewards will always remind user about the pleasure of compleating the routine and motivate him to do his best and achieve more than before.

To fully experience all advantages of meco app, you can play around with the interactive prototype by [this link](#).

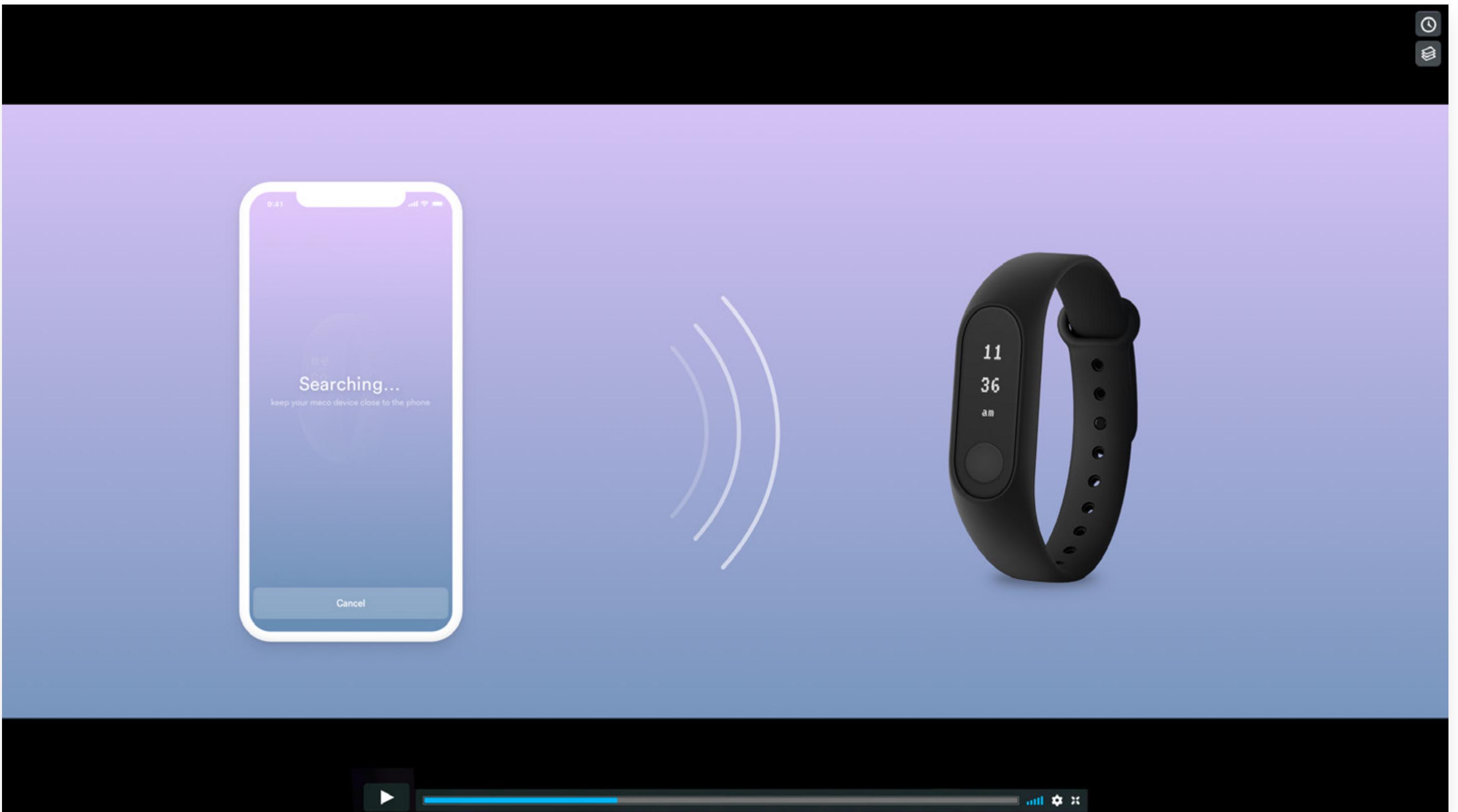


7.2 final video

To demonstrate all features and advantages of meco device and meco app as well as their appliance in real life the promo video was created.

It not only shows the problem and how meco solves it but also explains the habit creation process and why meco is one of the best products on the market, which covers everything from the cue to the reward.

The final result you can watch by clicking on [this link](#).





8. Reflection

8.0 Evaluation

How did it go?

Throughout this project, I pushed my limits to achieve the great results in each area of the design process. I wanted to come to the end of my degree with the proud feelings about the product I had made.

Although I spent first eight weeks on the project which has been dismissed later on, I'm happy about this decision. I believe it was a brave move which gave me much more motivation to develop a brand new idea and execute it into a design concept and physical prototype.

As usual, I spend a lot of time on careful and considered research as I wanted to ensure that I fully understood every aspect of habit creation process that helps me move towards creating a solution to a real problem. I used research insights to develop every aspect and decision throughout my project, which ultimately brought me to a solution that was backed by my gathered insights.

Also, the feedback-driven approach I took for this project allowed me to create the app and the device that I'm confident about. Furthermore, regular advice and suggestions helped me to form a solution that I felt had real value and strong unique selling proposition.

I feel that I applied all my personal strengths in UX research and UI design field as well as developed some new skills in physical interaction design. However, I have exposed myself to new challenges and emerged feeling pleased with my achievements and performance during the module. I listened to feedback, adapting my vision as I progressed which gave me various of app design iterations and three different devices form-factors in the result.

I believe that I have fulfilled the brief and completed the challenges that I set for myself, and although the feeling that I was initially quite ambitious, I have found that right time management model and good prioritising method to finish the most critical areas of the project. I will be leaving University with more confidence in my abilities and increased hunger to develop my skills exponentially, especially in primary user research field.

What I would do differently

Although I'm satisfied with the final result, there are a few things I'd do differently if I'd have a chance to do this project again.

Unfortunately, I spent a lot of time in doubts about changing the idea and had to do so right after gathering user research insights and defining the lack of need in a solution for DIY smart home devices. There was no point in developing the concept any further to understand that it has more disadvantages than advantages.

Also, I'd spend more time on developing the physical prototype and the enclosure for it. This particular project taught me not to rely on seller's eBay rating and double check all modules if they work right after they have arrived.

Another thing that I'd optimise if I have a chance is the video. Creating a simple animatic and gathering a feedback would help to define that the video lacks informality and doesn't explain the main features of the app. By doing this, I'd save a few hours spend on filming the first version of my demo video.

8.1 Future development

Despite that the project is pretty much finished, there are a few more ideas how it can be developed further because I believe that there is always a room for improvements.

Social aspect

I really like the idea of the social leader board and the ability to create a clan and invite your friends there. It would give some extra motivation to the user and would play on humans competition nature.

Also, this would help people to unite and be supported by other peers, which in the return may improve people habit performance significantly.

Habitica, the competitor app, proves that the social aspect of the app is a unique and working motivation cause and helps users to achieve their goals.

Reward mechanic

I have a feeling that rewards could be done in a more exciting way comparing to the way how they work at the moment.

By adding a commercial element to the app, small and large merchants and services such as Starbucks, Amazon, Deliveroo and others may offer their product to the users in exchange for karma points.

This would give more motivation to users as the reward could become a real product from someone else (the reward could also be donated or gifted to your clan's member)

Bets

Also, another idea related to the reward system is the introduction of bets inside the clan. People can set their own price for the word they give at the habit creatin stage.

If they complete the routine and perform it regularly – they would double the reward they set. Alternatively, when they failed to complete the habit, they will lose their bet.

Also, the bet shouldn't be financial or physical, the user could set a specific amount of karma points or for example some sort of punishment task for the failure.

8.2 Graduation show plan

During the prototype visual communication development, I came up with the idea how to use the prototype in my degree show, because this was one of the questions that John asked me during the midterm presentation.

Instead of demonstrating the morning routine or any other habit completion, I'm going to link the trigger to different files on the computer using Processing.

Next, I'll rewrite the code so it would have the following interactive tasks which the visitor have to complete:

- Start the graduation show routine
- Watch a video about this project
- Review other Svyat's project
- Learn more about Svyat
- Take Svyat's business card

For each of these tasks, there will be a dedicated RFID tag on the table, which the visitor should trigger by placing the prototype on it.

Next, the prototype will signify the visitor about the next step and offer him to move on.

In the final result, it should give the visitor the feeling of using meco device and encourage the visitor to take my business card.

the end.

Thank you for your time

Photos – <https://unsplash.com>
Icons – <https://www.flaticon.com>
Mockups – <https://www.sketchappsources.com>