TRUST
Smart Home UI

Proposal

Trust Smart Home NZ has made a new smart heat pump that you can control using a tablet or a mobile phone. They need an app interface designed for this new product.

The Problem - They have seen many plain and boring smart home interfaces and so they need a developer to design a UI that has a new take on smart home app design. They want to integrate their branding to the design but foremost they want the app to be accessible and easy to use.
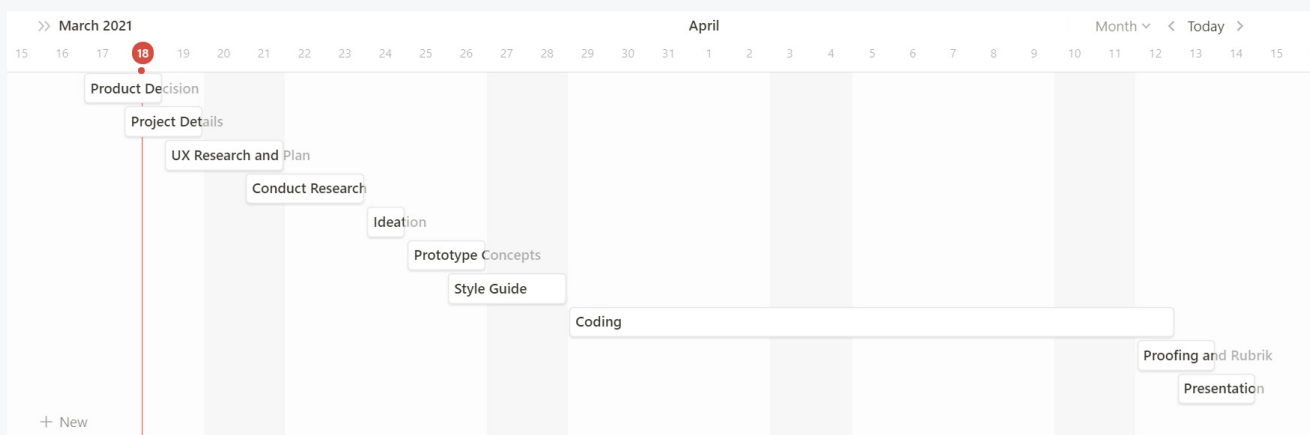
PROJECT OVERVIEW

Use UX research methods to...

     - Figure out consumer interface preferences.
     - Check that styling guidelines are accessible and consistent.

Develop a UI that...

     - Is responsive for mobile and table use.
     - Easy to use and understand.
     - Engages the user, leaving them wanting to utilize the app as much as possible

Timeline

March 2021	April	Month ∨ < Today >

| 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |

Product Decision
Project Details
UX Research and Plan
Conduct Research
Ideation
Prototype Concepts
Style Guide
Coding
Proofing and Rubrik
Presentation

+ New

Design Process

STRATEGY > DISCOVER > ANALYSE > DESIGN > PRODUCE

Strategy: Who, What, Why. Project Vision and Goals, Priorities and Focuses.

Discover: Who are the competitors? Interviews, surveys and testing existing products to compare.

Analyse: How will users interact with this product? Personas and Use Cases.

Design: Moodboard, Wireframing and User Testing.

Produce: Prototypes, more User Testing and LAUNCH.

TRUST Smart Home Brand Guidelines

Source - https://smarthomenz.nz

COLORS

#211E1F

#EA2729

FONTS

HEADLINES: ROBOTO BOLD

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
0123456789

BODY COPY: ROBOTO REGULAR

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
0123456789

UX RESEARCH

Objectives

1. Who uses smart home apps and products? Do they have any issues with these applications?
2. Investigate using an all in one app for smart home devices, discover how different designs provide navigation options.
3. Gain an understand on how users interact with various interface elements. Positives, negatives, pain points, etc.
4. Test and discover what is the most accesible design patterns for users to efficiently control temperature in an application.

Methods

1. Survey - Using quantitative and qualititative data to support Objective 1
2. Competitor Research - Analysis on existing solutions to support Objective 2
3. Interview - Personal interactions with users to support Objective 3 & 4
4. Co-Creativity Sessions - Hands on interaction with users to Objective 3 & 4

Survey Questions

- How old are you?
- Do you use smart home devices? If you do please list some below. A smart home device can be adjusted using mobile devices and are typically connected to wireless networks - Wi-fi Bluetooth, NFC, etc.
- Are you familiar with any of these smart home apps below? Samsung SmartThings, Amazon Alexa, Apple HomeKit, Google Assistant, None of the above.
- Do you use smart home apps?
- If you do use smart home apps, do you have any issues with the design of the app?
- Please explain why you like or disklike smart home devices?
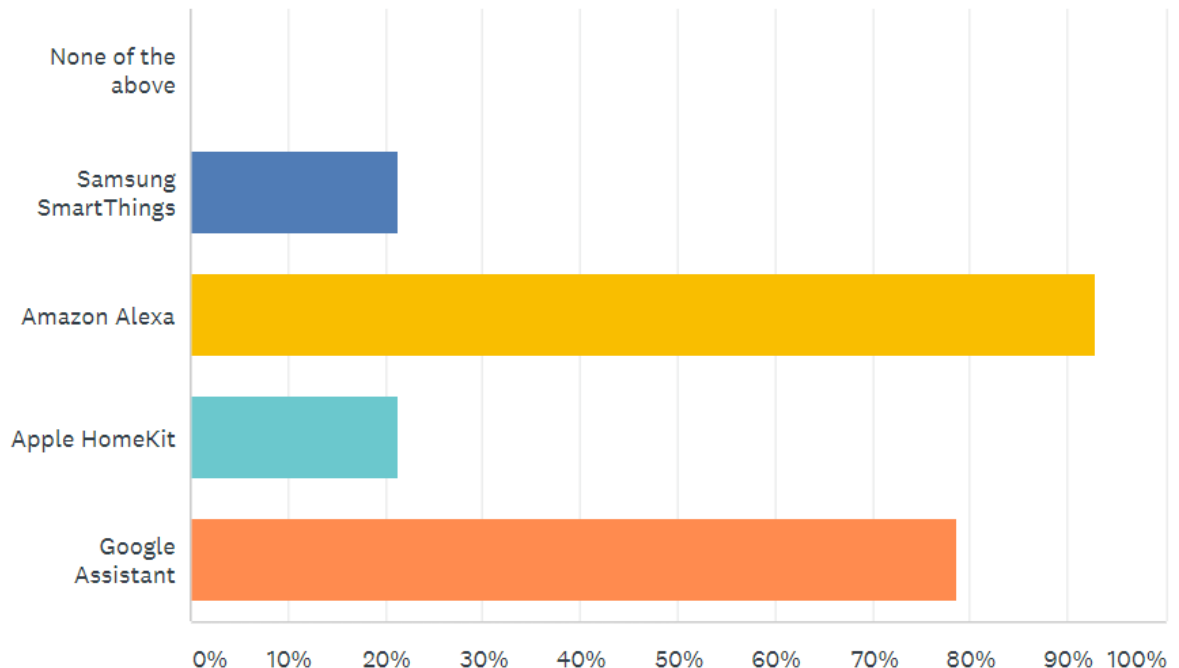
Application used - SurveyMonkey.com

Key Things to Discover

- What apps are people using and what do they know off. Use this information to test these app designs and gather more feedback on them.
- Issues that people have with smart home products in general - accessibility issues and security.

Survey Summary

Are you familiar with any of these smart home apps below?

Answered: 14   Skipped: 0

App	
None of the above	(0%)
Samsung SmartThings	(~21%)
Amazon Alexa	(~93%)
Apple HomeKit	(~21%)
Google Assistant	(~79%)

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Source - https://surveymonkey.com

Comments On Smart Home Products

"They're easy and simple to use."

"I do not like them as I do not wish to rely on them in future."

"I like that they help you monitor and prepare your home while you aren't there."

"From what I've seen, they're pretty boring."

"I prefer not checking my phone for everything"

"I don't trust my security/privacy to be controlled by something that can be easily hacked into"

Result Analysis

Competitor research on Amazon Alexa's UI is key as most people are familiar with this app. Many don't trust having smart home applications because of security and privacy reasons, putting emphasis on having the privacy documentation easily accesible to users. A key feature for smart home applications are the ability to function while you are not there. This leads to features such as timers and different settings to become key assets to the product.

COMPETITOR ANALYSIS ———

Amazon Alexa

Source - https://mspoweruser.com/amazon-rolls-out-a-new-update-for-alexa-app-with-revamped-ui/
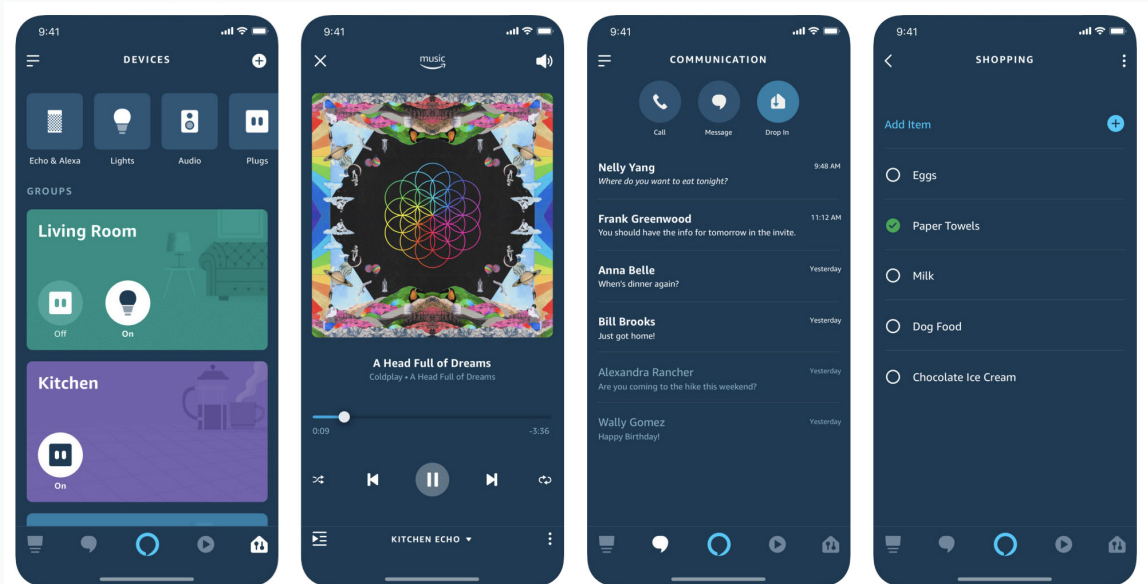
My Analysis

Pros

+ Fits their branding
+ Minimal with good use of space
+ Imagey, illustrations and icons are understandable.

Cons

- Not very engaging or visually appealing.
- Color scheme is a little odd and a little off.
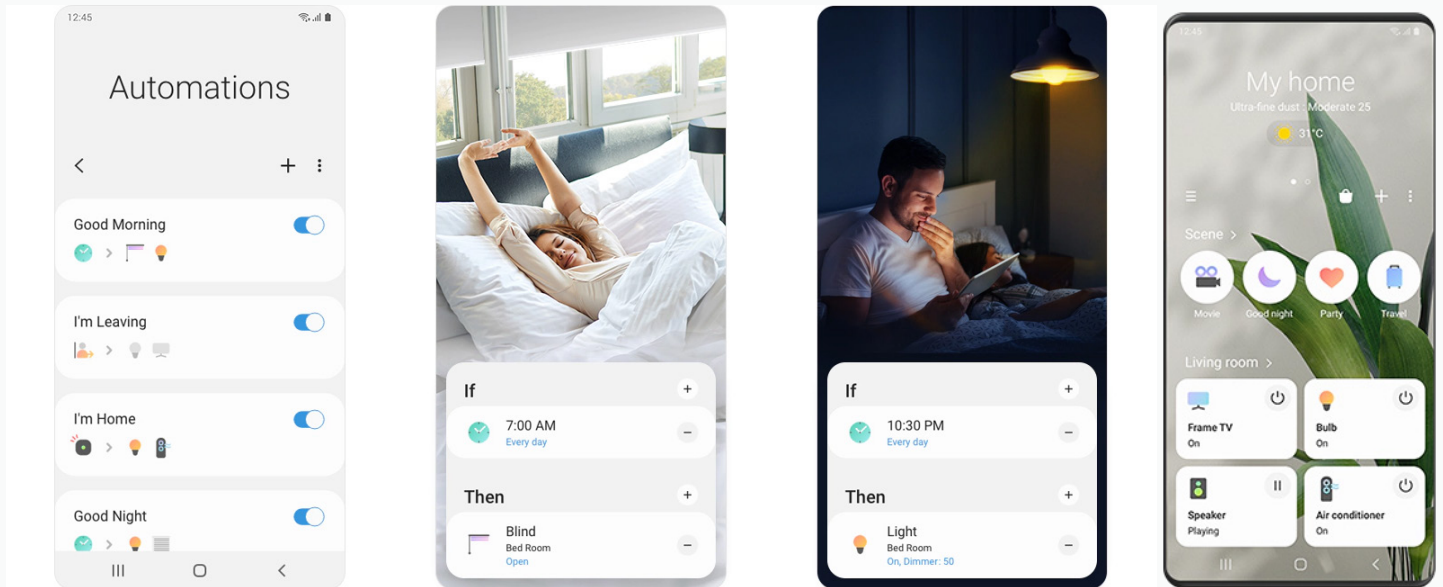- Overall it feels dull and flat.

Interview Comments

Pros

+ Clear, direct and straight forward.
+ Big elements and sections that are simple and easy
to use.
+ Good color, easy on the eyes.

Cons

- Boring, run of the mill layout. Background color
  could be lighter.
- Doesn't look finished. Looks clunky and the icons are
  confusing, big section.
- Doesn't see the scale of all the elements
- Contrast not high enough.

Samsung SmartThings

This design tied best with the Apple HomeKit UI.

My Analysis

Pros

+ Consisten styling and branding.

+ SImple and minimal.

+ Easy to read fonts and understandable icons.

Cons

- Not very engaging.

- Where is the navigation? Is it relying on the Samsung Phone's back button feature?

- Lots of different icons next to each other that can be confusing
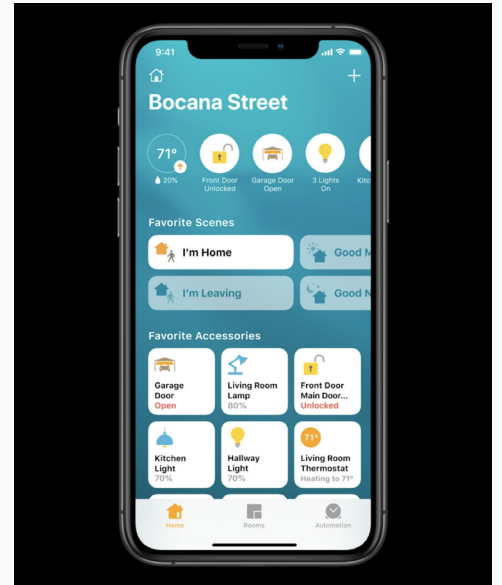
Interview Comments

Pros

+ Icons are good, simple and friendly.

+ UI is soothing and has aesthetic.

+ Has customizability.

+ Eyes are easily drawn to the My Home header.

Cons

- Transparent nav is a no! Icons are bad and not understandable.

- Style is very basic.

- Current background image needs to be changed.

Apple HomeKit

This design tied best with the Samsung SmartThings UI.

My Analysis

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+ Consisten styling and branding.

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- Not very engaging.

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INTERVIEW, CO-CREATIVITY SESH

Question - What is your most used app?

Aa Name	☰ App/s	☰ +	☰ -
Monique	Twitter	Icons	Fleets - like insta story, it takes too much space and is not needed
Matt	Instagram	Basic and Usable	Moved some elements and has a negative effect because people already have familiarity with the original layout. Shop and reels are annoying and not needed
Grace	Twitter	Simple nav, dark mode great for low lighting	Image cropping, ads, fleets. Irrelevant information
Ambar	Facebook	Icons, whitespace consistent	Image cropping, ads, zig zag menu that is constantly changing in order.
Jared	Soundcloud	simple., intuitive, icons easy to understand, nav is at the bottom and accessible, dark mode.	Twitter - slow and immediately gives you tweets that are not the latest but tweets that are doing well with algorithm Shazam - needs to be automatic, you shouldn't have to touch any buttons/turn it on to start listening to the song.
Raph	Youtube	Easy, simple, lots of recommendations. All things are better in dark mode, easy on the eyes, "bright kills eyes"	Irrelevant recommendations and outdated look in comparison to sites like twitch.
Angela	Instagram		Nothing stands out, very compact, navigation is confusing but swiping and automatic videos are addicting.
Malka: Under 15	Instagram	Easy to navigate, literally 4 buttons! Quick and info is already there. Icons are understandable. I like the History through the Activity section. Dark mode beneficial and everyone likes dark mode.	Irrelevant things like the shop and the QR that is similar to snapchat.
My Dad	YouTube	Content, entertainment, educational purposes. Free and videos are high end quality	It's usable but outdated visually. Cluttered and the ads are too much, there's heaps.

Making a UI Design Results

This Co-Creativity Session allows testers to make their own UI using pre-made knobs and buttons that could be found in the final design of the app.
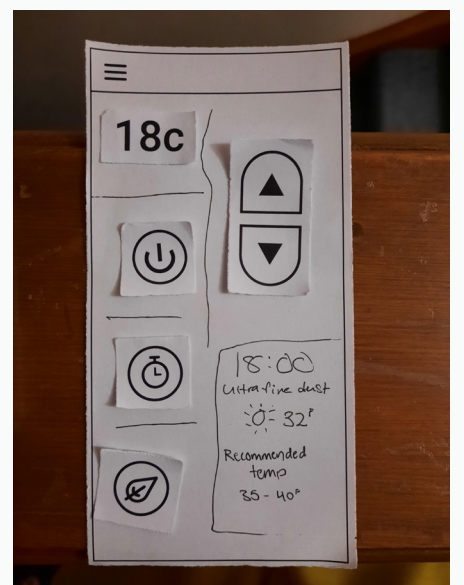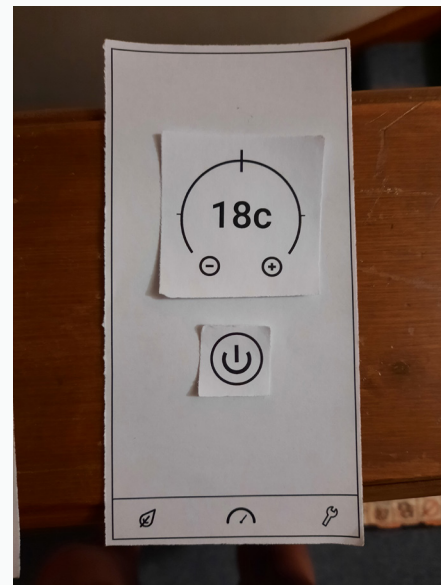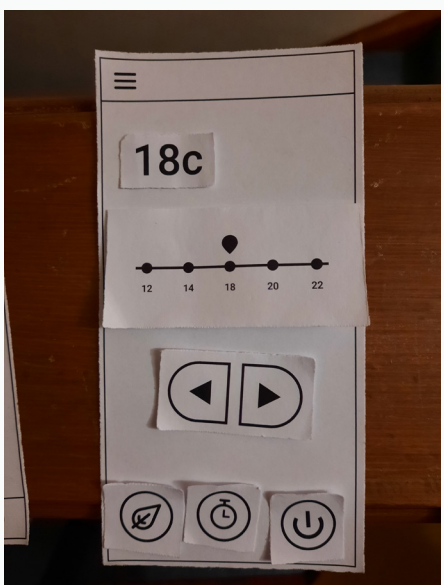
What Testers Have Said During the Process

"Have color"

"Locks/key points on the knob so that it isn't so finicky"

"Have the option to type in the temperature"

"Have the option to type in the temperature"

"Double nav for accounts and settings"

"Multiple ways to adjust the temperature - dial (quick and easy), +&- or arrows for more specific temperatures, preset temperatures."

"Keep it simple"

"Big buttons so that it is easy to understand"

"Have other features like current room temperature or outdoor temp"

"Have a tutorial before the app starts"

"Simple is better. Do not clutter."

"I'm a simple minded guy, keep it real simple, I just want to change the temp"

"Make it familiar to current heat pump controllers"

"Have buttons that are more precise with temperature"

"FAMILIARITY!!"

My Observation

Users think that the dial is too finicky. They want to change the temperature easily and quickly, nothing too fancy. The simpler the better, make sure that there isn't irrelevant information displayed. Features like room temperature, weather/outdoor room temp are features that you could expand on future developments/designs.

PERSONAS & EMPATHY MAP

Target Audience

Those who are homeowners and people that can afford a heatpump. Typically 25+
Not gender specific or ethnic specific.
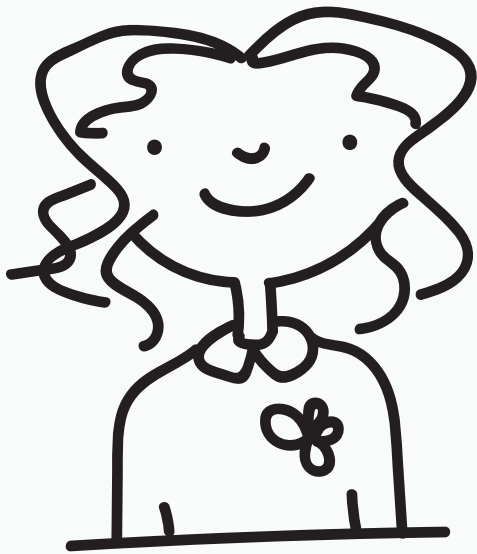
Annie Marie

Mother, 32, Running a small at home business.

Hobbies - Reading, watching historical dramas and social media.

Goals - Expand her business and raise her kids well.

Troubles - Working really hard for her business and family leaving her exhausted some days. The last thing she wants to do is to walk to her heat pump to change the temperature.

She uses TRUST Smart Heatpump because she is able to not think about the heatpump and let it run on her preset timers and eco mode.

George Newpeep

Single, 27, Junior Software Dev, works at home most days.

Hobbies - Cycling, Gardening, Origami.

Goals - Become a freelance software developer.

Troubles - Staying focused and not procrastinating tasks. The last thing he wants is to get distracted with the heat pump.

He uses TRUST Smart Heatpump because he likes that there is an eco mode and that he doesn't have to check on it.

Think and Feel

Lets set some timers for this week to save some money.

Feeling hot today, lets turn on the smart heat pump with my phone!

Hopefully this is as easy to use as my other smart home products.

My friends want to hangout at my place, I should turn to heat pump on to warm up the apartment.

Hear

A coworker told me that the number one cause for high electricity bills are heaters and heatpumps, I should probably turn on eco mode.

Is my heatpump on? I can hear it from here, lets check the app

See

Quickly turn up the heat with this really cool knob.

The weather is gonna be hot today, what's the heatpump temp.

Oh a notification, my heatpump is about to turn off in 10mins.

Pains

Are there any privacy settings I should consider? This is just a heatpump...

I hope that the changes I make out of the house registers in the heatpump. I don't want to be freezing coming home!
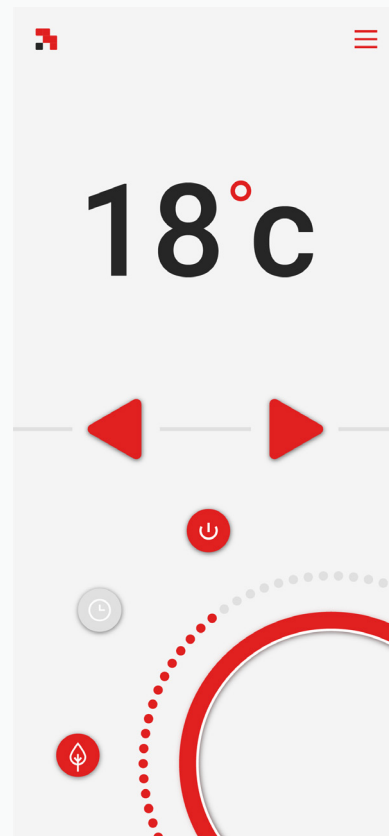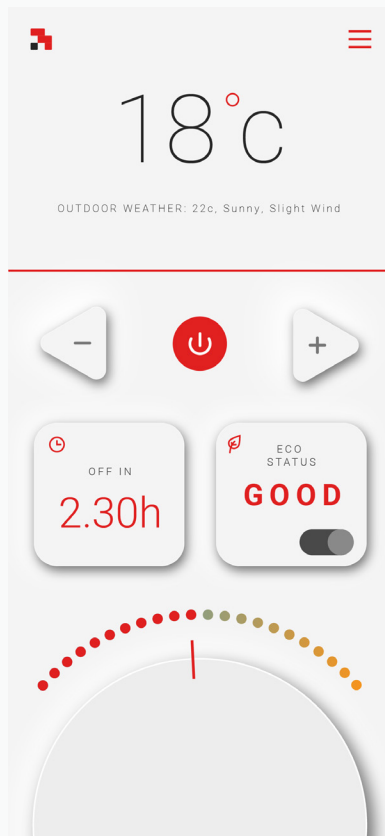
Gains

Yes I can adjust the heatpump from here. No distractions and I can focus on completing this smart home appllication!
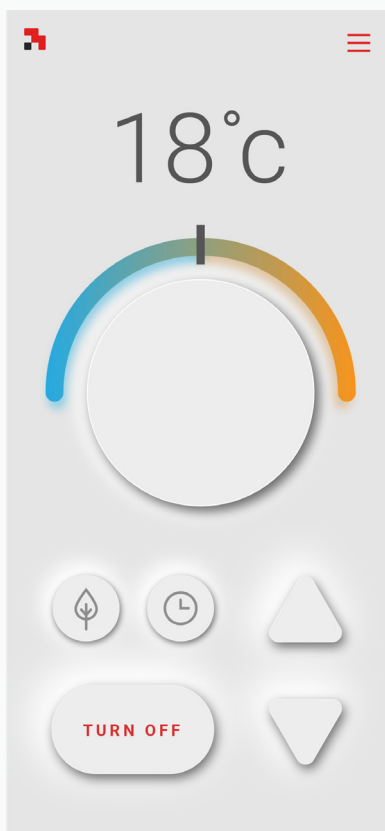
I can save some money using the heat pump's eco mode.

DEVELOPING A HI-FI

Initial Developments

Developed Design

The feedback I got on the designs above, in summary, was "It's cool but it's too complicated." The users that were younger found viewed the initial designs as cool and different and they would prefer Dev 2 overall. But for those in the targeted age group, 25+, they wanted things to be even more simpler and less "techy."

Using the feedback on the intial designs, I developed a design on the left to be simpler and clear. This design is more familiar to traditional heat pump remotes and it screams minimalism.

A piece of feedback that I got for the developed design was how I could incorporate the brand colors into the temperature dial, instead of the blue and orange. At first, I could not visualize the idea but when I implemented it to the design, it perfectly made the UI even more consistent with the branding. Another add on was having an arrow pointing to the gradient instead of a bar, indicating that the dial can be turned.

Brand Incorporation

An issue that I found was how to incorporate the red of the branding. Red can mean many things but in general it is a strong, powerful color. The decision I made was to make the red as the on/pressed button. It's boldness and contrast with the off-white background makes it easy for the users to understand that they have interacted with the button and it is working.
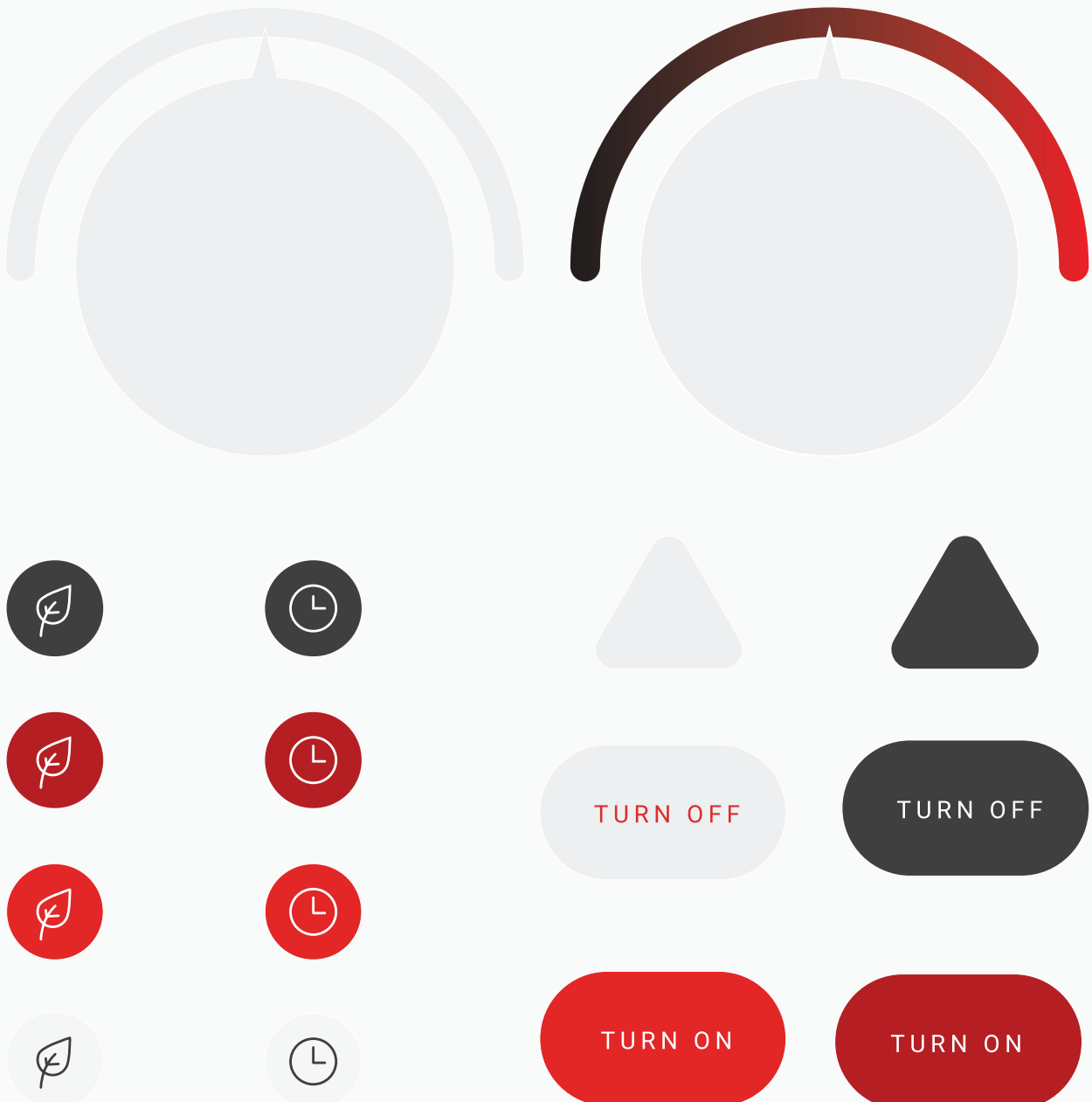
Key Features

Dial - In almost all user testing designs, the users incorporated a dial onto their design.
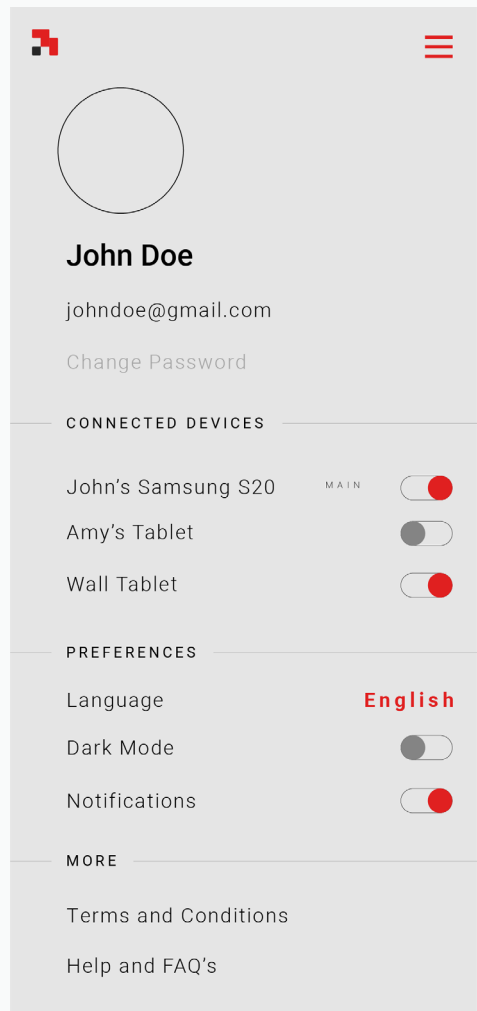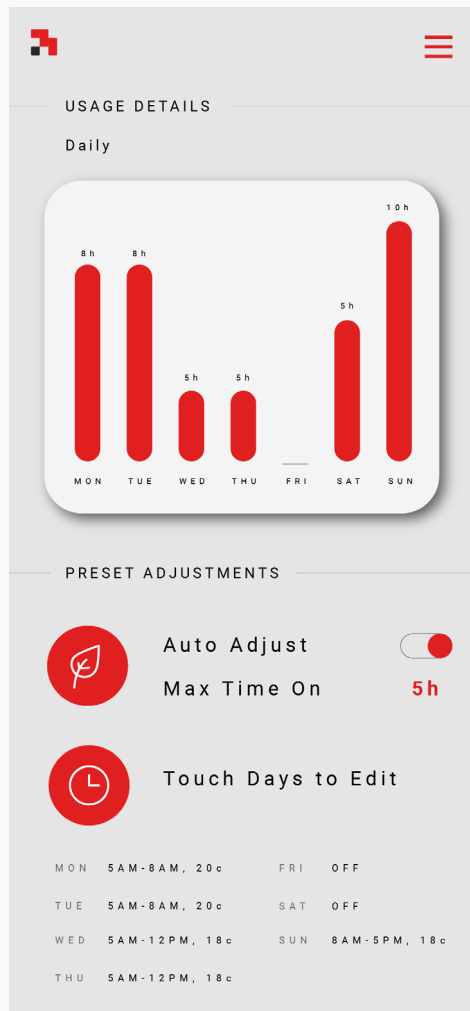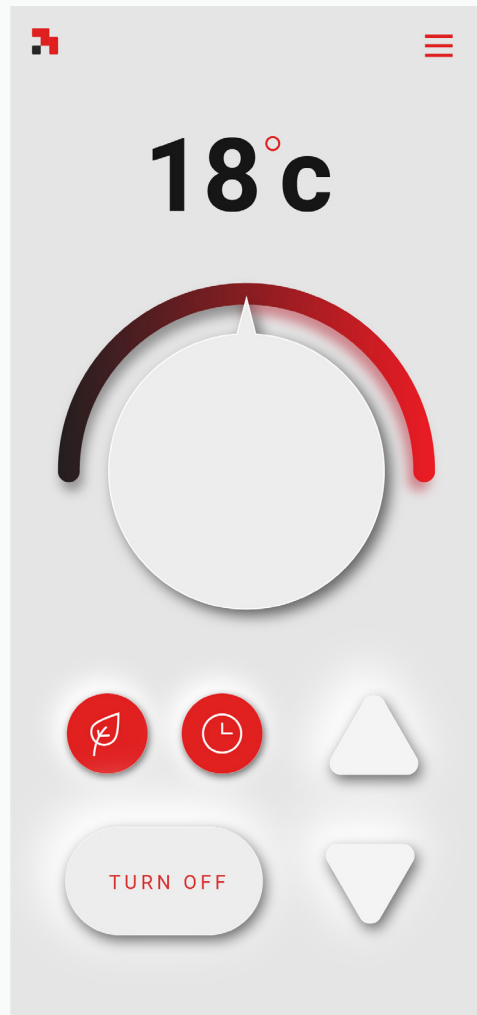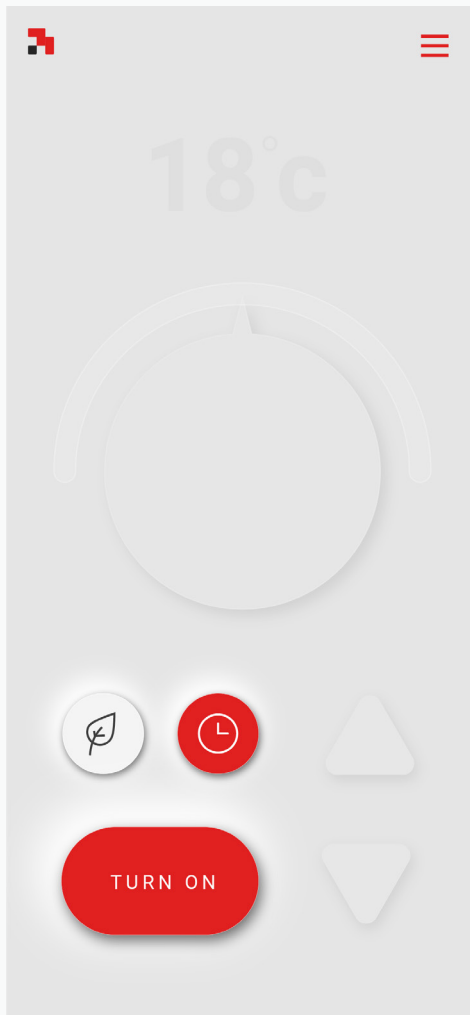Arrow Buttons - Familiarity to heat pump remotes. More precise temperature adjustments.
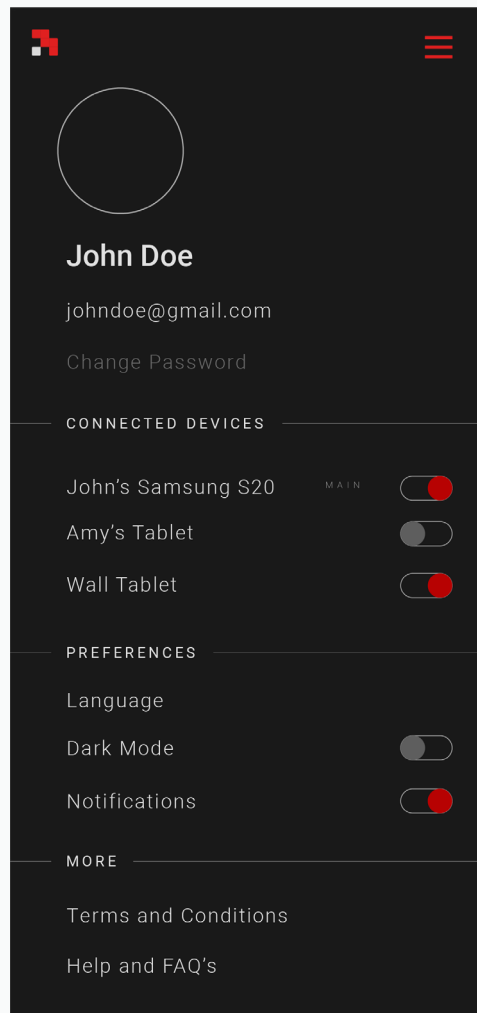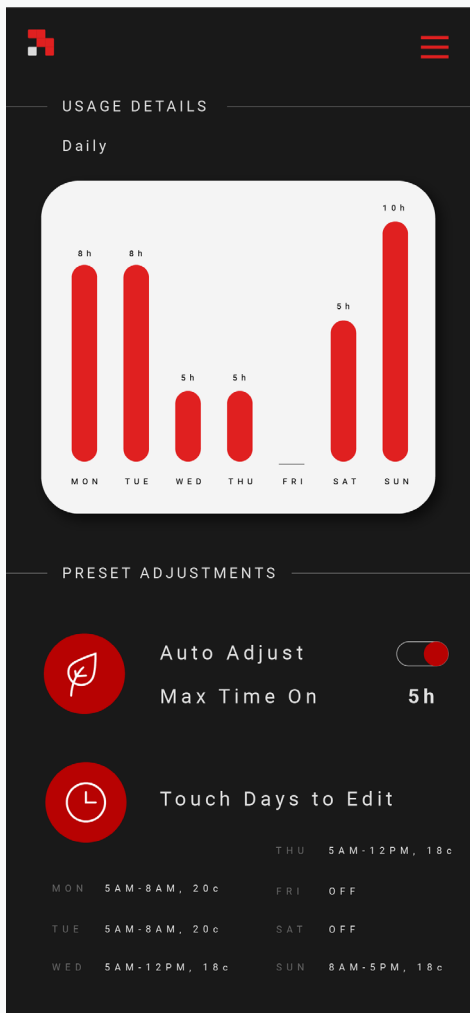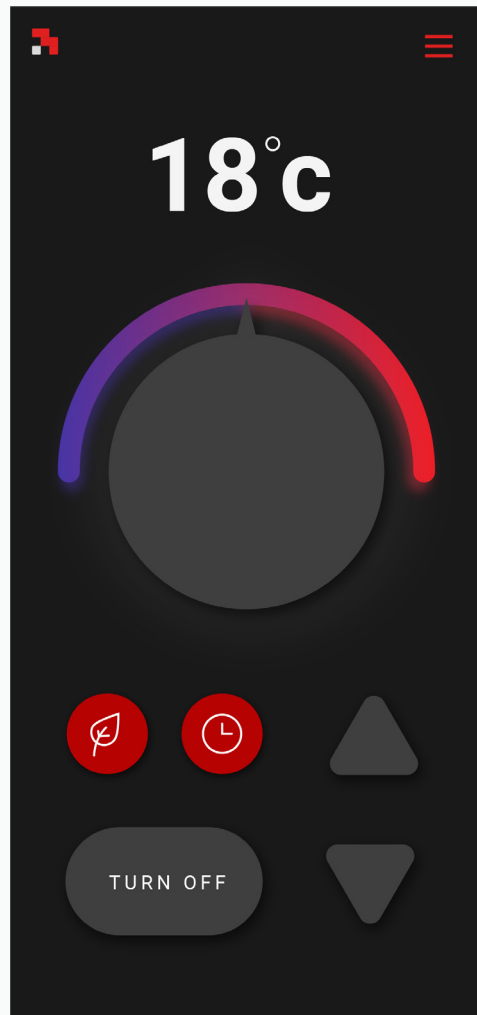Simple Preset Buttons - Users have expressed the "simple is better" concept and by making these simple buttons, it allows the design to be balanced and minimal.
Large Power Button - The most important feature of the app is to turn the heatpump on. By using text and color, it is clear to the users when the heatpump is on and off.

UI Kit

TURN OFF

TURN OFF

TURN ON

TURN ON

18°c

18°c

TURN ON

TURN OFF

USAGE DETAILS

Daily

10 h

8 h   8 h

5 h   5 h   5 h

MON   TUE   WED   THU   FRI   SAT   SUN

PRESET ADJUSTMENTS

Auto Adjust

Max Time On   5h

Touch Days to Edit

MON   5AM-8AM, 20c   FRI   OFF
TUE   5AM-8AM, 20c   SAT   OFF
WED   5AM-12PM, 18c   SUN   8AM-5PM, 18c
THU   5AM-12PM, 18c

John Doe

johndoe@gmail.com

Change Password

CONNECTED DEVICES

John's Samsung S20   MAIN

Amy's Tablet

Wall Tablet

PREFERENCES

Language   **English**

Dark Mode

Notifications

MORE

Terms and Conditions

Help and FAQ's

18°c

TURN ON

18°c

TURN OFF

USAGE DETAILS

Daily

8 h	8 h					10 h
		5 h	5 h		5 h	
MON	TUE	WED	THU	FRI	SAT	SUN

PRESET ADJUSTMENTS

Auto Adjust

Max Time On   **5 h**

Touch Days to Edit

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FINAL FEEDBACK

"Have color"

"Locks/key points on the knob so that it isn't so finicky"

"Have the option to type in the temperature"

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CODING PROCESS

CSS Methology

Peer Coding Review

Code Validation

SUMMARY AND OVERVIEW
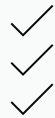
Project Success

Use UX research methods to...

- Figure out consumer interface preferences. ✓
- Check that styling guidelines are accessible and consistent. ✓

Develop a UI that...

- Is responsive for mobile and table use. ✓
- Easy to use and understand. ✓
- Engages the user, leaving them wanting to utilize the app as much as possible ✓

Future Developments

Because of time limiations, many features of the UI are not usable. Below are future developments and ideas that I would like to code and incorporate in the future.

An important development would be a working "change language" feature and having Maori as an available language. By creating a partnership with Maori people for translation, this feature can can help protect the Maori language and perhaps even encourage those learning Maori to use this feature to enhance their learning and invlovement in the Maori language.

The temperature changing with the use of the dial and the arrow buttons would be something to complete but I would also like to add a feature that perhaps tells you the current weather and recommended temperature for your household. I am unsure on how to incorporate this at this stage but temperature and weather are closely linked and the availability to the users would be helpful and also time saving.

Overall interactions of the application would be a good thing to develop. By interactions, I mean - simple page and button animations, notifications and screen reader compatability for those with sight impairments.

Summative Experience and Review

I really enjoyed this summative. I was able to understand my strengths and weaknesses as a designer but foremost as a developer. I found out that research is where I lack patience and I easily forget it's importance and jump straight into design, it is something to definitely work on in future projects. Design is still my stronger skill but I have definitely grown fond of coding and it's tedious but exciting challenges. The amount of things that I can learn excites me and this excitement towards coding has never happened before. Seriously, never. I want to learn more about animations, whether css animations or javascript, I don't really care - I really just want to learn and incorporate it into my developments. In terms of my personal management of this project, I did okay. Things can be improved on, eg. getting more feedback, taking breaks, working agile and setting deadlines for myself. Overall, I am happy with the results of the project.

RESEARCH AND DESIGNED BY

Rane Magno