

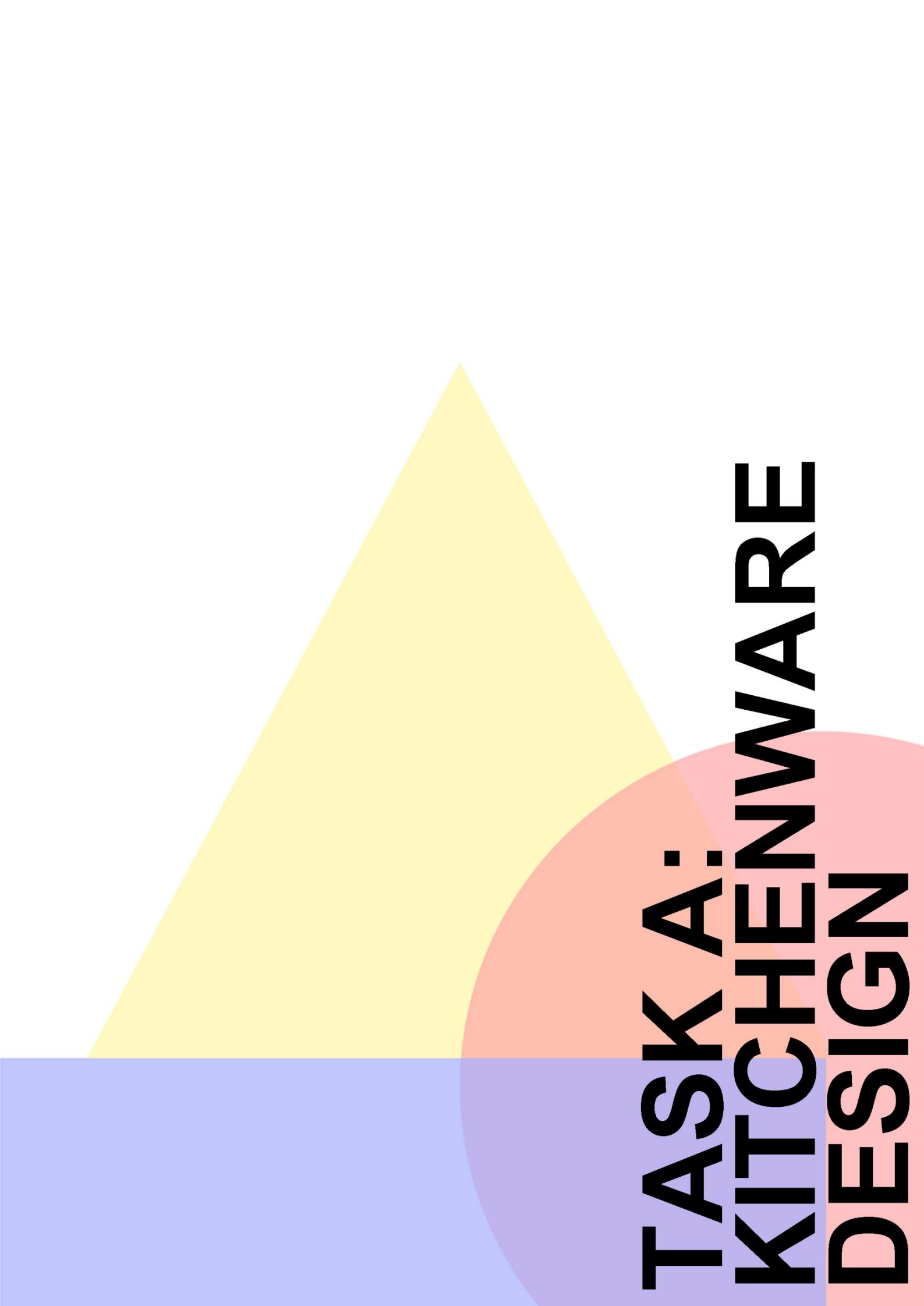
Rhys A. Way

MDes / BA (HONS) PRODUCT DESIGN



USER EXPERIENCE DESIGN

[M5X01239]



TASK A: KITCHENWARE DESIGN

TASK A: KITCHENWARE DESIGN

TASK B: HEALTHY EATING SERVICE DESIGN

“Preparing a meal at home is an important daily activity for everyone to maintain a healthy and independent lifestyle. It includes a variety of activities such as shopping for food, preparation and cooking in the kitchen and clearing up afterwards. Inclusive design plays a key role in enabling the widest range of people to prepare meals effectively.”

<http://designingwithpeople.rca.ac.uk/activities/meal-preparation>



TASK A: KITCHENWARE DESIGN

TASK B: HEALTHY EATING SERVICE DESIGN

CHARACTER PROFILES

The following 6 authentic candidates are the personal character profiles of the subjects used in my User Experience (UX) Design investigation. The assessment subjects, will be utilised on numerous occasions, firstly for myself to monitor their daily lifestyle patterns, typically in the kitchen or a food preparation environment. Which will be accomplished to distinguish typical issues associated with the act of food preparation, and then later throughout the investigation to model and assess my prototype design solutions.

- 1**
- NAME: CAITLIN
 - AGE GROUP: 16-25
 - OCCUPATION: STUDENT
 - CONFIDENCE IN FOOD PREPARATION: 3/5
 - PHYSICAL IMPEDIMENT: N
 - PERMISSION TO PARTAKE IN TEST(S): Y
 - DESIGNATED COLOUR: 

- 2**
- NAME: LOUISE
 - AGE GROUP: 36-45
 - OCCUPATION: EDUCATION EXAMS OFFICER
 - CONFIDENCE IN FOOD PREPARATION: 5/5
 - PHYSICAL IMPEDIMENT: REGULAR BACK PAIN
 - PERMISSION TO PARTAKE IN TEST(S): Y
 - DESIGNATED COLOUR: 

- 3**
- NAME: ANDREW
 - AGE GROUP: 50+
 - OCCUPATION: MANAGER OF SHIPPING AGENCY
 - CONFIDENCE IN FOOD PREPARATION: 5/5
 - PHYSICAL IMPEDIMENT: N
 - PERMISSION TO PARTAKE IN TEST(S): Y
 - DESIGNATED COLOUR: 

- 4**
- NAME: ALED
 - AGE GROUP: 16-25
 - OCCUPATION: STUDENT
 - CONFIDENCE IN FOOD PREPARATION: 3/5
 - PHYSICAL IMPEDIMENT: N
 - PERMISSION TO PARTAKE IN TEST(S): Y
 - DESIGNATED COLOUR: 

- 5**
- NAME: MARJORIE
 - AGE GROUP: 50+
 - OCCUPATION: RETIRED
 - CONFIDENCE IN FOOD PREPARATION: 5/5
 - PHYSICAL IMPEDIMENT: ARTHRITIS
 - PERMISSION TO PARTAKE IN TEST(S): Y
 - DESIGNATED COLOUR: 

- 6**
- NAME: ELLA
 - AGE GROUP: 50+
 - OCCUPATION: RETIRED
 - CONFIDENCE IN FOOD PREPARATION: 5/5
 - PHYSICAL IMPEDIMENT: ARTHRITIS, MOBILITY
 - PERMISSION TO PARTAKE IN TEST(S): Y
 - DESIGNATED COLOUR: 



TASK A: KITCHENWARE DESIGN

TASK B: HEALTHY EATING SERVICE DESIGN

INVESTIGATION I: BEHAVIOURAL MAPPING

SUBJECT: **INCAHUANA**

The initial research process of my investigation will involve the use of a technique called 'Behavioural Mapping', which is designed to allow the researcher to experience an authentic act of (*in this case meal preparation*) first hand, and unfiltered, allowing them to capture genuine mistakes, issues, product faults/failures and hence the title, the subject's natural behaviour during the process. It's a first-hand insight into how people live and operate throughout daily life.

+ On the following page is the **behaviour map**, and below is the **key**.

-
1. ITEM RETRIVAL (FRIDGE/FREEZER)
 2. COLLECT TRAYS + UTENSILS
 3. PRE-HEAT OVEN
 4. BOIL WATER (KETTLE)
 5. PLACE FROZEN FOOD ON TRAY + IN OVEN
 6. COLLECT PAN
 7. INSERT BOILING WATER + FOOD
 8. PLACE ON HOB
 9. COLLECT DRINKING GLASSES
 10. POUR DRINKS
 11. COLLECT CUTLERY
 12. COLLECT PLATES
 13. PREPARE SIDES
 14. PLACE SIDES IN OVEN
 15. STIR FOOD ON HOB
 16. TURN OVEN OFF
 17. SERVE ON PLATE
 18. TAKE OUT FOOD FROM OVEN
 19. SERVE CONTENTS
 20. TRAVEL TO EATING LOCATION
-

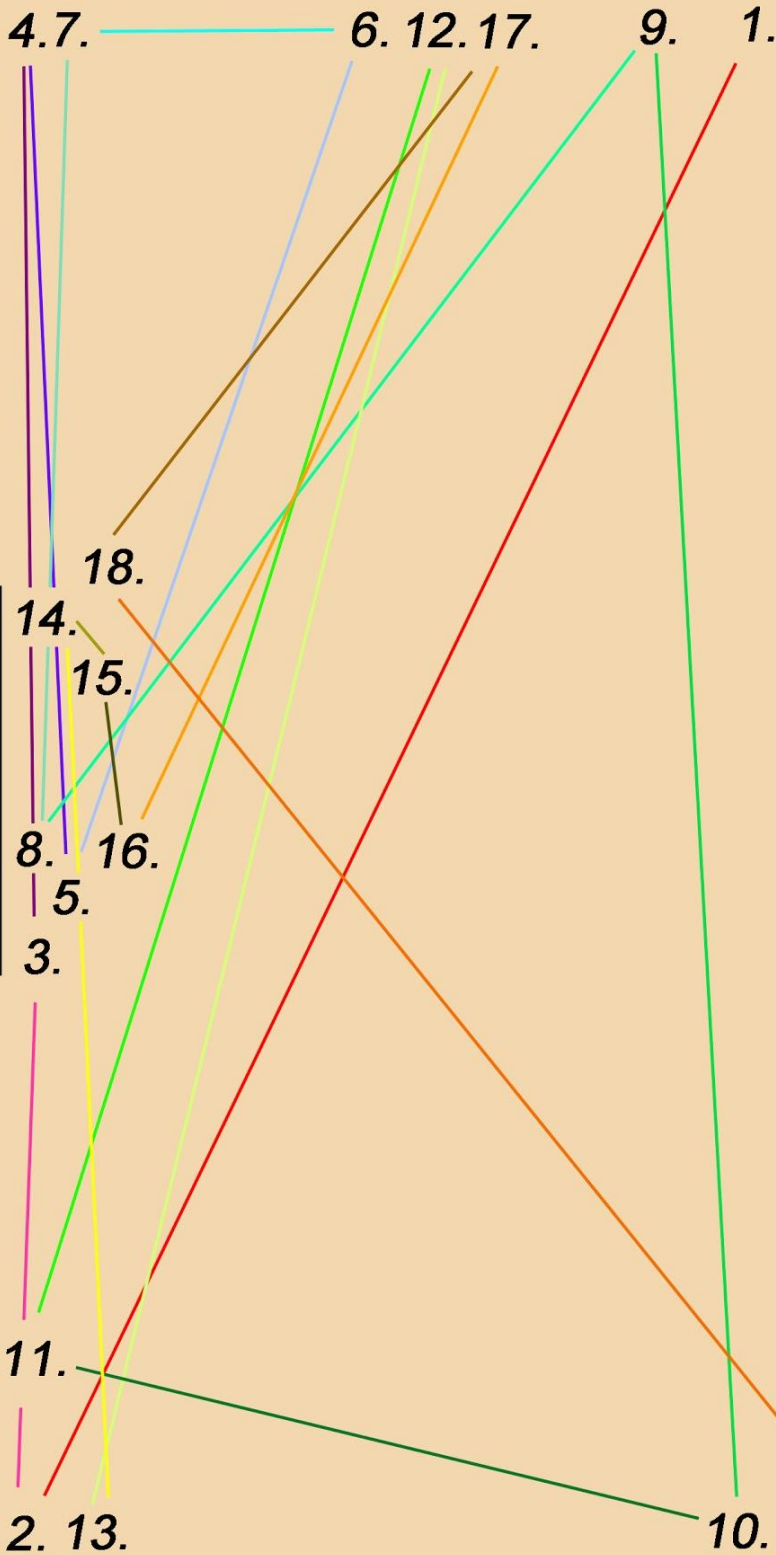


WALL MOUNTED
CUPBOARDS

FRIDGE

 KETTLE

OVEN +
HOB
COOKER



SINK

WORKTOP

TASK A: KITCHENWARE DESIGN

TASK B: HEALTHY EATING SERVICE DESIGN

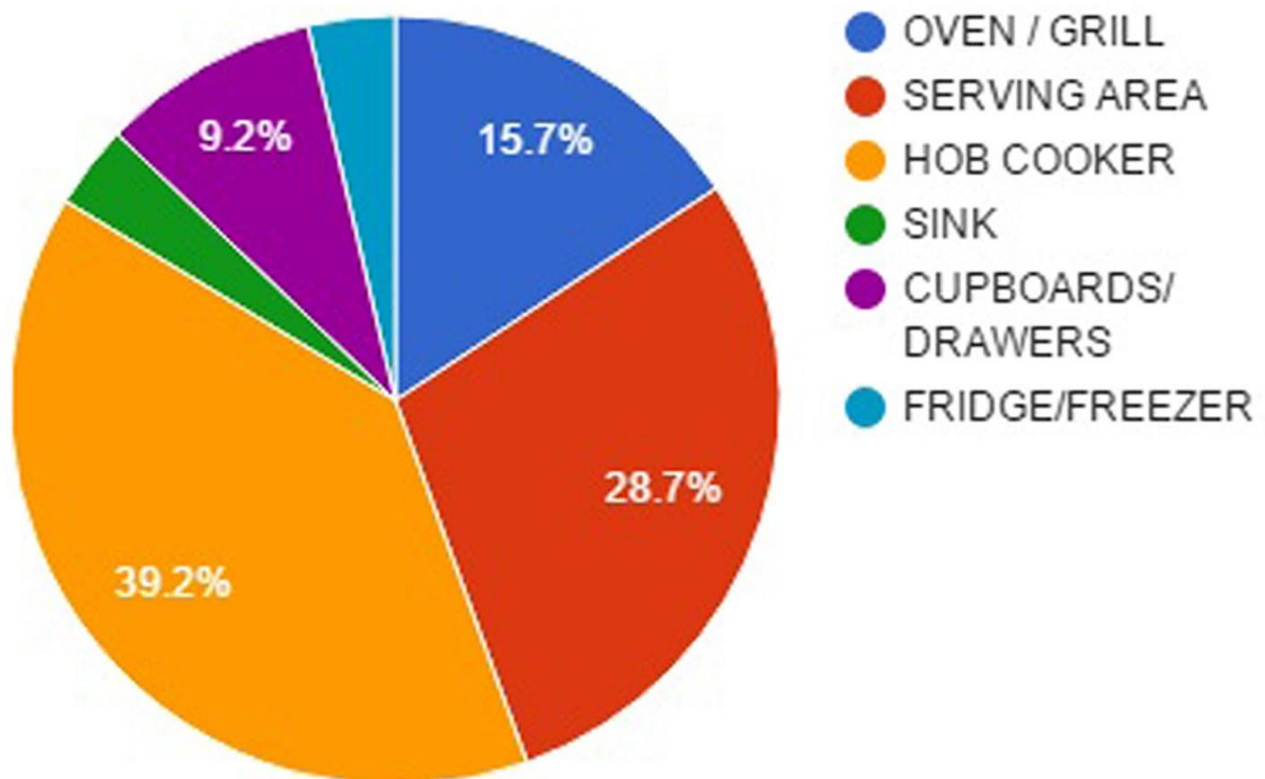
INVESTIGATION I: BEHAVIOURAL MAPPING

SUBJECT: **MACALLINE**

ANALYSIS

From looking at the below diagram it is evident that the vast majority of the duration of the process was spent using the oven and hob cooker. This provides it's own dangers as it is also the most potentially hazardous utility in the kitchen. This may now provide a suitable option for me to focus my investigation in designing to assist kitchen users.

Percentage of duration spent at each station.



TASK A: KITCHENWARE DESIGN

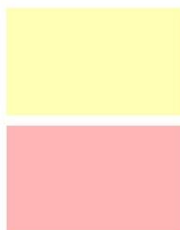
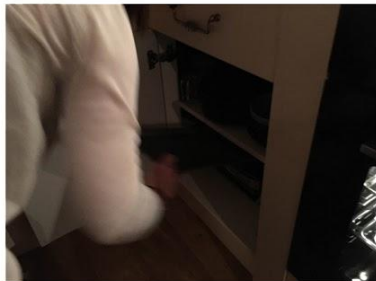
TASK B: HEALTHY EATING SERVICE DESIGN

INVESTIGATION II: FLY ON THE WALL

SUBJECT: **2. LOUISE**

The second research method in my investigation is the process of being a 'fly on the wall' offering an uninterrupted perspective on the preparation of a meal for one, observing the issues faced with this task will be essential to my design research. The meal was chosen specifically to highlight issues surrounding food preparation involving hazards associated with heat.

START



Difficulty opening, Small text - difficult to read. Ease of spillage.



Burn Risk - hand & wrist.



TASK A: KITCHENWARE DESIGN

TASK B: HEALTHY EATING SERVICE DESIGN

INVESTIGATION II: FLY ON THE WALL

II

SUBJECT: 2. LOUISE



Heat Risk, Absence of component to allow safe holding of pot, Naked edges of piping-hot baking tray upon worktop, decanting extremely difficult.



TASK A: KITCHENWARE DESIGN

TASK B: HEALTHY EATING SERVICE DESIGN

INVESTIGATION II: FLY ON THE WALL

III

SUBJECT: 2. LOUISE



END



Difficulty decanting, utensil unsuitable, absence of handles, draining peas results in steam burns via this method.



TASK A: KITCHENWARE DESIGN

TASK B: HEALTHY EATING SERVICE DESIGN

INVESTIGATION III: VERBAL RESEARCH & DATA COLLECTION

SUBJECT: 5 MARJORIE

For the third research stage of my investigation I refer to subject 5 in order to examine the difficulties faced by one whom suffers from a physical impedement and how this affects their shopping, preparation and cooking routine. The disability in question is arthritis, which greatly limits daily practicalities.

**3/4 OF
DIAGNOSED
ARE WORKING
AGE.**

**10
MILLION
PEOPLE
IN THE
UK.**

**75%
FEMALE**

**NO
KNOWN
CURE.**

ARTHRITIS

200,000 NEW CASES PER YEAR.

[http://www.rheumatology.org.uk/patient_information/
simple_tasks/did_you_know.aspx](http://www.rheumatology.org.uk/patient_information/simple_tasks/did_you_know.aspx)



TASK A: KITCHENWARE DESIGN

TASK B: HEALTHY EATING SERVICE DESIGN

INVESTIGATION III: DAY IN THE LIFE

SUBJECT: 5. MARJORIE



TASK A: KITCHENWARE DESIGN

TASK B: HEALTHY EATING SERVICE DESIGN

INVESTIGATION III: DAY IN THE LIFE

II

SUBJECT: 5 MARJORIE

After completing the previous research methods, I then conducted a verbal feedback session with subject five, discussing the contents of their shopping trolley amongst other things. But firstly, the trolley was said to contain items of convenience, for example; ones that will store long (= less trips out), items that can be easily prepared and served (e.g. soup cans and bean cans), mainly items that are easy to open and are generally healthy but also time efficient. Subject five said they bought food to try and avoid using the oven due to their impediment, using the oven becomes strenuous on their back and legs, and gripping trays and cooking dishes (especially hot) is near impossible, oven gloves only further the difficulty.



The next stage is for myself to try existing appliances with the same restrictions subject five faces, and design accordingly around any issues or limiting factors. The image above is a fine example of how a simple task can be made difficult through this impediment.



TASK A: KITCHENWARE DESIGN

TASK B: HEALTHY EATING SERVICE DESIGN

INVESTIGATION IV: EMPATHY MODELLING

The next stage in my process is entitled 'empathy modelling'. Below demonstrates myself using kitchen appliances. The electrical tape and layered sweatshirts restrict movement in said locations to exemplify what living with arthritis is like. Allowing me to understand the limitations better and allow me to design accordingly.



Post my empathy modelling investigation, it is clear that GRIP is a huge issue, with limiting factors, e.g: Utensils, working handles or mechanisms, lifting heavy appliances such as the saucepan and kettle. Both of which needed two-hands to use, which was impossible due to the heat. Lastly, lunging and bending towards a low cupboard or oven was greatly restricted.

TASK A: KITCHENWARE DESIGN

TASK B: HEALTHY EATING SERVICE DESIGN

CONCLUSION

OF RESEARCH

After extensive research utilising various methodologies, the main factors I have learnt and will take into consideration during the design process are;

- + The majority of the time spent was around heat. (Oven, Grill, Hob etc.)

- + The biggest and most common hazard associated with injury is heat.

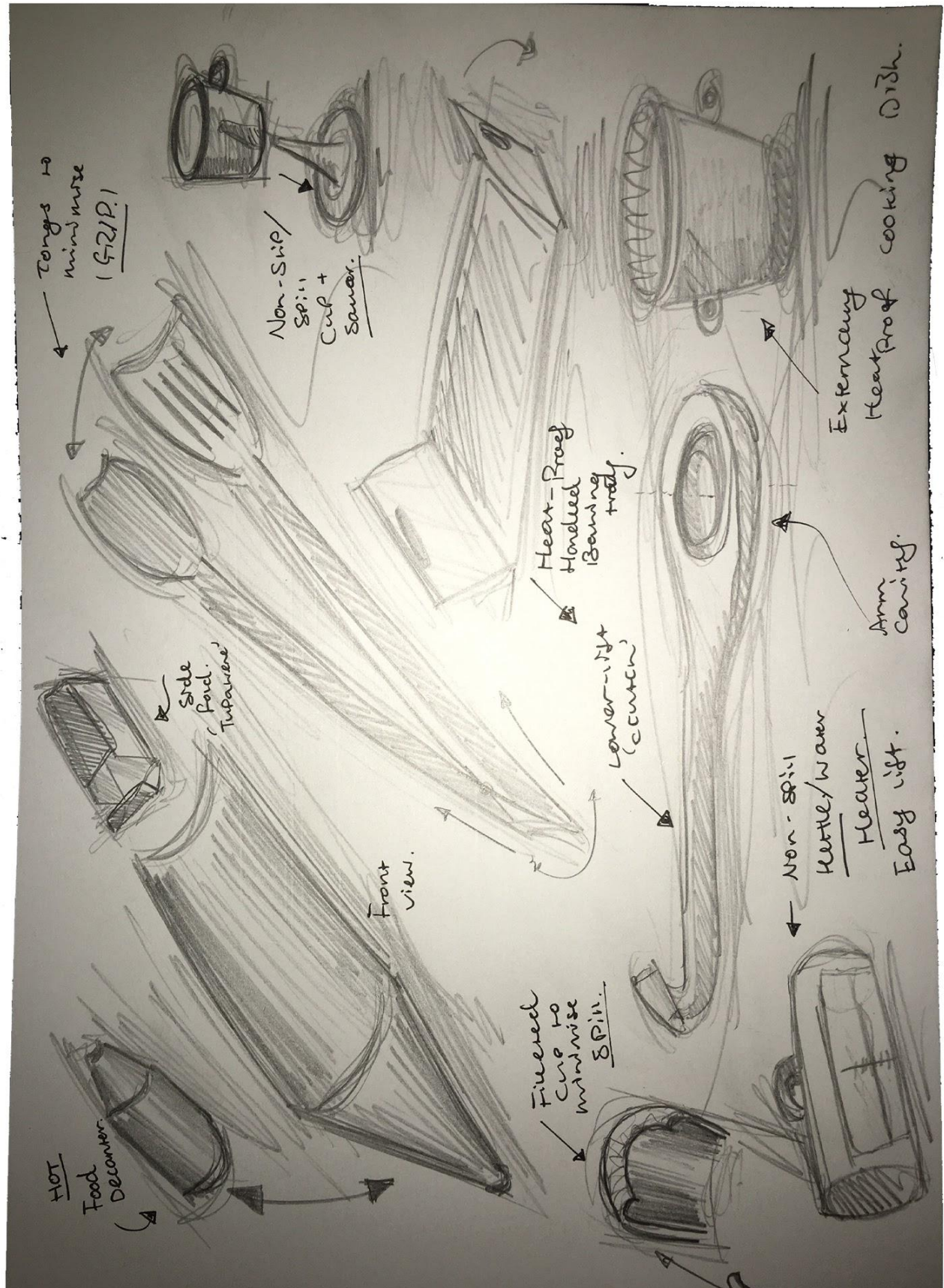
- + Limiting factors, e.g. arthritis or back pain etc. hold drastic effects.

For my design solution, My aims are to Improve safety, health and convenience. Focusing on utensils, I aim for it to be inclusive, to try and design out limiting factors such as arthritic tendencies and of course eliminate hazards whilst, decanting, or serving food.



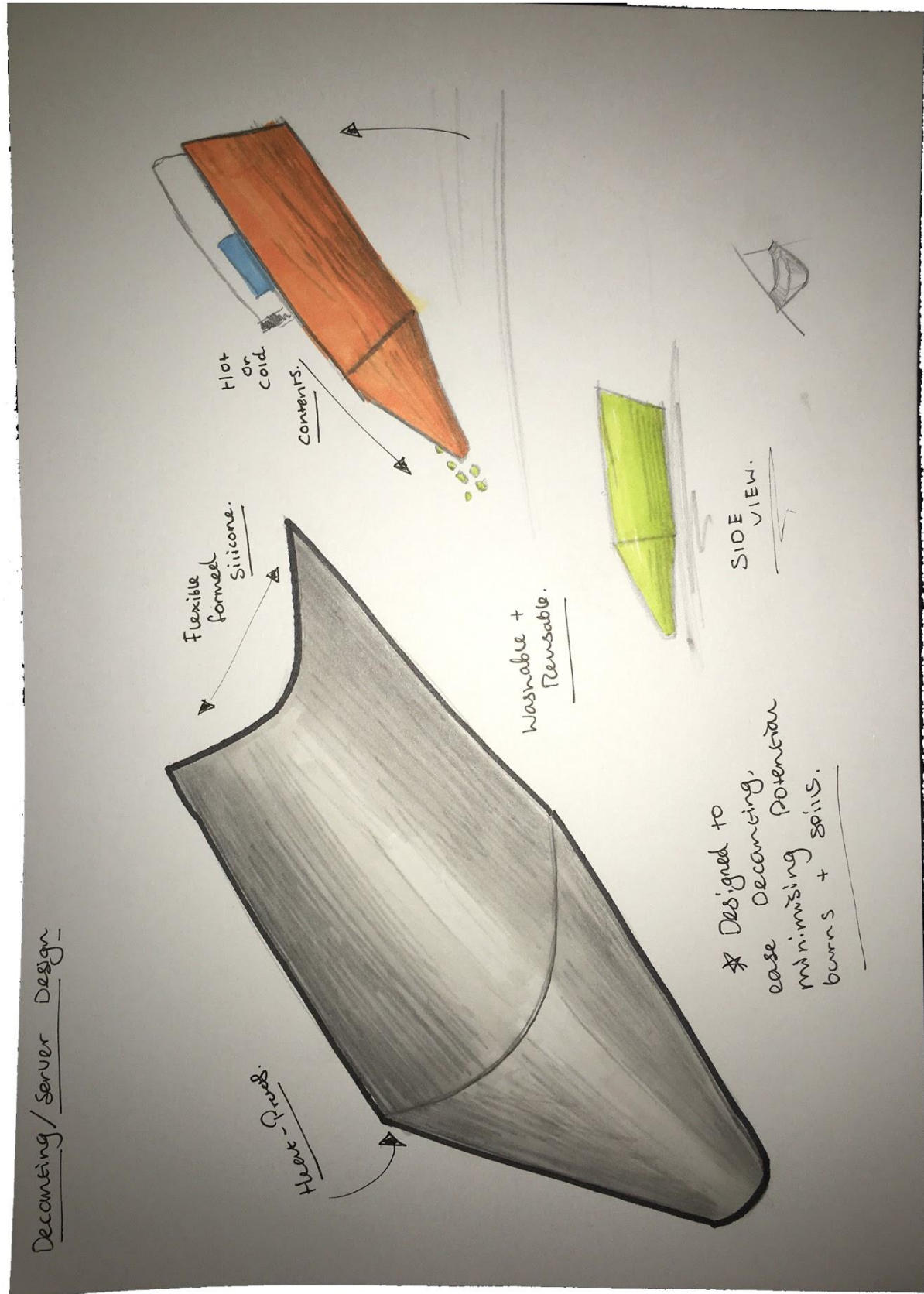
TASK A: KITCHENWARE DESIGN

TASK B: HEALTHY EATING SERVICE DESIGN



TASK A: KITCHENWARE DESIGN

TASK B: HEALTHY EATING SERVICE DESIGN



TASK A: KITCHENWARE DESIGN

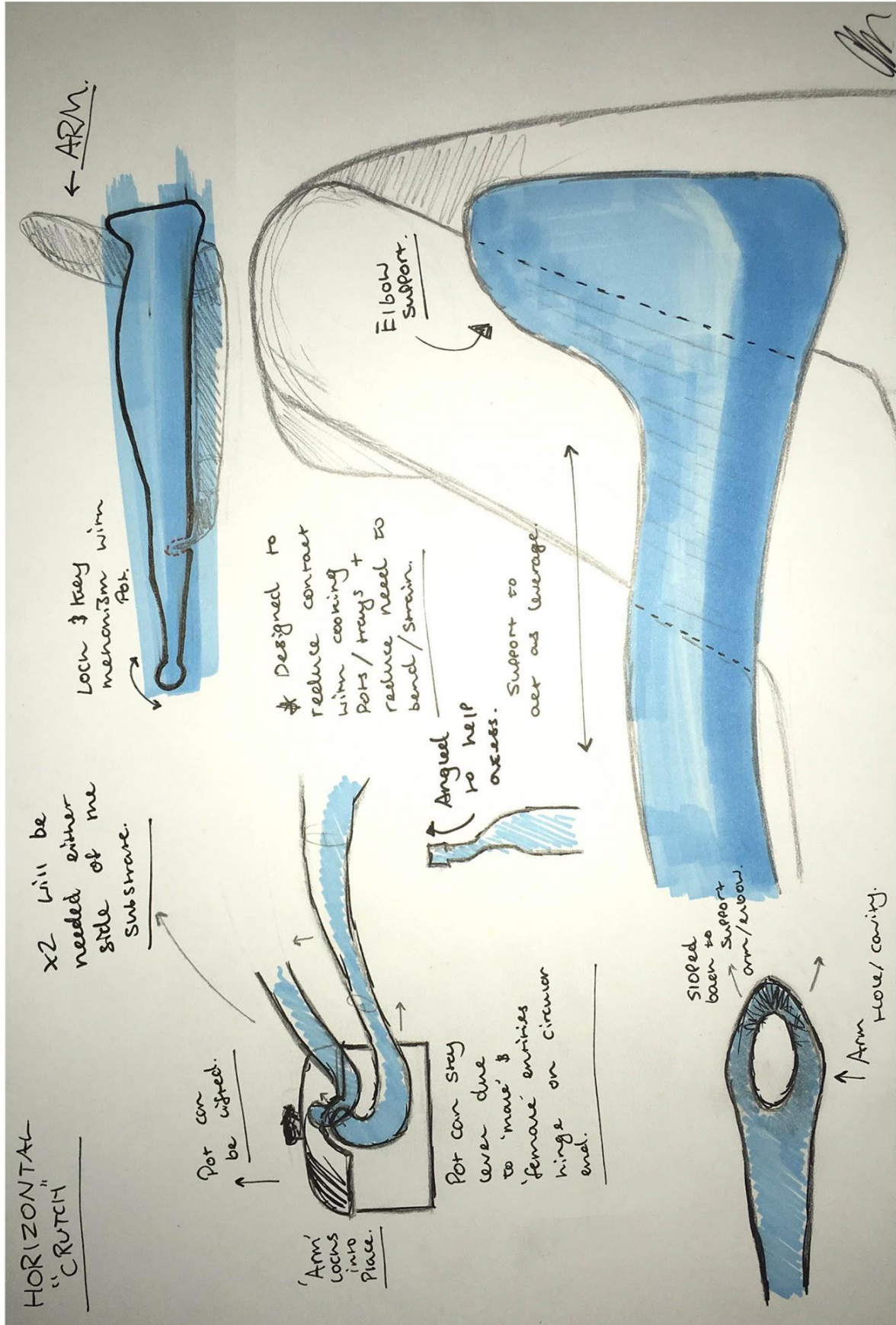
TASK B: HEALTHY EATING SERVICE DESIGN

PROTOTYPE 1



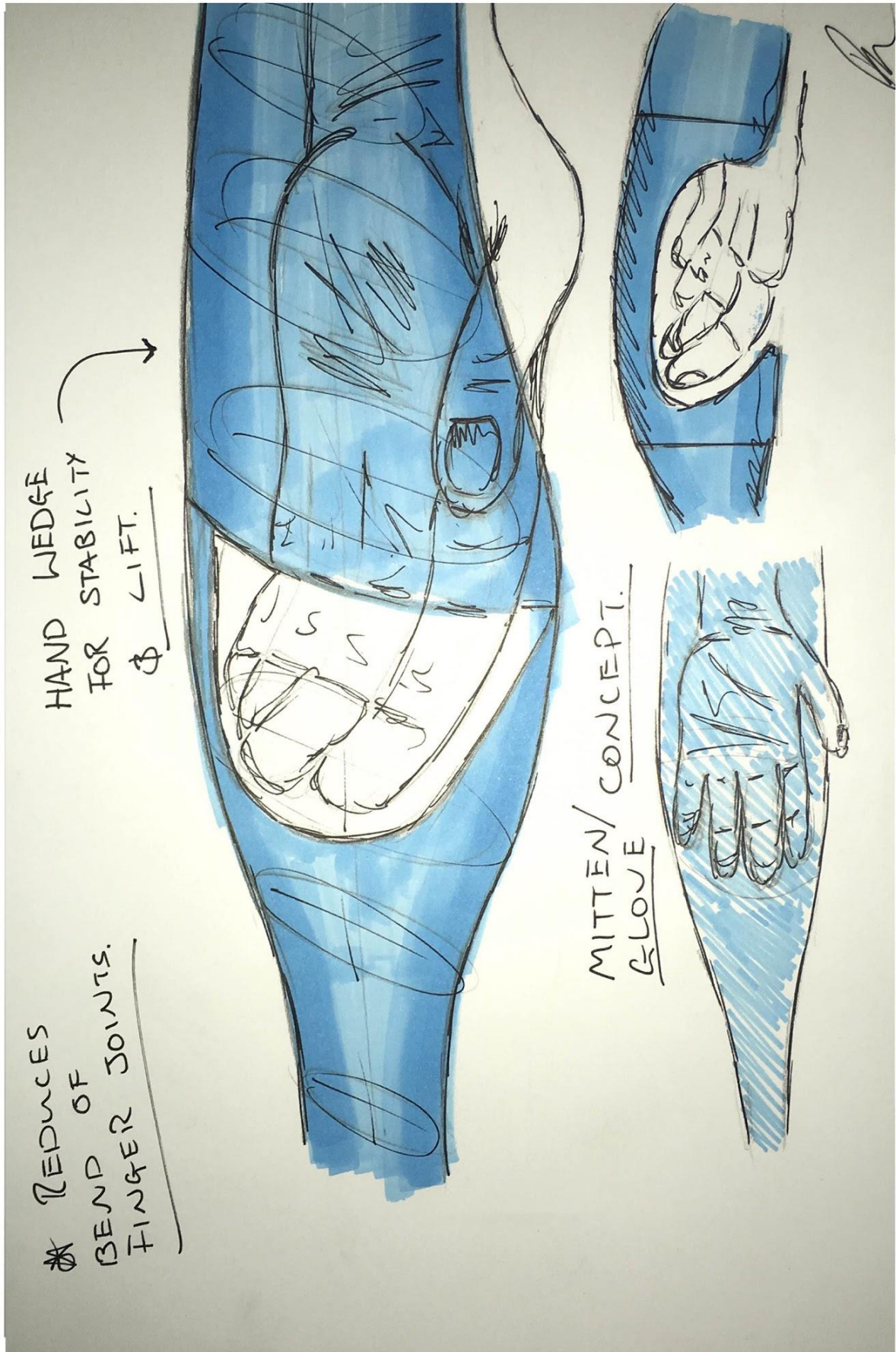
TASK A: KITCHENWARE DESIGN

TASK B: HEALTHY EATING SERVICE DESIGN



TASK A: KITCHENWARE DESIGN

TASK B: HEALTHY EATING SERVICE DESIGN



TASK A: KITCHENWARE DESIGN

TASK B: HEALTHY EATING SERVICE DESIGN

PROTOTYPE 2



A Crutch device designed to help users suffering with Arthritis.

Arm & palm support act as leverage no 'grip' needed.



Part of a twin set one for either arm to hold either side of substrate.

Hand slot for stability.

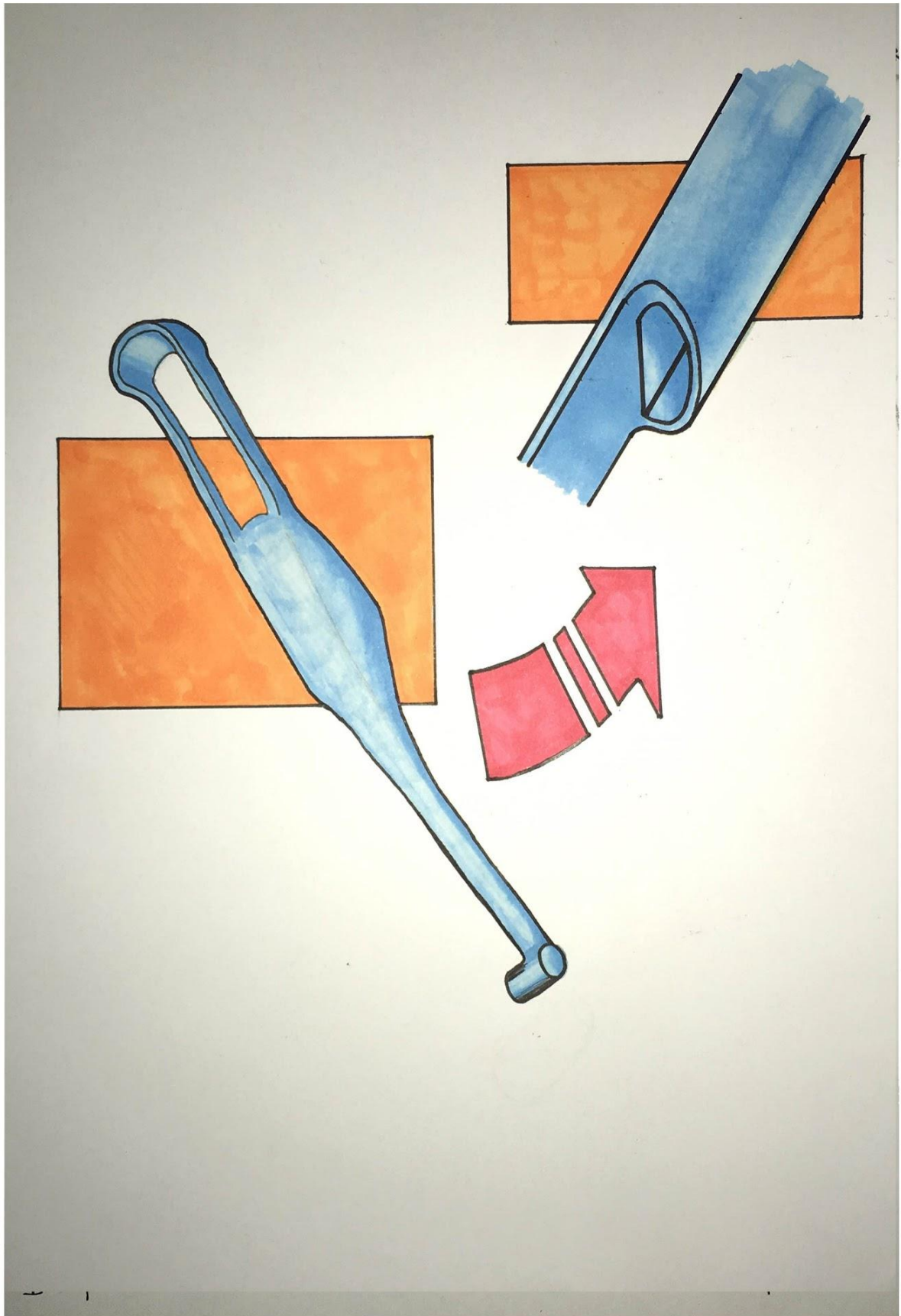


Allows user to reach without bending.



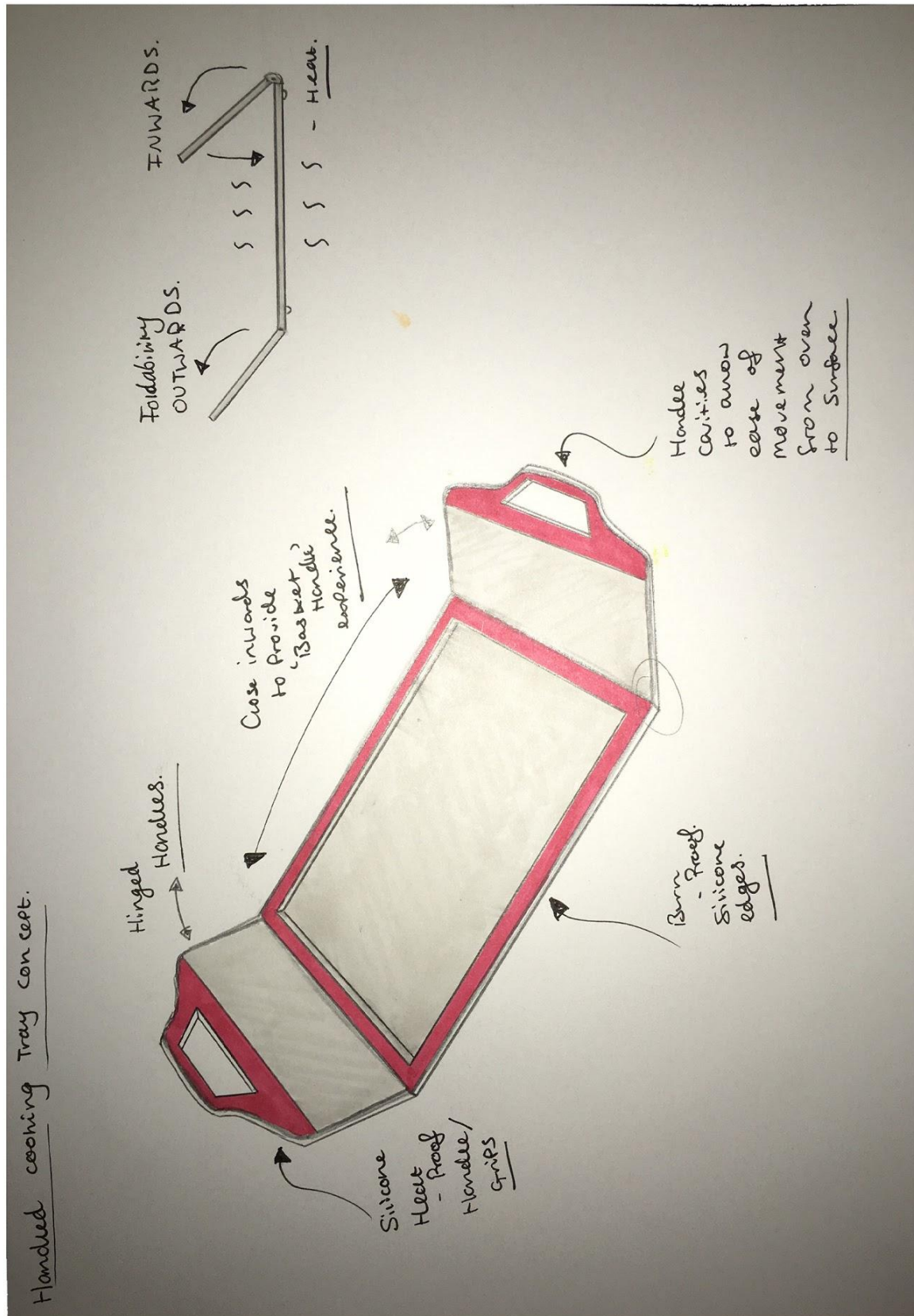
TASK A: KITCHENWARE DESIGN

TASK B: HEALTHY EATING SERVICE DESIGN



TASK A: KITCHENWARE DESIGN

TASK B: HEALTHY EATING SERVICE DESIGN



TASK B: HEALTHY EATING SERVICE DESIGN

PROTOTYPE 3



**Improves back posture,
easier to grip/hold.**

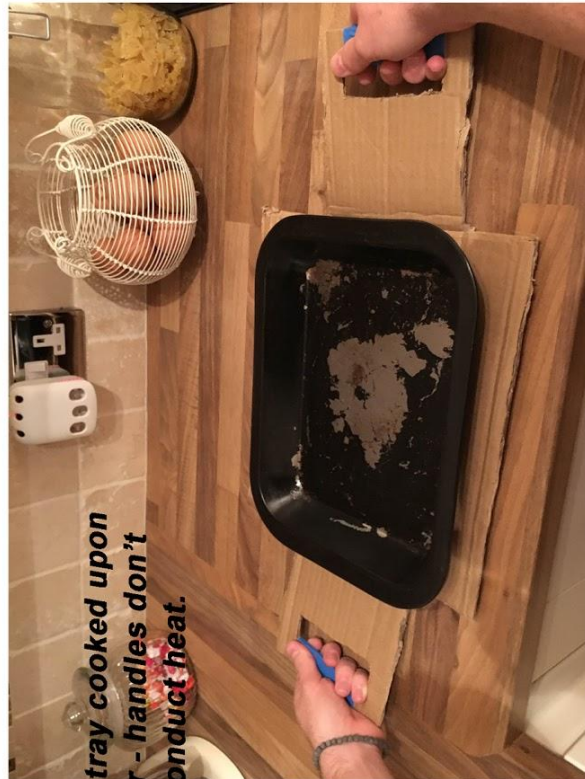
Heatproof handles.

More stability.



Wrists are straight.

**Hinged handles flattened
to create serving tray.**



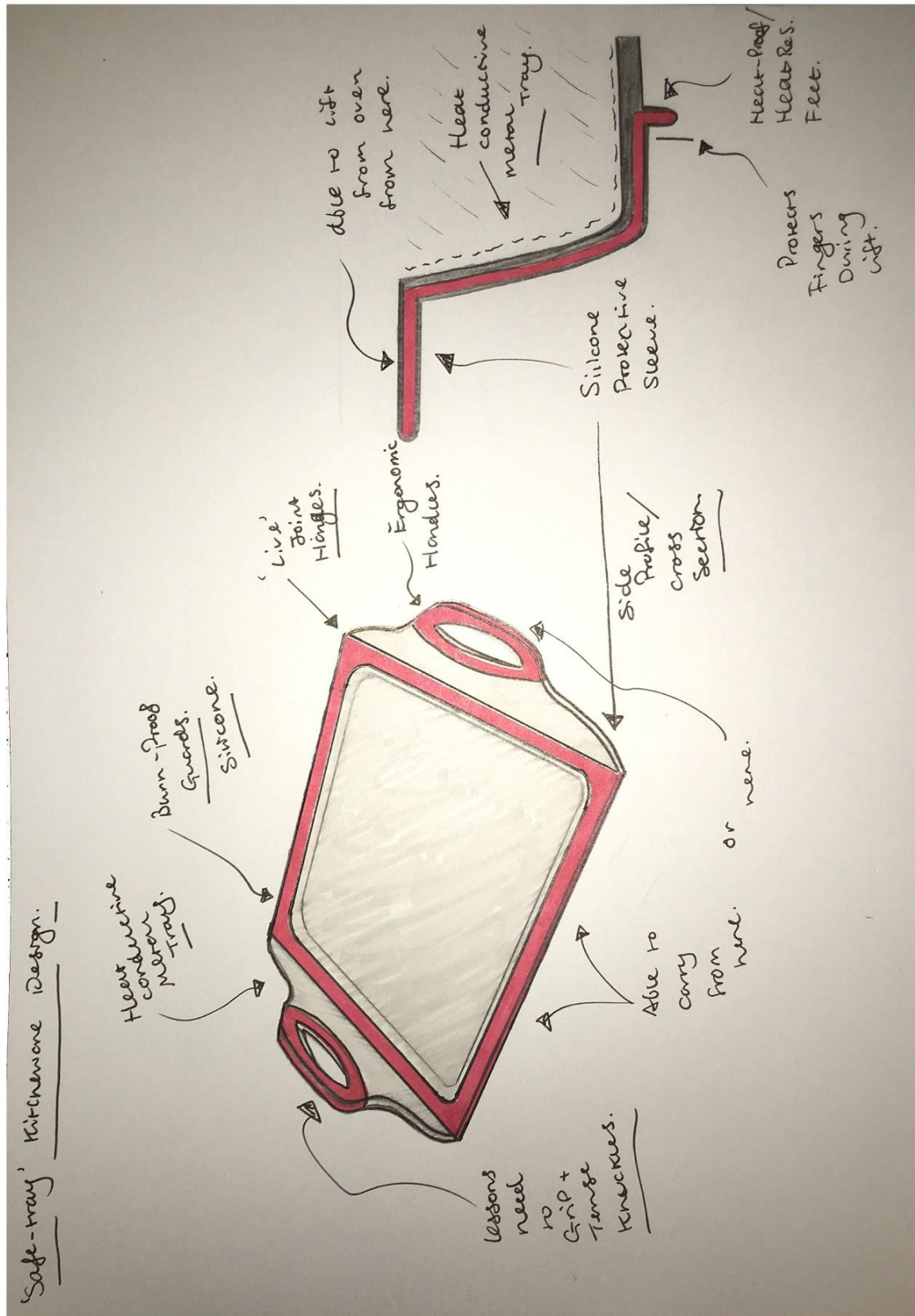
**Baking tray cooked upon
carrier - handles don't
conduct heat.**

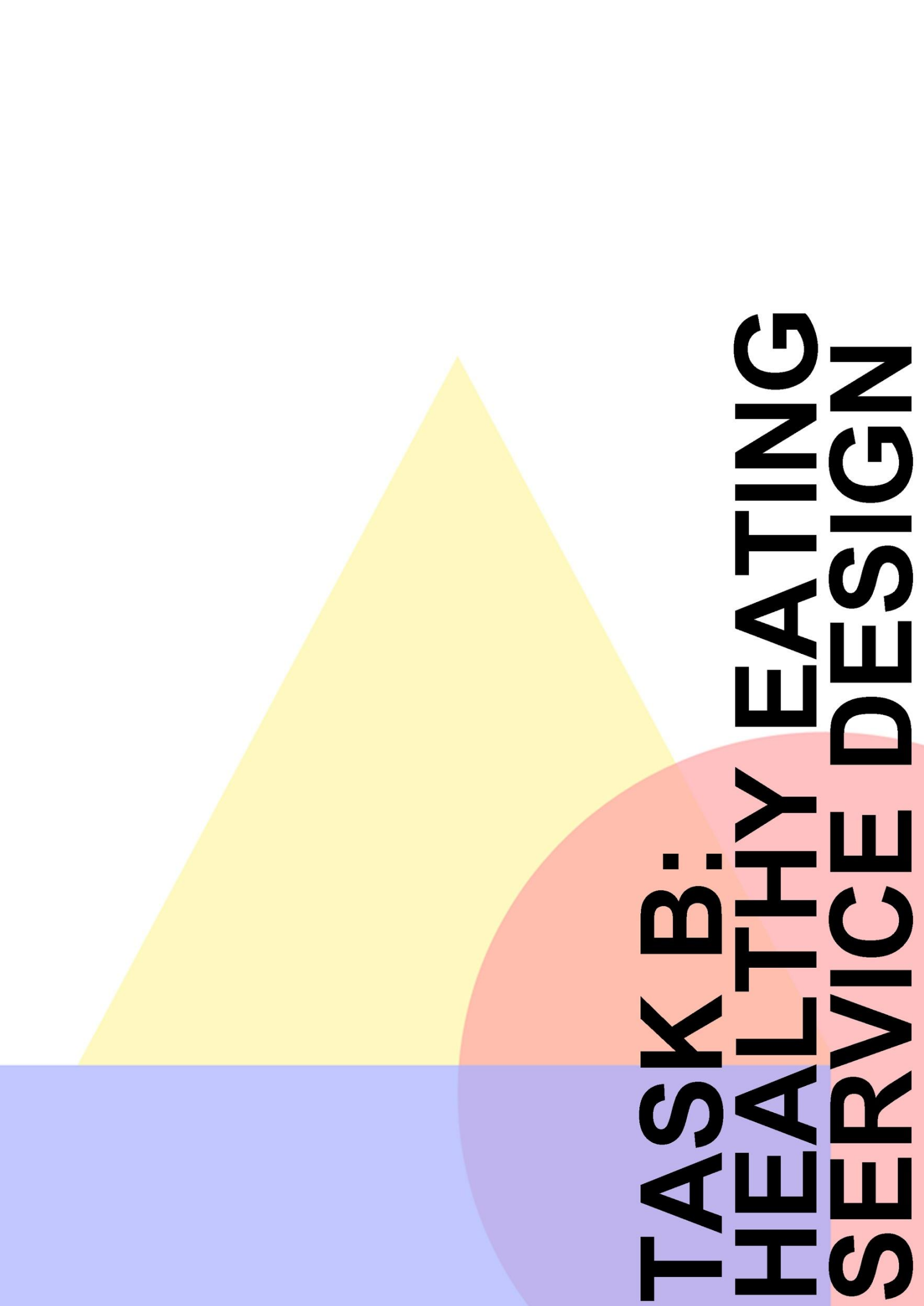


**Lift / Carry / Serve without
heat damage.**

TASK A: KITCHENWARE DESIGN

TASK B: HEALTHY EATING SERVICE DESIGN





TASK B: HEALTHY EATING SERVICE DESIGN

START

APP OPTIONS / PATHWAYS

EAT HEALTHY

SAVE MONEY & TIME

GET FIT

DIET TRACKER

QI Code scan.
Photo Identification.
Calorie Counter.
Link to Shop.
Intuitive Recipe Tips.
Recommends Meal based off
calories burned, & home
stock.)
Recommendations off
personal data.

SMART SHOP

Stock Check at home.
Local resources.
(Calc journey time etc)
Sales & Offers.
Smart List (Favourites etc)
uses location data.
Intuitive recipe tips.

EXERCISE
(PARTNER)

Apple Watch config.
Pedometer.
(Opt) link to diet tracker.
Reminders to exercise.
Tips & Small excercises.
(Time Calculated)
Releases Motivation.
(Stats, friend's
achievement)
linked to music app.
Gym Membership.
Social Media?

Enter Details For Personal Experience

NO

YES

OPTIONS

USE

TOUR

A modular application used on any network carrying device (smartphone/smart watch/computer/tablet.)

Offers users **OPTION**.

All services in app are optional.

Caters to a variety.

Tour & Test of all features before formal setup.

Singular use, or multiple use.

Customisable, colour, style, font, size, configuration, layout, score, points, profile, compete online game etc.

(OR NOT)

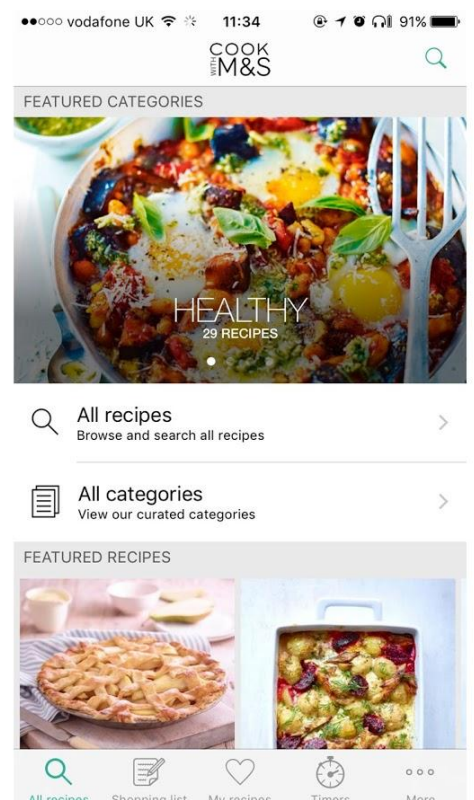
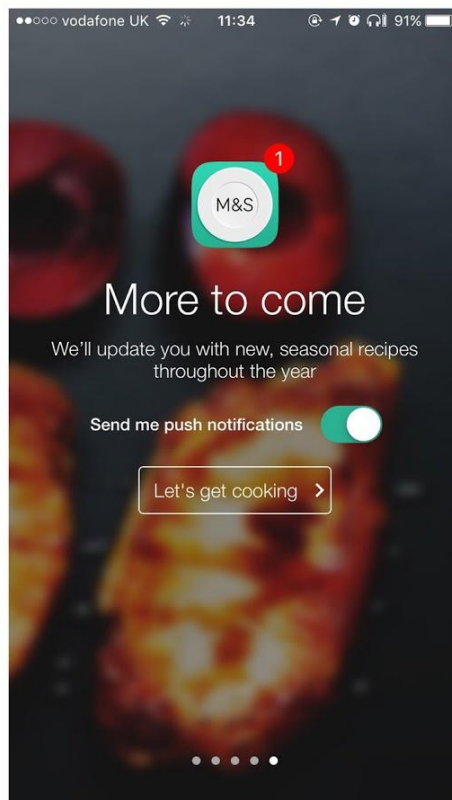
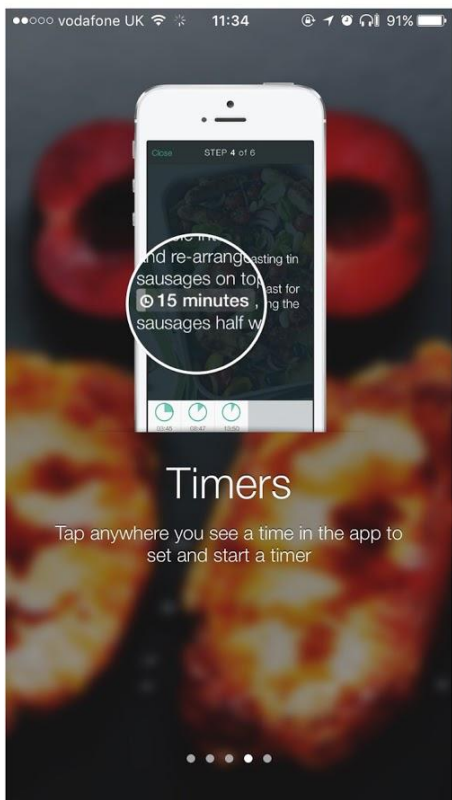
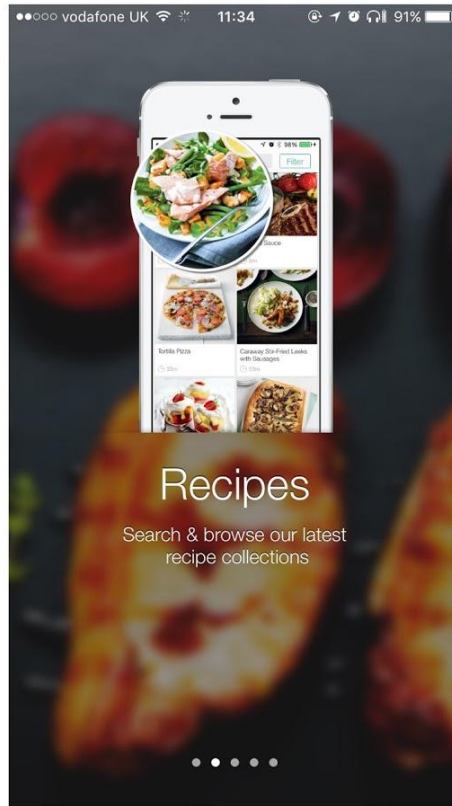
EASE OF USE.

You get out of the app what YOU want to get out.

IDEA GENERATION

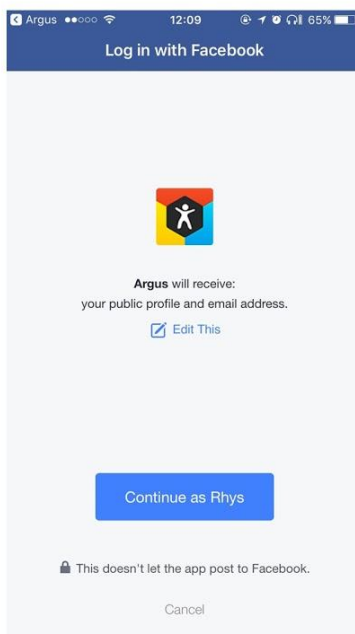
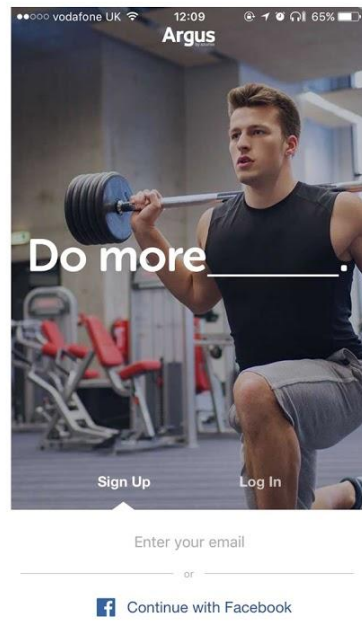
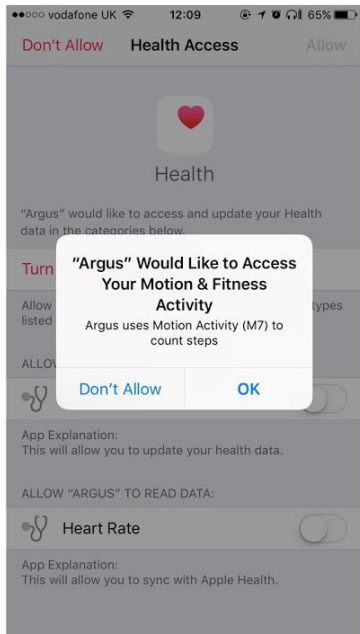
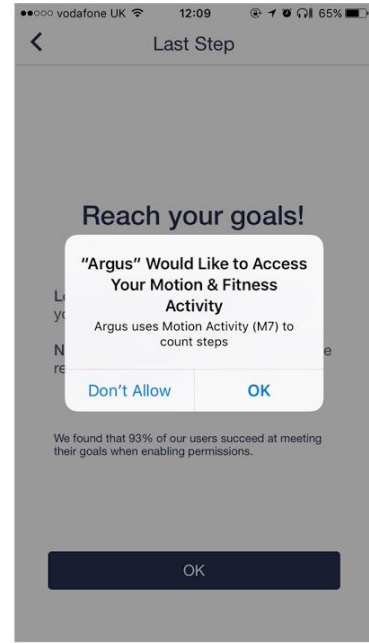
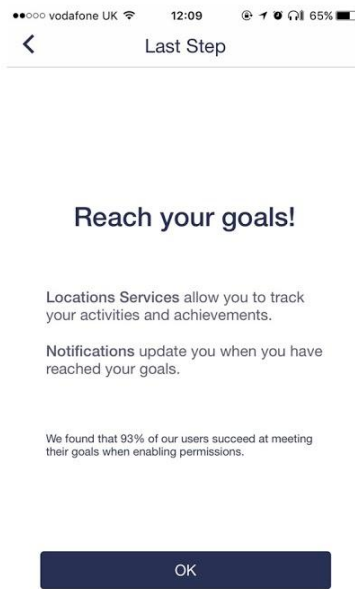
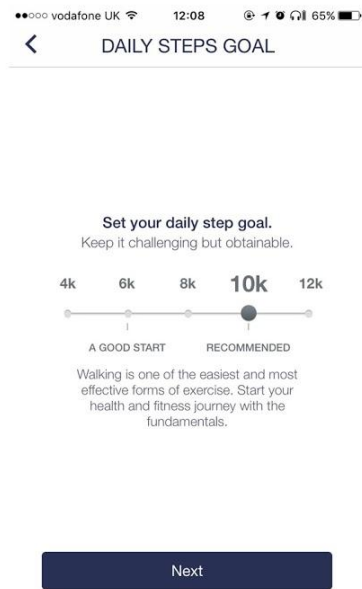
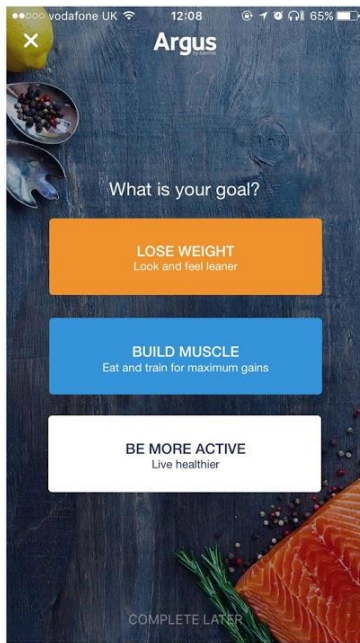
TASK A: KITCHENWARE DESIGN

TASK B: HEALTHY EATING SERVICE DESIGN



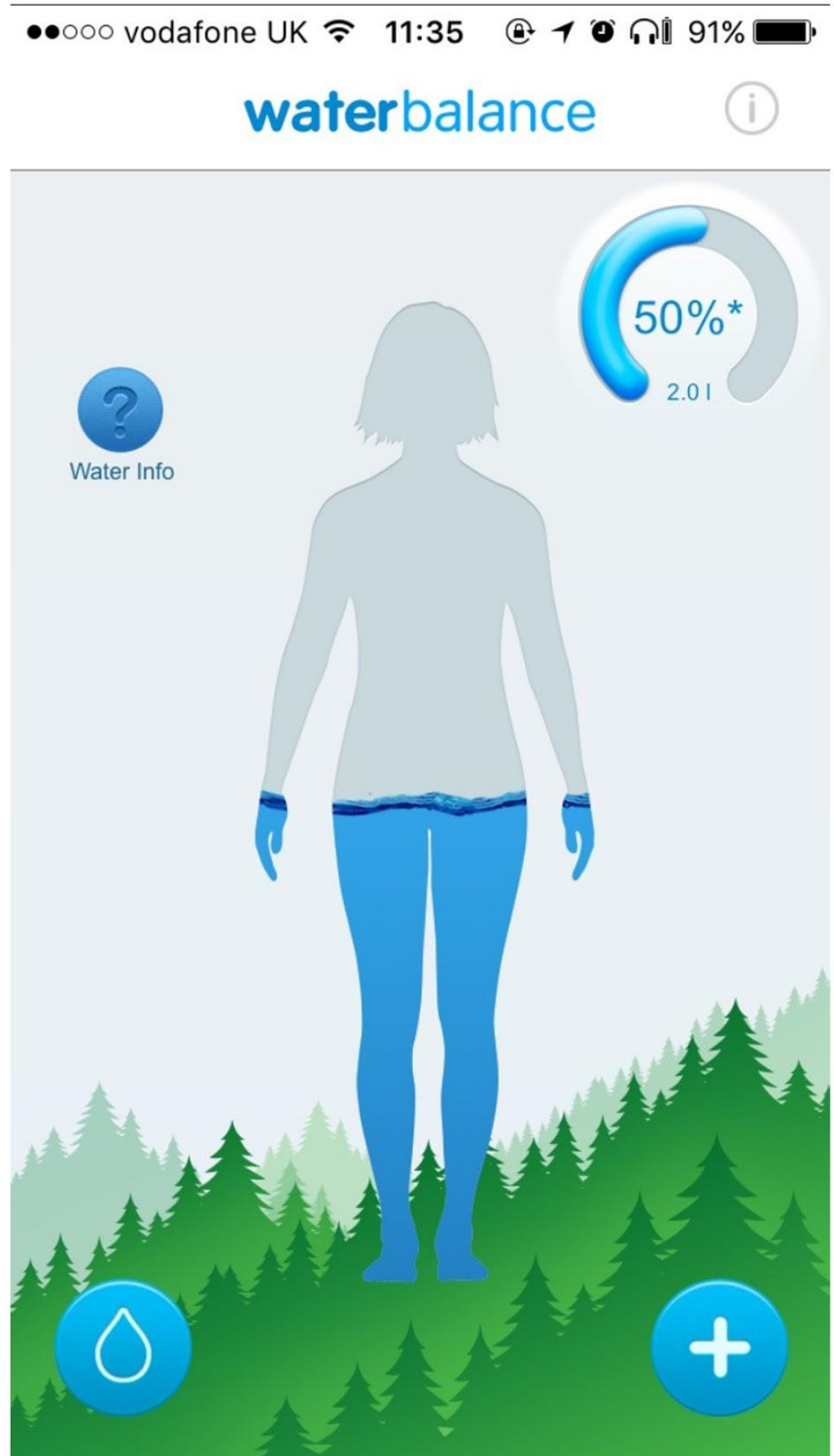
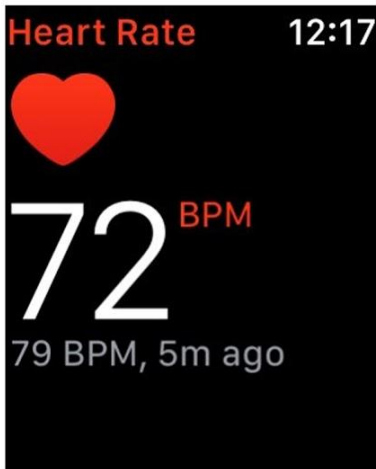
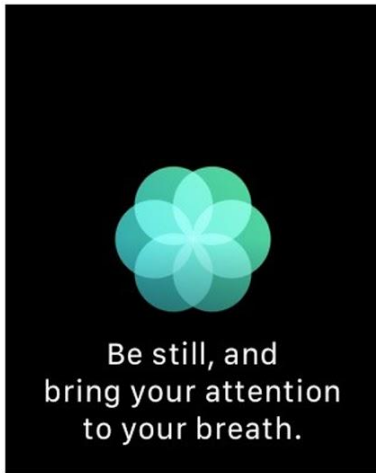
TASK A: KITCHENWARE DESIGN

TASK B: HEALTHY EATING SERVICE DESIGN



TASK A: KITCHENWARE DESIGN

TASK B: HEALTHY EATING SERVICE DESIGN



TASK A: KITCHENWARE DESIGN

TASK B: HEALTHY EATING SERVICE DESIGN

The previous portfolio pages demonstrate existing health & fitness apps available on the Apple App Store. I selected a couple to familiarise myself with an existing health service and to also gain knowledge on available features being utilised in existing services. Below, are the features, pros & cons of each of the apps I tested.

M&S COOK

This app is simply a cooking app, delivering easy-to-follow recipes and cooking instructions to increase healthy eating amongst it's users. It offers healthy meal solutions, Recipes, and also acts as a cooking utility with included features such as a timer. It provides it's users with updates and notifications to ensure it's users return to the service. It's extremely easy to navigate with a crisp layout and gets 'straight to the point' with what it's intended to offer.

ARGUS

Probably the best app I tested throughout my investigation was indeed 'ARGUS'. It encapsulated everything a health app should be with an extreme ease of use. It gave the user an option to train their weight, health or muscle, or all three! It provided the user with GOALS to provide motivation and maintain motivation. It asks the user to make an account adding to commitment towards their goal and a 'premium' feel to the app. The app itself is free of charge with in-app purchases for additional services. The app offers connectivity amongst other services in your collection, providing a larger range of features and a better health service overall. The honeycomb layout of the front-face of the navigation screen is excellent and easy to navigate through various data and feature locations. Offering the user a huge range of features, without overcomplicating the service. Some notable features are; a calorie tracker, a food consumption data base, water intake, excercise, pedometer, achivements and goals, social media interaction.

WatchOS APPS

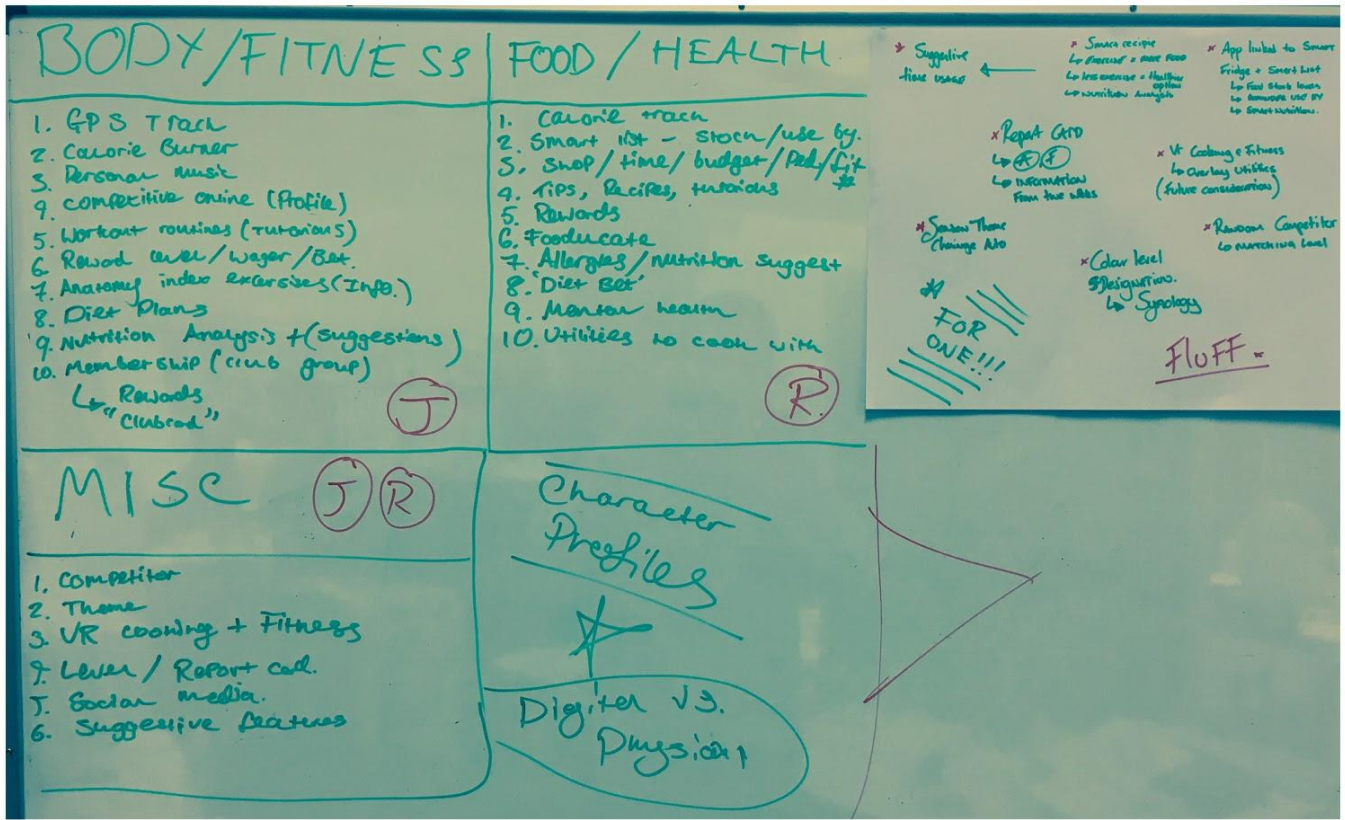
The additional, notable apps are those featured on the Apple Watch, offering a unique and more personal examination of it's users physical health and lifestyle. It offers a variety of apps, and is able to collect data a smartphone perhaps cannot. The integration of these features within the smartphone app offers a more accurate understanding of your health regime.



TASK A: KITCHENWARE DESIGN

TASK B: HEALTHY EATING SERVICE DESIGN

WHAT FEATURES TO INCLUDE?



MY PROPOSED FEATURES

1. CALORIE TRACK
2. FRIDGE CONTENT CHECK
3. SHOPPING 'BUDDY' (TIME / BUDGET / HEALTHY ALTERNATIVES)
4. TUTORIALS
5. REWARDS
6. 'FOODUCATE' (FACTS / NEWS IN FOOD INDUSTRY)
7. NUTRITION & ALLERGY ADVICE
8. DIET-BET (BET MONEY TOWARD GOAL)
9. MENTAL STIMULATION (GAMES / PUZZLES / BREATHING)
10. COOKING UTILITIES
11. FOOD & WATER INTAKE
12. VR COOKING
13. REPORT CARD
14. SOCIAL MEDIA
15. VIDEO GAME INTERACTION



LIKERT SCALE

TO DETERMINE RELEVANT APP FEATURES

Please clearly indicate your answer on the scale below. The scale has been designed to determine the relevance of possible features within a new health service application. The scale is set from **1-5**. (1 being 'Irrelevant', 3 being neutral, and 5 being 'Highly Relevant').

Firstly, please complete the below questions to assist in data collection for the investigation.
Circle your relevant answer.

AGE GROUP: **16-25** **26-35** **36-45** **50+** **70+**

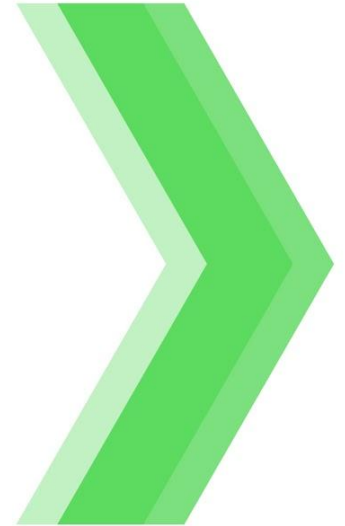
CONFIDENCE :	1	2	3	4	5
IN USING					
TECHNOLOGY	NONE		NEUTRAL		ALOT

	1	2	3	4	5
CALORIE TRACK	☐	☐	☐	☐	☐
FRIDGE STOCK CHECK	☐	☐	☐	☐	☐
SHOPPING BUDDY	☐	☐	☐	☐	☐
HEALTH TUTORIALS	☐	☐	☐	☐	☐
REWARDS	☐	☐	☐	☐	☐
FOODUCATE (NEWS & UPDATES IN FOOD INDUSTRY)	☐	☐	☐	☐	☐
NUTRITION & ALLERGY ADVICE	☐	☐	☐	☐	☐
DIET-BET (BET TOWARDS END GOAL)	☐	☐	☐	☐	☐
MENTAL STIMULATION	☐	☐	☐	☐	☐
COOKING UTILITIES	☐	☐	☐	☐	☐
FOOD & WATER INTAKE	☐	☐	☐	☐	☐
VR COOKING	☐	☐	☐	☐	☐
REPORT CARD (GOAL PROGRESS)	☐	☐	☐	☐	☐
SOCIAL MEDIA	☐	☐	☐	☐	☐
VIDEO GAME INTERACTION	☐	☐	☐	☐	☐

TASK A: KITCHENWARE DESIGN

TASK B: HEALTHY EATING SERVICE DESIGN RESULTS

RANKING	LIKERT SCALE		FEATURE
	AVERAGE		
1	4.7		9. MENTAL STIMULATION
2	4.6		8. DIET-BET
3	4.6		11. FOOD & WATER INTAKE
4	4.3		2. FRIDGE CONTENT CHECK
5	4.3		13. REPORT CARD
6	4.2		3. SHOPPING BUDDY
7	4.0		1. CALORIE TRACK
8	3.9		6. FOODUCATE
9	3.9		14. SOCIAL MEDIA
10	3.6		4. TUTORIALS
11	3.6		5. REWARDS
12	2.7		7. NUTRITION & ALLERGY ADVICE
13	2.6		10. COOKING UTILITIES
14	2.6		15. VIDEO GAME INTERACTION
15	2.1		12. VR COOKING

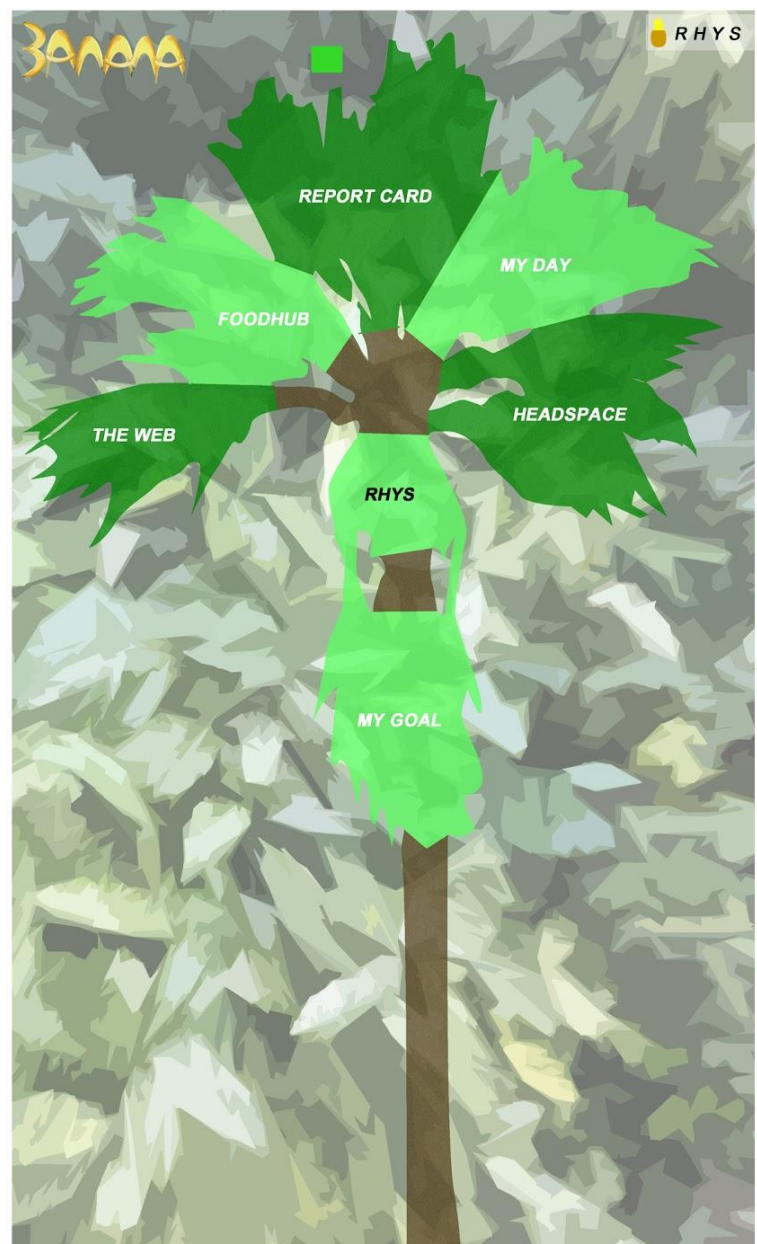
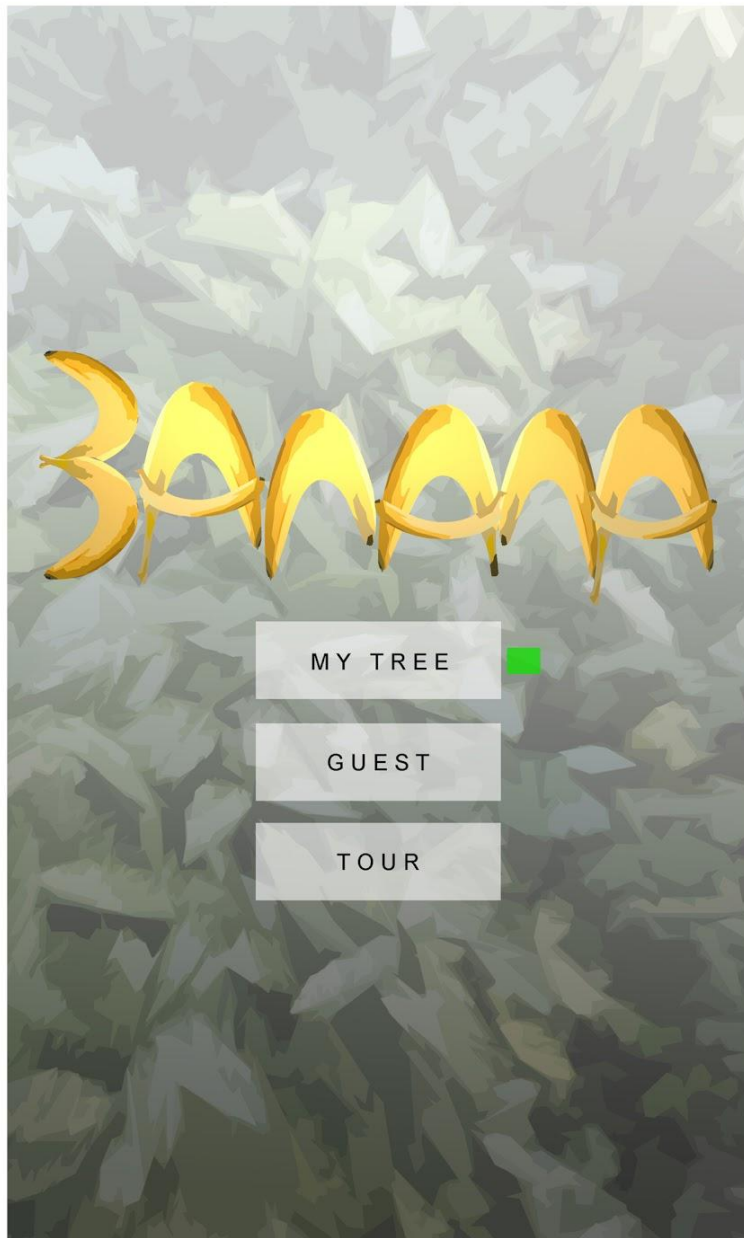


The above chart depicts the results from the previous likert scale. The first ten features (in rank order) will be included into the final iteration of my service design. Whereas the remaining five will be discarded concepts.



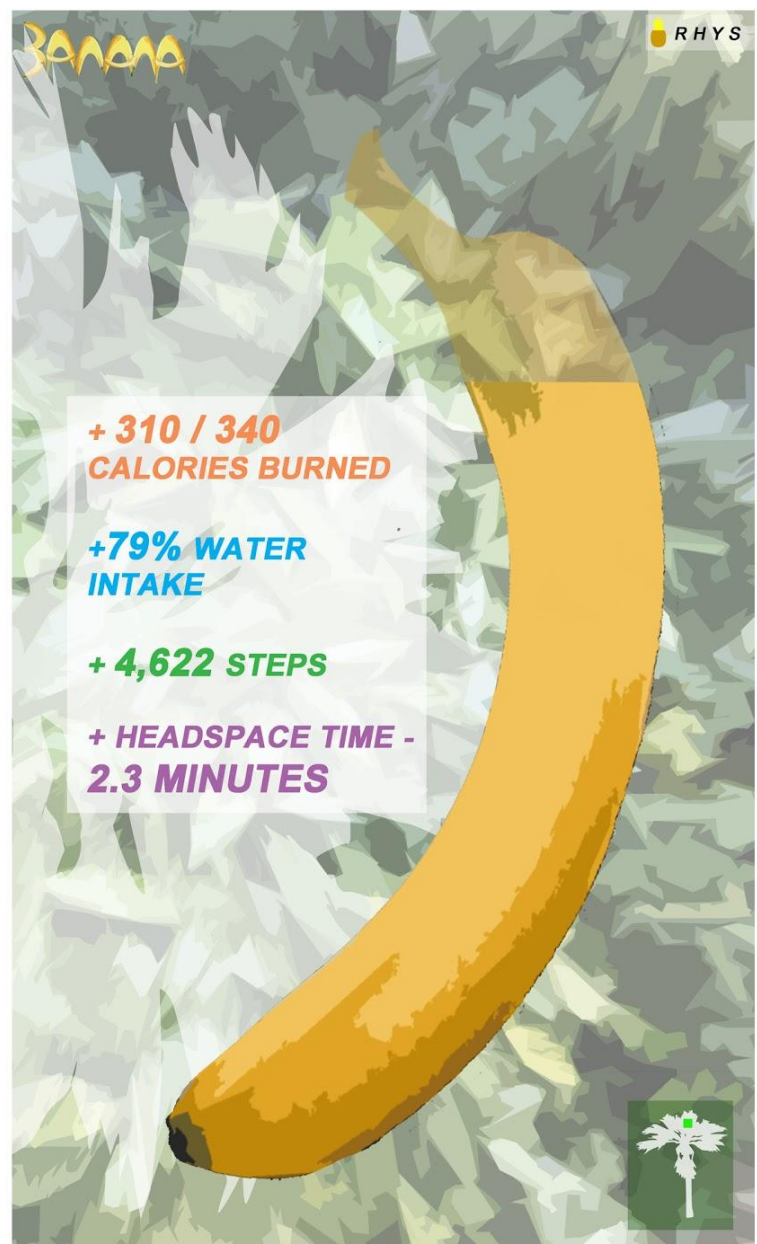
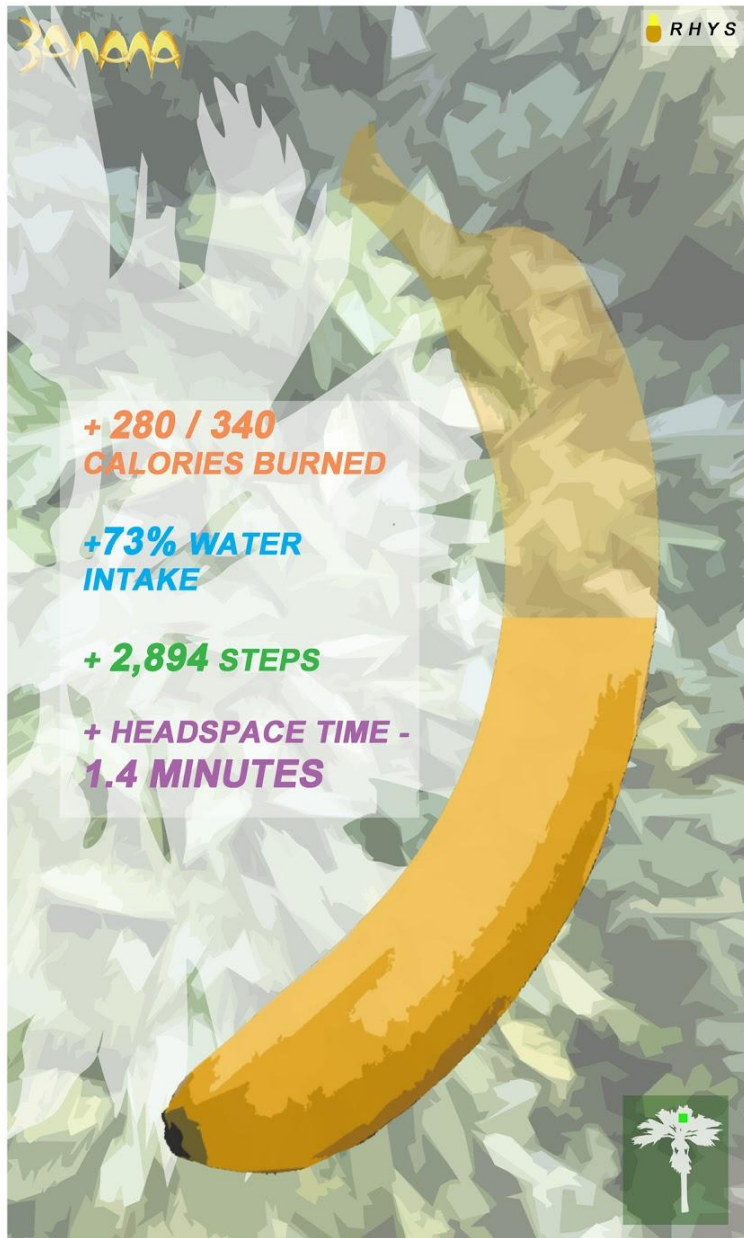
TASK A: KITCHENWARE DESIGN

TASK B: HEALTHY EATING SERVICE DESIGN



TASK A: KITCHENWARE DESIGN

TASK B: HEALTHY EATING SERVICE DESIGN



TASK A: KITCHENWARE DESIGN

TASK B: HEALTHY EATING SERVICE DESIGN

SIMPLY
HEALTH

RHYS

GUEST

TOUR

SIMPLY
HEALTH

RHYS

REPORT CARD

MY DAY

TRACK

INTAKE

< TUTORIALS

FOODUCATE

WEB

FOOD STOCK

BUDDY

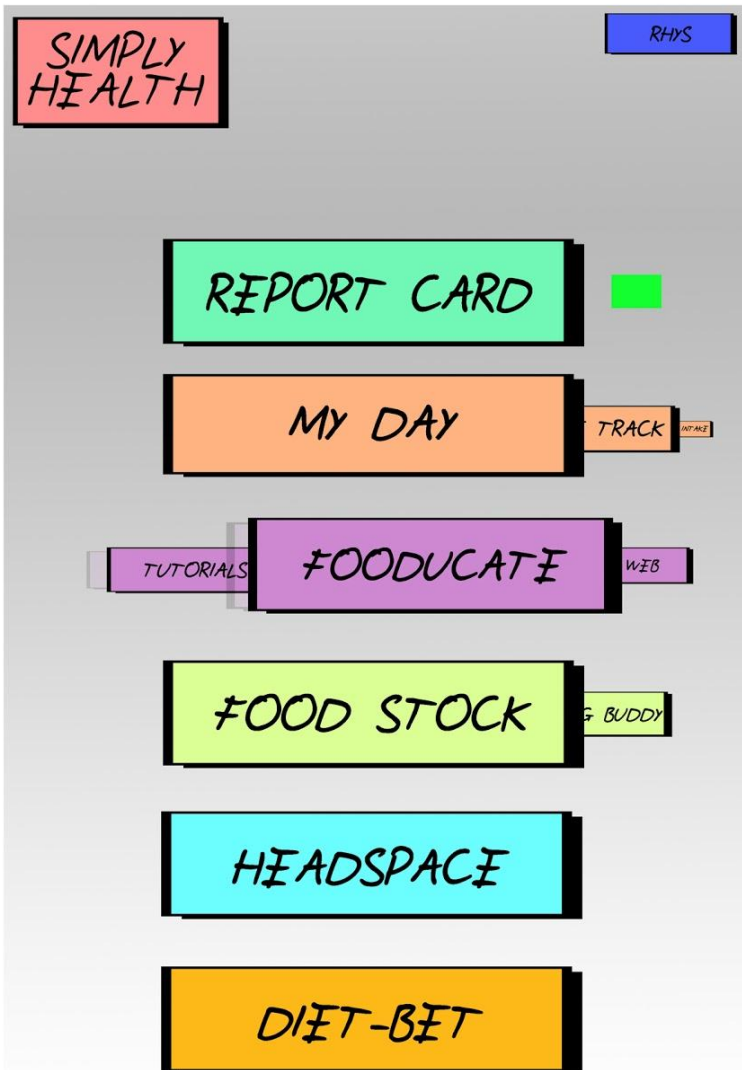
HEADSPACE

DIET-BIT



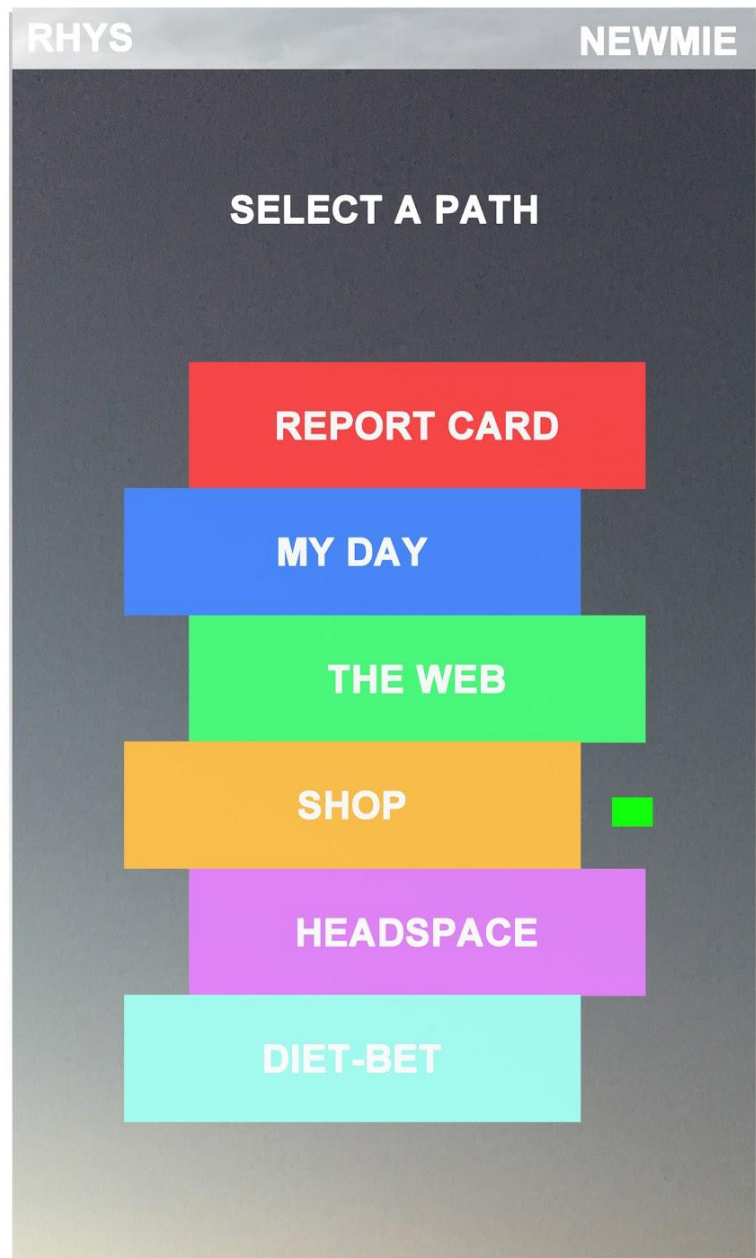
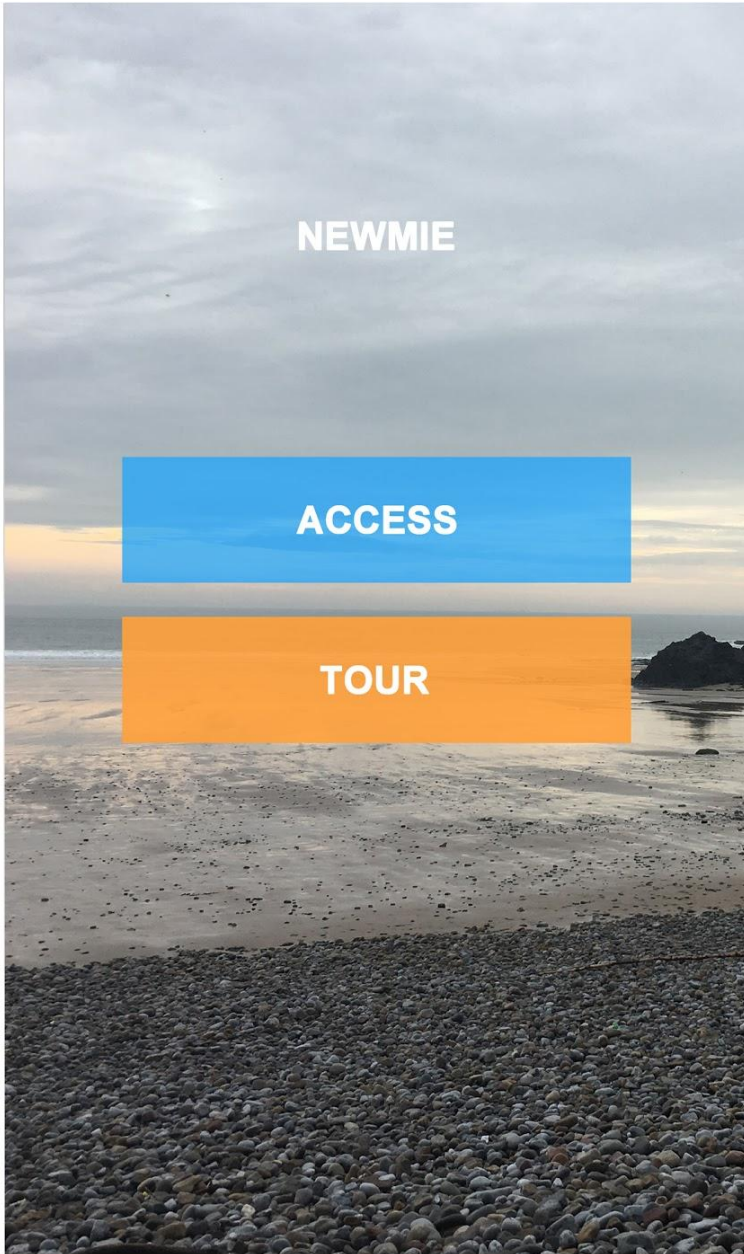
TASK A: KITCHENWARE DESIGN

TASK B: HEALTHY EATING SERVICE DESIGN



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TASK B: HEALTHY EATING SERVICE DESIGN



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