Faculty of Communication and Environment
Rhine-Waal University of Applied Sciences
Master of Arts Design and Interaction

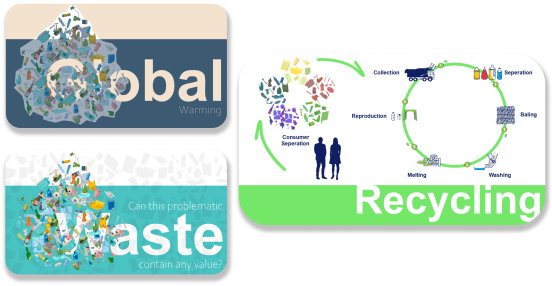
Design and Interaction Project II

Rethink

Emre Dalgic

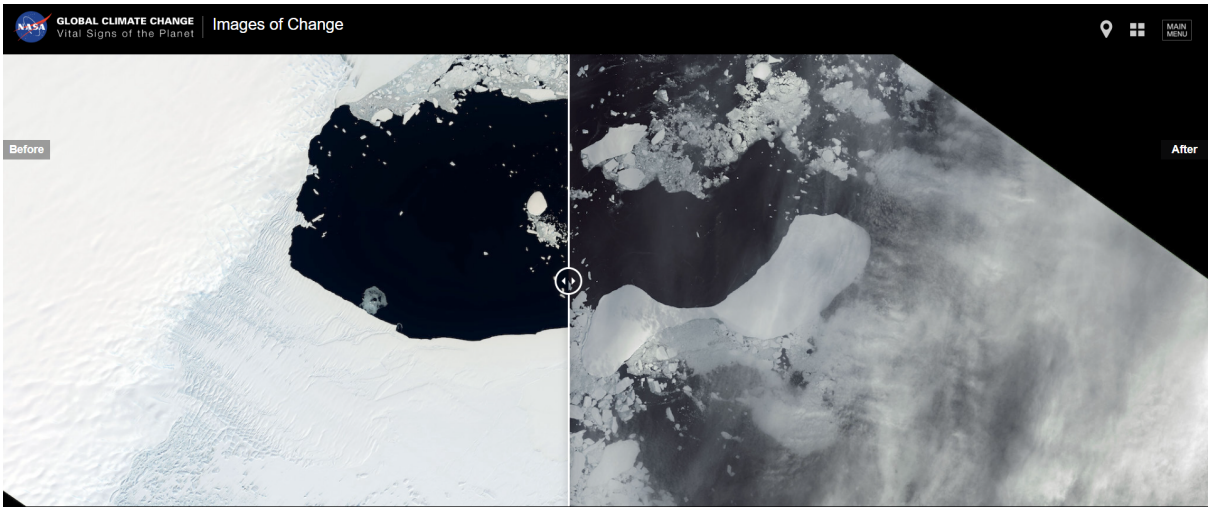
Introduction:

In the 19th cc, the spread of mass production and industrialization made it easy for people to access various products. On the other hand, it caused pollution and global warming due to waste. The use of packed foods and drinks and personal care products in supermarkets causes plastic pollution underwater. On the other hand, millions of daily objects have easy access on to the markets. To save natural resources and to protect the environment from waste pollution, recycling and reusing these products are necessary. Recycling and reusing increase awareness about saving natural resources by using the residual value of used items.



Furthermore, pouring the wastes of industrial production factories into waters without control and CO2 emissions of factories affects the microscale life underwater which is composed of bacteria and algae - helping to produce nearly most of the Oxygen and Nitrogen of the atmosphere - and many other micro-organisms. Since the 1980s the rise of global temperatures affects negatively the normal living conditions of these organisms and damaged the mutual life cycles in the ecosystem. The planet earth is always in a “change” by weather conditions from summer to winter, but these "change"s reaches an extreme level in some parts of the world.

Examples:



https://climate.nasa.gov/images-of-change/?id=788#788-east-antarctica-ice-shelf-collapses

As a result, we are facing with effects of global warming from the micro scale to the macro scale due to waste pollution in different parts of the world.

As we can see "change" is part of nature. This "change" idea, forces me to rethink on our daily consumption behaviors. The daily mass-produced products which cause CO2 emissions in its mass production line with long transportation and service systems and their wastes which also has hard to biodegredation in long time periods.

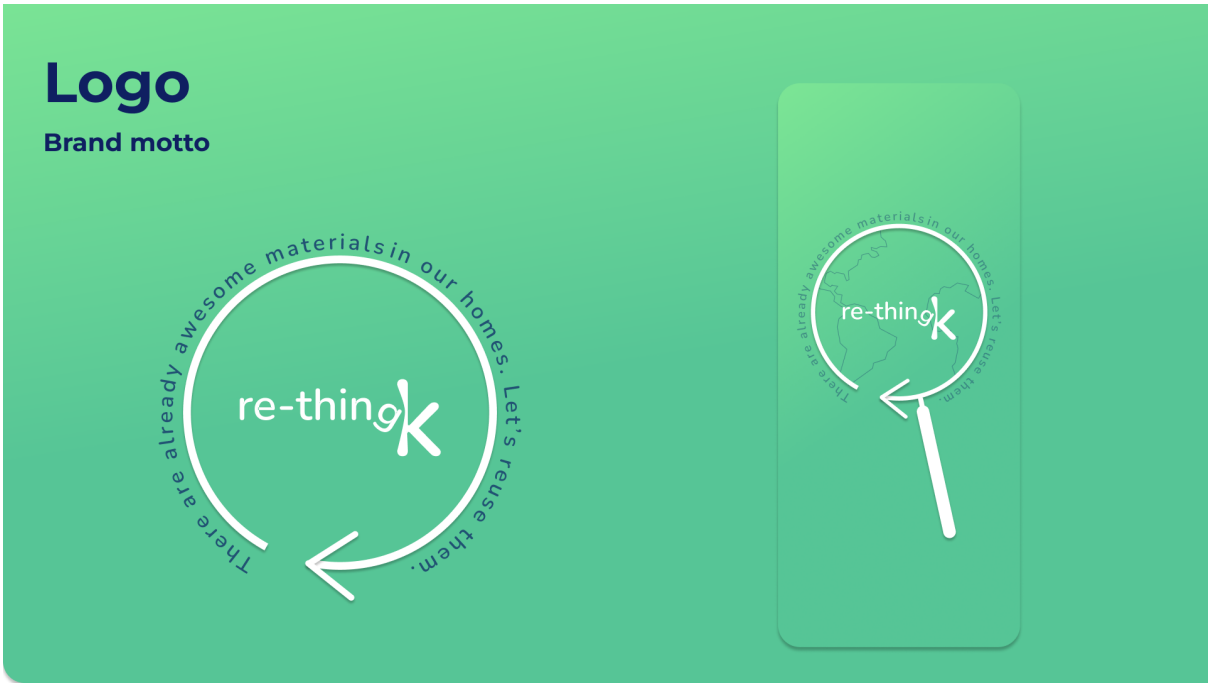
Thinking on "change" idea first I focused on how this product produced and secondly how it can continue its usage life after-used condition;

How we consume and how we cause waste, I realized that people start to get far away the nature and so the relation between material and people is decreasing while the production phase [ref2]

To reduce waste, handicraftsmen have an important role here in order to make people rethink their waste while they upcycle their daily objects in their homes. Creative upcycling [ref4]

Handmade stuff are environmentally friendly and help people to rethink the use of home materials.

My project name is “Rethink” and the motto is “There are already awesome materials in our homes. Let’s rethink them”.



The logo represents the reusing objects with a circle shape arrow. Magnifying glass on planet earth represents “the scale difference between products and the natural ecosystem of planet world” and also “searching objects for upcycling in the home”. The aim behind the logo is to motivate people with small changes of the daily objects we search in the home can change the world. Color selection is based on the natural color between “green and blue”. color of forests and plants in the deep oceans.

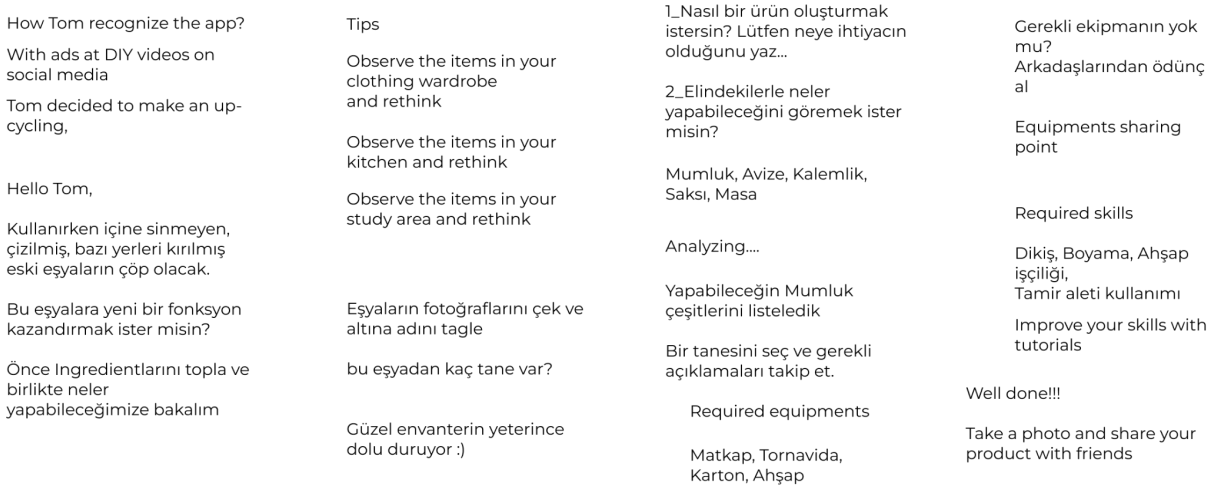
Rethink

Rethink is a platform that aims to help people with low crafting and design skills while up-cycling their waste and enabling people to share their crafting equipment and knowledge.

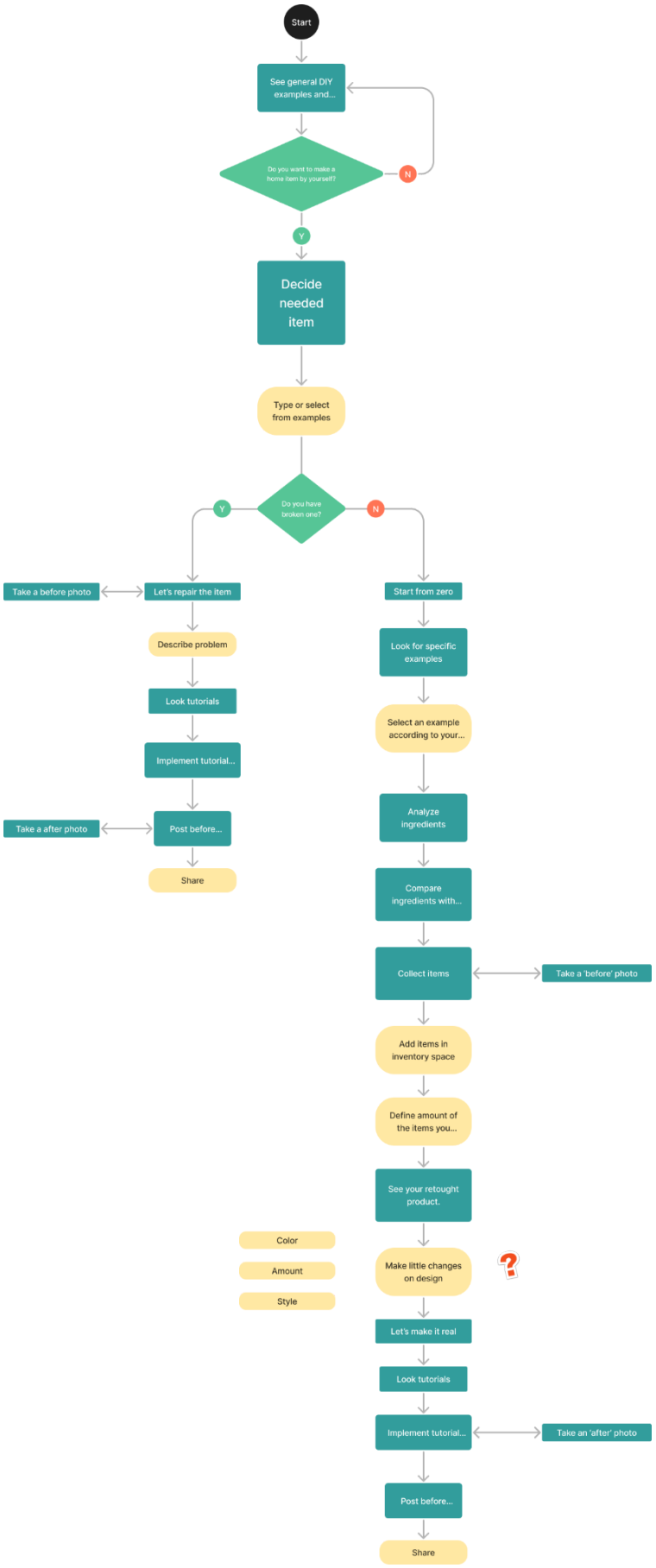
Re-think is a community-based platform that people can;

- get recommendations and instructions for up-cycling their “home objects which will not be used”
- share their equipment and design ingredients
- communicate in order to help each other to make their handmade crafts.

Communication between user and app,

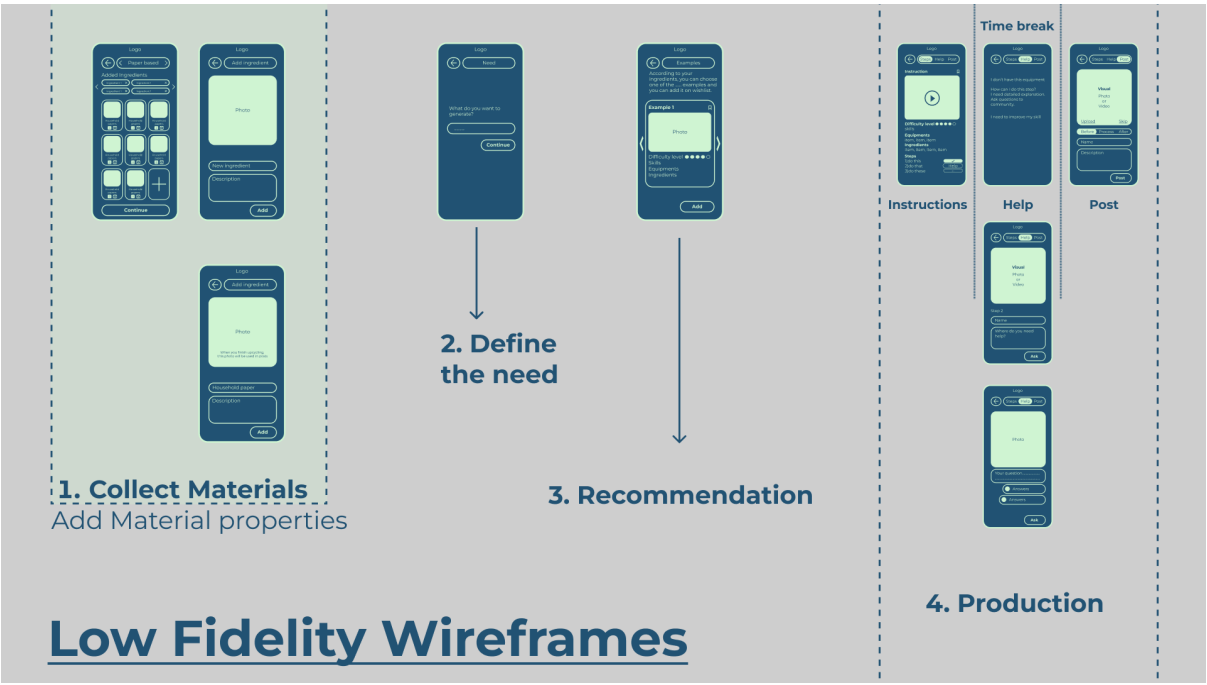


User flow


Start
See general DIY examples and...
Do you want to make a home item by yourself?
N
Y
Decide needed item
Type or select from examples
Do you have broken one?
Y
N
Take a before photo
Let's repair the item
Describe problem
Look tutorials
Implement tutorial...
Take a after photo
Post before...
Share
Start from zero
Look for specific examples
Select an example according to your...
Analyze ingredients
Compare ingredients with...
Collect items
Take a 'before' photo
Add items in inventory space
Define amount of the items you...
See your retought product.
Color
Amount
Style
Make little changes on design
Let's make it real
Look tutorials
Implement tutorial...
Take an 'after' photo
Post before...
Share

How the app works;

Wireframes are composed of 4 different parts. First User collects materials that he wants to use in up-cycling. Then write what he wants to generate. After that, the application recommends various examples according to his material selections. Finally, at the production part, the application guide user to produce the handmade product and also get help from experienced people in the community.



Welcoming page

On the welcoming page, a brief explanation and guide start.

"Your old items that are scratched, or broken in some parts will be garbage. Do you want to give these items a new function? Check your wardrobes, kitchen, and study area. Gather your Ingredients first and let's see what we can do together."

Select Ingredients

In consideration of their home objects users selects the objects that want to upcycle according to 6 different categories: paper, wooden, plastic, metal, textile, and e-waste. This categorization by materials is more familiar for users with the waste separation part of the recycling process. With this selection also material type is selected and the app starts to create a design context with selected ingredients.

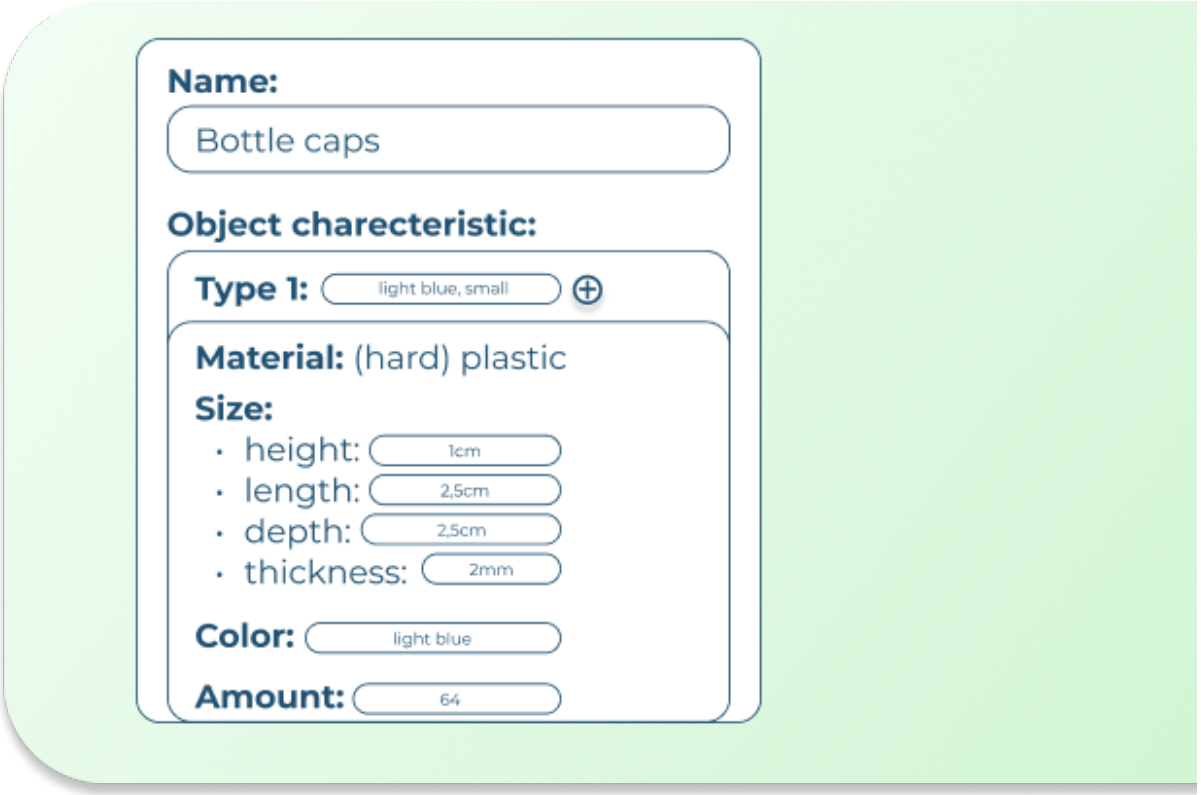
After he selects ingredients, on the upside of the interface he sees the added ingredients in his inventory.

An option button appears on the selected ingredient.

Scan and material properties

To reach personalized designs for every user, the app gives a notification
"You can personalize your ingredient by scanning and updating the characteristics of your materials. This helps me to provide better solutions."

In order to get more information about the selected object's color and size. With this information, the app will suggest designs personalized with users' selected ingredients more precisely. In that part, users start to feel involved in the design process with their selections. Also, it helps the app to enlarge and detail its library.



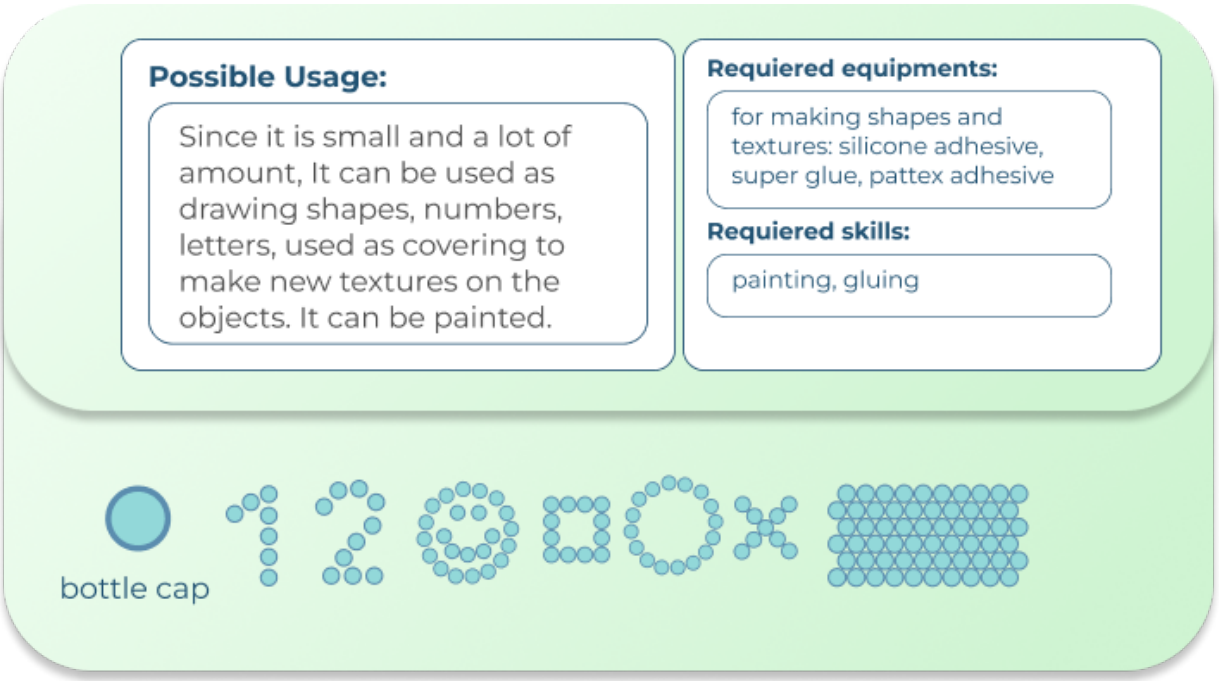
All of the objects contain information of the average dimensions - length, width, height if has thickness-, material, and color. In one object selection, there can be different types of objects. For example, there are large-size bottle caps for 2lt juice and small-size bottle caps for 0.5 lt water. Therefore there are different types of objects in one object. These types can be add by user with inputing the object properties manually. But at this part, measuring the all of the objects's dimentions and inputting these into the app, can be frustrating for users. At this point, 3D scanning and object detection technologies improves the user experience, and helps users to input these data into app to personilize their recommendations precisely.

3d scanning: is that measurements of the object get easily.

Object detection: is that, it helps material, color object type detection. According to object type app suggests the possible usage according to this objects in its library.

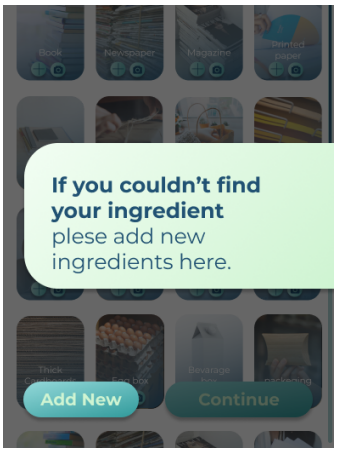
While creating a design context for the app by selecting objects, scaning the objects in the home strengthen connection between user and the users' objects at the near environment. User involvement would be strengthened with physical movements around the object. Mentally, user would feel that I collect this waste from my environment and add it into my inventory in the application."

After the type of the selected object is determined, Possible usage info for designing purpose such as structural, finishing, shapable..... .



Interface also shows the possible usage of this ingredient, in order to relate how it used in up-cycling process,

also shows Required equipment to use it. For example silicone or super glue to stick bottle caps on a surface in order to draw shapes or make covering on it.



If user couldn't find the object in the library, he or she can also create new item by clicking add button by uploading photo ,describing the object and giving the dimension data.

Define

After he collects the different types of ingredients, the application asks what do you want to generate?

Users will define what they need by typing it into the app

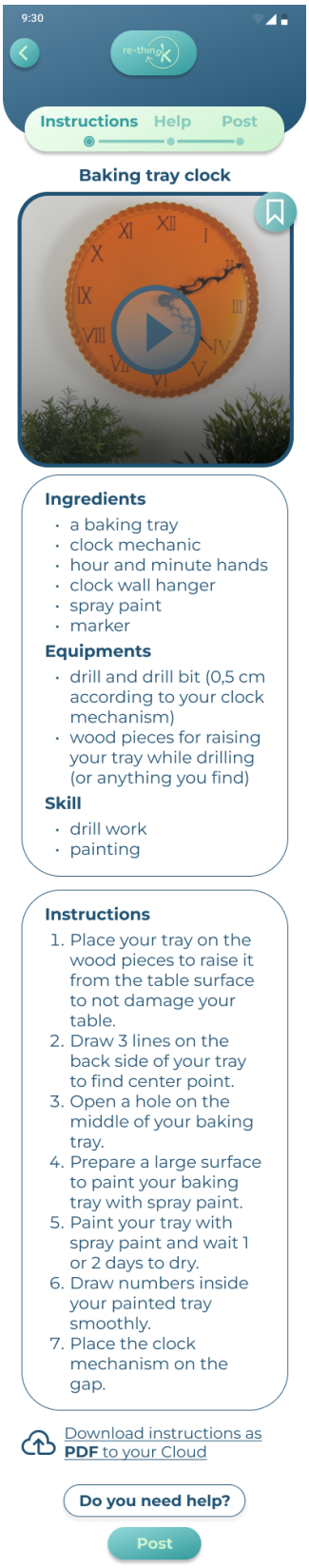
Recommendation

Then, According to his ingredients, the user can choose one of the clock examples. And continue.

Production

This part is divided into different parts due to in the production process users can have different frustrations like - How can I do these products? - I need help with a specific issue. - I do not have such items.

a) Instructions



The first part is instructions which the user can follow step by steps instructions and see the required ingredients, equipment and skills. The aim of this page give the sense of everything is under control if I do these steps I will achieve the product in a simple and easy way.

The application shows the required ingredients and equipment, and skills and gives the step by step instructions. Users can download this instruction as PDF.

In a real atelier environment, It can be hard to use a phone to follow the steps. Users' hands will be full and they try to read from long distances. So users can use pdf format to read instructions easily in the atelier environment by clicking a link on the interface.

b) Help

If the user stucks while he is making it. He can ask questions to other people from “Ask for Help in Forum”

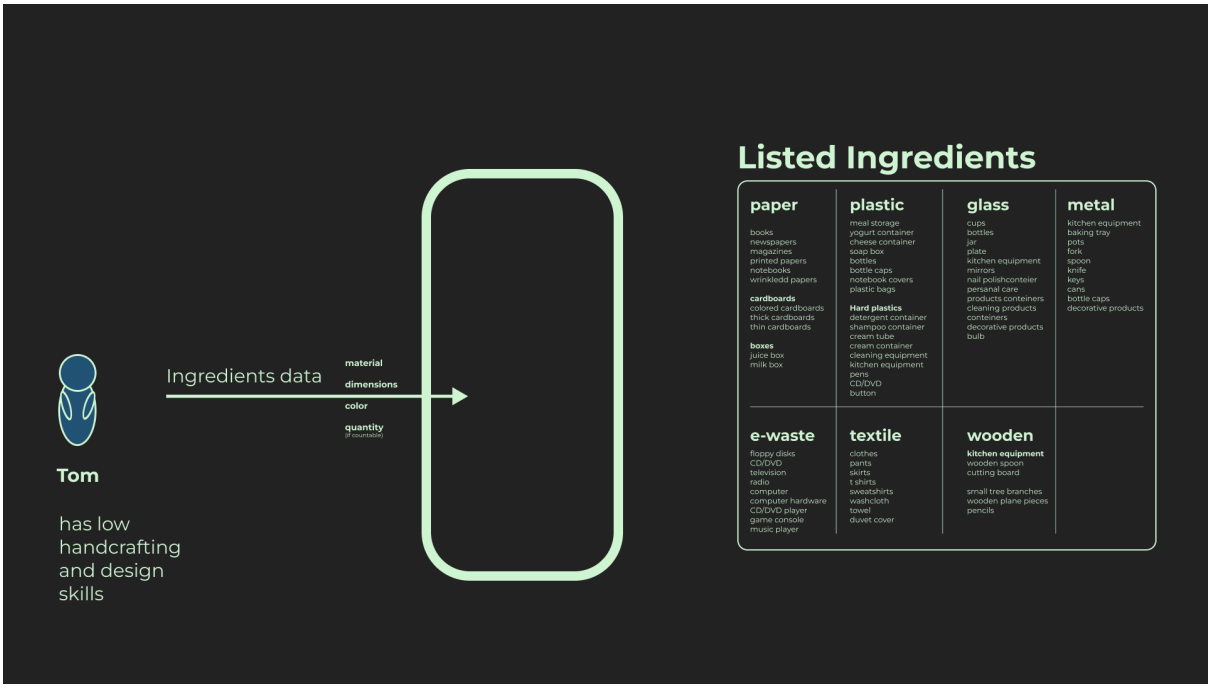
sent a request to borrow equipment from his friends from “Borrow Equipment”

and also request materials that are not sufficient in his inventory from “Get ingredients”

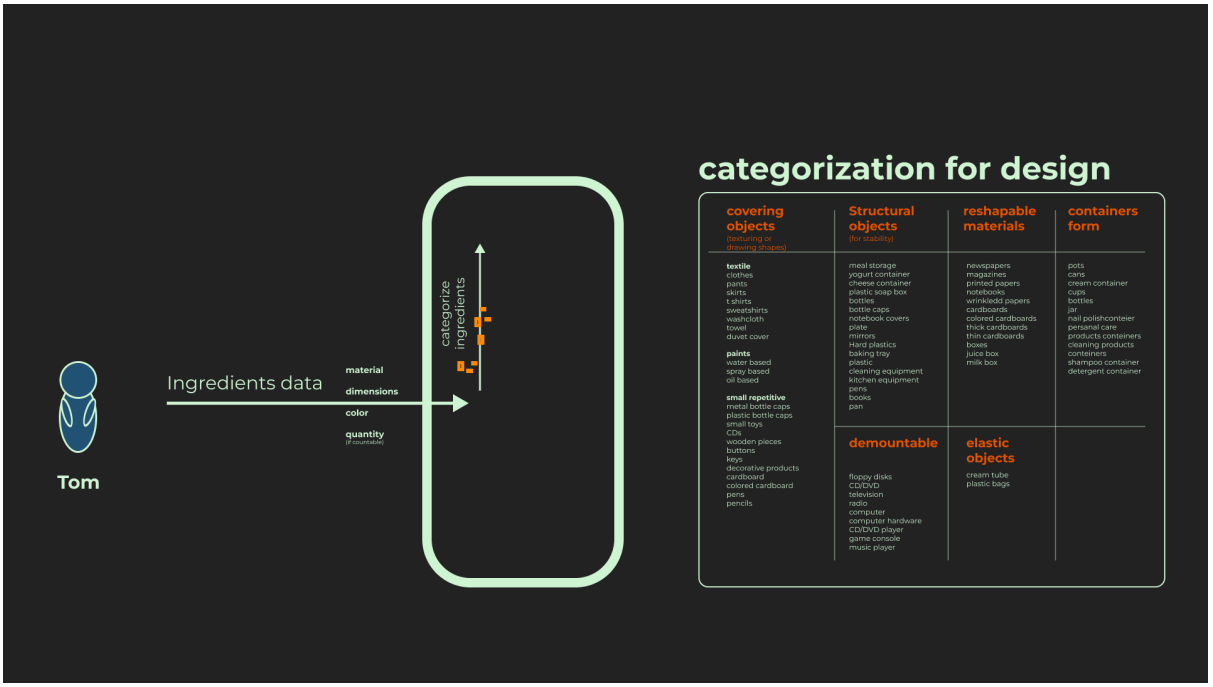
c) Post

When the user finishes the production, he can share his production process with before, during, and after images with explanations and giving tips to the community.

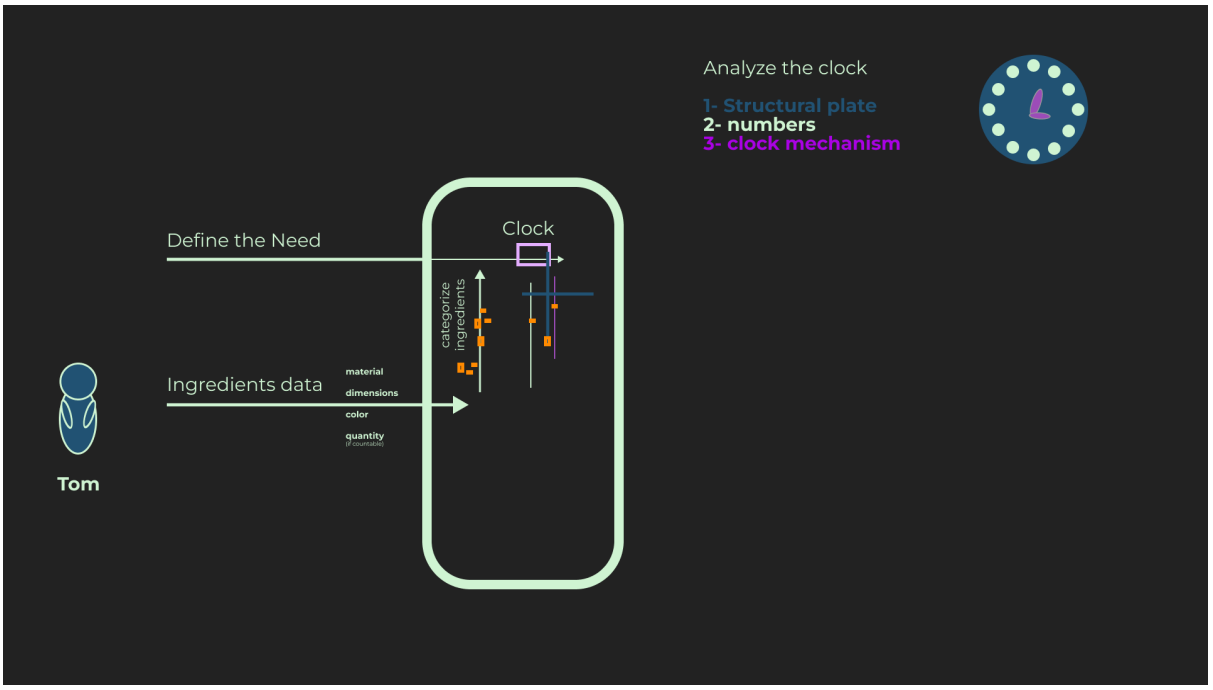
How AI and recommendation work



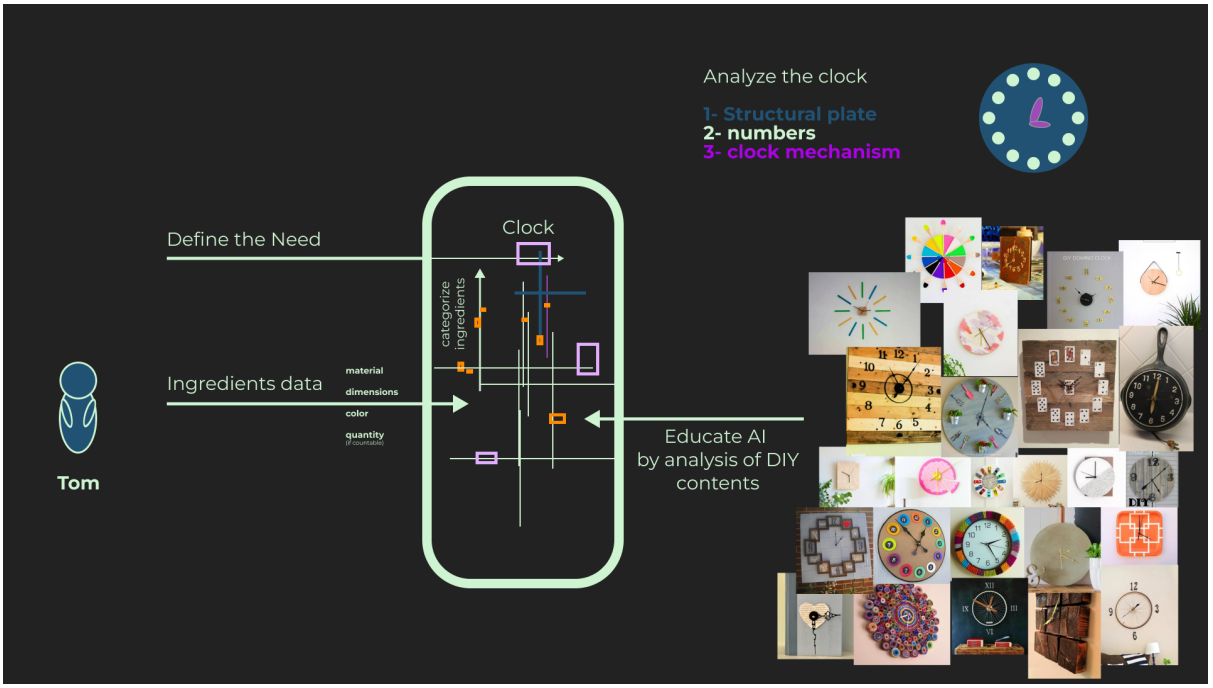
The user gave various ingredient data, materials, dimensions, colors, and quantities by selecting and scanning.



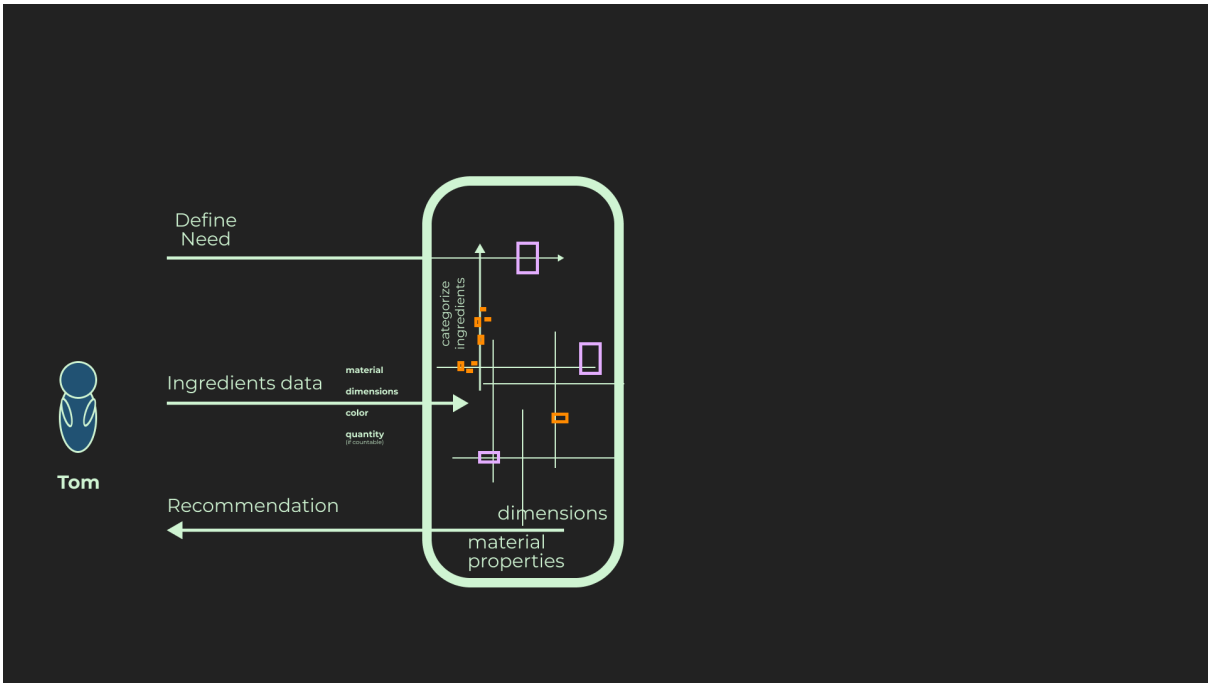
AI categorized these ingredients according to use of them in a design: covering, structural, reshapable, elastic, demountable, and form of container.



Then user defined the “Need” as a Clock



AI learned what is a clock from various examples and what kinds of different objects can be used for its structural plate and representation of numbers.



Then AI made the selection from the user's objects which is most related to making a clock. by comparing dimensions and material properties. Finally gave the recommendations.

Prototype

References

[ref1]Change

https://climate.nasa.gov/images-of-change/?id=788#788-east-antarctica-ice-shelf-collapses

[ref2]Sustainable Consumption

https://onlinelibrary.wiley.com/doi/full/10.1002/mar.21540

[ref3] Water pollution: Musilage on media

https://www.duvarenglish.com/cnns-underwater-footage-reveals-mucilage-suffocating-marmara-sea-video-57734

https://www.theatlantic.com/science/archive/2021/12/turkey-sea-snot-climate-change/620756/

https://observers.france24.com/en/tv-shows/the-observers/20210623-turkey-sea-of-marmara-sea-snot-mucilage-pollution-global-warming

https://www.aa.com.tr/en/environment/5-things-you-need-to-know-about-mucilage-or-sea-snot/2273311#:~:text=What%20is%20mucilage%2C%20how%20does,contains%20a%20variety%20of%20microorganisms.

https://www.youtube.com/watch?v=5-NQbI7WAzY&ab_channel=DWNews

https://www.bne.eu/istanbul-blog-turkey-s-sea-snot-crisis-forces-closure-of-coastal-fertiliser-plant-213463/

https://www.theguardian.com/artanddesign/2021/jul/07/clean-up-of-turkeys-sea-of-marmara-in-pictures

[ref4] Creative Upcycling

https://www.sciencedirect.com/science/article/abs/pii/S0959652618310047

https://www.sciencedirect.com/science/article/pii/B978008099359100014X

https://www.sciencedirect.com/science/article/pii/B9780080993591000096

https://www.sciencedirect.com/science/article/pii/B9780080993591000096