MIXI

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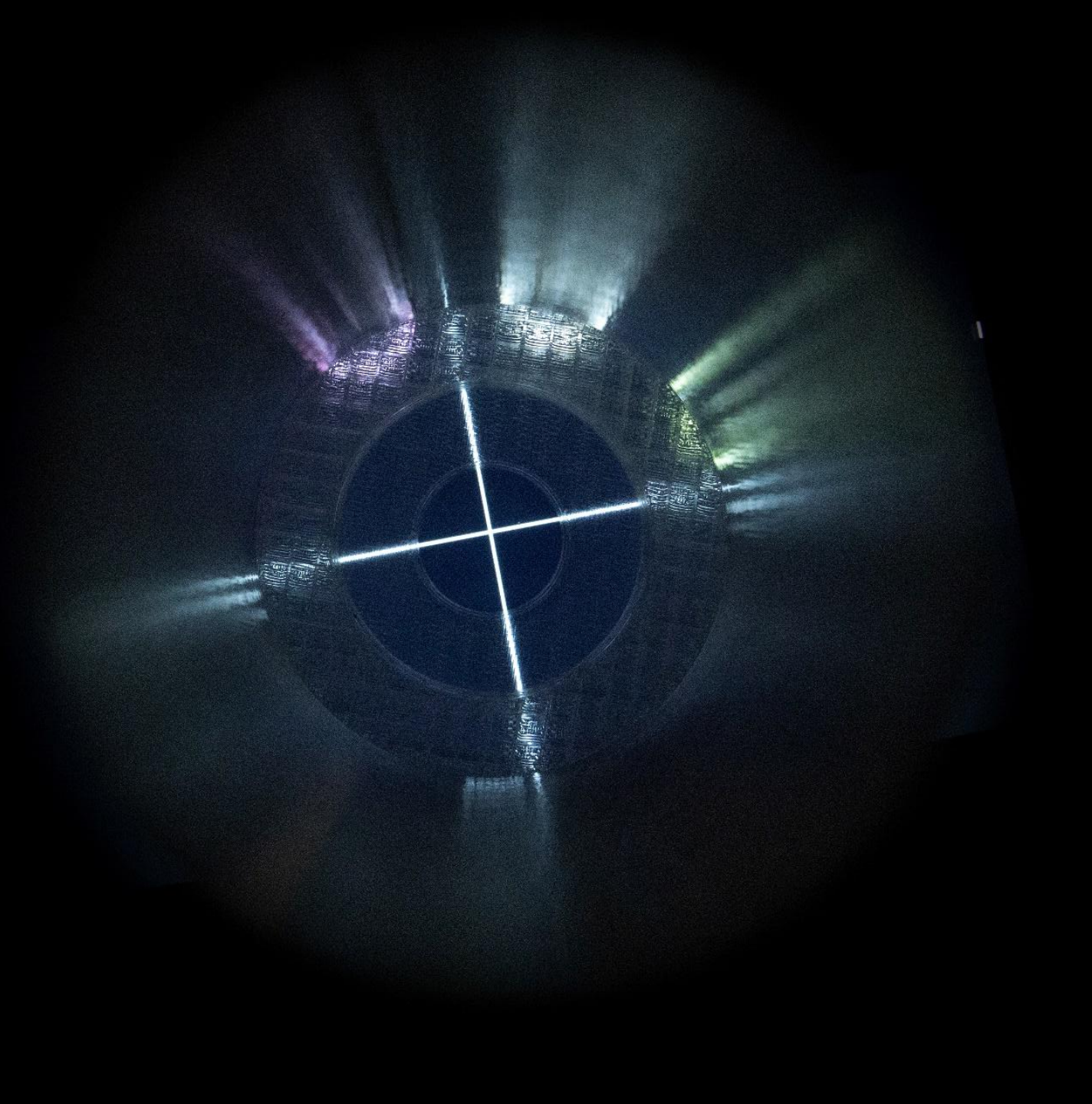
“We aim to design a beverage machine that strengthens long-distance relationships. “

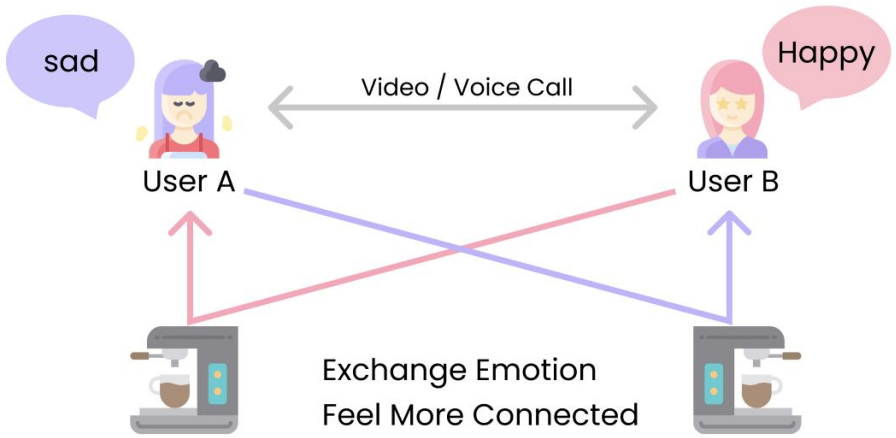


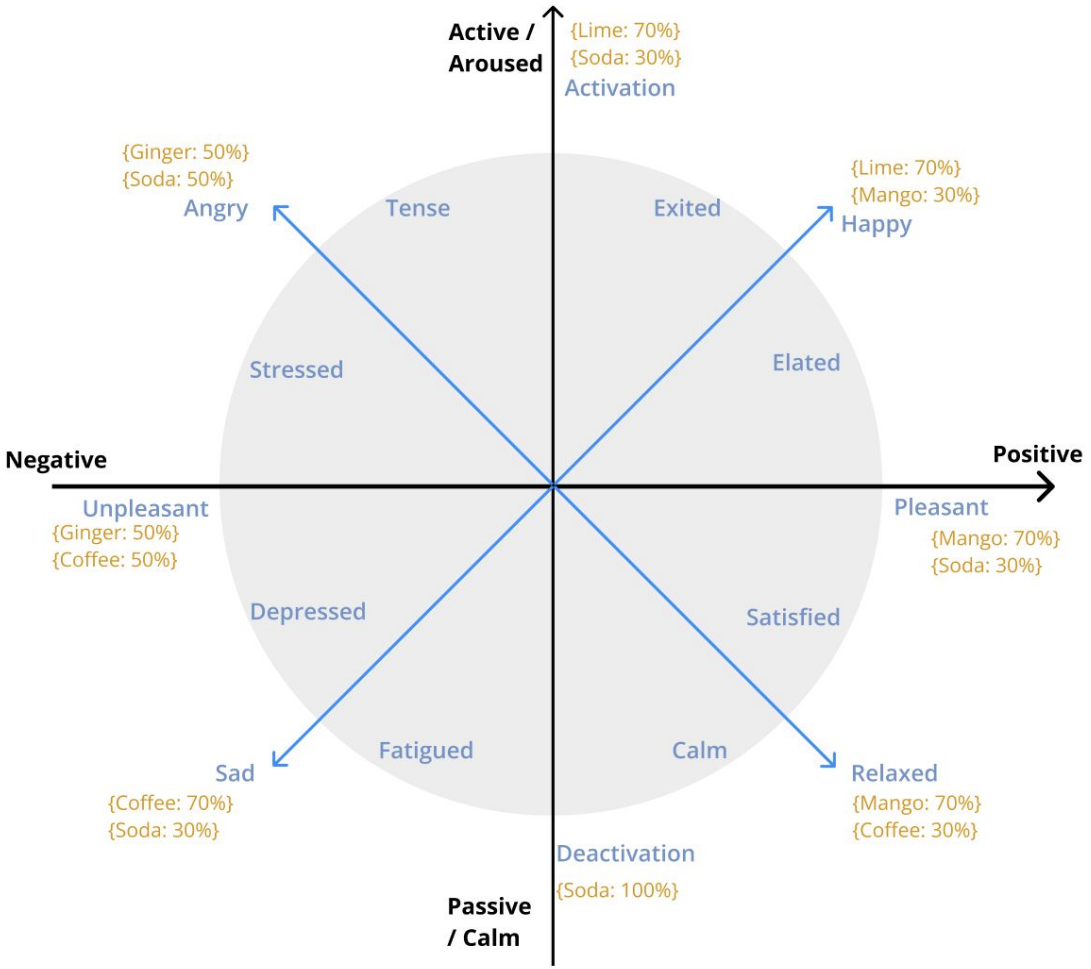
HERO SHOT

Inspiration

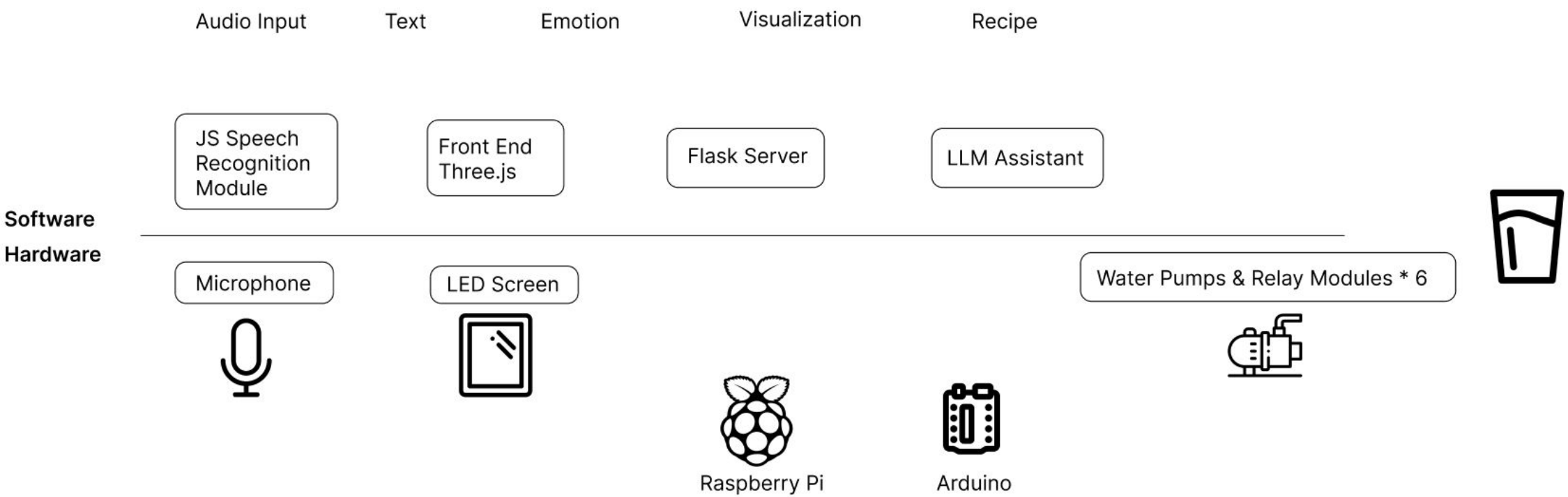
People have always socialized and built connections through shared experiences of eating and drinking. With advancements in the internet and transportation, forming friendships across the globe has become easier than ever. However, maintaining these relationships and spending quality time with long-distance friends remains a challenge due to physical separation. To overcome this, we propose a beverage machine that creates a new form of social interaction, enabling long-distance friends to connect, share meaningful moments, and “hang out” together in an engaging and unique way.

Ideation and Design Process

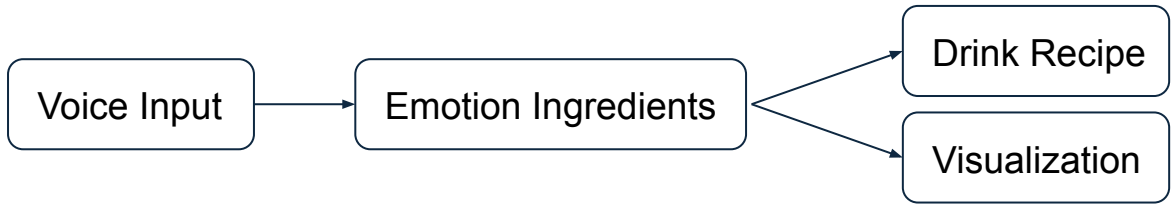




Architecture



LLM Workflow



Prompting Structure

- Persona
- Text - to - Emotion Logic
- Emotion Visualization Instructions (with Example Data)
- Emotion - to - Recipe Logic
- Recipe Customization
- Drink Ingredients Choices
- Reference Recipe

Example Output

{'Emotion_name': 'conflicted emotions', 'Drink_name': 'Emotional Rollercoaster', 'Emotional_Ingredient': [{'Emotion': 'Happiness', 'polar_angel': 30, 'percentage': '50%'}, {'Emotion': 'Anger', 'polar_angel': 180, 'percentage': '30%'}, {'Emotion': 'Frustration', 'polar_angel': 150, 'percentage': '20%'}], 'Overall_Polar_coordinate': {'Polar_angle': 101, 'Percentage': 1}, 'Recipe': {'Ingredients': [{'Ingredient_name': 'lime juice', 'Proportion': '10%'}, {'Ingredient_name': 'coffee', 'Proportion': '40%'}, {'Ingredient_name': 'ginger', 'Proportion': '30%'}, {'Ingredient_name': 'mango juice', 'Proportion': '20%'}]}}

Response Format (Json Schema)

```
response_format={
    "type": "json_schema",
    "json_schema": {
        "name": "AnalyzeEmotionAndGetRecipe",
        "strict": True,
        "schema": {
            "type": "object",
            "properties" : {
                "Emotion_name": {
                    "type": "string",
                    "description": "Name of the emotion analyzed from the user input and associated with the drink"
                },
                "Drink_name": {
                    "type": "string",
                    "description": "A creative name for the drink"
                },
                "Emotional_Ingredient": {
                    "type": "array",
                    "description": "List of emotional ingredients contributing to the drink",
                    "items": {
                        "type": "object",
                        "properties": {
                            "Emotion": {"type": "string", "description": "Name of the emotional component"},
                            "polar_angel": {"type": "number", "description": "Polar angle value"},
                            "percentage": {"type": "string", "description": "Percentage of the emotion in the blend"}
                        },
                        "required": ["Emotion", "polar_angel", "percentage"],
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                },
                "Overall_Polar_coordinate": {
                    "type": "object",
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                        "Percentage": {"type": "number","description": "Percentage representation of the overall emotion, from 0-1, a float number"}
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                },
                "Recipe": {
                    "type": "object",
                    "description": "Recipe details for the drink",
                    "properties": {
                        "Ingredients": {
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                            "description": "List of ingredients and their proportions",
                            "items": {
                                "type": "object",
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                                    "Ingredient_name": {
                                        "type": "string",
                                        "description": """Name of the ingredient. Currently with only four drinks available, you can only choose from
                                            lime juice - sour
                                            coffee - bitter
                                            ginger - spicy
                                            mango juice - sweet
                                            Only make juice with the above four elements.
                                            """},
                                    "Proportion": {"type": "string","description": "Proportion of the ingredient in percentage"}
                                },
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                            }
                        }
                    },
                    "required": ["Ingredients"],
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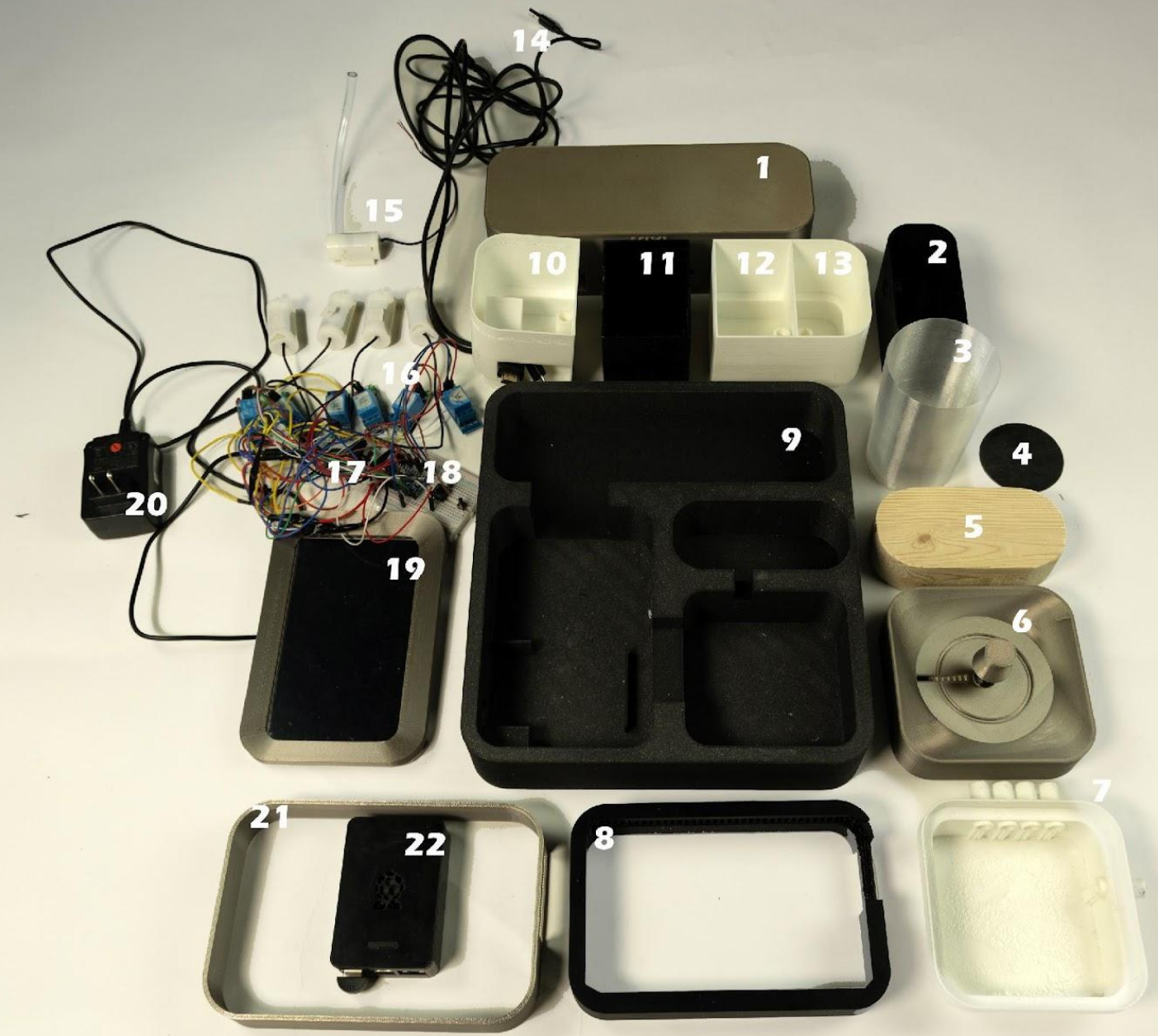
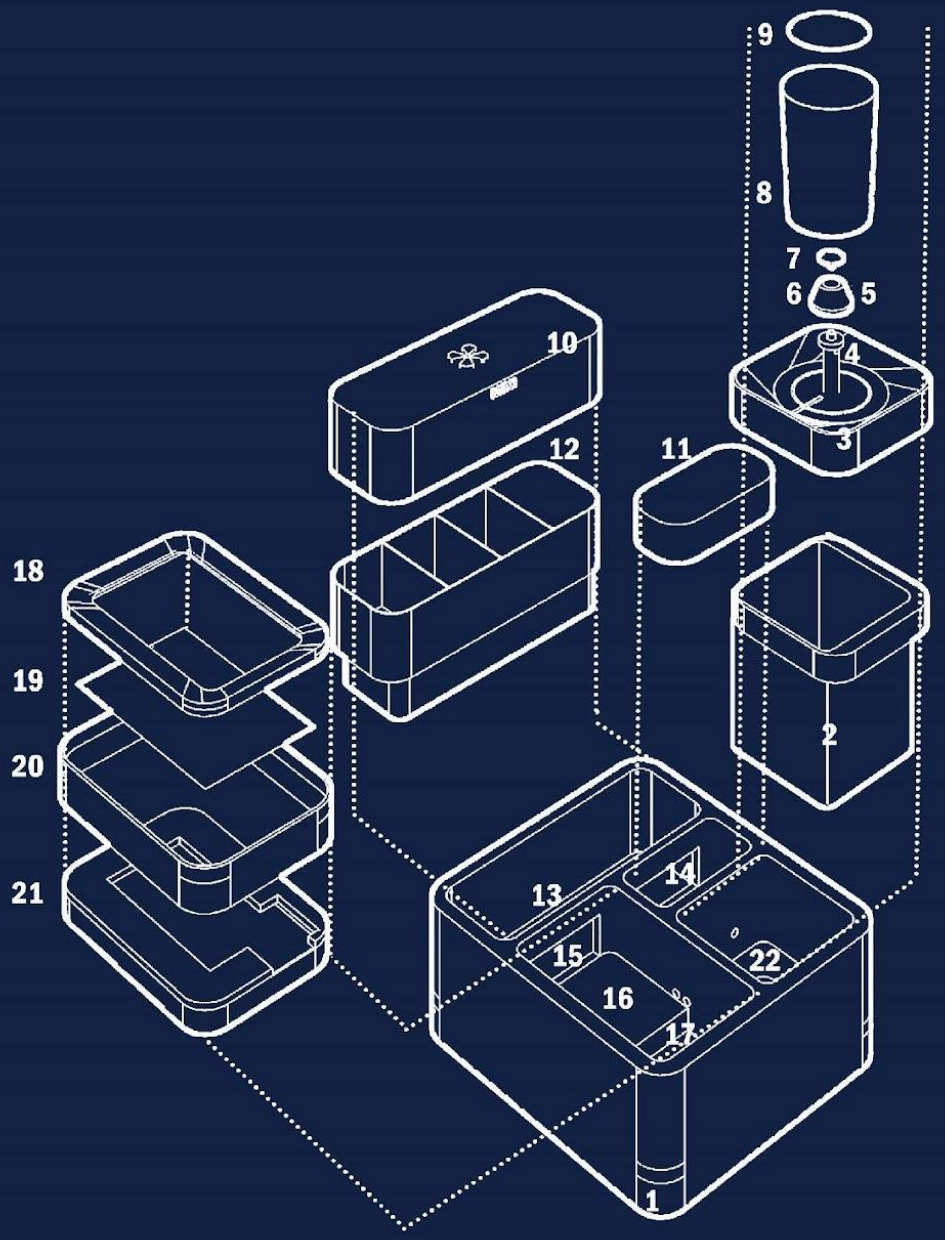


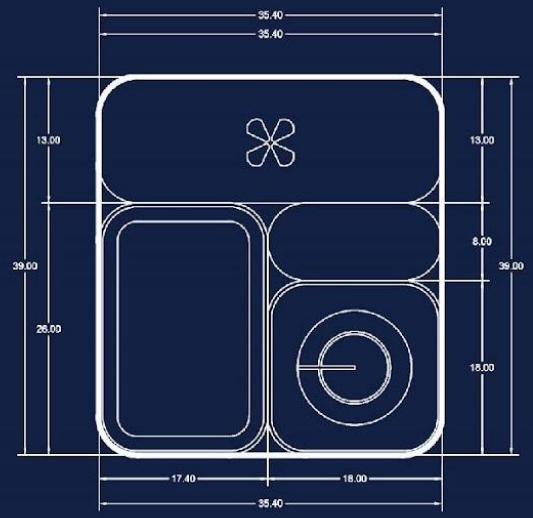
1 Logo Cover
2 Soda Pool
3 Cup
4 Bottom of Cup
5 Soda Pool Cover
6 Out Put
7 Mix Pool
8 Screen Stand
9 Base
10 Sore Pool
11 Sweet Pool
12 Bitter Pool
13 Spicy Pool
14 Raspbery Pi Cable
15 Pump
16 Relay Module
17 Arduion
18 BreadBoard
19 Screen
20 Power
21 Skin
22 Raspbery Pi

Structural Decomposition Diagram



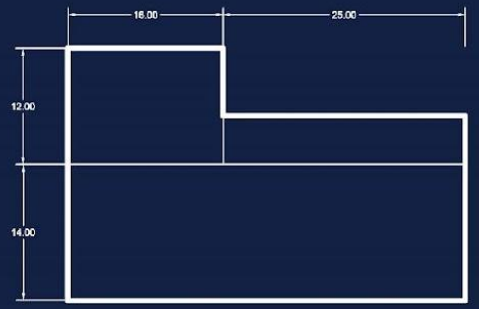
1 Base (wood)
2 Mixing Container
3 Cover
4 Drinking Outlet
5 Magnet
6 Plugging Block
7 Fixed
8 Cup
9 Magnetic Disk
10 LOGO Cover
11 Sparkling Water Containers
12 Four Flavored Beverage Containers
13 Water Valve
14 Water Flow Sensor
15 Cable Channel
16 Arduino
17 Raspberry Pi
18 Cover
19 Screen
20 Outer Shell
21 Support
22 Pump

Dimensional Drawings of Components

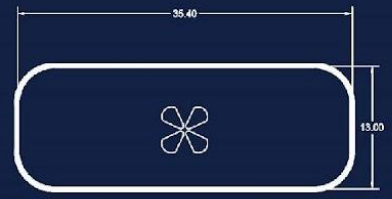


Overall layout

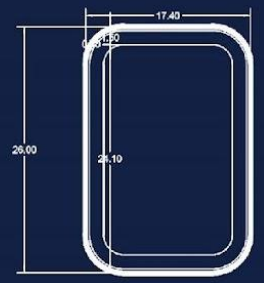
Front façade



Side façade

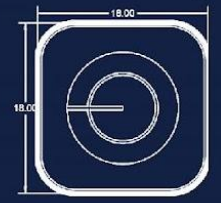


Beverage containers plane

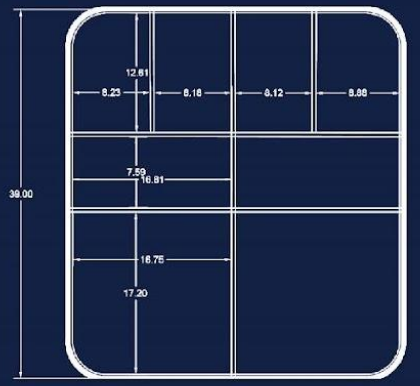


Interactive screen plane

Base beverage container plane



Drinks outlet plane



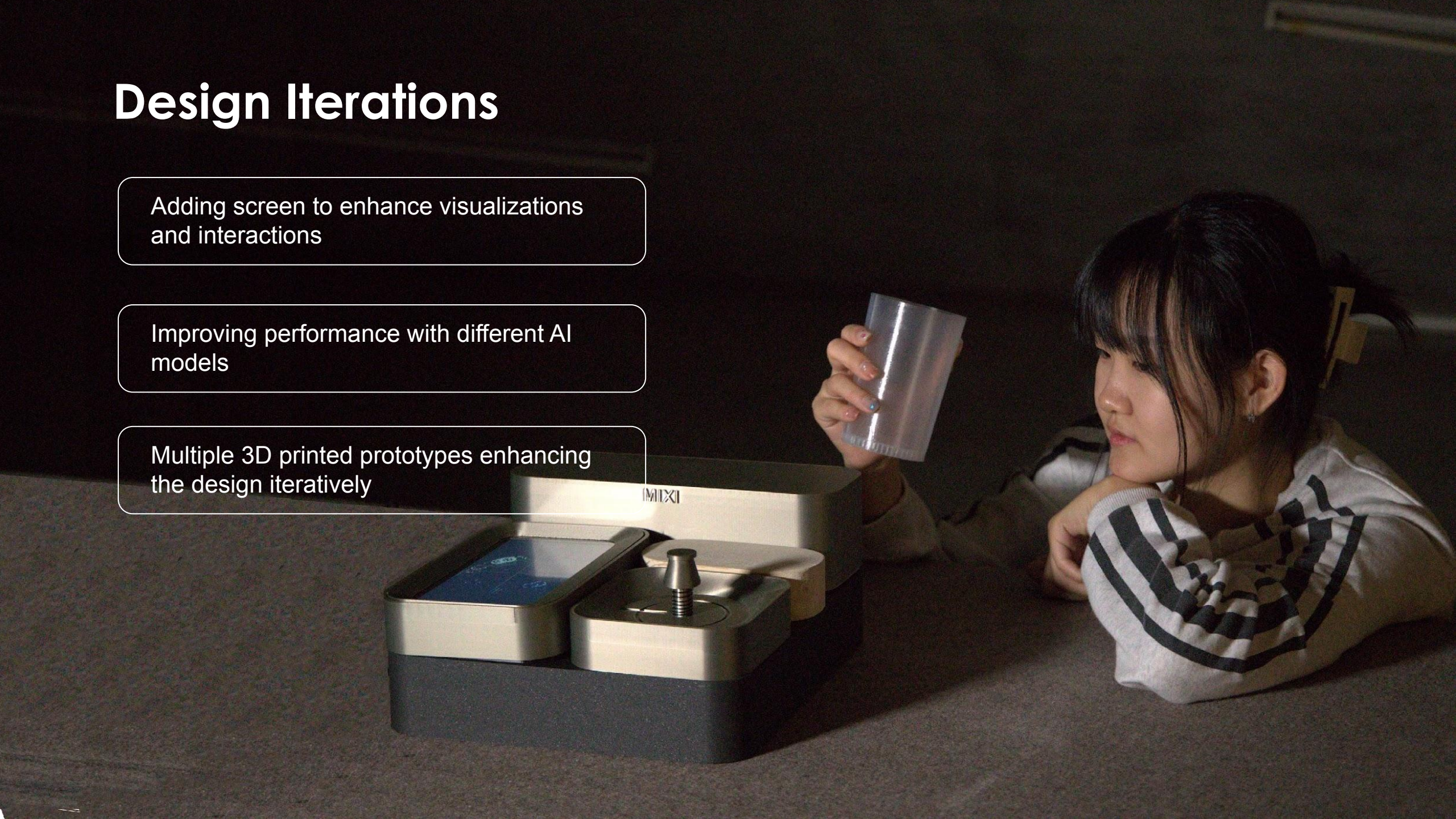
Base plane

Design Iterations

Adding screen to enhance visualizations and interactions

Improving performance with different AI models

Multiple 3D printed prototypes enhancing the design iteratively



Lessons Learned

1. We need to learn how to balance our desire to challenge ourselves with effective time management.
2. 3D-printed models can leak water! Even if you print a cup or container, it won't be completely waterproof due to tiny gaps between the layers.
3. It’s truly rewarding to work on a project we’re passionate about, alongside people we enjoy collaborating with.