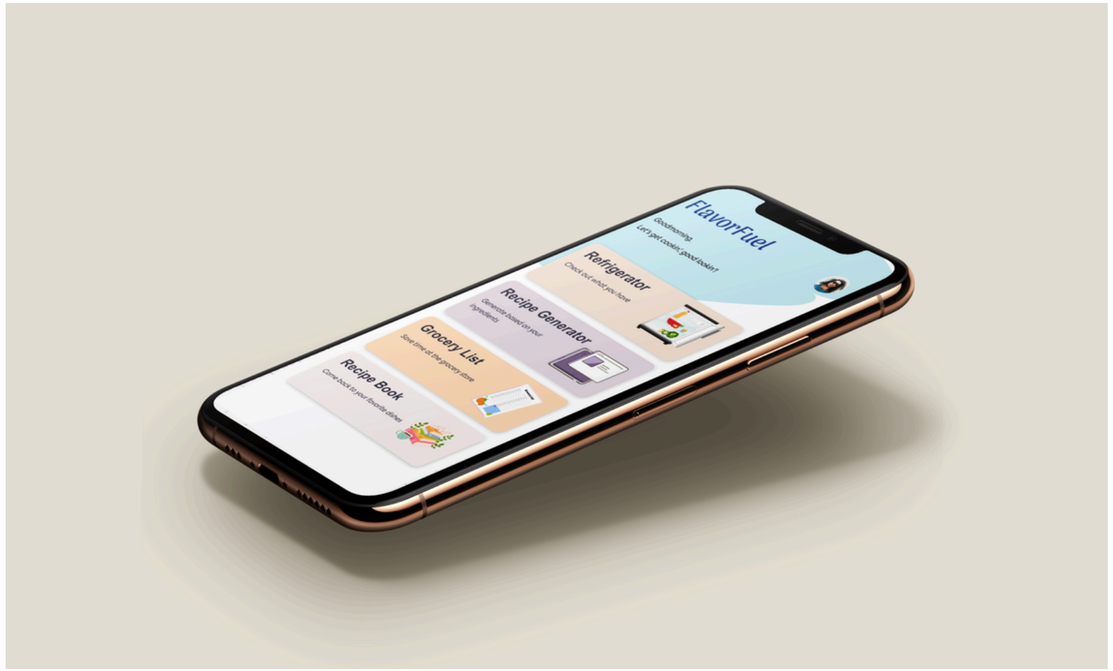

FLAVORFUEL

GRADUATE PROJECT

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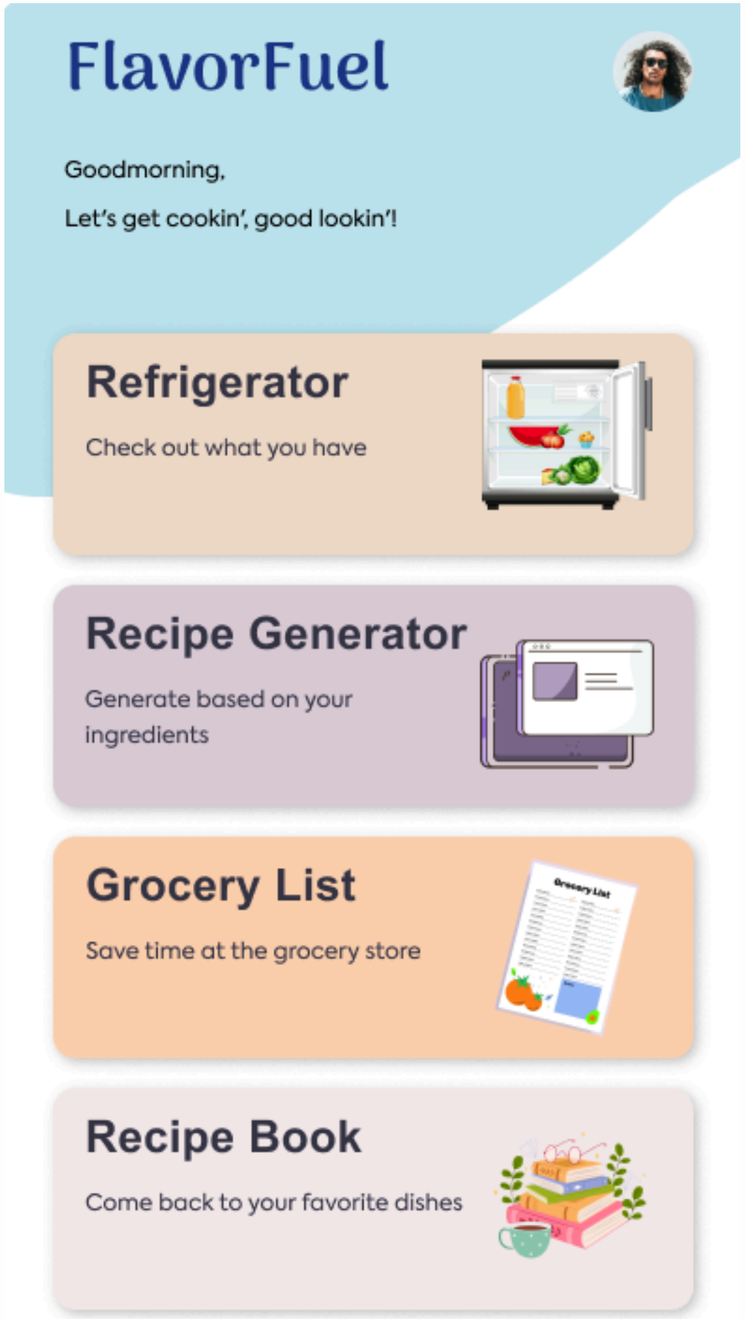


INTRODUCTION

- **Project Overview:** FlavorFuel is a mobile application designed to help low-income adults with beginner cooking experience easily find and prepare recipes using the ingredients they have on hand. The app aims to reduce the mental and physical burden of meal preparation and prevention of food waste. The domain of inquiry was created with a *mental wellbeing* theme in mind, focusing on the physical, mental, and social aspects of food. The project aimed to address food insecurity, improve dietary habits, and enhance the overall well-being of the target users

- **My Role:** As part of a team, (Alejandra Ramos) contributed to research, design, usability testing, and prototype iteration.

BACKGROUND

Created by Fajar Studio
from Noun Project

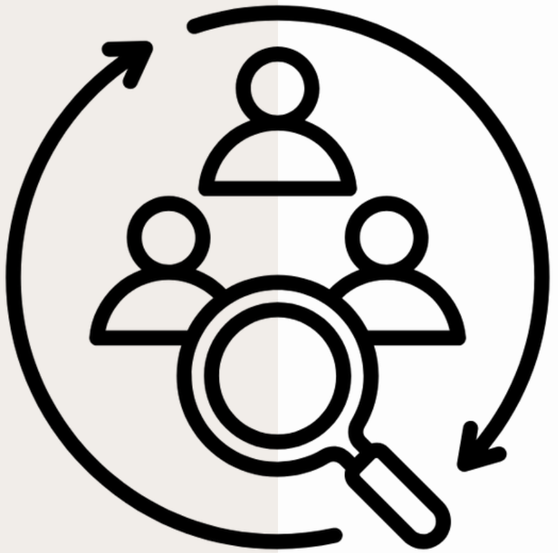
- **Context and Background:** The project addresses the *mental wellbeing* that low-income adults aged 21-26 face in meal preparation, including limited time, resources, and cooking experience. The domain of inquiry aims to provide an easy-to-use solution for generating recipes from available ingredients.

- **Stakeholders:** The primary stakeholders are low-income adults aged 21-26 with beginner cooking experience. Secondary stakeholders include organizations focused on food security and nutrition education.

- **Project Goals:** Improve the meal preparation process for the target user group by providing a tool that helps them make the most of their available ingredients and time.

RESEARCH

- **Research Goals**: Understand the mental wellbeing of meal preparation habits, challenges, and needs of low-income adults aged 21-26.
- **Methodologies:** Contextual inquiries and user interviews
- **Participants:** Low-income adults aged 21-26 from various ethnic backgrounds and living situations.
- **Findings:** Common pain points include difficulty using available ingredients, lack of centralized recipe resources, and time constraints. Participants also expressed a preference for visual learning aids and the need for clear navigation cues.



Created by Mia Elysia
from Noun Project

RESEARCH- FINDINGS

Participant Information	How recipe obtained	Factors influencing recipe choice	How they view food	Cultural foods	Why they learned to cook
P1 — Leo 23 — Restaurant worker/youth sports coach — <$20k	Parents - recently; YouTube	food availability; Cooking ability	An essential	Doesn't have means to cook them	Started living alone
P2 — Aeon 26 — Events operations Manager — ~$50k	Parents - a lng time ago; Cooking shows	cravings; food availability	fuel for body; keep energy up	likes to cook them, not from own culture	Mom and grandma influence; Hates ordering out; Imporve relationship w/ food
P3 — Felix P 25 — Claims Adjuster — $55k	Through word of mouth; mostly from his mom	meals are already planned; knows how to buy groceries within a budget	Amazing, loves food; eats because body needs it; Wants to look good and feel good	Rice, Beans & Meat (steak or chicken)	Moved to college → living on his own
P4 — Ana R 23 — Labor Worker — $15k	Tiktok, Google; Through family members	If ingridients were already available; Easy to make → the recipe in itself was cheap	Loves food; relationship with food is getting better; choosing healthier ways to eat her favorite food	Enchiladas; Caldo de pollo; Pozole	out of neccessity → moved out on her own
P5 — Chef 26 — Project Engineer — 11k/yr	TikTok for additional tips; learned from bf's mom	rotation of 3 basic recipes; Minimal clean up (one bowl recipes); High protein for gym gains; Effort/time dedication; ingredients that are convneint (won't go bad qiuckly/can be kept in freezer); Bulk items to save money/ cheapest options; Lazy about getting new ingredients for new recipes; Flavor, will sacrifice heealthiness	food is enjoyable /pleasure; Doesn't like to worry too much about food, not healthy to; Used to have habit of eating to satisfy boredom; Focus on eating in moderation (calorie intake)	janky/very customized version of korean foods; learned from multiple people. pick and choose ideas	out of necessity/ too $$ to eat out; likes to decide/know what goes into her body (track calories)
P6 — Leah 24 — Product designer — 50k	TikTok/ IG/ Youtube; learned from ex bf, how to use basics; looks up recipes that she wants to cook (has to have video)	Available ingrdients at home; Easy to follow; Rotation of recipes; Shoprite (convenient, available, affordable-ish, childhood); won't buy things that are too $$ (like fruit); No asian super market nearby; small kitchen/co untertop	fuel; nutrition; necessity; expensive; struggle to eat a lot	chicken and broccoli (chinese style); chicken adobo; porkbelly and rice, fried rice	college meal plan was disgusting; not sustainable to eat out all the time

miro

PROBLEM DEFINITION

Problem Statement

User Persona

User Journey Maps

Conceptual Design Scenario

Created by Eko Purnomo
from Noun Project

PROBLEM STATEMENT

Participants have the need of an easy-to-use, intuitive solution that would allow them to efficiently obtain recipes based on their current available ingredients, along with clear, step-by-step cooking instructions to minimize food waste and reduce the stress of meal preparation.

USER PERSONA

About

- Link Enlogg
- 23 years old
- Mexican
- Entry-level UX Designer
- New York, USA

Bio

Link aims to improve her physical health by hiking and playing badminton but struggles to find time for cooking due to her busy schedule. New to cooking, she finds meal preparation daunting and calorie tracking time-consuming. While food delivery is convenient, it's expensive and hard to track calories. She shops at Costco for cost-effective bulk Hispanic foods but feels overwhelmed by her lack of cooking skills and limited space in her small NY apartment. Link enjoys watching and saving cooking videos for future use.

Behaviors

- Casually active, mainly through social physical activities
- Bulk buys Costco (with her vehicle)

Pain Points

- New to cooking
- Low food budget
- Small fridge
- Small kitchen
- Little time to cook every day

Resources

- Gets recipe ideas from social media
- Prefers instructional videos to reading

Needs

- Minimal ingredients
- Wants to be more healthy

USER JOURNEY MAP

Link Enlogg The Fresh Chef, Entry-Level UX Designer, 23

🎯 *Utilize minimal ingredients available to cook meals that are quick and easy.*

Journey Step	Return Home from Work	Checks fridge for available ingredients	Looks up recipes with list of available ingredients	Decides to cook instant ramen Adds scallions	Washes dishes
Feeling	Hungry Tired	Disappointment in lack of logically combinable ingredients	Overwhelmed Regretful of time wasted	Excited that process is quick	Guilty about poor-nutrition and potential waste of available ingredients Sluggish, Gross
Thought	"Should I order out...it's too expensive" "What's in the fridge?"	"What can I even make with these?" "I forgot I even had this ingredient"	"This is so time and effort consuming" "Finding a recipe is so complicated"	"This didn't take long at all, and I only used one bowl" "I'm finally eating something after a long day"	"Only a couple of dishes to wash!" "The things in the fridge might go bad soon..." "I'm not hungry anymore, but now I feel icky"
Requirements	-simplify the process for deciding what to eat -fridge inventory (for meal planning ahead of time)	-recipe curation with specific ingredients -ingredient inspiration based on diet goals -digital fridge that reminds and suggest use of available ingredients	-one location to find and store recipes	-minimal cooking time -simple to make -customization of meal	-minimal dish-ware/cleanup -nutritional value in meal -incorporation of all useful ingredients

USER JOURNEY MAP (2)

Link Enlogg The Fresh Chef, Entry-Level UX Designer, 23

🎯 *Find a recipe that utilizes only available ingredients and is fast and easy*

Journey Step	Google Search	Looks through Saved Recipes from Social Media	Looks to get Takeout from UberEats
Feeling	Overwhelmed with number of recipe results that require additional ingredients and the time and effort necessary to find recipes that match her needs	Optimistic Hopeful	Guilty Desperate
Thought	"This is really tedious... " "I'm starting to give up " "I don't have any of the other ingredients to make any of these recipes"	"I know I have the perfect recipe somewhere.." "All these recipes have things I don't have "	"The fees for this meal cost more than the actual meal" "This would've been such an easy and convenient option"
Requirements	-option for recipes that don't use additional ingredients -filtration for cooking time/difficulty level/etc. -only show a few recipes at a time	-saved recipes in one location -input recipes from outside sources	-minimal ingredients for the sake of budget -easy and fast recipes for convenience

CONCEPTUAL DESIGN SCENARIO

Link is heading home on the subway after a long workday, eager for dinner. She opens The App on her phone to decide on a meal. Using the digital fridge feature, she checks her available ingredients, then uses the recipe generator to find a suitable recipe. She applies filters for minimal equipment, low difficulty, and short cooking time. Satisfied with a recipe, she gathers the ingredients and heads home. After a short walk, she customizes the recipe with a tip from social media, saves it, and follows the video instructions to cook dinner. The App helps Link cook comfortably and efficiently within her means, saving her time and money.

IDEATION

Concept Development

The team discussed possible features, screens and design elements that addressed identified pain points.

Brainstorming

Created wireframes for key screens, including the home screen, refrigerator, recipe generator, and recipe selection with instructions.

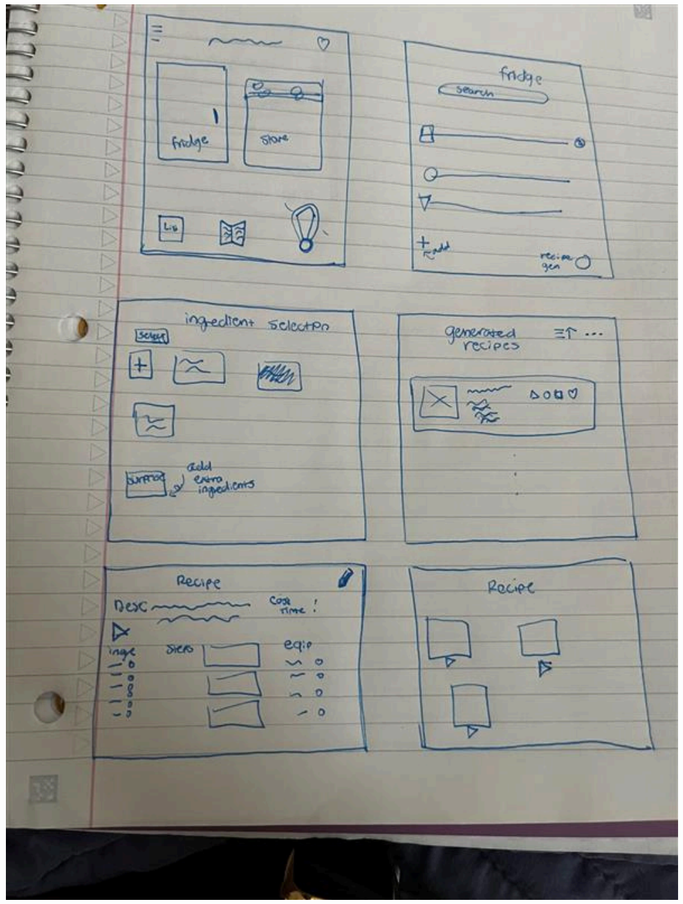
User Flows

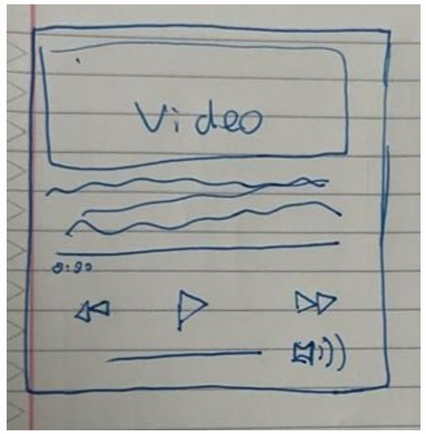
Developed user flow diagrams to illustrate the steps users would take to input ingredients, generate recipes, and follow cooking instructions.

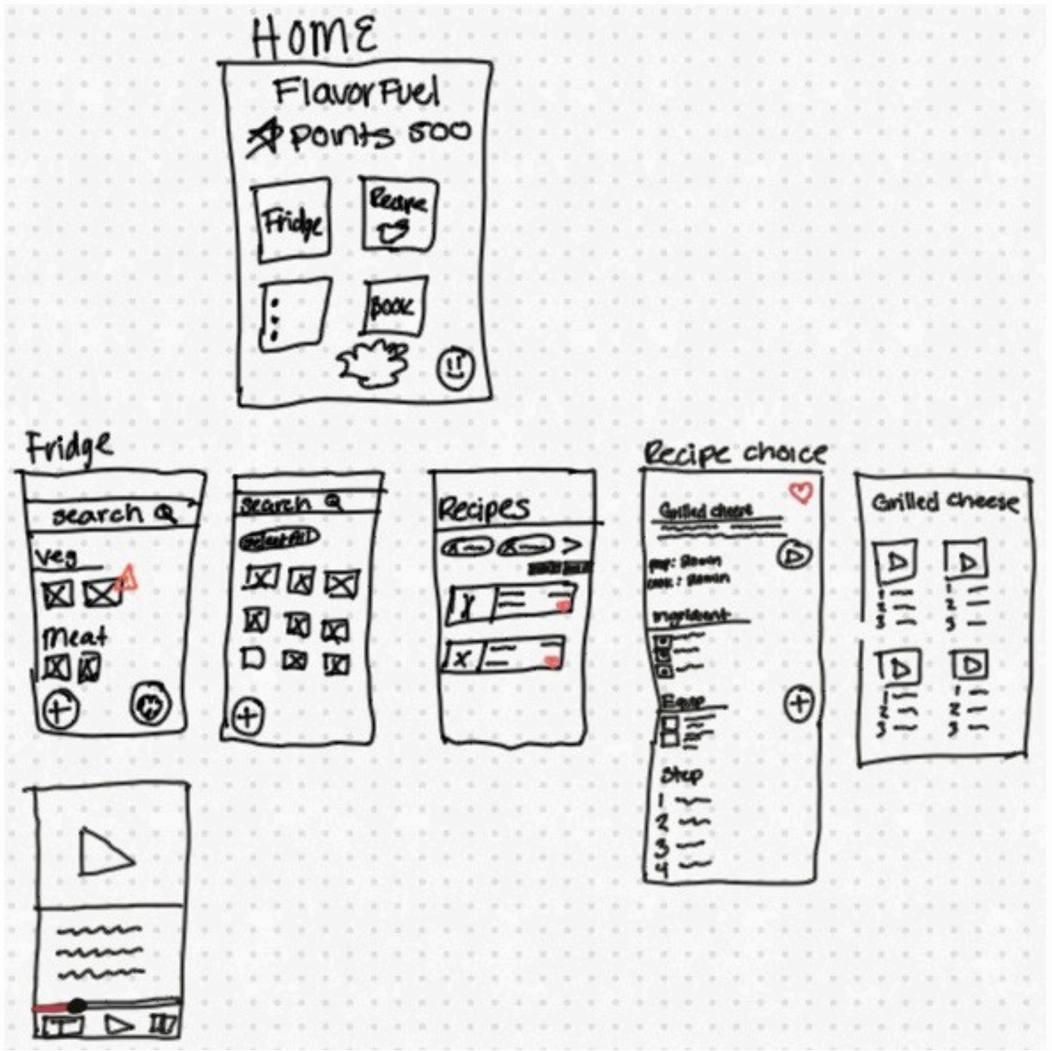
IDEATION-CONCEPT DEVELOPMENT

Requirements Based on User Persona/User Journey Map	
User Persona	**Requirements**
★ Mental load is too full from work	★ Simplify recipe selection
★ To start meal planning at any time ○ Reduce time spent planning when arriving home from work ★ Forgets ingredients in fridge ○ Goes to waste	★ Fridge inventory ○ Tracks available ingredients ○ Reminds and suggests ways to use available ingredients ■ to limit food waste
★ Needs to use ingredients on hand	★ Recipe curation for specific ingredients
★ New to cooking ★ Palate expansion ★ Wants to eat more nutritiously	★ Ingredient inspiration based on diet goals ○ Nutritional value in meal
★ Beginner cooking experience	★ Catering to level of cooking experience
★ Minimal ingredients ★ Does not have time to go buy extra ingredients	★ Option for recipes that only use “my ingredients”
★ It is a complicated and long process to find recipes on Google ★ Appreciates fast and easy cooking process	★ Filters ○ Cooking time ○ Difficulty level ○ (Diet plan, Keto, Paleo, etc.) ○ Allergens (Gluten free etc)
★ Recipe ideas/tips from social media	★ Customization of recipes
★ Single, has to prep, cook, and clean ★ Appreciates easy clean up	★ Easy equipment use
★ Enjoys watching cooking/recipe videos	★ Visual instructions

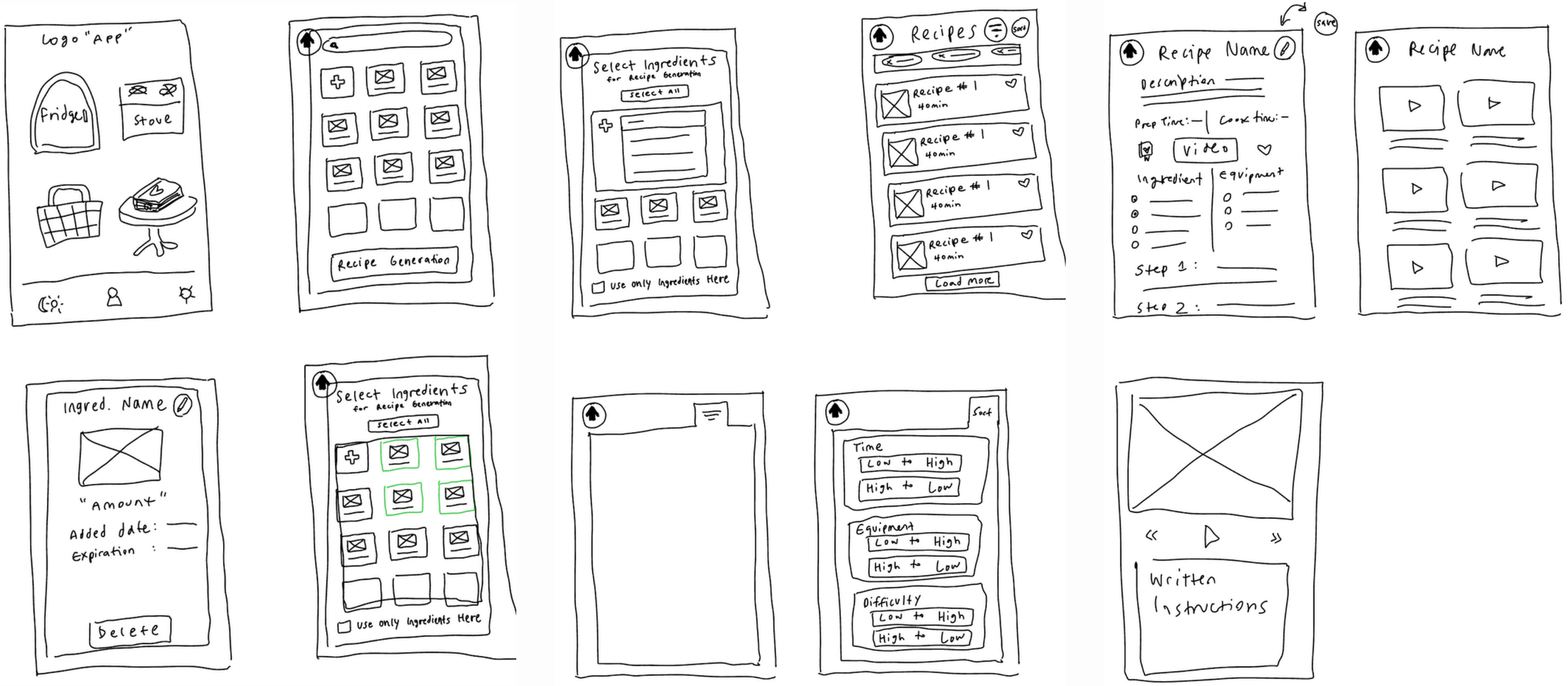
IDEATION- BRAINSTORMING



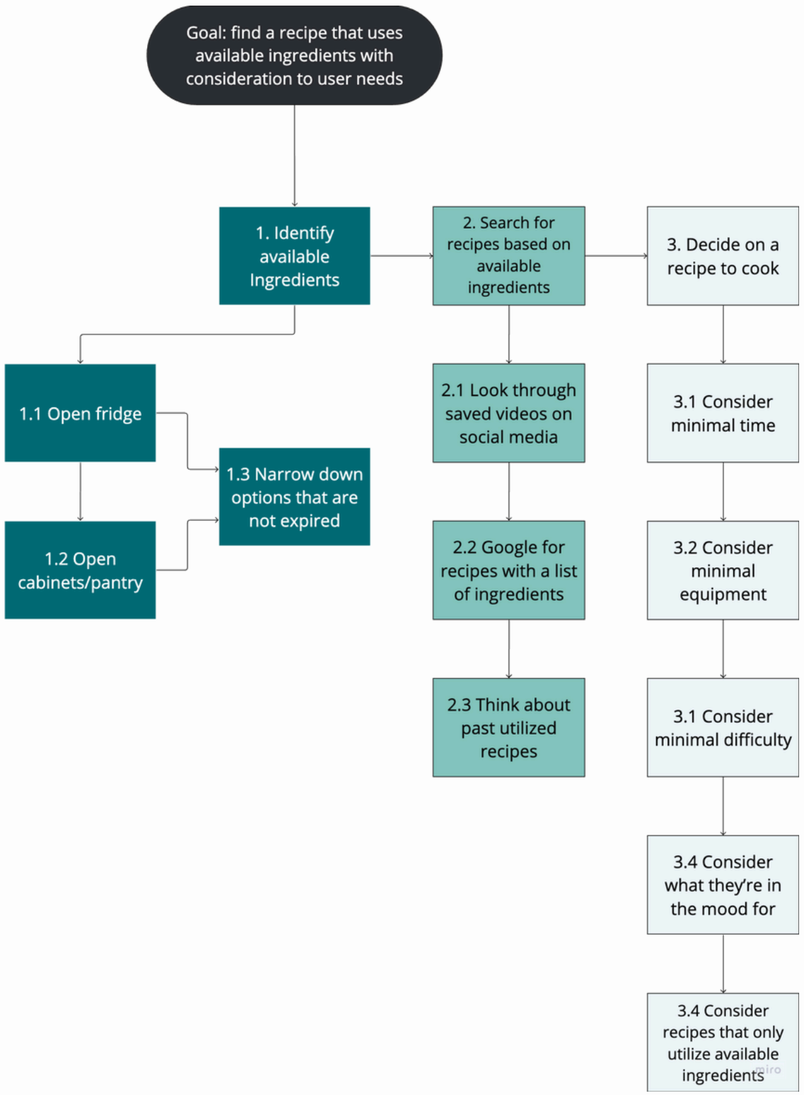




IDEATION- BRAINSTORMING



IDEATION- USER FLOWS



DESIGN

Wireframes

Initial wireframes were created to visualize the key screens and interactions.

Design Consolidations

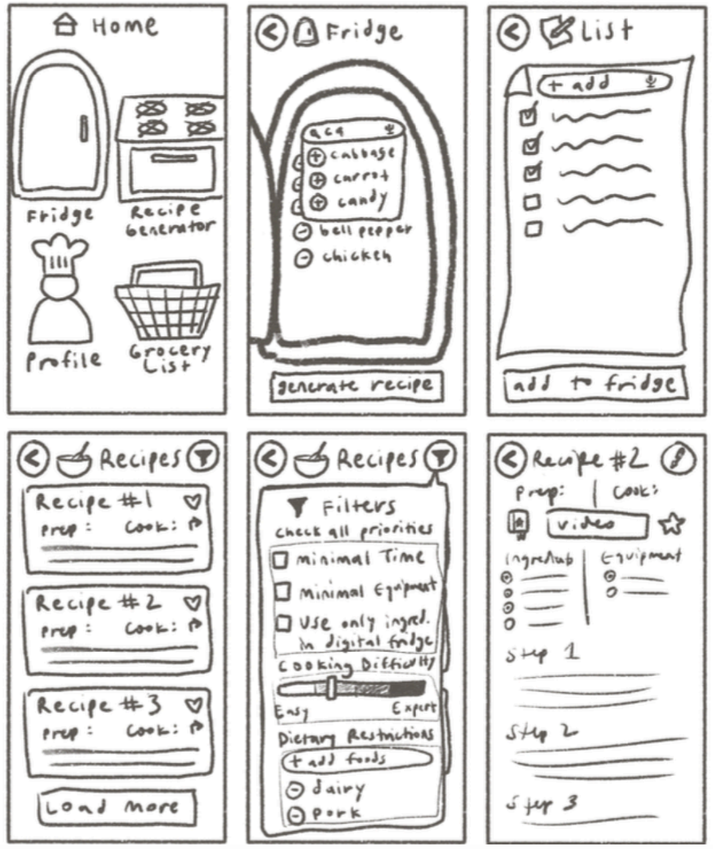
To consolidate our designs, we identified key screens including the home screen, refrigerator, recipe generation, and recipe selection and detailed design considerations into our Figma wireframes.

Prototypes

Developed low-fidelity prototypes in Figma, incorporating features that addressed users needs.

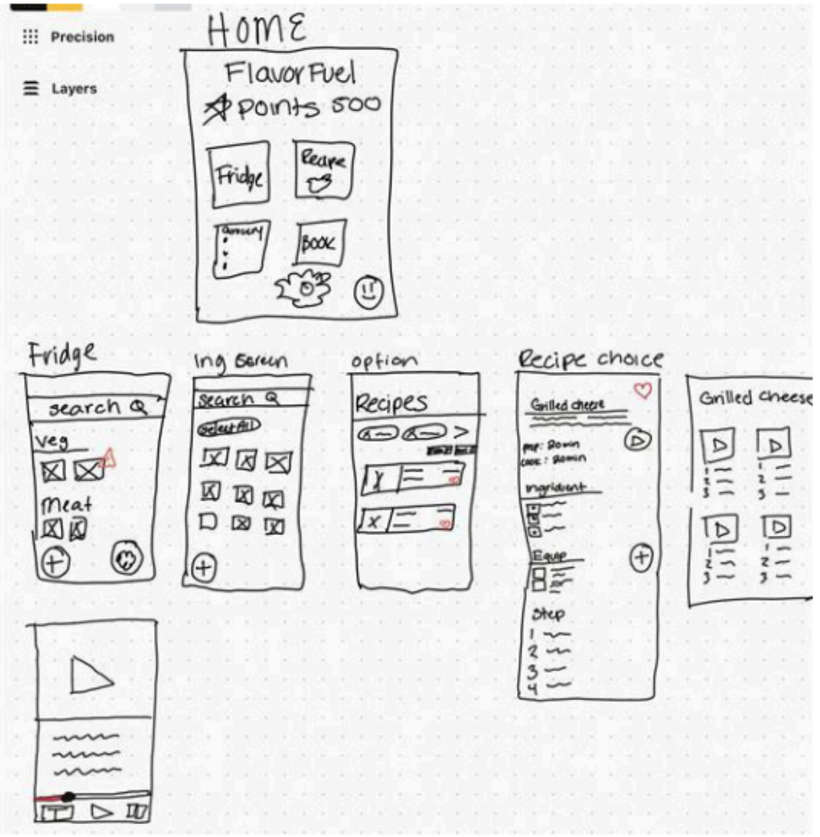
WIREFRAMES

A. Jeong Hyo Kang



B. Amy Tuffour-Manu

C. Alejandra Ramos



DESIGN CONSOLIDATIONS

Screens	Consolidations

Home Screen	• Options:
	  ○ Fridge, Grocery List, Recipe Book, Recipe Generator
	  ○ Item/Environment Customization with points
	  ○ Tutorial reward + proof w photos?
	• App Name (+Logo?) + Profile + Settings
	• Environment, Gamified

Fridge	• Visual: inside of fridge
	• Search bar for items in the fridge
	• List of items with visual
	  ○ Discuss visuals and categorization
	• Add and Delete Items Icons
	• Warning
	• Items details
	  ○ Added date
	  ○ Amount
	  ○ Optional expiration date
	• Recipe generator button

Recipe Generation (Ingredients Screen)	• Same as fridge screen • Select all button • Add button • Ingredients can be selected/deselected ○ In card grid layout

Recipe Generation (Recipe Options)	• FIlter + Sorting Buttons
	• Ingredients Horizontal Bubbles
	• List of recipes + Image
	  ○ Difficulty Level
	  ○ Time Estimate
	  ○ Favorite Button

Recipe Generation (Filter Sorting Pop ups)	Filter:
	• Time, Equipment, Difficulty
	• Portion Sizes
	Sorting:
	• Time
	  ○ Low to high
	  ○ High to low
	• Equipment

	○ Low to high ○ High to low • Difficulty ○ Low to high ○ High to low
Recipe Choice	• Recipe Name + Description • Prep + Cook Time • Recipe Book + Video + Favorite + Edit/Save Button • Ingredient List + Amount ○ Checkboxes but circles • Equipment List • Steps
Recipe Video	• Recipe Name • Blocks of Steps with Video Thumbnail ○ Play Button

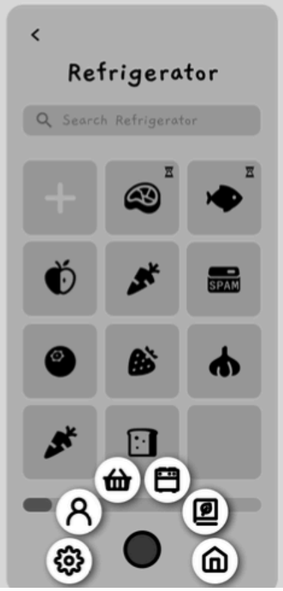
Recipe Video (Enlarged Step)	• Animation
	• Step + Voice + Written Instructions
	• Play/Pause/Scrubber
	• Settings
	  ○ Transcript Toggle
	  ○ Speed
	  ○ Language

LO-FIDELITY

Fig. 1

Fig. 2

Fig. 2.1



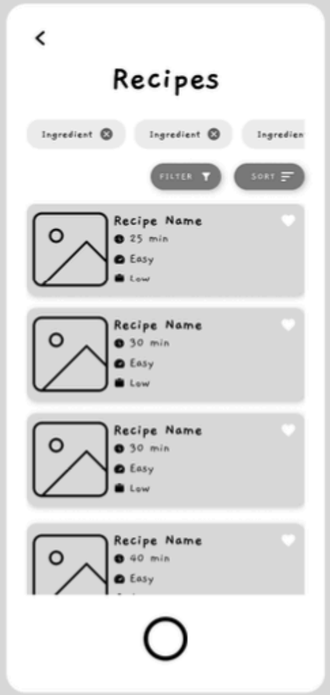


Fig. 4

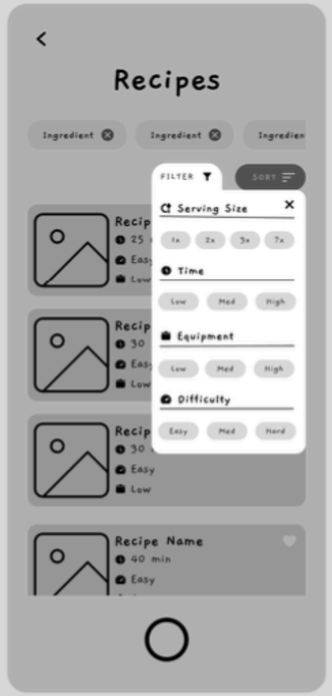


Fig. 4.1

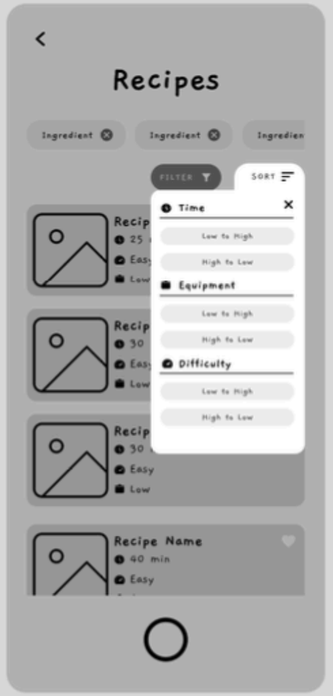
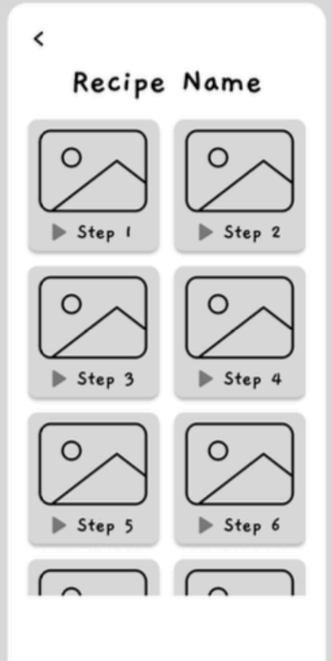
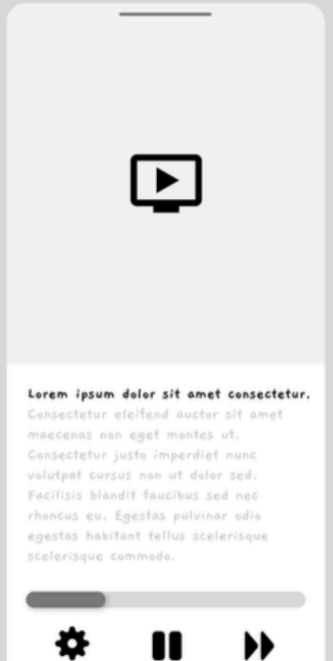


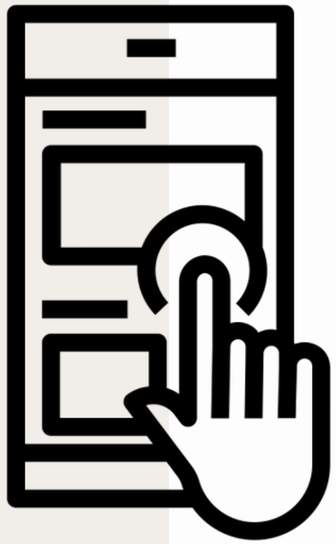
Fig. 4.2





USABILITY TESTING

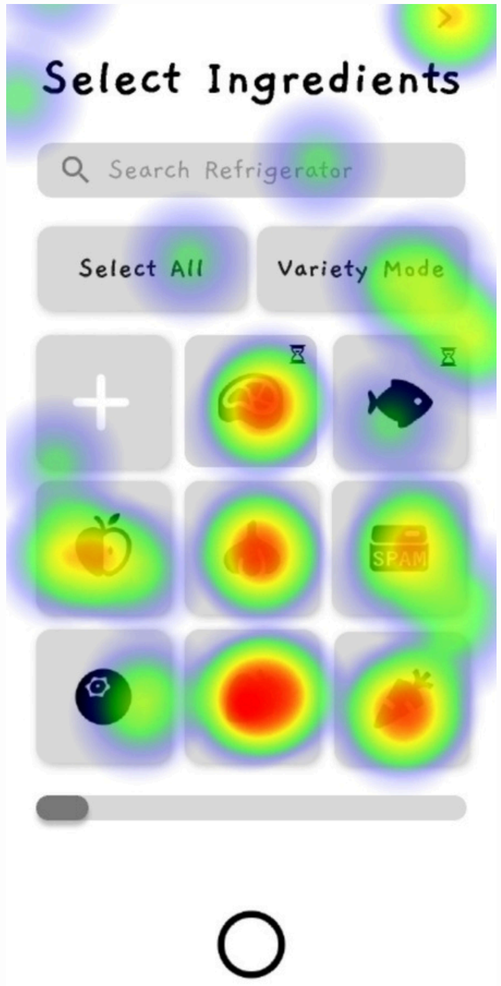
- **Usability Testing:** Conducted three rounds of usability testing using Maze, with participants from the target user group
- **Feedback:** Participants provided feedback on navigation, button clarity, and overall usability. Heatmaps and observational notes were used to identify areas for improvement.
- **Iterations:** Redesigned the navigation cues, added labels to icons, and improved the visual hierarchy based on feedback.



Created by DailyPM
from Noun Project

USABILITY TESTING- MAZE

Prompt 1: Select 3 ingredients that you want in the recipe.



Prompt 2: Were you satisfied with your selection?

Responses

Yes

Participant 223876950

Yes

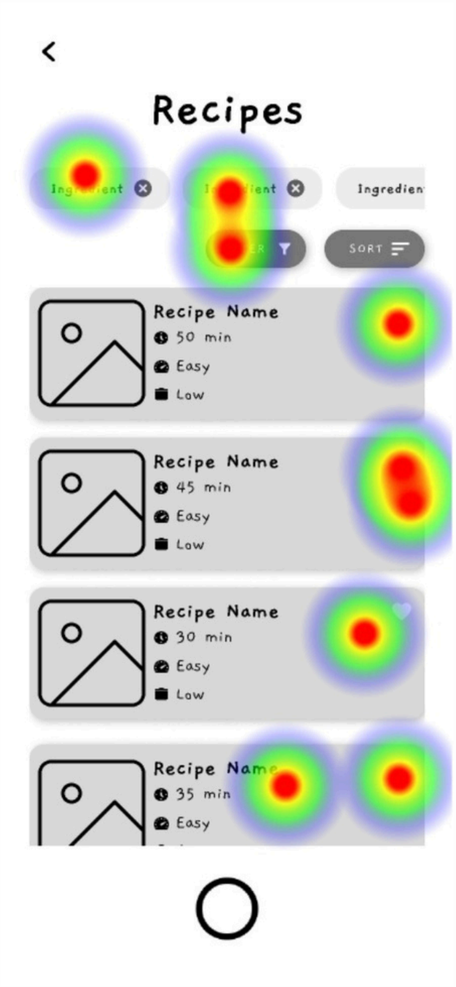
Participant 223877985

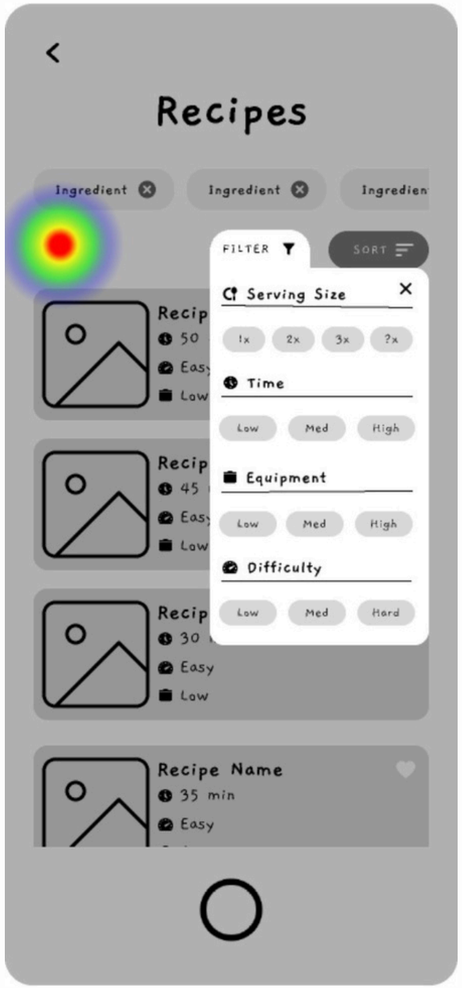
Yeah it was simple to select my items

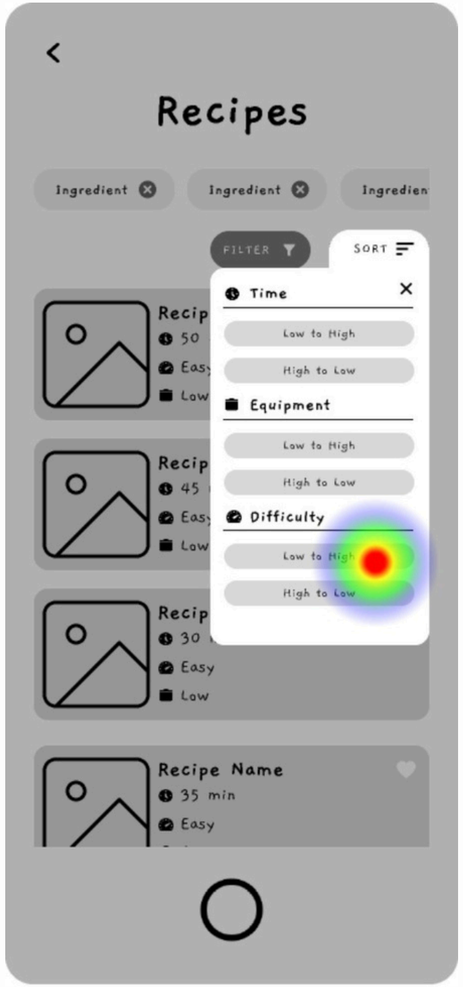
Participant 223878904

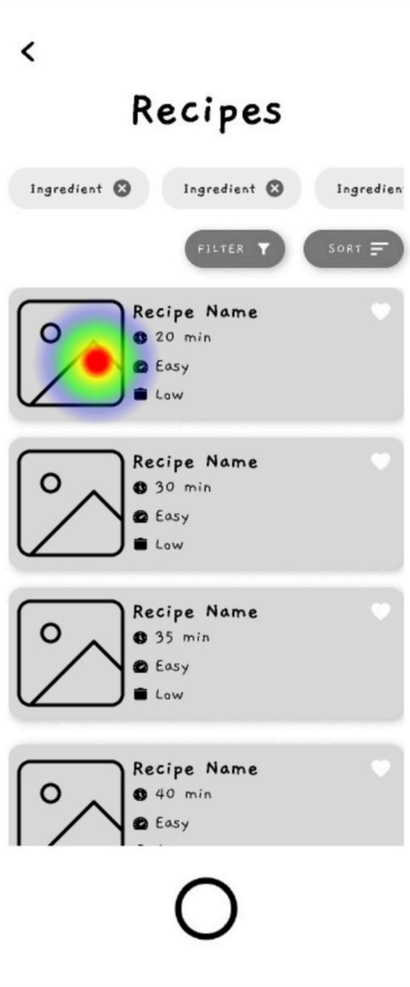
USABILITY TESTING- MAZE

Prompt 3: Find a recipe that fits your needs:





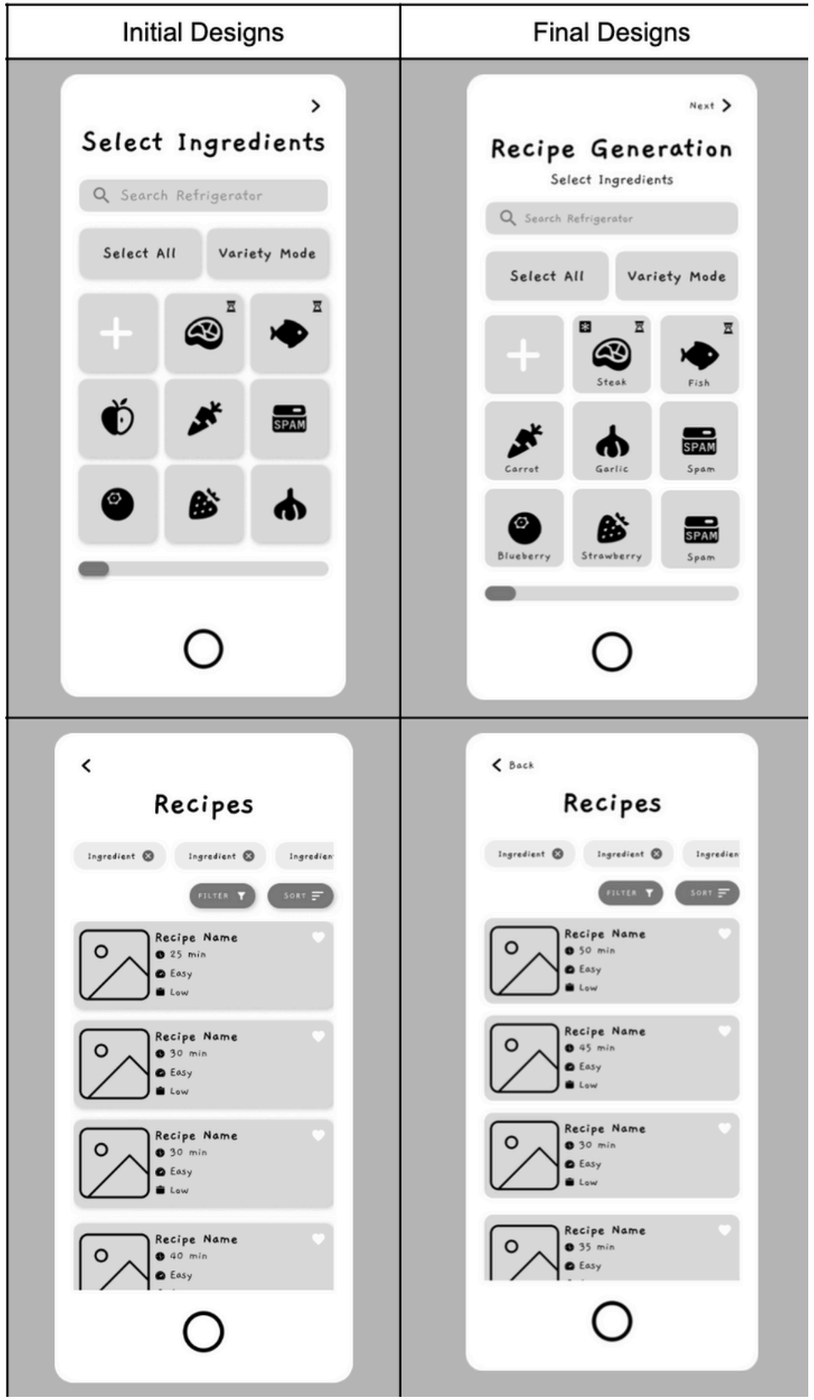


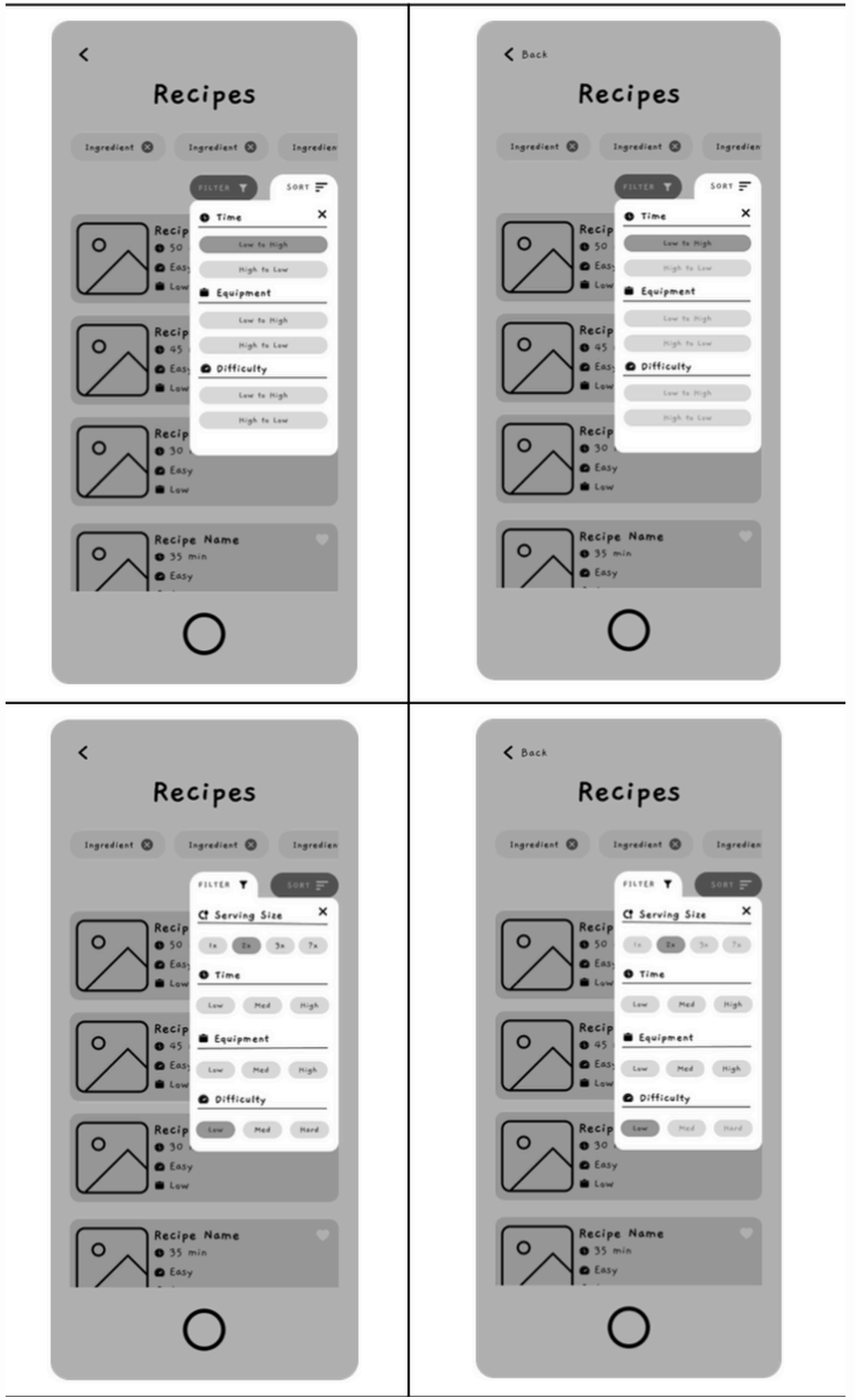


USABILITY TESTING- FEEDBACK

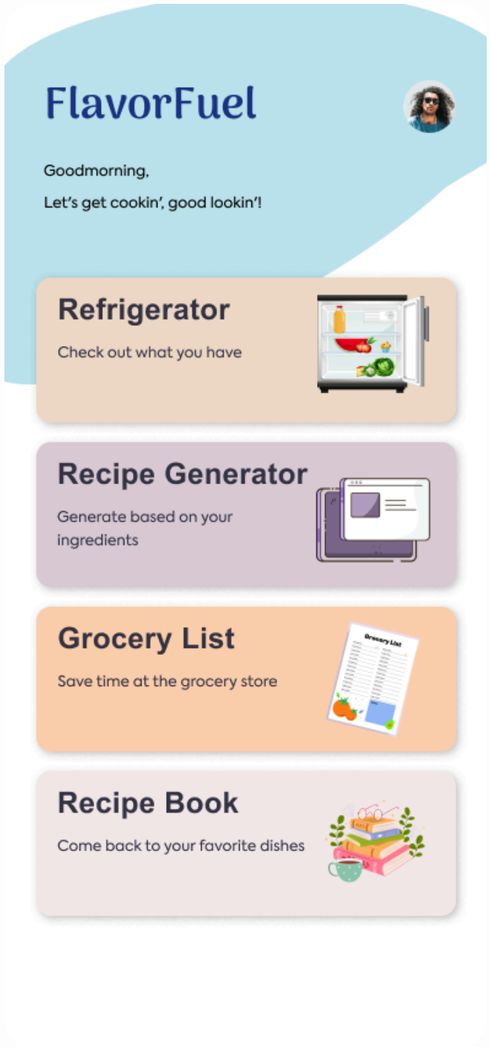
- **Frozen Ingredients Indicator:** A participant suggested adding a feature to indicate if items are frozen and not readily available, enhancing the usability of the digital fridge.
- **Navigation Clarity:** Difficulty in locating the “next” button was noted, indicating the need for more prominent and clickable navigation buttons.
- **Sorting Mechanism:** Confusion around the sorting options suggested the need for a clearer signifier that only one sorting option can be selected at a time, such as graying out unselected options.
- **Home Screen and Task Transparency:** Participants expected a home screen for better orientation and clearer titles or descriptions for each screen to improve task transparency.
- **Usability and Labeling:** Positive feedback on the design’s user-friendliness highlighted the importance of maintaining big buttons and appropriate use of space. Additionally, clearer labels on icons and controls were recommended to enhance usability and better convey ingredient names.

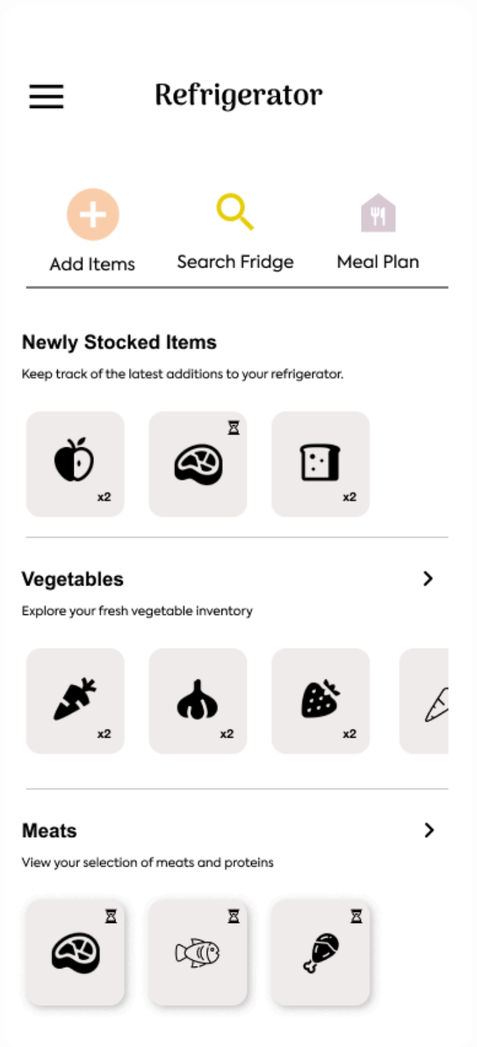
ITERATIONS BASED ON FEEDBACK

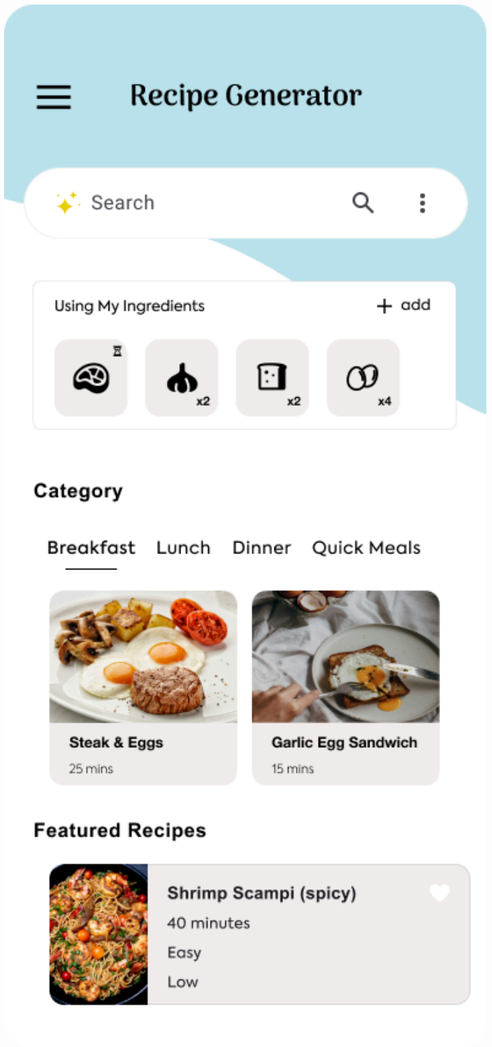


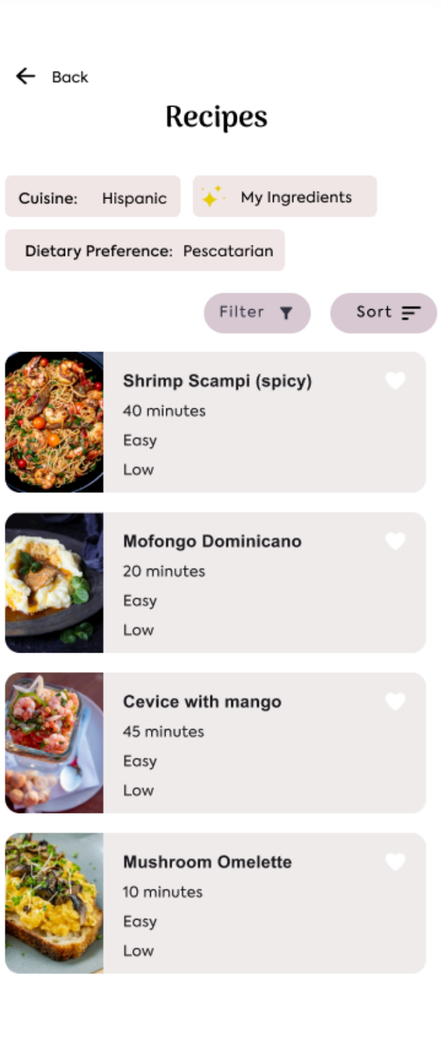


FINAL DESIGN (ALEJANDRA'S VERSION)

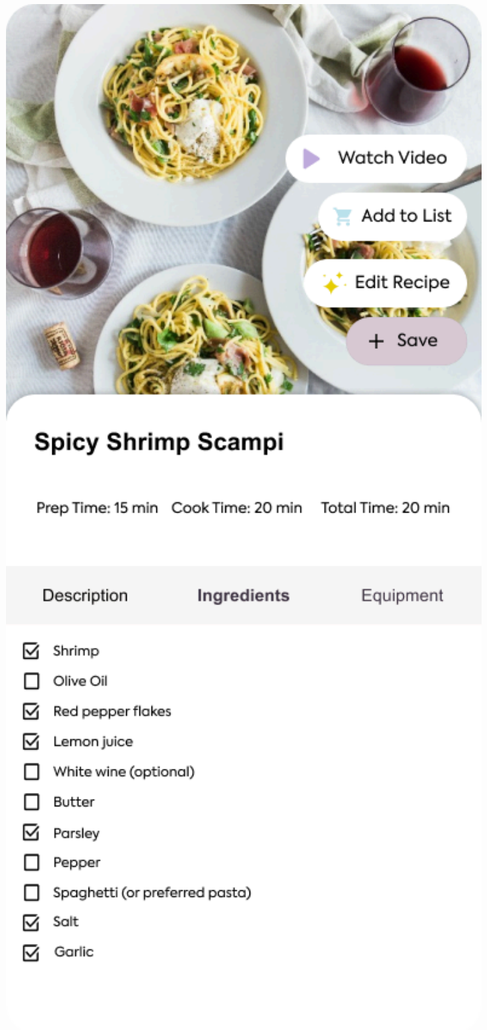


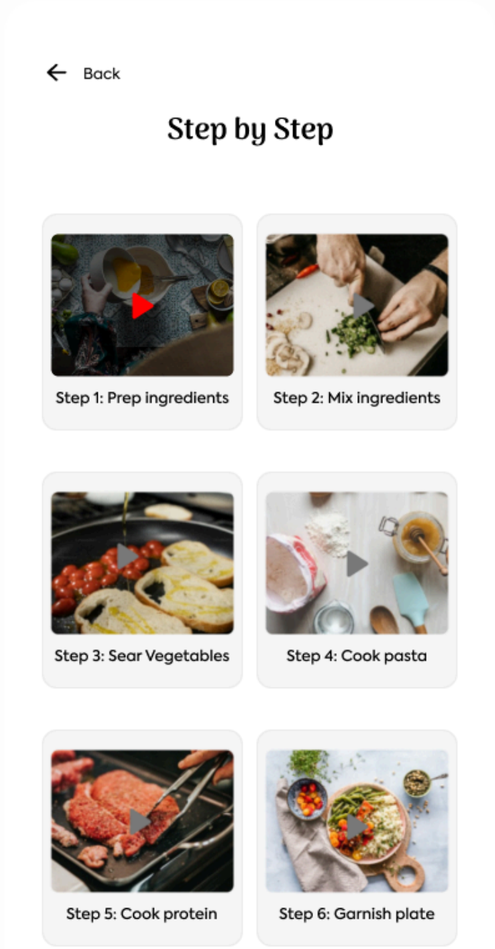


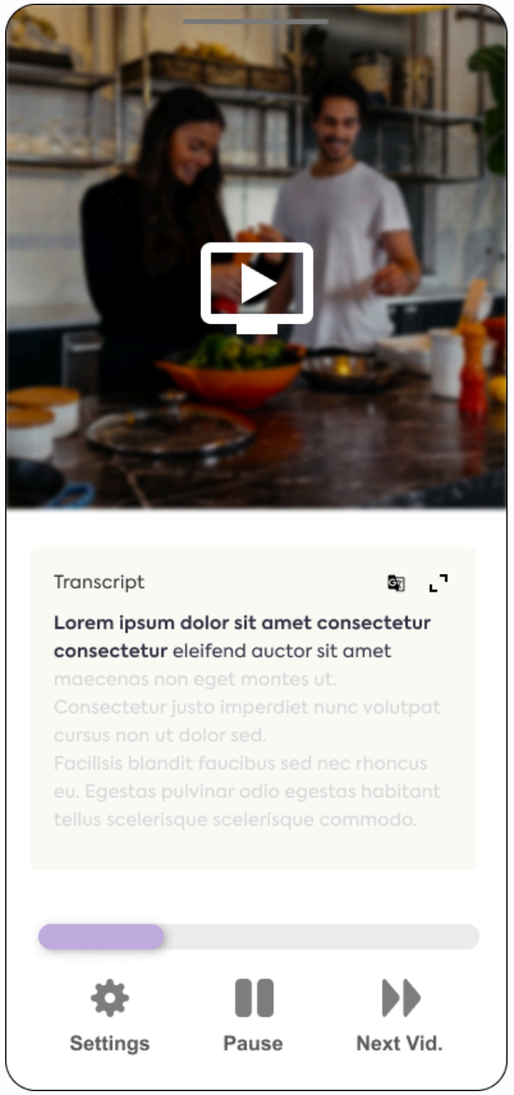




FINAL DESIGN (ALEJANDRA'S VERSION)







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