simmr

"The voice that turns every recipe into a story."

Final Report

CS 147 Fall 2025

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PROJECT NAME AND VALUE PROPOSITION

Project Name

Simmr

Value Proposition

The voice that turns every recipe into a story.

TEAM MEMBER NAMES AND ROLES

Jasleen S.

Jasleen served as our lead researcher and aesthetic designer, shaping the visual direction of the project and creating the slides for our presentations. She led user interviews and acted in the video prototype. She refined the heuristic evaluation and contributed to coding the high fidelity prototype. She also served as a User Researcher, UX Designer, Mobile Developer, and project coordinator for Simmr.

Jasmine T.

Jasmine T. served as the technical driver for Simmr, architecting and delivering the full website experience while leading end-to-end development of the mobile application. She operated across multiple workstreams as a User Researcher, UX Designer, Mobile Developer, and project coordinator. In addition to owning core product build-out, she spearheaded user interviews, crafted experience prototypes, and managed participant recruiting.

Jasmine A.

Jasmine A. contributed across multiple phases of Simmr's design and research process, supporting needfinding interviews, crafting experience prototypes, and refining interactive flows that shaped the core user journey. She also produced the visual storyboards for the concept video, translating the team's narrative vision into clear, compelling frames. Jasmine served as a UX Designer for Simmr

Mara B.

Mara served as lead UX Designer and product coordinator, guiding Simmr from early concept through high-fidelity build. She defined core features and implemented key components on the mobile app, leading user interviews and translating insights into requirements throughout all design stages. She managed participant recruitment and prototyping, conducted WCAG accessibility reviews, and co-wrote concept video script.

PROBLEM AND SOLUTION OVERVIEW

Cooking, for many home cooks, has become repetitive and isolating. Most recipe apps emphasize efficiency and output, neglecting the emotional and social dimensions that make cooking meaningful. As a result, users often lose interest, feeling disconnected from the creative and communal joy of preparing a meal.

Simmr reimagines cooking as an interactive, story-driven journey. Through voice-guided narration, ambient music, and embedded mini-lessons, Simmr turns ordinary recipes into immersive experiences. Whether it's following a tropical adventure while making dinner or collaborating on a story-themed meal with friends, Simmr transforms cooking from a chore into an engaging, social, and memorable experience.

NEEDFINDING

Interviews

Before starting our needfinding process, we wanted to understand how people actually learn and follow a recipe in a step-by-step way. Our team was interested in skill-building and everyday learning, so we focused on cooking because it is familiar, routine, and forces people to follow instructions under time pressure. This made it a strong domain for exploring breakdowns, habits, and motivation.

In our first round of interviews, we spoke with people whose daily lives involved balancing many roles. For example, one participant was a student athlete juggling school, training, work, and interviews. At this stage, we were not only thinking about cooking. We were exploring how people learn or follow structured steps in general, including presentations and studying. This helped us understand how people think about step-by-step tasks across different contexts.

To reach a wide range of perspectives, we interviewed four participants with different levels of cooking experience. Our interviewees included a frequent home cook who works in data engineering, an amateur cook in biomedical engineering, a professional chef from Stanford Dining, and a graduate student athlete with limited time to cook. These roles gave us different viewpoints on confidence, time management, and how people navigate recipes with varying skill levels.

In our second round, we intentionally sampled people at the extremes of the cooking experience. We interviewed individuals for whom cooking carries significant emotional or logistical weight. One participant spends hours preparing low-FODMAP meals for her son even though they live in separate homes. Cooking for her is both a burden and an act of care. Another interviewee, an elite athlete, focuses on cooking for performance, prefers to cook alone, and dislikes written recipes. She relies on visual, intuitive learning instead.

Across interviews, two team members were usually present. One person led the conversation, and the other took notes. We asked participants to walk us through how they choose recipes, the tools they rely on, and when they feel confused or overwhelmed in the kitchen. These conversations helped us identify consistent needs around clarity, timing, visual cues, and hands-free guidance. This shaped the early direction for Simmr and informed which problems we chose to solve.

Figure 1: *The locations where we interviewed participants. From left to right: Antonio's home in Mountain View, the Center for Academic Medicine, Athlete Dining, and a coffee shop in San Francisco.*

Synthesis

To make sense of our interviews, we created empathy maps for each participant and organized what they said, did, thought, and felt. This helped us see patterns in how people approach cooking, where they struggle, and what kinds of support they actually want. By unpacking these experiences, we identified the core needs that shaped the direction of Simmr.

Figure 2: *Nicole at Stanford Tressidor*

One of the most influential interviews was with Nicole, a mother who cooks low-FODMAP meals for her son every day. Although she and her son live in different homes, she remains deeply involved in his diet and meal planning. For her, cooking is both a burden and an act of love. She describes cooking as exhausting, time-consuming, and mentally demanding, yet essential to caring for her son's well-being. She also experiences a constant cognitive load as she plans restrictive meals, balances competing family preferences, and ensures that every dish meets her son's health needs. This emotional and mental strain helped us understand how overwhelming cooking can be, even for highly dedicated home cooks.

Nicole's perspective highlighted a critical opportunity for simmr: the value of support that reduces cognitive burden without adding friction. Her stories made it clear that hands-free, guided cooking could help by simplifying decisions, clarifying steps, and relieving the mental pressure of managing restrictions. Just as importantly, she expressed that cooking often feels isolating and something she must push through alone. This insight reinforced the importance of Simmr's storytelling layer, which reframes cooking as a more uplifting, emotionally supportive workflow rather than a draining obligation.

Across our interviews with more casual cooks, we heard complementary challenges: trying new recipes without getting lost, juggling timing when rushed, or getting confused by unclear steps. Many wanted guidance that kept them anchored without requiring constant screen-checking. Others said they wanted more confidence but felt overwhelmed by too much information at once. When we compared these perspectives with Nicole's, we saw a clear throughline: cooks across experience levels crave clarity, confidence, and emotional relief.

By comparing these perspectives, we noticed that cooks across experience levels shared similar needs. People wanted help staying on track with timing, understanding steps, and avoiding mistakes under pressure. They also wanted support that felt calm, simple, and not stressful. These patterns led us to focus on designing a tool that offers clear, hands-free, step-by-step guidance. Overall, our needfinding interviews highlighted the importance of clarity, timing, and confidence in cooking. These insights guided the rest of our project and helped us define the main needs Simmr should address.

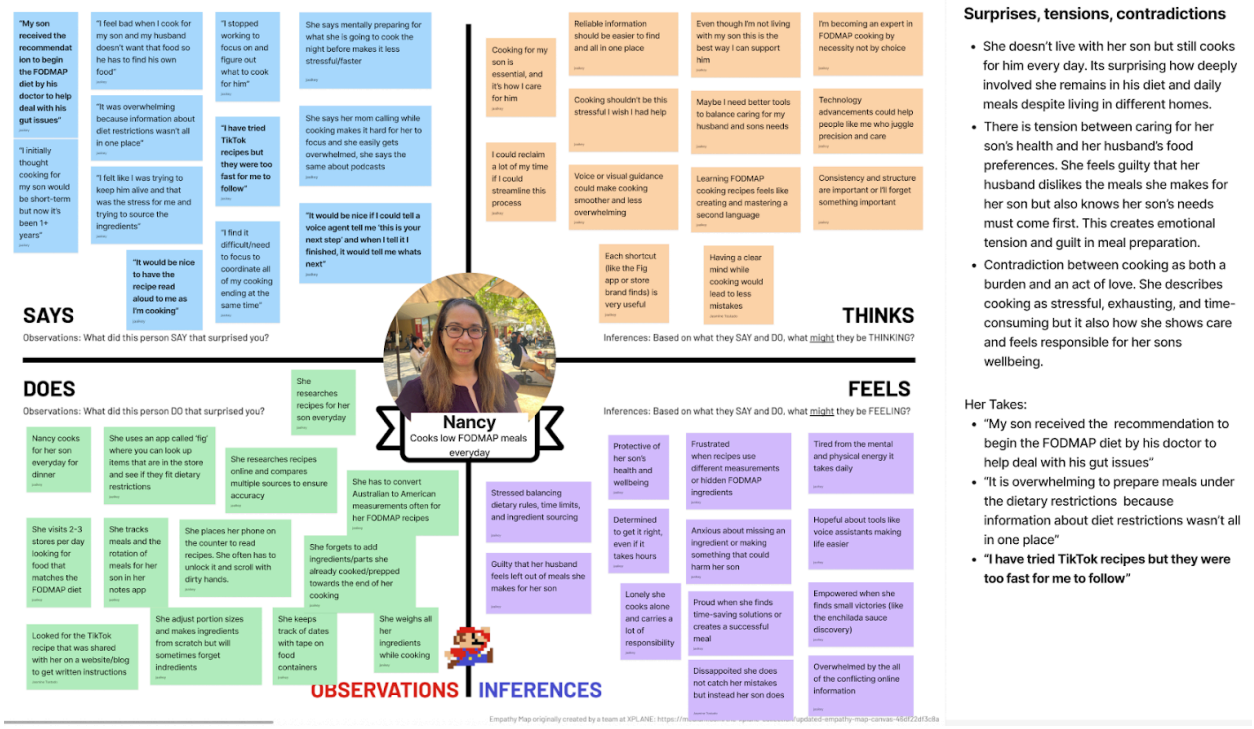


Figure 3: *An empathy map unpacking our findings from Nicole's interview*

POV'S AND EXPERIENCE PROTOTYPES

After our needfinding process, we reviewed all of the empathy maps we created and selected the three most insightful interviews to unpack more fully. We chose three users, Nicole, Claire, and Jessica, who represented very different points along the cooking experience. For each user, we created a point of view (POV) statement that captured who they are, a tension we observed in their cooking habits, the need that tension suggests, and a possible direction for brainstorming. From each POV, we then generated a set of How Might We (HMW) statements that helped us explore solution spaces for Simmr.

Jessica POV

- **We met** Jessica, an amateur cook who doesn't cook often because she finds it repetitive.
- **We were surprised to realize** that he doesn't enjoy cooking, but when she does cook, she purposely chooses recipes that challenge her.
- **We wonder if this means** Jessica seeks intellectual engagement and believes cooking is only enjoyable when she is learning in the process.
- **It would be game-changing to** motivate Jessica to cook by highlighting her desire for learning, challenge, and personal growth.

HMW Statements from Jessica's POV

- HMW make her feel rewarded for learning while cooking?
- HMW show the same recipe in a range of difficulties?

Nicole POV

- **We met** Nicole, a devoted mother who spends much of her day grocery shopping, prepping, and cooking low-FODMAP meals for her adult son.
- **We were surprised to realize** that although Nicole finds cooking stressful, exhausting, and time-consuming, she uprooted her life to move across the country to care for her son through food.
- **We wonder if this means** she feels guilty stepping back from cooking because it is tied to her son's well-being.
- **It would be game-changing to** reframe cooking as a source of connection and love for Nicole's son, rather than a constant burden.

HMW Statement from Nicole's POV

- HMW make cooking feel like an activity/hobby and not a responsibility?

Claire POV

- **We met** Claire, a time-constrained student-athlete and amateur cook who prioritizes quick, healthy recipes.
- **We were surprised to learn** she prefers having meal decisions made for her by her teammates and family.
- **We wonder if this means** she values simplicity in her decision-making process.
- **It would be game-changing to** reduce Claire's decision fatigue and make the leap from choosing a recipe to cooking feel effortless.

HMW Statement from Claire's POV

- HMW make deciding a meal feel like talking to a friend?

Top 3 Solutions

- Gamifying cooking into a personal game show
- Storytelling recipe guidance with music and lessons
- Playing a game of "Would you rather?" to decide on a recipe

EXPERIENCE PROTOTYPES

These solutions would only work for our users if certain underlying assumptions were correct. We developed experience prototypes to evaluate the assumptions underlying our top three solutions.

Experience Prototype 1: Timed Cooking Challenge

Our experience prototype for Simmr was designed to test the core assumption behind turning cooking into a playful, game-like experience. This idea grew from Jessica's POV, where she explained that cooking only feels enjoyable when it is challenging and intellectually engaging. Based on this insight, we wanted to test the following assumption:

Key Assumption: competition and time pressure will make users feel more engaged and motivated to cook, not more anxious or rushed.

To test this assumption, we asked Laura, a 20-year-old student who cooks occasionally, to make the same dish twice. First, she prepared avocado toast normally. Then she cooked the same dish again under a three-minute "game show" challenge. For the second round, we added a countdown timer, energetic music, and live commentary to create a competitive cooking environment. We observed how her behavior changed across the two rounds, asked her to compare her mood before and after the challenge, and had her reflect on her motivation and enjoyment.

The prototype produced a strong emotional reaction. Laura moved faster and paid more attention, but she also became tense and anxious. What initially felt exciting quickly turned into pressure. Through this, we learned that time pressure shifts the user's focus from enjoyment to performance. The playful and creative feelings that normally come with cooking disappeared once the task became competitive.

Our key assumption was not supported. For this user, competition reduced motivation and enjoyment because stress outweighed engagement. These findings suggested that competitive cooking may not be the right direction for Simmr.

Moving forward, this experience led us to shift toward self-paced and friendly forms of gamification instead. Users responded better to ideas centered around progress tracking, creativity, and gentle challenges rather than timers or competition. These insights helped refine our direction for Simmr and confirmed that cooking support should feel encouraging, not stressful.

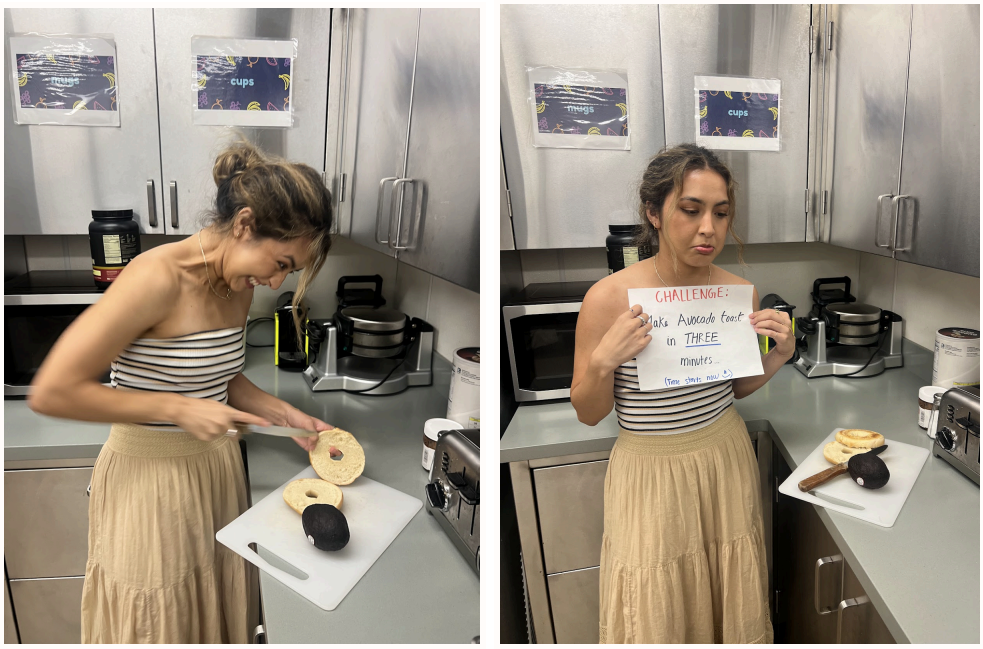


Figure 4: *Scenes from our timed cooking prototype, showing Laura cooking normally and then repeating the task under a three-minute game show challenge.*

Experience Prototype 2: Storytelling Recipe Guidance

Our 2nd experience prototype for Simmr was created to test if storytelling with recipe guidance and mood-based music was distracting for someone cooking. This idea came from Nicole's POV, where she explained how cooking felt like a chore to her at times, so we wanted to try and make cooking a more fun and immersive experience. From this insight, we wanted to test the following assumption:

Key Assumption: Users will find talking to an AI natural and listening to a story/music non-disruptive in a kitchen context.

To evaluate our key assumption, we designed a step-by-step recipe that included mood music and a fake voice AI that guided the participant (Greg 61). We carefully selected mood music to match the pirate adventure theme we had created and even changed the tone and wording of the instructions to match the pirate theme. For example, we addressed the participant as captain for the duration of the recipe. Once the recipe was completed, we got feedback from the participant and ate the delicious food.

The prototype provided hands-free cooking guidance that the participant found immersive and fun to follow along with. The user enjoyed the musical aspect and the ability to keep his hands free while

cooking a new recipe. Also, our user found the storytelling aspect amusing and preferred this to a monotone voice reading out recipe instructions.

However, the user found that the pacing of the story was not always accurate to where he was in the cooking process. He also mentioned that he wanted to be able to easily tell the voice AI that he needed to have a step repeated. This told us that we need to make sure the functionality of repeating steps or going forward, or going backward in the recipe was easily accomplished. In addition, we made it a priority as we developed our app to ensure that the pacing was easily controlled by the user by adding a pause feature so that you can easily step away and come back to cooking hands-free.

Our original assumption was validated: hands-free voice guidance and interaction were non-disruptive while cooking. However, users wanted more control over pacing and the ability to pause or navigate through the recipe fully hands-free. From this feedback, we were able to further develop Simmr's functionality for the best user experience possible.

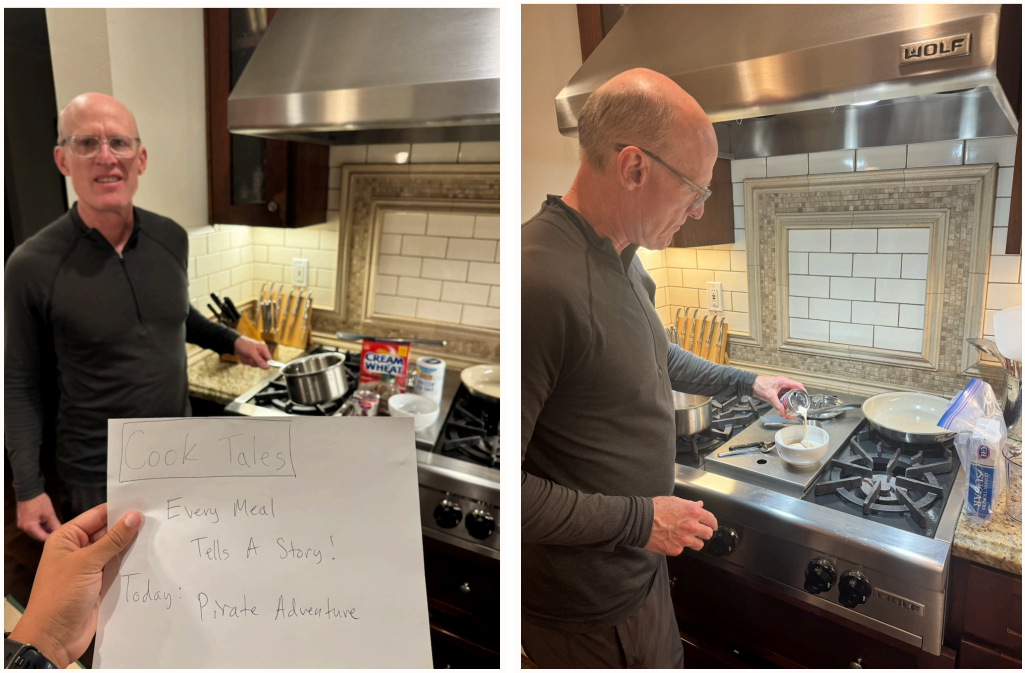


Figure 5: *Photos from the storytelling experience prototype, where you can see our participant boiling water (left) and mixing ingredients (right) while being guided through a recipe with music and step-by-step instructions*

Experience Prototype 3: "Would You Rather?" Recipe Generation Game

Our experience prototype for Simmr was designed to test whether a playful, mood-based decision game could reduce meal-choice fatigue. This idea emerged from Claire's POV, where she shared that deciding what to eat feels exhausting and is often the main barrier to enjoying cooking. Based on this insight, we wanted to test the following assumption:

Key Assumption: users believe fun choices around their moods and emotions can lead to accurate meal matches.

To evaluate our key assumption, we built a "Would You Rather?" recipe-generation game that paired emotional prompts with hidden ingredient mappings. We developed a set of choice-based questions, assigned each option an ingredient, and created multiple prebuilt meal combinations that could be surfaced based on participants' selections. To make the experience tactile and playful, we created notecards for each choice and handed both participants (Lily, 21, and Daisy, 21, both college students) the card they selected. At the end of the session, we revealed a final meal composed entirely from their responses.

The prototype delivered strong engagement: both participants found the interaction simple, fun, and surprisingly enjoyable. The experience felt more like a personality quiz than a meal-planning task, lowering cognitive load and reducing the stress commonly associated with deciding what to eat. The sense of surprise ("What will it generate next?") added delight and kept both users invested.

However, perceived accuracy varied. Lily felt her meal aligned with her "cozy night" mood and appreciated that the process seemed to consider how she wanted to feel. Daisy, by contrast, didn't relate to her final dish, noting that the chosen protein and ingredients weren't aligned with her tastes. This suggests that while mood-based abstraction can work, the underlying ingredient logic must be both adaptive and deeply personalized. Additionally, Lily's feedback revealed that effort level and time availability influence the perceived fit of a meal, indicating that contextual factors (energy, time of day, cooking complexity) play a meaningful role in whether the result feels "right."

Our original assumption was partially validated: users *do* enjoy making fun, mood-driven choices and believe those choices can lead to relevant meal recommendations, but only when the outputs reflect their preferences, cooking effort, and current context. These insights enabled us to strategically evolve Simmr's recommendation logic to incorporate key contextual factors.

Figure 6: *Cards with choices used for the "would you rather?" questions (left) and Lily holding her final selections at the end of the game (right).*

DESIGN EVOLUTION

Final Solution:

Simmr is an immersive cooking companion that blends recipe guidance with voice-driven storytelling to transform everyday meal prep into an engaging experience. Users can browse recipes, follow step-by-step audio instructions, and enjoy a narrative woven into the cooking flow. The voice AI can be paused at any time to reduce overwhelm and support different comfort levels in the kitchen.

To support families, the kid-friendly cooking mode incorporates vibrant visuals that keep children entertained while completing each step. Story experiences are tagged by tone, such as adventure, cozy, or romantic, allowing users to customize the atmosphere of their cooking session. A built-in AI chat enables personalized recipe recommendations based on preferences, dietary restrictions, or available ingredients.

The app also includes a Pantry feature that helps users track ingredients on hand, ensuring they can quickly identify recipes that fit what they already have. In addition, the Cooking With Friends section enables collaborative session planning, allowing users to choose a recipe, select a story tone,

schedule a date and time, and view upcoming or past group events. Users can also import contacts to seamlessly invite friends to join their cooking sessions.

Rationale: Our solution emerged directly from user research, competitive analysis, and iterative studio feedback.

- **Needfinding Insights:** Users frequently described cooking as overwhelming, repetitive, and mentally taxing. Many wanted clearer guidance to reduce mistakes, while others expressed a desire to learn or stay engaged during routine meal prep. These findings validated a voice-guided, hands-free approach paired with narrative elements that make cooking feel enjoyable rather than tedious.
- **Emotional Pain Points:** Interviewees, including parents and individuals with dietary constraints, emphasized the cognitive load involved in planning, adapting recipes, and managing family needs. Story-driven guidance addresses these emotional burdens by making the process more enjoyable and less isolating.
- **Competitive Analysis:** Most cooking apps prioritize efficiency, timers, and static instructions. Few focus on the *experience* of cooking or offer features that make the process emotionally rewarding. This gap reinforced our opportunity to differentiate by emphasizing storytelling, delight, and connection.
- **Studio Feedback:** Reviewers highlighted that users often cook based on ingredients they already own. This led to the integration of the Pantry feature, which enables practicality without sacrificing the experiential core of the app.
- **Multi-User Needs:** Users expressed an interest in cooking as a social experience. The group-cooking flow, complete with contact importing and scheduling, aligns with our value of joyful connection.

Together, these insights pointed to a solution that balances practicality with emotional enrichment, enabling Simmr to deliver both functional support and a transformative cooking experience.

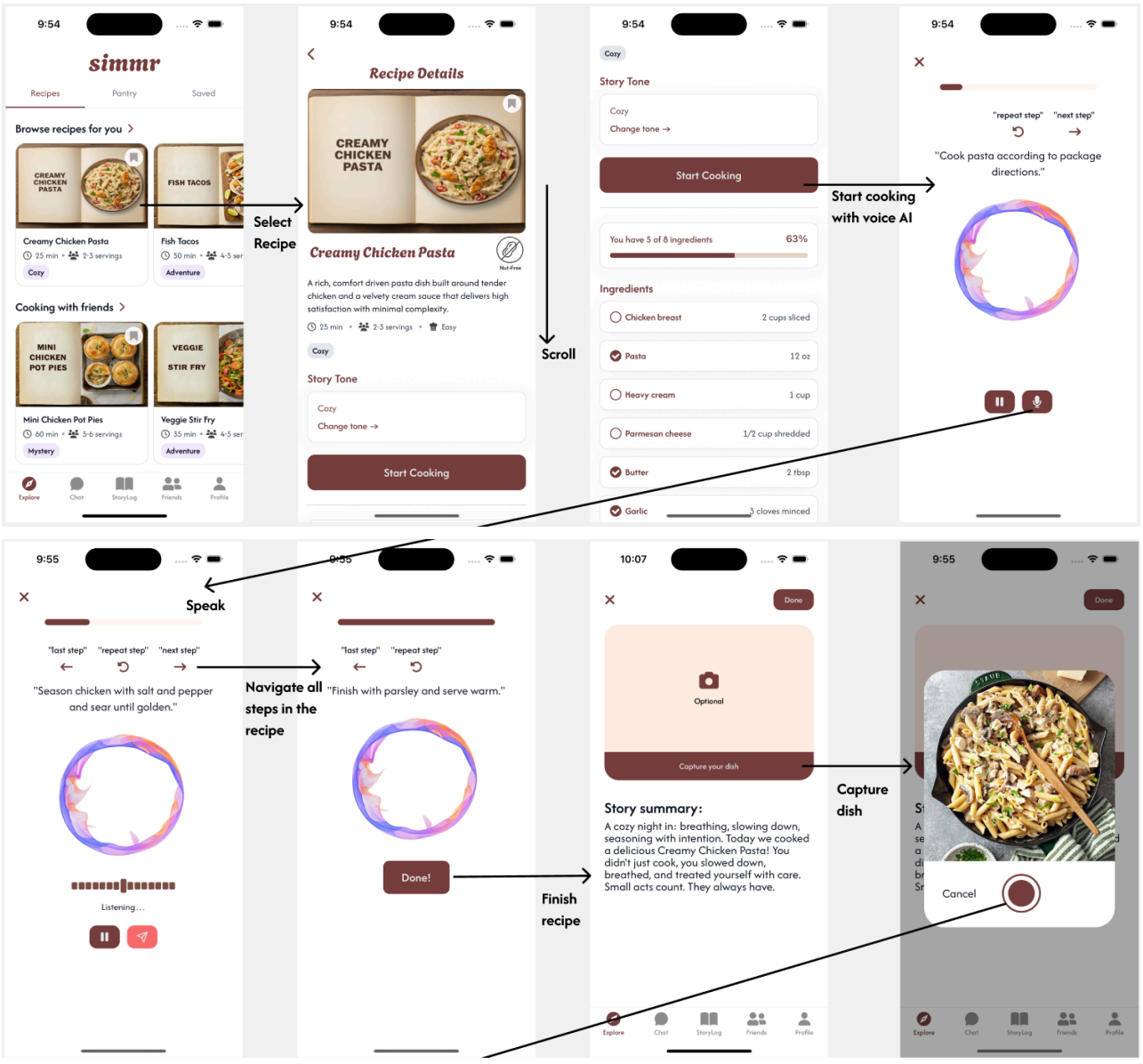
Tasks:

Simple task

- **Title:** Listening to a story while completing a recipe
- **Description:** Nicole cooks every day for her family and finds it repetitive and boring. She would like to make cooking more engaging for herself by immersing herself in a story while completing a recipe.
- **Justification:** This task supports users who cook daily and want to make the experience more enjoyable without adding complexity. Many home cooks view cooking as repetitive and

mentally draining. Allowing them to listen to a guided story while following a recipe directly addresses this need by transforming a routine chore into an engaging experience. Since the majority of users cook alone during the week, this task reflects the most common and high-frequency use case.

Annotated simple task-flow



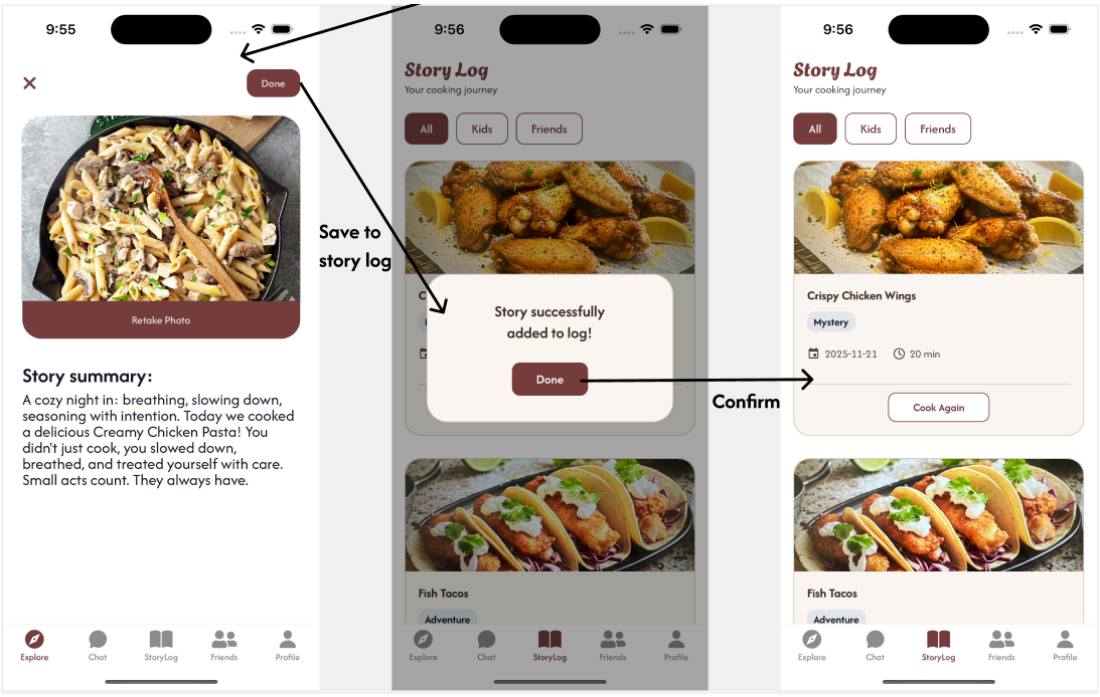


Figure 7: *Annotated simple task-flow on iPhone 16 (final interface)*

Moderate task

- **Title:** Cooking with friends as an activity
- **Description:** Nicole wants to host her friends at home and make cooking together more fun. She hopes to turn an ordinary recipe into an interactive cooking experience for her friends to enjoy.
- **Justification:** Cooking socially represents users who want to make hosting friends for dinner more engaging and memorable. This task matters because it expands Simmr's value from personal enjoyment to shared experiences, allowing users to elevate a standard dinner gathering into an interactive activity. It also aligns with user motivations around connection, hospitality, and making shared meals feel special. While not an everyday action, it is still highly relevant for users who enjoy entertaining and want structured support to make it more fun.

Annotated moderate task-flow

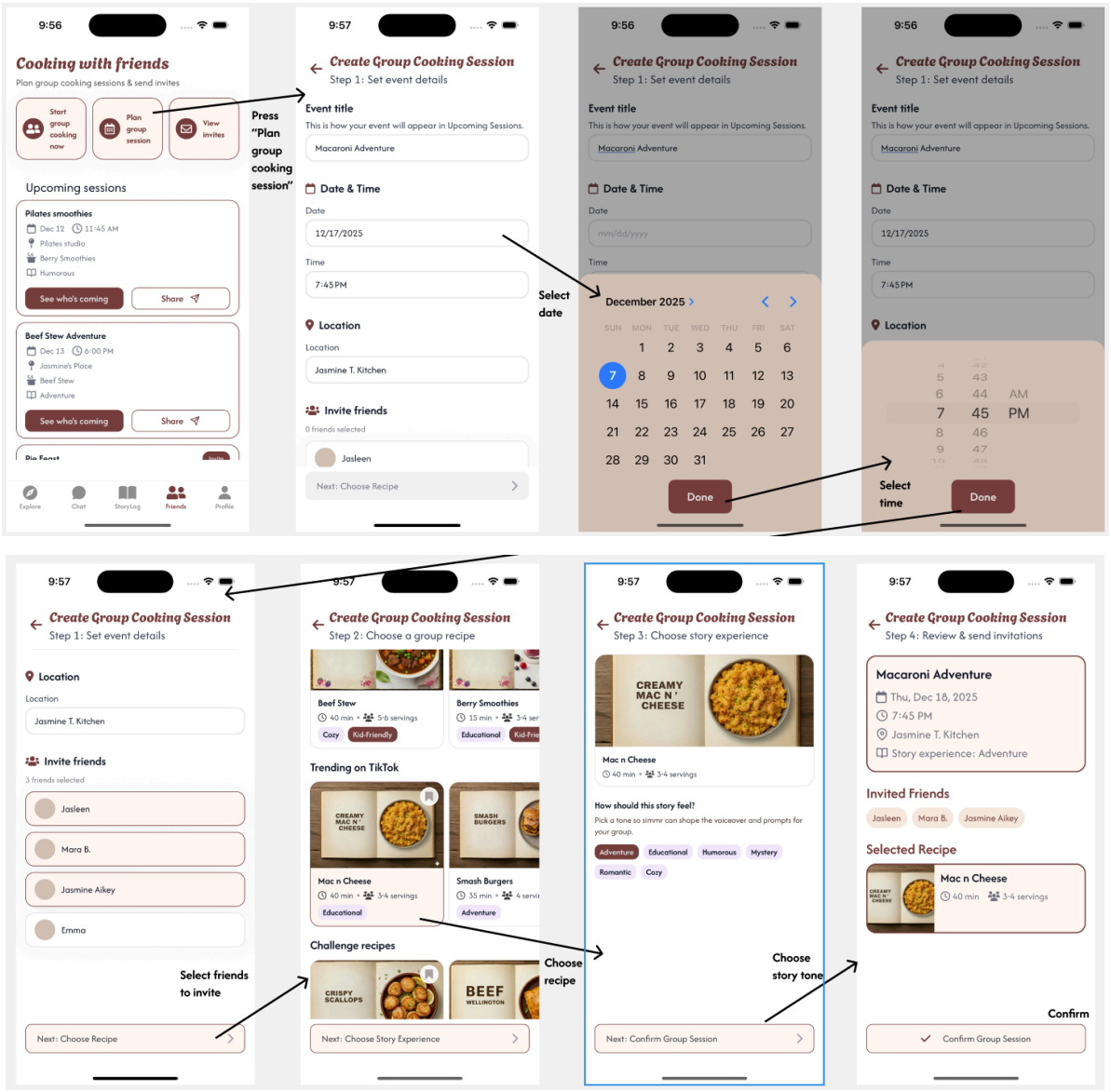


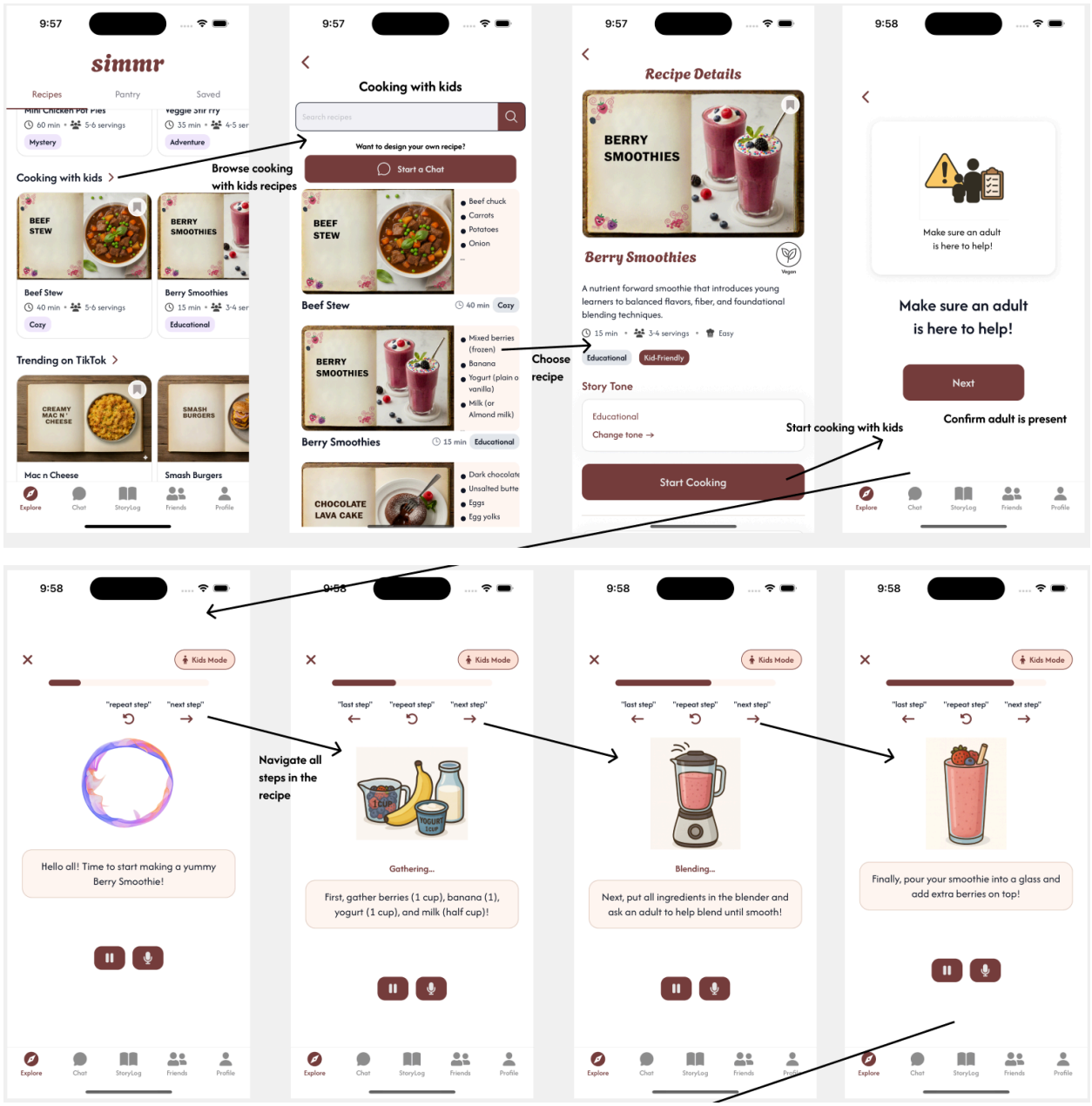
Figure 8: *Annotated moderate task-flow on iPhone 16 (final interface)*

Complex Task

- **Title:** Entertaining kids while cooking
- **Description:** Nicole needs to make cooking with her kids a more engaging and enjoyable experience. Her goal is to keep them entertained throughout the process and inspire them to look forward to cooking together again.
- **Justification:** This task supports a key subset of users: parents who want cooking to double as quality time with their children. It addresses real pain points around keeping kids engaged, managing their varying attention spans, and getting them excited about helping

in the kitchen. The complexity comes from the unpredictability of cooking with children, which requires more flexible storytelling, visual cues, and interactive elements. Although performed less often, this task is essential because it demonstrates Simmr's ability to scale into more demanding, high-value family scenarios that differentiate the product from traditional recipe apps.

Annotated complex task-flow



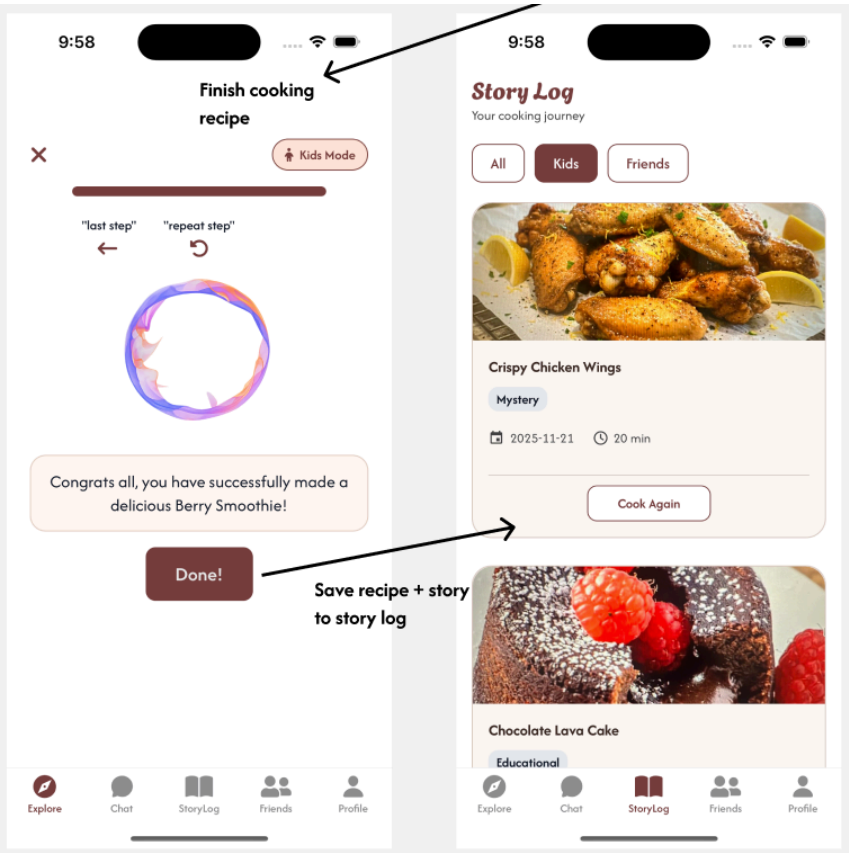


Figure 9: *Annotated complex task-flow on iPhone 16 (final interface)*

Design evolution visualization(s) and rationale:

Initial Sketches

During our initial sketching, we explored multiple different potential interfaces for our app including mobile, AR/VR, watch, and more. After the initial brainstorming and finalizing how we wanted our app to interact with the user and its environment, we decided that a mobile app or wearable app would be best for implementation. Finally, we narrowed it down to a mobile app implementation because we thought smartwatches constrain storytelling, visuals, and interaction, given their small screens. Also, a mobile app scales easily, works hands-free, and fits naturally into everyday cooking.

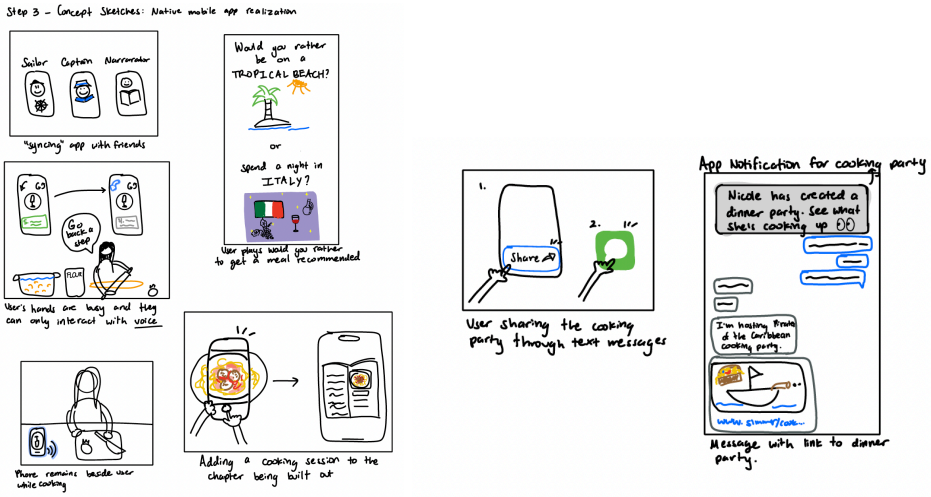


Figure 10: *Initial concept sketches for the mobile app.*

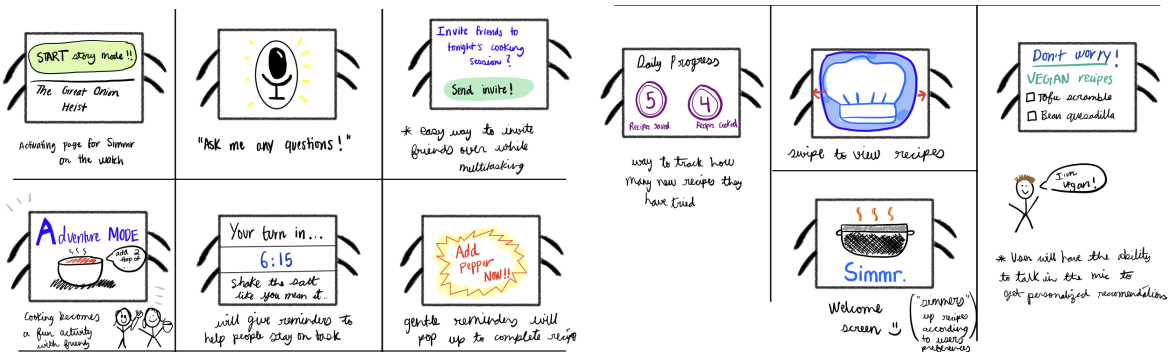


Figure 11: *Initial concept sketches for the wearable app.*

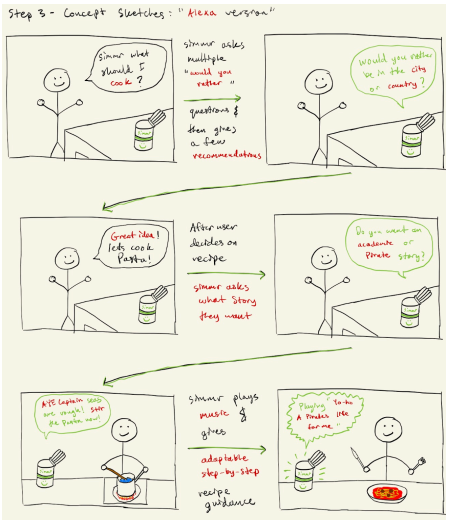


Figure 12: *Initial concept sketches for the amazon alexa integrated app.*

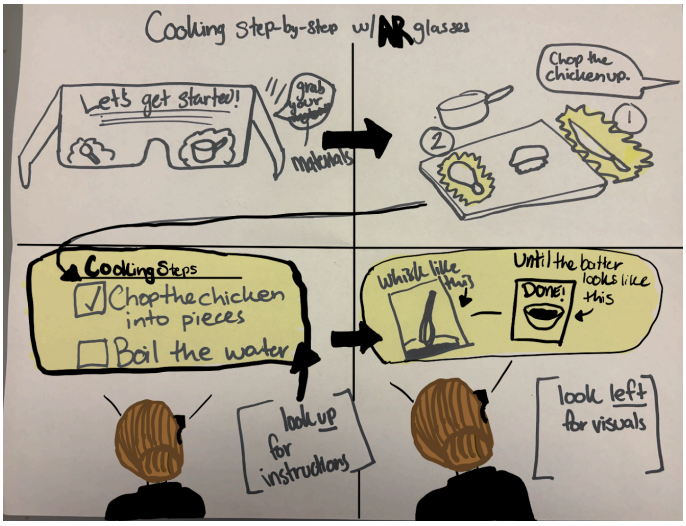


Figure 13: *Initial concept sketches for the AR app.*

Lo-fi prototype and Eval

After deciding on a platform, we started sketching out the task flows for all 3 tasks on a mobile platform. Our final Lo-fi prototype was hand-drawn on construction paper, and we had one team member acting as the Voice AI during testing. We conducted user testing on four participants in our user demographic. Each participant was instructed to navigate through our 3 tasks and to think out loud during navigation. We had one teammate solely as a notetaker during these testing interviews, and we wrote down all feedback and pain points. We also tracked the number of misclicks during each task and asked users to give feedback on the flow of each task.

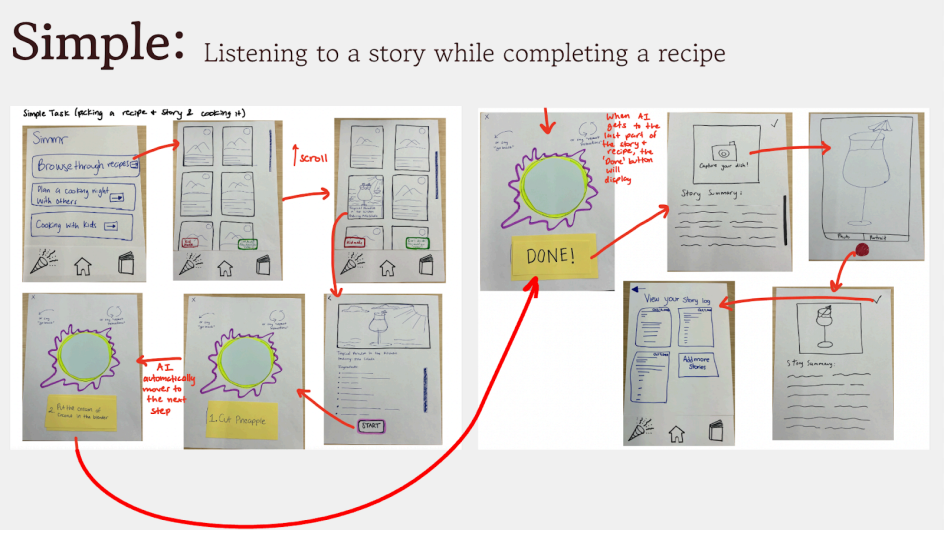


Figure 14: *The two parts of our initial simple tasks for our Lo-fi prototype.*

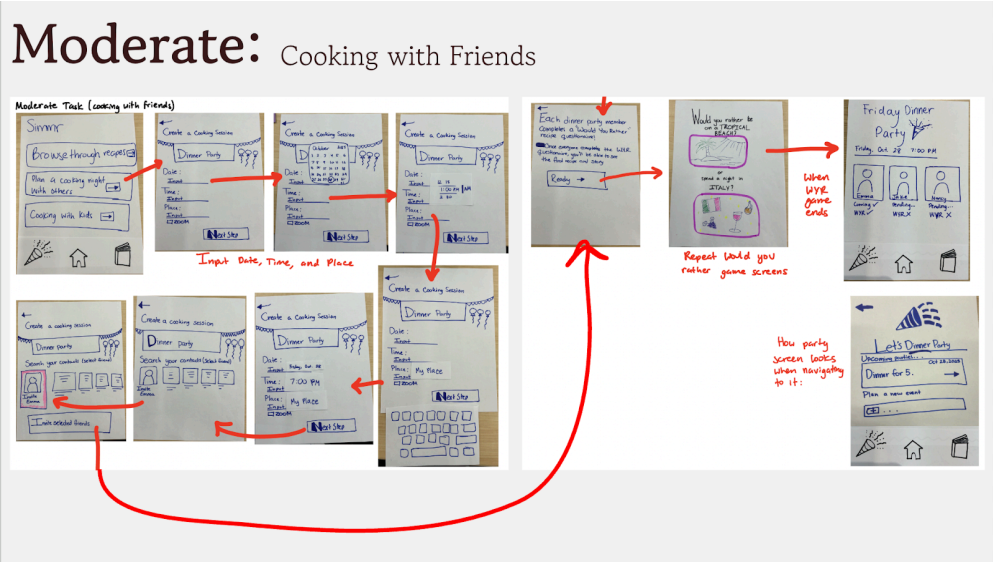


Figure 15: *Medium task flow for our Lo-fi prototype.*

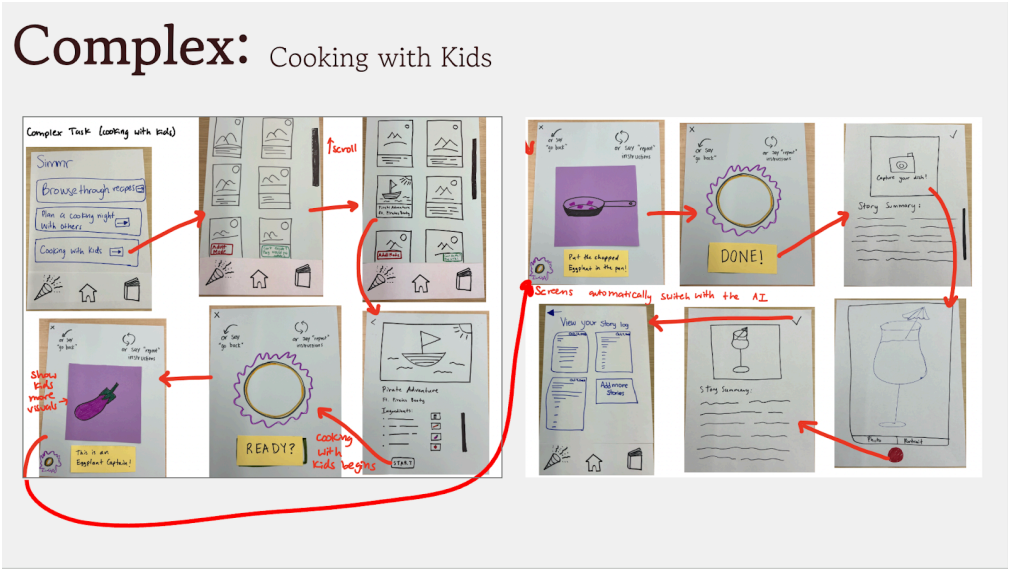


Figure 16: *Complex task flow for our Lo-fi prototype.*

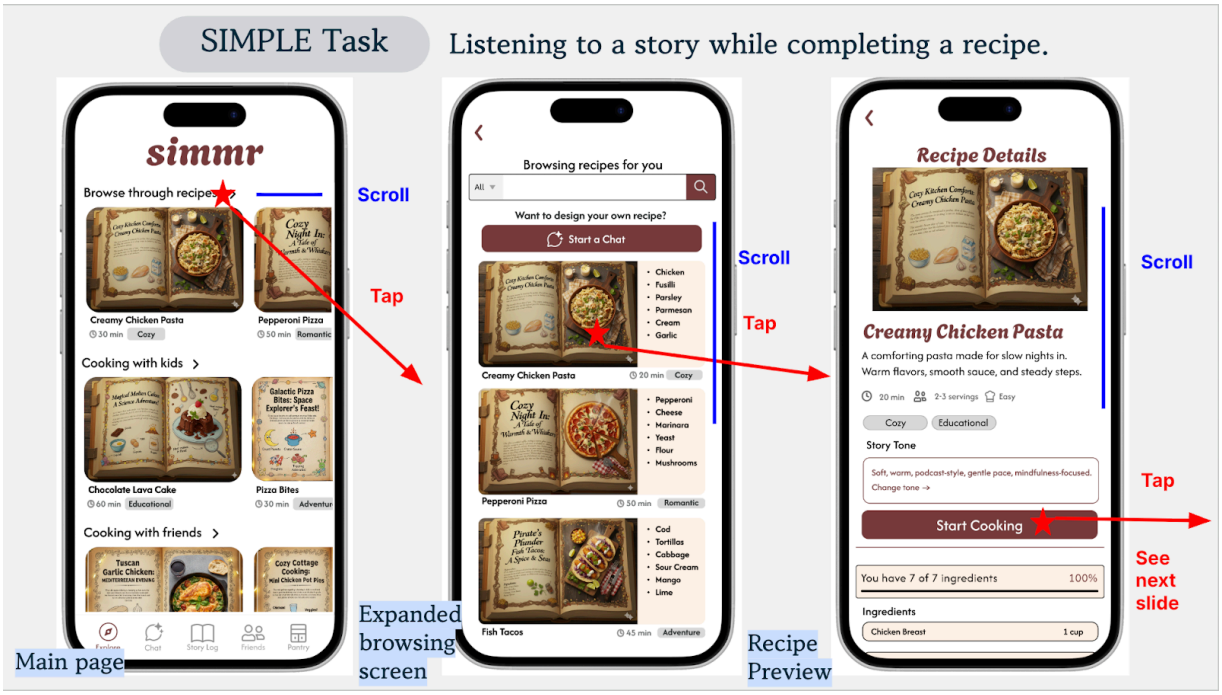
After testing, we compiled all of the notes and data we collected and had some interesting findings. All the participants found the overall layout intuitive, but certain icons/buttons caused confusion in their use. The users also wanted clearer visuals and reminders throughout the use of the app. Positively, all the participants enjoyed the storytelling and voice guidance and thought the app was very engaging. Three of the participants specifically suggested adding a search bar and allowing for filtering options for recipes. These three also mentioned wanting equipment and grocery lists included in the ingredient sections. Finally, two participants specifically praised the voice AI flow and

recommended reminder features (preheating, cleanup, or pending invites) to improve the cooking and planning flow.

Overall, the response and data from our testing led us in the right direction for future prototyping. Our adjustments we wanted to introduce were clear onboarding to help first-time users to help them understand how to interact with the voice AI and navigate key app features. We also wanted to simplify labels and icons ("In-Person / Virtual," "Kid Mode") and improve button hierarchy for intuitive navigation. For our simple task, we wanted to introduce timed voice prompts, audio cues that automatically play at key cooking moments to keep users hands-free and engaged. Example: "Great job chopping the veggies! Go ahead and preheat the oven to 350 degrees." For our moderate task, we wanted to add a 'Remind' button to follow up on pending invitations and clarify the Would You Rather questionnaire flow that generates a shared, tailored recipe. Finally, for our complex task, we wanted to design child-friendly transitions with playful visuals, simplified steps, and adaptive narration to sustain attention and guide learning.

Med-fi prototype and Eval

We created our medium-fi prototype using Figma, and we utilized all of the feedback and data we collected to help expand our original ideas. We also decided to simplify our original simple task. Initially, our simple task was cooking a recipe, and finding said recipe using a would you rather game; however, after feedback, we decided to simplify this to be only completing a recipe.



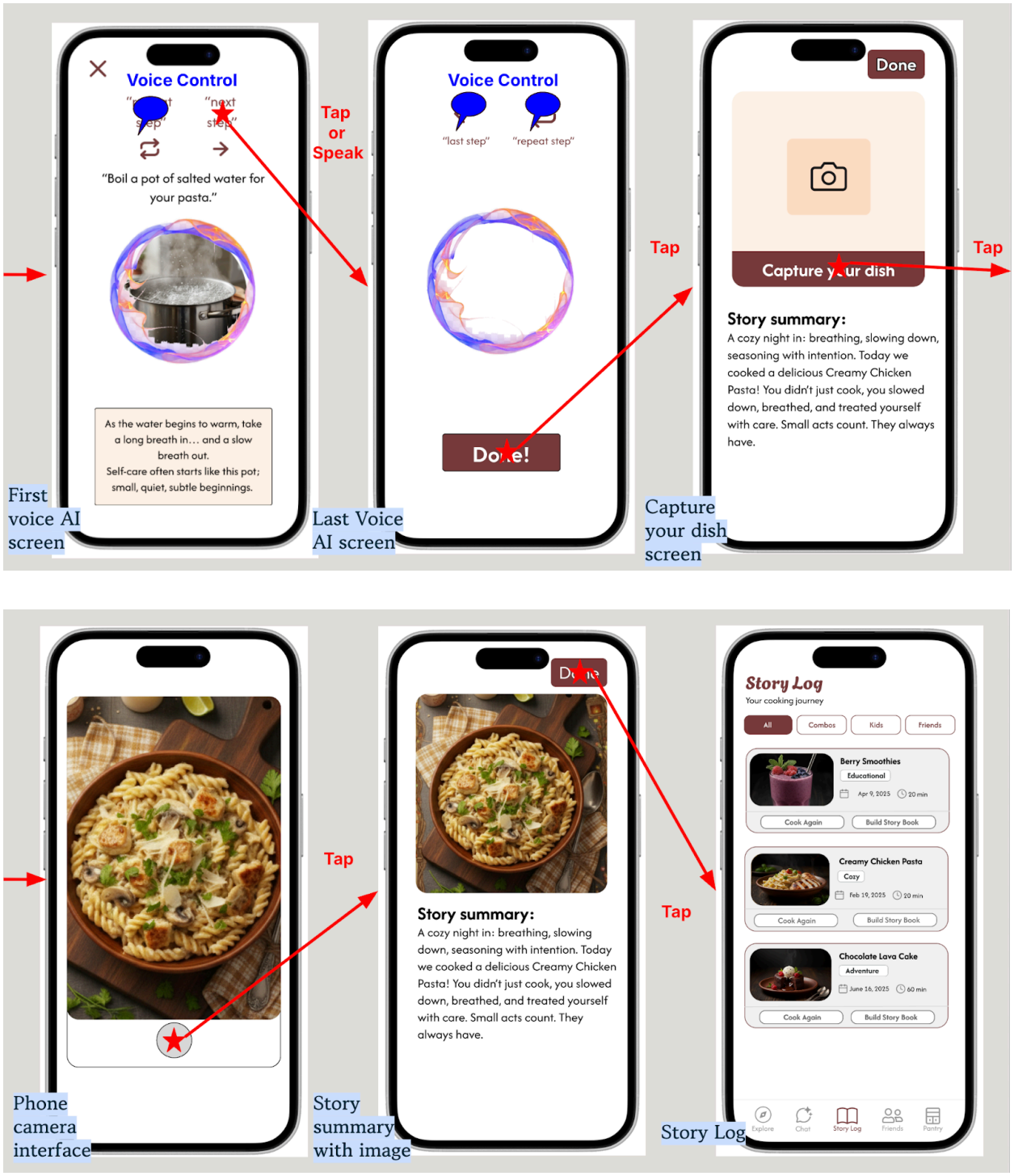


Figure 17: *Simple task flow on Figma for our Med-fi prototype.*

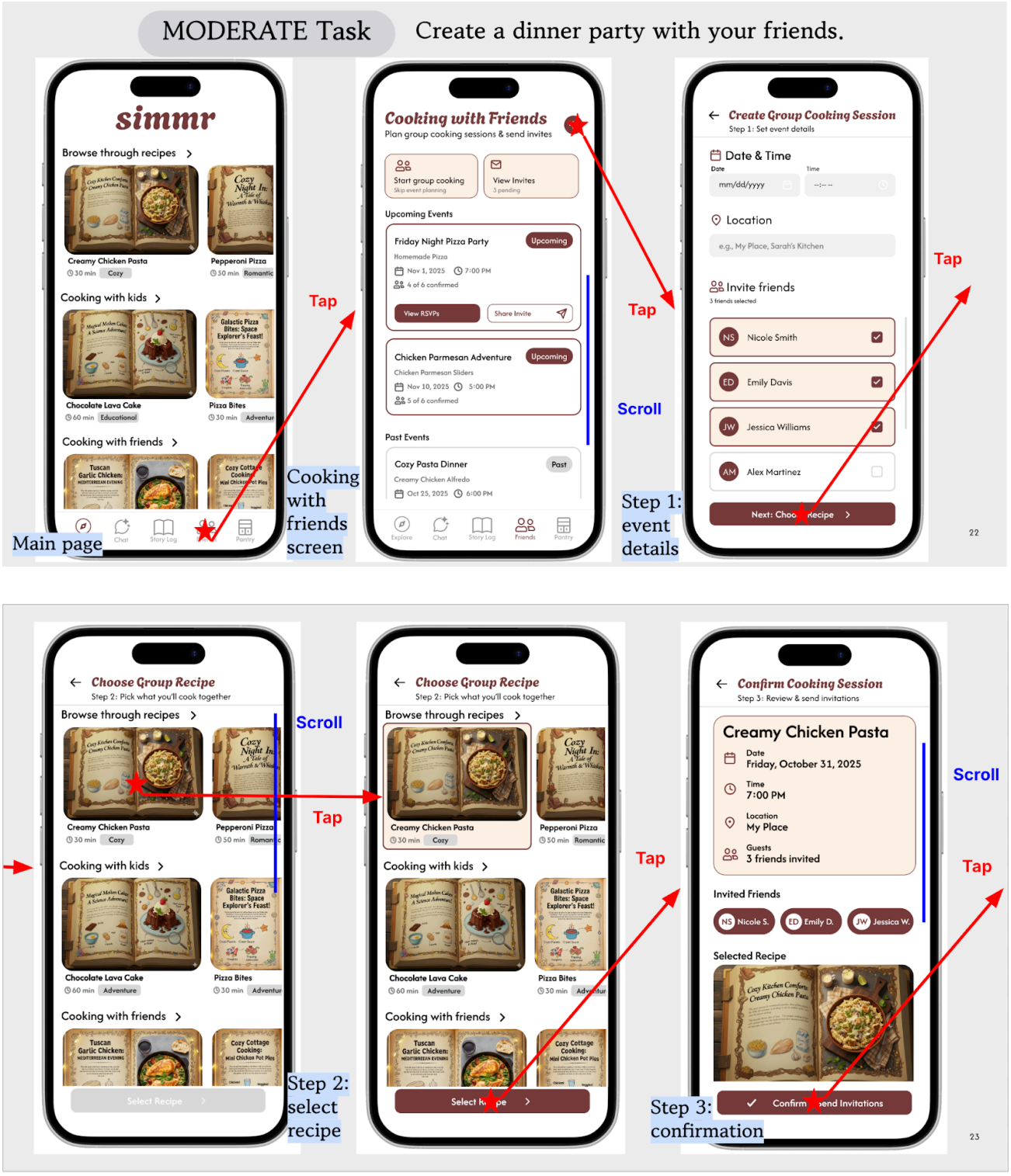
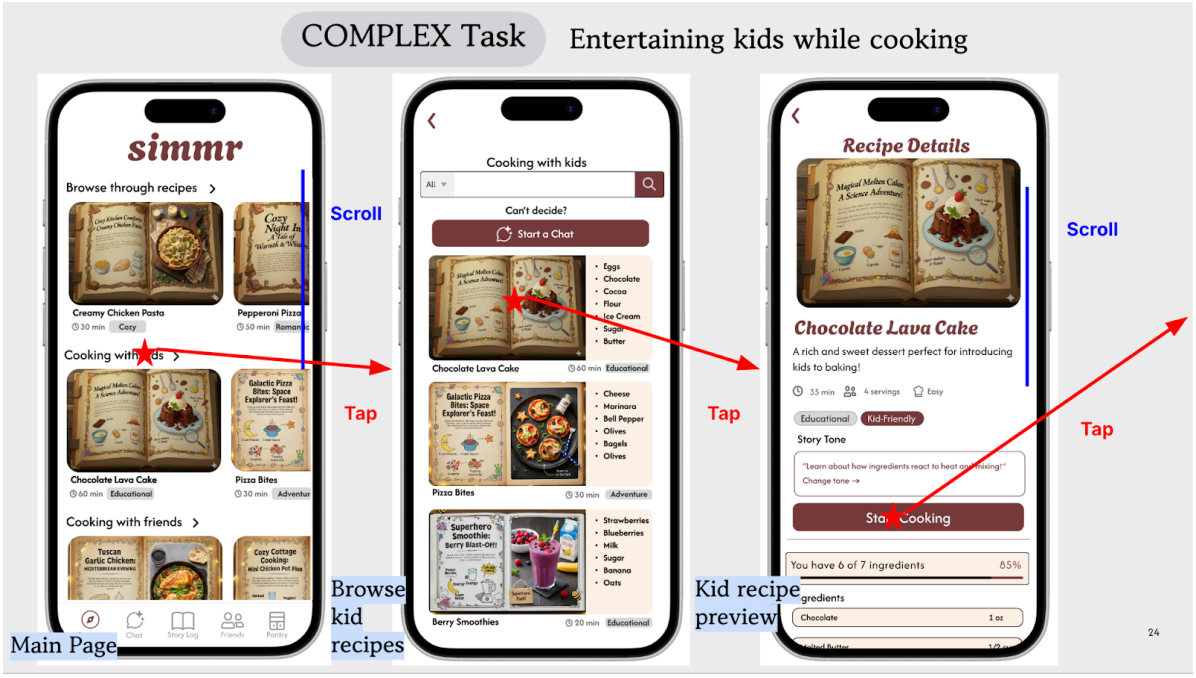
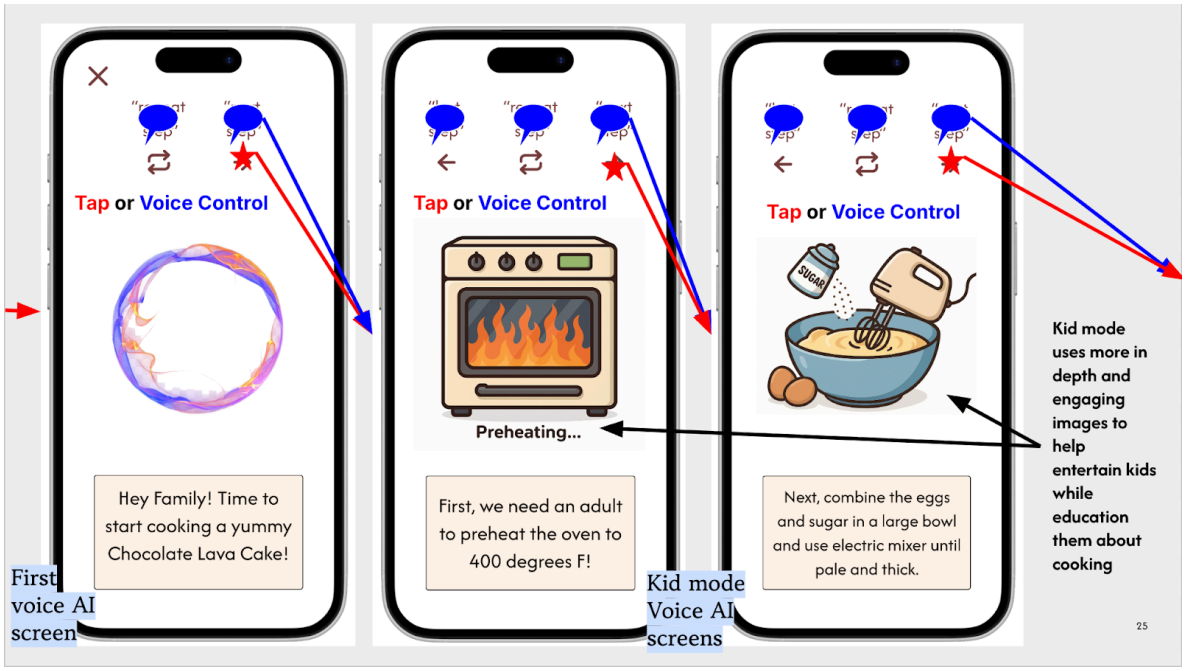


Figure 18: *Medium task flow on Figma for our Med-fi prototype.*


COMPLEX Task
Entertaining kids while cooking
simmr
Browse through recipes
Creamy Chicken Pasta
Pepperoni Pizza
Cooking with kids
Chocolate Lava Cake
Pizza Bites
Cooking with friends
Tuscan Garlic Chicken
Cozy Cottage Cooking
Scroll
Tap
Main Page
Cooking with kids
Can't decide?
Start a Chat
Chocolate Lava Cake
Pizza Bites
Berry Smoothies
Browse kid recipes
Recipe Details
Chocolate Lava Cake
A rich and sweet dessert perfect for introducing kids to baking!
Educational
Kid-Friendly
Story Tone
You have 6 of 7 ingredients
Chocolate
Kid recipe preview
Scroll
Tap
24


Tap or Voice Control
Hey Family! Time to start cooking a yummy Chocolate Lava Cake!
First voice AI screen
Preheating...
First, we need an adult to preheat the oven to 400 degrees F!
Next, combine the eggs and sugar in a large bowl and use electric mixer until pale and thick.
SUGAR
Kid mode Voice AI screens
Kid mode uses more in depth and engaging images to help entertain kids while education them about cooking
25

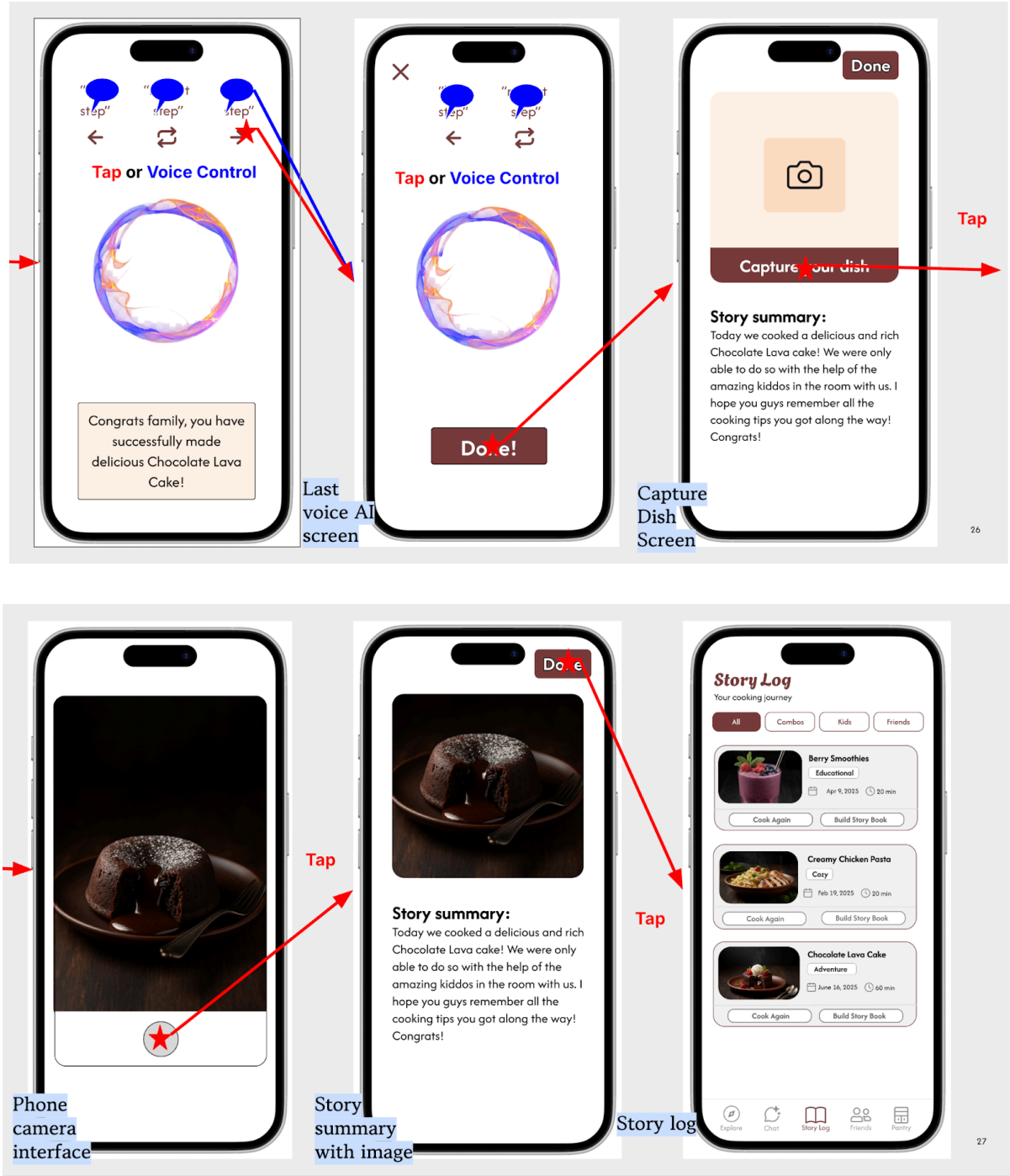


Figure 19: *Complex task flow on Figma for our Med-fi prototype.*

In order to evaluate our med-fi prototype, we had our prototype evaluated by our peers in 147 using a heuristic evaluation. We received 72 total violations, 37 of which were severity 3-4 violations. Our most violated heuristics were H4: Consistency and Standards and H7: Flexibility and Efficiency of

Use. After completing our revisions, our new designs significantly reduced navigation friction and made core actions predictable and findable.

All heuristic violations we fixed:

From our 37 severity 3 and 4 violations, we did not address 13 of them for reasons explained below. For the remaining 24, we went through each heuristic violation as a team per task and brainstormed and implemented new designs. These design changes are organized by [Task] / [Type] / [Severity of Violation].

[All Tasks] / [H1: Visibility of System Status] / [3]

- Issue: Missing step progress and time remaining.
- Fix: Add a progress bar at the top of the screen.

[All Tasks] / [H1: Visibility of System Status] / [3]

- Issue: No explicit confirmation that the session was saved to StoryLog.
- Fix: Added a confirmation intermediate screen.

[All Tasks] / [H1: Visibility of System Status] / [4]

- Issue: The voice UI currently does not indicate when the user is speaking or listening.
- Fix: Added a voice line and a voice orb that indicates when the AI is talking and when the device is listening to the user speak.

[Complex Task] / [H2: Match b/w System and World] / [3]

- Issue: Temperatures are only shown in Fahrenheit.
- Fix: We added Celsius readings as well.

[Moderate Task] / [H2: Match b/w System and World] / [3]

- Issue: "Build Story Book" button is non-functional and convoluted with the "story" metaphor.
- Fix: Removed this functionality from the app as it did not add to the user experience.

[All Tasks] / [H3: User Control and Freedom] / [4]

- Issue: While cooking a recipe, it's not possible to cancel and go back to the menu.
- Fix: We made it clearer where the 'X' button was to close out of a recipe and go back to the menu.

[Moderate Task] / [H4: Consistency and Standards] / [3]

- Issue: There is no way to specify what kind of story you want in the group cooking page, even though the option exists elsewhere in the app.
- Fix: Added functionality to specify what story you want in a group cooking setting.

[All Tasks] / [H4: Consistency and Standards] / [3]

- Issue: The primary call-to-action buttons change location across screens.
- Fix: Changed our primary buttons to have consistent placement throughout the app.

[Complex Task] / [H4: Consistency and Standards] / [3]

- Issue: In the "Cooking with Friends" page, there is a small "plus" button next to the title and a much larger "Start Group Cooking".
- Fix: Instead of the 2 buttons, we changed the plus to be a 3rd button that takes you to the next screen instead of the plus.

[Moderate Task] / [H4: Consistency and Standards] / [3]

- Issue: Invited means different things depending on if the user is on the RSVPs page or the confirm cooking session page.
- Fix: Corrected both pages so that invited meant the same thing across our entire app.

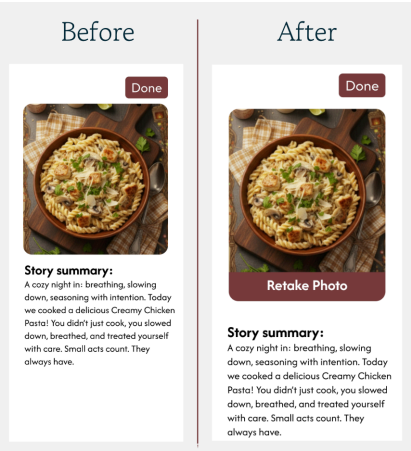
[All Tasks] / [H4: Consistency and Standards] / [4]

- Issue: Missing step progress and time remaining.
- Fix: Added a progress bar that showed what step of the recipe a user is on.

[Complex Task] / [H4: Consistency and Standards] / [4]

- Issue: The "X" close button appears only on the final voice AI cooking screen but is absent from all previous recipe and cooking pages, and is inconsistent with the simple task where the "X" button appeared on every recipe page.
- Fix: We made sure the 'X' close buttons were prevalent and on every single voice AI screen so the user could exit with ease.

[Simple Task] / [H5: Error Prevention] / [3]

- Issue: Camera capture lacks review, retake, and edit options.
- Fix: The retake button is now available after you capture an image.
- 

[Complex Task] / [H5: Error prevention] / [3]

- Issue: Kid recipes with hazards don't have any specific warning on the card.
- Fix: We added a warning screen that says this recipe requires parent supervision.

[All Tasks] / [H5: Error Prevention] / [4]

- Issue: The back arrow is too close to the left edge.
- Fix: Went through all tasks and changed placement so it would not cause an error or difficulty.

[Simple Task] / [H6: Recognition not Recall] / [3]

- Issue: Ingredient measurements are not specified within the body of the recipe (e.g. boil a pot of salted water for your pasta -- how much water? How much salt? + season with salt, pepper, and a little garlic -- how much of each?"
- Fix: We added in-text to go along with as the AI is talking to help with recipe clarity.

[All Tasks] / [H6: Recognition not Recall] / [3]

- Issue: The "Capture your dish" option finishes with a "Done" button.
- Fix: Added X so they can leave the screen if they want to.

[All Tasks] / [H7: Flexibility and Efficiency of Use] / [4]

- Issue: No narration speed control.
- Fix: We added a pause feature that can be activated manually or using voice control for added speed control beyond next, back, and repeat already implemented.

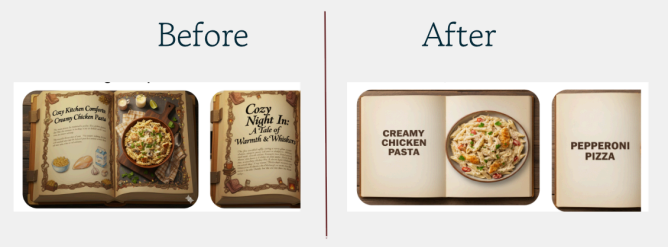
[All Tasks] / [H7: Flexibility and Efficiency of Use] / [3]

- Issue: No hands-busy gesture options.
- Fix: Added a pause button that you can use verbally or manually if you need to slow your pacing.

[All Tasks] / [H9: Help Users with Errors] / [3]

- Issue: No display of what the speech-to-text heard.
- Fix: We added an animated voice line that moves to indicate when the user is speaking and when the AI is speaking.

[Simple Task] / [H11: Accessible Design] / [3]

- Issue: Small text within the recipe images inside the books.
- Fix: Changed images to have no small text.
- 

[All Tasks] / [H12: Value Alignment and Inclusion] / [3]

- Issue: The discovery page food options are mostly non-vegetarian. No badges for allergens.
- Fix: We added allergen headers.

[Complex Task] / [H12: Value Alignment and Inclusion] / [3]

- Issue: The 'Hey family' greeting in the complex mode assumes that the app is being used in a family context.
- Fix: We changed the greeting to be 'Hello there' to be more inclusive.
- 

[Extra Violations] / [H12: Value Alignment and Inclusion] / [3]

- Issue: AI imagery for dishes detracts from the values of connection and inclusivity.
- Fix: We decided to use simpler images for the recipes that contained only the necessary and engaging information.

All heuristic violations we decided not to change, and the justification:

[Complex Task] / [H2: Match b/w System and World] / [3]

- Issue: The AI assistant is not inclusive for children beyond the first two steps.
- Justification: Our app is not meant for kids to be cooking alone. There is a warning at the beginning of kid-friendly recipes that use potentially harmful things like ovens that adult supervision is required. However, adult supervision should be required for all recipes. Our app is meant to entertain kids, not help them cook alone.

[Extra Violations] / [H3: User Control and Freedom] / [3]

- Issue: Cannot navigate to all story log pages from one another, even though all pages are built out.
- Justification: Not sure what this meant, but we have a navigation bar where you can navigate throughout the app, and all of the story log recipes are navigable.

[All Tasks] / [H3: User Control and Freedom] / [3]

- Issue: Finish immediately, end the session with no option to undo or resume the action.
- Justification: The user does not understand that the app ending a session means you have completed the recipe, so there would be no need to go back.

[Complex Task] / [H3: User Control and Freedom] / [3]

- Issue: Chat with AI feature doesn't adjust to fit the specific needs of entertaining children when entered from the "cooking with kids" page.
- Justification: This is not true.

[All Tasks] / [H3: User Control and Freedom] / [3]

- Issue: No exit/undo for accidental starts.
- Justification: There is a back button already, so this doesn't matter.

[Complex Task] / [H4: Consistency and Standards] / [3]

- Issue: After pressing "Start group cooking" in the friends tab, a page shows up that looks like the "explore" page, where you can browse different recipes. The flow after the "Start group cooking" and the "explore" page is different and inconsistent.
- Justification: We used the same explore screen; we changed the header/button names depending on what the user is doing: starting right away vs not.

[Simple Task] / [H5: Error Prevention] / [4]

- Issue: The start button is always enabled, even when ingredients are not available.
- Justification: We are not forcing users to input every ingredient; this is an optional checklist for users if they want to keep track of ingredients they have.

[Simple Task] / [H6: Recognition not Recall] / [4]

- Issue: No narration audio preview on recipe details.
- Justification: We thought adding this would add too much clutter to a small mobile screen that our app is designed for.

[Simple Task] / [H7: Flexibility and Efficiency of Use] / [3]

- Issue: The recipes on the "explore" page are not clickable.
- Justification: We didn't fully implement all individual recipes because this was a Figma prototype. They will all be fully implemented in our Hi-Fi prototype.

[All Tasks] / [H7: Flexibility and Efficiency of Use] / [3]

- Issue: Not able to take a photo at a later entry point from the story log.
- Justification: Users will capture their pictures in the moment, not later.

[Simple Task] / [H8: Aesthetic and Minimalist Design] / [4]

- Issue: App emphasizes a narrative-based approach to cooking to make things more fun, but the "story" reads more like quotes from a self-help book.
- Justification: This was AI-generated and not meant to be a full-fledged version of the story aspect of our final Hi-fi prototype. Also, this 'story' was meant to have a theme that may have resembled a self-help book, but not all stories will have the same theme.

[Simple Task] / [H9: Help Users with Errors] / [3]

- Issue: There are no options to help with "cooking" errors.

- Justification: There is no way for our app to figure out if a user messed up the recipe.

[All Tasks] / [H12: Value Alignment and Inclusion] / [3]

- Issue: Unclear what the visibility is when sharing a picture.
- Justification: Users decide what to do with the photos they share on the app, so we didn't feel a need to fix this, as our app does not automatically share photos with anyone. The story log is for personal progress use.

We learned a lot from this heuristic evaluation process, and we were able to create a more cohesive and engaging app for users. After finalizing these design changes, we proceeded to make our Hi-fi prototype using React Native mobile development.

Values in our Design Solution

While creating Simmr we had a few principles in mind to stop cooking from feeling repetitive and unengaging. The main values we kept in mind were to help make cooking a fun, social, and interactive experience.

Fun

Throughout our needfinding process, we noticed that users reported that cooking felt repetitive and draining, so the main objective of our app was to help users have fun in their daily cooking tasks. We decided to lean into a storytelling approach in our design to not just guide users through recipes but to immerse them in a story and keep them engaged. We deliberately chose the name Simmr because we felt like it was a mundane cooking task that most people would find somewhat boring on its own, but with a story to go along with it, could feel like an engaging experience.

Social

While we wanted to make sure that individual users felt engaged while interacting with our voice AI storytelling agent, we also wanted to help users who felt that cooking could be an isolating experience. We decided to implement a feature, which is our moderate task, and that is to allow users to plan dinner parties with their friends where they can all cook a larger recipe together using our app. This feature is meant to encourage people to intertwine cooking with social activity so it doesn't always feel like an isolating experience.

Interactive

Finally, one of our most important values was making our app easy to interact with and engaging. When we asked our needfinding participants what they didn't like about normal cooking apps, they said they were too focused on efficiency and not enjoyment. From this feedback, we thought one way to make cooking more enjoyable was to make it interactive. So we made it possible for our users to choose stories/recipes with different themes and mood music and control the pacing completely for the voice AI narration. We made sure to implement next, back, repeat, and pause buttons that could be activities through voice or touch. We wanted users to have control over the pace of their cooking and not add stress to the environment.

Values Tensions

As we sought to mold Simmr into a fully fledged, enjoyable user experience, we ran into some tensions along the way.

Fun vs. Efficiency

We wanted to make Simmr a fun experience and not a rushed one, but often people need to meet time restrictions while cooking. We combatted this tension by letting users have full control over pacing and making sure a general time limit was listed at the start of each recipe. Also, we added pause, repeat, previous step, and next step touch and voice buttons to speed up or slow down the storytelling process if needed.

Interactivity vs. Cognitive Load

We want people to be able to interact and immerse themselves fully in the cooking experience, but cooking and interacting with a voice agent simultaneously could be a big cognitive load. We actually used an experience prototype to test out early on if this format for cooking and recipe guidance would even be feasible in a kitchen environment. After a successful prototype and feedback, we decided that this was the way to go. However, we still kept this tension in mind while finalizing details for our high-fi prototype, and we made sure that the voice AI agent didn't dominate users' cognitive load and was strictly a helper with a story tone. Again, the pause button was another useful addition here because if users are overwhelmed or need to step away, they can easily do that and pick up where they left off with no consequence.

Storytelling Immersion vs. Accuracy and Safety

Finally, a very important tension to be focused on was the matter of kitchen safety. This came in multiple forms, which is general kitchen safety while distracted and also kitchen safety with kids involved. We combatted kitchen safety with kids by adding a warning at the start of kid-friendly

recipes that adults would need to be involved to help with any potentially more dangerous kitchen activities. This is because our app isn't meant to help kids cook on their own but rather keep them engaged while cooking with adults. Also, we tried to prompt our AI voice agent to be quieter/non-distracting during potentially more dangerous moments where more focus was required. However, this was incredibly hard for us to keep track of since we have an independent voice AI agent that we are prompting; we couldn't be sure this was implemented, as there is no set-in-stone script for each story/recipe, so that is something to keep in mind.

FINAL PROTOTYPE IMPLEMENTATION

Our final prototype for Simmr was developed as a fully functional React Native mobile application, using Expo and Supabase. The prototype successfully demonstrates the complete user experience across our three core tasks: listening to a story while cooking, hosting a cooking session with friends, and cooking with kids, meant to engage their attention and participation in the cooking process. This section outlines how we built the final system, the tools used, the Wizard-of-Oz techniques required to simulate voice interactions, the aspects we hard-coded to support evaluation, and the AI tools leveraged throughout our design and build process.

Tools used (Pros and Cons)

React Native (Frontend Framework)

We coded Simmr in React Native, chosen for its cross-platform mobile support and its compatibility with Expo.

Pros: Allows fast iteration and consistent UI across iOS/Android. Large ecosystem (React Navigation, gesture libraries, icon sets). Ideal for multi-page flows such as our Explore, Chat, Story Log, Friends, and Pantry.

Cons: More setup complexity than visual tools like FlutterFlow. Some native-level customization (e.g., advanced voice APIs) requires additional configuration.

Expo Go

We used Expo to build and preview the app across devices.

Pros: high-speed development feedback loop; easy asset bundling; supports RN features.

Cons: certain capabilities (full voice synthesis, background audio events) require ejecting or custom modules.

Supabase (Database + Auth + File Storage)

Supabase powered our storage of recipe data, user accounts, images, and saved recipes.

Pros: Built-in authentication and row-level permissioning. Relational tables are ideal for recipes, ingredients, and cooking sessions—robust file storage for recipe images.
Cons: We were unable to fully implement all relational logic (e.g., dynamic hazard detection, real-time group cooking) within the high-fidelity timeline. Some logic was simulated (see Wizard-of-Oz section).

Figma (UI + Interaction Design)

Our full med-fi designs were created in Figma and refined using heuristic evaluation feedback documented earlier in the report (72 violations reduced through redesign).

Pros: Fast iteration and collaborative editing. Allowed us to test story tone selection, voice UI pacing, and kid-friendly flow before coding.
Cons: Motion, dynamic pacing, and voice interactions could not be fully simulated in Figma.

GitHub (Version Control)

GitHub enabled collaborative development and merging individual feature branches.

Pros: versioning, conflict resolution, and safe parallel development.
Cons: required coordination to manage merge conflicts and environment variables.

Wizard-of-Oz Techniques Used

Because real-time voice interaction and story generation require a far more advanced backend than was feasible within the quarter, several core system behaviors were simulated.

Simulated Story Personalization

Users can select a story tone, and the narration "adapts," but the responses were decided by the OpenAI API response.
Justification: Dynamic generation of narrative content requires integrating LLMs with real-time state tracking, which is unnecessary for validating our UX.

Hard-Coded Techniques Used

To keep the demo stable and focused on UX, several elements are intentionally hard-coded:

1. Explore page recommendations: "Browse recipes for you" and other "Recommended" sections do not use a real recommendation algorithm. Results do not meaningfully adapt to history or preferences; pantry updates only change labels, not the underlying recommendation logic.
2. Recipes, stories, and visuals: Recipe titles, steps, images, hazard badges, and story summaries come from a fixed dataset or were generated once and stored. They do not vary by user cooking style, dietary profile, or story tone.
3. Kid-friendly recipes: Safety icons, warnings (e.g., "requires parent supervision"), and progress bars are manually configured per recipe, rather than dynamically inferred from steps. The four kid-friendly recipes are hardcoded with the images and icons included, as we found that

implementing them alongside our voice AI would be too much. After completing a kid-friendly recipe, you can still take a photo and save your final dish to the story log.

4. Profile settings: Profile toggles and narration-speed settings are represented in the UI but do not yet fully drive recipe surfacing or voice speed under the hood.

AI Tools Used (and Justification)

Google Gemini: Recipe & Book-Style Images

We used Gemini to generate high-quality images for recipes and storybook-style covers.
Justification: Ensures visual cohesion across recipes. Avoids low-quality stock images or inconsistent screenshots. Gives the app a distinct, illustrated style that supports the storytelling theme.

ChatGPT: Ingredient Lists & Recipe Variations

ChatGPT helped generate ingredient lists, substitute suggestions, and variations across story tones.
Justification: AI-generated recipes were realistic and aligned with the story themes. Accelerated prototyping by removing the need for manual culinary research.

Figma Make: Design Adjustments

We used Figma Make to generate layout fixes, alternative component designs, and updated screens after our heuristic evaluation
Justification: Ensured consistency in typography, spacing, and accessibility across screens.

REFLECTION AND NEXT STEPS

Key Learnings About the Design Thinking Process

Throughout the development of Simmr, we learned a great deal about the importance of approaching the design thinking process with patience, curiosity, and a willingness to adapt direction when necessary. We realized early on that the needfinding stage sets the foundation for everything that follows, so we focused on listening closely, asking open-ended questions, and paying attention to the moments when users said something that did not align with our assumptions.

Many of the insights we discovered during user interviews and experience prototype tests were surprising and shifted our direction in meaningful ways. For example, we originally assumed that people wanted more structured guidance while cooking, but several interviewees shared that they actually wanted flexibility instead of strict instructions. This helped us understand that our app needed to support multiple cooking styles, from longer stories to short, simple prompts. To uncover insights like these, we had to let go of our early ideas and allow users to guide us with their own perspectives and habits.

Iteration became a constant part of our process. We refined Simmr throughout the entire quarter, making changes after every test session, heuristic evaluation, and round of feedback. While a few parts of our low-fi prototype carried through to the final version, many features were rethought or completely rebuilt once we saw how people interacted with them. This included adjusting the tone options, reworking the flow of the cooking experience, and improving how the voice features were introduced. Each revision helped us create a product that felt more grounded in real user needs.

Another major learning was how much easier the design thinking process becomes with a diverse and communicative team. Each person brought something different to the table, whether it was design, programming, research, or organization, and this variety made it easier to divide tasks and support one another. We stayed in close communication throughout the project, which made it simple to jump in when someone needed help or when a feature needed extra attention. This allowed us to move quickly while still being thoughtful about every decision.

By the end of the project, we had a much clearer understanding of how to balance user insights with technical constraints, how to iterate with intention, and how a strong team culture makes the entire process more manageable and fulfilling.

Key Learnings About Studio Theme

Since our entire team was interested in voice technology, the studio theme aligned perfectly with what we wanted to explore. We all felt that voice interactions are becoming a core part of how people use apps, and we were curious about what it would take to design something that actually felt natural and helpful. None of us had worked with voice AI before, so we knew it would be challenging, but that was exactly why we wanted to pursue it. We saw it as an opportunity to push ourselves beyond our comfort zones and come out with skills that we did not have at the start of the quarter.

Early in the process, we had to think critically about how voice could shape the entire app experience, rather than being an add-on. This meant understanding when voice made tasks easier, when it added friction, and how people would react to it in a real cooking setting. We also had to consider tradeoffs, such as how much control users want over what the AI hears or how flexible the responses should be.

One of the biggest lessons we learned was that, if we wanted voice to feel meaningful, it needed to sit at the center of the interaction instead of being treated as an extra feature. At first, we struggled to figure out how to integrate voice smoothly. Once we started building prototypes and testing

them, we realized that a voice-based app only works when the voice interactions guide the experience, not when they come in at random points.

This pushed us to rethink our approach and redesign Simmr so that voice became the main way people interact with the app, while still giving users the choice to adjust things like tone, length, and pace. By the end, we not only learned how to implement voice AI but also how to design around it, which shaped our final product in a meaningful way.

Key Learnings About Simmr

One of our biggest takeaways during the creation of Simmr was that we could not stay attached to a single idea for too long. We started with a broad interest in cooking and how to make it feel more fun and social, and at first, we thought the app might be most helpful for people who cook often, including amateur chefs. Once we conducted our early interviews, it became clear that this direction was too narrow and that most people were looking for something more playful, flexible, and less intense. They wanted guidance that felt light rather than instructional, and they wanted an experience they could shape to match their own comfort level and attention span.

This led us to understand that Simmr needed to rely on stories, but those stories had to be adjustable. Some users enjoy longer, more playful narratives, while others get frustrated if the story slows them down. Because of this, we built several options for tone, length, and style so the user can easily choose the version that feels right for them. This shift reminded us that designing the product around real user needs, rather than our original assumptions, would lead to a better and more inclusive experience.

We also struggled with naming the app, because nothing felt aligned with the direction we wanted until we eventually chose Simmr. The shorter name felt memorable and warm, and it captured the playful cooking energy we were trying to build into the product.

Throughout the entire process, we kept coming back to the idea of third spaces and how much people miss simple moments of connection. Cooking naturally creates those moments, so we designed each of our key tasks to support shared experiences. Whether someone is discovering a recipe, cooking with a partner, or exploring substitutions, the app helps people enjoy the process together and brings back a sense of community that many users said they felt was missing.

Next Steps

One of our next main steps would be developing a recommendation algorithm for the recommended recipes page. In our current prototype, there are no suggestions or personalized recommendations built in. Adding an algorithm would allow Simmr to learn from each user's cooking habits, preferences, and tone selections, which would make the experience feel more tailored and helpful over time. This feature would also support our long-term goal of keeping users engaged by showing them new meals that match the way they cook.

We also hope to fully implement the kid-inspired visuals that we explored earlier in the design process. Users responded well to the playful energy during testing, since it made the app feel light and inviting, especially for people who often feel stressed or bored while cooking. Due to time limits, we could not build out the full animations in our hi-fi prototype. Bringing these visuals to life would strengthen the identity of Simmr and reinforce the idea that cooking can feel simple and enjoyable.

Another important step would be preparing the app for a real release. Our initial target population would be home cooks who want to find joy in everyday cooking instead of feeling stuck with the same meals. This includes students, young adults, and casual home cooks who want a more engaging or playful cooking experience. We would start by sharing Simmr with people in our networks, collecting feedback, and learning how real users interact with the voice features, story tones, and recipe flows. This would also help us refine the product before expanding further.

Although there is still much to build, creating Simmr has given us a clear sense of where we want to take the app next. Our goal is to keep improving the experience so that cooking feels more enjoyable, social, and creative for anyone who uses it!