Cindy Brummer

Harmonious

Welcome, Wendy!

Let's play!

Start a Game

Join a Game

Refresh

HARMONIOUS

The game that connects

What to **expect**

1   **Why**

2   **Scope & Strategy**

3   **Research & Key Findings**

4   **Approach & Prototype**

5   **Reflections and Next Steps**

Why This Challenge?

Meet my Dad

He has cognitive decline. Due to less social contact in 2020, it worsened. It worried me.
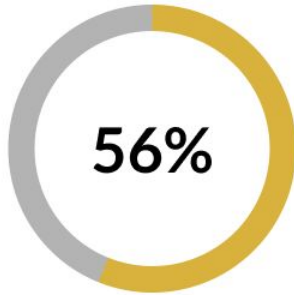
My Dad
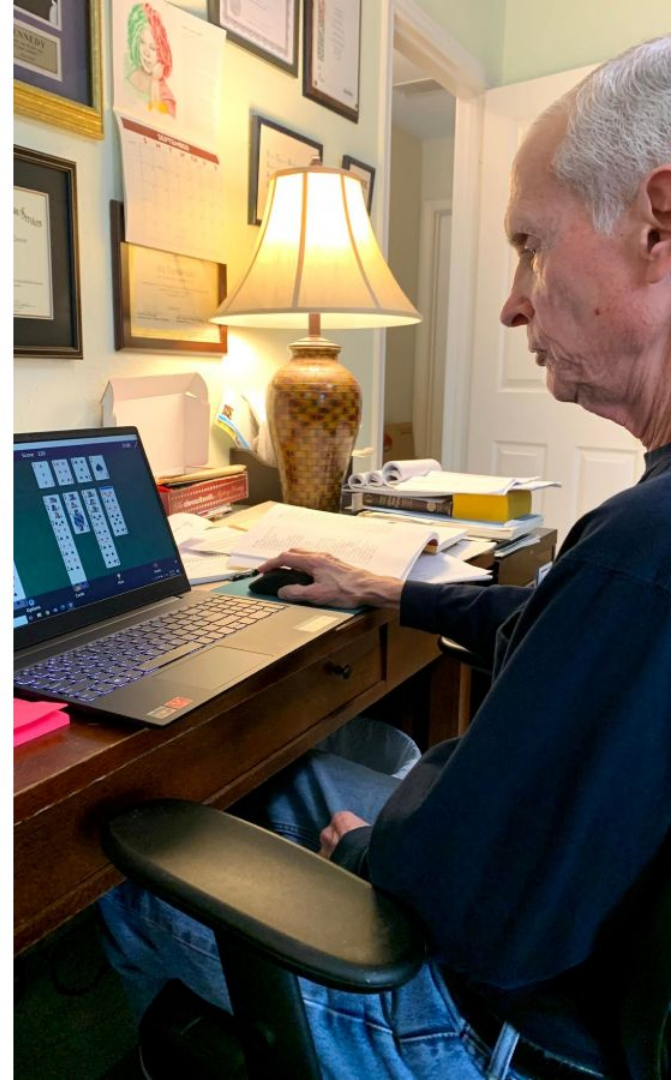
" Loneliness and separation puts older generations at risk for dementia and other serious mental conditions.[1]
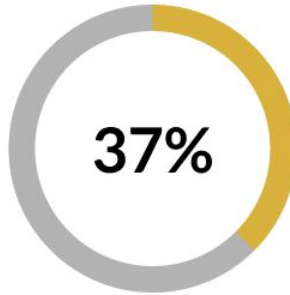
Centers for Disease Control and Prevention
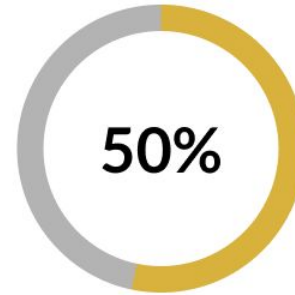
Social Isolation --> Dementia

56%

Isolation

Percentage of people who said they sometimes or often felt isolated from others (2020).[3]

37%

Time Alone

Percentage of people age 60 and older who spent all measured time alone (2019).[4]

50%

Risk of Dementia

Percent increased risk of dementia due to social isolation. [1]

The Need

Seniors need to engage multiple areas of their brain to protect it from decline.[5]

Sign of Hope

Participants ages 55-75 who played video games for 30 minutes a day, five days a week, saw increases in gray matter volume in the hippocampus and cerebellum. Their short-term memory also improved.[2]

Canadian medical study

Problem Statement

How might we design a tool that _engages family members face-to-face_ over geographic distance while providing opportunities to engage in _memory-building_ and _active learning_?

Strategy

Research
Understand Users

Learn as much as we can about target user groups: how they connect and any past-time games.

Definition
Define the Problem

Synthesize the research to understand user needs.

Prototyping
Design the Prototype

Create the solution through multiple iterations.

Testing
Gather feedback

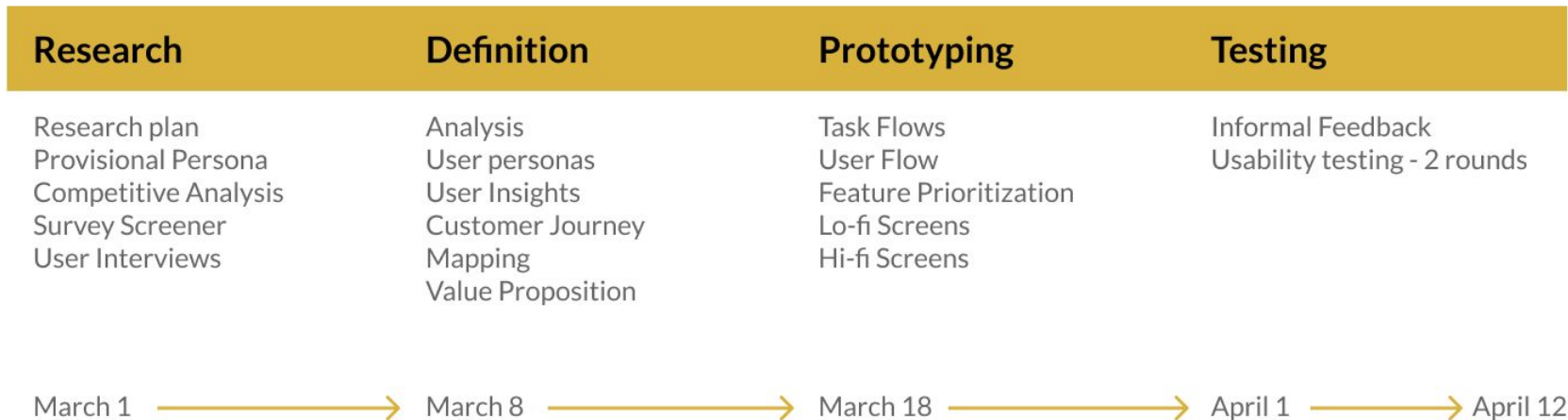Test the solution through multiple rounds of user feedback.

Activity Timeline

This project spanned 10 weeks and was split into 4 major phases.

Research	Definition	Prototyping	Testing
Research plan	Analysis	Task Flows	Informal Feedback
Provisional Persona	User personas	User Flow	Usability testing - 2 rounds
Competitive Analysis	User Insights	Feature Prioritization	
Survey Screener	Customer Journey	Lo-fi Screens	
User Interviews	Mapping	Hi-fi Screens	
	Value Proposition		

March 1 ⟶ March 8 ⟶ March 18 ⟶ April 1 ⟶ April 12

Understanding

Research Goals

Is this an issue for other families?

1 **Understand how families connect when they are geographically separated.**

2 **Understand challenges and barriers with socializing**

3 **What solutions have families come up with?**

The User

Adult Child

Has a Senior parent

Has regular communication with parent and lives more than 5 miles away.

Senior

Lives independently

Has an adult child who communicates with them on a regular basis.

Methodology

User types: Adult children of seniors who live on their own; Seniors, age 70+, living on their own

Method	Data Collection	Dates	Participants
Semi-structured, qualitative user interviews: 16 total	Data collected through Zoom remote video recording and through notes, then transcribed with Otter.ai	March 4-March 6	16 participants from targeted user profiles: 8 adult children of seniors 8 seniors

Research plan ⟶ Screener ⟶ Recruitment ⟶ Interviews ⟶ Transcription

" Sometimes I worry about her because she's by herself. But... she's kind of a sassy lady. So she's very self sufficient and independent."

--Daughter of Senior Mom

"I'm alone all the time.

--Senior

17

"

...Sometimes it gets a little boring. It's a little tough being single -- I'm a widow.... a little hard to start all over again."

--Senior

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Exploration

Meet the User

Wendy

Child of Senior

Pain Points & Hesitations

Intimidating tech

Her mom has an iPad and phone, but feels uncomfortable with applications sh'e not already familiar with. And Wendy isn't physically present to show her.

Complexity

Simple tech, like FaceTime, is powerful. But interfaces that requires more familiarity or knowledge are a barrier.

Declining health

While her mom is in good health now, Wendy is aware that as time goes on, her mom is likely to become less and less able. Her mom already has a bad back and knee, which makes driving long distances difficult.

Link to Persona

Meet the User

Marilyn

Senior

Pain Points & Hesitations

Loneliness

She is alone much of the time
and sometimes feels lonely.
To address this, she stays active
and travels to see her family, but
she is still alone much of the day.

Support system

Because she is alone, she has
created a support system of
friends and neighbors out of
concern no one will be there for
her in her health declines.

Cognitive health

Her biggest fear is developing
dementia.
She is also concerned about
beng forced to leave her home if
her health declines too much.

Link to Persona

" My mom plays games on her computer, like it is her job, hours a day, and she loves it.

--Daughter of Senior Mom

The Insight

Seniors already play games because it helps their brains stay active.

They just aren't always playing with family.

Key Findings

Families struggle to engage other than talking and want more.

Connect more than 2

Families typically communicate via FaceTime or the phone. They need ways to connect more than two people at a time.

Make it accessible

Families need technology to be simple and inclusive of all abilities. Technology is intimidating for many and it need to be accessible to everyone in the family.

Make it familiar

Users shy away from playing games with people they don't know. They will play multiplayer games if they are playing with people they personally know.

Keep it timeboxed

Families are busy, and find time to be a problem. Users need a timeboxed method for engagement so that they can overcome time constraints.

Link to Affinity Diagram

The Journey

Doing	Search	Evaluate	Download	Explore	Commit	Repeat Use	Share

Thinking and feeling

Opportunities

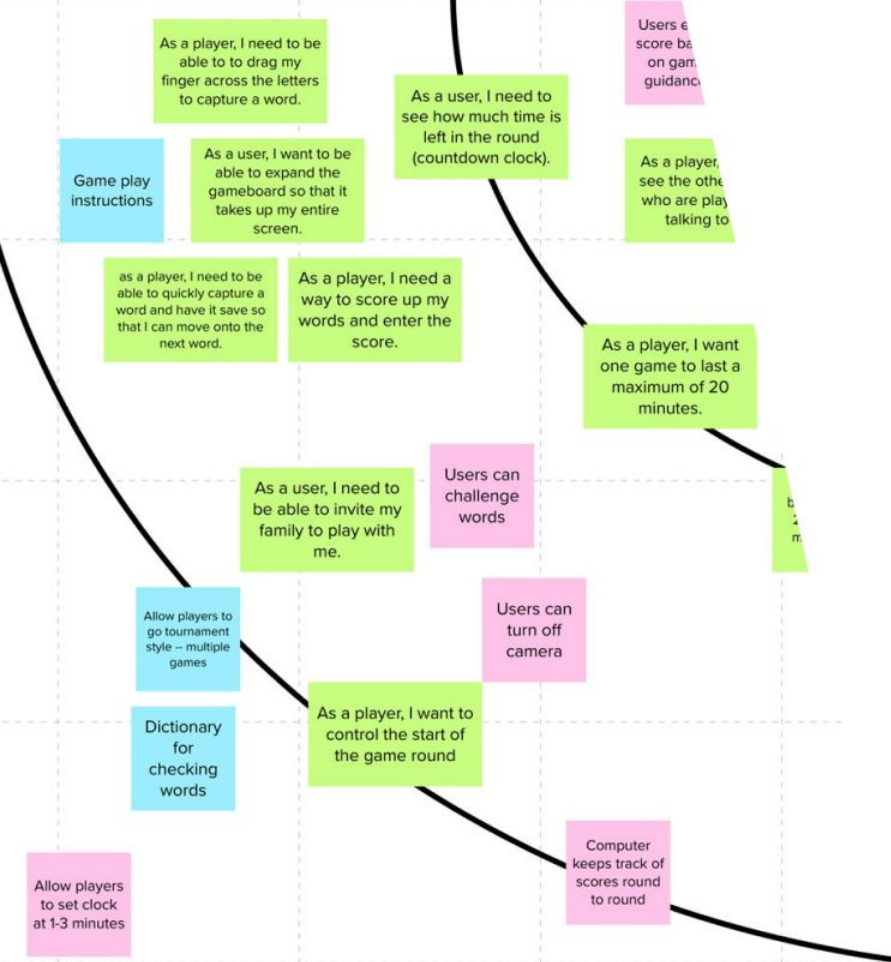| Ensure ratings are high.	Few games offer face-to-face oppotunities.	Make game available across devices.	Smooth adoption: Make game simple.	Allow users to limit play to people they know.

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What if?

What if I built a simple online game that challenges the brain while allowing for synchronous video conversations?

Designing

As a player, I need to be able to to drag my finger across the letters to capture a word.

As a user, I need to see how much time is left in the round (countdown clock).

Users e... score ba... on gam... guidanc...

Game play instructions

As a user, I want to be able to expand the gameboard so that it takes up my entire screen.

As a player, see the othe... who are play... talking to...

as a player, I need to be able to quickly capture a word and have it save so that I can move onto the next word.

As a player, I need a way to score up my words and enter the score.

As a player, I want one game to last a maximum of 20 minutes.

As a user, I need to be able to invite my family to play with me.

Users can challenge words

Users can turn off camera

Allow players to go tournament style -- multiple games

Dictionary for checking words

As a player, I want to control the start of the game round

Allow players to set clock at 1-3 minutes

Computer keeps track of scores round to round

Features

Word game

Most users indicated they enjoyed word games and sought them out for fun and challenging play.

Game lasts 15-20 minutes

Most users only had a short amount of time -- games that took hours would not meet their needs.

Simple touch interface

Game play can't be complex -- using a finger to drag and capture words would be simple to master and more accessible than a mouse.
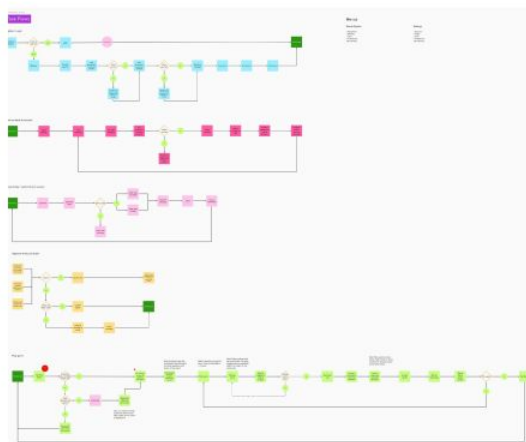
Start with iPad

Most seniors had an iPad readily available and were familiar with the interface.

From User Flows to Wireframes

I mapped out the task and user flows needed for a high-fidelity prototype over an iterative process, incorporating user feedback thoughout.
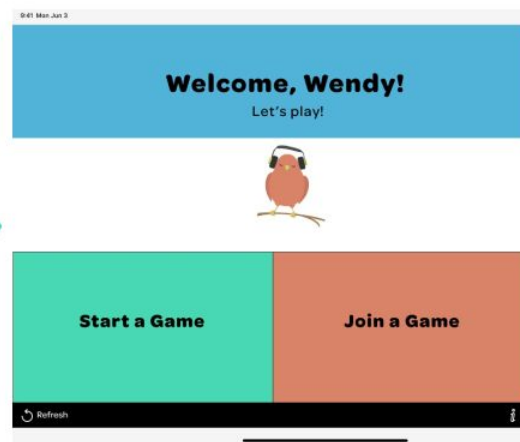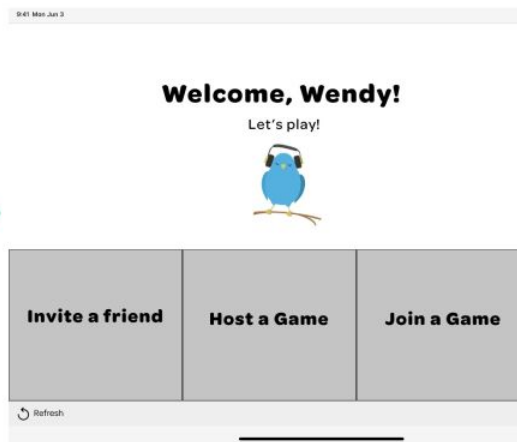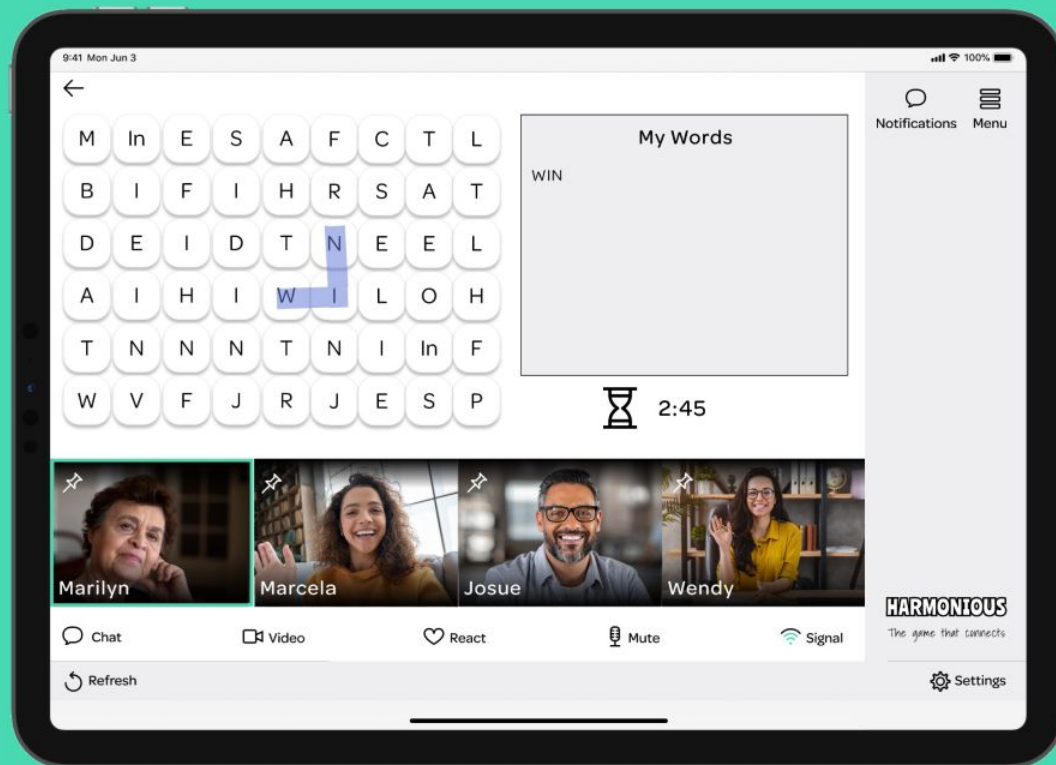
Wireframe Evolution

User feedback was key to houw the interface and its features evolved. Feature suggestions were evaluated based on usability, clarity, and ease of use. I also considered and added features that would add to the richness of the game itself.
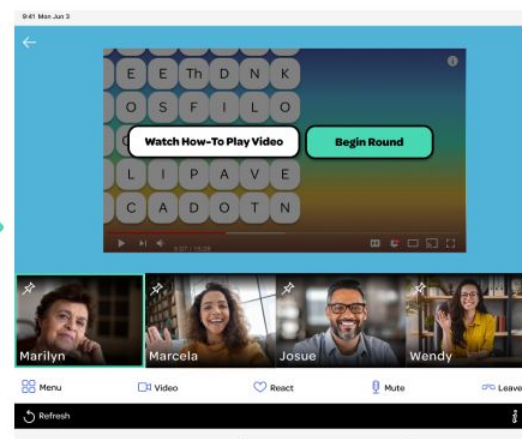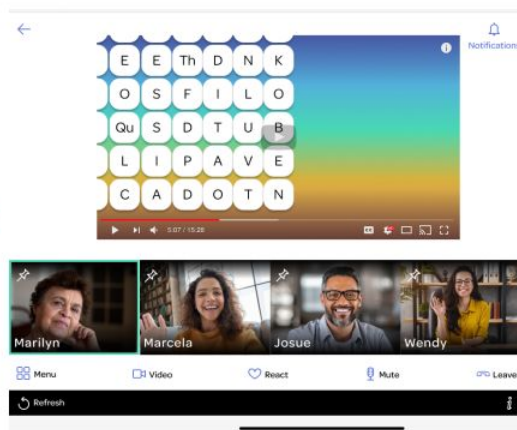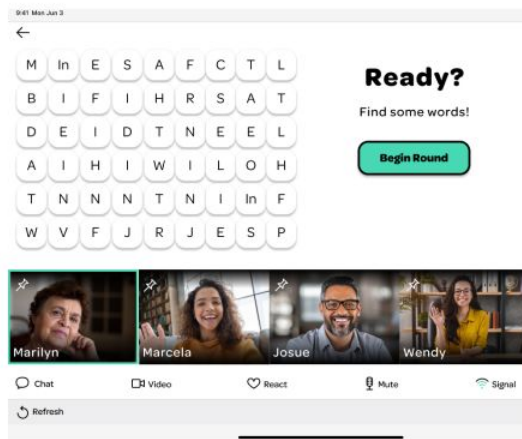
Mid-Fi Designs

Features

Word Search Gameboard

Players tap and drag their finger to capsture words

Invite friends

Players start a game by generating a game code, then sharing through email or text.

Settings panel

Users can control access to contacts, camera and microphone through settings.

Mid-Fi Designs

Features

See Results

Players see results at the conclusion of the round.

Accept Results

Players accept or dispute results for each opponent

Alerts and Notifications

Alert boxes using iOS design guidelines pop up with messages throughout the app.
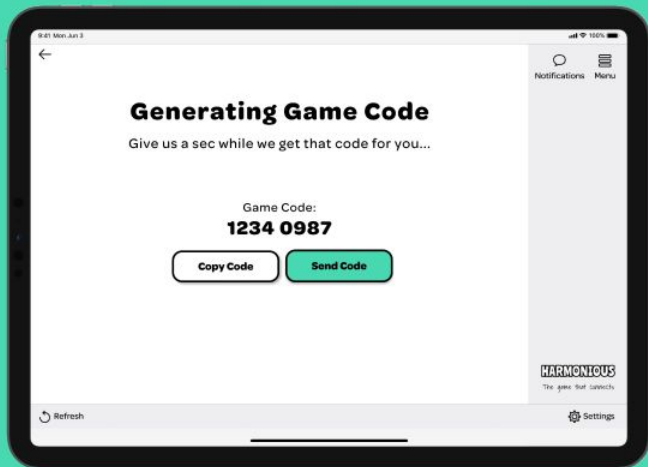
User Feedback

Menu confusion

Confused about what's behind menu -- is it stored data about the game or how to play?

Add drama for end-of-round

Do a little video for showing the winners -- like how marioKart does it.

How do I see friends?

When I'm online, can I see a list of my friends?

Game initiation

Do they need a game code if inviting through the app? Game code should only be public; no way to add people

Branding

Girl/Guy Next Door

Brand Archetype

Personality

Down to earth, accessible, approachable, hard working, and nice.

Voice

Friendly, humble, honest, practical

Customers feel

Included, understood, warm, part of the group

HARMONIOUS

The game that connects

Link to Brand Guide

Branding

HARMONIOUS

The game that connects

Primary

Secondary

A

Primary Pressed

Omnes

Omnes, Bold
(50.68px/2.027em)

H1 Header Style

Omnes, Bold
(40.05px/1.602em)

H2 Header Style

Omnes, Bold
(35.60px/1.424em)

H3 Header Style

Omnes, Regular
(19.75px/.79em)

Paragraph, Small & Regular, Styles

Omnes, Medium
(17.56px/.702em)

Small Text Style

Hi-Fi Screens
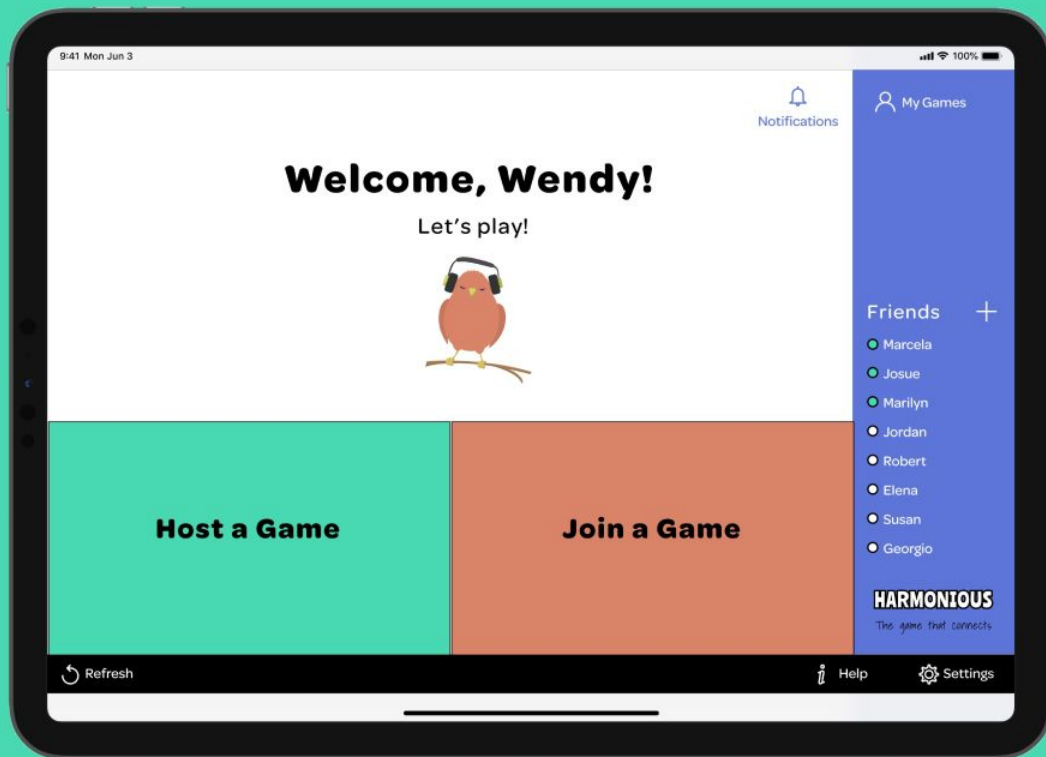
Iterations

Add branding

I applied the branding throughout the app, through color, fonts, and imagery.

Friends panel

I added a panels of connected friends and made an indicator that the friend is online.

Simplify game start

I simplified how users initiate a game and gave them a choice on whether to make it private or share with users not in the app.

Hi-Fi Screens

Iterations

Clarify onboarding copy

I included onboarding text to show users what to expect and what they can do.

Include instructions

I included video instructions right before the game to explain how to play.

Add results sequence

I added a sequence after the round to build up drama about how everyone did.

Usability Testing

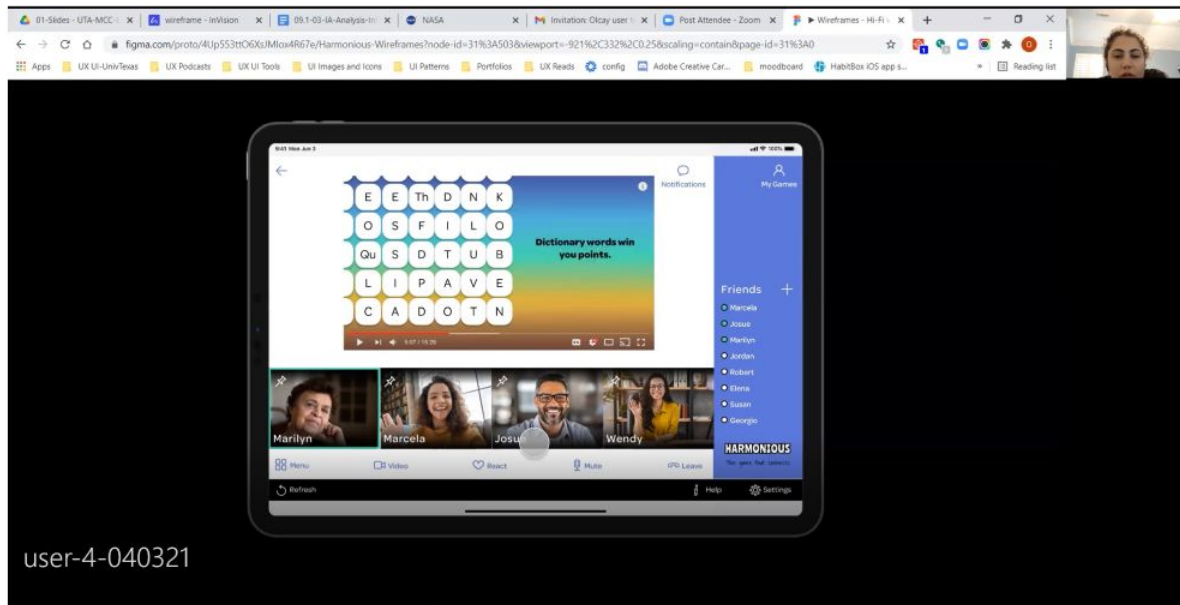**Task-based usability testing with 5 remote testing participants.**

Onboarding confusing

Users thought app would automatically add contacts from onboarding screen.

Video too fast

Users found instruction video to be fast and not clear about how to play.

Start game from panel

Users thought they could start a game with users on the right sidebar.

user-4-040321

Usability Testing

Task-based usability testing with 5 remote testing participants.

More settings control

Users requested additional options for sound level and text size for accessibility.

Word challenges

Users wanted to increase interaction among participants on the call. One suggestion was adding "challenge a word."

Bigger text

Some alert boxes -- especially those from the iOS UI kits -- were too small to read.
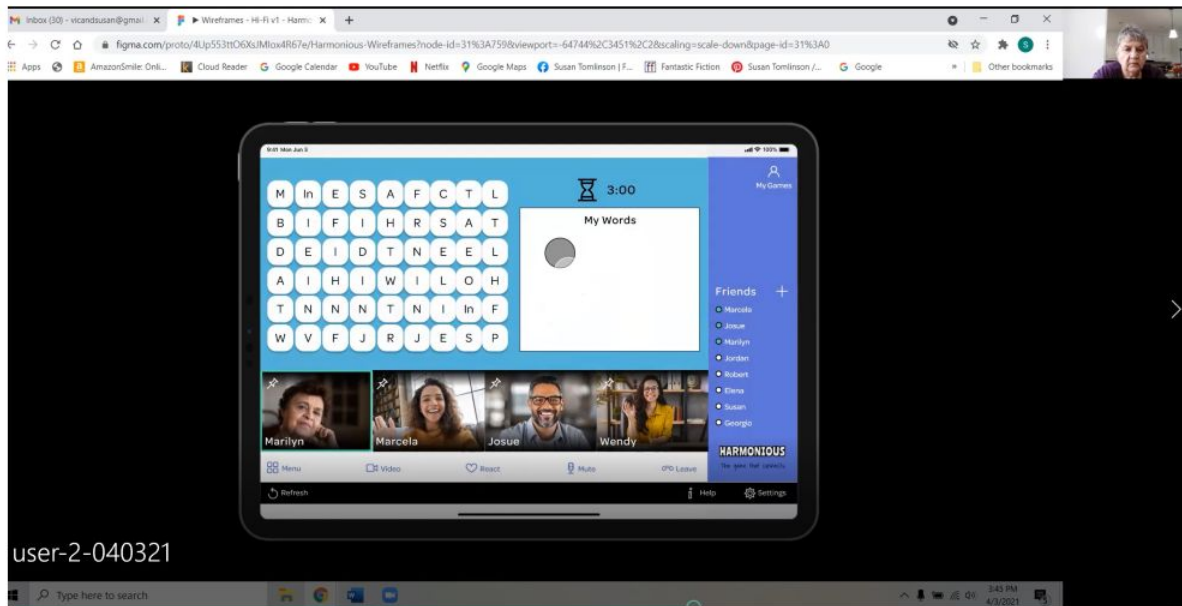
Prototype

Final Prototype

Link to Prototype - Figma

Testing Feedback

" You're sharing an experience. You're sharing an adventure. You can talk together. I really think this could be a loneliness buster. I think it's great."

User testing participant

" I want to play this."

User testing participant

What Worked

☆ Sidebar menu makes sense

Users were able to correctly guess what was behind the new menu buttons.

Initiate a game with friend

Users understood that a game could be initiated with a friend from the side panel.

Understand friends online

Users understood which friends were online and were not confused.

Onboarding microcopy

Users did not think that onboarding meant they would be connecting all of theor contacts at that moment.

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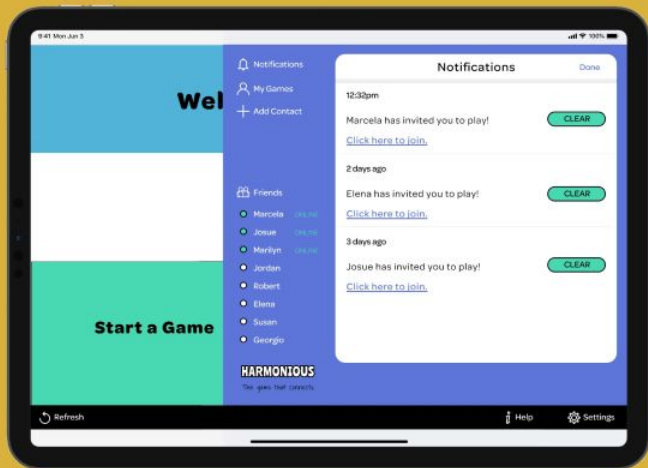
User Testing Feedback

What to Improve

"Help" button not intuitive

Users were not always clear that a "how to play" video was behind "help".

Challenge feature affordance

Users liked the feature, but it wasn't clear how to initiate it.

Fix slow performance

Figma was lagging and causing performance issues with testing

Slow video down

For some users, the help video still went too fast.

Lessons & Next Steps

Lessons Learned

Test, test, and test again

The highest value came from getting feedback directly from potential users.

Go high-fi early

By strategically moving into high-fi earlier than I had planned, I created a cohesive system that was easy to update.

Think through components

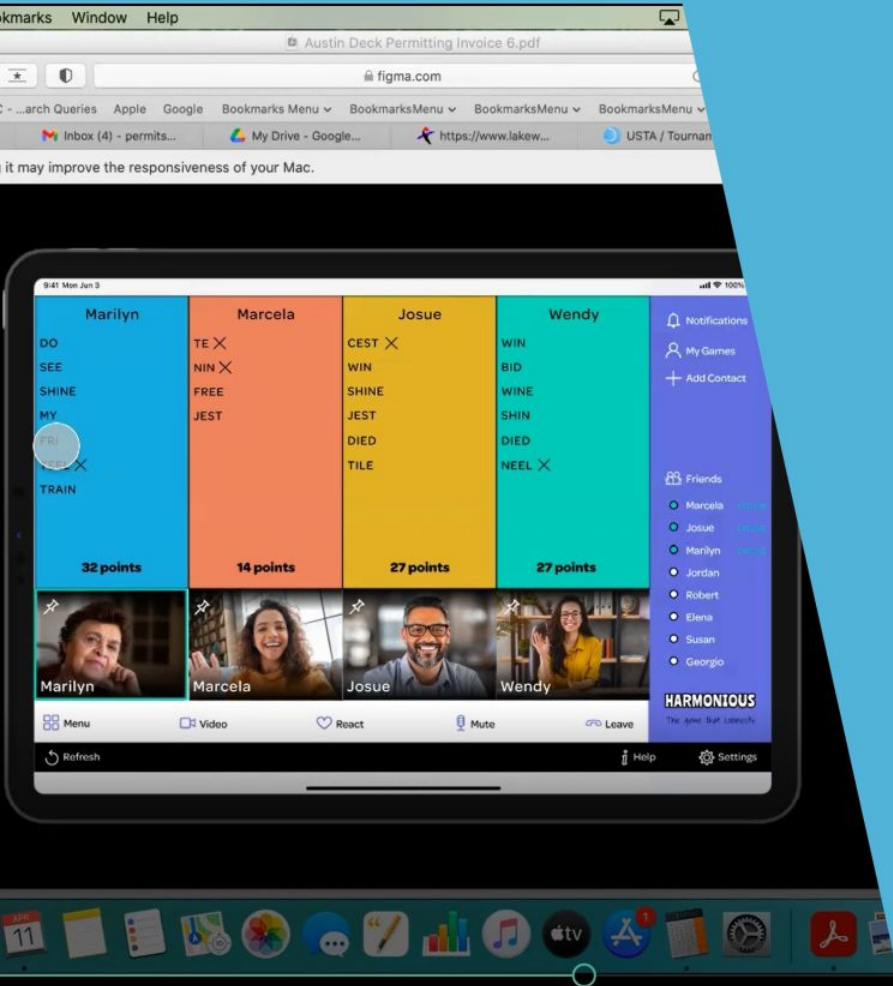Some of the components I created needed to be reworked.

Work in a team

This project was huge for one person, and I wish I had been able to tap into the brain power of a team.

HARMONIOUS

The game that connects

Moving forward

Next Steps

This is what I plan to do next.

Implement recent user feedback

I plan to iterate my prototype with the most recent feedback.

Redline wireframes

I will annotate the wireframes for developer handoff.

Work with a developer

My business partner is already building a functional coded prototype.

Build an MVP

We will build out a rough prototype for another round of user testing on the path to an MVP.

Appendix

Research Plan

Objective: Understand how families currently engage when connecting socially, their challenges, barriers, and solutions.

Method	Data Collection	Dates	Participants
Semi-structured, qualitative user interviews: 16 total	Data collected through Zoom remote video recording and through notes, then transcribed with Otter.ai	March 4-March 6	16 participants from targeted user profiles: 8 adult children of seniors 8 seniors

Link to research plan in Google Docs

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Proto Personas

Activity: Determine user types and create proto personas for the starting point of creating a user interview plan.

Outcome: Provisional document for developing user interview questions and discussion guide; list of features for identifying users using screener

Link to proto personas on Mural

Competition

Activity: Analysis of 3 direct and 3 indirect competitors in the space to determine what features may be missing.
Outcome: Analysis of competitors provides identification of recommended solutions for feature brainstorming

| Houseparty	Airconsole	Facetime Games	Board Game Arena
This app includes face to face play with games, but the games are limited. It's fairly simple to set up, but the push to invite friends is confusing. The UI has a heavy emphasis on inviting friends.	This is the closest competitor to what the project envisions. The integration with videoconferencing is close to the vision, and it also uses a web-based game. Games are limited and require some power in the computer to play.	Face to face app, but no direct integration with a game. users who play games can play things like Charades.	No face to face playing and not all games considered.

Link to competitive analysis in Google Sheets

Recruitment and Survey Screener

Tool for recruitment and screening applicants to ensure they meet definition of target user.

This survey was shared across Linkedinand Slack.

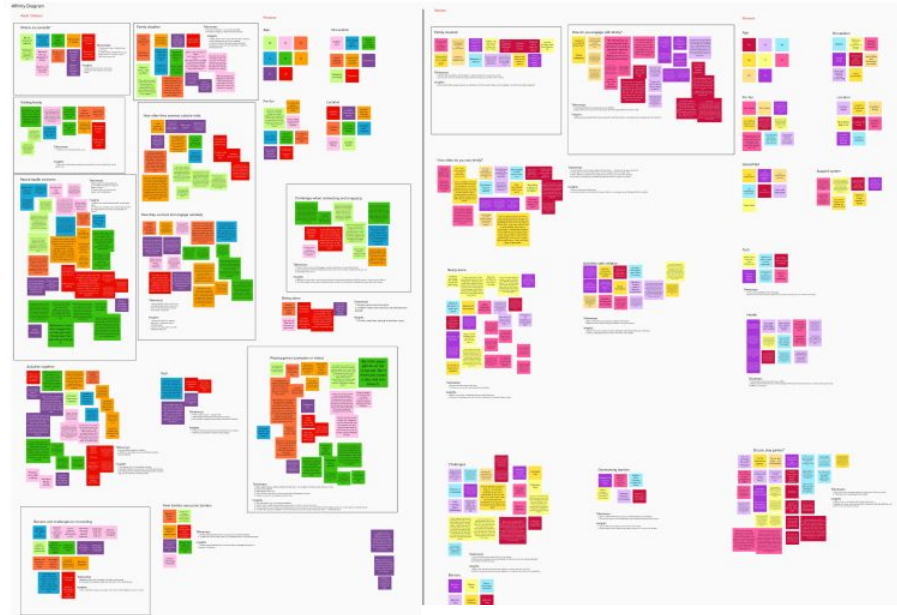**Outcome:** List of potential interviewees for user interviews
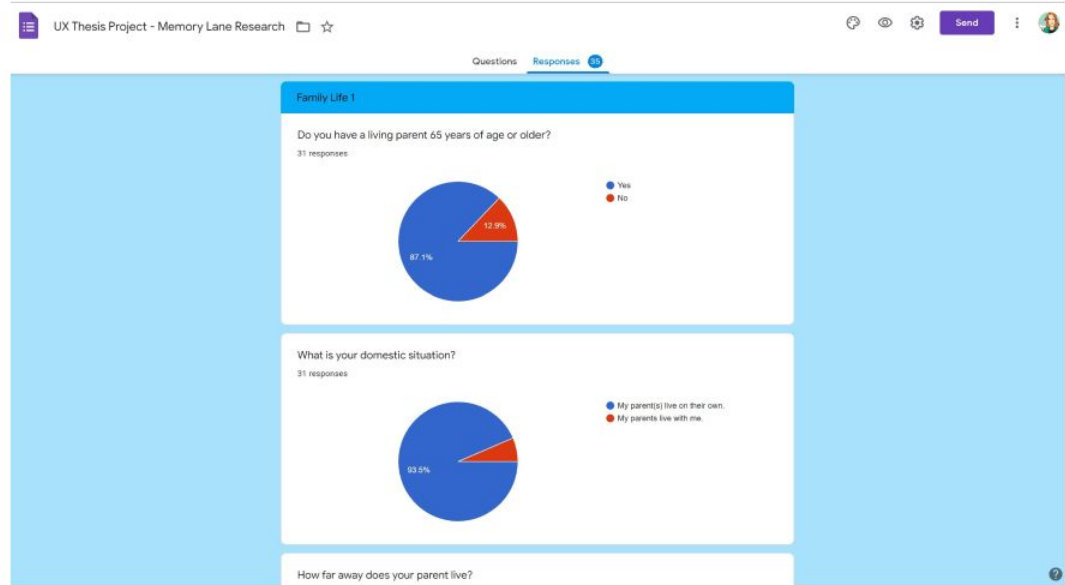
Link to results in Google Sheets

Research Synthesis

Activity: Externalize data to find patterns in findings and uncover meaning.

Outcome: Categories of findings for key insights

Link to Interview analysis in Google Sheets

Link to Affinity Diagram on Mural

User Insights

Activity: Generate insights to understand the deeper meaning behind patterns and behaviors in order to finalize problems and propose solutions.
Outcome: Scenarios for for customer journey map step.

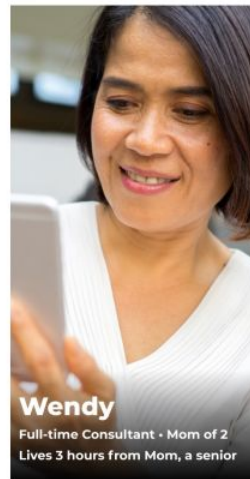| Insight 1	Insight 2	Insight 3	Insight 4
Users need ways to connect more than 2 people in families	Users need technology to be simple and inclusive of all abilities in order to connect and be accessible to everyone in the family.	Users will play multi-player games if they are playing with people they personally know.	Users need a timeboxed method for engagement so that they can overcome time constraints.

Link to user insights in Google Sheets

User Personas

Activity: Iterate personas based on data from research and develop empathy for user types.

Outcome: Concise persona document to use for feature brainstorming.

[Link to User Persona 1 PDF](#)
[Link to User Persona 2 PDF](#)

About

Wendy lives in Dallas, Texas and her mother, 72, lives in Austin, Texas. Wendy works full-time and is raising two small children, and her mom typically drives up to visit her. But lately she hasn't been able to travel as much because of health concerns. Wendy is close to her mom and calls her every week to stay in touch.

> "I was like, 'OK, well, how are we going to feel more connected?' So it was kind of a big ordeal because I had to teach her how to use Zoom.'"

Environment & Context
· **Home:** Often busy with kids' schedules. Texts photos and messages frequently to parents.
· **Tech:** Owns an iPhone, tablet and laptop for work. Very familiar with work tools, like Zoom and Hangouts
· **Play:** Winds down with a few digital games. Enjoys Words With Friends (plays against her mom), Solitaire, and CandyCrush.

Goals & Needs
· Ease worries about mom's health and how much she's alone.
· Find ways to make sure her mom stays active and engaged.
· Teach mom how to use tools so they can talk face to face more often.

Hesitations & Pain Points
· **Intimidating tech** -- Her mom has an iPad and phone, but feels uncomfortable with applications she's not already familiar with. And Wendy isn't physically present to show her.
· **Complexity** -- Simple tech, like FaceTime, is powerful. But interfaces that requires more familiarity or knowledge are a barrier.
· **Declining health** -- While her mom is in good health now, Wendy is aware that as time goes on, her mom is likely to become less and less able. Her mom already has a bad back and knee, which makes driving long distances difficult.

Wendy
Full-time Consultant · Mom of 2
Lives 3 hours from Mom, a senior

About

Marilyn is a retired nurse who has two adult children. Marilyn's son lives in Houston and her daughter in Dallas. Marilyn's children are busy with their jobs and her daughter has two small children. Marilyn typically drives to visit them whenever she wants to see them, but lately she has not been able to. Even though she has a nearby network of friends and neighbors, she feels a bit lonely.

> "I think the world that I grew up in is definitely different than the world that we live in now. And I think that makes things harder. In the fact that people right now you want your kids to be you teach them to be independent, and you want them to fly. And they do. But there's no nucleus of family as much as there used to be."

Environment & Context
· Home: Lives independently.
· Fun: Lives an active lifestyle and has a busy life. Likes to visit with friends and neighbors. Plays games on her iPad.
· Health: In good health other than an aching knee. Concerned about dementia, because both her parents suffered.

Goals & Needs
· Keep her mind active to stave off boredom and prevent dementia.
· Communicate frequently with her adult children and their families.
· Age in place in her own home.

Hesitations & Pain Points
· Alone much of the time and sometimes feels lonely.
· Worried about developing dementia.
· Has created a support system of friends and neighbors out of concern no one will be there for her in her health declines.
· Concerned about being forced to leave her home if her health declines too much.

Marilyn
Senior · Retired
iPad User · Plays games for fun

55

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Marilyn

Senior · Retired

iPad User · Plays games for fun

Customer Journey - Current State

Activity: Understand the user's current situation to identify areas where solutions can solve problems.

Outcome: Identification of 3-4 areas of opportunity for the solution to address.

[Link to Customer Journey 1 PDF](#)
[Link to Customer Journey 2 PDF](#)

Brainstorming

Activity: Generate ideas for solving the users' problem using Mural for capturing ideas based on the outcomes created so far. I will use the "I Like, I wish, What if" method of brainstorming.

Outcome: List of ideas for solving the problem
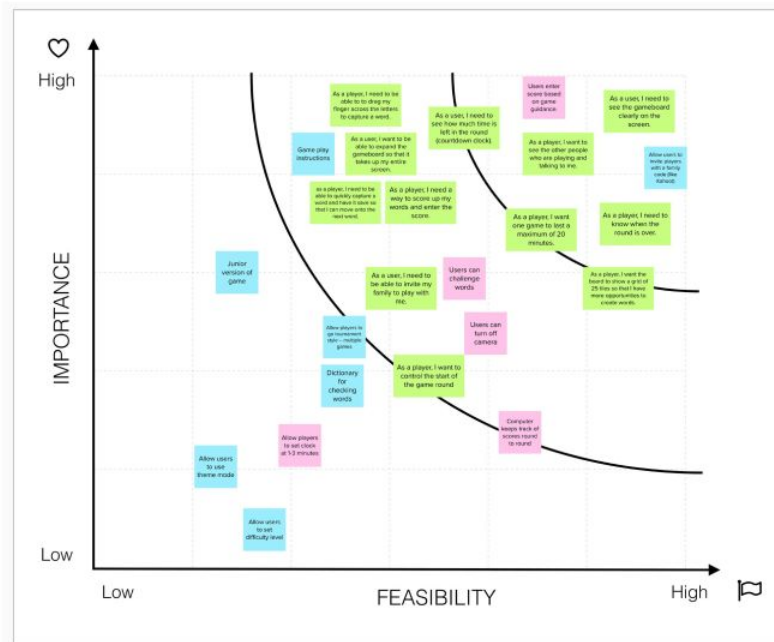
Feature Prioritization

Activity: I will use two methods for prioritization. The first will roughly measure the feasibility of an idea by mapping it on a matrix of effort versus impact. This will eliminate non-feasible ideas. Then, I will rank the remaining ideas based on a score of Value versus Effort, and rank the ideas according to its score.

Feature / Epic	Effort 1= most / 5=least	Value (1=min / 5=max)	Score (V * LOE)	Priority
As a player, I want one game to last a maximum of 20 minutes.	4	5	20	High
As a user, I need to see the gameboard clearly on the screen.	3	5	15	High
As a player, I need a way to score up my words and enter the score.	5	3	15	Medium
As a user, I need to be able to invite my family to play with me. (Allow users to invite players with a family code (like Kahoot))	3	5	15	High
Letter tiles appear on board	4	3	12	High
As a player, I need to know when the round is over.	3	4		

[Link to Feature Prioritization in Google Sheets](#)

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Value Proposition

Ensure ideas meet needs in the market and differentiate from competitors (identified as a risk).
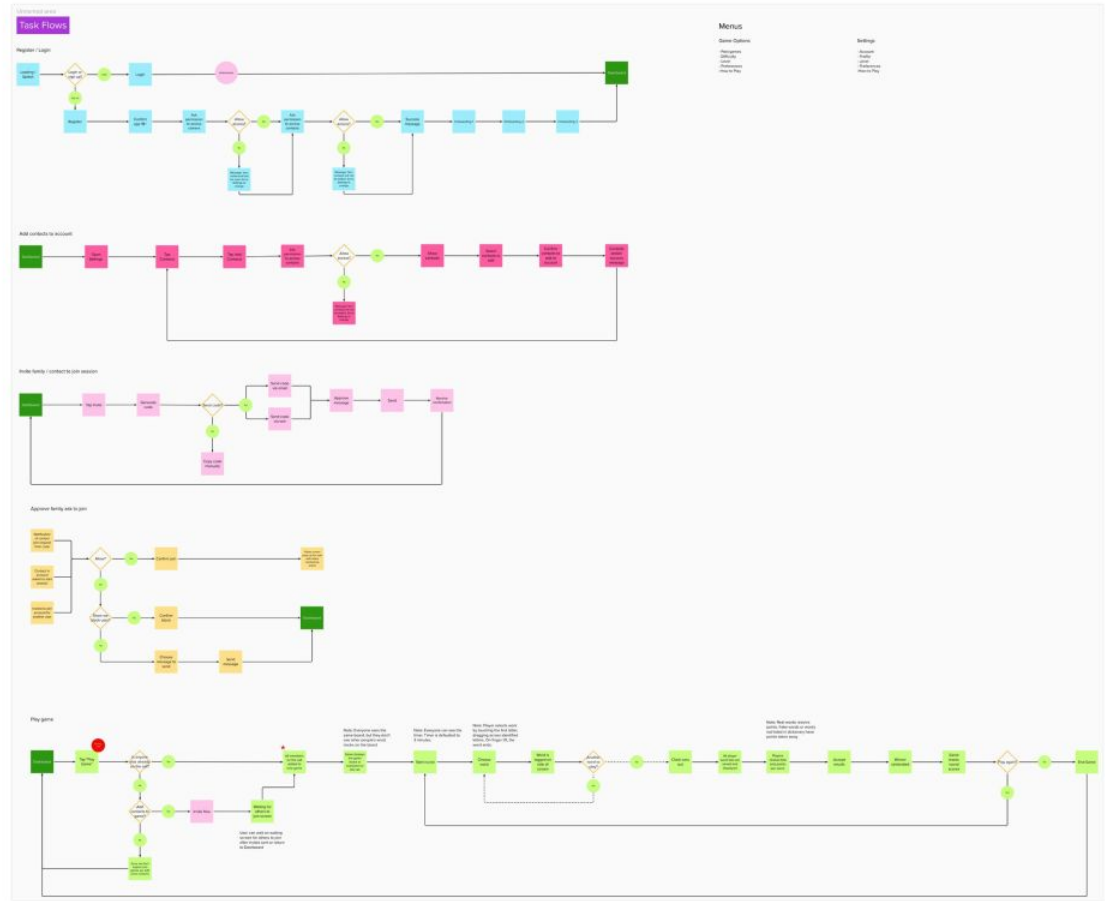
Outcome: Completed value-prop canvas

The Value Proposition Canvas — Strategyzer

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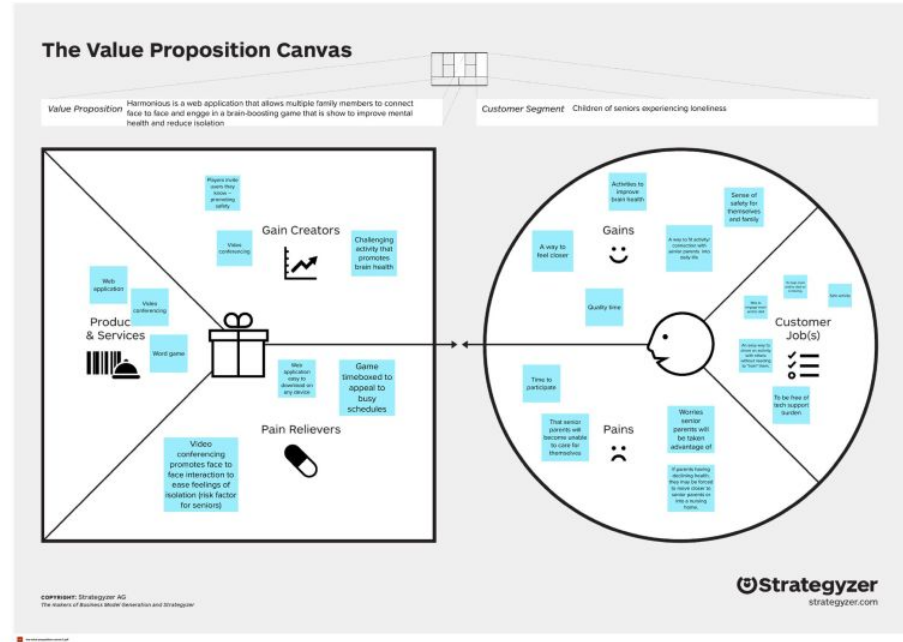
Task Flows

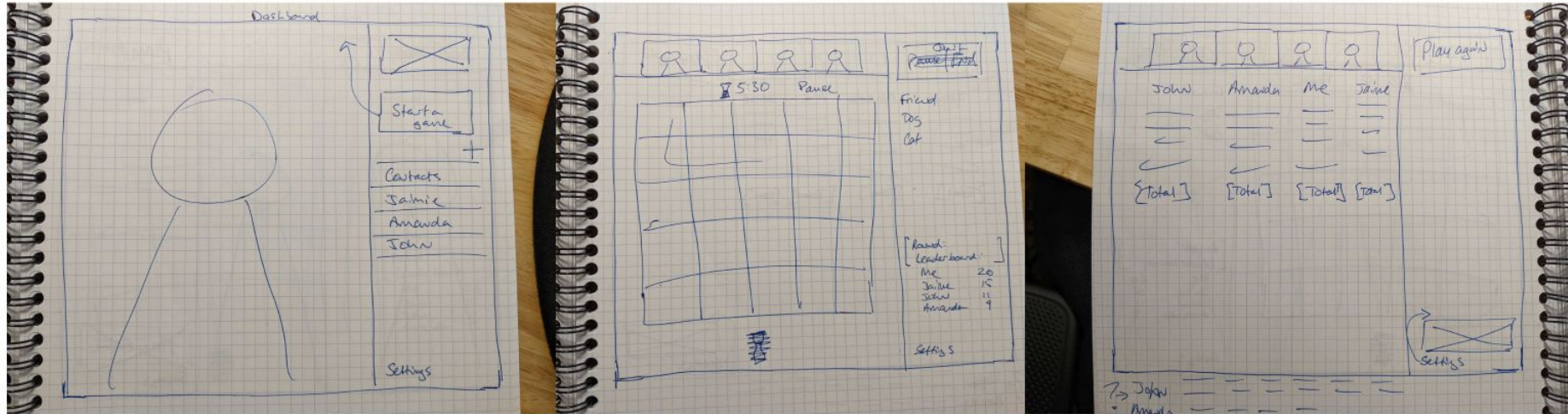Understand primary tasks for user types.

Outcome: Diagram to understand flow for certain tasks.
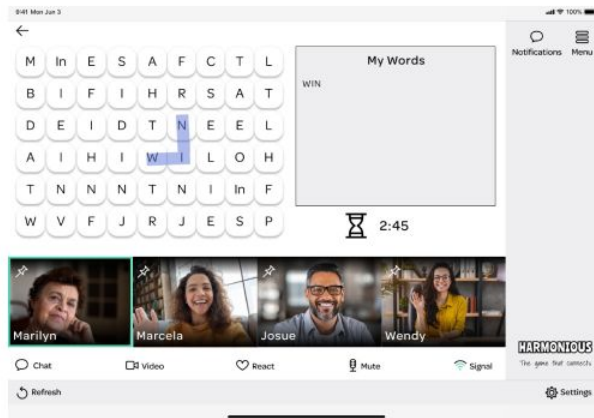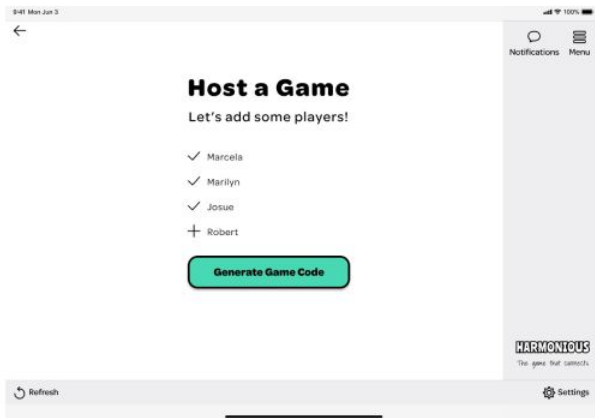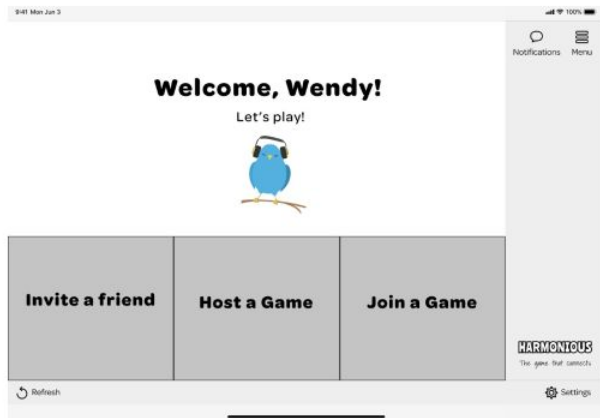

Link to Task Flows on Mural

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User Flow

Flesh out user paths to see entire flow of user through solution
Outcome: Diagram to understand full user flow to end goal.

Link to User Flow on Mural

Sketches

Lo-fit sketches to work through initial solution design.

Mid-Fi Screens

I iterated on my sketches in Figma using an iOS UI kit for faster prototyping.

Informal User Feedback

Methodology: Informal testing with 4 users. This was conducted using semi-structured remote testing. Users were provided with a link to the prototype and asked to walk through it. Each session was recorded and analyzed.

Feedback	Focus Area to Adjust
- Need to include microphone access -- can put this with camera access - Do a little video for showing winners -- like how MarioKart does it - Add pop up to "Quit" and ask if they really want to quit - Need instructions on how to play during onboarding - In the user dropdown - see who's online - Instead of menu -> profile and your accomplishments "Incoming -- may not need to approve: - Look at how Spotify share works --> share internally through everything - When the game's about to start, don't show the letters.	- Initiation of game -- for private game, invite people through the app; for public game, create game code - Start of game -- don't show game board before the rounds starts; give instructions on how to play -- maybe in video form - Sharing -- change this to more like how Spoify does this - Contact list -- show and add -- fill out this flow - Game win -- make this more fun -- build the drama and change how the winning words are displayed

[Link to Feedback analysis in Google Sheets](#)

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Brand Guide

I designed a unique look and feel for my app and created this brand guide in Figma. Then I turned the brand guide into an asset library.

HARMONIOUS
The game that connects

Brand Identity

Brand Archetype

Girl/Guy Next Door

Goal
Relate, belong, accept and be accepted by others

Personality
Down to earth, accessible, approachable, hard working, and nice

Fear
Be left out, leave anyone behind

Strategy

Brand Voice
Friendly, humble, honest, practical

Customers Feel
Included, understood, warm, part of the group

LOGOS

HARMONIOUS
The game that connects

HARMONIOUS
The game that connects

HARMONIOUS
The game that connects

HARMONIOUS
The game that connects

HARMONIOUS
The game that connects

The Harmonius logo was designed as a typographical logo with two fonts:
-Ranchers (Google font) for the name mark
-Shadows into Light (Google font) for the tagline

The name can be used alone or with the tagline in one of the five shades of the color palette.

TYPOGRAPHY

Adobe Typekit Font

Omnes

Omnes was selected for heading and body type styles because of its roundness, which indicates friendliness and approachability. Additionally, it is easy to read and pairs well with the typographical logo.
As an Adobe Typekit font, it is licensed for personal and commercial use. Omnes can be used freely in both printed and digital products, commercial or otherwise. Additionally, By using Adobe fonts for a web project, the type styles are fast loading and handle cross-platform rendering. These key features improve the overall experience and retain consistency across browsers.
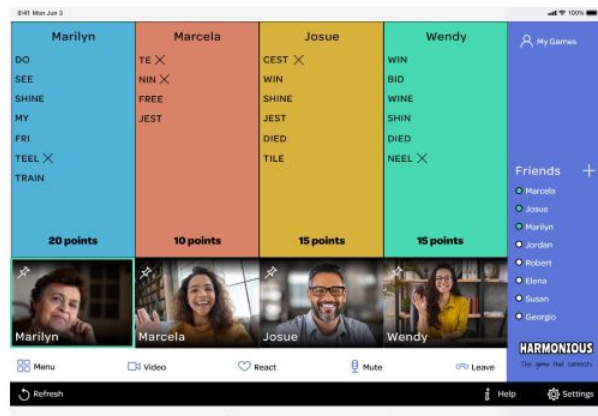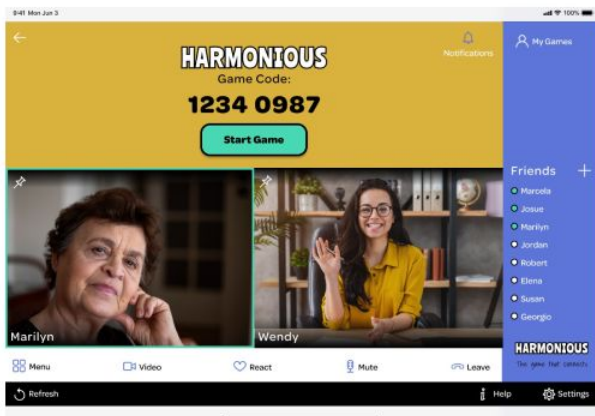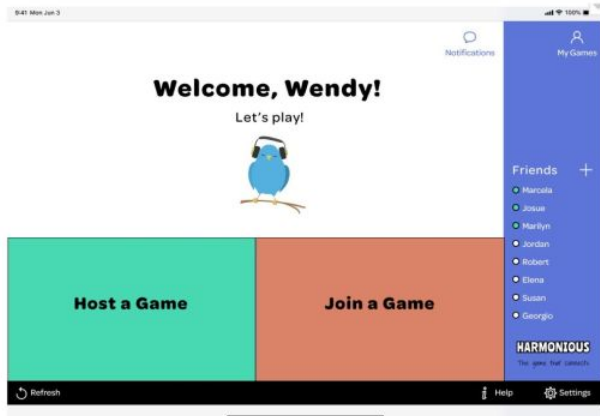
TYPE STYLES

Regular   A Visual Type Scale

Medium   A Visual Type Scale

Bold   **A Visual Type Scale**

[Link to Brand Guide on Figma](#)

Hi-Fi Screens & Prototype v1

I turned the mid-fi screens into high-fidelity and implemented the design feedback.

Link to Hi-fi Prototype v1 on Figma
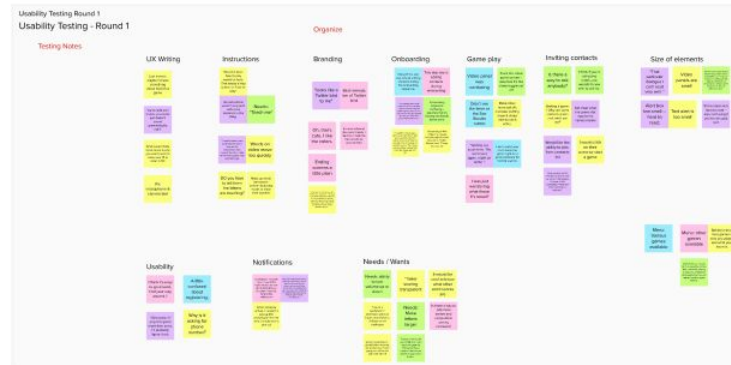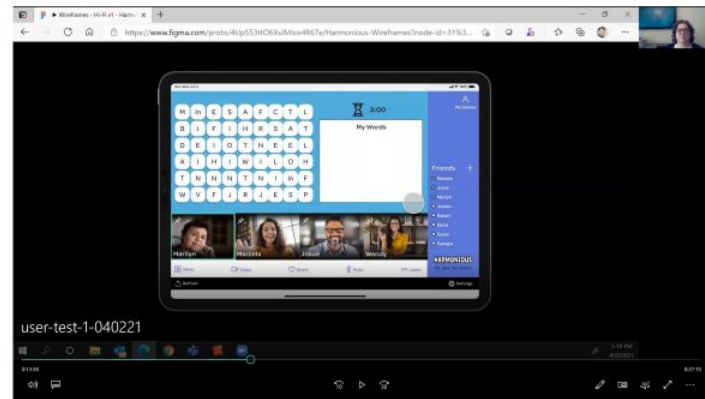
Usability Testing 1

User testing conducted April 2-4 via Zoom. Results were analyzed and synthesized using Google Sheets and Mural.

Methodology	Participants

Scenario-based usability testing- Steve Krug style - using remote, moderated testing environment.

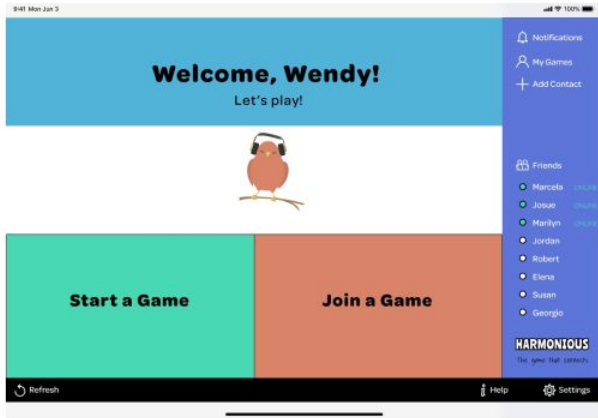Five participants sourced from original group of user interviews who agreed to be contacted for testing.

Link to analysis of results on Google Sheets | Link to synthesis of results on Mural

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Hi-Fi Screens & Prototype v2

I iterated my high-fidelity screens and prototype based on the feedback from the formal user testing.
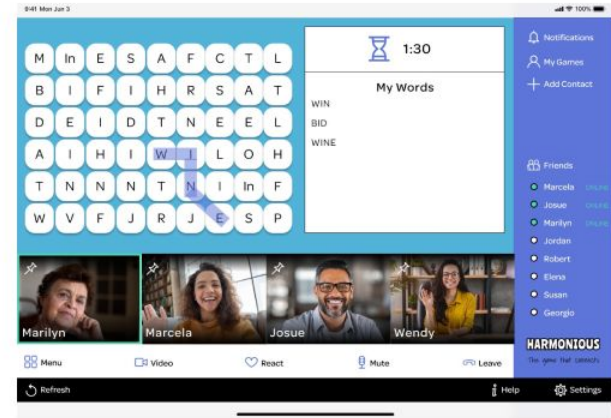
Link to Hi-fi Prototype v2 on Figma

Usability Testing 2

User testing conducted April 10-11 via Zoom. Results were analyzed and synthesized using Google Sheets and Mural.

Methodology	Participants
Scenario-based usability testing- Steve Krug style - using remote, moderated testing environment.	A different set of 7 participants were sourced from original group of user interviews who agreed to be contacted for testing.
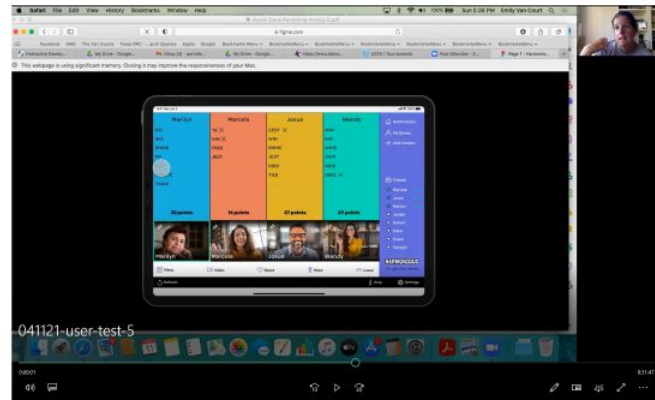
Link to analysis of results on Google Sheets | **Link to synthesis of results on Mural**

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References

References

1. "Loneliness and Social Isolation Linked to Serious Health Conditions." Centers for Disease Control and Prevention, Centers for Disease Control and Prevention, 4 Nov. 2020, www.cdc.gov/aging/publications/features/lonely-older-adults.html.

2. Livingston, Gretchen. "On Average, Older Adults Spend over Half Their Waking Hours Alone." Pew Research Center, Pew Research Center, 30 May 2020, www.pewresearch.org/fact-tank/2019/07/03/on-average-older-adults-spend-over-half-their-waking-hours-alone/.

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4. "Some Video Games Are Good for Older Adults' Brains." ScienceDaily, ScienceDaily, 6 Dec. 2017, www.sciencedaily.com/releases/2017/12/171206141648.htm.

5. Goad, Kimberly. "Frequent Activities May Help Prevent Cognitive Decline ." AARP, 10 Sept. 2019, www.aarp.org/health/brain-health/info-2019/activities-cognitive-decline.html. 2020 Alzheimer's Disease Facts and Figures. Alzheimer's Association, 2020, www.alz.org/media/Documents/alzheimers-facts-and-figures.pdf.