

# larry

Mobile Vocabulary Learner UX Case Study

Tiffany Chan



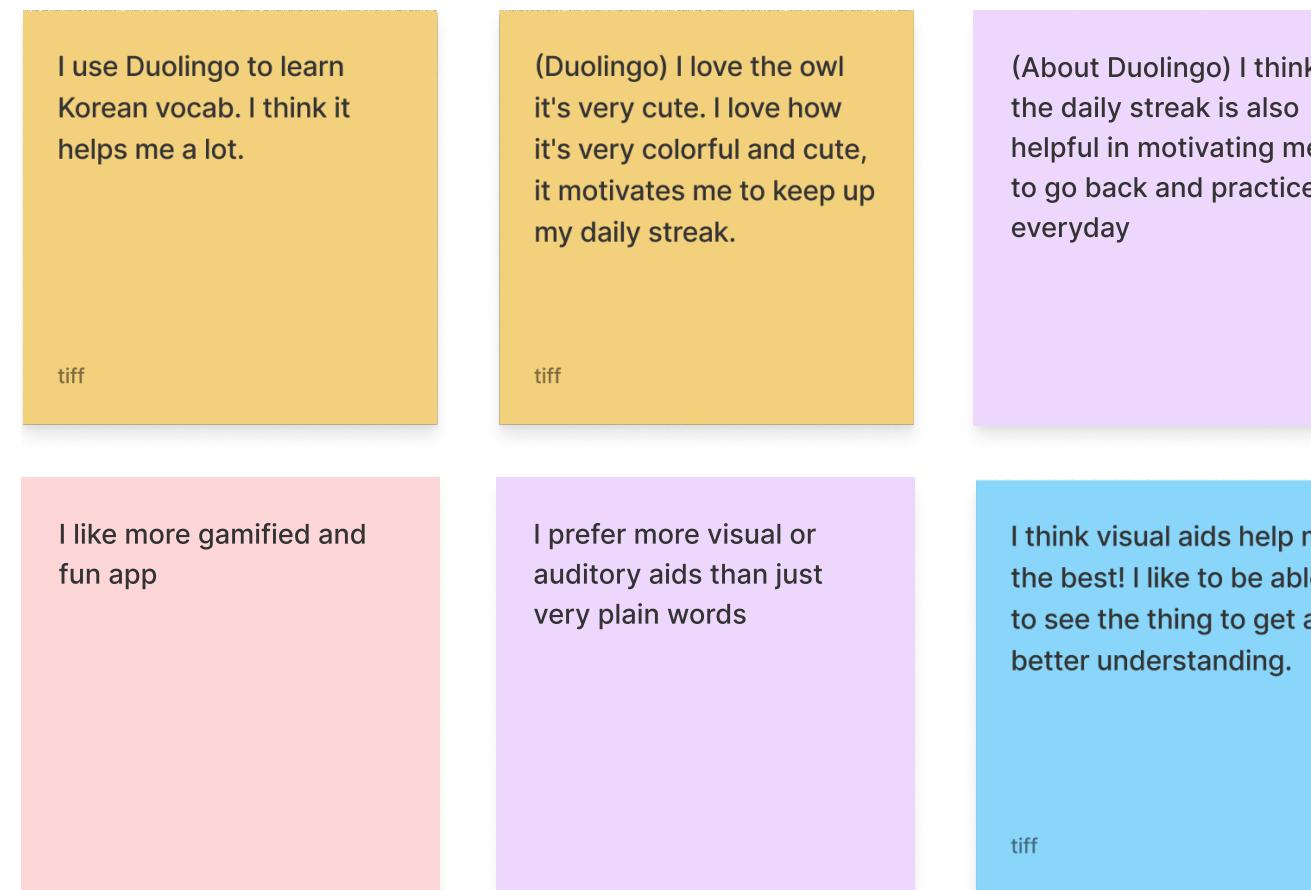
# User Interviews

To get a rough sensing of the kind of features and thoughts regarding learning new vocabulary and vocabulary apps, I conducted short interviews with 4 users who have made attempts to improve their lexicon of English.

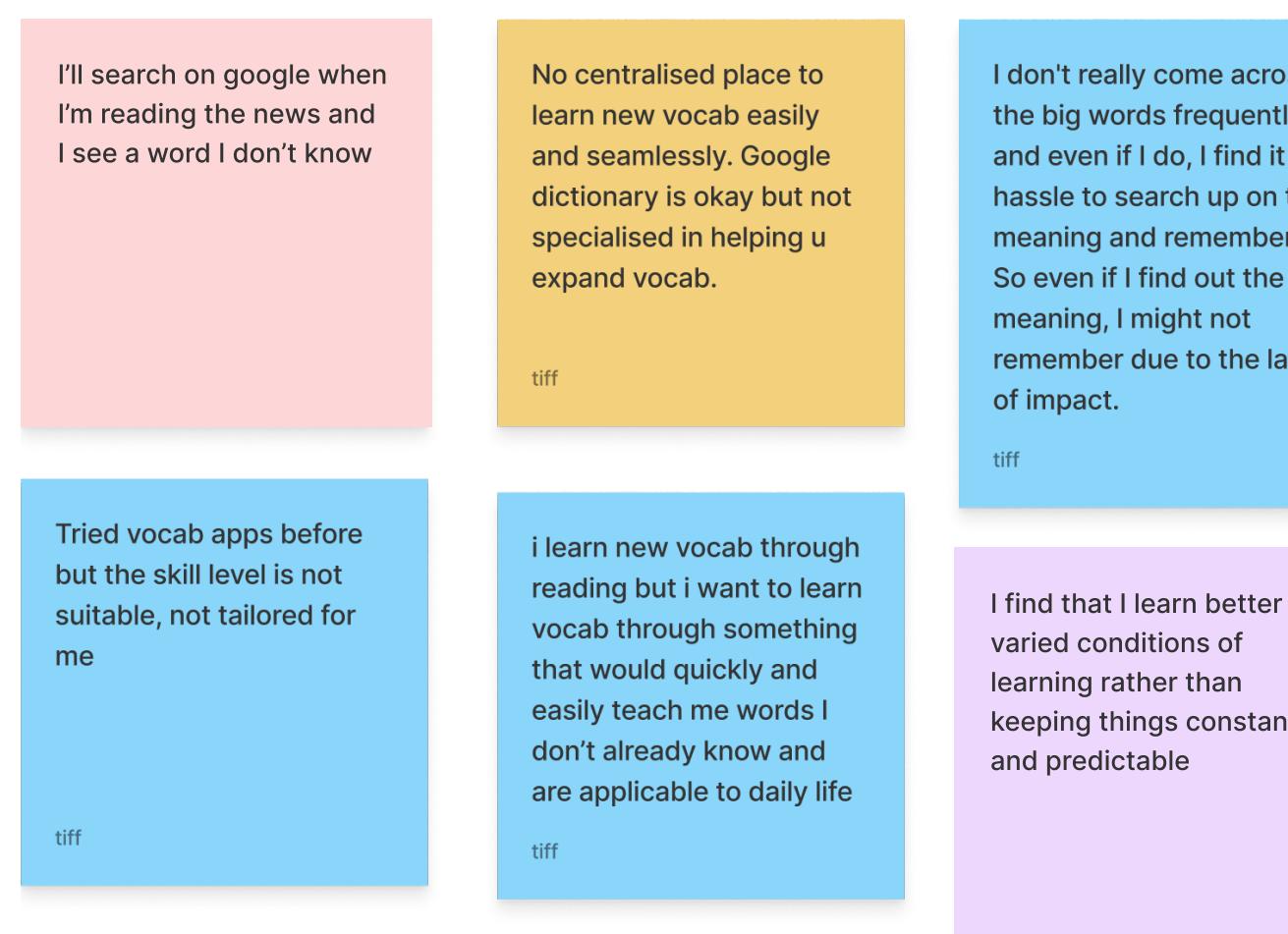
Following which, I synthesized my findings into a mini affinity diagram to identify what I should focus on, and inform what kind of design and learning styles users found useful.

With my findings, I created a user persona and customer journey map which can be found on the next page.

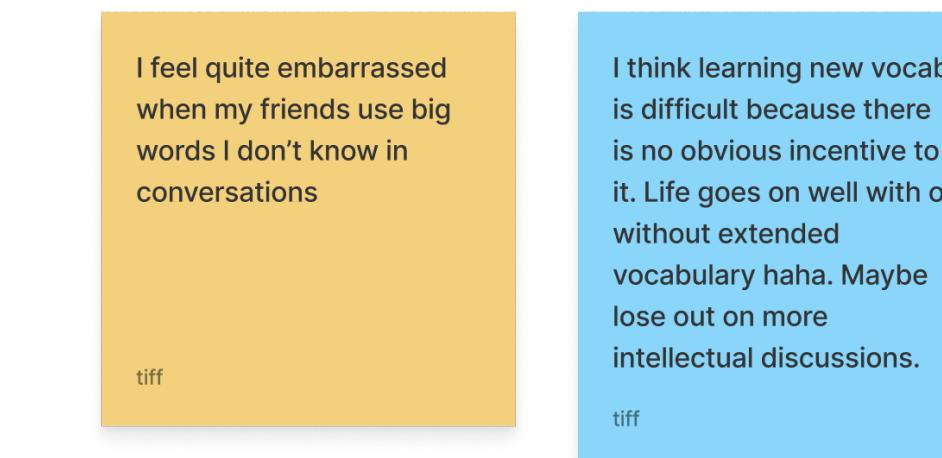
## Gamified/Visual Learning



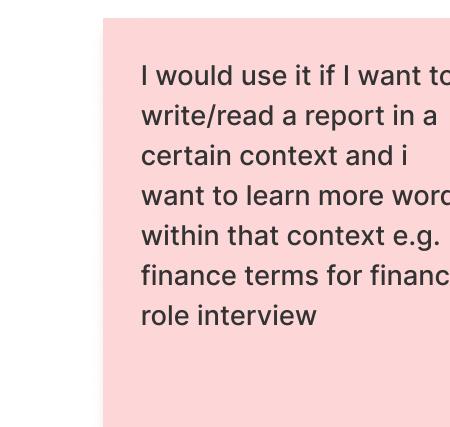
## Current way of learning is troublesome



## I want to expand my vocab to look smarter



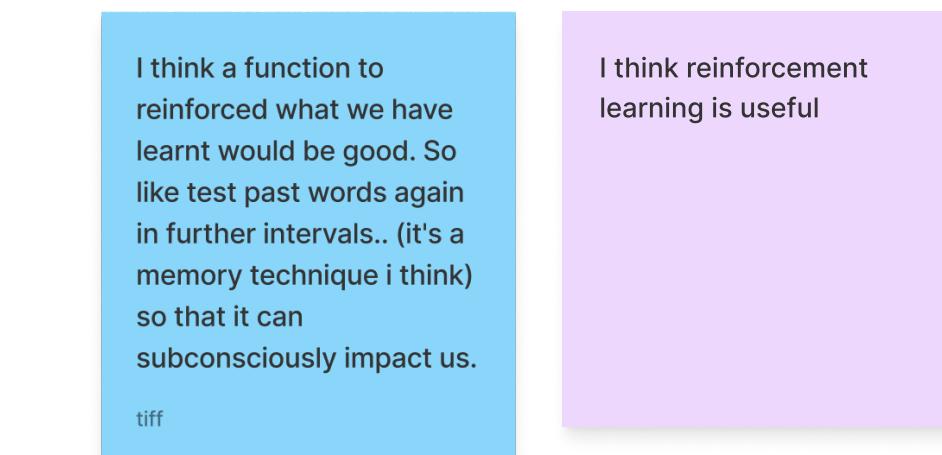
## Sometimes I want to learn more context-specific vocab



I think having Word of the day and sample sentences would be useful

tiff

## Feature that will test you on previously learnt terms





## Nicole Choo

Nicole is a 21 year old university student in Singapore. She reads news often and will do a Google search whenever she encounters unfamiliar words. She wants a fun and easy way to improve her vocabulary so she can use more impressive words in her essays and reports. However, being a busy student, she does not want to dedicate much time to actively read up on new words and hopes to do so while relaxing or during her free time.

### GOALS

#### Looking up unfamiliar words

Finding out what certain words mean



#### Improving vocabulary overall

Continuously exposing herself to and learning new words

### Doing

Google searching for unfamiliar words

- Try to keep a list of vocabulary in her notes app but usually does not refer to it
- Using another vocab app but already knows most of the words they suggest

### Thinking/ Saying

“It’s tedious to Google search every single unknown word”

“It’s boring to learn by myself”  
“I have a 153 day streak for Spanish in Duolingo but learning new English words is boring”  
“I like to study during idle or relaxed moments throughout the day”

### Feeling

**Lazy** - to Google search all unfamiliar words

**Embarrassed** - when my friends use words I don’t know the meaning of

**Frustrated** - when encountering words she doesn’t know

**Motivated** - To use more impressive words in everyday life

### Opportunities

- Inbuilt dictionary
- Word of the day
- Short tests and quizzes

- Streaks
- Inspiration from Duolingo - dynamic, lively, appealing characters
- Maybe a social aspect

# Summary of Learning Points from Articles

- **Varying conditions of learning rather than keeping conditions constant and predictable**
- **Repeated/frequent testing rather than repeated studying**
  - Spacing out study efforts
  - Knowledge assessments
  - Good for future retention
- **Creating difficulty in tests**
  - Increase conceptual understanding
  - Generating erroneous predictions leads to better later recall: the active process of generating a response more effective
- **Immediate testing immediately after studying**



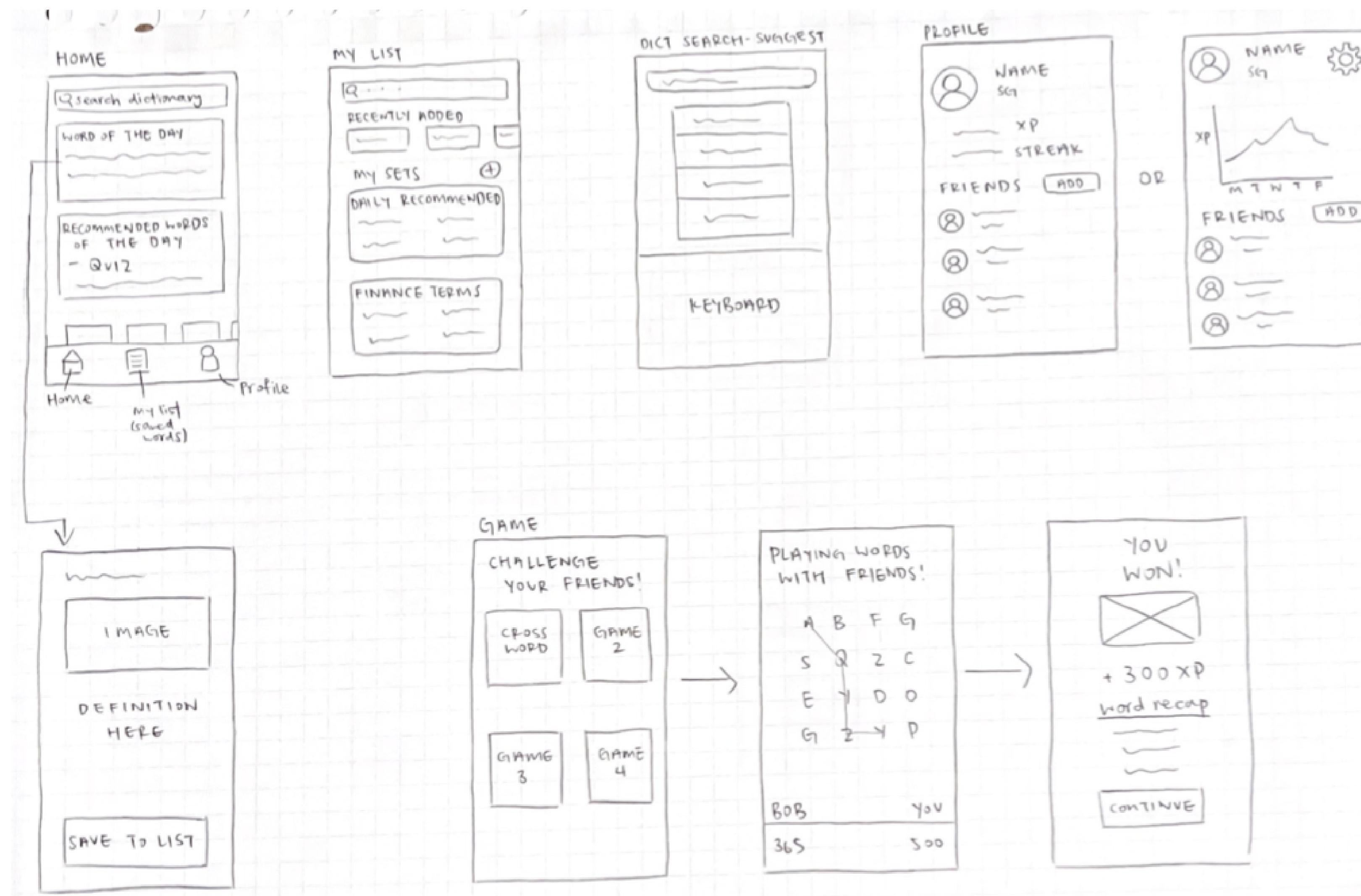
# Ideas

With the brainstorming from the user journey map compounded with the learnings from the articles, I proceeded to compile a list of ideas I could potentially integrate into the app.

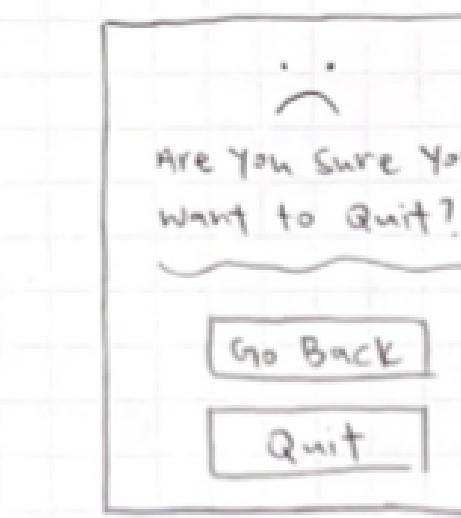
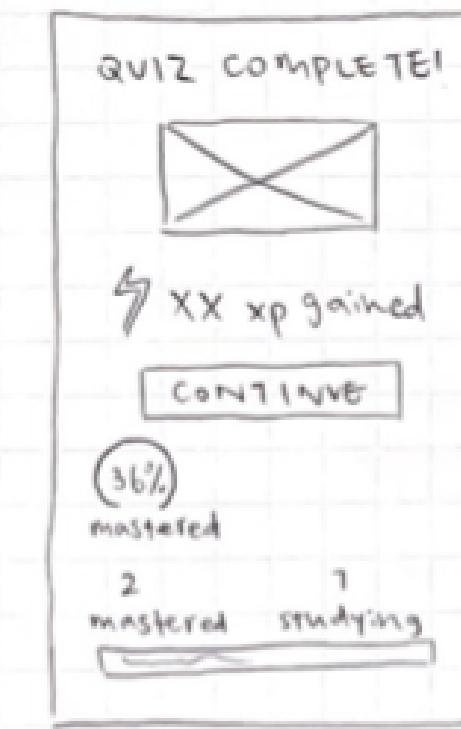
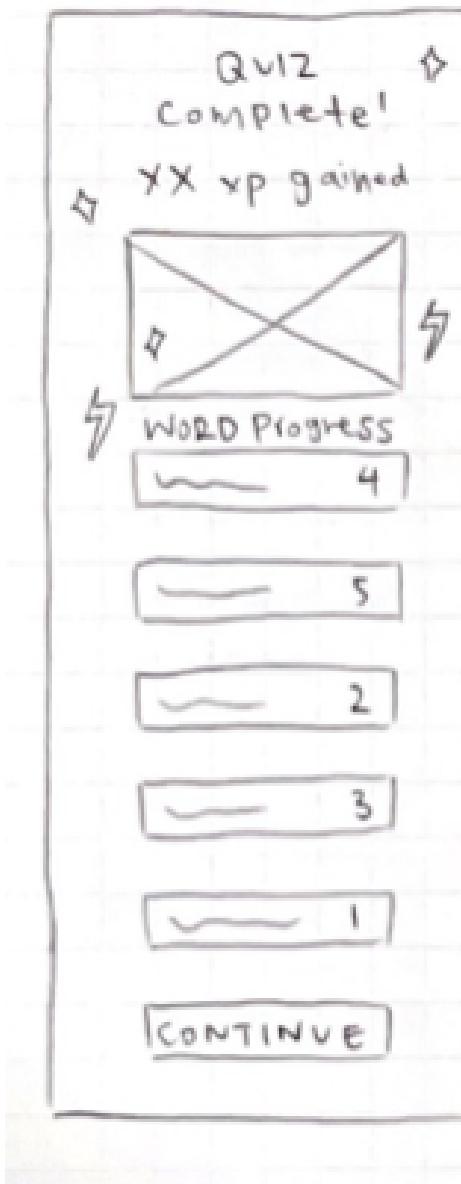
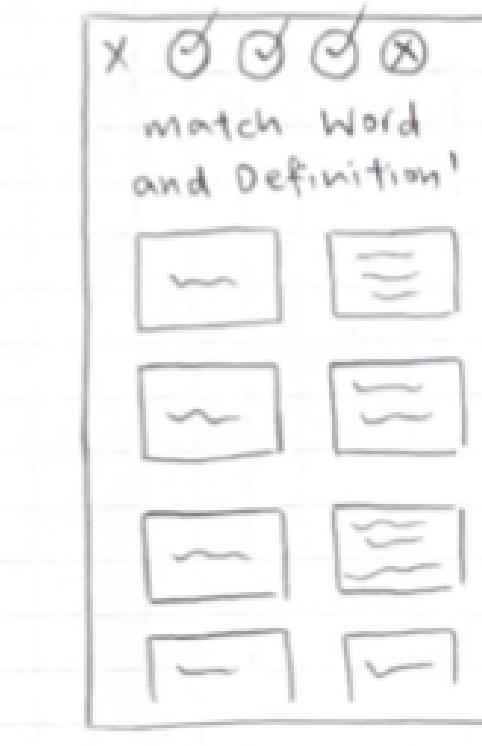
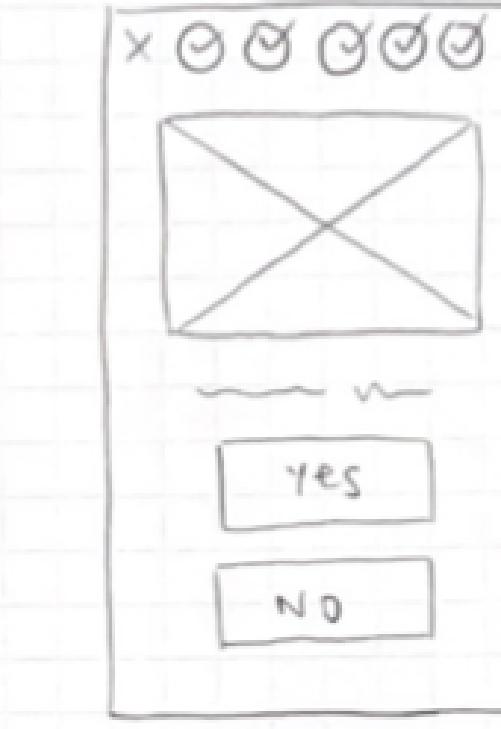
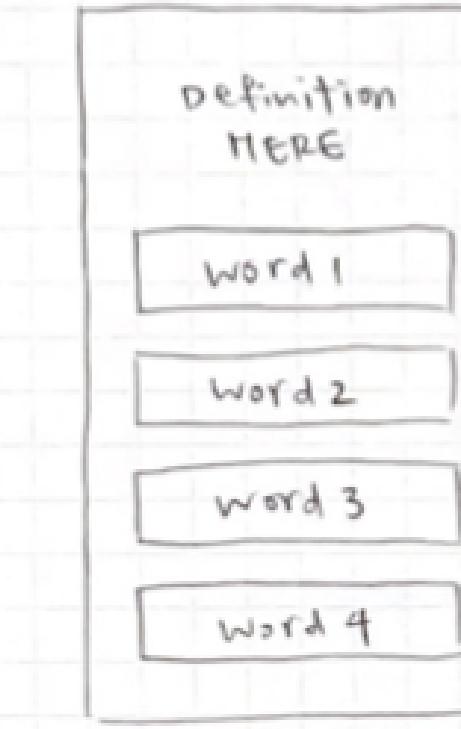
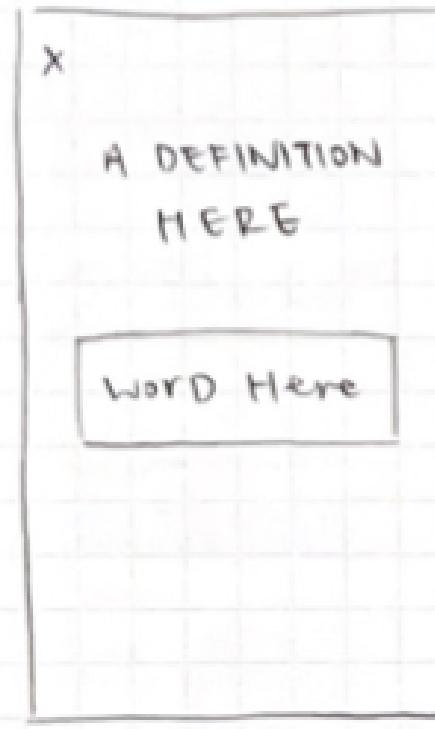
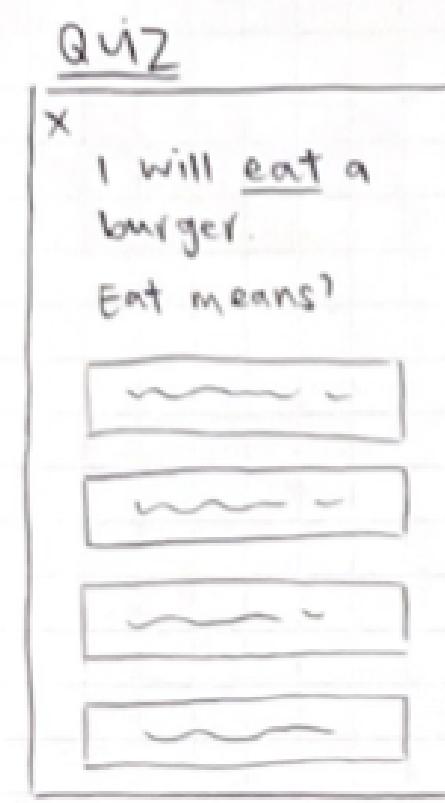
Condition/Problem	Idea
<b>Varying conditions of learning rather than keeping conditions constant and predictable</b>	<ul style="list-style-type: none"><li>• Gamification and appealing fun factors</li><li>• Using imagery and different modes of testing</li></ul>
<b>“It’s boring to learn by myself”</b>	<ul style="list-style-type: none"><li>• A progress metric: Streaks, leaderboards, XP system</li><li>• Minigames with friends<ul style="list-style-type: none"><li>• Speed testing?</li><li>• Words with friends, Crosswords</li></ul></li></ul>
<b>Frequent testing</b>	<ul style="list-style-type: none"><li>• Daily quiz to earn XP</li><li>• Varying difficulty, some easy some difficult for engagement</li></ul>
<b>Adjusting learning vocabulary with busy life schedule</b>	<ul style="list-style-type: none"><li>• Allow users to set reminders and goals</li><li>• Using streaks to motivate users to pop in once a day</li><li>• The ability to jump in and out easily, testing in short chunks</li></ul>
<b>Skill level of existing vocab apps are not suitable</b>	<ul style="list-style-type: none"><li>• Use machine learning to gauge user’s skill level</li></ul>

# Sketches

# Main Pages Ideas



# Quiz Format Ideas



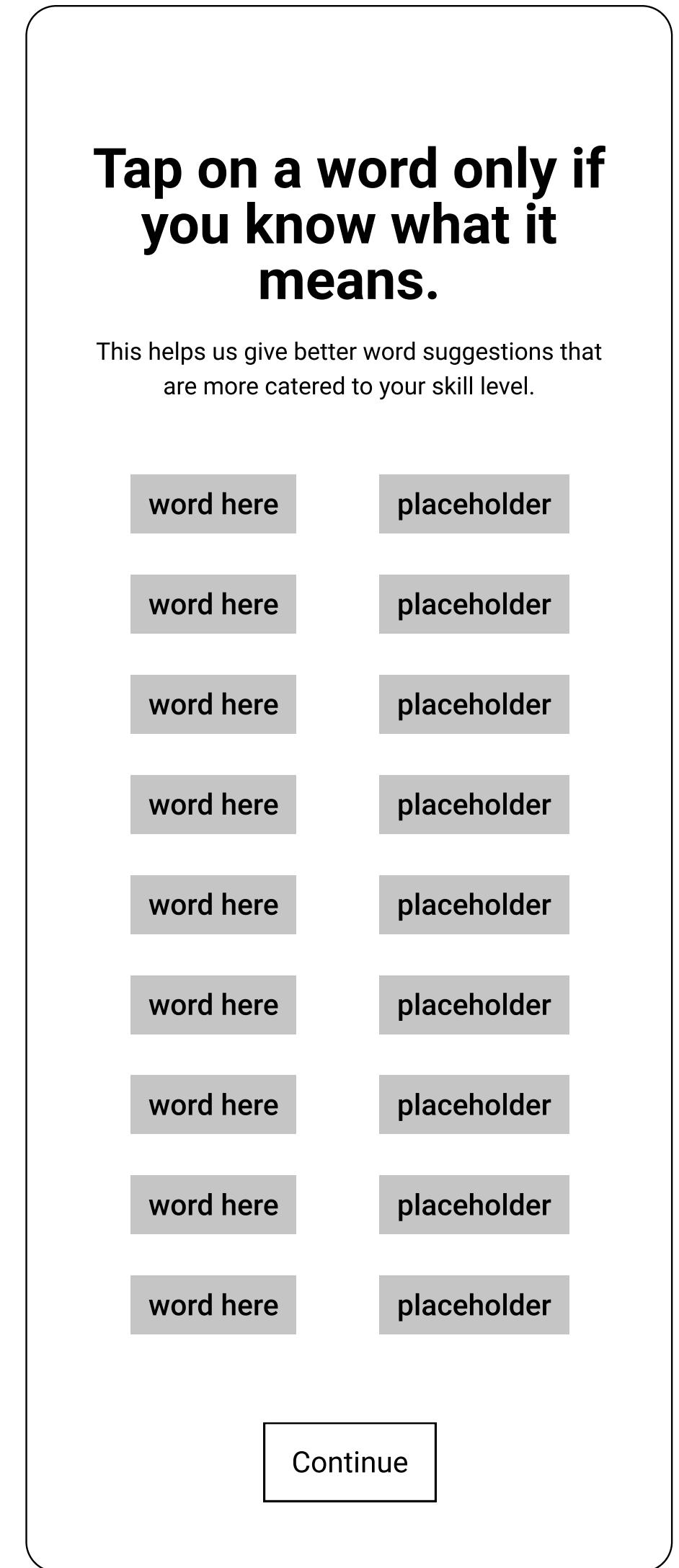
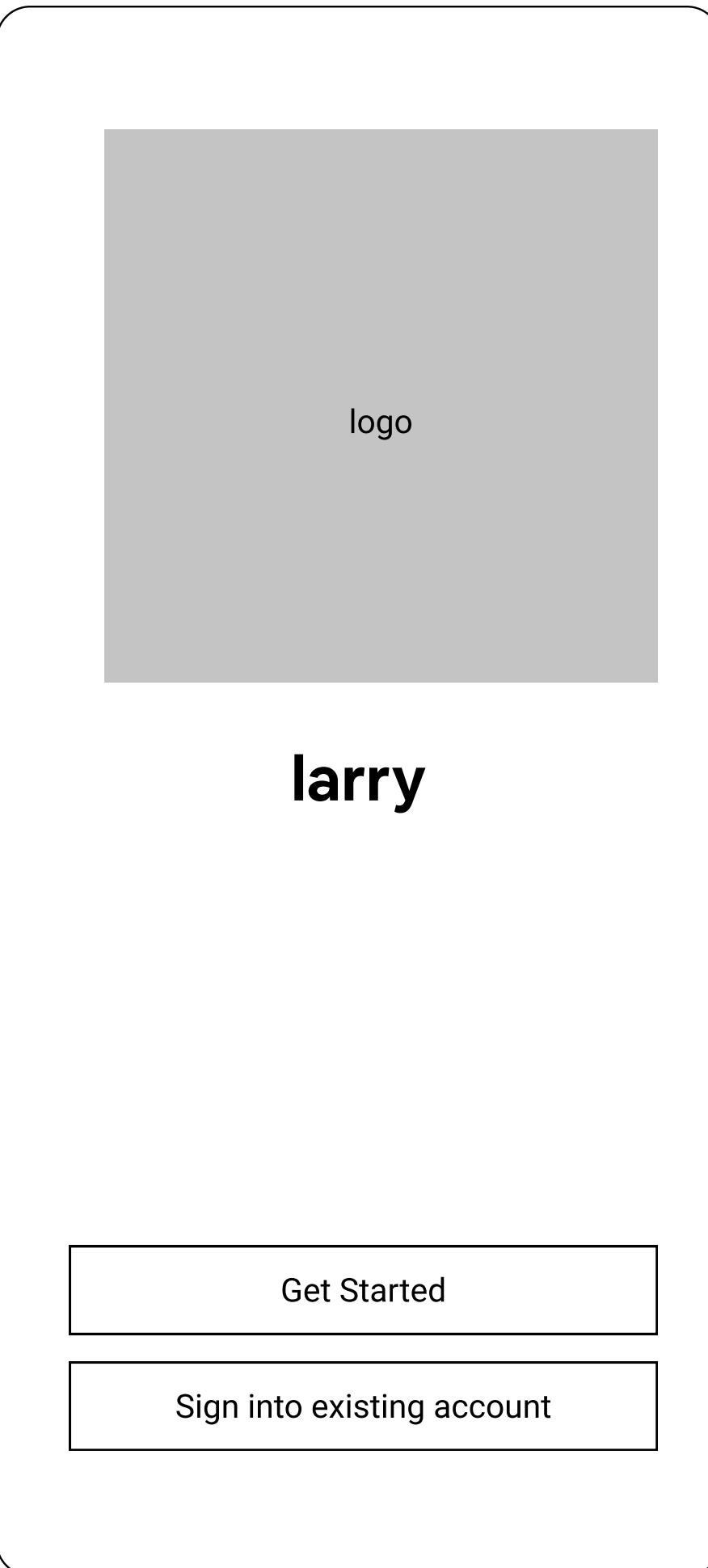
# Low Fidelity Prototypes

# Onboarding

What users will see upon entering the app.

## Key Features

1. To reduce friction of use, users will not have to create an account right away, being prompted to create an account further down the road when they are already hooked.
2. Part of the onboarding process would include having the user pick words they are already familiar with for machine learning algorithms to get a gauge of their vocab mastery and recommend appropriate words for them to learn.



# Home Page

What users will see upon entering the app.

## Key Features

- 1. Word of the day** - machine learning algorithms will suggest an appropriate word everyday for users
- 2. Daily Quizzes:**
  - A pick of suggested words for users to learn
  - Revising words that are already in the user's saved words
- 3. Community-contributed study sets** - Users brought up that often they would learn words within a particular context, e.g. for a report or an interview.

The mockup shows a rounded rectangular screen with three main sections. Section 1 (top left) displays a 'Word of the day' card with the word 'Sceptical'. Section 2 (middle left) displays a 'Daily Quiz' card with the text 'larry is hungry... feed him by doing your daily quizzes!' and lists words like Gormandize, Flexuous, Mandate, Scion, Gasconade, and '+4 more...'. Section 3 (bottom right) displays a 'Learn new words' section with four cards: 'Finance' (Expert level), 'Idioms' (Advanced level), 'Medicine' (Expert level), and 'Wine' (Beginner level). A navigation bar at the bottom includes icons for home, library, search, and profile.

**2 day streak! 100XP**

**1**

**Word of the day**

Sceptical

**Daily Quiz**

larry is hungry... feed him by doing your daily quizzes!

**2**

**Learn new words**

Gormandize  
Flexuous  
Mandate  
Scion  
Gasconade  
+4 more...

**Revise current words**

Gormandize  
Flexuous  
Mandate  
Scion  
Gasconade  
+4 more...

**3**

**Learn new words**

Pick from an existing pack!

<b>Finance</b> Expert level	<b>Idioms</b> Advanced level
<b>Medicine</b> Expert level	<b>Wine</b> Beginner level

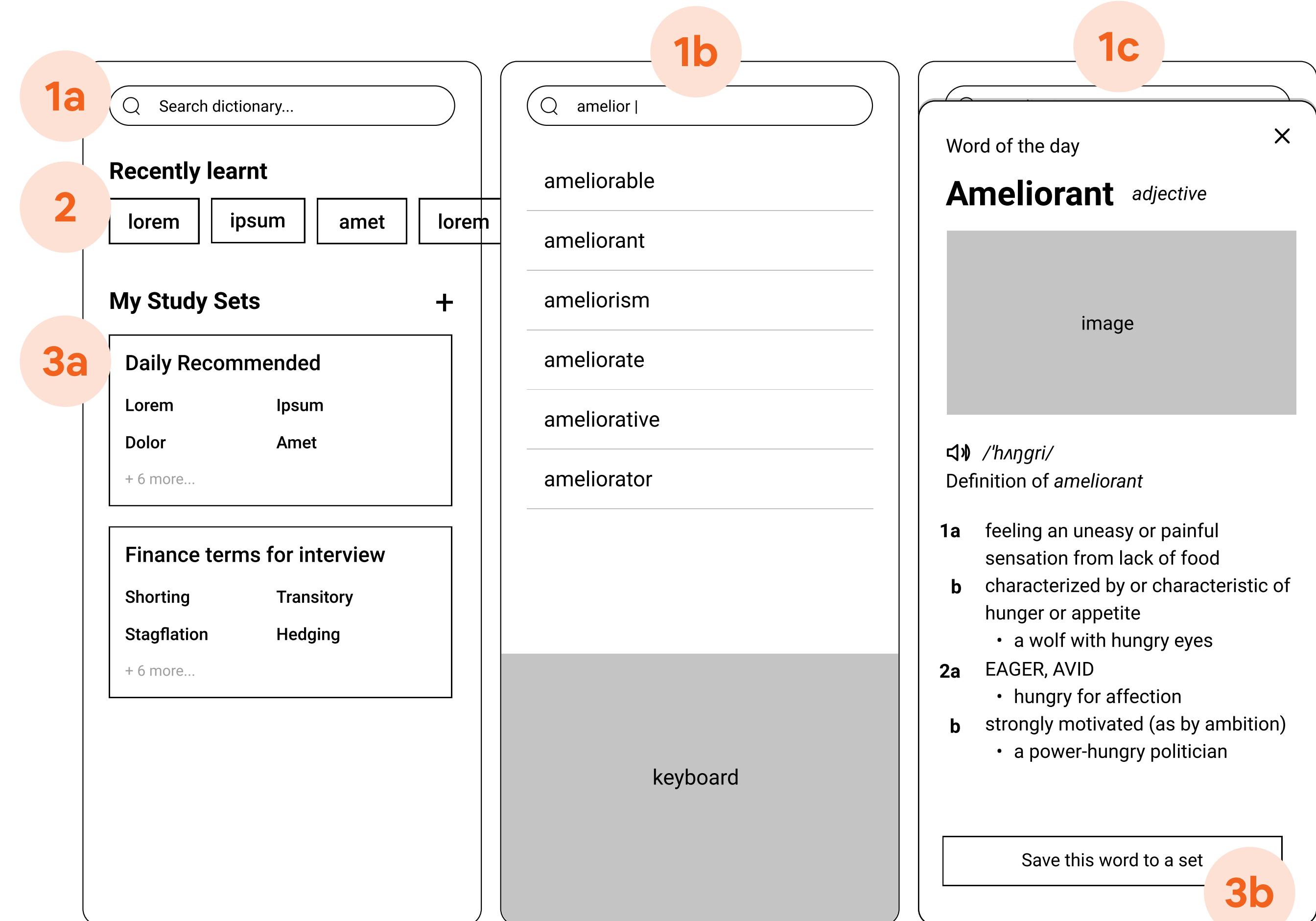
Home Library Search Profile

# My Sets

Recently learnt words, and study sets

## Key Features

- 1. Dictionary** - Users are able to look up words and add them to their own sets for revision later
- 2. Recently learnt** - Scrolling snapshot of recently learnt words
- 3. My Study Sets** - Users are able to compile different sets of words within particular contexts for their revision later. Clicking on a set would open up a quiz of the words within the set

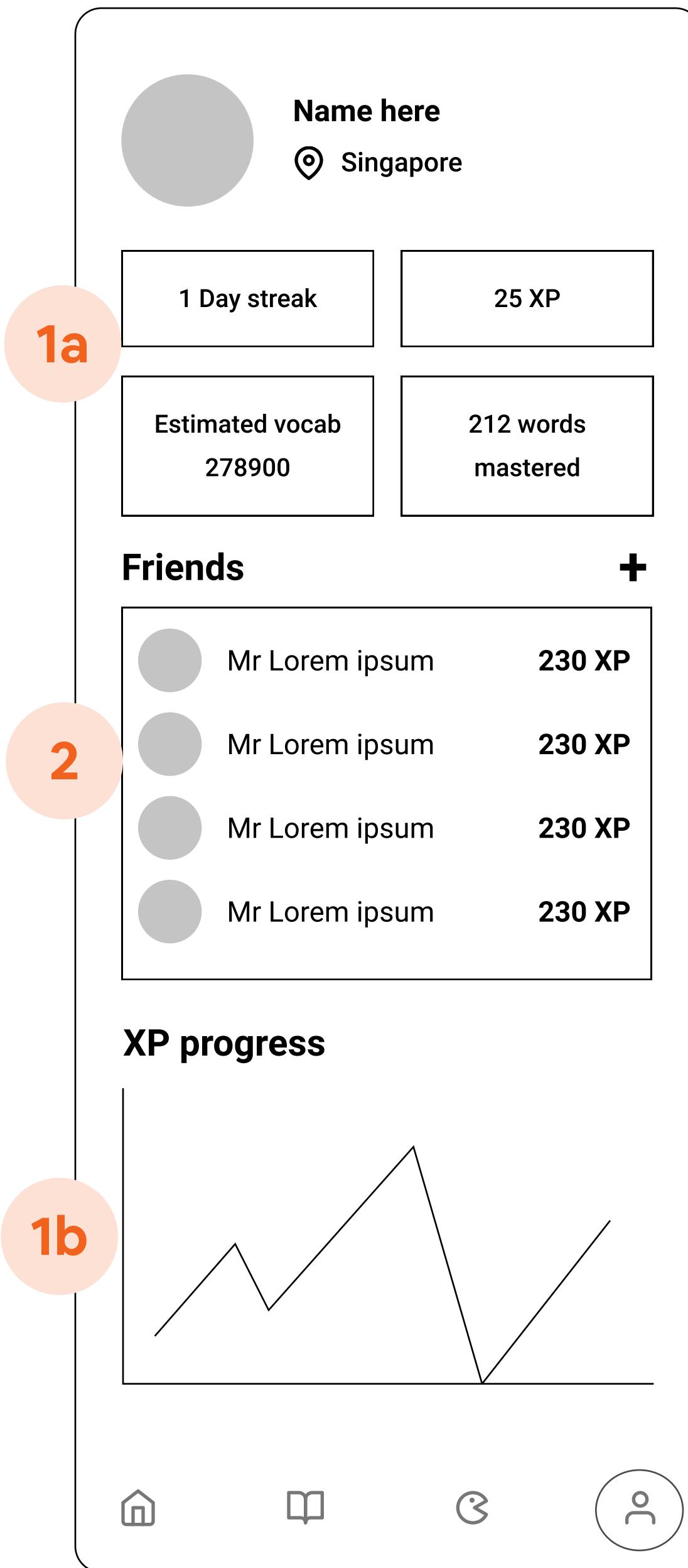


# Profile

Recently learnt words, and study sets

## Key Features

- 1. Statistics** - Users brought up that having progress metrics was a useful motivator. They get XP from completing quizzes and they can track their XP progress.
- 2. Friend Lists** - Users are able to add friends which they can compare XP with and play games with. This facilitates friendly competitiveness and accountability.

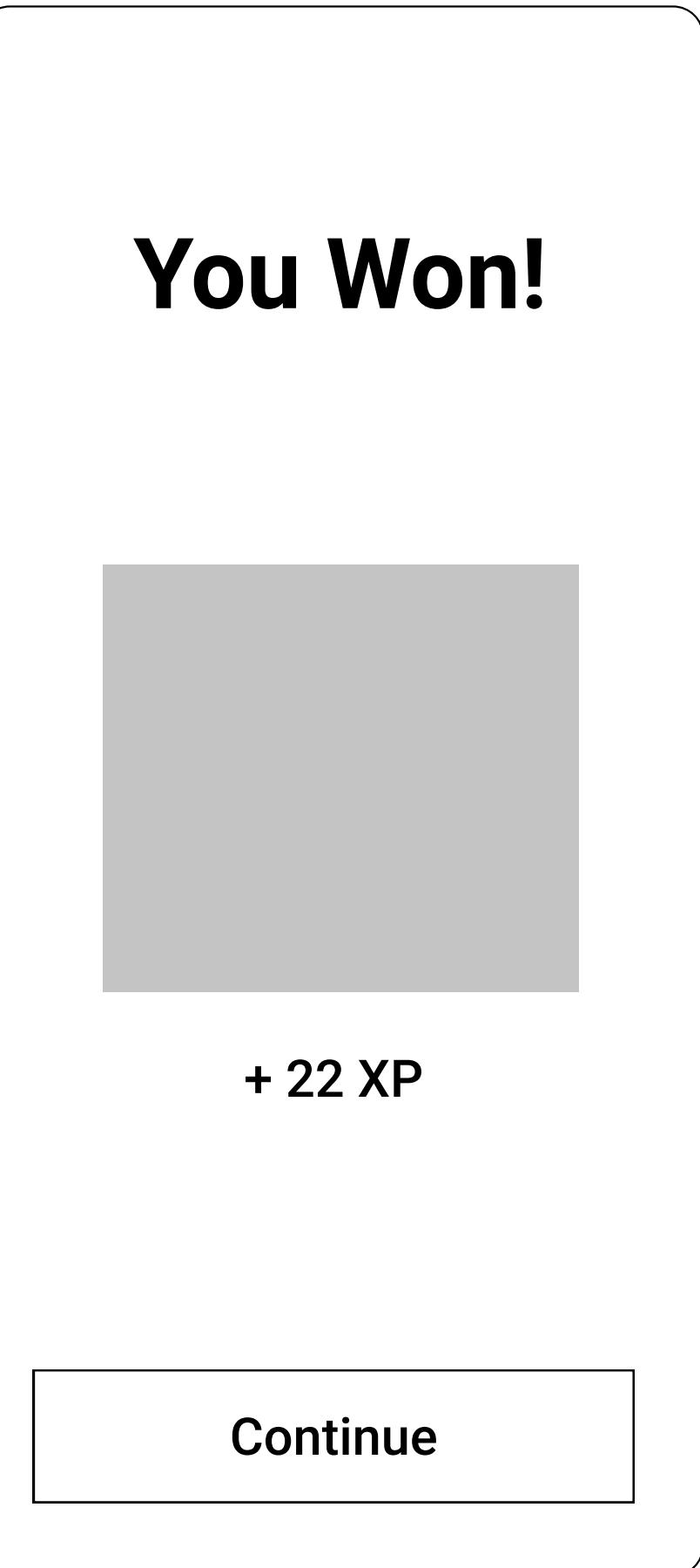
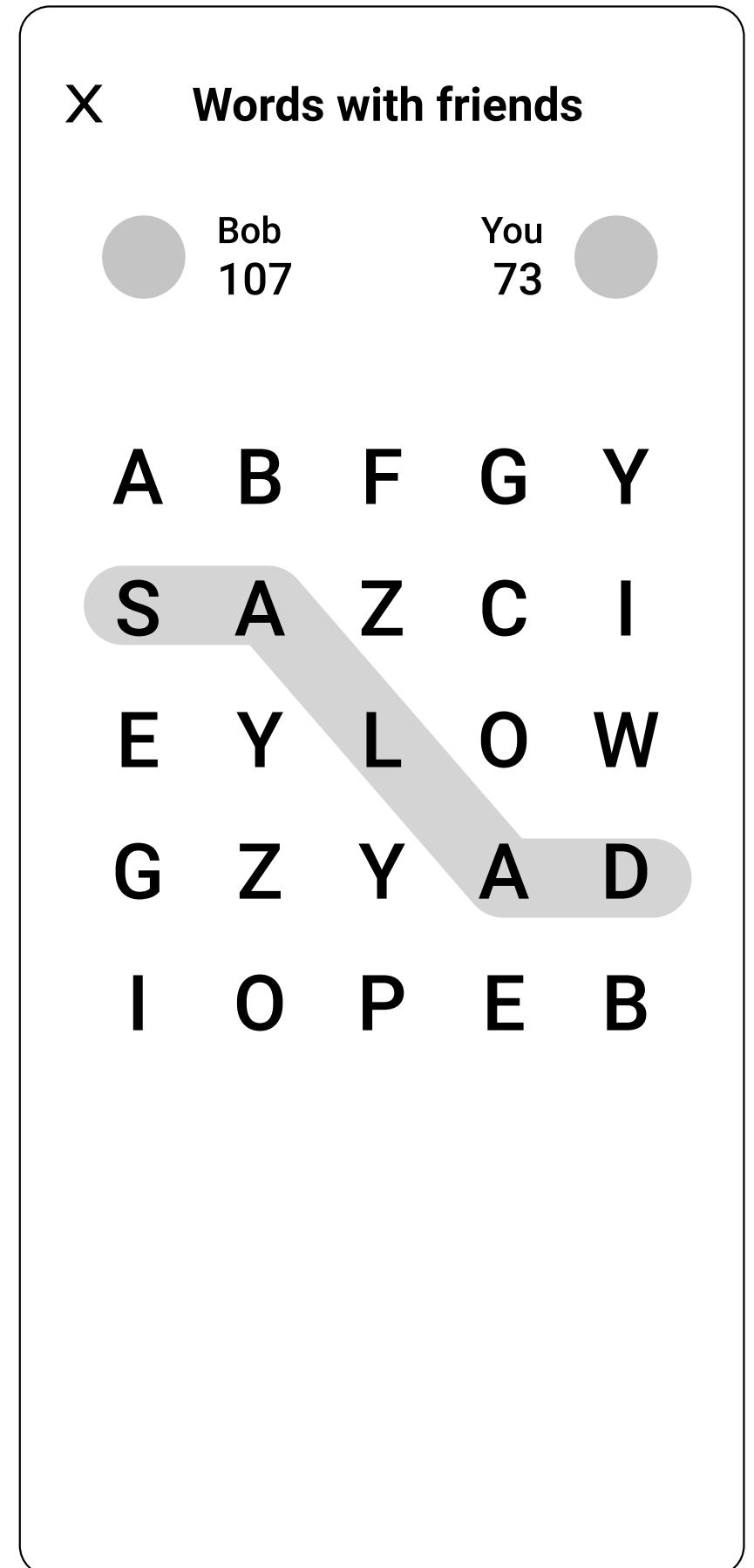
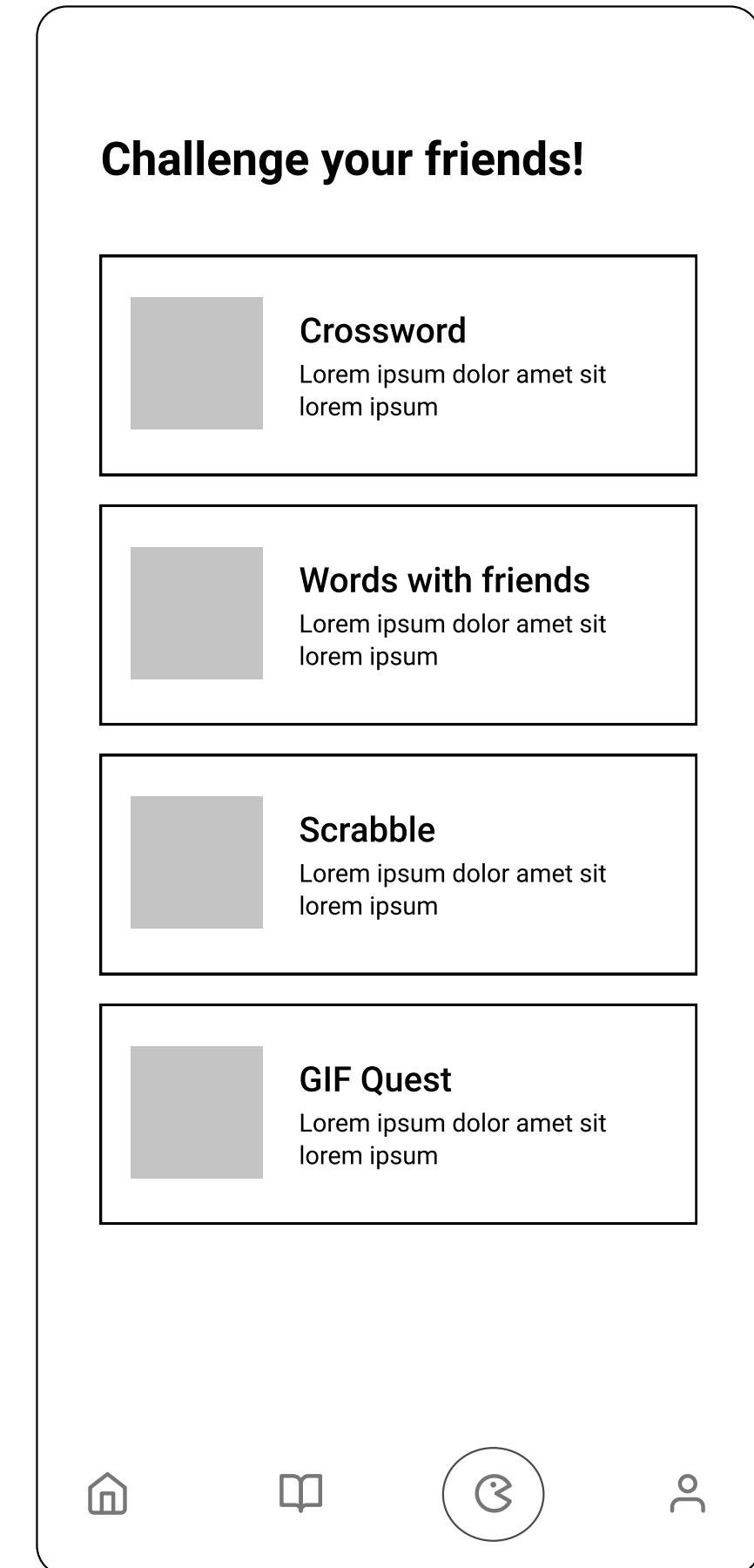


# Games

## Play word games with friends

Users interviewed expressed the desire to learn and utilise vocabulary in a fun, gamified format, and that the process of learning vocab is usually an isolated and linear one.

I thus felt that word games with friends would be an interesting feature to challenge user's vocab in a gamified and enjoyable context. Users would also be able to gain XP from the games, which provides an additional incentive.



# Quizzes

Informed by the learnings from the articles and the user findings, I decided that quizzes in the app would serve the main functions of using testing **both as learning events and knowledge assessment** (Roediger et. al, 2006). I thus sought to come up with a variety of different testing methods to “vary the learning conditions” (Bjork, 2015) and introduce “desirable difficulties” (Roediger et. al, 2006).

Quiz questions are split into two main groups: **learning** and **testing**. Notably, it would be optimal for some of the testing screens to allow users to “generate erroneous predictions” (Bjork, 2015). The next page includes some choice wireframes of both types of questions.

# Quizzes

The image shows a sequence of seven mobile phone screens illustrating a quiz interface for the word "hungry". Each screen has a top navigation bar with an "X" icon and seven circular status indicators.

- Screen 1:** Shows a large gray square with a black X drawn through it, labeled "image". Below it, the question "What does hungry mean?" is displayed. Four options are shown in a grid:
  - feeling or showing the need for food.
  - Definition 2
  - Definition 3
  - Definition 4

Buttons at the bottom: "Continue".
- Screen 2:** Shows the question "Feeling or showing the need for food.". Below it, four options are shown in a grid:
  - feeling or showing the need for food.
  - Definition 2
  - Definition 3
  - Definition 4

Buttons at the bottom: "Continue".
- Screen 3:** Shows the question "I was feeling ravenously hungry". Below it, four options are shown in a grid:
  - feeling or showing the need for food.
  - Definition 2
  - Definition 3
  - Definition 4

Buttons at the bottom: "Continue".
- Screen 4:** Shows the question "I was feeling ravenously hungry". Below it, four options are shown in a grid:
  - feeling or showing the need for food.
  - Definition 2
  - Definition 3
  - Definition 4

A large gray oval at the bottom right contains the text "Great!" with a checkmark and "Keep up the good work!". Buttons at the bottom: "Continue".
- Screen 5:** Shows the question "Feeling or showing the need for food.". Below it, the instruction "Select the right letters" is displayed. A text input field contains "H U \_\_\_\_". Below it, a grid of letters is shown:

G	Y	W	H	R	K	I
F	M	N	U			

Buttons at the bottom: "Continue".
- Screen 6:** Shows the question "Feeling or showing the need for food.". Below it, the instruction "Type in the word" is displayed. A text input field contains "Enter word...". Buttons at the bottom: "Continue".
- Screen 7:** Shows a large gray box containing a sad face emoji. Below it, the text "Are you sure you want to quit? Your progress won't be saved." is displayed. Buttons at the bottom: "Go back" and "Quit".

Using illustrations/gifs to encourage users to 'guess' meanings of new words

Definition -> word recall

Word -> definition recall

Success state to motivate users

Challenge user to recall spelling and generate a response

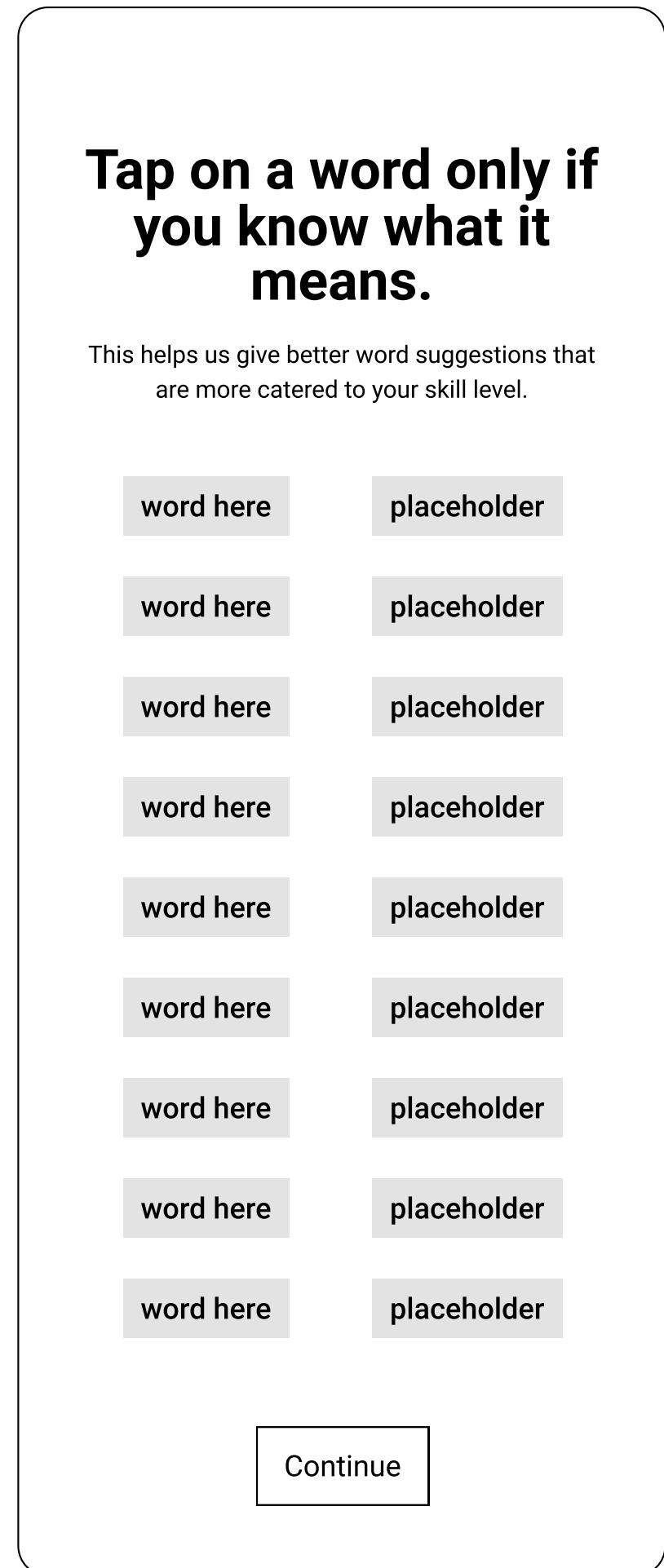
Difficult testing: challenge user to recall spelling and generate a response

Express sadness and/or disappointment to guilt trip user when they try to quit

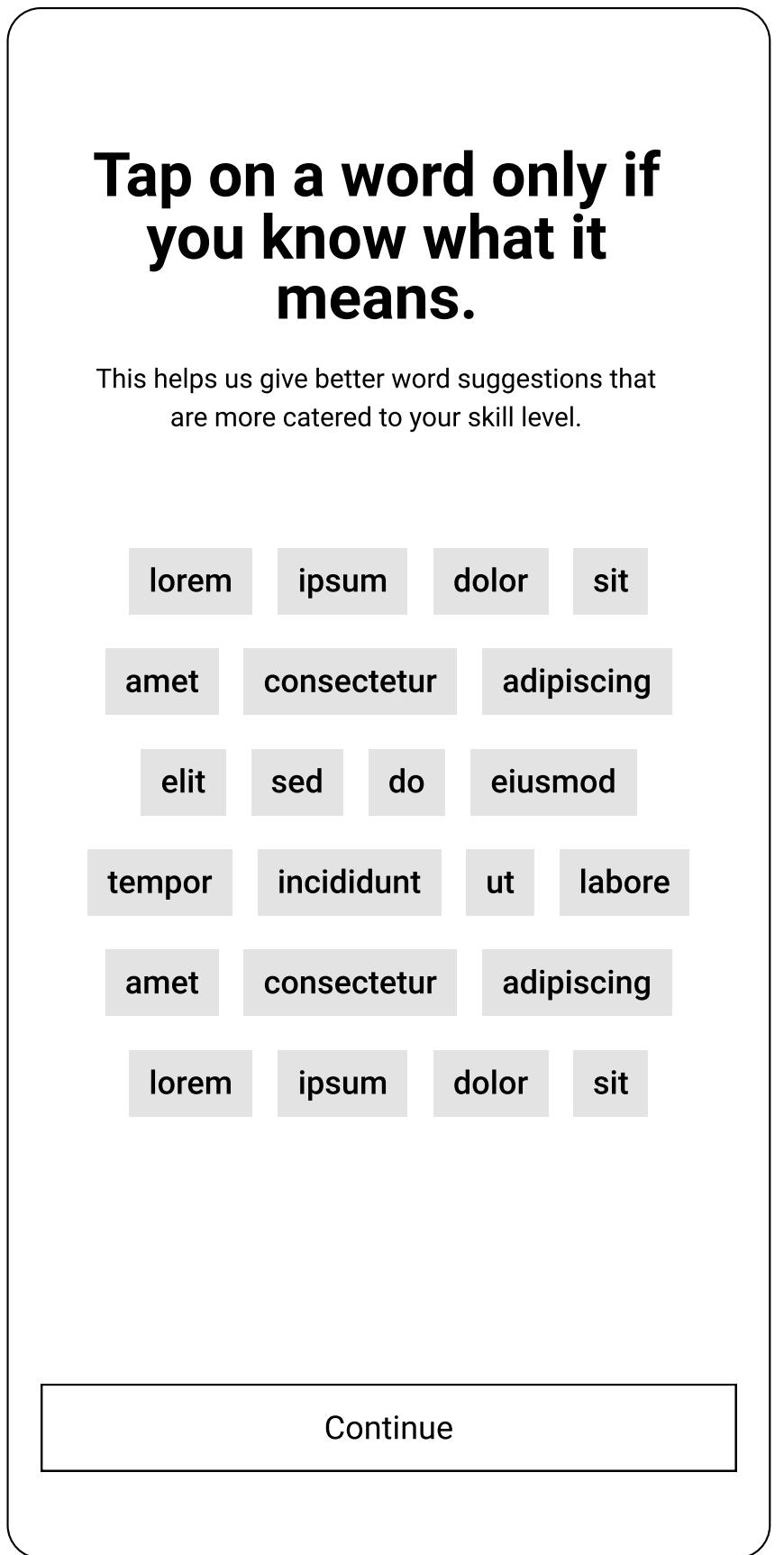
# Low Fidelity Prototype Revised

In order to test the main features of my prototype, I carried out some basic usability testings with 2 participants. Results were analysed with Jakob Nielsen's error severity rating scale.

# Issue 1



Before Testing



After Testing

## Feedback

- Users felt the list of words was too long and tedious
- Having to scroll down to find the continue button is initially confusing

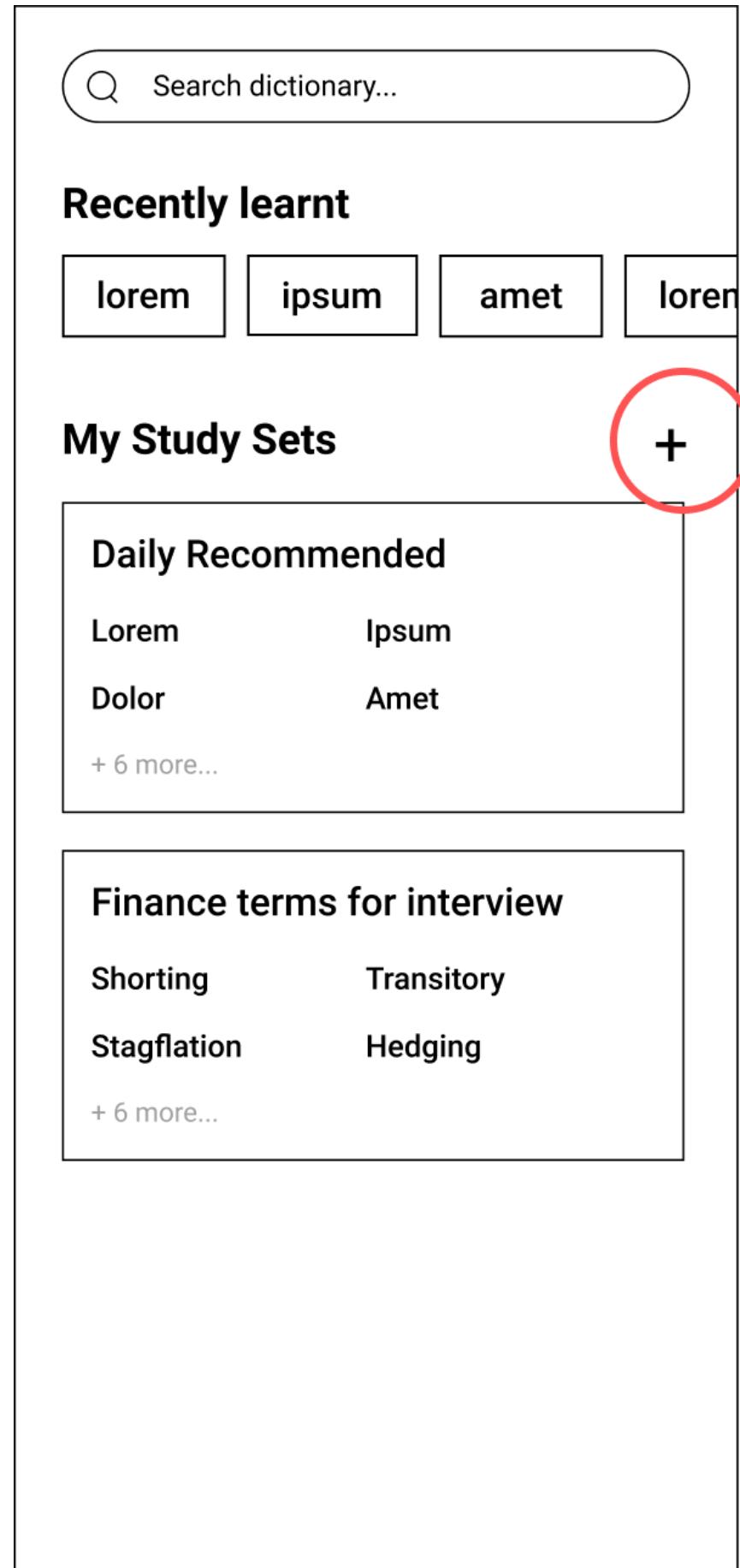
## Modification

- Collapse and condense the words together so users will have to scroll and move their gaze less.
- Expand size of button to full screen and not under the fold as it was so improve user knowledge of what's next.

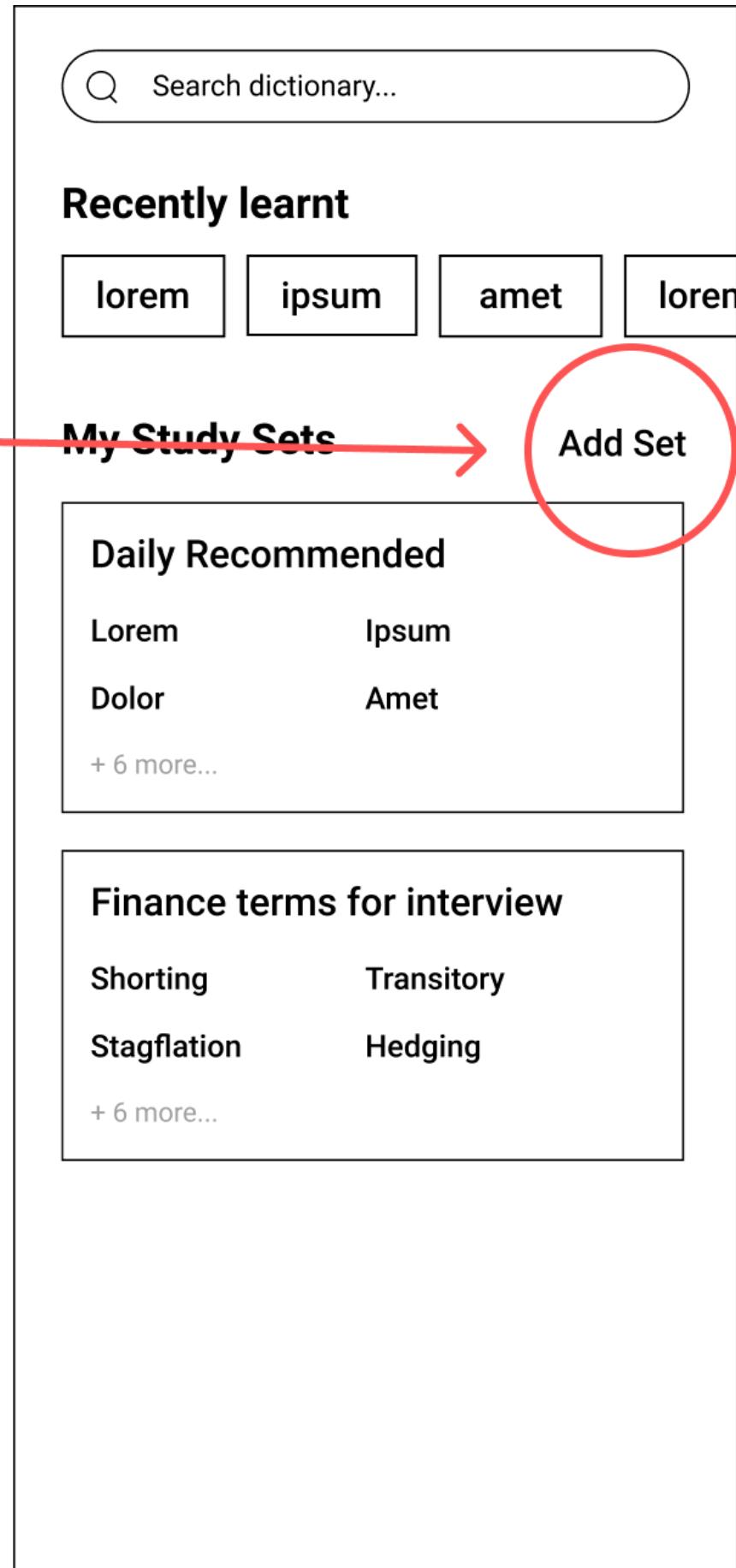
## Severity

3 (Major issue)

# Issue 2



Before Testing



After Testing

## Feedback

- Plus icon button to add a new set is too small: easily missable and ambiguous in meaning (add what?)
- Button too small might not be so suitable for mobile as user says he has fat thumbs

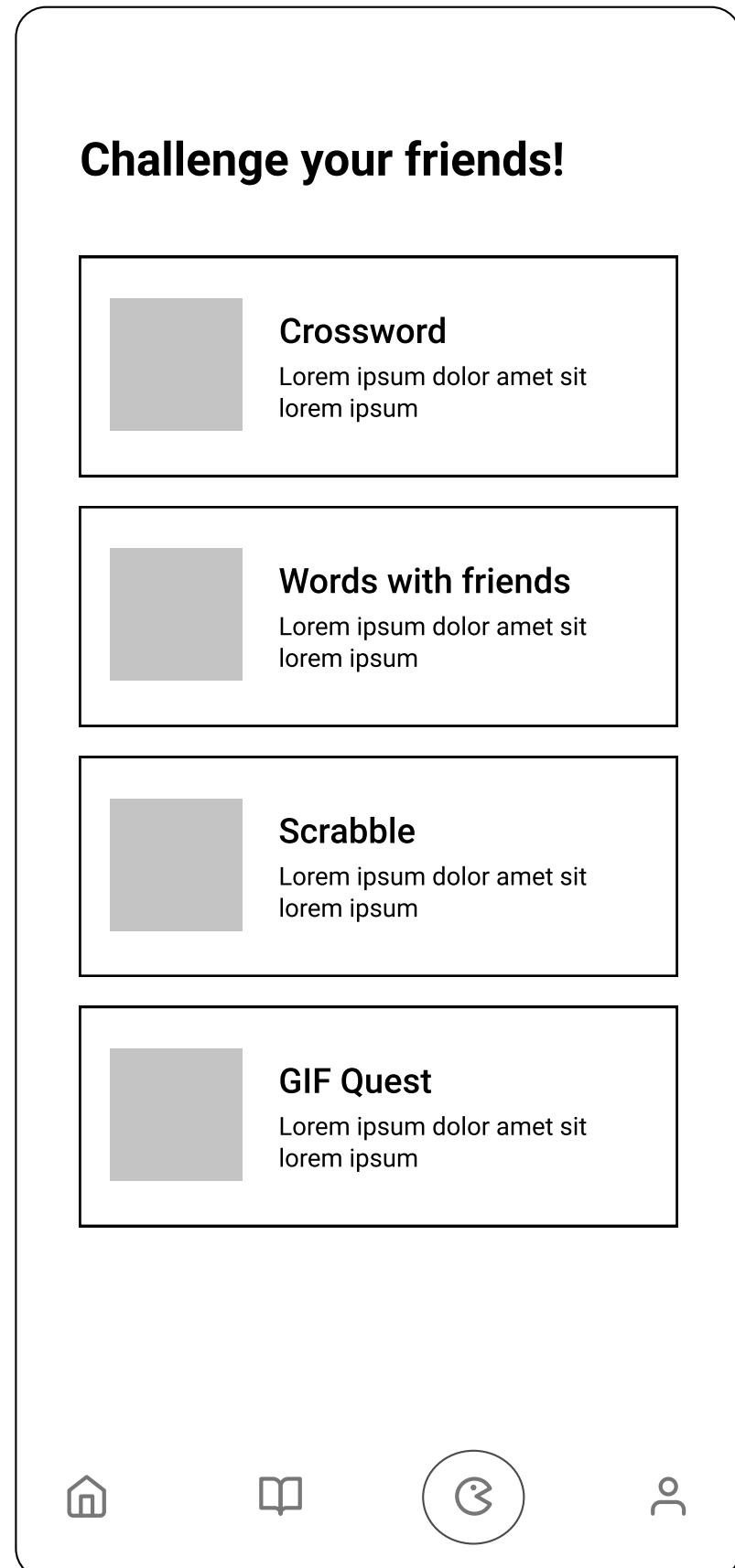
## Modification

- Replace it with a text button to make it clearer the function of the button

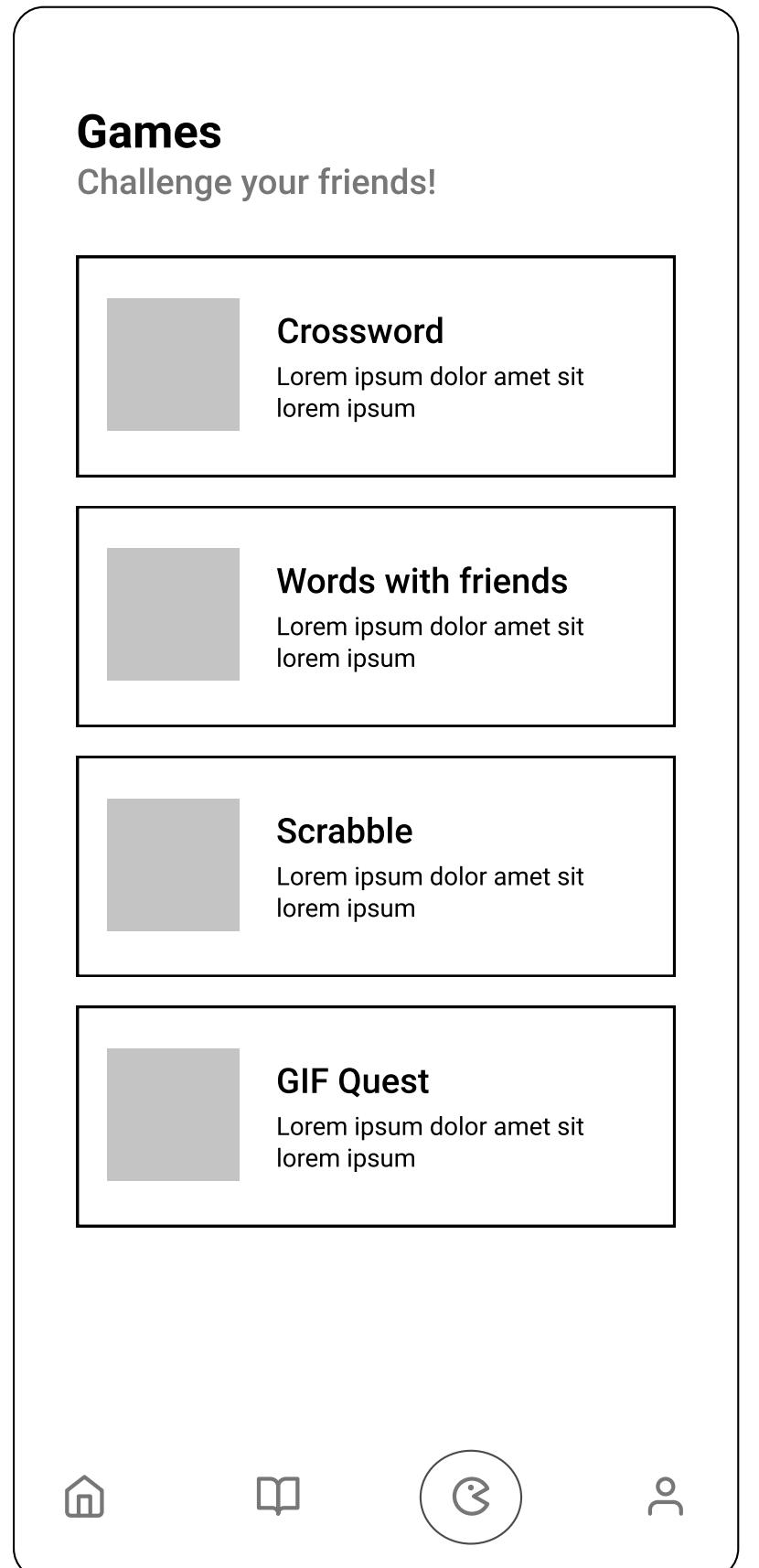
## Severity

2 (Minor issue)

# Issue 3



Before Testing



After Testing

## Feedback

“Challenge your friends” title is ambiguous, users did not immediately realise what the tab was for

## Modification

- Prioritise the UX and make the title clearer, changing it to “Games” instead.

## Severity

2 (Minor issue)

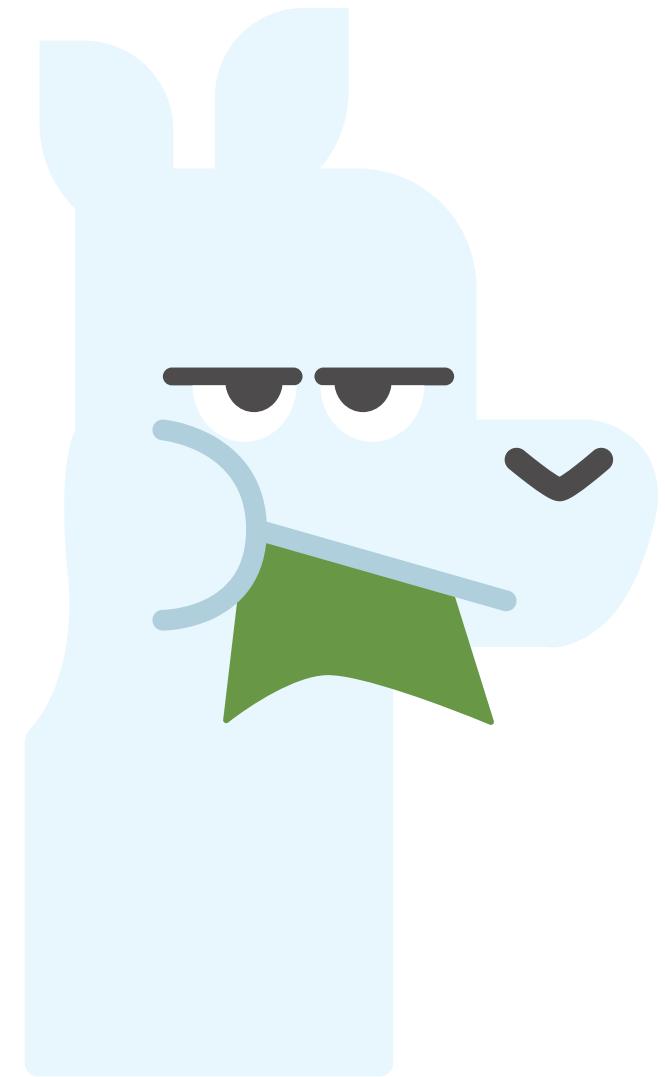
# Visual Design, Style guide

Based on my findings from user interviews where users stated they enjoy a fun, gamified and visually appealing interface to learn vocabulary, I built a simple styleguide building on this ideology.

# Branding and name

I christened the application “**larry**”, as a spin-off/pun of the last 2 syllables of ‘vocabulary’. Since users had earlier mentioned they enjoyed the role of Duo the owl in Duolingo as a character to motivate them, I thought it would be fun to introduce a character **Larry the Llama**, named after the app.

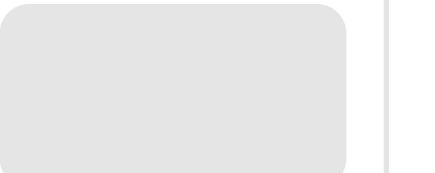
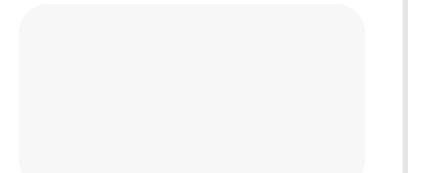
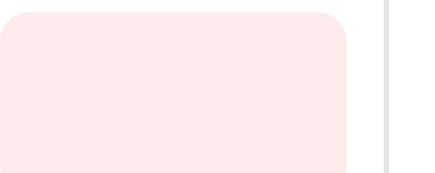
Based on some research, I learnt that **blue** is best used for **learning situations**, and has been shown to improve reading comprehension. As such, I felt it would be appropriate to adopt an **energetic and inspiring bright blue** as the primary color.



**larry**

Expand your vocabulary

## Colors

			
<b>Blue</b> #1CB0F6	<b>Blue-Darker</b> #066998	<b>Blue-Lighter</b> #89D6FA	<b>Blue-a10</b> #1CB0F61A
			
<b>Neutral-1</b> #4b4b4b	<b>Neutral-2</b> #777777	<b>Neutral-3</b> #afafaf	<b>Neutral-4</b> #e5e5e5
			
			<b>Neutral-5</b> #f7f7f7
			
<b>Success</b> #8AC251	<b>Succ-Darker</b> #5C9226	<b>Succ-Lighter</b> #C2E69E	<b>Succ-a10</b> #8FD14D1A
			
<b>Error</b> #E63B2A	<b>Error-Darker</b> #C42617	<b>Error-Lighter</b> #F18D84	<b>Error-a10</b> #E63B2A1A

## Typography

### Airbnb Cereal App

ABCDEFGHIJKLMNOPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz

**Header - 28 pt**

**Subheader - 20 pt**

Base size - 17 pt

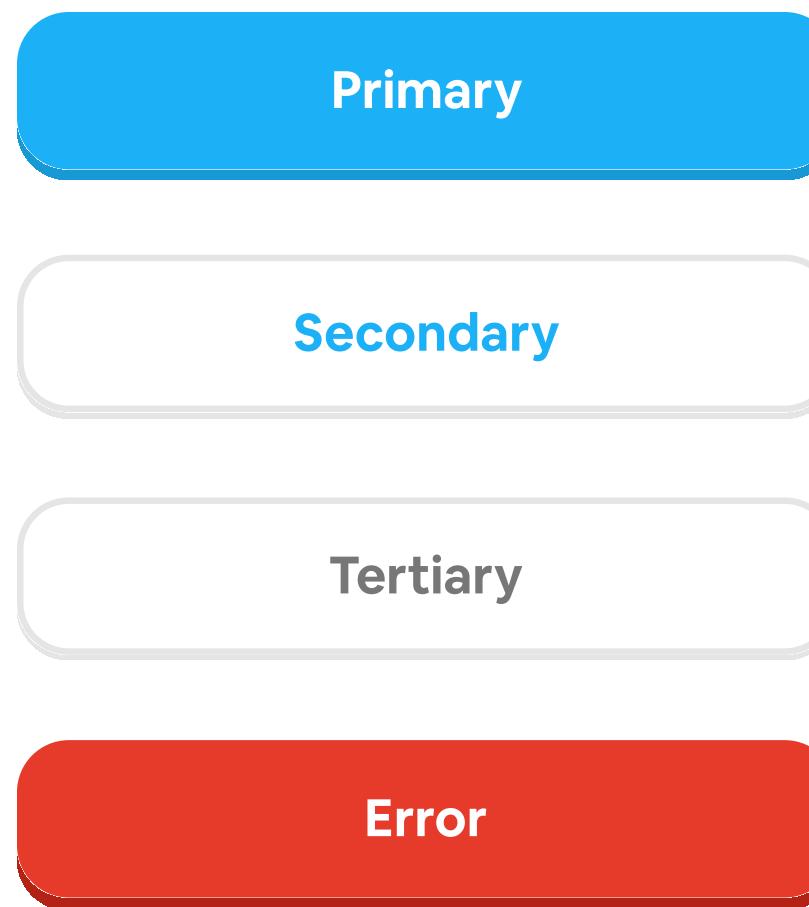
Secondary text - 15 pt

Tertiary text - 13 pt

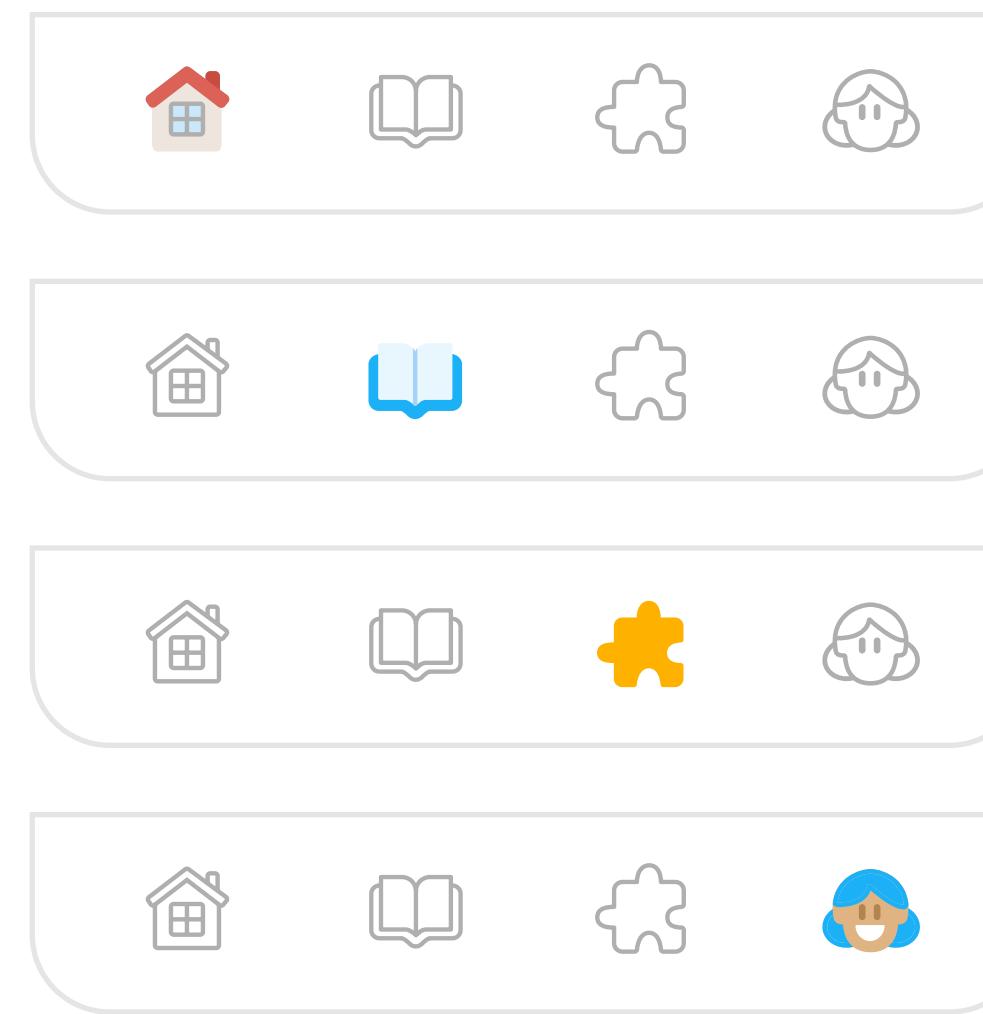
Small text - 11 pt

# UI Elements

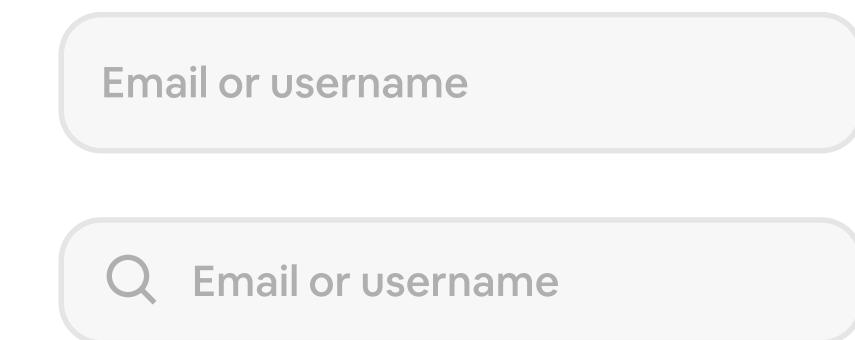
## Buttons



## Navbar

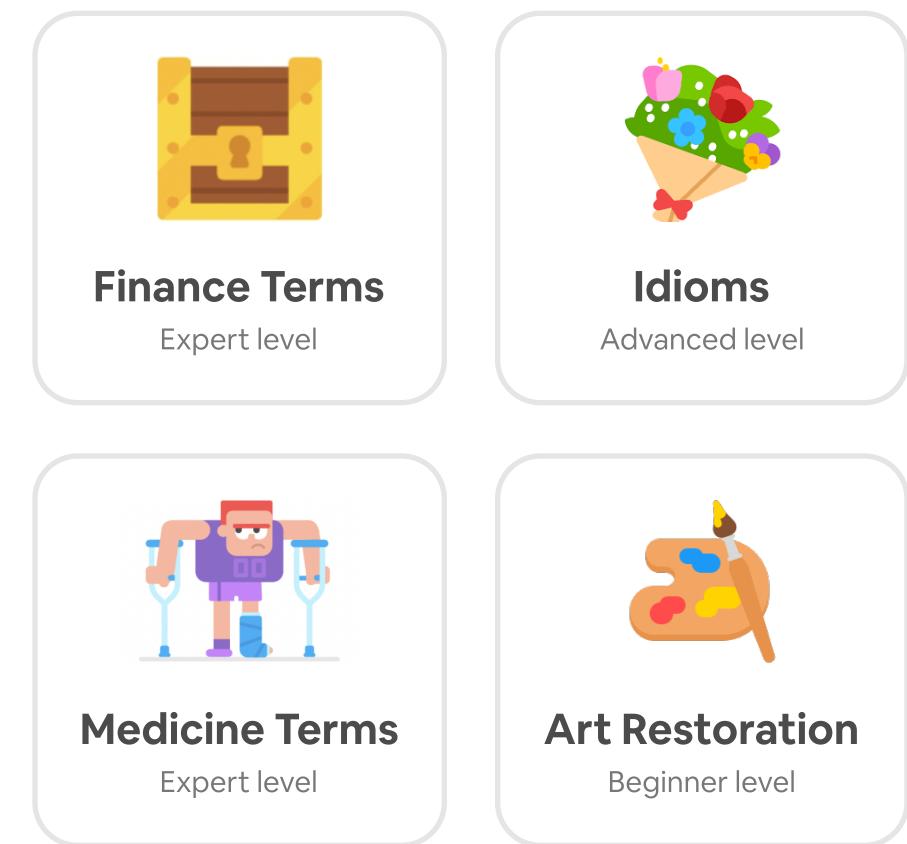
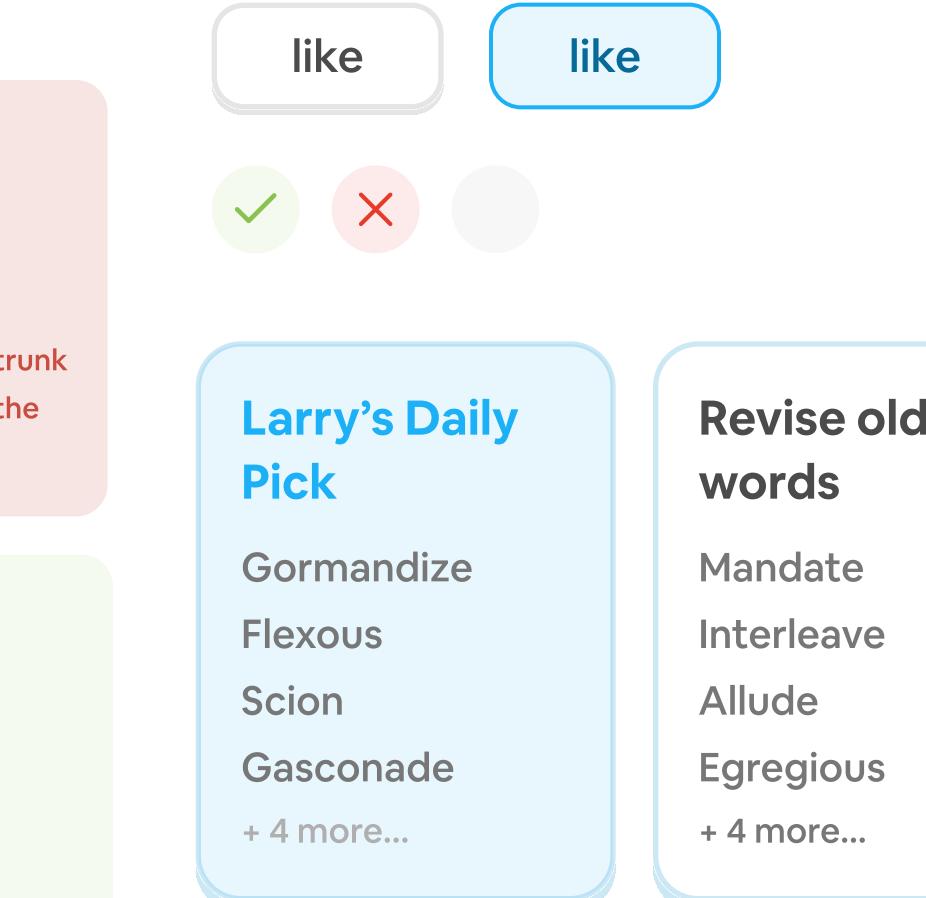
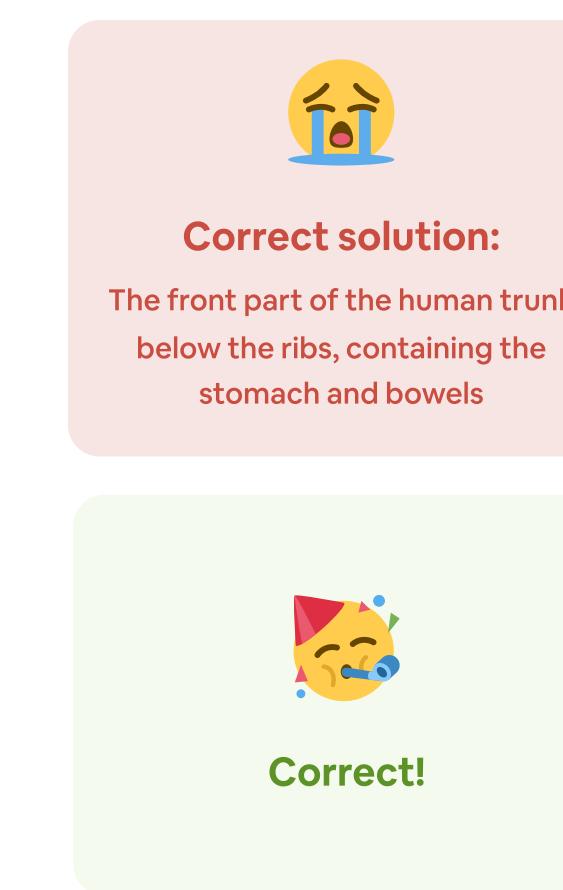


## Inputs



## Quiz Options

- The front part of the human trunk below the ribs, containing the stomach and bowels.
- The front part of the human trunk below the ribs, containing the stomach and bowels.

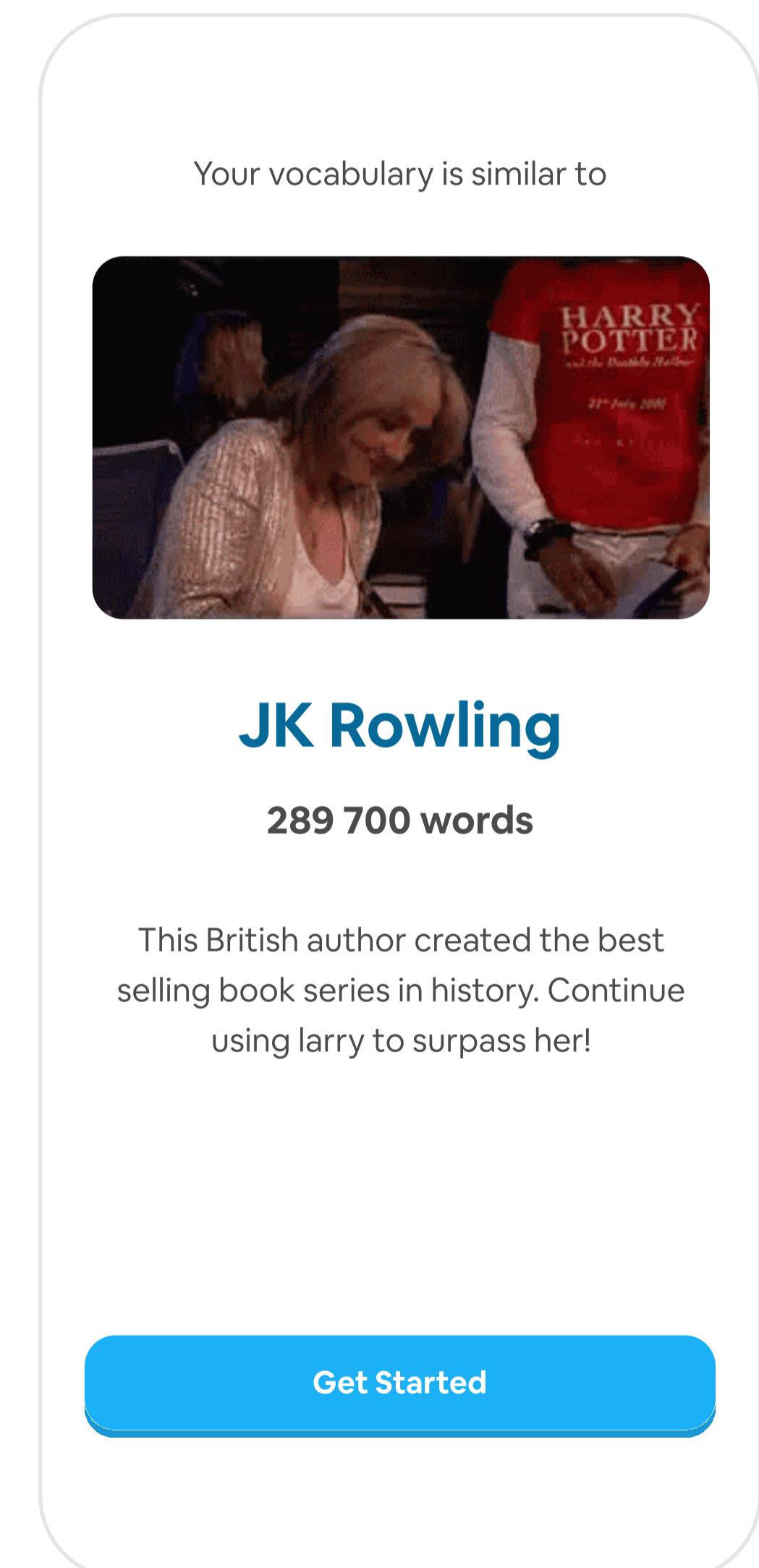
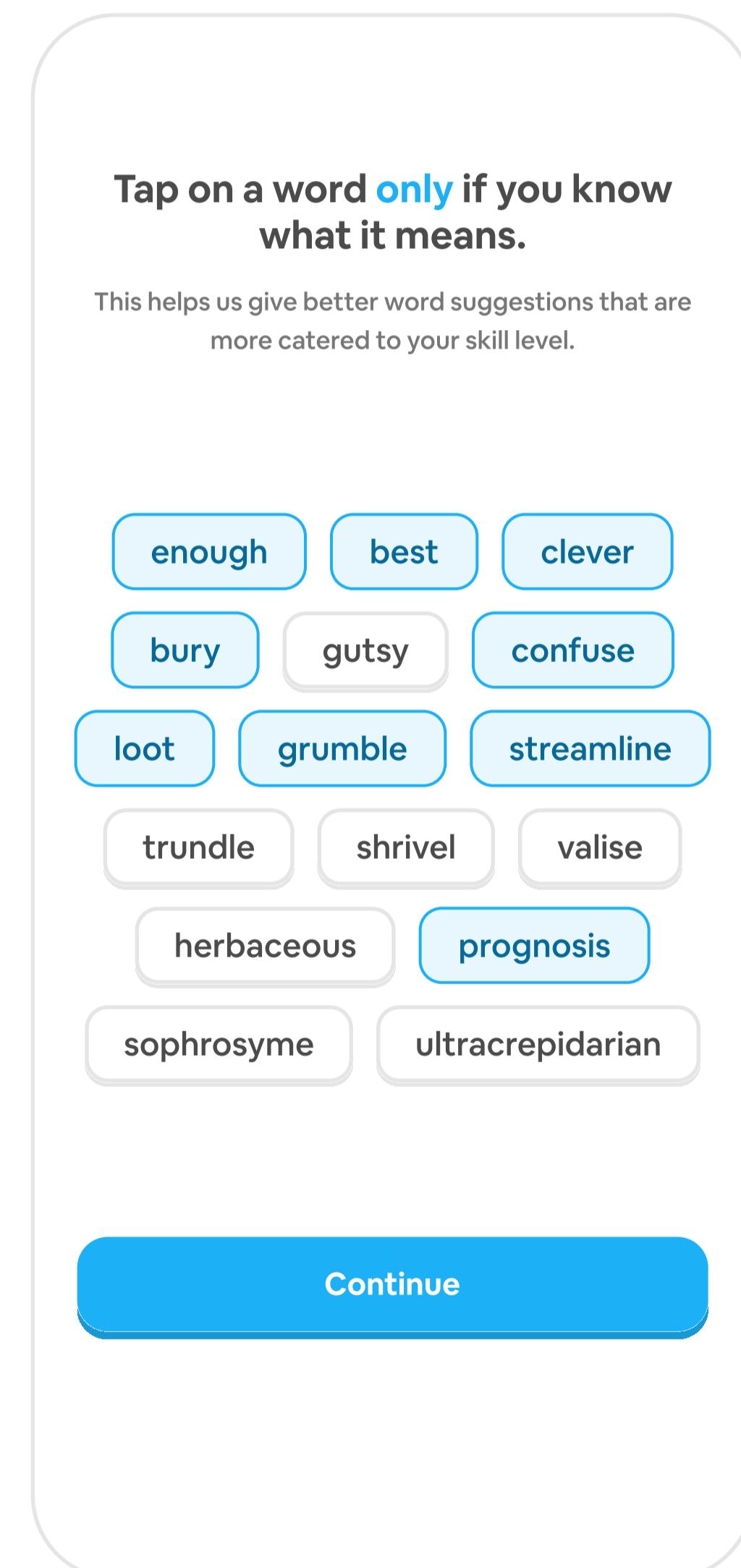
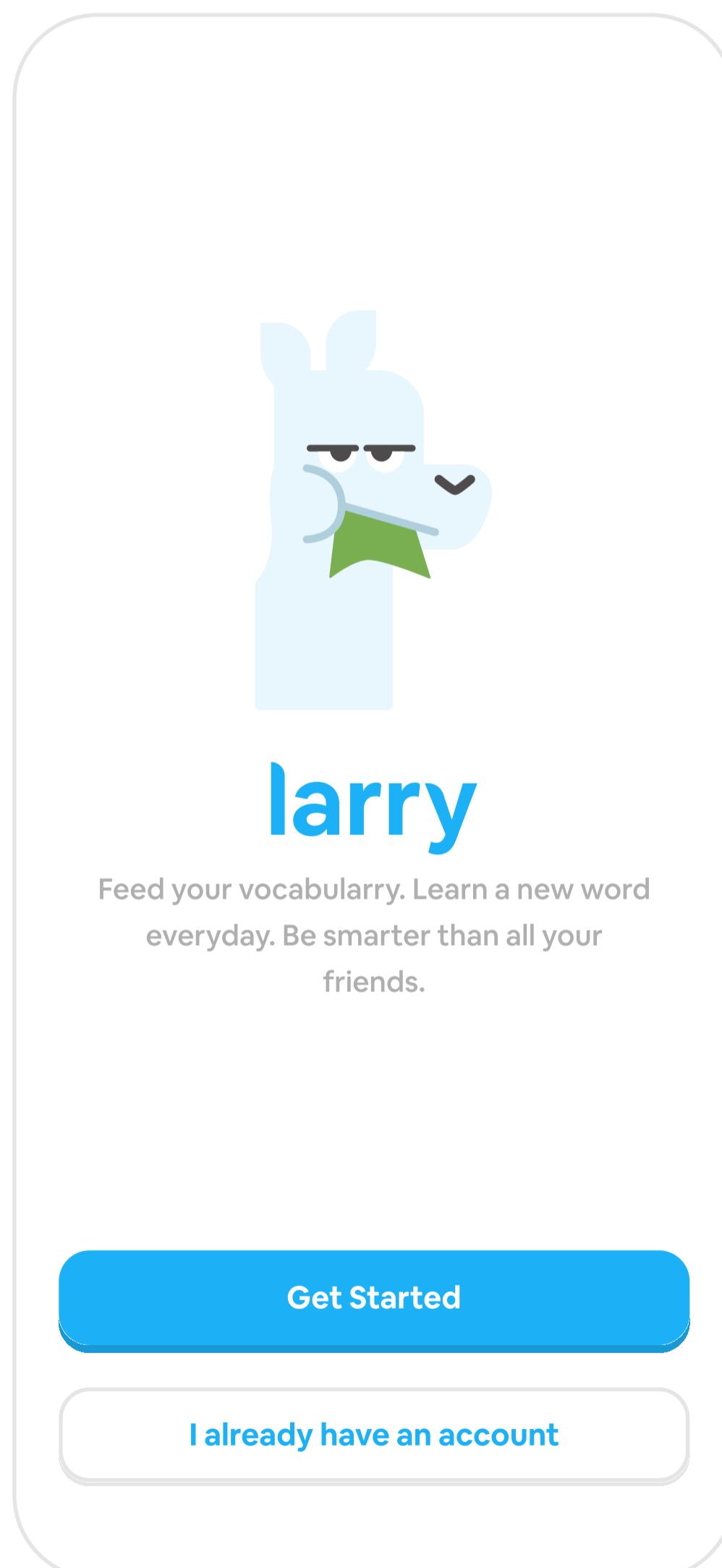


# High Fidelity Prototypes

I created high-fidelity wireframes by applying established styles. It further lets me to examine the overall aesthetic feelings and visual balance of the application.

# Onboarding

In the onboarding process, users pick words that they are familiar with. This helps the app get a good sensing of the user's current vocabulary mastery and suggest daily words that are appropriate for the user's skill level.



User is shown given a fun comparison of their skill level to let them have a better sensing and to motivate them.

# Home

Upon entering the app, the user will see a suggested word of the day, a suggested pick of words to learn, or to revise words that they have already learnt before. There are also community contributed sets for them to explore vocabulary terms within certain contexts.

Word of the day  
**Sceptical** 

Click to see definition...

**Daily Quiz**  
Larry is hungry to learn new words....

**Larry's Daily Pick**

- Gormandize
- Flexous
- Scion
- Gasconade
- + 4 more...

**Revise old words**

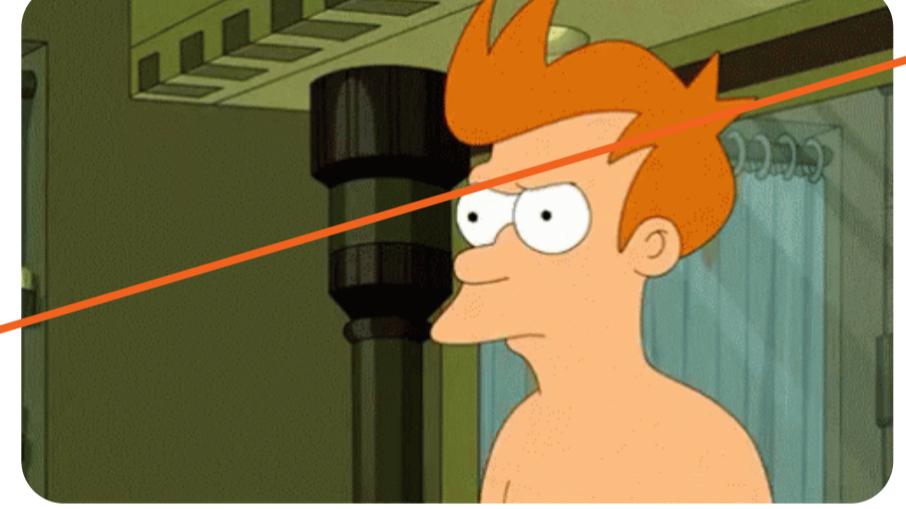
- Mandate
- Interleave
- Allude
- Egregious
- + 4 more...

**Learn new words**  
Pick from community-contributed sets!

10 XP    2

Word of the day  
**Sceptical** verb



ⓘ /'skɛptɪk(ə)l/

Definition of sceptical

1 not easily convinced; having doubts or reservations.  
• "the public were deeply sceptical about some of the proposals"

**Similar:** dubious, doubtful, questioning, cynical, distrustful, suspicious. [Tap for more](#)

1.1 [Philosophy] relating to the theory that certain knowledge is impossible.

Add to lists

Daily Challenge  
**Larry's Pick**



**Gormandize**

**Flexous**

**Scion**

**Gasconade**

**Belly**

**Hungry**

Start Quiz

# Quizzes

From the articles, testing with variations have been shown as an effective tool for learning and future recall. Thus, I created various kinds of quiz questions for both learning and testing. For learning questions, users are for example shown a funny GIF demonstrating the definition of a word. This helps users with better visual association and recall while learning. As the users grasp the meaning of the words within the quiz, the questions will get progressively harder to encourage independent recall.

The image displays six mobile phone screens arranged horizontally, each representing a different type of quiz question:

- Screen 1:** A question about the meaning of "violence". It includes a GIF of two cats using lightsabers and a list of definitions. The correct answer, "Behaviour involving physical force intended to hurt, damage, or kill.", is highlighted in blue.
- Screen 2:** A question about the meaning of "belly". It shows a sentence "His fat belly stuck out over his trousers." and a list of definitions. The correct answer, "The front part of the human trunk below the ribs, containing the stomach and bowels.", is highlighted in pink.
- Screen 3:** A question about the meaning of "belly". It shows the same sentence and a list of definitions. The correct answer is highlighted in pink.
- Screen 4:** A question about the meaning of "belly". It shows the same sentence and a list of definitions. The correct answer is highlighted in pink.
- Screen 5:** A question asking for the definition of a word. It includes a text input field, a "Show hint" button, and a "Check" button.
- Screen 6:** A question asking for the definition of a word. It includes a text input field and a "Check" button.

# My Sets

In this page, users have access to an inbuilt dictionary, words they have recently learnt, and various study sets that they can create for context-specific words. Within word definitions, they are able to add the word to their own study sets as well.

The image displays a user interface for a language learning or dictionary application. It consists of three main sections:

- Left Panel (My Sets):** This section contains a search bar labeled "Search dictionary...", a "Recently Learnt" section with words like "Disjunctive", "Countenance", and "Sear", a "My Study Sets" section with a "Daily Recommended" box listing words such as "Perspicacious", "Irreproachable", "Ameriorate", "Tantalize", "Sagacious", and "Pendulous", and two other study set boxes: "Act smart to friends" and "Finance terms for interview...".
- Middle Panel (Dictionary Search):** This panel shows a search bar with the query "commis", a list of suggestions including "commissary", "commisure", "commissural", "commisserate", "commissarial", "commisserant", and "commissioneration", and a virtual keyboard at the bottom.
- Right Panel (Word Definition):** This panel shows the definition of the word "Commiserate" (verb). It includes a cartoon illustration of two people hugging, the pronunciation "/kə'mizəreɪt/", the definition ("express or feel sympathy or pity; sympathize"), an example sentence ("She went over to commiserate with Rose on her unfortunate circumstances"), a "Similar" note ("offer sympathy, be sympathetic to, express sympathy for."), and an archaic note (feeling or expressing pity for someone). At the bottom is a blue button labeled "Add to my sets".

Annotations with orange arrows and text:

- An arrow points from the "Search dictionary..." bar in the My Sets panel to the "commis" search bar in the Dictionary Search panel.
- An arrow points from the "Add to my sets" button in the Word Definition panel to the "Choose set to add to" dialog box.
- The text "opens dialog" is written next to the arrow pointing to the dialog box.

# Profile

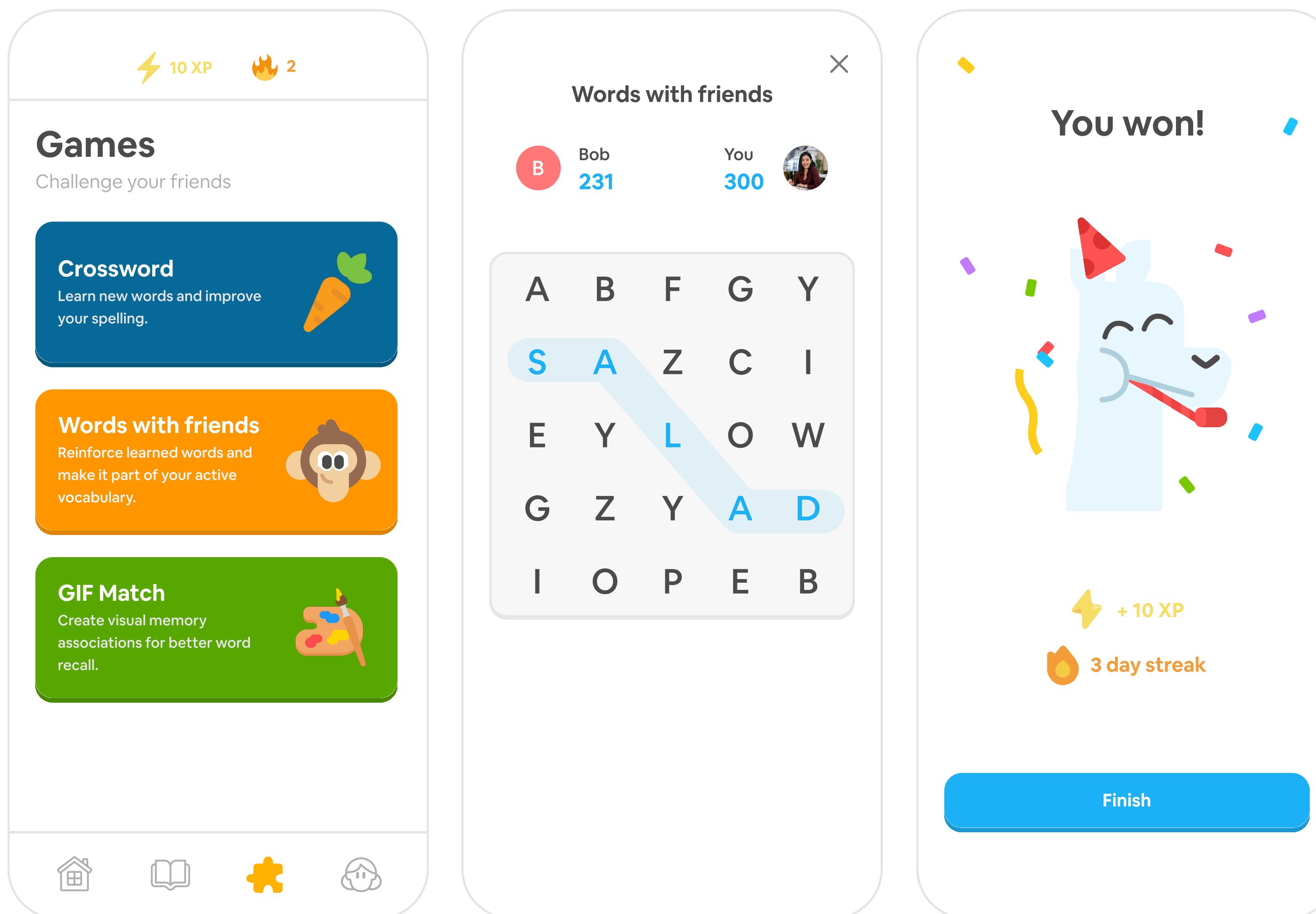
In the profile page, users are able to keep track of their progress metrics, which user research has shown is highly motivational as they watch their vocabulary mastery expand. In addition, they are also able to add friends and compare their progress which adds accountability and a social element.

The wireframe illustrates the process of adding a friend from a user's profile page:

- Initial Profile View:** Shows Nicole Choo's profile with a photo, location (Singapore), and stats: Day streak (1), Total XP (233), estimated vocab (289700), and words mastered (210). Below this is a "Friends" section with a "Find Friends" button and a "XP this week" chart showing fluctuating XP levels across the days of the week.
- Search Result:** Shows the "Find friends" search results for "bob". It displays one result for "Bob" with a profile icon and a blue "Add Friend" button. An orange arrow points from the "Add Friends" button on the left profile to this "Add Friend" button.
- Friends List Updated:** Shows the updated "Friends" section after adding Bob. It now lists Alice (150XP) and Bob (311XP). Below this is another "XP this week" chart.

# Games

User research showed that users enjoyed having a fun, and more gamified experience. After all, learning doesn't feel like learning when you're having fun. As such, I added some word games that users would be able to play with their friends and get to utilise the words they have learnt in practice.



# Final Interactive Prototype

[Go to prototype](#)

# Reflections

This app has been personally very challenging and exciting to work on. Apart from acquiring valuable experience through **user interviews**, which allowed me to obtain direct user input, one of the most important skills I learned from the lectures that I tried my best to apply here was to **rationalize every single design decision** with thorough research that minimises gaps. The user research I conducted was critical in **identifying the core features** of the app and it helped my understand **user needs and pain points**. Since I have had experience with that in the group project, I felt slightly more confident to tackle the research and analysis on my own this time.

Working through the various stages was challenging and rewarding, as I learned how to **organize and strategize concepts that we had learned** in class while **identifying problems and solutions**. I learned the value of working iteratively, **testing and more testing** to ensure the needs of the user were met and there were no confusions. It was exciting to watch users interacting with my app and providing real-time feedback and suggestions on how I could improve it.

Overall, I truly enjoyed working on **larry** and learned a great deal about the UX design process.

# Thank You!

