

# LinguaVerse

**Start Document**

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## **Chapter 1 - Description**

LinguaVerse is a robust language learning platform designed to facilitate effective language acquisition through a variety of interactive features and personalized learning experiences.

Users can register and log in to access personalized profiles, where they can manage language preferences, track progress, and adjust settings to tailor their learning experience.

An analytics dashboard provides users with visual representations of their progress, strengths, and areas needing improvement, empowering them to set goals and monitor their achievements.

## **Chapter 2 - LinguaVerse Concept**

LinguaVerse is a language application that helps users improve their language skills by playing mini-games and interacting with the language. Users can register on the login/register page to create a new account. The application primarily focuses on the English language and offers several learning tools for interactive learning.

Once logged in, users can access the dashboard and mini-games. The dashboard displays progress, daily streak status, language selection options, quiz history, and a support page. The quiz history shows the quizzes the user has played, with summaries available upon selection.

The support page allows users to submit queries through a form. The language selection option currently allows users to choose between English and Italian. However, since Italian is not yet implemented, users will continue with English and select their preferred mini-game.

LinguaVerse is built using .NET MAUI and the UI framework used is WinUI3.

## **Chapter 3 - Mini games in LinguaVerse**

LinguaVerse offers a range of mini-games designed to make language learning engaging and effective. Each mini-game focuses on different aspects of language acquisition, providing users with varied and interactive ways to enhance their skills. Here are three of the primary mini-games available on the platform:

### **1. Flashcards**

Flashcards in LinguaVerse are interactive vocabulary tools that combine text and images to enhance memorization and pronunciation skills. These flashcards are designed to provide a multisensory learning experience, allowing users to see a word, hear its pronunciation, and visualize its meaning through associated images. This method helps in reinforcing the vocabulary, making it easier for users to recall words and their meanings. Flashcards can be customized to match the user's learning pace and preferences, offering a personalized approach to vocabulary building.

## 2. Quizzes

Multiple-choice quizzes: These tests challenge users to select the correct answer from several options, helping them to reinforce their understanding of vocabulary, grammar, and usage.

Matching games: These activities require users to pair words with their definitions or synonyms, aiding in vocabulary retention and understanding.

These quizzes are designed to provide comprehensive feedback, helping users identify their strengths and areas for improvement.

## 3. Match the Synonym

The "Match the Synonym" game is an engaging activity that combines grammar and vocabulary practice. Users are presented with a list of words and are tasked with matching each word to its synonym from a given set. This game not only enhances vocabulary but also helps users understand subtle differences and similarities between words. By making the learning process enjoyable and interactive, "Match the Synonym" fosters a deeper understanding of language nuances.

# Chapter 4 - Features

Core Application Features:

### 1. User Authentication:

- a. A foundational aspect of LinguaVerse is the secure and robust user authentication system. This system not only protects user data with the latest security protocols but also provides a seamless experience for users to register and log in. By integrating advanced encryption for passwords and personal information, LinguaVerse ensures that user profiles and settings are kept private and secure. The authentication process is designed to be both user-friendly and highly secure, balancing convenience with the need for stringent data protection measures.

### 2. Language Selection:

- a. At the heart of LinguaVerse's language offerings is a versatile language selection feature that enables users to choose primarily from English and possibly from one or more languages.

### 3. Flashcards:

- a. LinguaVerse's flashcards are an engaging educational tool that aids in vocabulary retention. Each flashcard is thoughtfully designed with clear text, vivid images, and crisp audio clips to reinforce learning and aid in memorization. This multimodal approach caters to different learning styles, whether visual, auditory, or kinesthetic.

#### **4. Quizzes and Tests:**

- a. The platform's diverse array of quizzes and tests serve to comprehensively assess and reinforce the user's language skills. These assessments provide immediate feedback, allowing learners to identify areas of improvement and celebrate successes along the way.

#### **5. Interactive Games:**

- a. Beyond traditional learning tools, LinguaVerse introduces interactive games that make language learning both engaging and enjoyable. They transform language practice from a monotonous task into a fun and interactive way to learn, ensuring that users remain motivated and entertained throughout their language learning journey.

#### **6. Progress Tracking:**

- a. Through an intuitive analytics dashboard, users can visually track their learning progress. The dashboard highlights key performance indicators such as mastered vocabulary, completed lessons, and quiz scores. This real-time progress tracking is instrumental in keeping users informed and motivated.

## **Chapter 5 - User Interaction**

### **Dashboard Page**

- **Label for Title:** The title "LinguaVerse" is displayed prominently at the top center of the page with a bold font and a large font size.
- **Frame with Welcome Message:** Displays a personalized welcome message inside a frame with a gradient background. The message is centered and uses a bold font.
- **Frame for Daily Streaks:** Shows the user's daily streaks. Each day is represented as a frame with a conditional background color (green if the task is completed, red if not). The days are displayed horizontally with some spacing in between.
- **Frame with Progress Bar:** Displays the user's overall progress using a progress bar. The frame has a gradient background, and the progress bar has a colored indicator for the progress made.
- **Buttons for Navigation:** Several buttons are placed horizontally with uniform spacing. These buttons allow navigation to different sections of the application, such as language selection, quiz history, analytics, support, settings, and profile management. Each button has a gradient background, white text, and a bold font.

## **Support Page and Profile Page are added to provide additional functionality:**

### **Support Page**

- **Text Input for Issues:** Users can input their support issues or questions.
- **Submit Button:** A button to submit the support request. The button has a gradient background and rounded corners.

### **Profile Page**

- **User Information Display:** Displays the user's profile information such as name, email, etc.
- **Edit Profile Button:** Allows the user to edit their profile information.
- **Logout Button:** Allows the user to log out of the application.

## **Chapter 6 - Styling and Design**

The application is designed with a modern dark theme, incorporating multiple colors to create a visually appealing and user-friendly interface.

The dark theme provides a sleek and elegant look while reducing eye strain, making it suitable for extended usage.

The interface features a harmonious blend of vibrant accent colors, carefully selected to enhance readability and provide clear visual cues without overwhelming the user.

*Key Features of the Design:*

- 1. Dark Theme:**
  - The primary background is a deep, rich charcoal color, providing a neutral base that allows other colors to stand out.
  - Text and UI elements are presented in light shades, such as off-white and soft gray, ensuring high contrast and readability.
- 2. Color Accents:**
  - Accent colors such as teal, amber, and violet are strategically used for interactive elements like buttons, links, and highlights. This color palette is designed to guide the user's attention to important features and actions.
  - Hover and active states of buttons and other interactive elements subtly shift to lighter or darker shades of the accent colors, providing intuitive feedback.
- 3. Typography:**
  - The application uses modern, sans-serif fonts that are easy to read. Larger font sizes are used for headers and important information, while smaller sizes are used for less critical details.
  - Text is displayed with high contrast against the dark background, ensuring that content is easily legible even in low-light environments.

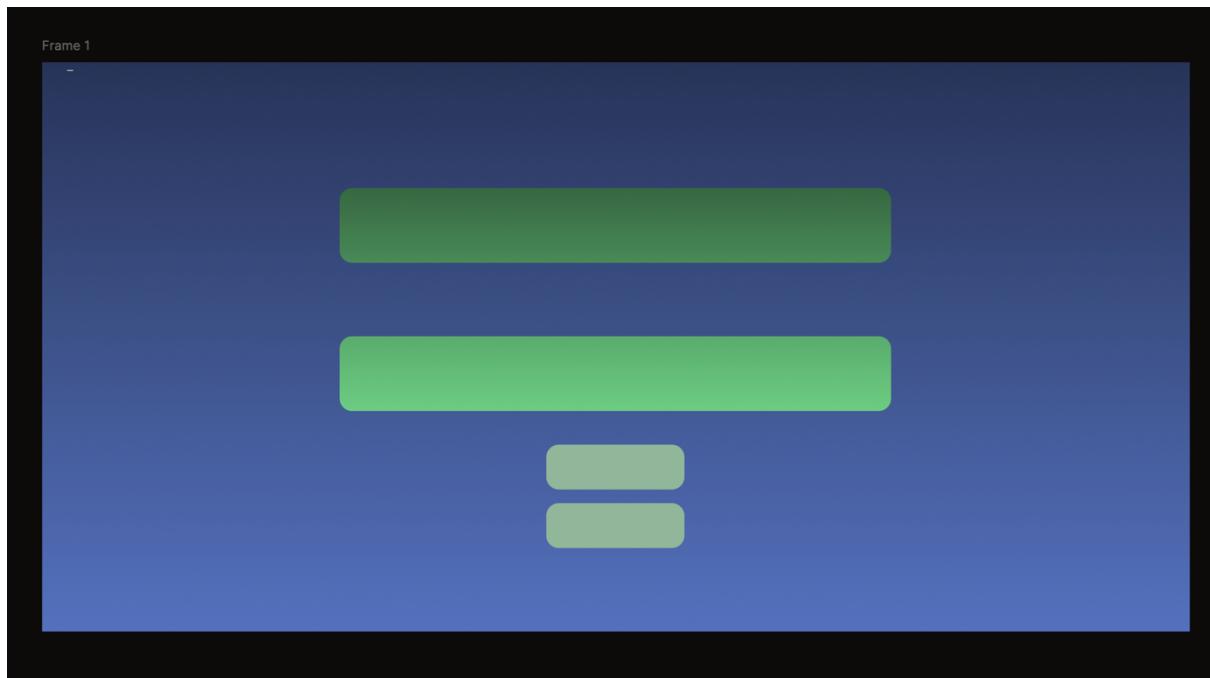
#### **4. Layout and Spacing:**

- Generous padding and margins are employed to create a clean and uncluttered layout. This helps to focus the user's attention on key content and actions.
- The layout is responsive, adapting seamlessly to different screen sizes and orientations, providing a consistent experience across devices.

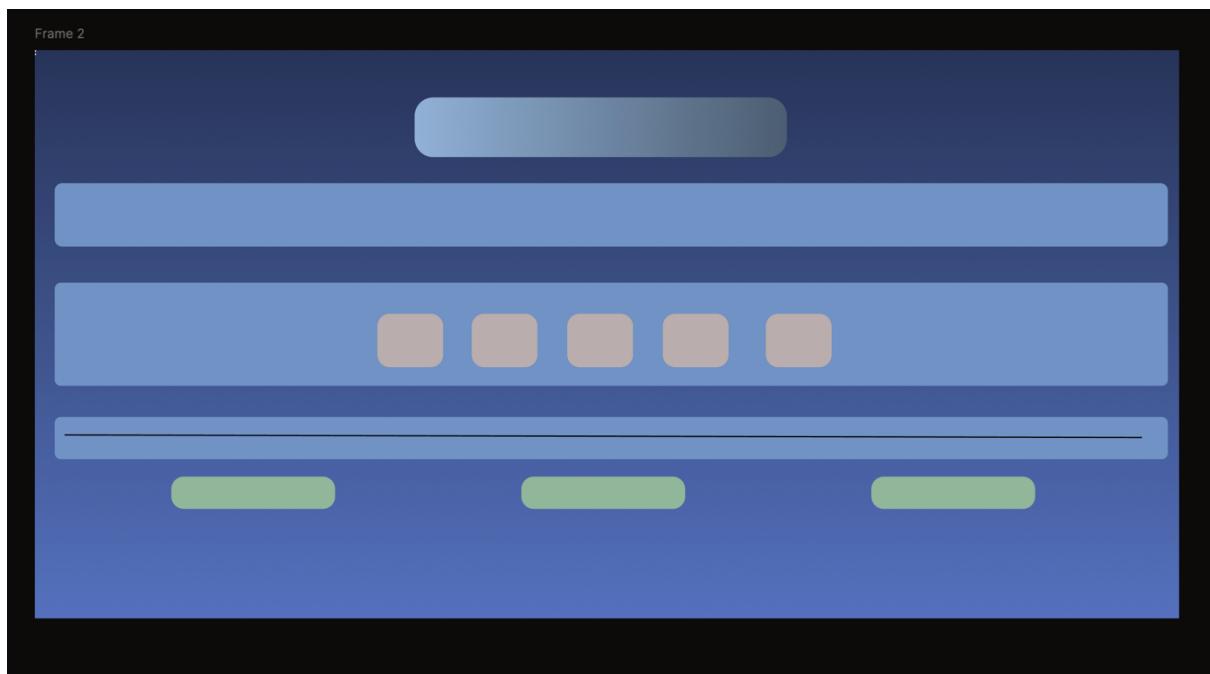
#### **5. User-Friendly Interaction:**

- Intuitive navigation patterns are employed, such as a bottom navigation bar on mobile devices and a side navigation drawer on tablets and desktops.
- Interactive elements like buttons and links are designed with ample touch targets, ensuring ease of use on touch devices.
- Smooth animations and transitions enhance the user experience, providing visual feedback for user actions and improving the overall feel of the application.

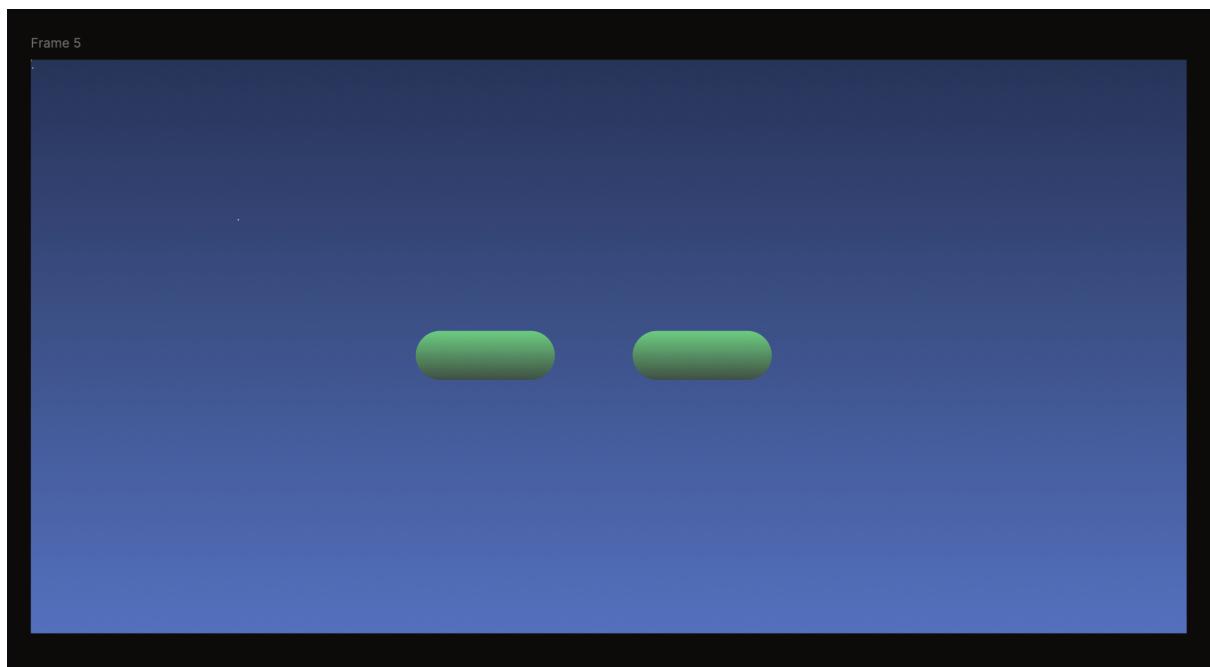
#### **Wireframe for Login:**



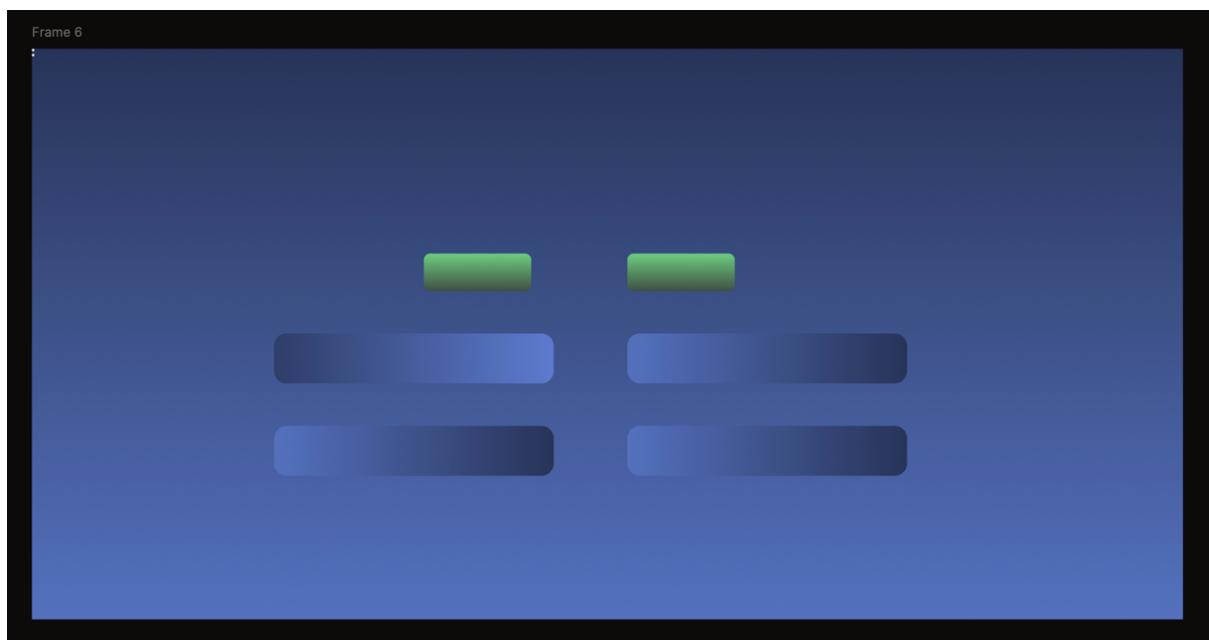
**Wireframe for Dashboard:**



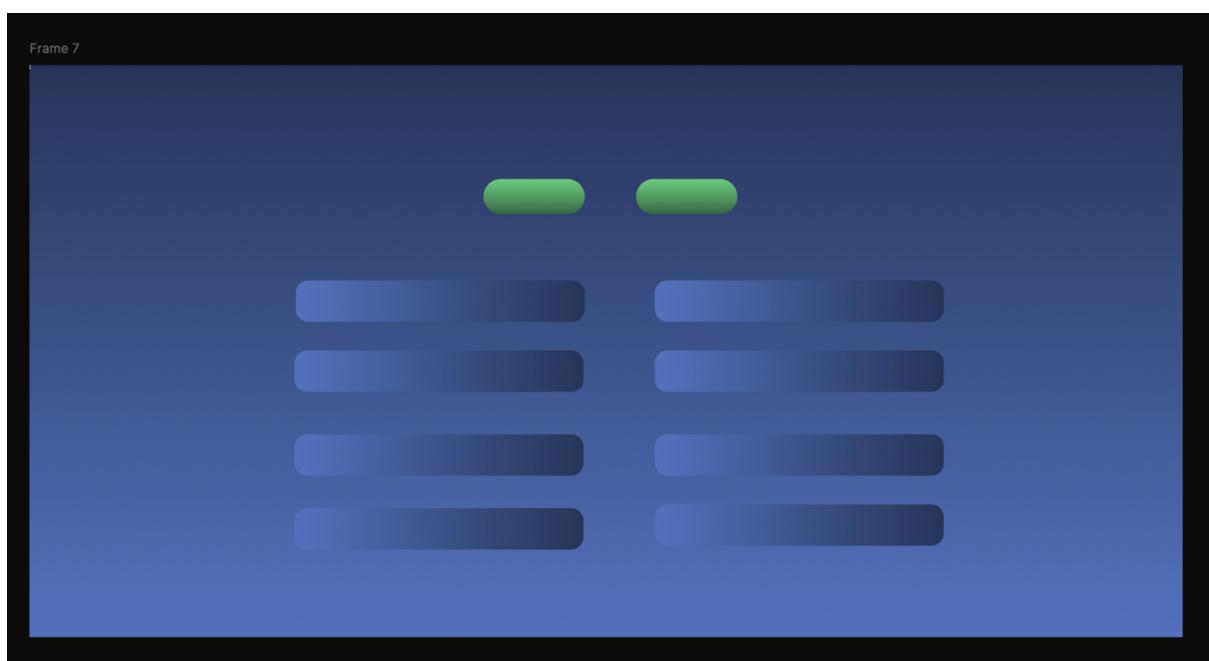
**Wireframe for Language Selection:**



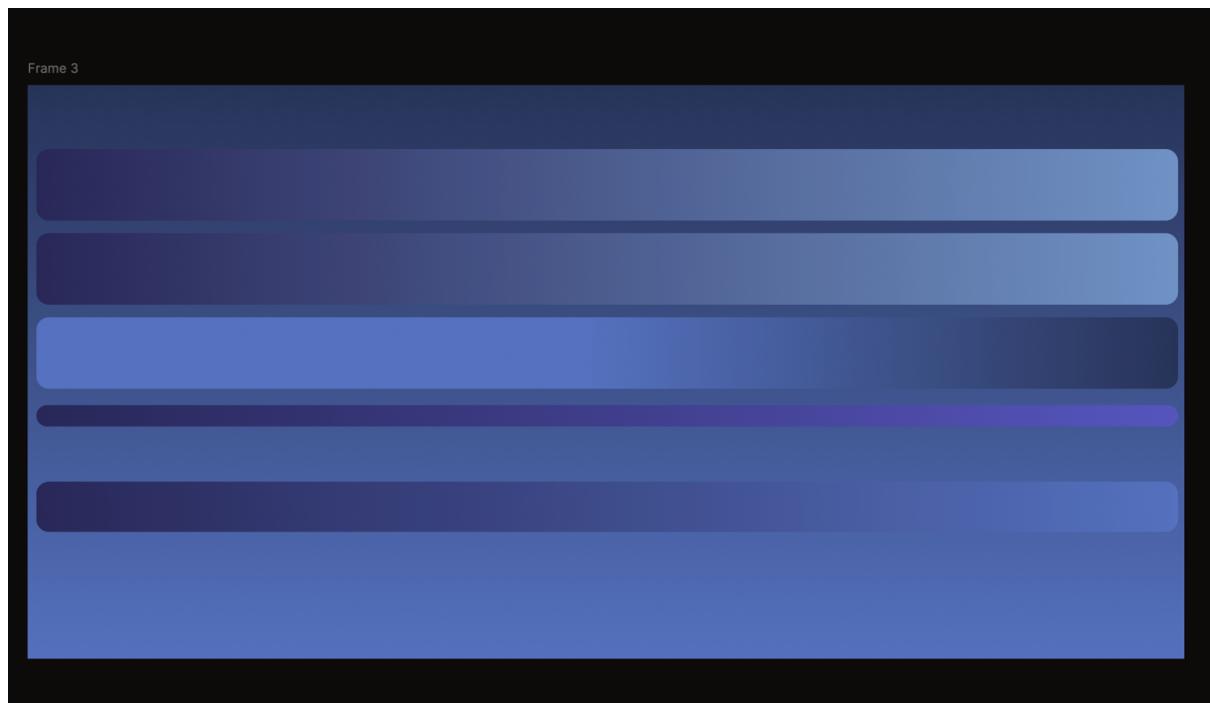
**Wireframe for Game Selection:**



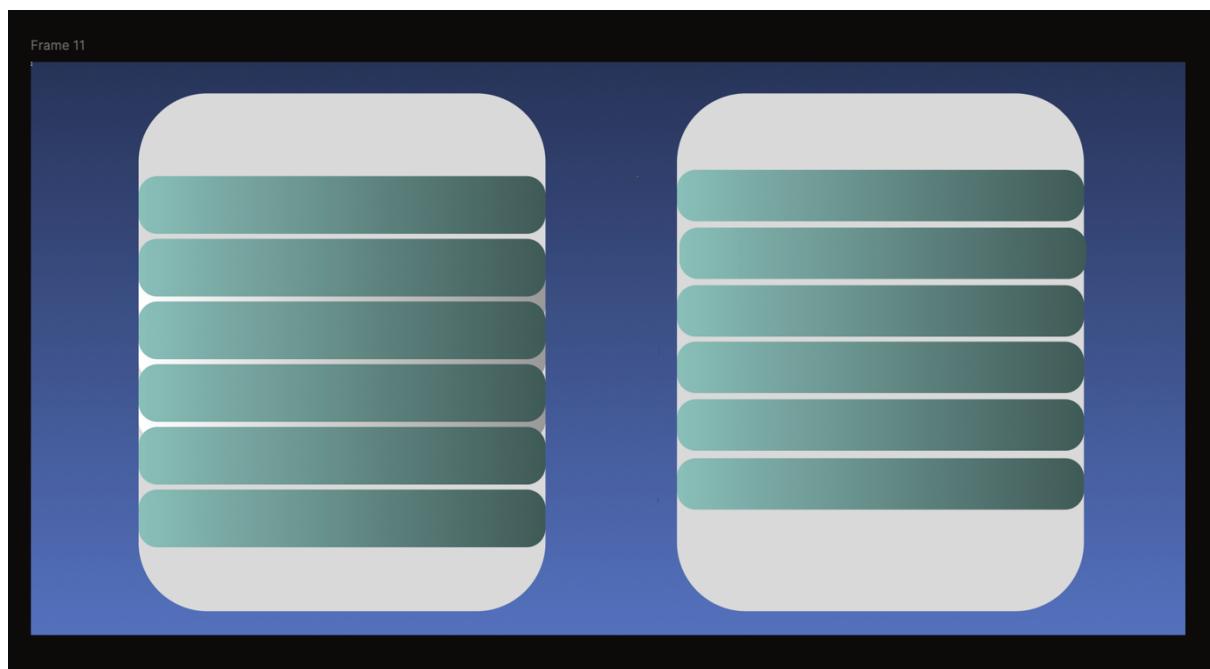
**Wireframe for Test Selection:**



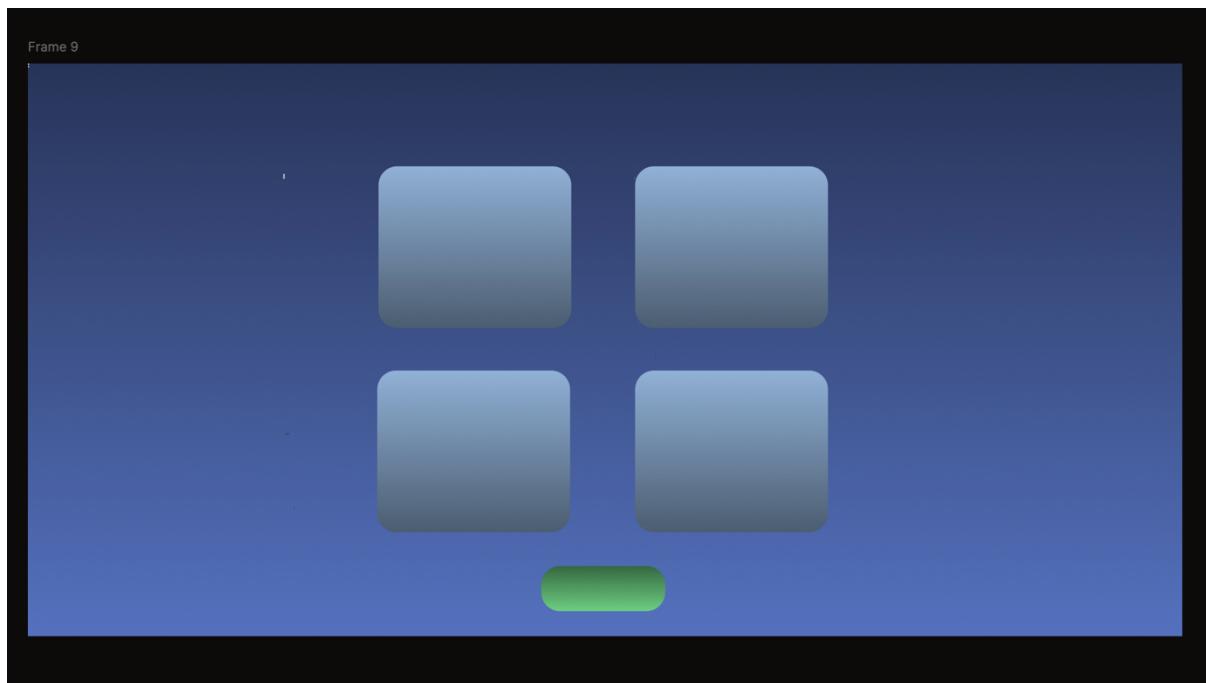
**Wireframe for Quiz:**



**Wireframe for Quest Game:**



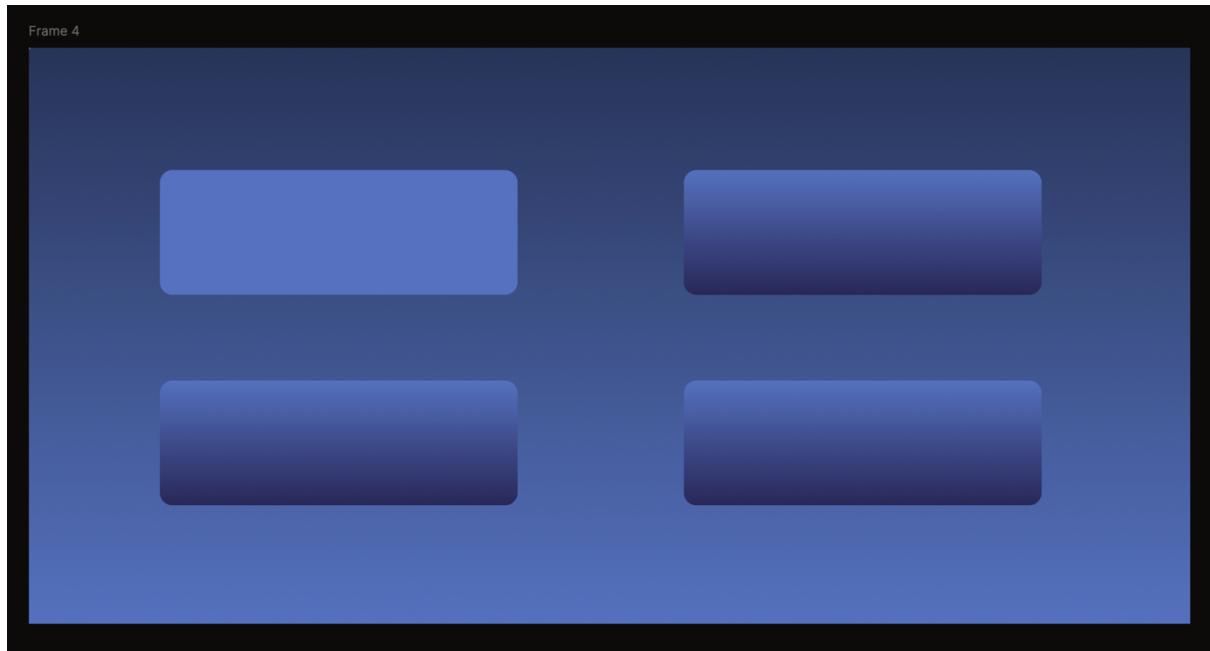
**Wireframe for Game Matching Cards:**



**Wireframe for Support Page:**



### Wireframe for Quiz History:



The Figma file can be found here:

[https://www.figma.com/design/gWbA57ZaEWtLjfSvOjFHEh/Untitled?node\\_id=0-1](https://www.figma.com/design/gWbA57ZaEWtLjfSvOjFHEh/Untitled?node_id=0-1)

## Chapter 7 - MoSCoW method

The Moscow Method categorizes tasks into four groups: Must have, should have, could have, and Won't have.

Here's how the features of LinguaVerse could be organized using this method:

### Must Have

1. **User Authentication:** Secure login and registration system to manage user profiles and settings, ensuring data security.
2. **Flashcards:** Basic interactive vocabulary flashcards with text, images, and audio to facilitate learning.
1. **Interactive Learning Mini Games:** Including grammar and vocabulary games to make learning more engaging and less monotonous.
2. **Quizzes and Tests:** A variety of assessments like multiple-choice quizzes, fill-in-the-blanks, and matching exercises to evaluate different language skills.
3. **Progress Tracking:** An analytics dashboard that displays user progress, strengths, and areas needing improvement to motivate and guide learners.

### Should Have

1. **Adaptive Learning Algorithms:** Core technology that adjusts the difficulty of tasks based on user performance to keep learning challenging yet achievable.
1. **Language Selection:** Ability to choose from multiple languages, enabling personalized learning paths.

#### Could Have

2. **Advanced Game Types:** More sophisticated language games that include cultural nuances and more complex gameplay to further engage users.
3. **Additional Language Options:** Expanding the range of languages offered, especially less commonly taught languages, to attract a broader user base.

#### Won't Have

1. **Live Tutoring Features:** Real-time interaction with language tutors might be desirable but is not essential for the initial phases of the platform due to higher complexity and cost.

## Chapter 8 - Development Timeline

- **Weeks 1-2:** Concept of the application was designed, the team formation, the development of the UI (mock-up). Research was conducted on how to implement the steps.
- **Week 3-5:** The first prototype was created, new logics were implemented, and all requirements for the application was gathered.
- **Week 6-7:** All components of the application was completed and merged.
- **Week 8:** The last changes were made for the styling, design, and interaction.

## Chapter 8 - Class diagram

