

# Foreign Language Learning Application



Software Requirements Specification



CSCE 247: Software Engineering

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# 1. Introduction

## Purpose

Experts estimate that over 7,000 languages are spoken worldwide. With more than 75% of people being fluent in another language other than English, learning different languages has never been easier and more beneficial. The cognitive benefit of learning foreign languages not only helps with overall brain function but has also been linked to positively impacting problem-solving skills. With so many benefits of learning new languages, our software will make learning new languages easier than ever before. With our intuitive interactive software, users will be able to learn new vocabulary in many different languages throughout the world.

Source: <https://www.bbc.co.uk/languages/guide/languages.shtml>

## Scope

This document will cover:


- The personas of potential users and stakeholders invested in this project.
- Any constraints that have been applied to this project.
- A description of the website/app along with its business use cases.
- Shows both the functional and non-functional requirements of the app.
- A competitive analysis to outline the purpose of the project

## 2. Stakeholders

- Individuals who want to learn a new language, such as students, professionals, or hobbyists.
- Language teachers who may use the app to supplement their classroom teaching or recommend it to their students.
- Linguists and educators who design and create language courses, lessons, and exercises
- Schools and universities that may partner with the app to provide language learning tools for students.

## Personas:




**KYLE SMITH**



**AGE: 25**  
**HOMETOWN: ATLANTA, GA**

**BIO**

Kyle was born and raised in his hometown Atlanta who eventually pursued his degree in computer science at the University of South Carolina. Kyle finished his undergrad and is committed to obtaining his masters in computer science. He is on his last year of graduate school. In his free time, kyle likes to spend time with his friends, play tennis, and loves to give back to the community.



**GOAL**

- Kyle is currently planning to study abroad in Korea. He understands that he needs a base level understanding in Korean in order to make this study possible however, he only has 4 months to prepare.


**INTERESTS**

- Tennis
- Hanging out with friends
- Community service
- Exploring new tech trends
- Traveling abroad for study opportunities

**CHALLENGES**

Kyle has tried to study foreign languages in the past for classes but the material just doesn't seem to stick with him. He's not a big fan in the teaching methods of most modern day language learning apps.




**DEVIN KAPOOR**



**AGE: 19**  
**HOMETOWN: TORONTO, CANADA**

**BIO**

Devin dropped out of highschool, persuing media and communication. He's fascinated by global digital content, particularly the explosion of social media platforms in Japan. Devin's long-term goal is to create content that resonates internationally, and he wants to learn Japanese to access more opportunities and to connect with creators in that space. He's tech-savvy and loves experimenting with new apps and tools.



**GOAL**

- Devin wants to become fluent in Japanese to understand trends and create content that appeals to Japanese audiences. He's aiming to reach intermediate fluency in 2 years so he can start engaging more deeply with the Japanese content creation community.


**INTERESES**

- Content creation (social media, videos)
- Gaming
- Japanese pop culture (anime, manga)
- Photography and videography
- Digital marketing trends

**CHALLENGES**

Though highly motivated, Devin tends to get distracted easily and is always juggling multiple projects. He's looking for an engaging and gamified learning experience that keeps him on track without feeling like a chore.





**MARIA ALVAREZ**

AGE: 43  
HOMETOWN: EL PASO,  
TEXAS

**BIO**  
Maria grew up in a bilingual household, speaking Spanish and English fluently. However, as she's raising her children, she's realized the importance of keeping up with cultural and language diversity. Maria's kids are learning French at school, and she wants to learn the language to support them in their education. She's passionate about learning new things but often feels overwhelmed by the challenges of managing her household.

**GOALS**

- Maria wants to master basic conversational French within 6 months to help her children with their homework and to eventually travel to France with her family for a cultural immersion experience.

**INTERESTS**

- Family activities
- Cooking and meal planning
- Gardening
- Reading parenting books
- Cultural exchanges and traveling

**CHALLENGES**  
Maria has very limited time due to her household responsibilities and is easily frustrated by complicated language learning methods. She prefers bite-sized lessons that she can fit into her hectic day.

### 3. Constraints

Time Constraints:

- This project is to be completed within a period of two weeks.

Monetary Constraints:

- This project's development has been allocated a budget of \$0.

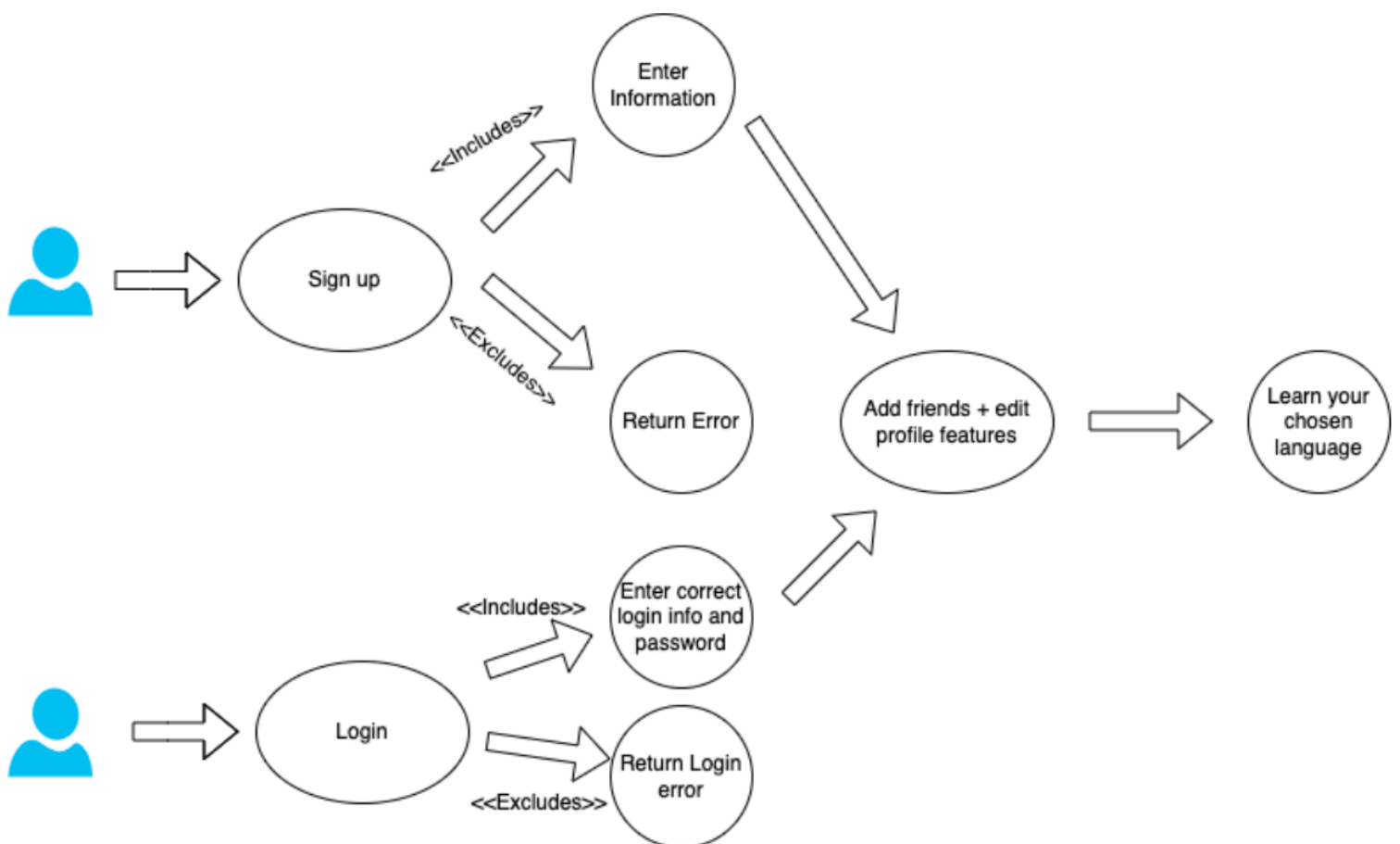
Technical Constraints:

- The code must be done in Java.
- The website must be accessible on a variety of different devices including PCs, laptops, and mobile devices.

## 4. Overall Description

This product will be accessible on mobile devices or computers and will allow language translation and learning. Descriptions of vocabulary will be in the user's specific fluent language. The user will select both the language they intend to learn and their current fluent language.

## 5. Business Use Cases



## 6. Functional Requirements

The link to the functional requirements is: [Requirement Spreadsheet](#)

## 7. Non-Functional Requirements

### Look and Feel Requirements

- The user interface shall have a simple and intuitive design to ensure users of all language proficiency levels can navigate the app easily.
- The app's color scheme and font shall be accessible to users with visual impairments (e.g., color blindness) by following WCAG 2.1 standards.
- The interface shall include an interactive and engaging design, with animations and visual cues to enhance the learning experience.

### Usability Requirements

- The system shall support multiple languages in its interface to cater to users learning different languages.
- The system shall allow users to customize their learning preferences (e.g., difficulty level, lesson frequency).
- The app shall be easy to use for individuals with a wide range of technical capabilities, from novice to advanced users.

### Performance Requirements



- The system shall load lessons, exercises, and audio/video content in under 3 seconds on any internet-connected device.
- The app shall be responsive and provide a seamless user experience on various screen sizes, including mobile phones, tablets, and desktop devices.

## **Maintainability and Support Requirements**

- The system shall be compatible with Android, iOS, Windows, Mac, and Linux operating systems.
- The system shall allow for easy updates, with new lessons or bug fixes rolled out without requiring users to reinstall the app.
- The system shall have a dedicated support portal available 24/7 for users to report issues and seek assistance.

## **Security Requirements**

- User data (such as progress, personal details, and preferences) shall be encrypted both in transit and at rest.
- The system shall implement multi-factor authentication (MFA) to ensure secure login.
- The app shall comply with GDPR, CCPA, and other relevant data protection regulations to ensure user privacy.

## **Legal Requirements**

- The system shall ensure that all payments and transactions adhere to local e-commerce and tax regulations in the regions where the app operates.
- The system shall provide a clear terms-of-service agreement, ensuring compliance with regional laws governing digital products and services.

## 8. Definitions and Acronyms

1. **Stakeholders:** Individuals or organizations that have an interest in the software project, such as students, professionals, educators, and schools.
2. **Functional Requirements:** These are the requirements that define what the system is supposed to do, such as translation, vocabulary learning, and user preferences.
3. **Non-Functional Requirements:** These are the requirements that define how the system performs its functions, such as usability, performance, and security standards.
4. **GDPR:** General Data Protection Regulation, a regulation in EU law on data protection and privacy.
5. **CCPA:** California Consumer Privacy Act, a state statute intended to enhance privacy rights and consumer protection for residents of California.

## 9. Competitive Analysis

	Duolingo
<b>Strength</b>	<ul style="list-style-type: none"><li>- User-Friendly Interface</li><li>- Wide Language Selection</li><li>- Free Access</li><li>- Effective Learning Approach</li><li>- Strong Community Engagement</li><li>- Mobile Accessibility</li></ul>
<b>Weakness</b>	<ul style="list-style-type: none"><li>- Limited Depth</li><li>- Overemphasis on Gamification: Can detract from learning quality.</li><li>- Ads in Free Version</li><li>- Lack of Speaking Practice</li></ul>
<b>Audience/Focus</b>	<ul style="list-style-type: none"><li>- Target Audience: Casual learners, beginners, and those learning for fun or basic communication.</li><li>- Accessible, engaging, and gamified language learning for a broad demographic, including students, travelers, and hobbyists.</li></ul>

	Babbel
Strength	<ul style="list-style-type: none"><li>- Structured Curriculum</li><li>- Focus on Practical Language Skills</li><li>- Customization</li><li>- High-Quality Content</li><li>- Offline Access</li></ul>
Weakness	<ul style="list-style-type: none"><li>- Paid Subscription</li><li>- Limited Language Selection</li><li>- Less Gamification</li><li>- Limited Community Features</li></ul>
Audience/Focus	<ul style="list-style-type: none"><li>- Target Audience: Adults and professionals seeking to learn a new language for practical, real-world use.</li><li>- Babbel is focused on delivering in-depth, structured language courses aimed at building practical communication skills, catering primarily to users looking for serious language learning rather than casual or gamified experiences.</li></ul>

	Rosetta Stone
<b>Strengths</b>	<ul style="list-style-type: none"> <li>- Interactive learning approach</li> <li>- Wide selection of languages</li> <li>- The structure is consistent across all languages</li> <li>- Accessible on mobile devices</li> <li>- Incorporates speech recognition</li> </ul>
<b>Weakness</b>	<ul style="list-style-type: none"> <li>- Lack of cultural context</li> <li>- Repetitive content</li> <li>- More expensive</li> <li>- No offline access</li> </ul>
<b>Audience/Focus</b>	<ul style="list-style-type: none"> <li>- Target audience: Beginners and early learners who want to learn a language without experience. It also targets individuals who learn better visually with interactive elements and videos.</li> <li>- Focus: Their focus is on interactive learning. The platform is designed to teach beginners by building foundational skills, using correct pronunciation.</li> </ul>

# 10. References

1. “BBC - Languages - Languages - Languages of the World - Interesting Facts about Languages.” *Www.bbc.co.uk*, [www.bbc.co.uk/languages/guide/languages.shtml](http://www.bbc.co.uk/languages/guide/languages.shtml).