

Language Learning App for English-to-Spanish Speakers

Software Requirements Specifications

CSCE 247: Software Engineering

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1. Introduction

Purpose

This language-learning app is designed to allow non-native Spanish speakers to learn the language with ease. The app will motivate both casual and advanced users to continue learning more. Around the world, there are 1.2 billion people attempting to learn a new language, which is why we want to create an app that can appeal to every learner. Studies show that people who know more than one language, even if they aren't fluent, earn up to 15% more than those who are monolingual. With features like a text-to-speech function, user-specific profiles, and daily streaks, we want our app to influence users to take advantage of the benefits of language learning with an interface that is easy to use and understand.

Source: <https://www.lingoda.com/blog/en/five-surprising-stats-about-language-learning>

2. Stakeholders

Personas



JULIE ADAMS

- 24 years old
- Madrid, Spain
- Full Stack Developer
- Recently moved countries

Biography

Julie graduated from Florida State University with a bachelor's degree in Computer Science. She moved to Madrid two months ago to pursue a job opportunity. Julie loves her new home, but she wants to surpass the language barrier and become fluent in Spanish.

Pain Points/Good Takeaways

- Subscriptions are expensive
- Exercises get repetitive
- + Gamification of learning
- + Convenience to learn on the go



What does a baby computer call his father? DATA

Wants + Needs

- A reliable app that uses modern diction
- An app that can quickly teach the basics of the language

Personality



Julie is looking for a language learning app that she can use to overcome the language barrier in a foreign country and communicate better with her coworkers.



JOHN GRIFFEN

- 62 years old
- Lexington, KY
- Retired
- Lives on a Ranch

Biography

John is a retired plumber who lives in Kentucky. He lives at home with his wife and has 4 kids. John has multiple horses, sheep, and cattle on his farm to take care of during retirement. This often keeps him quite busy when he is not traveling with his family and friends.

Pain Points/Good Takeaways

- Unable to Add Friends
- Word Phrasing is Weird
- + Straight Forward
- + Learning Should be Fun



After an unsuccessful harvest, why did the farmer try a career in music?
Because he had a ton of sick beets!

Wants + Needs

- Learn Entry Level Spanish
- Communicate Casually
- Easy To Learn
- Takes A Few Minutes Each Day

Personality



60%
COMPASSION



30%
LOVE



10%
PATIENCE

John is looking for an app that is easy to learn and only takes a few minutes out of his day



JANE DOE

- 21 years old
- Columbia, SC
- International Studies
- Study Abroad

Biography

Jane Doe is junior year student pursuing degree in International Studies with a minor in Spanish at University of South Carolina. She is excited for her study abroad experience in Spain, to deepen her language skills and explore cultural understanding.

Pain Points/Good Takeaways

- + Integration of cultural context
- + Progress tracker
- - Monotonous content
- - Lack of pronunciation feedback



The past, the present, and the future walked into a bar.
It was TENSE!

Wants + Needs

- An app that improves her pronunciation skills and has a consistent learning path.
- Resources to track her progress.

Personality



90%
Curiosity



80%
Dedication



60%
Adventurous

Jane Doe is looking for an app which is interactive and has features that keep her motivated and excited about learning.

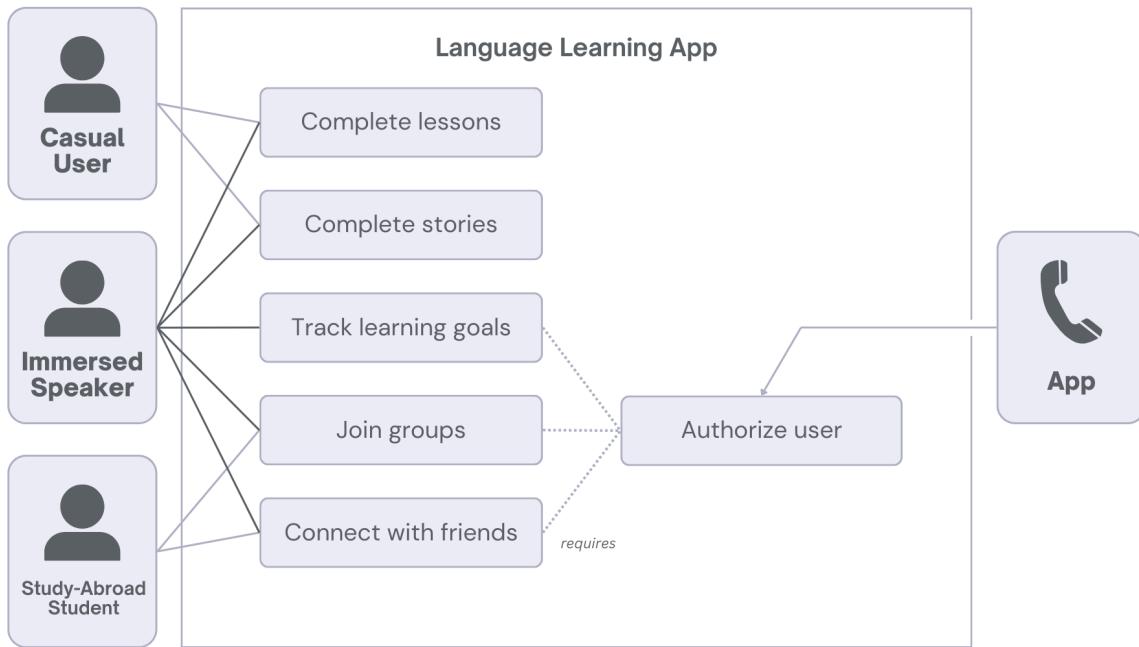
3. Constraints

- **Time:** The project must be completed over the course of one academic semester.
- **Resources:**
 - Since Java is the app's primary language, its limitations (i.e. cloud applications) must be considered in the app's development.
 - The provided budget is \$0, which eliminates premium solutions.
- **Knowledge:** The app is created by sophomore- and junior-level computer science students with novice app development experience.

4. Overall Description

- This app must have a sign in page for first-time users.
- This app will implement a text-to-speech function.
- There will be an option for beginner, intermediate, and advanced speakers.
- Only one language (Spanish) will be available to learn.
- This app will be free to use.

5. Business Use Cases



6. Functional Requirements

Functional Requirements

https://docs.google.com/spreadsheets/d/1q8VhcQz0UTNhVosH_ircqFjNpH9phpxzD8AYdKdNgsE/edit?usp=sharing

7. Non-Functional Requirements

- The app shall be free for all users, promoting widespread access to all types of people.
- The app shall implement login security measures to prevent unauthorized access.
- The app shall be functional on any device with computer or mobile capabilities.
- The app shall be accessible to user 24/7 except for the scheduled maintenance time.
- The app shall require 3 GB of storage in order for users to install and run the app efficiently.
- The app shall be compliant with the Children's Online Privacy Protection Rule (COPPA) to service users under 13 years old.
- The app shall be documented using JavaDocs.
- The app shall prioritize privacy (i.e., implementing data encryption) to protect users' information.
- The app shall undergo rigorous QA testing to ensure the experience is seamless.
- The app shall incorporate reusable components common in current apps.
- The app shall be user friendly.
- The app shall refrain from terms commonly associated with classrooms (i.e., "test," "lesson," "lecture").
- The app shall feature themed lessons based on culturally-significant seasons.
- The app shall only include short lessons to retain the attention of users.
- The app shall feature a mascot to guide and motivate users.
- The app shall display a progress bar to visually track lesson progression.
- The app shall prioritize accessibility for users of visual and auditory (dis)abilities.

8. Definitions & Acronyms

- **Text-to-speech:** assistive technology that reads text aloud.
- **Gamified:** make more game-like.

9. Competitive Analysis

Duolingo	
Strengths	<ul style="list-style-type: none">• This site has a bright, fun interface that immediately draws the user in. The lessons and challenges are set up as a game that keeps competitive users coming back to win.• When the user hasn't logged in to use the site in a while, it sends notifications to remind them and bring them back.• The site's main features are all free to use.
Weaknesses	<ul style="list-style-type: none">• The activities that this site provides can get repetitive and boring.• The site's speech recognition is not always reliable.• Direct translation is not the best way to learn a language, and this site relies more on direct translation than context clues to teach.
Audience	With an abundance of games to aid in language learning, Duolingo is perfect for the casual learner.

Rosetta Stone	
Strengths	<ul style="list-style-type: none">• Instead of using translations into a mother language, this site uses pictures and visual cues to help the user understand words.• This site breaks learning into several categories (beginner, intermediate, and advanced), which allows the user to progress at a comfortable pace.
Weaknesses	<ul style="list-style-type: none">• Requires a paid subscription before allowing the user to view the site. This site doesn't have a free

	<p>trial, and it is the most expensive of the three sites we have analyzed.</p> <ul style="list-style-type: none"> Because the lessons provided are more intensive and focused, they can take a longer time to complete. The user will likely take half an hour to work through each lesson.
Audience	Serious users who want to become fluent find this site's usage of conversationally-based lessons most useful.

Babbel	
Strengths	<ul style="list-style-type: none"> This site offers live lessons. Users can meet with a teacher and even other students to learn languages together, which allows more social learners to flourish. <p>Many different types of activities are offered that provide the user with a multitude of different ways to learn.</p> <p>Clear instructions are offered for each activity.</p>
Weaknesses	<p>This site requires a paid subscription in order to use it.</p> <p>Compared to the other sites, Babbel doesn't offer as much conversational speaking practice.</p>
Audience	With its advanced grammatical lessons, Babbel is a great site for both beginners and advanced learners who are willing to pay for the service.

As a result of the competitive analysis, we have identified several strengths and weaknesses among language learning apps. Like Duolingo, our platform will have a bright, engaging interface. Specifically, our app will feature a gamified learning experience with unique, customizable avatars designed to keep users motivated. We will also include notifications to encourage users to continue their learning journey, ensuring engagement over time. Rosetta Stone, another app that inspired our design,

assess their user's language proficiency upon account creation. Our app will also feature similar functionality, allowing users to progress based on their current skills.

However, we aim to avoid certain weaknesses identified in these platforms. For example, we will ensure that the activities and lessons do not become repetitive or boring — as reported by some Duolingo critics — by providing features like reward system, daily streaks, and flashcards. Additionally, we aim to implement auditory exercises that are more reliable and comprehensive than Duolingo's, allowing users to practice conversational skills more effectively.

Ultimately, our language learning app will combine the best features of these sites — engagement, interactivity, and social learning — while avoiding repetitiveness and limited access to make language learning more enjoyable and effective for all users.

10. References

- [Babbel Vs Rosetta Stone Vs Duolingo: The Ultimate Language Learning App Showdown \(duolingoguides.com\)](https://duolingoguides.com/babbel-vs-rosetta-stone-vs-duolingo-the-ultimate-language-learning-app-showdown/)
- <https://www.fluentu.com/blog/reviews/duolingo-vs-rosetta-stone>
- <https://www.lingoda.com/blog/en/five-surprising-stats-about-language-learning>

11. Appendices

N/A