

# Online Language Learning Platform

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## Software Requirements Specification



CSCE247: Software Engineering

Zuckerberg's Minions

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# **1. Introduction**

## **Purpose**

This project tackles the growing industry and demand for language learning tools, which has been driven by an increase in global travel and cross-cultural interactions. In 2023, the number of U.S. citizens traveling overseas increased by over 10 million compared to the previous year. Our app will let travelers be able to have the necessary language skills to navigate through their adventures and travels as they learn better communication and cultural understanding. Through features like interactive lessons, real-world conversation practice, and cultural understandings, users will be able to enjoy their travels while also having the knowledge and insight they need to connect meaningfully. The app will also offer personalized learning paths which can be customized to different individual goals and progress which allows users to learn at their own pace.

## **2. Stakeholders**

## Robert Dellington

age: 56  
residence: Chicago, IL  
education: Masters  
occupation: Foreign Language Teacher  
marital status: Married



*"To learn a language is to have one more window from which to look at the world"*

Robert is a foreign language teacher at The University of Chicago who wants to keep his mastery sharp and possibly learn more than just the language. He is not the most tech-savvy but can learn quickly and figure out apps after using them for couple of days.

### Comfort With Technology

#### INTERNET

#### SOFTWARE

#### MOBILE APPS

#### SOCIAL NETWORK

### Needs

- Ongoing Training
- Flexible Curriculum
- Diverse Materials

### Values

- Continuous Improvement
- Cultural Sensitivity
- Honesty
- Dedication

### Criteria For Success:

To be able to teach his students successfully and efficiently so that his students can pass his class. Students demonstrate measurable improvement in their language skills, including speaking, listening, reading, and writing. Students actively participate in class activities, discussions, and exercises, showing enthusiasm for learning the language.

### Wants

- Active Participation
- Acknowledgment of Effort

### Fears

- Boredom
- Maintaining Language Skills
- Cultural Misunderstandings

## Elizabeth Rose

age: 20  
residence: Phoenix, AR  
education: Undergraduate  
occupation: None  
marital status: Single



*"Life begins at the end of your comfort zone"*

Elizabeth simply wants to pick up a language for fun, she doesn't know any language besides her native language. It is hard for her to stay focused on things but she is always able to get her work done and she likes going out to eat different types of food.

### Comfort With Technology

#### INTERNET

#### SOFTWARE

#### MOBILE APPS

#### SOCIAL NETWORK

### Needs

- Study Groups
- Mentorship
- Affordability

### Values

- Self-Improvement
- Curiosity and Open-Mindedness

### Criteria For Success:

Maintaining interest and motivation in language learning through interactive and enjoyable activities. Successfully reaching specific learning goals, such as completing a language level or passing a proficiency test. Overall regular improvement in language skills.

### Wants

- Cultural Immersion Experiences
- Interactive and Fun Learning Tools
- Flexibility in Learning

### Fears

- Judgment
- Not Making Progress

## Bruce Henderson

age: 40  
residence: Rhode Island  
education: B.A.  
occupation: CEO  
marital status: Married



*"Success isn't just about the numbers, it's about the impact you leave behind."*

As a successful business owner, Bruce's mornings are dedicated to strategic planning and high-level decision-making. He believes in leading by example and often meets with his business team first thing everyday. He sets the agenda for the day and ensures that everyone is aligned with the company's objectives. Bruce is hands on, yet he trusts his team to execute his vision which allows him to focus on the big picture.

### Comfort With Technology

#### INTERNET

#### SOFTWARE

#### MOBILE APPS

#### SOCIAL NETWORK

### Needs

- Efficient Time Management
- Trusted Team
- Work-Life Integration

### Values

- Integrity
- Ambition
- Loyalty
- Innovation

### Criteria For Success:

Bruce finds comfort in his work-life balance despite his business demands. Bruce prioritizes time for personal life. He views balance as essential to long-term success. Bruce also loves to grow and not just with his business. Expansion and diversification of his business and other aspects of his life are key indicators of success. He values increasing market share and launching new ventures.

### Wants

- Continued Growth
- Recognition
- Quality of relationships
- Freedom

### Fears

- Losing Control
- Obsolescence
- Failure

## 3. Constraints

### Timeline

- The project must be complete in a relatively short amount of time (by the end of the semester).

### Team Size

- The project will be completed by a group of 4 students. This results in a smaller amount of work that can be done (when compared to large groups or companies).

### Budget

- The project has a budget of \$0.

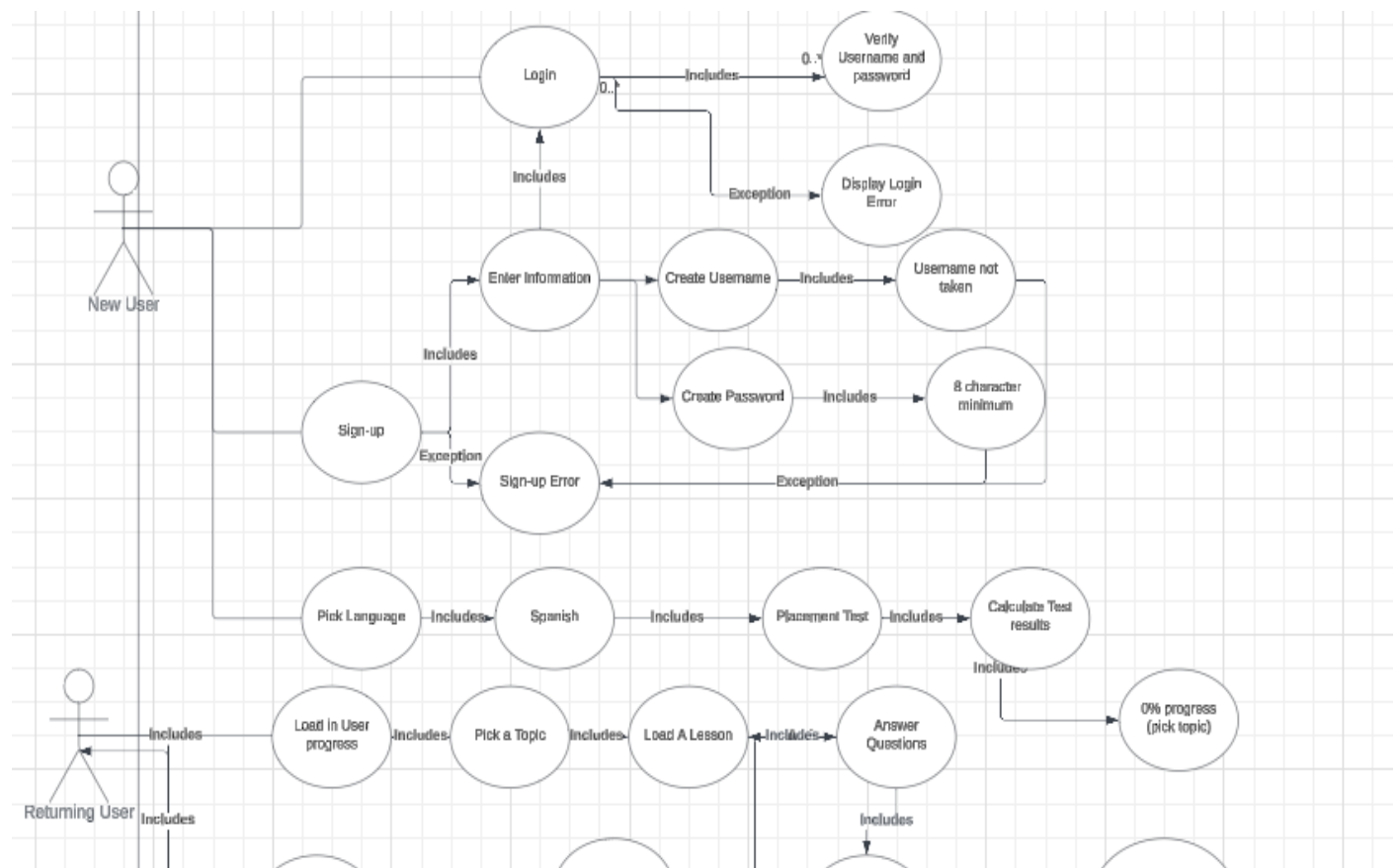
### Technology

- The entire application must be made in Java. This may come with some drawbacks, as different languages could be more useful for certain parts of the development process.

## 4. Overall Description

This application will help users to learn or practice a language. Through their mobile devices, users will learn new concepts and practice what they already know in the language they are learning. To make this more appealing, the app will offer its content in a fun, gamified manner. Users will be offered multiple levels of difficulty, making the app useful for both beginners and experienced speakers of the language being learned. To gauge the user's familiarity with the language, they will be tested upon creating an account so that they can be suggested where to start within the set of modules.

## 5. Business Use Case Diagram



## **6. Functional Requirements**

### Requirements Document

## **7. Non-Functional Requirements**

### Look and Feel Requirements

- The user interface of the system shall be implemented in a way for the beginner users to understand what they are looking at.

### Usability Requirements

- The system shall be used by users with a wide range of capabilities.

### Performance Requirements

- The system shall run on any device connected to the internet.

## Maintainability and support requirements

- The system shall be able to run on Window, Linux, and Mac systems.
- The program shall be able to be easily scaled to implement more languages and lessons

## Security requirements

- The user's information shall be stored in a secure manner.

## Legal Requirements

- The system shall comply with all state and local law.

## 8. Definitions and Acronyms

**Gamified:** The process of adding games or game-like elements to something

**Java:** A multiplatform, object-oriented programming language

**Linux:** An operating system is the software that directly manages a system's hardware and resources, like CPU, memory, and storage.

## 9. Competitive Analysis

	Duolingo
Strengths	<p>Gamification is a major focus of the app. Features like streak count, badges, instant feedback, leaderboards, and points keep users interested and engaged. These features also give users a tangible metric of how much they've accomplished, keeping them interested in completing more lessons.</p> <p>Duolingo is easy to use for users of all ages. The user interface is colorful and understandable, as well as pleasing to look at. By having a well-made user interface, Duolingo decreases friction for users, which can create higher user retention.</p> <p>Duolingo offers both a paid and free version of the app. Beginners can try out the app at no cost, making it accessible to anyone interested in learning a language. The heart feature of the app gives free users a certain number of permitted mistakes before they have to wait on a cooldown period. This encourages more serious learners to purchase the paid version, which has no cooldown periods.</p>

	The app offers 43 different languages that users can learn. This makes it useful to a wide range of people and increases the target audience.
<b>Weaknesses</b>	<p>Users can become frustrated with the constraints that come with the free version of Duolingo. The cooldown period can become frustrating for users, as it is based on the amount of mistakes made in the lessons by the user. This can lead to decreased time spent on the app.</p> <p>Users on the free version don't have any commitment to continue using the app. Without any sunk cost, these users are more likely to quit using the app, leading to lower user retention.</p> <p>Lessons on Duolingo are often based on trial and error. When compared to more traditional forms of language learning (like school or courses), this approach can be less useful. Traditionally language is taught by giving learners a new concept, followed by an opportunity to apply it in conversation.</p> <p>Some users may be using this app for travel. In this scenario, the user should learn common expressions or other useful words that they will encounter while staying in another country. On Duolingo, these users may be wasting time by learning words and expressions that aren't necessarily useful in conversation.</p> <p>Educational apps have one of the lowest user retention rates of any category on the app store. This is a challenge not just for Duolingo, but for all apps in its market.</p>
<b>Audience/Focus</b>	Duolingo is primarily for beginners who don't have much experience in the language they're learning. Due to this, the app offers most beginner level lessons on topics like grammar and basic words.

	<b>Babbel</b>
<b>Strengths</b>	<p>Babbel has introduced live group classes that give you access to content in a classroom like environment.</p> <p>They offer placement tests. This allows users to not get bored by working on content that they already have a strong understanding of.</p>



	<p>They offer a lifetime membership for \$349. Although it is expensive it allows users full access to the website for a single price.</p> <p>Material is unique for each language and targets pronunciation/real life usage.</p> <p>Some languages are organized by levels of understanding and are based off a universal CEFR (Common European Framework for Reference for Language).</p>
<b>Weaknesses</b>	<p>Babbel is more challenging than the average language learning app, so they miss/are less successful with the new learner market share</p> <p>There are only 13 languages available compared to 43 on Duolingo.</p> <p>There is very little access to Babbel for free and the plans cost around \$15 a month. Live classes are an extra cost and more expensive than some of their competitors</p> <p>There isn't gamification which could cause users to easily become bored of the app if they aren't serious about learning a new language.</p>
<b>Audience/Focus</b>	<p>Babbel is best for people that are skilled at learning languages, or people learning a language that is like one they already know.</p>

	<b>Rosetta Stone</b>
<b>Strengths</b>	<p>Rosetta Stone offers 23 languages. Although there aren't as many options as Duolingo, it offers some of the most common/sought after languages to learn.</p> <p>It is only subscription based, which is a clear and guaranteed way to bring in revenue if you can get users.</p> <p>Rosetta Stone is consistent and reliable, being that it is one of the oldest and most well-known language learning platforms.</p> <p>They have different sections that can help you focus on vocabulary in a category that you are most interested in. For</p>

	<p>example, some of the sections are travel, work, and basic and beyond.</p> <p>You can jump ahead if you find the content to be too easy.</p> <p>It is fully immersive. Everything is in the language you are trying to learn except for the menus, settings, and title screens.</p> <p>They offer tutoring sessions for a fee.</p> <p>There is an option to play games. They even have an option to play the games online with other students on the platform.</p>
<b>Weaknesses</b>	<p>Rosetta Stone is only available with a subscription that ranges from 13.99 a month to a one-time lifetime subscription for \$399. This can be expensive and only serious learners are likely to join this platform.</p> <p>It is very repetitive, which could cause users to get bored and leave the platform.</p> <p>Every language program is almost identical, causing you to miss out on cultural context. This can be critical and can create a misunderstanding when learning certain content.</p> <p>No placement tests.</p>
<b>Audience/Focus</b>	<p>Rosetta Stone does extremely well for those trying to build a foundation in vocabulary and grammar. As well as offering content for more experienced students.</p>

## Summary

	<b>Strength</b>	<b>Weakness</b>	<b>Focus</b>
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<b>Duolingo</b>	+Gamification + Easy to use +Variety of languages	+free version +Retention +Not Learning	<b>General Audience (Novice)</b>
<b>Babble</b>	+Group environment +Unique material +Levels	+Challenging +Limited languages +No gamification	<b>Intermediate users</b>
<b>Rossetta Stone</b>	+Choice of language +Free tutorial +Online games	+Not free +Boring +Cultural context	<b>Students</b>

After completing the competitive analysis, we found strengths and weaknesses in all the platforms we researched. We plan to implement the strengths of Duolingo's gamification strategy by having a reward system for correct answers and the ability to use these coins to buy avatar customizations. We also plan to implement repetition in the lessons, hoping it will help users learn new vocabulary at a pace that is not frustrating. We also plan to implement a placement test to keep the content as engaging as possible and inclusive for learners of all levels. Overall, our goal is to create an engaging platform for motivated learners of all levels that allows users to gain a real understanding of various languages around the world.

## Sources

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