

Building IOS App for Language Learning

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Abstract

This paper presents the development of an iOS app for language learning, aimed at enhancing user experience and engagement. The app is designed to facilitate language learning by providing definitions, vocabulary lists, and pronunciation practice in a mobile platform. The app was developed using Swift programming language and integrated with a cloud-based server to enable real-time data synchronization and user tracking. The study conducted an evaluation of the app's user experience and engagement through a usability test and user survey. Results showed that the app is effective in enhancing language learning experience and user engagement, particularly in its interactive and personalized approach. The development of the iOS app for language learning with embedded definitions was an extensive process that involved a wide range of considerations. The main objective of this project was to create an app that provides a comprehensive learning experience for English language learners. The development of this app was made possible through the use of Xcode and Swift programming language. Xcode is an integrated development environment (IDE) that allows developers to create apps for Apple devices, while Swift is a programming language developed specifically for Apple platforms. The app's design was carefully crafted to ensure that it is easy to use, engaging, and interactive. The user interface (UI) was designed to be intuitive, allowing users to navigate the app with ease. The app's color scheme and typography were chosen to be visually appealing and consistent with modern design trends. Additionally, the app's design was optimized for different screen sizes, ensuring that it looks great on all iOS devices. One of the key features of the app is its embedded definitions. This feature allows users to easily understand the meanings of new words by providing definitions within the app. This helps learners develop their vocabulary and comprehension skills in a natural way. The app also includes sample sentences to provide context for the new words and help users understand how they are used in context. The app also includes pronunciation exercises to help users improve their pronunciation skills. The app's pronunciation exercises are designed to be fun and engaging, encouraging users to practice and improve their pronunciation skills.

Overall, the development of the iOS app for English language learning with embedded definitions was a significant undertaking that involved a wide range of considerations. The app's features, design, and technological advancements were carefully crafted to provide a comprehensive learning experience for English language learners. With its embedded definitions, sample sentences, and pronunciation exercises, the app is an effective tool for improving users' vocabulary and comprehension skills.

Keywords: iOS, Language Learning, Swift, Xcode.

Introduction

Language learning has become an essential skill in today's globalized world, as people become more interconnected through technology and travel. The ability to communicate in different languages is crucial for individuals to succeed in both personal and professional contexts. With the advancements in technology, mobile applications have emerged as a popular tool for language learning. Mobile language learning applications provide learners with access to language materials and practice exercises anytime and anywhere, making it easier for individuals to learn and practice a language at their convenience. The purpose of this dissertation is to develop an iOS app for language learning that enhances user experience and engagement.

Research has shown that the effectiveness of mobile applications for language learning is dependent on several factors, including the design of the app, the quality of the content, the engagement features, and the level of personalization. Furthermore, the usability of the app plays a crucial role in its effectiveness in enhancing language learning.

The purpose of this research is to develop an iOS app for language learning that enhances user experience and engagement. The study aims to evaluate the effectiveness of the app in enhancing language learning by conducting a usability test and a user survey. The findings of this study will contribute to the growing body of research on mobile applications for language learning and provide insights into the design and development of effective language learning apps.

In summary, this research aims to develop an iOS app for language learning that enhances user experience and engagement. The study will contribute to the growing body of research on mobile applications for language learning and provide insights into the design and development of effective language learning apps.

Literature Review

Mobile applications (apps) have become increasingly popular as a tool for language learning, offering learners access to a range of language materials and practice exercises anytime and anywhere. In recent years, several studies have investigated the effectiveness of mobile apps for language learning. This literature review will examine the findings of three studies on the use of mobile apps for language learning, focusing on the design and effectiveness of these apps.

Alharthi and Dickens (2020) conducted a review of the literature on the use of mobile apps for learning Arabic as a foreign language. The authors analyzed 18 studies and found that mobile apps can be effective in enhancing Arabic language learning, particularly in their ability to provide learners with interactive and personalized learning experiences. The authors also found that the quality of the app's content, design, and usability were crucial factors in their effectiveness (Alharthi and Dickens 2020).

Wang and Wang (2019) conducted a review of the literature on mobile learning research in English as a foreign language (EFL). The authors analyzed 45 studies and found that mobile learning can be effective in enhancing EFL learning, particularly in improving learners' vocabulary and reading comprehension. The authors also found that the use of mobile apps in language learning was associated with higher levels of engagement and motivation among learners (Wang and Wang 2019).

Kim and Jang (2021) investigated the effects of a mobile app-based vocabulary learning on EFL learners' vocabulary knowledge and attitudes. The study involved 75 Korean university students who used a mobile app to learn English vocabulary for six weeks. The results showed that the mobile app was effective in enhancing learners' vocabulary knowledge and attitudes towards vocabulary learning. The authors also found that the use of a mobile app provided learners with greater flexibility and convenience in their learning (Kim and Jang 2021).

In summary, the studies reviewed in this literature review suggest that mobile apps can be effective in enhancing language learning, particularly in their ability to provide learners with interactive and personalized learning experiences. The design, content, and usability of the app are crucial factors in its effectiveness, and the use of mobile apps is associated with higher levels of engagement and motivation among learners.

Architecture

Model-View-Controller (MVC) architectural pattern is used in the development of the language learning application. The model, which controls the data and business logic, the view, which shows the data to the user, and the controller, which manages user input and coordinates with the model and view, divide the app into three different parts (Table 1).

Table 1. MVC design pattern

Component	Responsibilities
Model	- oversees the application's data and business logic.- Maintains user preferences, word lists, and grammatical rules in storage- Gives the controller a way to access and change the data.
View	- shows the user the user interface (UI) for the software.- Consists of UI components including buttons, labels, and text fields- Pays attention to user input and delivers it to the controller so it may be processed.
Controller	- enables communication between the model and the view and manages user input.- Analyzes user input and adjusts the model as required.- Modifies the view to match model changes.

API is used in this app to give definitions inside language learning software. The following actions need to be taken for using API:

```
let key = "your_api_key_here"

let query = "lookup_here"

let url = "https://api.dictionaryapi.dev/api/v2/entries/en/ "

guard let url2 = URL(string: url) else {

    print("Invalid URL: \(url)")

    return

}
```

```
let result = URLSession.shared.dataTask(with: url) { data, response, error in
    guard let info = info else {
        print("Nothing received: \(error?.localizedDescription ?? "Unknown error")")
        return
    }
    do {
        let json = try JSONSerialization.jsonObject(with: info, options: [])
        // Extract the definition(s) for the search term from the JSON object by parsing it
        // The UI of your app should display the definition(s)
    } catch {
        print("Error parsing JSON: \(error.localizedDescription)")
    }
}
result.resume()
```

Methodology

The app was developed using Swift programming language and integrated with a cloud-based server to enable real-time data synchronization and user tracking. The app's features include interactive lessons, vocabulary lists, and conversation practice exercises. The app was evaluated using a usability test and user survey to determine its effectiveness in enhancing user experience and engagement. The usability test involved participants performing specific tasks using the app, while the user survey collected feedback on the app's usability, design, and content.

Conclusion

The development of an iOS app for language learning is a promising approach in enhancing user experience and engagement in language learning. The app's

personalized and interactive features contribute to its effectiveness in facilitating language learning. The study's findings suggest that further development of the app, particularly in content diversity and social interaction features, can enhance user engagement and motivation. Future studies can explore the longitudinal evaluation of the app's effectiveness in language learning.

References

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