

ODIA BARNABODHA (AN ODI LANGUAGE LEARNING APPLICATION)

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Abstract:

"ODIA BARNABODHA" is an innovative Odia language learning application designed to make the process of acquiring Odia language skills engaging, interactive, and accessible for users of all ages. The application incorporates a wide range of features including a built-in dictionary, translator, augmented reality (AR) screen, quizzes, educational games, writing practice for words and numbers, and a module to learn words associated with each letter of the Odia alphabet. Developed using Java, XML, SQL, and integrated with Google Text-to-Speech API, the app offers a dynamic and user-friendly interface that supports both self-paced learning and immersive experiences. By combining traditional linguistic elements with modern technology, ODIA BARNABODHA aims to preserve the Odia language while promoting digital literacy and enhancing the learning journey for students, educators, and language enthusiasts.

Keywords:

JAVA, XML, SQL

I. INTRODUCTION

ODIA BARNABODHA is more than just a language tool; it is a digital bridge that connects users to the soul of Odisha's linguistic heritage. Rooted in tradition yet enhanced by innovation, the app is designed to cater to a wide spectrum of users — from children taking their first steps in language learning to adults seeking to reconnect with their mother tongue or learn it as a second language. Whether in a classroom setting, at home, or on the go, ODIA BARNABODHA offers a personalized, interactive, and immersive experience that adapts to individual learning styles and needs.

LITERATURE REVIEW

The development of language learning applications has become a cornerstone of modern educational technology, particularly for regional and underrepresented languages. Various studies have highlighted the effectiveness of integrating multimedia tools and gamified elements to enhance language acquisition (Godwin-Jones, 2018; Kukulska-Hulme, 2020). In this context, ODIA BARNABODHA aims to fill a significant gap in digital resources for Odia, a classical language of India. Traditional language learning methods have often lacked interactivity and accessibility, especially for younger learners or those outside Odisha. Recent advancements have shown that combining features such as dictionaries and translators can improve vocabulary retention and cross-lingual comprehension (Chen & Li, 2021). The inclusion of a dictionary and translator in ODIA BARNABODHA aligns with these findings, providing users with quick access to word meanings and translations between Odia and other languages.

II. SYSTEM DESIGN

1. Integration of Interactive and Immersive Learning Tools:

The inclusion of *dictionary, translator, VR screen, quizzes, and games* in language learning applications has proven to enhance engagement and retention. Studies have shown that immersive environments, such as those provided by VR, along with gamified elements, significantly boost user motivation and improve learning outcomes. Moreover, interactive quizzes and games reinforce vocabulary and grammar, making the learning process enjoyable and effective.

2. Technology Stack for Efficient Language Learning:

The use of *Java, XML, SQL, and **Google API (Text to Speech)* in developing the ODIA BARNABODHA application ensures scalability, usability, and smooth user interaction. Java and XML allow for the development of a robust and intuitive Android application, while SQL ensures efficient data management for storing progress and content. The *Text to Speech API* enhances the learning experience by assisting with correct pronunciation, fostering auditory learning, and improving overall language fluency.

III.IMPLEMENTATION

1. User Interface (UI) Design with XML:

The UI is designed using *XML* to create an intuitive and user-friendly layout for the application.

2. Dictionary and Translator Integration:

The *dictionary* and *translator* functionalities are implemented to provide quick translations between Odia and other languages.

3. Text to Speech (TTS) Integration:

Google API Text to Speech is implemented to convert text into spoken words.

4. VR Screen for Immersive Learning:

VR-based learning environments are designed to immerse users in virtual spaces, linking words with real-life objects and scenarios.

5. Quiz and Game Features:

Quiz and game sections are implemented to provide interactive and engaging learning experiences.

6. Writing Practice for Words and Numbers:

Digital handwriting recognition or input tools help assess and improve writing skills.



IV. RESULTS

The Odia Barnabodha app is a comprehensive and engaging tool designed to facilitate learning the Odia language, one of India's six classical languages and an official language of Odisha. This interactive application caters to beginners and learners looking to enhance their reading, writing, speaking, and understanding of Odia through a variety of innovative features. It includes an Odia-English dictionary for quick reference, enabling users to explore vocabulary effortlessly, and a

translator for seamless conversion between English and Odia, aiding in practical communication. The app's VR screen feature offers immersive experiences, such as exploring AR solar system models and animals, making learning visually stimulating and memorable. Additionally, Odia Barnabodha incorporates quizzes and games to test knowledge and reinforce learning in a fun, interactive way, alongside drawing games related to alphabets, numbers, and words. Users can practice writing Odia words and numbers with guided support, ensuring proper script formation, and learn words associated with each letter of the Odia alphabet, which consists of 12 vowels and 40 consonants. With its child-friendly design, access to classical Odia literature, and tools like interactive drawing for alphabet and number practice, the app is ideal for students, teachers, and anyone interested in Odia language and culture, providing a rich, multifaceted learning experience.

V. CONCLUSION

Odia Barnabodha has successfully established itself as an innovative and effective language-learning application designed to teach the Odia language. Through its diverse set of features, the app caters to learners at different proficiency levels, from beginners to advanced users. The inclusion of both traditional and modern learning tools allows for an immersive, well-rounded language learning experience that is both educational and enjoyable. The app's focus on making learning interactive and practical has made it highly accessible and user-friendly.

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