Student Innovation (Language related application)

**Problem Description and statistical Data**

This is a student innovation where we make an application based on one of the toughest languages **Telugu**. Many people who have their mother tongue “Telugu” struggle to read Telugu. There are 2 Telugu speaking states “Andhra Pradesh” and “Telangana” where about 90% of them speak Telugu and Telugu is fourth most spoken language in India. So, it is much more important to speak Telugu.

**Problem validation**

* **Identify Core Problem**: Limited resources are available for Telugu-speaking students and learners, making it difficult to access quality educational and reading materials in Telugu**.**
* **Define Target Audience**: Focus on Telugu-speaking students and individuals learning the language who need support for reading, comprehension, and vocabulary building**.**

**Existing solutions and their limitations**

1. **Google Translate**

* **Functionality:** Provides basic translations from Telugu to other languages helping users.
* **Limitations:** Limited Context Accuracy and No Language Learning Support

1. **Duolingo and Other Language Apps**
   * **Functionality:** Apps like Duolingo offer language learning for languages, using vocabulary.
   * **Limitations:** Lack of Telugu Support and Generic Learning Approach
2. **Telugu News Apps**

* **Functionality:** Apps like Eenadu offer Telugu news that helps improve reading and vocabulary.
* **Limitations:** Complex Language Level and No Educational Focus.

**Our Solution and Its Uniqueness**

1. The app is tailored for beginners who struggle with reading Telugu, providing structured support.
2. It features authentic voice support, simulating a native Telugu speaker’s pronunciation and accent.
3. A competitive environment is included, allowing users to track progress with leaderboards and scores.

**Technical Description and Feasibility**

1. **Front-End (React)**:
   * User Interface
   * Story Display and Interaction
   * Dynamic Leaderboards and Scoring
2. **Back-End (Express and Node.js)**:
   * Authentication and Database Management
   * Image Upload and Text Extraction
   * Speech Recognition and Feedback
3. **Database (Firebase and Firestore)**:
   * Data Storage and Management
   * Real-Time Reading and Audio Feedback
   * Progressive Learning
4. **Feasibility**:

* **React, Express, and Firebase** provide a robust, scalable architecture. Tesseract OCR and Speech Recognition APIs make text extraction and pronunciation feedback feasible. This setup effectively supports a comprehensive Telugu learning experience with personalized guidance, real-time feedback, and engaging competitive elements.

**Prototype images/Algorithms/Flowcharts/Graphs**

 

 