

ECHOLEARN

GIVING VOICE TO INCLUSIVE EDUCATION

Team WillDo





PROBLEM STATEMENT

How can a digital learning application empower deaf and mute students by integrating sign language translation and interactive learning modules?

SOLUTION

- Developed an AI-powered learning platform to assist deaf and mute students in accessing education seamlessly.
- Integrated real-time sign language translation to convert both **text and speech into sign language**, ensuring accessibility.
- Implemented an **AI-driven** system that allows students to interact with content without language barriers.
- Designed and developed **interactive learning modules** that provide an engaging and self-paced learning experience.
- Created a structured **progress-tracking system** to monitor student engagement and learning outcomes.

KEY FEATURES

- **AI-Powered Sign Language Translation** – Converts speech and text into real-time sign language animations.
- **Interactive Learning Modules** – Video-based lessons with sign language support, quizzes, and AI-driven progress tracking.
- **Speech-to-Sign & Text-to-Sign Conversion** – Enables seamless communication for students and teachers.
- **Accessibility-Focused UI** – High-contrast mode, adjustable fonts for better comprehension.
- **Community & Teacher Support** – discussion forums, and teacher dashboards for monitoring progress.

TECHNOLOGIES USED

- **Programming Language: Python**
- **Libraries: Tensorflow, scikit-learn, gTTS(Google Text-to-Speech)**
- **Framework: Mediapipe**
- **Frontend: Javascript, React.js**
- **Backend: Flask**

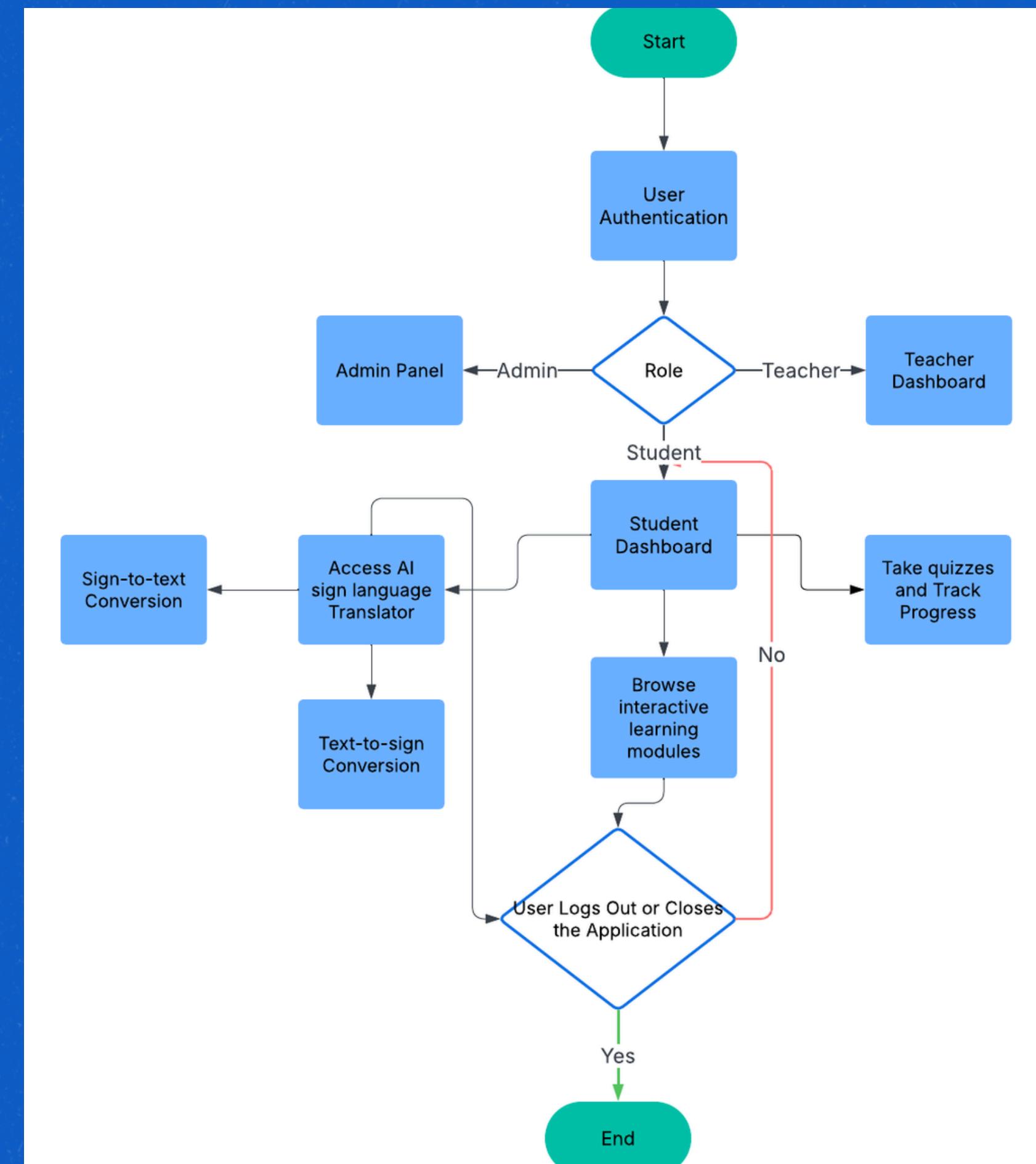
IMPACT OF ECOLEARN

- Educational Inclusion – Ensures that deaf and mute students receive equal learning opportunities.
- Breaking Communication Barriers – Enables smoother interaction between students, teachers, and society.
- Self-Paced Learning – Allows students to learn at their own speed using AI-powered tracking.
- Increased Digital Literacy – Encourages tech adoption among deaf and mute students.
- Policy & Educational Reform – Encourages governments and institutions to adopt inclusive learning strategies.

FUTURE SCOPE

- AR/VR Integration – Creating immersive learning experiences.
- Gamification – Adding interactive challenges and rewards.
- Institutional Integration – Partnering with schools and universities.
- Offline Learning Support – Providing accessibility even in low-internet or rural areas.
- Integration with IoT Devices – Smartboards, haptic devices, and wearables to assist in learning.

WORKFLOW OF THE PROJECT





**THANK
YOU**