SAY IT WELL

a gamified app for speech therapy

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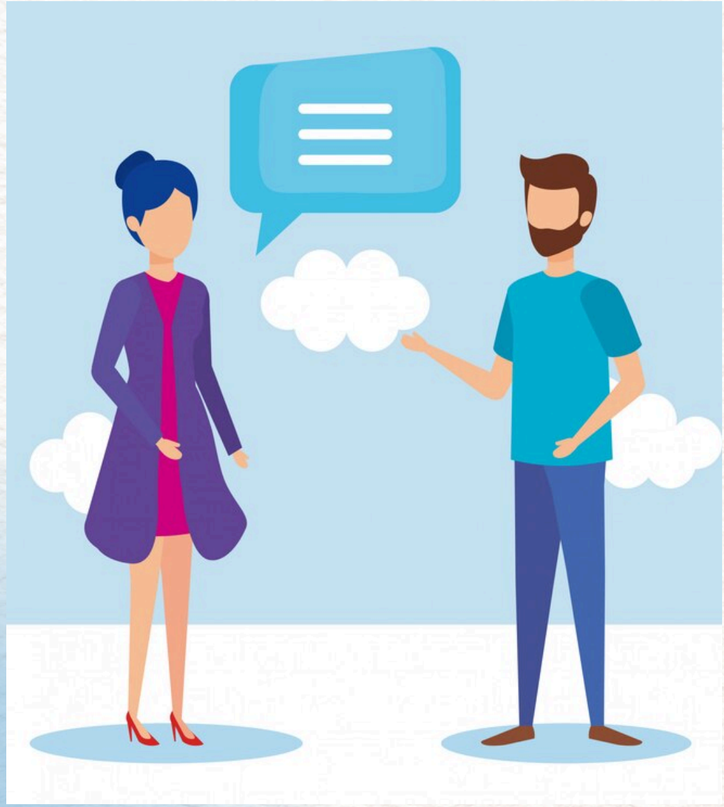
ABSTRACT

Effective communication is a cornerstone of personal and professional success, yet speech challenges like stuttering, articulation issues, and fluency disorders can hinder confidence. This project introduces a gamified speech therapy app with features like an AI coach for real-life conversation simulations, real-time speech analysis, and visualization tools for tracking progress. Built using Google Speech API, TensorFlow, and Flutter, the app combines gamification with AI to make speech training engaging, effective, and accessible.

PROBLEM STATEMENT

Speech disorders hinder communication and confidence, making traditional therapy less engaging. Our app gamifies speech training, using AI-driven speech analysis and real-time feedback. Users control a game character by reading sentences aloud, with AI evaluating pronunciation and fluency. A daily challenge provides real-life speaking practice, and progress tracking helps monitor improvement. This approach makes speech therapy fun, interactive, and effective.

OBJECTIVES



01 Improve Accessibility: Offer a mobile platform for easy access to speech therapy anytime, anywhere.

02 Boost Engagement: Use gamification elements like rewards and challenges to motivate consistent practice.

03 Track Progress: Include visual tools like graphs to help users monitor improvements over time.

04 Simulate Real-Life Scenarios: Offer interactive exercises to build confidence in real-world conversations.

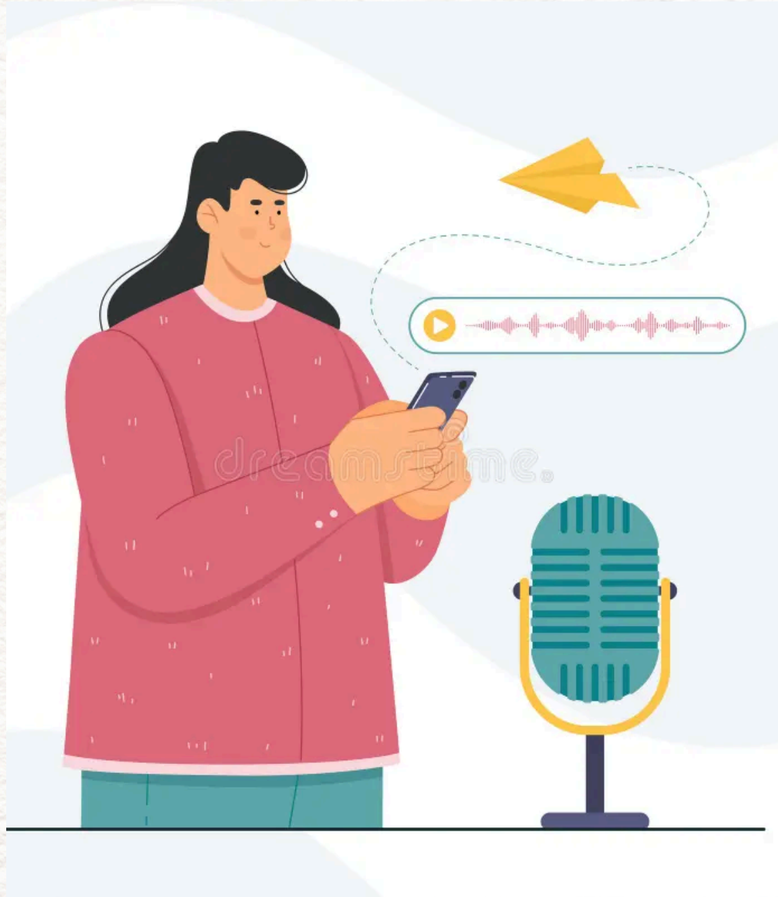
05 Deliver Real-Time Feedback: Utilize AI to analyze speech and provide instant, personalized guidance.

LITERATURE AND SURVEY

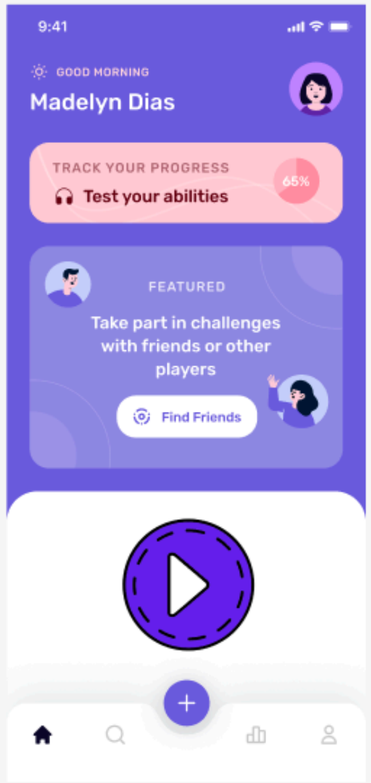
	01 STAMURAI	02 ARTICULATION STATION	CONVERSATIONAL THERAPY
Competitors	Stamurai is a speech therapy app designed to help people manage stuttering through guided exercises, techniques, and self-paced practice.	Articulation Station is a popular app designed to help individuals, particularly children, improve their articulation and pronunciation of speech sounds.	Conversation Therapy is an app designed to improve communication skills, particularly for adults and teens with speech-language challenges
Drawbacks	• Lack of Real-Life Conversation Simulation • Engagement Issues	• Limited Age Range is provided • Narrow Focus on Articulation	• Narrow Focus on Conversations • No Speech Recognition for Interactive Conversations

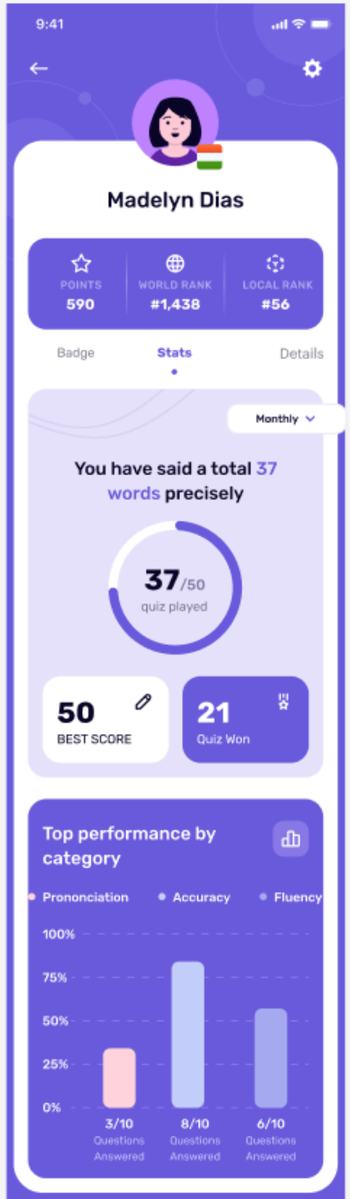
PROPOSED METHODOLOGY

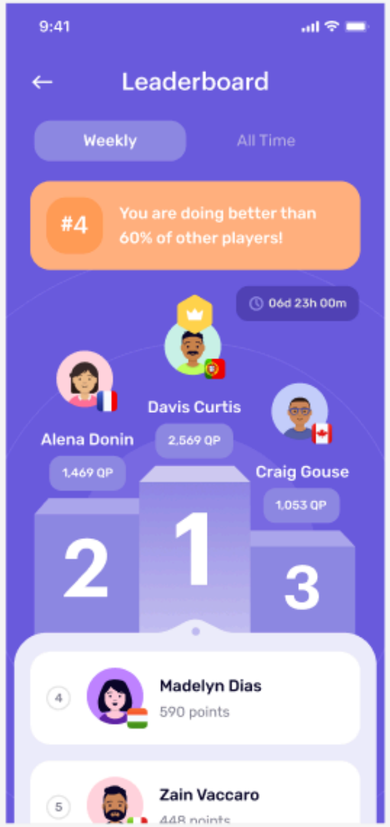
- The speech therapy app, built with Flutter, provides an interactive UI where users record their speech. The Flask-based backend processes the audio using OpenAI Whisper, transcribing and analyzing pronunciation, fluency, and stuttering.
- Using NLP and phonetic analysis (CMU Pronouncing Dictionary), the system detects mispronunciations and speech irregularities. Real-time feedback helps users improve, while a progress-tracking dashboard ensures continuous learning.



EXPECTED OUTPUT







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