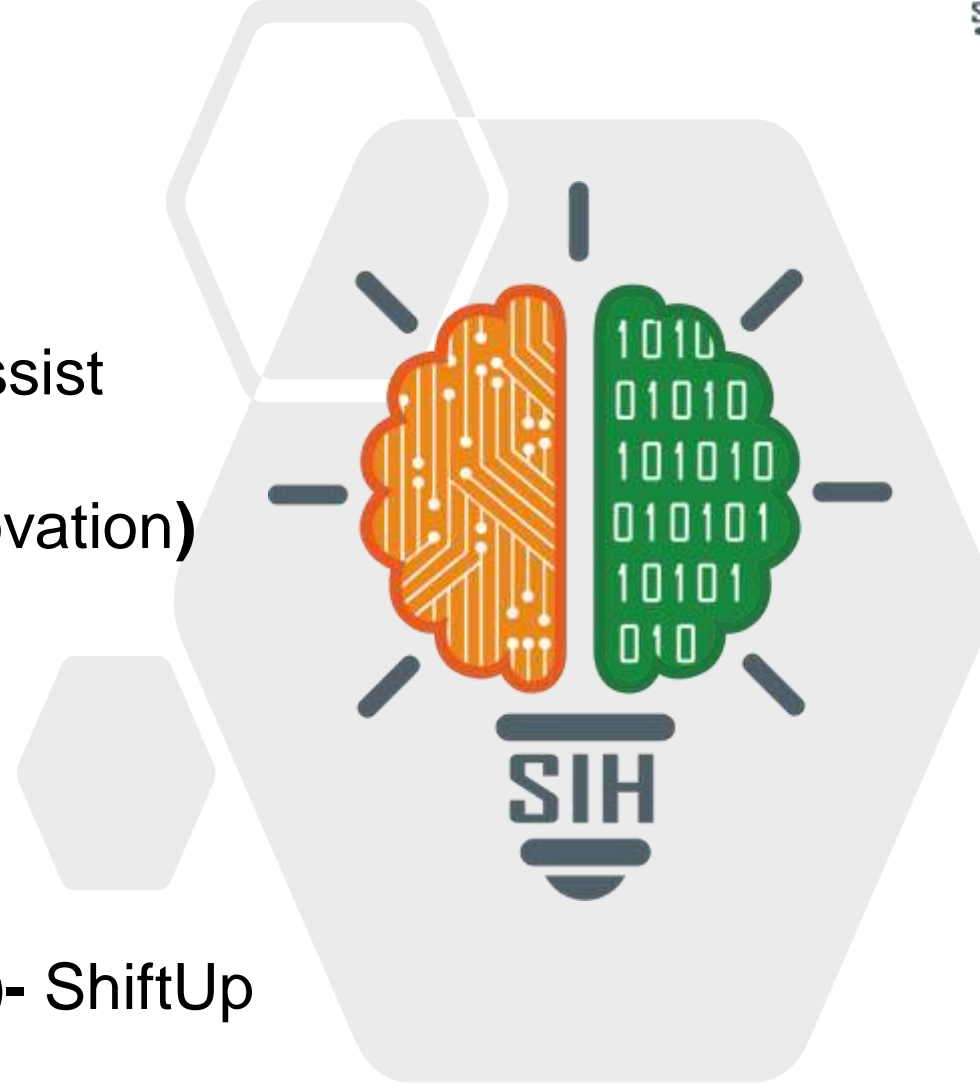


SMART INDIA HACKATHON 2025



- **Problem Statement ID** – SIH25137
- **Problem Statement Title-** AccentAssist
(Student Innovation)
- **Theme-**Travel & Tourism
- **PS Category-** Software
- **Team Name (Registered on portal)-** ShiftUp



❖ Proposed Solution

Problem Statement:

In India's booming tourism sector, **real-time communication gaps** between international tourists (particularly those with American or British accents) and local service providers (guides, hotel staff, drivers, shopkeepers) often lead to **confusion, misinterpretation, and poor customer satisfaction**.

Solution Overview

- We propose **AccentAssist**, a mobile application that serves as an essential tool for local hospitality staff, guides, and anyone in the tourism sector who interacts with American and British tourists.
- The app provides targeted training for understanding and speaking with American and British accents.

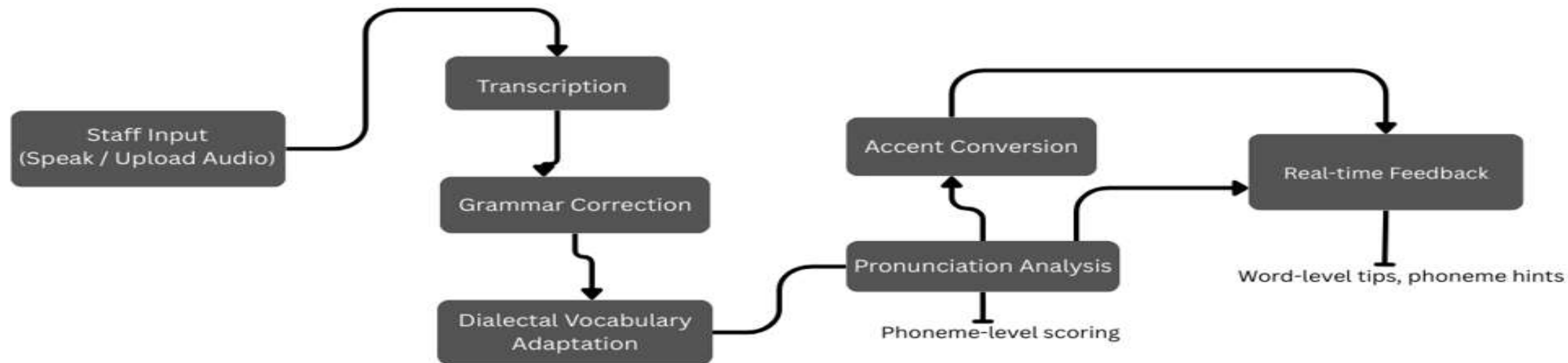
How it Addresses the Problem

- It directly addresses the most common communication barrier in tourism by focusing on the two most prevalent native English accents.
- Breaking accent barriers in tourism
- Empowers staff to deliver better service
- Enhances tourist confidence & satisfaction

Innovation & Uniqueness

- Most accent apps are for the learner. Our app is uniquely for the **service provider**, focusing on understanding and speaking to tourists.
- The limited scope (American/British accents) is a strategic advantage, allowing for a highly accurate and specialized model.
- The app is designed for quick, on-the-job training, It's a professional tool.

Methodology



Frontend (Mobile App): Flutter (Dart)

Backend: Python (FastAPI / Flask)

Database & Auth: Firebase

AI Models

- **Whisper** → Speech-to-Text (Transcription)
- **Hugging Face Model** → Grammar Correction
- **Custom Dictionary** → Dialect Adaptation (American/British)
- **YourTTS / Coqui TTS** → Accent Conversion
- **MFA + Parselmouth** → Pronunciation Scoring

Feasibility

- ❑ **Technology Readiness** – Whisper, Hugging Face, and TTS models are open-source & production-ready
- ❑ **Cross-Platform** – Flutter enables quick Android & iOS deployment
- ❑ **Seamless Backend** – Python (FastAPI) for AI integration
- ❑ **Firebase** – Authentication + real-time database → secure & reliable storage.

Viability

- ❑ **Tourism Market Fit** – Solves global communication challenges in tourism.
- ❑ **Direct Users** – Hospitality staff, guides, local businesses → immediate adoption.
- ❑ **Impact** – Improves tourist experience → boosts reviews & repeat visits.
- ❑ **Scalable Use Cases** – Extendable to call centers, healthcare, education, and corporate training.

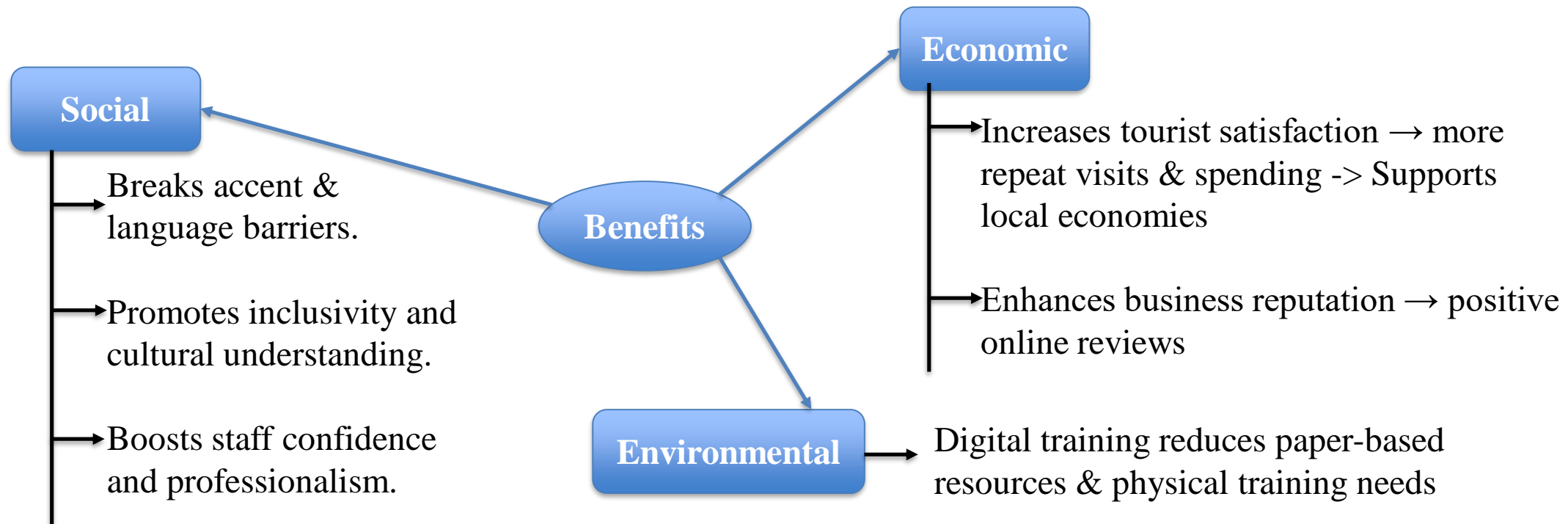
Potential Impact

Target Audience – Tourism staff, guides, hospitality workers

Businesses – Better reviews, higher customer satisfaction

Tourism Industry – Enhanced reputation & global competitiveness, confidence in communication

Individuals: Skill development & better career opportunities



Research and References

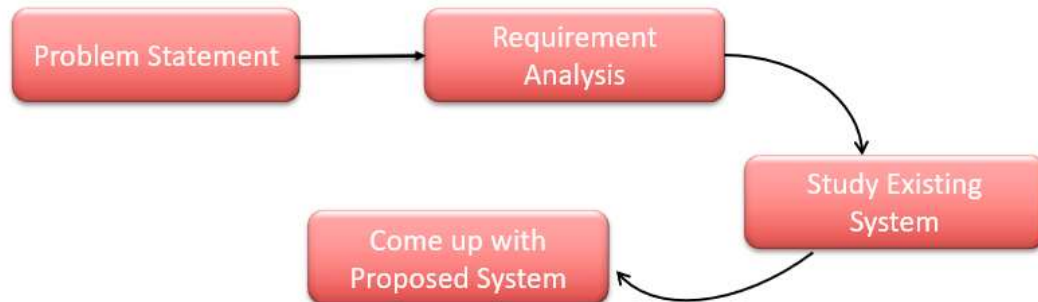
Recent paper on how AI applications like ElsaSpeak improve pronunciation accuracy-

https://www.researchgate.net/publication/393750370_AI_Based_Applications_to_Foster_Pronunciation_Accuracy

OpenAI Whisper: <https://huggingface.co/openai/whisper-large-v3>

Grammar Correction : <https://languagetool.org/http-api/>

Research Approach



Feature / Capability	Elsa Speak	Duolingo	Speechling	AccentAssist (Proposed)
Pronunciation Training	Yes	Yes	Yes	Yes (hospitality-focused phrases)
Grammar Correction	No	Limited	No	AI-powered (Hugging Face)
Accent Comprehension (US/UK)	No	No	Limited	Dedicated US/UK focus
Dialectal Vocabulary Adaptation	No	No	No	Yes
Accent Conversion	No	No	No	Yes
Real-time Feedback (Word-level)	Partial	No	Score-based	Instant word-level guidance
Target Audience	Learners	Learners	Learners	Tourism staff & service providers

Live Demo:

<https://drive.google.com/file/d/1JxONK7Y-oW0-LINHoaOQcgEIWXzFwa0F/view?usp=sharing>