



Project Title: A real-time Indian language communication assistant for the Deaf and hard of hearing.

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Problem Description

Many individuals such as non-verbal, elderly, illiterate, or physically challenged people struggle to communicate effectively during emergencies.

Most existing mobile applications depend on typing, reading, or speaking, which makes them inaccessible to these users.

In rural or low-connectivity areas, delays in communication can lead to critical situations and even loss of life.

There is a lack of simple, intuitive tools that support quick emergency communication with minimal user interaction.

Users need an accessible system that can convert simple actions into voice alerts and share real-time location with emergency contacts.

Objectives

To design a tap-based mobile app for emergency communication without speaking or typing.

To enable voice message generation and real-time location sharing to alert caregivers or contacts.

To make the app accessible for non-verbal, elderly, or illiterate users, especially in rural or low-connectivity areas.

MODULES

Module 1: Tap-Based Interface

- Large, color-coded buttons designed with XML layouts.
- Tap gestures mapped to emergency actions via Java logic.
- Provides visual and vibration feedback for confirmation.

Module 2: Voice Message Generation

- Uses **Google Text-to-Speech (TTS) API**.
- Converts predefined emergency messages into audio alerts.
- Supports regional languages to improve accessibility.

Module 3: Emergency Contact Notification

- Stores emergency contacts using **Firestore/SQL**.
- Sends **SMS alerts with real-time location** via SMS Manager API.
- Works with offline fallback to ensure reliability.

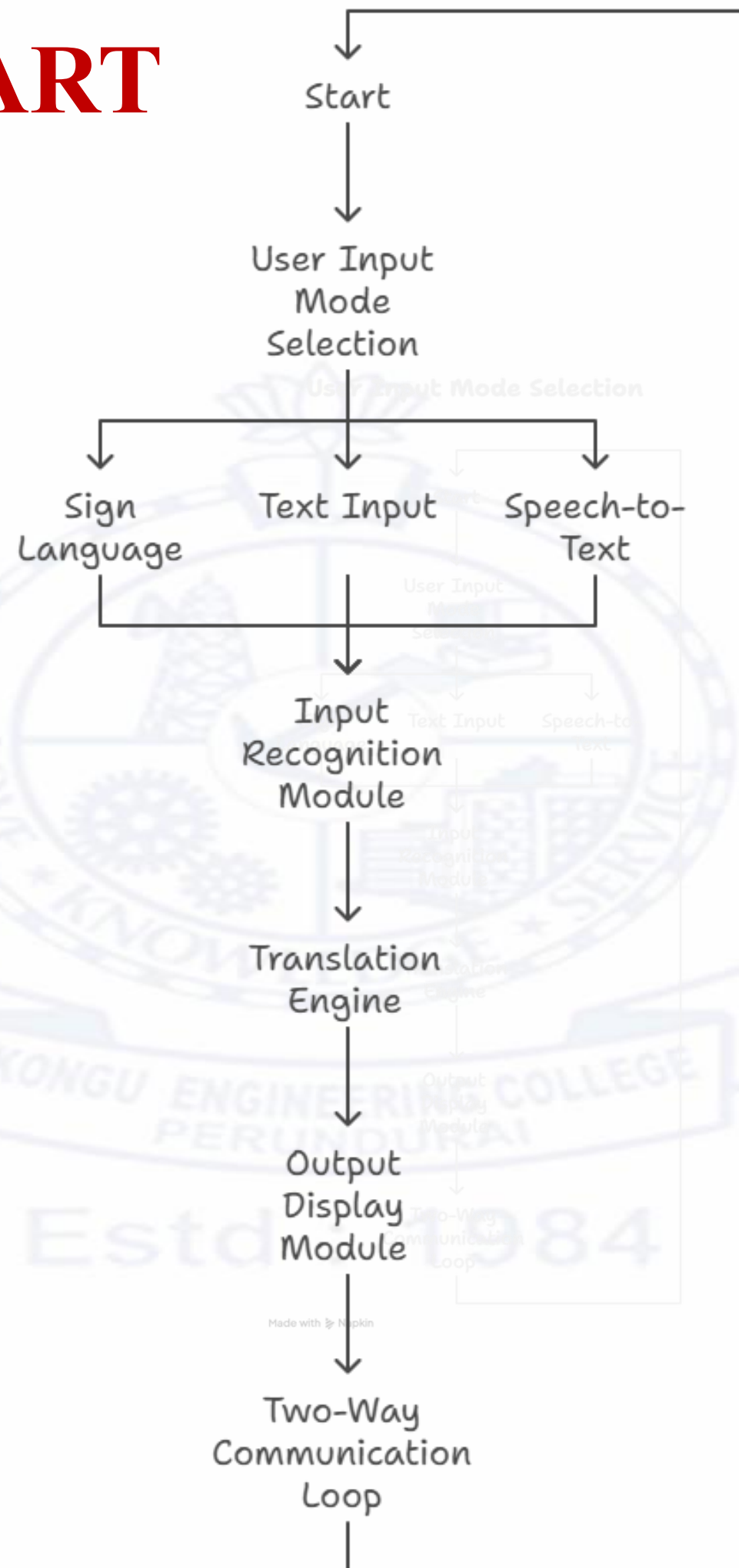


Flow of Operation

- User taps the emergency button.
- Predefined voice message is generated.
- Location + SMS alert sent to emergency contacts.
- Local alert (voice + vibration) triggers for nearby help.
- Offline storage ensures function without internet.

FLOWCHART

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ADVANTAGES

- No need for typing, speaking, or reading.
- Works even with **poor or no internet connectivity**.
- Inclusive design for **non-verbal and elderly users**.
- Quick alerts minimize **response time in emergencies**.



Thank you!