CodeNection

Campus Management

Campus Safety App

PELAJAR-PELAJAR

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Problem Statement

- Many students and staff feel unsafe when walking alone, especially at night.
- Sometimes they want a companion, sometimes they just need someone checking on them.
- Need to quickly send their exact location to trusted people in a real emergency
- Stress and fear

We make an app for your needs

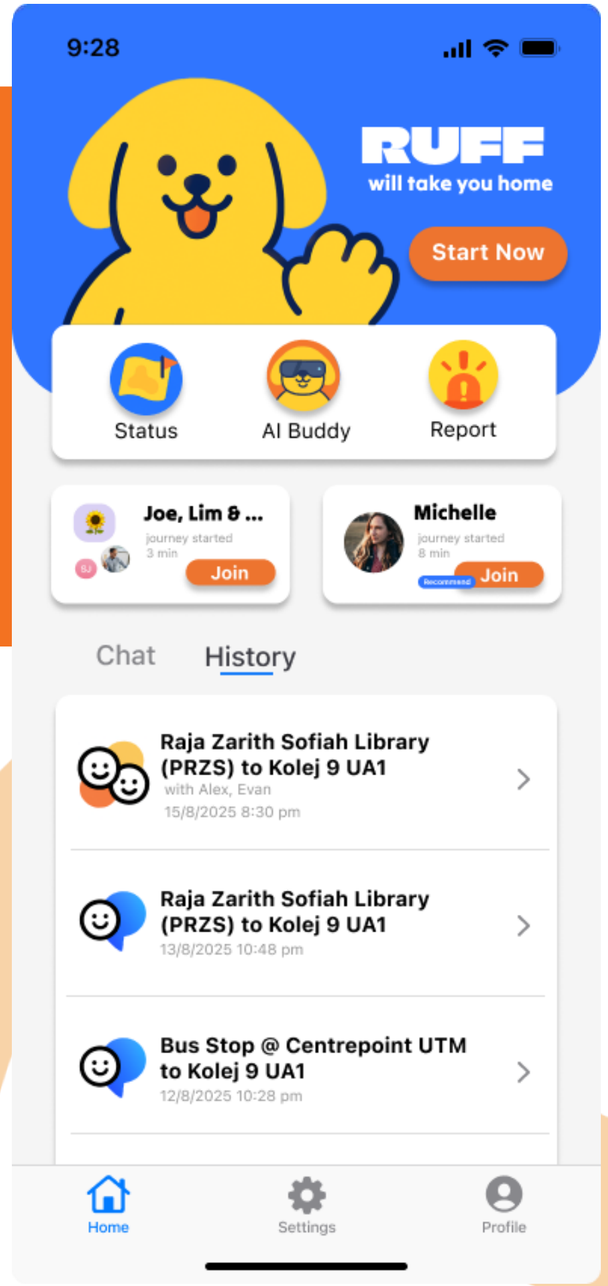
A campus safety application designed to protect students through friend accompaniment, AI support, blockchain-secured safety logs and a smart SOS system.

Homepage

Start Now Button: Primary action to begin a journey — sets location/destination and opens the live safety call room.

Quick Access Menu (Icons Row): Direct to others pages

Journey Cards: Shows ongoing journeys of friends. A “Join” button to enter their live call room and accompany them virtually.



Chat Tab

Displays recent conversations with friends.

Let users coordinate journeys or check in casually.

Shows profile picture, last message, and status indicators.

History Tab

- Logs completed journeys with details such as route, date, and time.
- Each entry shows a symbol:

Friend companion(s) joined

Solo journey or AI Buddy accompaniment

Video-call Room

Map Panel

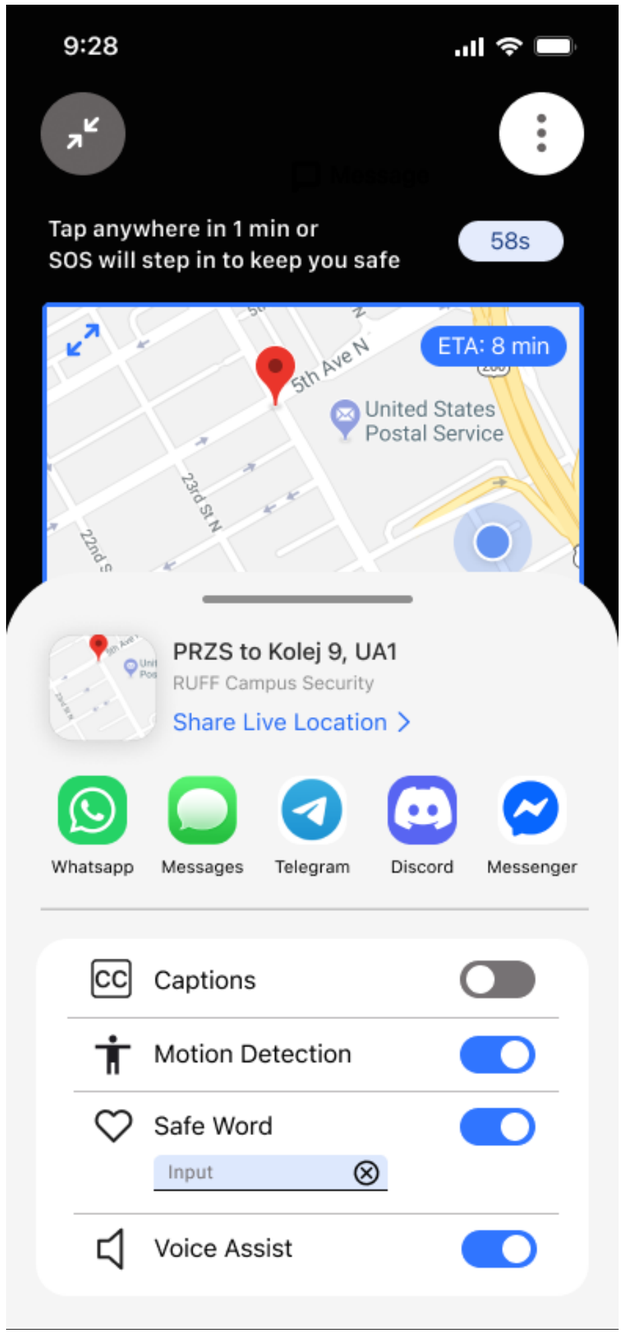
Shows live location, route, and ETA.
Updates in real time

SOS Button

Large red button for manual emergency trigger.

AI Buddy Bubble

Voice Analysis: Detect stress, distress keywords (“help,” “followed”), background aggression → auto-SOS pre-trigger.
Safe Word Detection: If user speaks pre-set keyword, SOS triggers silently.



Feature Panel

Share Live Location
Quick share link (map + ETA) to external apps

Captions
Real-time transcription for accessibility.

Motion Detection
Alerts if sudden stop, running at night, or route deviation.

Safe Word
Allows user to set a personal keyword to silently trigger SOS.

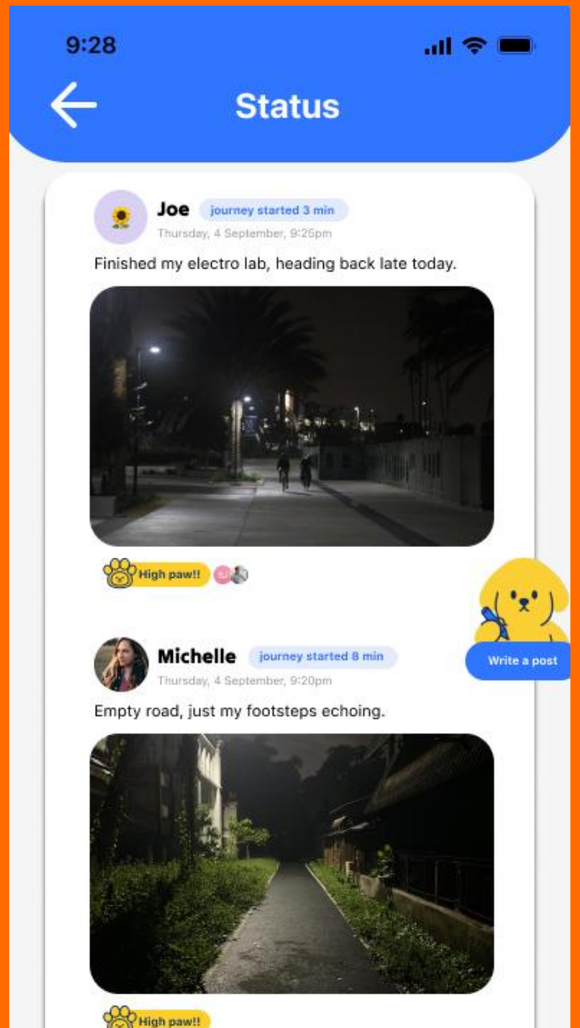
Voice Assist
Reads out alerts aloud.

Technical Approach

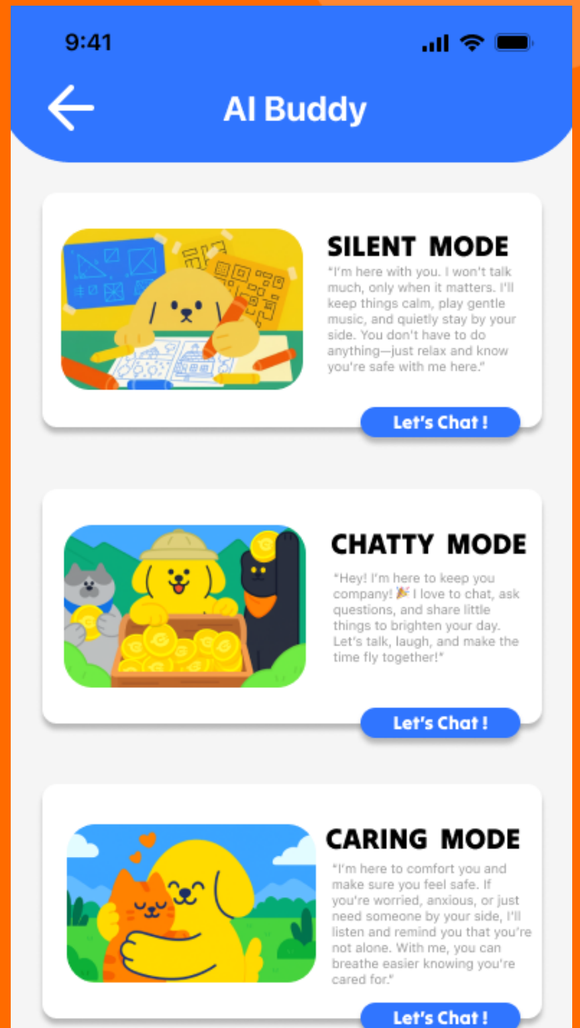
- GPS-based geolocation combined with Flutter's Geolocator package

communicates with phone's GPS and Wi-Fi to find user's position.

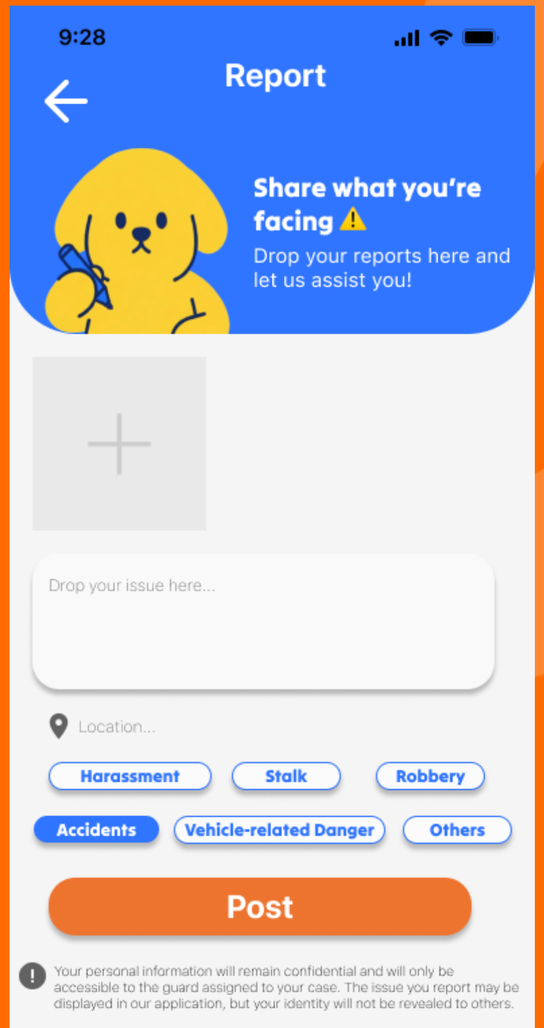
Share or view ongoing journeys of friends. Allows posting of updates (photo, location, visibility) when on a journey.



Choose between Silent, Chatty, or Caring mode to have the AI join your journey call for company



File structured incident reports (with photos, video, anonymity)



AI Companion

Silent Mode 🎶

the AI stays mostly quiet, giving short affirmations and playing soothing background music.

Chatty Mode 💬

engages with cheerful conversation, fun facts, and friendly banter to keep the user company

.

Caring Mode 🤗

provides gentle reassurance, emotional support and calming tips to help users feel safe and at ease

Technical Approach

- GPT-3.5 free tier as AI model

the prompts we send will be adjusted depending on the mode selected by the user.

GPT-3.5

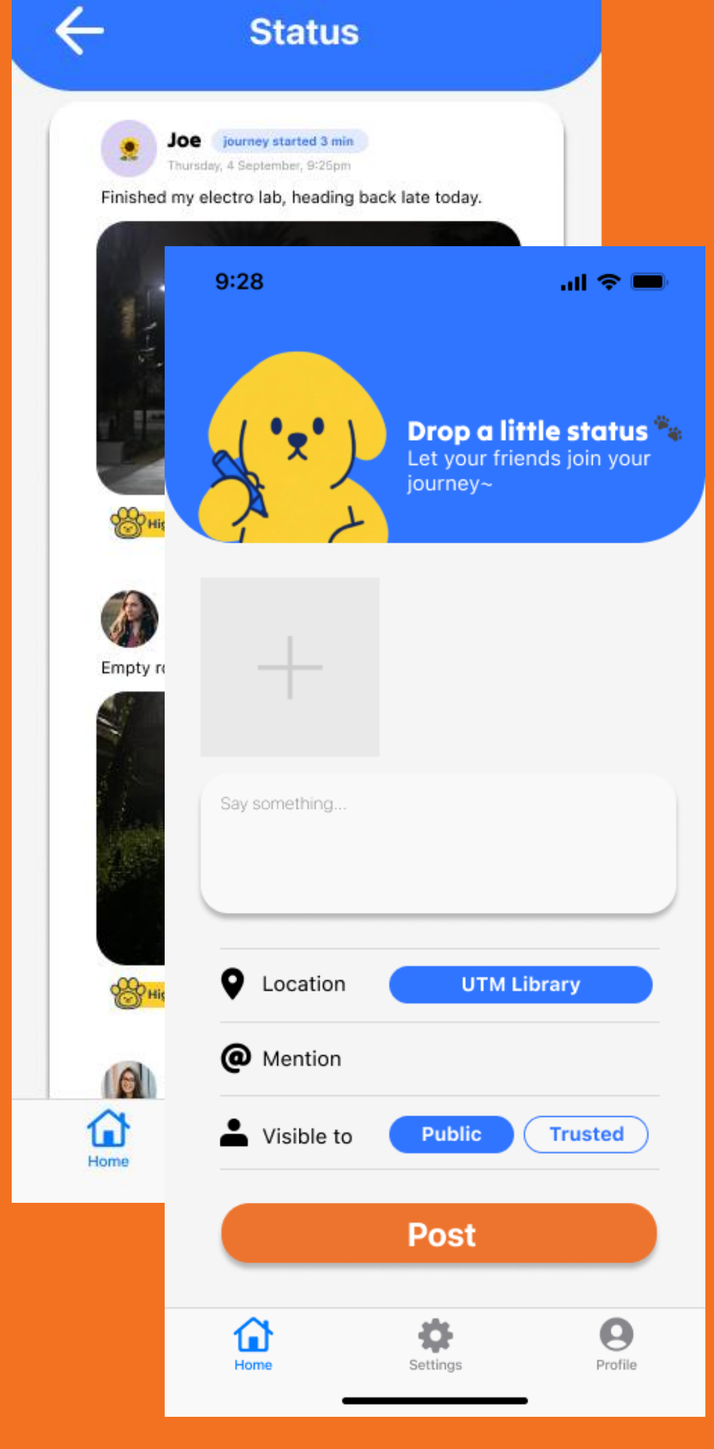
- Text-to-Speech (TTS) system using the flutter_tts plugin

which which enables the AI to interact with users using a natural-sounding voice.

Flutter

Status

- Encourages social accompaniment by letting friends notice and join journeys.
- Works as a safety broadcast: if the path looks unsafe (e.g., empty road photo), friends can check in.
- Gives flexibility in privacy (public vs. trusted groups).



Technical Approach

- Firebase

When user create a status in our application, the data will be stored in a secure cloud database

Firebase

- share_plus plugin by Flutter

connection with external application

Flutter

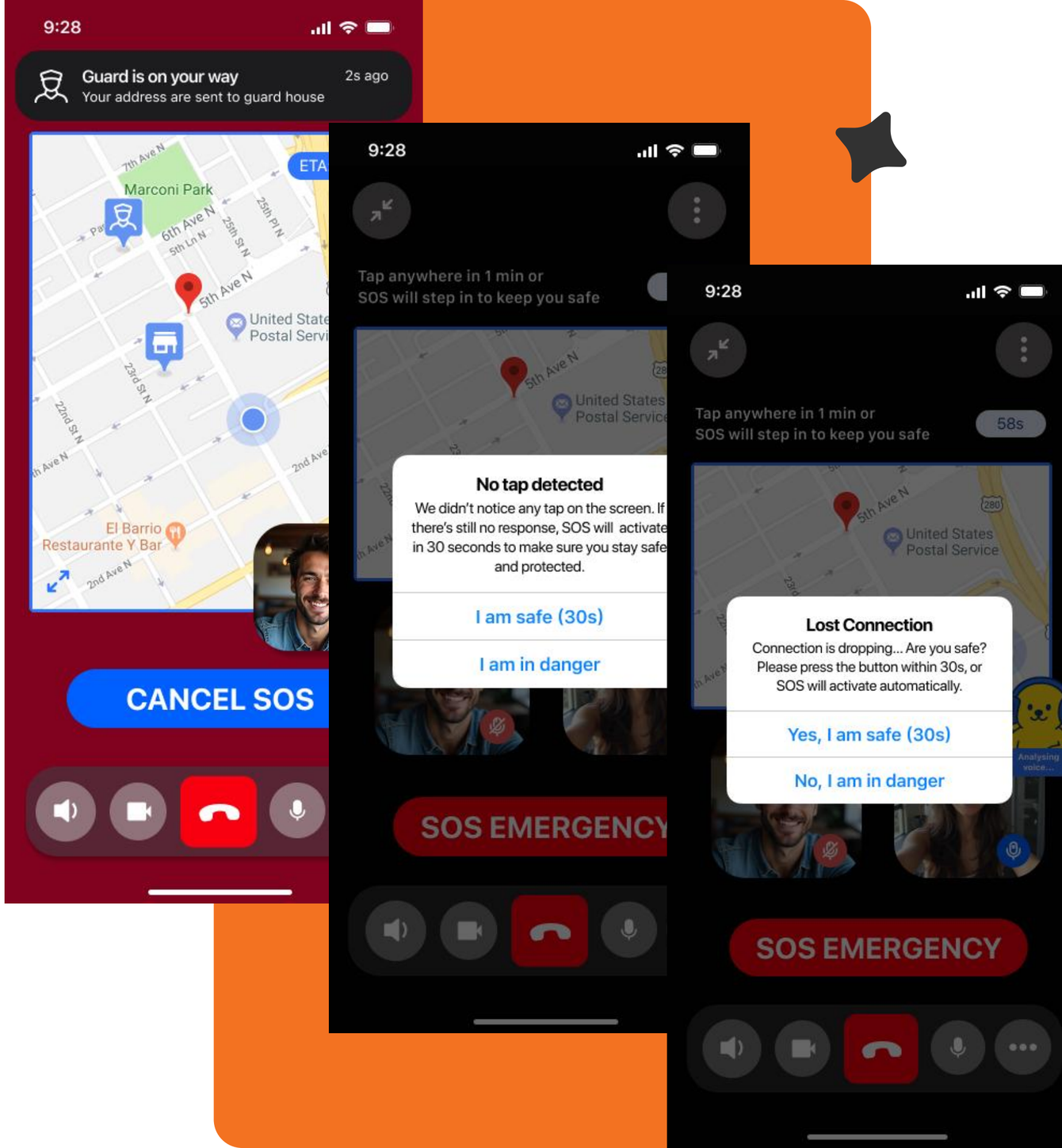
Trigger SOS

SOS button will be triggered in condition below:

i) User presses the big red SOS button.

ii) User's connection lost for more than 30 seconds.

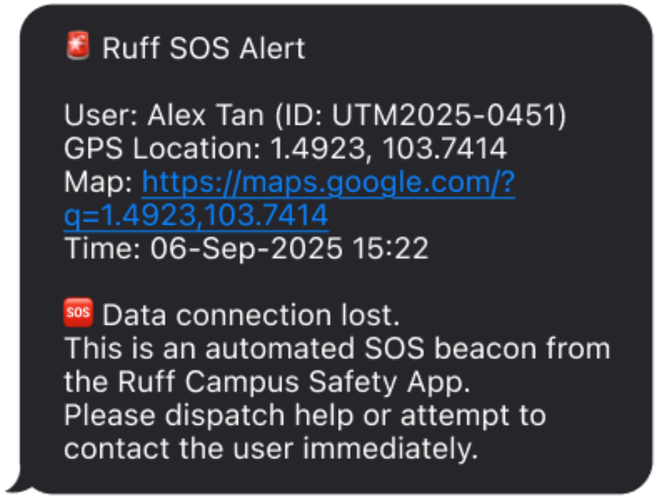
iii) User not tap their screen within 1.5 minutes. The 1-minute countdown is displayed and counted by tapping anywhere in screen.
The next 30 seconds are used to check on user's condition.

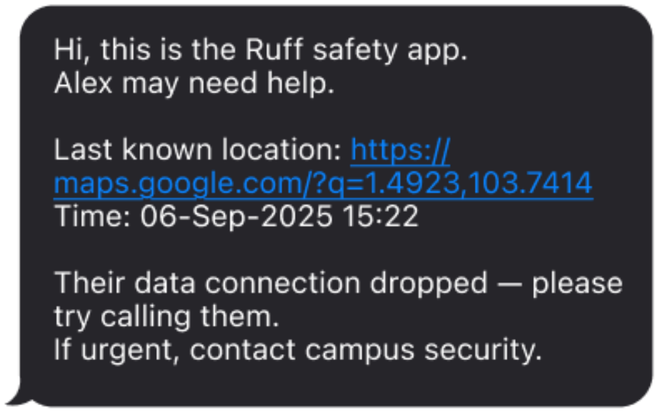


SMS Fallback Beacon

If data connection is lost and SOS is triggered, an automated SOS alert is sent via SMS fallback beacon to campus security and also sent to user's emergency contacts.

- Ensures help can be summoned even if internet is cut.
- Adds redundancy: if voice/video call drops, SMS still works.
- Provides immediate actionable info (map link, ID, timestamp) to both security and friends.





Technical Approach

- SQLite local database

built-in small database for mobile application to store the data.

- Flutter Telephony package

SMS alert for offline condition.

Wait for Help

Option 1

Wait for Guard → campus security dispatched, live ETA shown.

Option 2

Head to Nearest Safe Place (shop, guard post) → guided navigation + security notified.

Scenario

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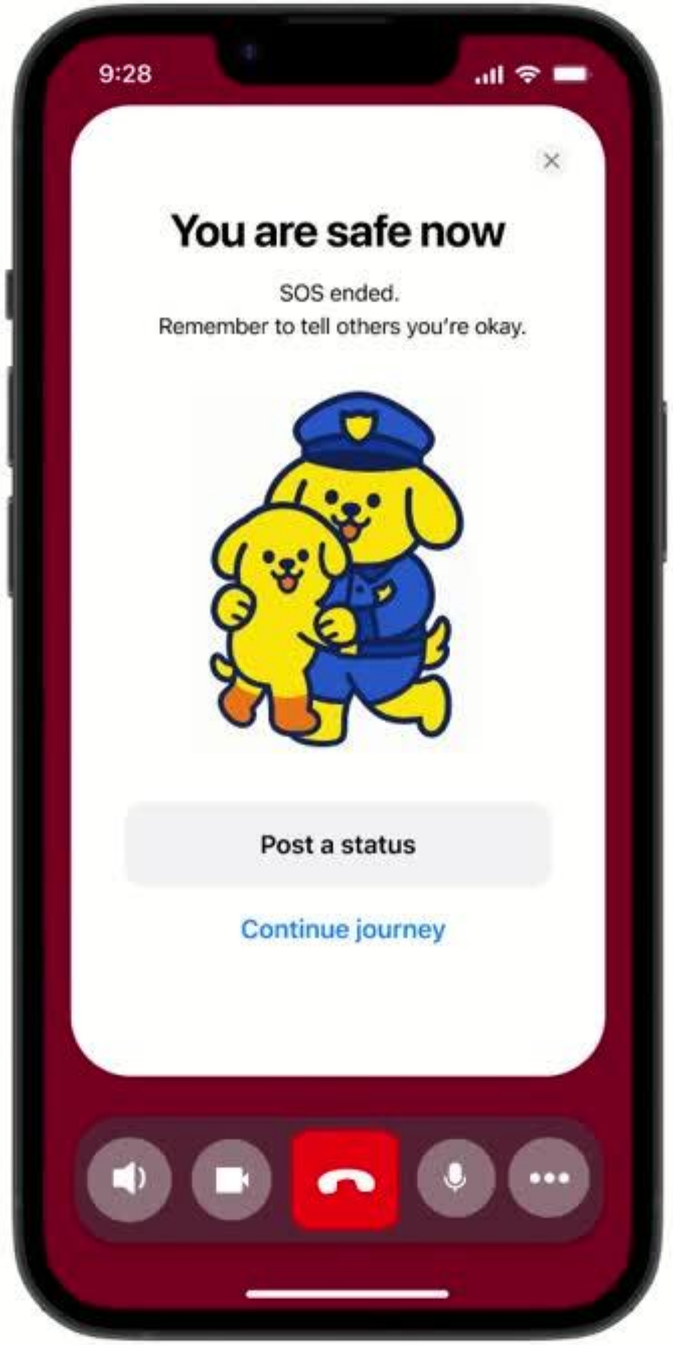
Scenario



If the user still feels unsafe upon arrival at the store, guards can proceed to their location.
After resolution, the app offers to
(a) post a “safe now” status
(b) continue the journey.

Technical Approach

- Node.js as main framework
- PostgreSQL database

stored guard house locations

- Google Places API

verified for stores availability

- Firebase Cloud Messaging(FCM)

push notification to guardian and campus security

Thank You