Void Network

Group 8

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Mobile Computing

2024/2025

Motivation

Stranger Things is a unique universe that happens in the 80's with a distinct division between the real world and the ***Upside Down***.

The ***Upside Down*** was the main name used to describe a mysterious alternate dimension existing in parallel to the human world.

This app aims for characters in this fictional world to communicate with each other across both dimensions.

Concept and Background

- **Goal:**
  - **Communication with alternate realities, blending location-based features with immersive communication.**

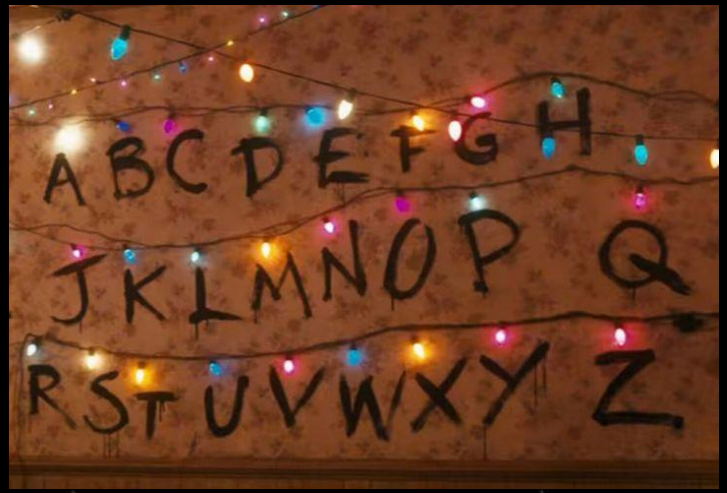
- **Related Apps:**
  - **Pokemon GO** - Blends real with fictional world through GPS and the camera.
  - **Discord/Whatsapp** - Real-time communication with other people.

Main Envisioned Features

- **Location-based Portals:** users can register existing portals to allow for voice communication if within its proximity.
  - Using an image detection API, through the camera, the app validates the existence of a portal (e.g. a tree)
  - If a user is within X kilometers of a portal, he can send a voice message, which all users also within another portal can receive in real-time.

Main Envisioned Features

- **Vibration/Light-based Communication**: when far away from a portal, users can communicate using taps, emitting vibration to others, or using the luminosity sensor, emit flashlight signals to others.
    - To simplify communication, we will develop a custom binary language API for creation and translation. This will enable users to have their own unique language that can be automatically translated. By default, morse code will be included as an available option.



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Main Envisioned Features

- **80’s Music Player**: users can listen to the 1980s greatest hits, as featured in the TV show, without needing a cassette player or Walkman.
  - Play 80’s classics
  - Listen along with friends
  - Custom playlists

Technologies

- **Device Sensors:**
  - **GPS** for registering portal locations
  - **Luminosity sensor** for detecting light;
- **Vibration:** for touch-based far away communication;
- **Google Cloud Vision API:** for detecting portals through camera photos;
- **Firebase:** for a centralized service
  - **Multi-user Functionality:** Synchronized communication through a real-time database;
  - **Firestore:** To store language translation mappings and portal GPS coordinates;
  - **Cloud Functions:** To perform the binary language translations in real-time and using the image detection API.

Planning

- **Checkpoint 1 (28 Nov)**
  - UI/UX.
- **Checkpoint 2 (19 Dec)**
  - Upside Down portal detection and registration with GPS;
  - Voice communication;
  - Luminosity sensor.
- **Final Project Demo (23 Jan)**
  - Binary language communication;
  - 80’s Music Player.

Questions?