**Real-Time Smart SURAKSHA: The Shield of Strength**

**Project Overview**

The Real-Time Smart SURAKSHA system is an innovative safety solution designed to provide real-time location tracking, situational awareness, and emergency alert mechanisms. This project is tailored for children, women, and men, offering personalized safety features powered by cutting-edge technology.

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**Problem Statement**

Vulnerability of Children: Lack of effective monitoring tools for children's safety. Limited Self-Defense Options: Absence of accessible self-defense tools in emergencies. Inadequate Emergency Alert Systems: Delayed communication of critical alerts. Lack of Awareness Among Bystanders: Limited mechanisms to notify nearby individuals. Delayed Response Times: Inefficient location tracking hampers timely intervention. Psychological Impact: Safety threats lead to stress and anxiety.

**Solution**

The Suraksha project provides:

1. Proactive Personal Safety: An integrated system for real-time monitoring and emergency alerts.
2. Voice-Activated Emergency Response: Hands-free activation during crises.
3. Real-Time Location Tracking: Continuous GPS monitoring and sharing.
4. Immediate Alert Mechanism: Audible alarms to notify nearby individuals.
5. Self-Defense Tools: A shock generator for personal protection.

**Features**

1. Voice Command Activation
2. Live Streaming via ESP32-CAM
3. Real-Time Location Tracking with NEO-6M GPS
4. Manual Alert Button for emergencies
5. Shock Generator for self-defense
6. RTC Timer for monitoring activity duration
7. GSM-based Alerts for instant communication

**Technology Stack**

**Hardware Components:**

1. NEO-6M GPS Module
2. VC-02 Voice Recognition Module
3. GSM 900A Module
4. Arduino Nano
5. ESP32-CAM
6. Real-Time Clock (RTC) Module
7. Buzzer and Shock Generator
8. Power Supply Units

**Software Tools:**

1. Arduino IDE
2. Google Maps API

**Future Scope**

1. Machine Learning: To distinguish genuine emergencies from false alarms.
2. Geofencing: Alert guardians if children leave designated safe zones.
3. Multi-Language Support: For voice recognition in diverse languages.

**Setup and Installation**

**Hardware Setup**

1. Connect all hardware components as per the circuit diagram.
2. Load the Arduino and ESP32-CAM sketches using Arduino IDE.

**About**

It is an innovative safety device for all age groups, combining voice-activated and manual button emergency responses, real-time GPS tracking, live streaming, and self-defense mechanisms. It ensures immediate alerts, situational awareness, and location sharing, providing protection in critical situations.