**Computer Peripheral & Interfacing Project (IOT)**

Presented by-

**Team "Digital Dynamos"**

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**Project title**: Women Safety and Tracking using GPS and GSM.

**Problem statement**:

In this women safety project, we are developing a robust solution that incorporates a dual-button system. One button initiates the transmission of an emergency message, including the user’s location, while the other button triggers an immediate emergency call via GSM technology. This streamlined approach prioritizes rapid and effective responses in situations requiring urgent assistance.

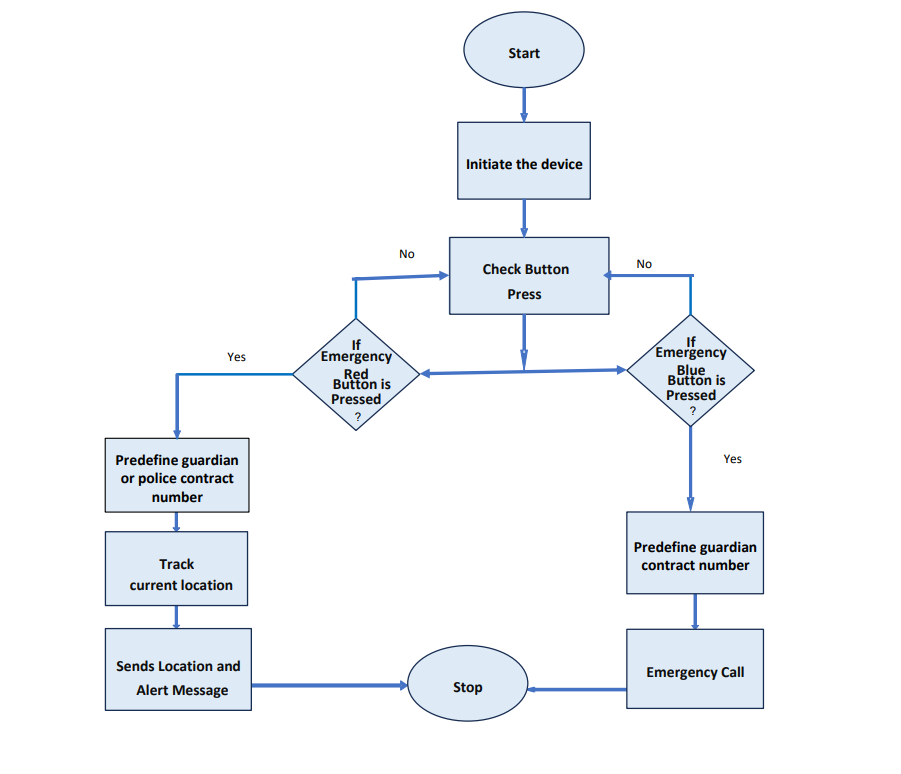
**Objective**: The objective of the project is to create a system that:

* Develop a real-time location tracking system with GSM messaging and calls.
* Implement an emergency alert system with GPS location sharing.
* Provide two-way communication with authorities.

**Features**:

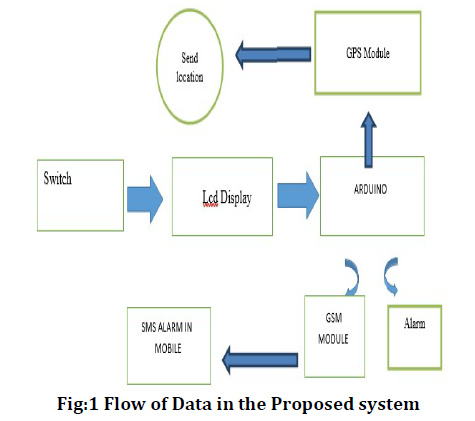
* Emergency button
* Real-time Location Tracking.
* Emergency alert message with location.
* Emergency call.

**Workflow diagram**:

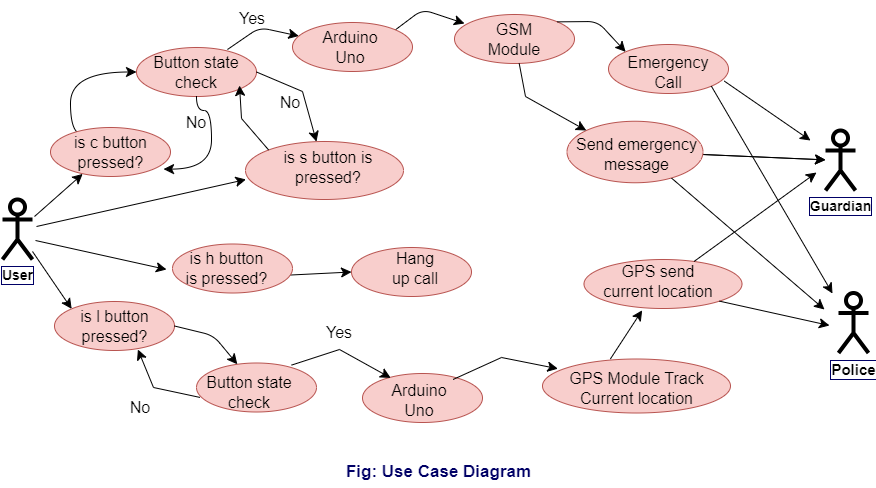
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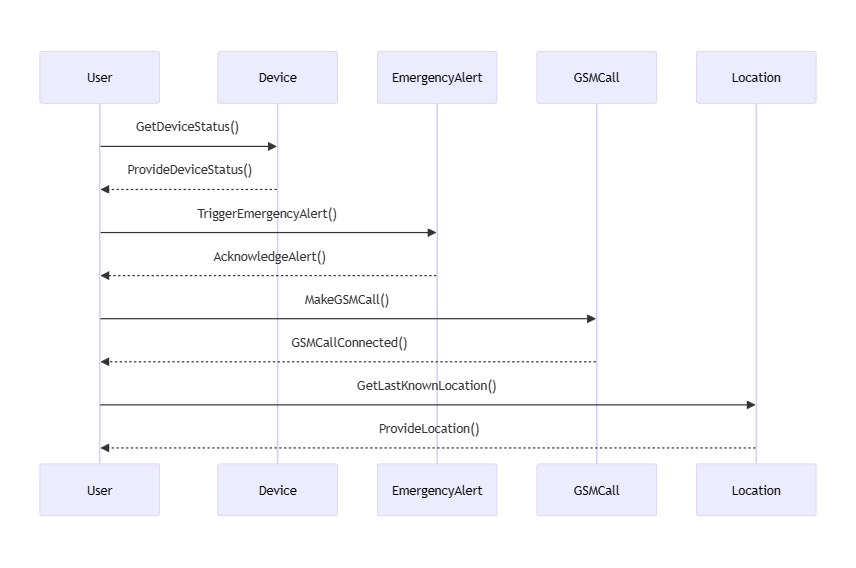
**Fig:2 Flow Chart of Our Women’s Safety & Tracking System**

**Dataflow diagram:**



**Prototype:**

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**Fig: Sequence Diagram**

**ALGORITHM**

𝐒𝐭𝐞𝐩 𝟏: Initialize A9G and Serial Monitor with 115200 baud rates.

𝐒𝐭𝐞𝐩 𝟐: Connect AGPS TX Pin connected to Arduino pin7 and RX to pin8.

𝐒𝐭𝐞𝐩 𝟑: Once power is on set SMS mode to text mode.

𝐒𝐭𝐞𝐩 𝟒: Set A9G to show the output on serial monitor.

𝐒𝐭𝐞𝐩 **5**: Turn on the GPS and it takes 2 min to 3 min to activate AGPS sensor

𝐒𝐭𝐞𝐩 **6**: If s button pressed call SendMessage() function to send message.

𝐒𝐭𝐞𝐩 **7**: If c button is pressed call MakeCall() function to make call.

𝐒𝐭𝐞𝐩 **8**: If h button is pressed call HangUpCall() to hang up call.

𝐒𝐭𝐞𝐩 **9**: If l button is pressed call ReadLocation() to get the location.

𝐒𝐭𝐞𝐩 **10**: From that we have to extract the required data.

𝐒𝐭𝐞𝐩 **11**: Finally, the required message is sent to the mobile

**Tools and devices**:

* Arduino Uno
* A9G GSM/GPRS+GPS Module
* NANO SIM CARD
* GPS ANTENA
* GSM ANTENA
* Power Supply (5V)

**References**:

* [A9G GSM/GPRS+GPS Module Wiki - DFRobot](https://wiki.dfrobot.com/A9G_Module_SKU_TEL0134)
* [A9G GSM/GPRS+GPS Module with Arduino - Getting Started (how2electronics.com)](https://how2electronics.com/a9g-gsm-gprs-gps-module-with-arduino/)
* [Microsoft Word - z47 Implementation of Women Safety System using Internet of Things (researchgate.net)](https://www.researchgate.net/profile/Anny-Leema/publication/344073130_Implementation_of_Women_Safety_System_using_Internet_of_Things/links/5f50fb1a299bf13a319ac1d8/Implementation-of-Women-Safety-System-using-Internet-of-Things.pdf)
* [Iot Based Smart Device for Women Safety.pdf (ijaem.net)](https://ijaem.net/issue_dcp/Iot%20Based%20Smart%20Device%20for%20Women%20Safety.pdf)
* [Arduino based Women Safety Device with GPS Tracking and Emergency Alerts (circuitdigest.com)](https://circuitdigest.com/microcontroller-projects/arduino-based-women-safety-device-for-emergency-alert-and-tracking)