



# REAL-TIME WOMEN SECURITY SYSTEM USING IOT

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## ABSTRACT

India is one of the fastest economic development countries and it also has super powers, still there are many crimes against women. So we are designing a system to reduce these kind of atrocities on women who are facing many problems such as women abuse, Harassment, etc., The device consists of multiple components like Push Button, ESP32 microcontroller & Wi-Fi module, GPS and GSM module, ESP32 Camera module. When women sense any danger or if she feels unsafe, she need to press the push button which is provided in the device. Once activated, the device will send an SMS containing the current location to the pre-registered mobile numbers and also the ESP32 Cam will capture the live photo and send them to the guardian's mobile. Since our device is small in size, it can be integrated in any daily wearables.

## INTRODUCTION :

India is one of the biggest countries in the world known for its culture and traditions. From ancient times women are given most respect in our country but now in this modern era women are feeling unsafe to step out of house as the number of crimes against women like Harassment, violence, abuse etc., are increasing. Many women are working in IT sectors even in night shifts so many working women feel insecure during nights. This system can be used in case of emergency situations as it can be fitted easily inside blazer (more similar to jackets and coats) and it can be carried everywhere as it is of small size. The push button is placed at one of the buttons of jacket. This device will intimate the parents and guardians about the current location of the victim so that the parents can easily reach to her location.

Technologies used:

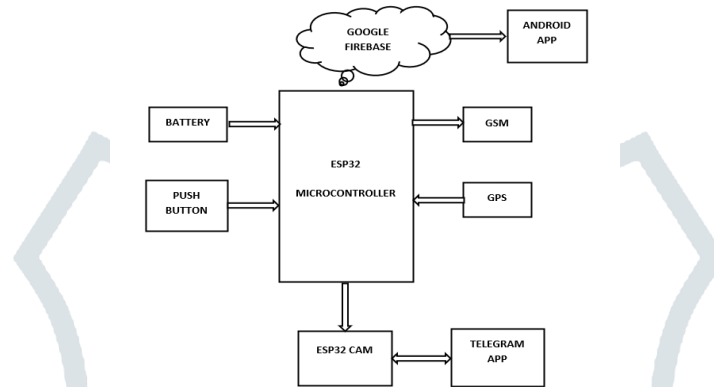
We used technologies like GPS, GSM, ESP32 Cam, and Android app.

## EXISTING METHODOLOGIES :

There are many android applications such as "My Safetipin", "Women Safety", "WeRsafe", etc., which is need to be installed in women's phone and whenever she feel unsafe she need to open the mobile app and press the button provided inside the app. This method has many drawbacks as she need to unlock the mobile phone which may take more time during panic situations, and also this applications are installed only on smartphones with access to GPS and Web.

**PROPOSED SYSTEM :**

The proposed system consists of Push button, ESP32 microcontroller and Wi-Fi module, GPS and GSM module, ESP32 Cam module. The device has access to web, it will fetch the location using GPS module and continuously update the location co-ordinates to the mobile app which is installed on parents' phone. When she presses the push button an alert message containing current location is sent to pre-registered mobile numbers and also the Cam module will take the photos and send it to parent's mobile through telegram app. The location can be monitored anytime from the mobile app installed in parents' phone which is connected to the device through google firebase.

**BLOCK DIAGRAM :****Block description:**

**BATTERY :** The device is turned on when we connect the Battery to our system, here we use 9 volt Battery for power supply to microcontroller and GSM module.

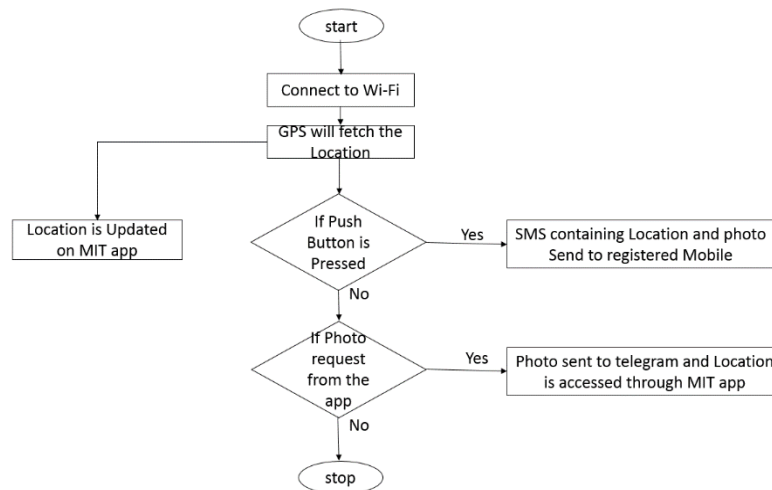
**ESP32 MICROCONTROLLER & WI-FI MODULE :** ESP32 microcontroller has built in wi-fi module which is suitable for IOT projects. It is a 48 pin microcontroller out of which 32 pins are provided for Digital input output pins. It has a power supply of both 3.3V and 5.0V. It has a 512 KB of On chip RAM and it also supports external memory upto 4 – 8 MB so, it can be used for connecting Cameras.

**GPS :** GPS stands for Global Positioning System. It is used by anyone to get the location co-ordinates anywhere in the world. It can be operated with both 3.3V and 5.0V power supply. It has a baudrate of 9600 bps by default and configurable upto 115200bps. In this project we are using GPS QUESTAR TTL.

**GSM :** GSM module is based on GSM Mobile Telephone Technology. It will provide a Wireless Data Link to the Network. These modules are generally used in equipments like Mobile phones. SIMs are used to locate the mobile in the Telephone network. Usually, the data rate is up to 64Kbps to 120Mbps. Currently it has subscribers more than 1 Billion all over the world. It will provide Advance Voice Services and also Data Service like Roaming. In this project we are using SIM800C, It is a Quad-Band GPRS/GSM Solution in SMT Type. This device can be used with many user applications. It can be used to send SMS and to transmit Voice information. It can be operated with less power.

**ESP32 CAM :** The ESP32 Cam has a Built-in Wi-Fi and Bluetooth module. It has a 2MP OV2640 Camera Module. It can be used for Face Recognition and many IOT applications. The size is also very compact and it is suitable for wireless monitoring, wireless control, industrial applications and many more. It can be operated independently with a footprint of 40x27mm and it has a deep sleep current upto 6 milli amps.

**FIREBASE :** Firebase is cloud service provided by Google for developing Web applications, It is used as a Backend Platform to design projects involving developing apps for iOS and android. This can be used to authenticate the user and to store the data in the apps background.

**FLOW CHART :****ADVANTAGES :**

- Compact in size
- Maintenance is very easy
- Effortless to use
- It can be used for security applications
- Pre – registered mobile numbers can be easily changed

**CONCLUSION :**

Providing security to women is one of the major issue in these days. The main aim of this paper is to provide a reliable security to women. The device will give security and confidence to women by intimating her parents about danger by sending an alert message containing her location details and also the live photos. The parent or the guardian can easily track her location and can easily help her. Thus the number of crimes can be reduced.

**FUTURE SCOPE :**

In this project, we are only alerting the parents about the danger by sending location but, further we can use an electric gun in the device to stop the attacker, and also we can use automated pepper spray towards the attacker.

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