

E-Application for Women Defense

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Abstract : In this current era, women are prone to multiple safety issues. In every three women, one is a victim of such violent acts. There are multiple programmes to make them aware and strong enough to face the situation, but not every woman is doing it. Crimes will also increase as the response to the act weakens. So, considering these circumstances, we used modern technology to support women with these problems. Violence can negatively affect women's physical, mental, sexual, and reproductive health and may increase the risk of acquiring HIV in some settings. We proposed a concept with GSM (Global System for Mobile) and GPS (Global Positioning System) built in. When the incident occurs, the alert signal is triggered with the press of a button, and the location is sent to the police officers. It also has a camera that can livestream the face of the person who committed the crime, as well as a handy defence tool to protect herself from the criminal. We can make women a little stronger through this project, although they are already strong enough.

Keywords: Internet of things (IOT), GSM (Global System for Mobile), GPS (Global Positioning System).

I. introduction

For the past few years, one of the major worries and threats has been the protection of women. That shouldn't go on like that. If it persists, the capacity of the female species will gradually disappear because they didn't come and learn about the outside world. In these years, women showcasing their skills and abilities to the opponents to prove they are equal to men. The number of crimes committed against women has significantly increased in recent years. Not only in the evening or at night, but also throughout the day at home, at work, while shopping, etc., women are harassed. Numerous women have safety-related fears about approaching strangers. In our nation, around 75% of women worry about their safety.

In earlier decades, there was more safety because women often didn't leave their homes for employment. But, given the existing situation, women desire employment and desire to work outside but lack safety. Many measures have been created to guarantee the safety of women. To determine which women are at risk, each system uses a different set of techniques. Several people made use of tracking the location with the help GSM and GPS or with the help of mobile applications.

II. Literature Review:

The temperature sensor and other sensors were employed in this system [1] to monitor the heartbeat and sense the environment around the ladies. An automatic detection system that alerts the public and the police when women are in unsafe situations must be devised to protect their safety. This can be accomplished by feeling a variety of things, including strange noises, physical reactions like shaking, perspiration, and heartbeat. The sensor and the components used in this project is GSM, GPS, Heart beat sensor, Temperature sensor.

This research paper article [2] provides a vast study on the various modules in the women safety. It is covering all possible fixes such as Database module, SOS Key Press Module and Voice Recognition Module, Auto receiving call module, Global Positioning System (GPS) module, GSM System Module, Spy camera detection module, Intrusion Detection Module, Area zone module, Fake call Tool Module, Action after getting the Handler Notification, Audio and video recording module, Call on 100 or other emergency number, Generate Electric Shock for Self Defence module, Screaming Alarm Siren module.

This technology [3] connects to the built-in mobile app called "Third Eye" when the pulse rate exceeds the threshold pulse value. The Bluetooth transceiver module is used to establish a connection between the device and the mobile application. The Android software and Android studio were used to create the mobile app.

Android applications[4] will be used to implement the suggested system. This will warn nearby users of the programme, sending them alert messages and playing an alert sound on the guardian phone when the user's phone shakes. Also, the application's saved contact numbers, as well as the police station and hospital, will receive messages and alert sounds. It uses the Global Positioning System to display the user's location [1]. The benefit of the suggested method is that it aids in protecting the user from physical assault and aids law enforcement in locating the suspect.

Application[5] primarily uses web-based technology, so it has extremely little system requirements. Moreover, slow network speeds will also function because the geolocation API will be the primary means of data sharing. The minimal system requirements for the application mean that it may be utilised practically anywhere in the world with low-end hardware and shoddy internet connections.

This application [6] will track the person's location via GPS and store the details of their current location into a distant server via GPRS sequentially. We will also track the person's schedule according to the schedule list that is being uploaded by the person, and we will send SMS to the concerned person's relatives informing them of the schedule and their current location at that time. We will have a second group of opponents to call the police, social workers, volunteer organisations, etc. if something is wrong so that they will be aware of the situation.

The device [7] will also use RF technology to send a location-specific emergency message to the closest police station, enabling the authorities to arrive quickly and offer assistance.

This project is intended to be a portable tool that women can use to communicate with family members and local police stations in an emergency while also alerting their neighbours. To assault the adversary, this device is also built to produce shock waves.

With this system[8], an Android application is used to locate a user and broadcast their location to a list of contacts that they have stored in their phone. Monitor your phone in addition to using a volume-button technique that sends alarm messages if the button is depressed at the right moment, audio messages if it is depressed twice, and calls to the police if it is depressed for an extended period of time. If a person wants to use hardware, they can use hardware, and if they want to use software, they can use software. We implement the identical component on the hardware side.

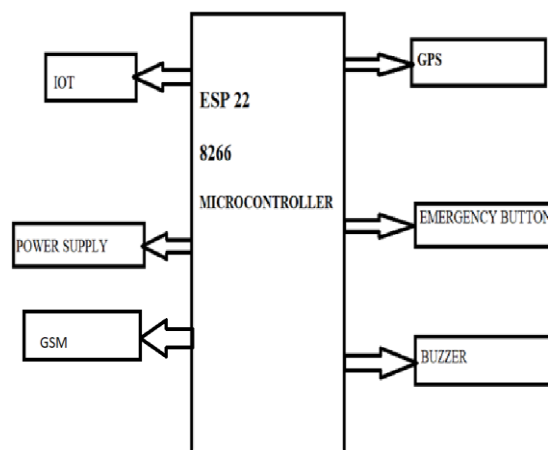
With this system[9], a user types the message's content, chooses the contacts it should be sent to, and then saves it. So, the message recorded in the app will be sent to the numbers he added to it when he is in trouble by just accessing it and tapping the HELP button. so that he can get assistance at the appropriate time.

III. Proposed System:

When the emergency button is touched, this programme will track the person's whereabouts and notify the police station, as well as the person's relatives. In the event that the individual cannot shout to warn the nearby people, a buzzer will be used to warn them. Also, it has a camera for recording, which activates when the emergency button is depressed.

The person's mobile phone application is receiving a live stream of the recording (IOT blynk). By using screen recording, the user can save the recording. The wireless fidelity is used for communication between the mobile phone and the apparatus. It includes one of the self-defence tools listed below: a knife, pepper spray, or a shock-wave generator. We are developing a tool accessible to everyone at any time.

IV. Block Diagram:



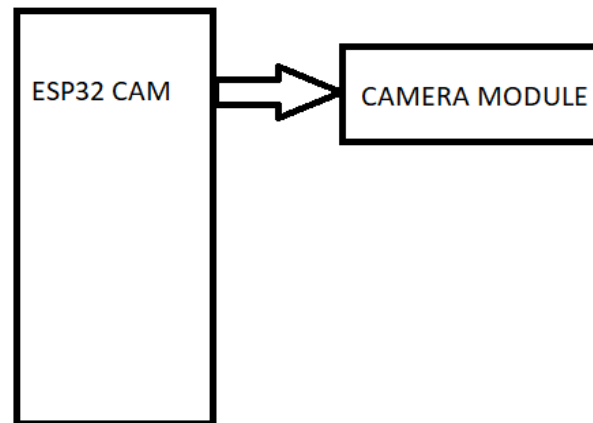


Figure 1,2 – Proposed system Block Diagram

v. Working:

The ESP32 8266 microprocessor requires 5V DC, which is converted from 12V AC in the power system. The ESP32 8266 microcontroller is wired up with the necessary components, including a buzzer, GSM, and GPS module. The controller's input voltage, which is used to run all these components, ranges from roughly 3.6 to 5 volts. We streamed the video using a different ESP32 CAM, and we can view it using the IOT Blynk app.

If the emergency button is touched, a message and the location will be sent to the police station, friends, and family. We also can view the live location on the IOT Blynk application.

Along with that, we may integrate it as a wearable one with any of the following self-defence tools, such as pepper spray, a knife, or a shock wave generator. It will also begin to sound to warn those nearby.

With Wi-Fi, a video is broadcast, and we can use techniques like automated memory card photo saving to save images. The streaming video in this project won't be automatically saved in the application, but we may still save it by screen recording.

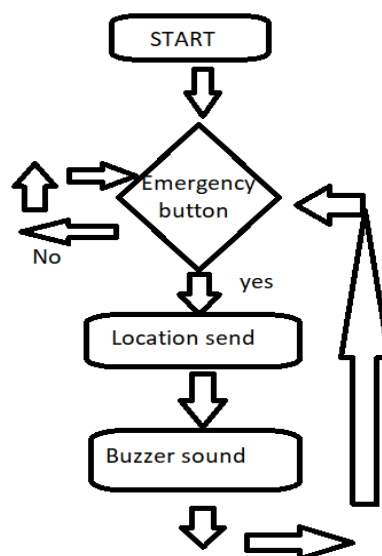


Figure 3 – Working Flowchart

Other option to save the picture of the criminal is we can take and save the picture with the clicking the ESP32 – CAM’s Reset button and it will save in the SD card storages. This is not implemented in this project but this is in one of ideas to implementing this project.

VII Result

Screenshots captured from the root device and the contact's device at various time intervals are used to illustrate the testing findings for the three sections indicated above. The user's device is referred to as the root device in this context because it is the one over which the rescue application is launched. The device to which the contact's location data is continuously supplied is referred to as the contact's device..

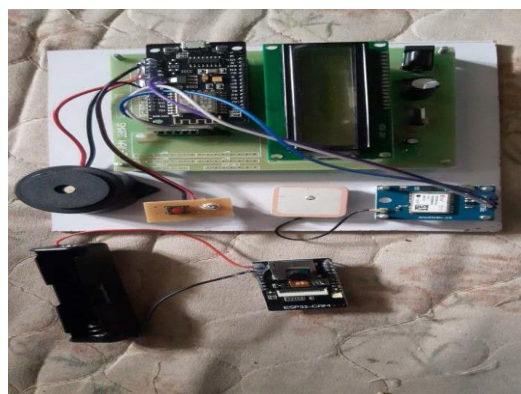


Figure 3 – Hardware

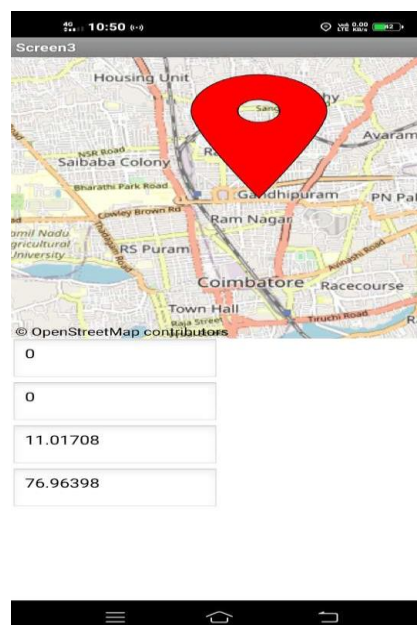


Figure 4 – Output screenshot from IOT blynk application.

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