



Smart Gadget for Women Safety Using IoT

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ABSTRACT

Bands for women's safety are wearable devices that have gained popularity due to their ability to ensure the wearer's safety. These devices come equipped with GPS tracking and Bluetooth connectivity, allowing them to send alerts to the user's contacts, family members, or emergency services in case of an emergency. Additionally, these devices can be programmed to send an alarm or make a loud noise to attract attention in case the user feels threatened or is being followed. Smart bands for women's safety can also be used to track the user's movements and activities and provide notifications and reminders. These features make smart bands for women's safety an essential tool for women who want to ensure their safety while walking or travelling alone.

I INTRODUCTION

Smart bands equipped with IoT technology have been developed to address the issue of women's safety. These devices come with features such as GPS tracking, Bluetooth connectivity, and panic buttons, allowing for alerts to be sent in case of an emergency. Additionally, they can monitor the user's health and wellness, making them a versatile and valuable tool for women in today's world. The integration of IoT technology has significantly enhanced their capabilities, making them an important innovation in the field of women's safety.

II LITERATURE REVIEW

Nowadays the developed a smart security device based on IoT concept. Throwing light on societal challenges faced by women, a device called "watch me" has been proposed that includes a sensor to detect the heart beat rate of a person that will become high when the woman is in danger, generating an alarm sound to grab the attention of nearby people. The device also automatically makes a call to registered contacts and supports GPS tracking to track the victim's location

III EXISTING METHOD

Women are excelling in every field in the industry. But they still have to struggle against the hardships in the society. Because of all these odds it is necessary that women feel safe in the surrounding. In major critical situations the women will either dial up to the police, scream for help, try protecting themselves through self defense etc. But even after doing all these it does not guarantee the safety of women.

LIMITATIONS OF EXISTING METHOD

- Women safety device with GPS tracking and alert.
- Smart band for women security based on internet of things.

IV PROPOSED METHOD

This method is used for Now-a-days women security is the main concern in the society. So there is need to build a system that can respond faster and provide security to the women in problem. In this paper we will include comparing of data from the sensors with the training dataset, if variation occurs then message will be send to nearby police, family, friend along with the GPS location to provide the security to the women in danger.

SOFTWARE REQUIRED

Arduino Software

Arduino Software is an open-source software platform used to develop and program microcontroller based projects. It consists of an Integrated Development Environment(IDE) and a programming language based on C++. The Arduino IDE provides an easy-to-use interface for writing,compiling and uploading code to the Arduino board.

The Arduino software is compatible with a wide range of microcontroller boards, including the popular Arduino Uno, Nano and Mega, as well as other boards based on Atmel AVR and SAM processors. The software also includes a large library of prewritten code, called sketches, that can be used to perform a variety of tasks.

One of the key advantages of the Arduino software is it is easy to use. The IDE provides a simple, intuitive interface that even beginners can use to get started with microcontroller programming. Additionally, the software is open source, which means that developers can modify and improve it as needed.

Overall, the Arduino software is a powerful tool for anyone interested in developing microcontroller based projects.It is easy to use, flexible and compatible with a wide range of hardware, making it an ideal choice for hobbyists,educators and professional alike.

Another advantage of the Arduino software is its strong community support.With a large and active base, developers can find help and resource easily, including tutorials, forums and sample code. This community also contributes to the ongoing development of the software, ensuring that it remains up-to-date and relevant for users.Finally, the open-source nature of software allows for high degree of customization and integration with other platforms, making it a versatile tool for a variety of applications.

BLOCK DIAGRAM OF PROPOSED METHOD

Arduino Uno

The microcontroller used is an ATmega 328p microcontroller. it's one chip microcontroller of the megaAVR family. The [6] microcontroller are often divided into two parts- hardware and software. The hardware consists of the next features- the USB plug which is used to upload the program into the board. It can also be used as a source of power supply. The plug supplies a regulated voltage of 5V. just in case it's insufficient, an external power supply of 9 to 12V are often given. There are 5 analog pins (A0 to A5). The digital i/o pins are from 2 to 13. The push is used to reset the microcontroller so on run a fresh program. There are 3.3V and 5V power pins

to power the Arduino. The second part is that the software. The software involves sending commands and directions to talk with and run the hardware.

This paper introduces a cost-effective smart gadget for women safety.

Block Diagram:

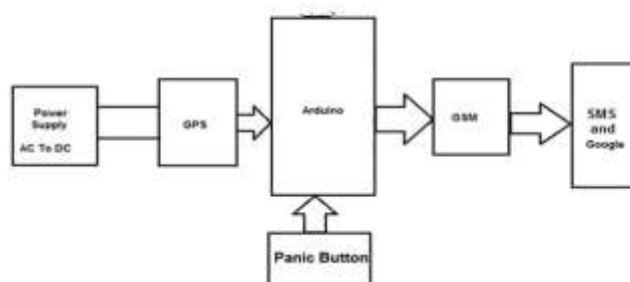


Fig 1:Block diagram

Temperature Sensor.

To maintain the health condition, body temperature is an important factor. Here we use LM35 series body temperature sensor. It is operates in +10.0mV/°C scale factor with 0.5°C accuracy.

BLE Module

Here we use BLE 4.0 Module which is HC-05v. This is used to connect smart band with the smartphone because which is required less power consumption. Data transmission rate is 2 or 3 mb/s. which is operates in frequency range 2.4GHz (ISM band) and transfer data in the 10m range.

Smart Band

Smart band consist of temperature sensor, pulse rate sensor, microcontroller. Smart band is connected with the smart phone by BLE 4.0

GSM and GPS Module

GSM is used to transfer the signal from smart band to smart phone and also used to send emergency message to the family member, friend and nearby police station. GPS module is used to track the current location of victim with the help of latitude and longitude of receiver.

Push Button

A push button is a type of switch that is activated by pressing a button. It is commonly used in electronic devices to initiate an action or signal a specific function.

Antenna

An antenna is a device used to transmit and receive radio frequency signals. It converts electrical signals into electromagnetic waves and vice versa, enabling wireless communication and broadcasting in various applications.

V System Architecture

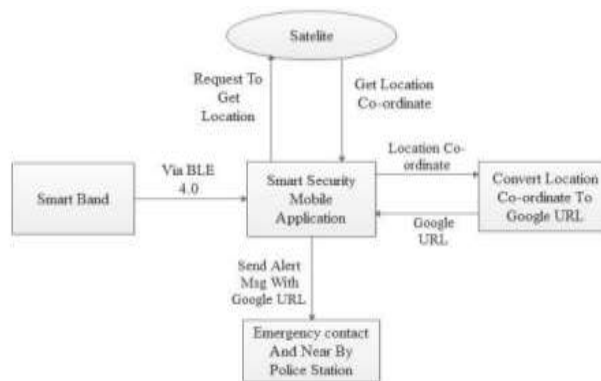


Fig 2.Ssystem Architecture

System Algorithm:

- Step 1: Women register in the system.
- Step 2: Women login in the System.
- Step 3: Women wear the smart band.
- Step 4: The device containtemperature sensor.
- Step 5: If she senses danger and press pushbutton
- Step 6: System track the current location of women.
- Step 7: Emergency message send to family member, friend and nearby police station with her GPS location.
- Step 8: Also send message any user whose location is near by the victim

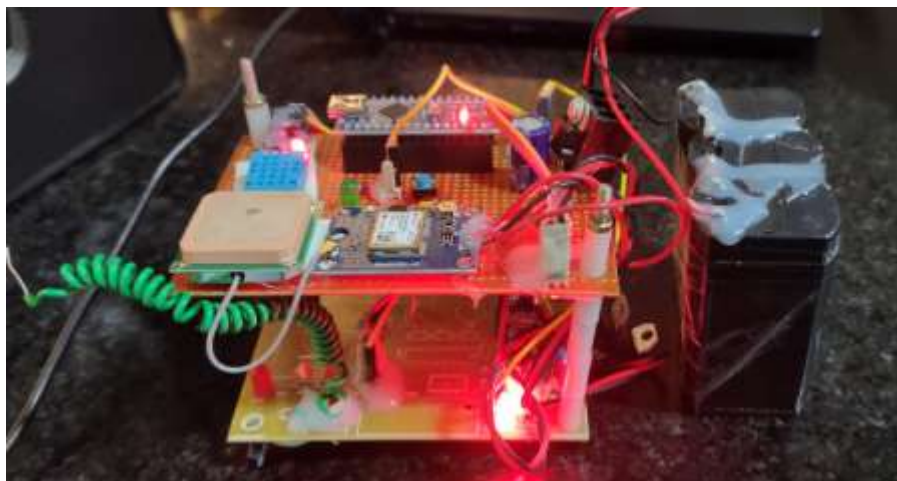


Fig 3:Smart Band for women safety

RESULTS

The below figure represents the process that we follow through mobile.



Fig 3: location received for mobile.

V CONCLUSION

The existing system are not powerful enough to prevent crimes against women. Main purpose of this system is fast process, low cost of development, acceptable quality, accurate tracking. This paper put forth a technique where a women, when in danger, can instantaneously intimate to the concerned authorities. This technique further uses the image and alert message and video to inform the family and police.

VII REFERENCES

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