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Women Safety Device Using Panic Button

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Abstract

Security is the condition of being protected against danger or loss. In the general sense, security is a concept similar to safety. The word "security" in general usage is synonymous with "safety," but as a technical term "security" means that something not only is secure but that it has been secured.

Women safety is a very important issue due to rising crimes against women these days. To help resolve this issue we propose a GPS based women's safety system that has dual security feature. This device consists of a system that ensures dual alerts in case a woman is harassed or she thinks she is introuble.

Keywords: Microprocessor, GSM, GPS

1. Introduction

This project is designed with ATMmega48. This Project presents a women safety detection system using GPS and GSM modems. The system can be interconnected with the alarm system and alert the neighbours. This detection and the messaging system is composed of a GPS receiver, Atmega48 and a GSM Modem. GPS Receiver gets the location information from satellites in the form of latitude and longitude. The ATmega48 processes this information and this processed information is sent to the user using GSM modem. A GSM modem is interfaced to the MCU. The GSM modem sends an SMS to the predefined mobile number. When a woman is in danger and in need of self-defence then she can press the panic button which is allotted to her. By pressing the panic button, the entire system will be activated then immediately a SMS will be sent to concern the person with location using GSM and GPS. The

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microcontroller- based system is built for controlling a function or range of functions and is not designed to be programmed by the end user in the same way a PC is defined as an embedded system. An embedded system is designed to perform one particular task able it with different choices and options. Embedded systems contain processing cores that are either microcontrollers or digital signal processors. In general, input always comes from a detector or sensors in more specific words and meanwhile the output goes to the activator which may start or stop the operation of the machine or the operating system. An embedded system is a combination of both hardware and software, each embedded system is unique and the hardware is highly specialized in the application domain. Hardware consists of processors, microcontrollers, IR sensors etc. On the other hand, Software is just like a brain of the whole embedded system as this consists of the programming languages used which makes hardware work. An embedded system is a combination of computer hardware and software, either fixed incapability or programmable, that is specifically designed for a particular kind of application device. In the twenty-first century, women have been involved in many activities a long side man. Women are contributing much to the success of society and the country, which deserves praise. However, sadly, the free movement of women are being hampered by sexual abuse. In the present world, sexual harassment is one of the major obstacles to women's empowerment. According to Ananda Bazar magazine, in the last three years (2017- 2019), there were more than 150 rapes in trains and station premises alone in India. Apart from these, there were 802 unpleasant incidents with women at the station premises and 870 inside the train. Working women and female students particularly faced this unfortunate incident. Meanwhile, Bangladesh witnessed a dark night on 6 February 2020. A female student of Dhaka University was raped on one of the busiest roads in Dhaka. The women went to her friend's place by a bus. Mistakenly, she got down at Kurmitola at 7 pm where she was brutally raped and tortured by a deranged person. She became unconscious and found herself in an isolated place at 10 pm. A female SSLC examinee was abducted and raped on January 26 of the same year. This incident took place at Tarakanda Upazila in Mymensingh. Also, on February 13, 2020 a nurse was gang raped on her way back from work. There have been many more other rape cases in Bangladesh in the last few years. For example, on August 25, 2017, a woman named Rupa was raped and killed by a bus driver and his assistant in Mymensingh. According to Prothom Alo, on

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January 21, a bus driver and his assistant of Gbatli Nabinagar reported the abduction of a woman. In April of the same year, a woman was raped in front of her husband inhumanly on a moving bus. All these events serve as immense obstacles for working women and female students. Considering the situations mentioned above, we have designed a system through which a woman will be able to receive administrative and volunteer assistance in a very short time. We have given the highest priority to women's security so we have designed a system with a combination of hardware and software. Because only hardware or only software cannot guarantee complete security. We used a band as hardware and a mobile application as software. Hardware and software are connected to each other via Bluetooth. If a woman is in danger, then she will press the panic button available in the band. As a result, an emergency SMS will be sent to the user's family as well as at the police box, the traffic police, and certain volunteers who are near the victim.

2. Objectives

Safety for women, Used as legal evidence of crime with exact location and information for prosecution.

Security is the condition of being protected against danger or loss. In the general sense, security is a concept similar to safety. The nuance between the two is an added emphasis on being protected from dangers that originate from outside. Individuals or actions that encroach upon the condition of protection are responsible for the breach of security. Our project emphasis on producing a novel system of providing security especially for females and initiate necessary actions when the subject encounters the security issue.

3. Methods

The block diagram of the women safety device using panic button is shown in the Fig 2. Modern security systems are built on the basis of precise controls where it is possible to design protection system that alerts the user by sending a text message and can use GPS for the purpose of tracking the victim and send a text message for the purpose of stopping it and can be used internet stuff to do this work that these innovative and modern methods are capable to limit women harassment. When the user will turn on the device, all modules will be launched simultaneously.

The band will check whether the emergency switch has been pressed or not. If the switch is not pressed the band will not take any further action. But if the band user is in danger and presses the emergency switch on her band, an emergency SMS will be sent immediately to the nearest police box,

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volunteers and her family. The location update will be done by the GSM module. We divided each road into several branches where one kilometre was taken for one branch. It is created with the values of latitude and longitude. Police boxes and some volunteers' mobile number of each branch will be provided to the system in advance. When the emergency switch will be pressed, the emergency message will be sent to the police.

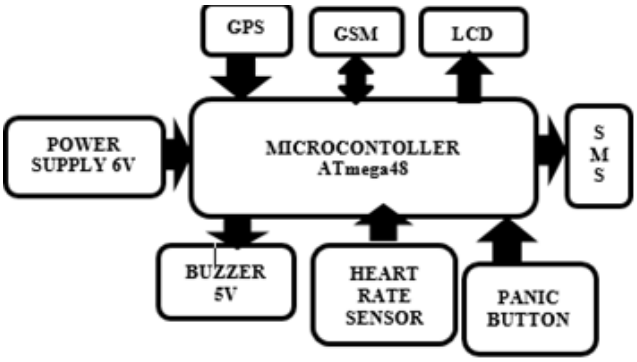

Fig. 3 shows the process of the proposed system.

- When the user will turn on the device, all modules will be launched simultaneously.
- The band will check whether the panic button hasbeen pressed or not.
- If the panic button is not pressed or pressed only few seconds, the band will not take further action.
- But if the band user is in danger and presses the panic button on her band until 5seconds continuously, an emergency SMS will be sent immediately to the nearest police station, volunteers and her family and buzzer will make sound.
- The location update will be done by the GSM module. GPS will help track the exact location.
- In this band main inputs will be panic button, GPS, GSM and Heart Rate Sensor and the output will be LCD display of alert SMS from the person who is in trouble, Buzzer.

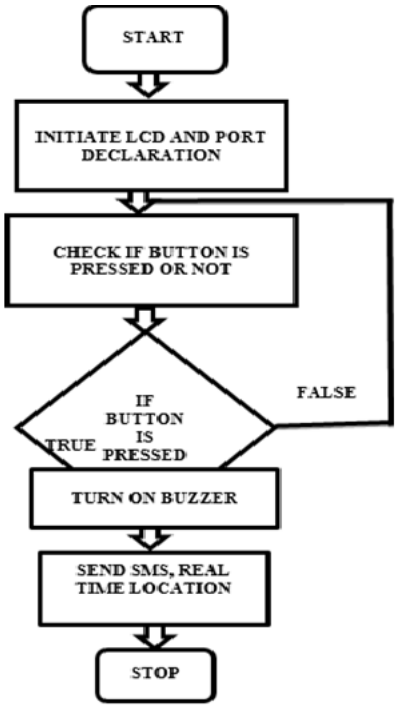

Fig. 4 shows the flow chart of the proposed work

4. Results

The result of the implementation is as explained in the Fig 4, Fig 5, Fig 6 and Fig 7. The main aim of this device is to introduce the concept of a women's safety device in India. The women possessing this device will

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press the panic button if in danger.

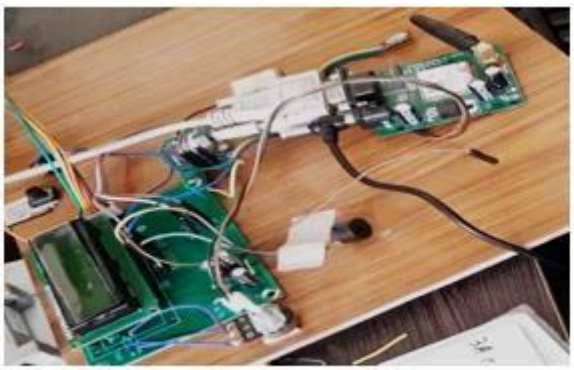

Fig 4.panic button and buzzer

At the same time buzzer will be ON and beep sound will be given so that the surrounding volunteers can get to know that the user is in danger and can help them. And message will be sent to their family members and police station along with the location where she stay with the help of GPS and GSM used in the project.

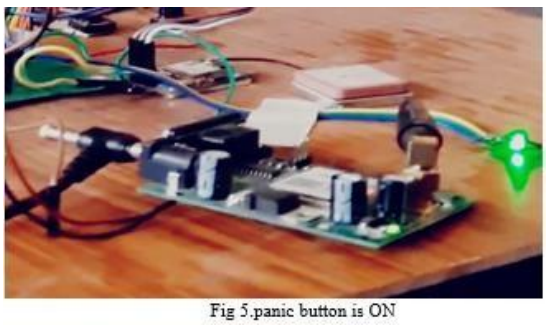

Fig 5.panic button is ON

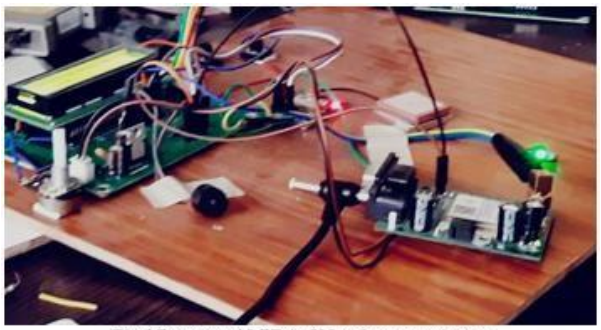

Fig 6.Buzzer and LED is ON and message is sent

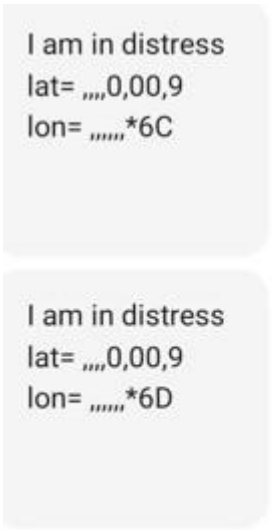

Fig 7.Message sent with the location

An SMS containing the latitude and longitude will be sent to volunteers and family members informing them about the danger and the location. The received members can be viewed on Google map to determine the location of the women and appropriate help can be provided.

5. Discussion

Maximum Women's Safety is the utmost concern of our project. So, we designed our project with few unique features. One of the key features is that in our system we can work in both online and offline mode. Police who are positioned near the user's location in both modes, they will assist the user. On the other hand, the most important and unique feature of our project is that when the user is in trouble, she will get helped by the people who are closer to them. We will add a heart rate senor with smart band so that the user can provide information about her physical

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condition if she is in trouble and their family can get the information about the user ,if they are safe or in trouble. This device will make user journey safer and secure .Without Women's progress, a country cannot move forward, yet we see women suffer a lot of harassments on their way, which is hindrance to their progress. For this reason, we decided to work on a project which will help millions of women .The main benefit of using this safety smart band is that women can feel more confident when they go outside as they can get quickly get support through the system when they go outside.

References

[1] Likhitha K.N, Hemalatha K.N, "Women Safety Device using GPS and GSM Modem", International Journal of Innovative Science & Research Technology,Issue 06, Volume 4, 2019.

[2] Shivani Basargi, Pranitha Veer, Swapnali Tomke, Mrinalini Ghewari, "Women Safety Device with GPS Tracking and Alerts", International Research Journal of Engineering and Technology (IRJET), Issue 02,Volume 07, 2020.

[3] B. Sindhu Bala, M. Shwetha, M. Tamilarasi, D. Vinodha, "Survey on Women Safety Using IoT", International Research Journal of Computer Engineering in Research Trends (IJCERT), Issue 02, Volume 05, 2018.

[4] Tejonidhi M.R, Aishwarya, Dayana M.K, Nagamma H, "IoT Based Smart Security Gadget for Women's Safety", International Conference on Advances in Information Technology, 2019.

[5] Thamaraiselvi.K, Rinesh.S, Ramaparvathy.L, Karthick.V "IoT based smart band to ensure the security for women", Second International Conference on Smart Systems and Inventive Technology(ICSSIT), 2019.

[6] G C Harikiran, Karthik Menasinkai, Suhas Shirol, "Smart Security Solution for Women Based on Internet of Things (IoT)", International Conference on Electrical, Electronics, and Optimization Techniques (ICEEOT), 2016.