



Protection for Women using IOT smart Device with location and parameter

Prof. Amita Jajoo¹, Satyam Bhardwaj², Chaitanya Wankhade³, Omkar Pathak⁴, Aditya Raj⁵, Sumedh Ghoderao⁶

¹Asst. Professor, ²B.E Student, ³B.E Student, ⁴B.E Student, ⁵B.E Student, ⁶B.E Student

Department of Information Technology

D.Y. Ptail College Of Engineering, Akurdi, Pune, India

Abstract: The international is becoming hazardous for ladies in all components. The crimes against ladies are increasing at a better rate. The hired women are feeling unsafe due to increasing crimes. This paper proposes a brief responding mechanism that enables ladies all through problem. When a person is going to harass, she will be able to press the button that is attached to the tool and the vicinity data is

sent as an SMS alert to few predefined emergency numbers in terms of range and longitude. The microcontroller used to interface with a push button, a GPS module, a GSM modem and fingerprint module. If the switch is pressed, it turns on the device to seize the attention of the people close by for help. The program is evolved in embedded language to illustrate the device capability in offering real time reaction. Thus the ladies' may be secure and he or she can feel protected

Index Terms - Women Safety, SIM, Wearable device, Web Application, GPS.

I. Introduction:

In contemporary world, girls protection has end up a chief trouble as they can't step out of their residence at any given time because of harassment abuse and a worry of violence. Even inside the twenty first century in which the generation is unexpectedly growing and new gadgets were advanced however nevertheless girls and girls are dealing with troubles. Even nowadays in India, girls can not circulate at night time in many places and even at day time crowded places hundreds and hundreds of incidents of harassment abuse happens to ladies each day. Among different crimes, harassment is the fastest growing crime in the United States nowadays.

The tool described here is a self-defence device particularly designed for ladies in distress to help them to guard themselves. This device may be geared up in a handbag, belt or suited to the girls sandals and the panic button connected to the belt. The woman in threat can prompt the gadget by using urgent emergency button on belt or tilting her sandal. It is a simple and clean to hold tool with extensive range of capabilities and capability.

The simple technique is to intimate on the spot region and a misery message to the law enforcement officials and registered range like mother and father, buddies, media, and ladies cell and so forth. In order that unfortunate incidents could be prevented and to provide real time proof for rapid action towards the perpetrators of crime towards girls.

Women everywhere in the global are facing and even subjected to unethical bodily harassment. Security for girls remains a prime difficulty because the range of crimes and harassment over ladies and women is increasing day-via-day. In this age of era, mobile phone is one of the devices that nearly each person like and makes use of to hold in touch with family and buddies. All they want is a tool that can be carried anywhere effortlessly.

This proposed venture offers with a short responding, fee safety system for an individual and mainly for women using which a female in discomfort can call for help simply with the click of a button in this clever device. Self Defence module for girls safety is sort of a Smart Watch for Women safety. It has the potential to help ladies with technologies which are embedded into a compact device. It has the ability to help ladies with technologies which are embedded. It is especially designed for women safety and protection. It has a control button so that it will be used by ladies to tell nearby police while they're in misery. This watch without delay receives connected to the satellite thru GPS when activated. Then the vicinity is transferred through the GSM, it additionally includes a shock mechanism to supply non-lethal electric powered shock in emergency conditions to discourage the attacker.

In this experience, the use of context-conscious generation is an important thing in those tendencies to understand stimuli from the context and react to it autonomously. An environment capable of recognizing the presence of humans, and finding them. Activity context is the bottom to our technology to illustrate all its capability. There are many processes that advocate electronic tele monitoring structures aimed at tracking sufferers and aggressors with the intention to reduce hazard conditions.

Though those procedures are primarily based on locating and data transmission technologies which include GPS and GPRS. This module directly receives related to the satellite via GPS while activated. Then the vicinity is transferred via the GSM and this tool is likewise supplied with a shock mechanism to supply non-deadly electric surprise.

II. LITERATURE SURVEY:

Anti-Theft System for Vehicles Using Fingerprint Sensor The stopping vehicle robbery the usage of microcontrollers and GSM modules, to achieve the incorporating safety with the aid of along with biometrics, i.e. a fingerprints [1].

A Study of Biometric Approach for Vehicle Security System Using Fingerprint Recognition vehicle security system the use of man or woman identification techniques. The survey specifically emphasizes on principal techniques for automated person identification, particularly fingerprint popularity and various present automobile protection device [2]. **A Review of Bike Security System Using Fingerprint GSM & GPS** The Fingerprint

matching is performed through utilizing the trivialities-based Fingerprint recognition scheme. The car is became on most effective with the bike key. If finger suits failed, it's going to bring about automobile getting immobilized and an alert message is sent to the cellular range of the proprietor [3].

Fingerprint Based Vehicle Security Monitoring and Tracking Using GSM & GPS Technology The degree of supervision and management for shipment shipping vehicles, mainly vans carrying coal it's miles vital to increase shipping cars faraway monitoring module [4].

GSM and GPS Survey of Bike Security gadget the use of Biometric Biometric installment framework is a good deal sheltered and steady and easy to make use of or even without utilizing any watchword or mystery codes to consider as evaluation and past framework like Visa installment framework, remote framework and versatile framework [5].

Vehicle Ignition the usage of Fingerprint Sensor The ignition of automobile using fingerprint sensor and liquid crystal display, we're generating the identical effects at the side of same proficiency and accuracy in it via lowering its value element, so that it's far without problems low priced with the aid of clients and we are able to extensively spread and enforce the safety in exceptional domains [6].

G C Harikiran, KarthikMenasinkai, SuhasShirol, "Smart Security Solution for Women primarily based on Internet Of Things (IOT)", International Conference on Electrical, Electronics, and Optimization Techniques (ICEEOT) – 2016[7].

They suggest to have a tool that's the integration of multiple gadgets, hardware accommodates of a wearable "Smart band" which continuously communicates with Smart cellphone that has get right of entry to to the net. The software is programmed and loaded with all the required statistics which incorporates Human behavior and reactions to specific conditions like anger, worry and tension. This generates a signal that is transmitted to the clever phone. The software program or application has access to GPS and Messaging services that is pre-programmed in one of these ways that whenever it receives emergency sign, it may send assist request alongside the location co-ordinates to the nearest Police station, household and the people within the close to radius who have utility.

B. Vijaylashmi, S. Renuka, Pooja Chennur, Sharangowda.Patil,"Self-defense device for women protection with region monitoring and SMS alert", Research Scholar, E&CE Department, VNEC, Sholapur – 585 220, Karnataka – India[8].

They describe a quick responding, price safety gadget for a person and especially for girls the usage of which a female in distress can call for assist just with the click of a button on this smart machine. Self Defense System for ladies protection is like a Smart Watch for Women. It has the ability to assist girls with technologies which can be embedded into a compact device. The ladies carrying this device as an eye or band, in case of any harassment or whilst she reveals that a person goes to harass, she presses a switch that is placed at the watch or band or whilst the women has fallen the data about the attack in conjunction with the body posture and location records is sent as SMS alert to three predefined emergency numbers And soon assistance is on its way! The machine will consist of embedded hardware and software co-designed for this devoted application.

AnnuKumari, ShikhaTripathi, Sandeep Singh, "Eve Teasing Avoidance system together with healthcare", Electronics and Communication Engineering, SRM University, NCR Campus Modinagar, India.[9]

This paper is to layout a machine that can act as a rescue device and can prevent harmless humans from harassment. Our undertaking behind this task is to layout and fabricate a gadget which is so compact in itself that offer benefit of camouflage. The gadget additionally contains healthcare device for sufferers and those who wished essential care. In this paper they provide key factors of the gadget and its software in chance time. We additionally provide information about challenges faced on this area now and in near destiny.

AbhijitParadkar, Deepak Sharma "All in a single Intelligent Safety System for Women Security" International Journal of Computer Applications Volume 130 – No.11, November2015.[10]

In this paper the they have got reviewed of diverse current systems on women safety. The authors have felt a need of superior ladies security

gadget to presents the protection degree in public locations in addition to visiting alone through public transports (college buses, agency

vehicle and many others). This paper proposed a new version for the women safety in public locations which aims to offer the hundred%

secure surroundings.

Dongare Uma, VyavahareVishakha and RautRavina, "An Android Application for Women Safety Based on Voice Recognition",

Department of Computer Sciences BSIOTR wagholi, Savitribai Phule Pune University India, ISSN 2320–088X. [11]

The paper proposes a voice keyword spotting app to recognize the consumer and spark off the app capability even when the cell keypad locked. The GPS module tracks the longitude and latitude to trace an genuine area of a person and sends the pre-stored emergency message together with location to the registered contact numbers. The Audio Recording module starts off evolved the recording of the communication for 5 minutes and saved as evidences. The message is going in queue if network trouble and send whilst community gets to be had. A notification is generated for successful supply message. Also, user can select contact via voice based totally touch list and make a name.

III. METHODOLOGY:

Figure 1 indicates the system structure The predominant purpose of this device is women protection and protection using raspberry pi. For this reason, python programming is used. The raspberry pi is integrated with a GPS, digital camera module,gsm module. When a girl is in danger the alert will ship automatically, manually to the concerned government SMS alert will ship to the involved authorities. Furthermore, utilizing voice information this could assist ladies in threat. And now not in that scenario to press the button that point she simply uses to say assist then SMS alert with place and captured photograph will ship to the parent's/police

The device architecture contains a Power supply, ADXL, Raspberry pi module, GPS, Camera , and buttons which act as an enter. System layout. Indicates the architecture diagram of girls protection device which incorporates the raspberry pi is a low-price singleboard computer used for connecting raspberry pi digicam and a button for sending an SMS alert to police and selected humans, here we used two buttons one is for assist and another one for that I am secure it relies upon at the condition of girls a pi digicam m that click the photograph of criminal and additionally the use of GPS for sending the cutting-edge location of the girls.

Expect this someday lady isn't able to press the button if above two situations will now not do then we're using a voice facts which is the major gain for women whilst she in hazard when she now not able to press button she says just help then the message will send to the worried authorities this is one of the essential advantages of our paper.

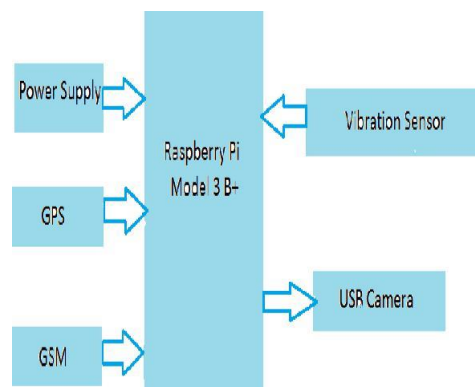


Fig 1.: Block Diagram

3.1 Raspberry pi 3 b+

Figure 2 indicates Raspberry pi which is a credit card sized computer. The raspberry pi 3 model B+ is an improved version of the raspberry pi 3 model B. It is based on the BCM2837B0 system-on-chips (SoC), which includes a 1.4ghz quad -core ARMv8 64bit processor and a powerful video core IV GPU. The Raspberry Pi can run a full range of ARM GNU/Linux distributions, including Snappy Ubuntu Core, Raspbian, Fedora and Arch Linux, as well as Microsoft Window 10 IoT Core.



Fig 2:- Raspberry pi 3 b++

3.2 GSM

Figure 3 indicate GSM module; GSM module has variety in which SIM800L module is used. This module allows for GPRS transmission, sending and receiving SMS and making and receiving voice calls. Low cost and small footprint and quad band frequency support make this module perfect solution for any project that require long range connectivity.



Fig 3:- GSM SIM800L

3.3 GPS

Figure 4 indicates GPS module; GPS module has variety in which GPS NEO module is used. It can track up to 22 satellites on 50 channels and achieves the industry's highest level of sensitivity, while consuming only 45mA supply current. It can do up to 5 location updates a second with 2.5m horizontal position accuracy. The navigation sensitivity is 161dBm



Fig 4:- GPS NEO

3.4 ADXL

The ADXL345 is a lower power, 3-axis MEMS accelerometer module with I2C and SPI interface. The adafruit Breakout boards for these modules feature on board 3.3v voltage regulation and level shifting which makes them simple to interface with 5v microcontrollers such as the Arduino. The ADXL345 features 4 sensitivity ranges from +/- 2G +/- 16G and it supports output data rates ranging from 10Hz to 3200Hz.

Our device serves as android cell phone-based era to track the offender with the geographical identification of the incident. The users are required to put up personal information which include email id and emergency contact numbers. The users can configure their own listing of contacts such as close spouse and children and buddies. At the time of any crucial incidents our utility will shop the girls by means of intimating the nearby police station to rescue her and additionally it'll give data to her family. Raspberry Pi is a portable microcontroller supported with latest programming language and guide many OS just like intensity of gadget to perform various technique earlier than the records is sent to cloud. It works on much less power connection and ought to be able to create hotspot to nearest Wi-Fi devices. It additionally accessible or controlled from the far flung place.

Therefore, it's also called as IOT hub. GSM (Global gadget for mobile communique) GSM (Global system for cell conversation) is used to send preset messages to circle of relatives and police manage room. It works with the frequency of 2.4GHz for 4G net. SIM800 module is used for this type of conversation. The GSM module communicates with the microcontroller via UART port, which supports SIMCOM enhance AT Commands. It is a chip or circuit so that it will be used to establish conversation among a tool or a computing device and a GSM or GPRS device. GPS gives the records approximately the range and longitude of the sufferers place. Here we use SKG13BL GPS module. It is an external kind lengthy antenna and operating frequency is 1575MHz and working voltage is three-5V.

The records synchronization is excessive in this type of module. NMEA - National Marine Electronics Authority is used to get records from satellites. Web digital camera is a digicam that captures the photos and movies via a pc community. These are smaller in size. Panic button is an digital tool which might be used in emergency situation to alert someone while the sufferer is in threat. This device receives activated while an man or woman name for assist. It is a resistive sensor and can not get solid statistics Tilt sensor is a small device that is used to feel the frame inclination with respect to reference plane (angle of inclination 0 to a hundred and forty diploma). When the output of the sensor is high it sends the cellular notification to the emergency numbers

IV. PROJECT OUTCOME:

- Provides safety for women in public places transport vehicles such as cabs, taxi, bus, auto rickshaw and working places.
- Portable device can be easily carried anywhere.
- Implement the device that is triggered without any manual aid provides safety for women in public places transport vehicles and working places.
- Gives more confidence to women about their safety.
- Comfortable and Easy to Use
- Reduced Cost.
- WIFI- Enabled

V. RESULTS AND DISCUSSION:

This type of idea plays an important role towards providing the fastest way of safety for women. The proposed design will deal with critical issues faced by women in the recent past and will help to solve them through using safety devices. This work was focused on developing a smart low-cost device to help women, feel them safer and prevent the occurrence of rape, harassment and other dangerous situations. It can be concluded that the system helps to support gender equality by providing a safe environment to women in the society, and it helps to reduce the crime rate against the women.

VI. CONCLUSION

In this system, a Raspberry Pi based smart wearable device system for Women safety is implemented using GPS and GSM technology. The system provides safety and security not only for women, but also for other people (especially elderly persons and children) in every walk of their life. The advantage of using Raspberry Pi3 Model B+ is that it has an in-built Wi-Fi module that can connect to the internet, without use of an external router. It can thus send an email alert to the predefined contact. The system can be made portable by fixing all the components inside a small enclosure and making it battery operated.

Reference

- [1] Bindu Nagendra , B Bhargav , Ramyashree K ,Sukanya K ,Nagashree R N “Anti-Theft Protection of Vehicles by using Fingerprint” International Journal of Engineering Research & Technology (IJERT) ISSN: 2278-0181
- [2] N. Kiruthiga and L. Latha “A Study of Biometric Approach for Vehicle Security System Using Fingerprint Recognitio” International Journal of Advanced Research Trends in Engineering and Technology (IJARTET) Vol. 1, Issue 2, October 2014
- [3] K. Dinesh Kumar , G. Nirmal , S.Prakash , S.Raguvaran “A Review of Bike Security System Using Fingerprint GSM&GPS” International Journal of Innovative Research in Computer and Communication Engineering Vol. 3, Issue 3, March 2015, ISSN(Online): 2320-9801.
- [4] Pranav PS, Hariharan G, Rajkamal J , Veeramani V “FINGERPRINT BASED VEHICLE SECURITY AND LOCATION TRACKING SYSTEM USING IOT
- [5] Akkammagari Suresh , S. Pavithra “GSM and GPS Survey of Bike Security system using Biometric” Journal of Chemical and Pharmaceutical Sciences ISSN: 0974-2115.
- [6] Kiran Rana Gill, Joel Sachin “ Vehicle Ignition using Fingerprint Sensor” IJIRST–International Journal for Innovative Research in Science & Technology| Volume 2 | Issue 12 | May 2016 ISSN (online): 2349-6010
- [7] G C Harikiran, Karthik Menasinkai, Suhas Shirol, “Smart Security Solution for Women primarily based on Internet Of Things(IOT)”, International Conference on Electrical, Electronics, and Optimization Techniques (ICEEOT) – 2016
- [8] B.Vijaylaxmi, S. Renuka, Pooja Chennur, Sharangowda. Patil, "Self defence device for women protection with region monitoring and SMS alert", Research Scholar, E&CE Department, VNEC, Shorapur – 585 220, Karnataka – India
- [9] Annu Kumari, Shikha Tripathi, Sandeep Singh, "Eve Teasing Avoidance system together with healthcare", Electronics and Communication Engineering, SRM University, NCR Campus Modinagar, India

[11] AbhijitParadkar, Deepak Sharma"All in a single Intelligent Safety System for Women Security" International Journal of Computer Applications Volume 130 – No.11, November2015

[11] Dongare Uma, VyavahareVishakha and RautRavina, "An Android Application for Women Safety Based on Voice Recognition", Department of Computer Sciences BSIOTR wagholi, SavitribaiPhule Pune University India, ISSN 2320–088X International Journal of Computer Science and Mobile Computing (IJCSMC) on-line at www.Ijcsmc.Com,Vol.4 Issue.Three, pg. 216-220, March- 2015