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RASPBERRY BASED WOMEN SAFETY PEN USING IOT

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ABSTRACT:

Women all over the world are facing and even subjected to unethical physical harassment. Security for women is still a major issue as the number of crimes and harassment over women and girls is increasing day-by-day. In this generation, smart phone is one of the gadgets that almost everyone like and uses to keep in touch with family and friends.. This proposed system deals with a fast reacting and protection system for an individual and especially for women .By using this device, a woman in danger can call for help by pressing the button on this device. Self Defense module for women safety is like a Smart Pen for Women safety. It can assist women with technologies that are implanted into a compact device.It is specially designed for women safety and protection.When women is facing any type of harrassment, she can press the button that is attached to the device and the location information is sent to website in terms of latitude and longitude.

I.INTRODUCTION

Even in this modern era, women do not feel safe leavinghomedue to the increase in crimes in our country suchas harassment, abuse, violence, etc., from thebusiness and technologysectors.informationis currentlybooming. Many women also work in the companyduring night shifts. There is a feeling of insecurity among working women. The emergency button is held on one of the buttons of the jacket. The main purpose of this device is to inform parents and the police about the current situation of women. The GPS system is used to track the current location of the victim and a GSM modem is used to send the message to predefined numbers. There are several apps that reduce the risk of sexual abuse by texting. In recent years, women are continually facing various threats such as abuse and brutal problems and are treated as victims. Wemust ensure the safety of women.The ideal system was a portable device. This project focuses on the security system for women by providing them with asafe environment. The objective of this project is to create a portable safety device for women. We mainly createan ideal model for the device which can be easilycarried anywhere. The safety of women in the world has become a major problem in the world. Nowadays, women are subjectedto various immoral activities. The devices used for women's safety will be upgraded as mobile application devices for their convenience. Our project providesa solution to one of theseproblems. Alerts family and friends by sending emergency message and captures images / videos of the attacker to preserveevidence for legal action. It consists of the button, when

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pressed, the device will automatically activate in a fraction of a second.The location of the injured person will be immediately tracked and messages will be sent to an emergency contact.

II.LITERATURE SURVEY

Islam et al. [1]he proposed “Design and implementation of the Auspice systemforwomen using GPS and GSM”. In this system, they used a GPS module, three buttons, a PIC16F887 microcontroller. The GPSmakesit possible to quickly reach the customer area. Three press stops are made to characterize the type of incident with which anincident is confronted. The moment the customer faces a problem anywhere,he can press any of these three stops. Atthis point, the microcontroller will receive it and send an SMS to the specific phone number. Thecustomer area will be monitored continuously until the customerturns off the frame once registered.Also, to control the wholeframe, they used a PIC16F887A microcontroller powered by four AA batteries.

Muskan et al.[2] Implemented a “women'ssafetydevicedesigned using IoT and machinelearning”. This study will design a device. To generate an alarm, the device is customized to learn the individual temperature and heart rate pattern andknow the threshold when the temperature and heart rate exceed the threshold, automatically send SMS and location to the contact number of emergency to take action.

Priyadarshini et al [3]she suggested"The emancipation of women towards the development ofIndia". Womenstrengthenthe basesto empower every woman in the country to empowerher in all the perspectivesthatareusually open to her, to be awareof rights and to prepare them for physical security. Thisdocument centers on describing the issues women look for in their accessibledaily life plans for women'sempowerment in India and the SelfHelpgroupthat is currentlyoperating in Tamil Nadu province,self-help group proposals for the futureupdate and contextual survey onwomen'sempowerment Cell.Navya R Sogi [4] proposed"SMARISA:a Raspberry Pi-basedsmartring for women'ssafety using IoT. Theymade a wearable gadget for women like a ring expert (SMARISA) and contain Raspberry Pi, camera, signal and capture to start administrations and the gadget is very compact and can be activated by touching the latchwhich will bring its current area and capture the image of the attacker employing Raspbe rry pi room and will sendit to the crisis contact number.

Sunil K Punjabi [5] designed the "Intelligentintelligent system for the safety of women and children" A compact gadget that will have a weight switch. When an attacker is about to ambush women / children or when he recognizes increasingly abnormal gaps, he would then have the option ofpressingdown on the device by spraying or squeezing it. Immediately the weight sensor identifies this weight and a normal SMS, with the causal area, will be sent to the phone numbers of your family members / guardians set aside in the devices uponreceipt. Follow-upof a call. If the call is not answered for a deferredperiod of time, a call will be sent to the police and an SMS will also be sent.

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III.EXISTING METHOD:

Another existing method is an application based prototype .It is interfaced with GPS, GSM and a spy camera. The user must register the emergency numbers.This is an android app which provides all facilities but it has a disadvantage that if the mobile phone of the victim is thrown away by the opposing person, this model cannot be used efficiently. To overcome these disadvantages we propose a model.

IV.PROPOSED SYSTEM:

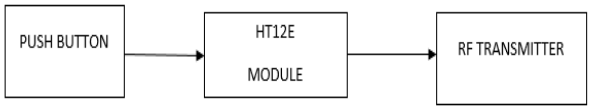
The microcontroller used is Arduino UNO. It is interfaced with a push button, a GPS module, a WIFI modem ,Temperature sensor ,MEMS sensor and a Buzzer circuit.It is interfaced with Emergency Switch, GPS Receiver, WIFI MODEM. In case of emergency the trigger button is pressed. The system tracks the location information from the GPS and prepares a link containing the present location information and send link through wifi modem to the website.Using the information supplied by this system, the location using GPS and can be traced through Google maps. Thus the girl will be safe and she feels protected.In this system,a camera is used to take the snap of the pervert and send that photo to the registered emails.

V.WORKING OF PROPOSED SYSTEM:

If a girl faces any harassment she will press the panic button, then name and location will displayed on the website. If any fire occurs in vehicle temperature sensor sends signal to the microcontroller and then microcontroller displays alert message and location on website.If the person falls from vehicle,MEMS sensor activated and displays body fall alert and location on the website.

BLOCK DIAGRAM:

TRANSMITTER PART:



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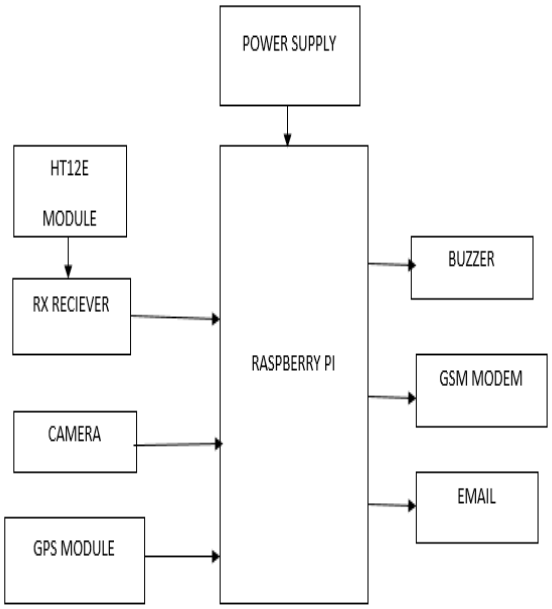
RECIEVER PART



V.MODULE DESCRIPTION:

A. RASPBERRY PI 3:

The Raspberry Pi is similar to the computerrunning Linux, Python programming but also provides a set of GPIO pins which are the general purpose of input and output for a wide range of uses. The pin found on an integrated circuit that has no particular function. Most pins have a dedicated idea, like sending a signal to the particular component. In Raspberry pi 3,the Broadcom 2837 64-bit Quadcore microprocessor is present. The operating voltage of the pi 3 processor isapproximately 3.3 volts. The raw voltage input is a maximum of 5 volts and the current source up to 2 A. In Raspberry pi 3 pin draw current totally 54 milliamps. But in each pin ittakes current up to 16 milliamps. The pi 3 houses the current. SSD memory card its memoryof about 16 gigabytes.The clock frequency is approximately 1.2 gigahertz. The internal RAM of the processor is 1 gigabyte. It has power sources from 5 to 3.3 Volts. The Raspberry pi 3 consists of UART interface, SPI interface and TWI interface. UART (Universal Asynchronous Receiver Transmitter) as communication interface (RDX, TXD) All input and output pins are often used as external interrupt. The optimum temperature is between 40 °Cand +85.

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Fig 1:Raspberry pi

B. GSM (Global System for Mobile):

GSM could be a mobile communication modem; stands for GlobalMobileCommunicationSystem (GSM). A GSM digitizes and collapses the information, then sends it through a channel with two completely different customer information streams,each in its own specific range. The SIM900 could be fullquad band GSM resolution in the associated SMT module which will be integratedinto customer applications. Equippedwith an industry standard interface, the SIM900 offers GSM 850/900/1800/1900 MHz performance for voice, SMS, data and fax in an extremely small form factor with low power consumption. energy. Thesemodules provide the GSM powered by the power supply and the communication interface. The interface probably RS232, USB 2.0 and others. A GSM modem is a wireless device that can be a cell phone or a modem that can be used to create a computer to communicate over a network. The modem needs a SIM card to operatewithin a certain range accepted by the network receiver. It can be connected to a computer via serial, USB or Bluetooth connection.The globalmobile communications system uses a combination of timedivisionmultipleaccess (TDMA) and frequencydivisionmultipleaccess (FDMA). GSM900 and GSM1800 are the most used frequency bandwidth in different globes, besides, the function of the modem is to receive data from the receiver at a certain signal based on the subscriber.

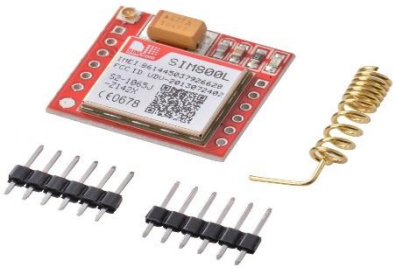

Fig 2:GSM Module

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C. GPS (Global Positioning System):

GPS signals are already very weak after reaching the earth's surface. By the time the GPS signals reach the receiver, they are usually weak downto -130dBm(-160dBW). This is often well below the thermal amplitude. Standard GPS receivers (e.g. TIM4A) integrate the received GPS signals up to 20 ms. This leads to the flexibility of the track signals down to about –150 dBm (–180 dBW). High-sensitivity GPS receivers are ready to integrate incoming signals for much longer and therefore coulddrop to levels close to 160 dBm. High-sensitivity GPS can provide positioning in many indoor locations, but not all. Signals are strongly attenuated by building materials or reflected as multipath. High-sensitivity GPS receivers can even compensate for the performance deficits of smaller antennas.For standard GPS receivers, signal reflections and multipath effects are unwanted phenomena. Internal GPS reception, however, must depend on reflected GPS signals in addition tothe direct line signalin order to receive enough satellites to calculate positions.

Fig 3:GPS Module

VI.RESULTS

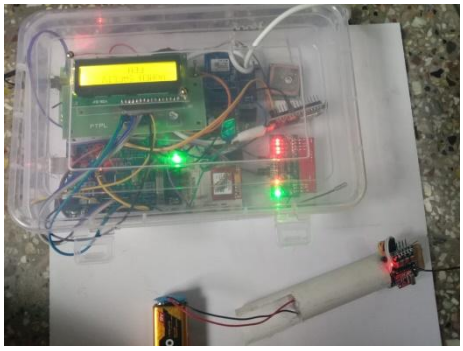

Fig 4:Hardware implementation

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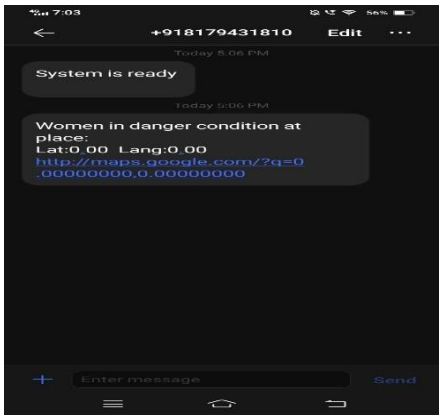

Fig 5:Message received when person is in danger

VII.CONCLUSION:

The proposed design will deal with critical issues faced by women and will help to solve them with technologically sound equipment and ideas. The merit of this work is it not only provides safety and it also provides security by means of self-defense mechanism. The crime against the women can be now brought to an end with the help of real system implementation of the proposed model. Our work to give a compact device provide the advantage of security purpose for the emergency situation which is helpful for women a critical time. It is economical benefit able and it can send the information of the user to predefined emergency contacts. By pressing a button the above process was held and it helps to improve the women safety.

REFERENCES

[1] Naeemul Islam, Md Anisuzzaman, Sikder Sunbeam Islam, Mohammed Rabiul Hossain, Abu Jafar Mohammad Obaidullah, “Design and Implementation of Women

[2] Auspice System by Utilizing GPS and GSM”, International Conference on Electrical, Computer and Communication Engineering (ECCE), 2019, pp. 1-5.

[3] Muskan , Teena Khandelwal, Manisha Khandelwal, Purnendu Shekhar Pandey, “Women Safety Device Designed using IoT and Machine Learning”,2018 IEEE, pp. 1204-1210.

[4] A.Priyadarshini, R.Thiyagarajan, V.Kumar, T.Radhu, "Women Empowerment towards developing India", IEEE Conference in Humanitarian Technology Conference,21-23 Dec 2016, Agra, India,pp.1-6.

[5] Navya R Sogi, Priya Chatterjee, Nethra U, Suma V, “SMARISA: A Raspberry Pi based Smart Ring for Women Safety using IoT”, Proceedings of the International Conference on Inventive Research in Computing Applications (ICIRCA 2018), pp. 451- 454.

[6] Prof. Sunil K Punjabi, Prof. Suvarna Chaure, Prof. Ujwala Ravale, Prof.Deepti Reddy, “Smart Intelligent System for Women and Child Security”, 2018 IEEE, pp. 451- 454.

[7]GCHarikiran,KarthikMenasinkai,SuhasShirol,"SmartSe curitySolutionfor Women based on Internet Of Things(IOT)", 2016 IEEE, pp.3551-3554.

[8] Nandita Viswanath, Naga Vaishnavi Pakyala, Dr. G. Muneeswari, "Smart Foot Device for Women Safety", 2016 IEEE Region 10 Symposium (TENSYMP),Bali, Indonesia, pp. 130-133

[9] Dantu Sai Prashanth, Goutam Patel, Dr. B. Bharathi, "Research and development ofa mobile-based women safety application with real-time database and datastream network", 2017 International Conference on Circuits and Computing Technologies[ICCPCT], pp.1- 5.

[10]Sindhu.K, Dr. R. Subhashini, Dr.S. Gowri, J.S Vimali, "A Women Safety Portable Hidden Camera detector and jammer", International Conference on Communication and Electronics Systems (ICCES 2018), pp.1187-1189.

[11]Ramachandran R1, Dhanya .L2, Shalini.M3, "A Survey on Women Safety Device Using IoT", Proceeding of International Conference on Systems Computation Automation and Networking 2019, pp.1-6.

[12]Wasim Akram, Mohit Jain, C. Sweetlin Hemalata, "Design of a Smart Saftey Device for Women Using IoT", International Conference on Recent Trends in Advanced Computing 2019, ICRTAC 2019, pp.657- 662.

[13]Kristy Crabtree, Petronille Geara, "Safety Planning for technology: displaced women and girl's interactions with information and communication technologyin

[14]Lebanon and harm reduction considerations for humanitarian settings", Crabtree and Geara Journal of International Humanitarian Action (2018), pp. 1-12.

[15]Vania Ceccato, "Women's victimization and safety in transit environments", Crime Prev Community Saf (2017) 19, pp.163-167