Women's Safety Security System using Raspberry PI

Dinah Punnoose, Sivasankari.S, K. Venkatesh, E. Ashokd, R.Prashanth

Abstract: ***Today in the present global scenario, a woman's word of security and safe life is a tough reality to happen, because women's sexual abuse has become a mainstream news in our everyday routine life. We should create a society in which women can travel openly and even at odd hours not of fear. While there are many rules and laws present, they are insufficient to provide the women in society with the full degree of security, safe and stable life. When the technology advances every day, it is a solution to other problems. And why can't we use these to create a stable and prosperous women's community. This project composed of components such as GSM, GPS, memory card, shock circuit, buzzer, camera, module Raspberry pi-3.***

Key words: ***GPS Tracker and GSM Module, IoT module, Neuro Stimulator***

I. INTRODUCTION

Today, the abuse of women is on the rise. It is high time the society needed a change. This project is focused on the protection of women, in which women feel secure. In almost every sector, i.e. sports, music, education, politics, etc., women have made an impact today. But the question still remains the same-Are women healthy in India? Even, the answer is NO. This paper therefore proposes an electronic protection device for women, installed in public transportation vehicles such as cars, buses and auto-rickshaws as women are now being molested, abducted and abused by drivers. This electronic device is mounted in the GPS, GSM, monitor, shock circuit, buzzer, memory card interfaced with the Raspberry pi-3 board.

II. EXISTING SYSTEM

EXISTING Program FOR WOMEN SECURITY several developers have come up with innovative solutions with this issue in mind. Many of those implementations are: Codes such as * 91 # are used to include emergency services that alert police control. Free smartphone application 'Support me on smartphone' to ensure women's health has been launched to support those seeking emergency services. Such applications need to do the function with a single button. Yet when a girl is in trouble the girl will not be able to take the phone and press the button at times.

A. SHE (Society Harnessing Equipment): it is a garment with an electronic device installed. This wardrobe has an electrical circuit which can produce 3800kV that can help the victim escape. It can send about 80 electric shocks in case of multiple attacks.

B. ILA security: This system's co-founders have developed three personal alarms that can shock and disorient possible attackers and thereby protect the user from unsafe situations.

C. AESHS (Advanced Electronics Network for Human Safety) is a tool that helps monitor the victim's location when attacked using GPS.

D. VithU app: A popular Indian crime television series "Gumrah" aired on Channel launched this emergency app. When the Smartphone's power button is pressed twice in a row, it starts sending warning messages to the contacts every two minutes with a connection to the user's location.

E. Smart Belt: This system incorporates a portable unit that resembles a standard belt. It is made up of Arduino Board, which screams warning and pressure sensors. Once the pressure sensor level reaches, the system will automatically turn on. This will activate the screaming warning unit and send sirens calling for help.

The biggest downside to these software and programs is that the victim needs to cause the initial intervention that sometimes doesn't happen in cases like these. So, the focus is on developing a solution that operates autonomously in encountered situations.

III. PROPOSED SYSTEM

In the proposed method, the person who attempts to physically assault women will be given a shock and an alarm will also be created. There is also a warning alert feature that sends GPS position to female already saved emergency contacts.

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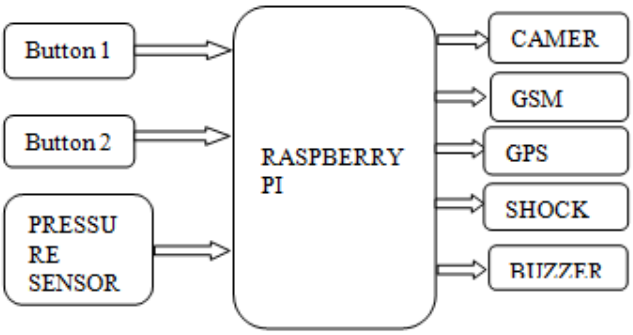


Fig.3.1:

i. Block diagram description(Fig.3.1)

- Raspberry pi module is the key component of this project. This module has 40 pins in all. Three buttons are used in our project-First button is used for on / off switch.
- Second bottom on GPS, GSM & buzzer is used. Third click is used for circuit shock.
- After pressing the first button, the time circuit is on. The GSM & GPS is also on when second button is pressed. It sends numbers to predefined venue.

We save three numbers which are police station, neighbor and friends. Using the GSM warning message "MY LIFE IS IN DANGER SITUATION," position is sent to the three numbers in the form of latitude and longitude. There will also be buzzer on. When the third button is pushed it will be on the time shock circuit. When attacking women, the time shock circuit is used to injure the attack.

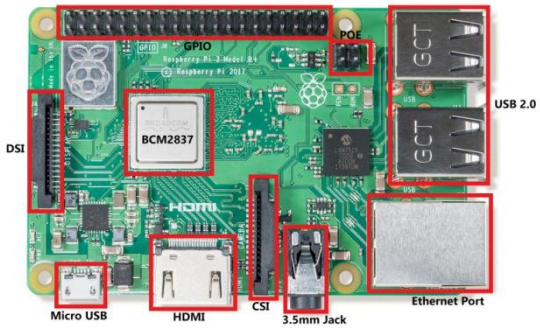
Camera will be on to capture image at the time and the image capture will be stored on memory card. Of this purpose, it is important of police to check for intruder. That device is most useful in today's life.

The block diagram consists of the following blocks.

ii. HARDWARE TOOLS

- Raspberry pi
- Camera
- Shock circuit
- GSM
- GPS
- BUZZER
- PRESSURE SENSOR
- TWO SWITCH.

Raspberry Pi: Raspberry Pi is a compact device with a credit size that can be carried anywhere and powered by a cell phone power bank. It has multiple GPIO pins which are mainly used to connect sensors. There are several versions of raspberry pi, where we use Raspberry Pi 3 + with BCM2837 SOC, 1 GB SDRAM, Bluetooth 4.2, POE support, Ethernet port, 4 USB 2.0 ports, camera jack, speakerport.



iii. SOFTWARE TOOLS

- Raspberry pi OS: Raspbian stretch
- Programming platform: python 3 IDLE
- Programming language: python 3

RASPBERRY PI

Raspberry Pi's heart is a Broadcom Chip Device (SOC) that includes ARM-compatible CPU and on-board graphic processing unit, as
well as Vediocore IV.

First-generation and third-generation main feature includes:

• CPU speed ranges from 700 MHz and 1.2 GHz;
• On board Ram (RAM) ranges between 256 MB and 1 GB.
• USB port deviates from 1 port to USB slot.
• HDMI, 3.5 mm phone jack and composite video output.
• Low-level output is given on widely supported GPIO pins.

GSM MODULE

GSM is used to transfer data from the control panel to the base computer. GSM 300 running at 900MHz frequency can be used. It has a 890MHz bridge band to 915MHz and a 935MHz to 960 MHz GSM down bridge band taking advantage of both FDMA and TDMA. 124 carriers with a channel spacing of 200 KHz (FDMA) are produced in 25 MHz BW. Every carrier is split into eight Time slots (TDMA). 992 voice channels are made available in GSM 300 at any given time.

GPS

GPS devices are highly flexible and can be used in almost every field of industry. These can be used for mapping forests, helping farmers cultivate their crops, and controlling aircraft on land or in the air. Here it senses the patient's precise position in order to enter them as soon as possible from nearby hospital.

PRESSURE SENSOR

BMP180 MODULE Features

- Can measure temperature and altitude.
- Pressure range: 300 to 1100hPa
- High relative accuracy of ±0.12hPa
- Can work on low voltages
- 3.4Mhz I2C interface
- Low power consumption (3uA)
- Pressure conversion time: 5msec

- Potable size

BMP180 MODULE Specifications

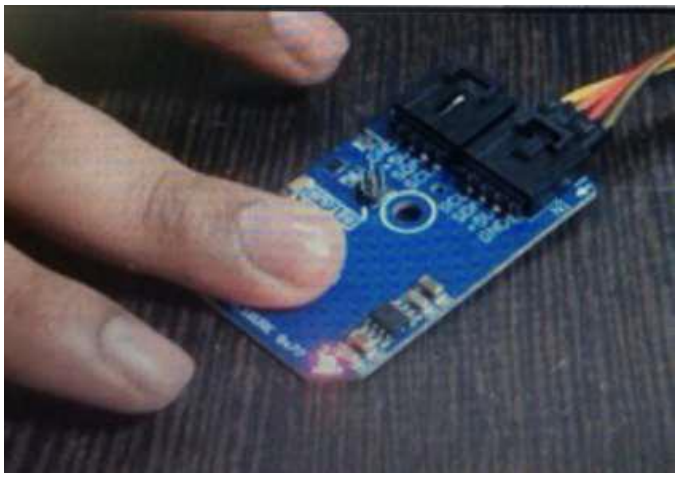
- Operating voltage of BMP180: 1.3V – 3.6V
- Input voltage of BMP180MODULE: 3.3V to 5.5V
- Peak current: 1000uA
- Consumes 0.1uA standby
- Maximum voltage at SDA, SCL: VCC + 0.3V
- Operating temperature: -40ºC to +80ºC

IV. CONCLUSION

The new concept would tackle crucial problems facing women and help with scientifically advanced tools and solutions to overcome them. The strength of this work is that it not only provides protection but it also provides defence through the system of self-defence. The violence against women will now be put to an end with the aid of actual operating framework of the proposed model

V. RESULT

BMP 180 Sensor

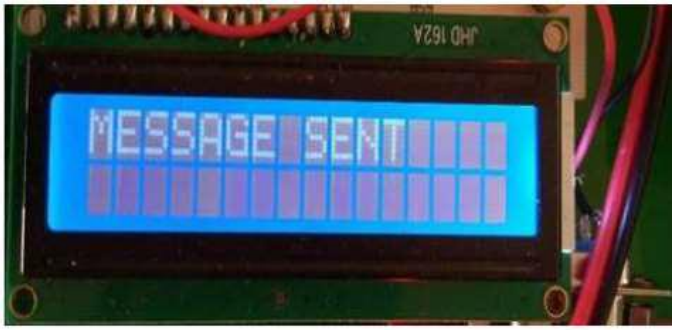


Working of the sensor

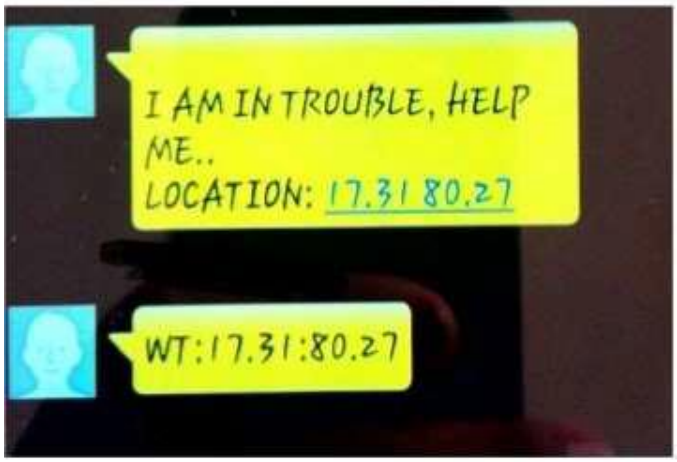
GPS Module tracking the location and displaying on LCD

GSM Module sending the message to the emergency contacts

Message sent by the GSM Module



Message received by the emergency contact



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