

Smart women's safety system that uses IoT

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ABSTRACT:

Women and children are very important to the growth of our country. These days, women have a lot of problems with staying pure and staying safe. The number of people who are harassed is growing every day. We're coming up with a way to make sure that women and kids who use the Internet of Things are safe. Heartbeat sensor and MPU6050 sensor are some of the sensors we use. A high voltage generator is used to make the high voltage that gives enemies an electric shock. We use GPS to find out where the victim is and then use an SMS warning through the GSM module to let her parents, the cops, or even an ambulance know where she is. The person who did wrong is photographed, saved in the cloud, and sent to the person who needs to see it.

INTRODUCTION:

The safety of women has become very important in our country because they can't leave the house at any time, especially at night. It's mostly because they're afraid of being hurt or abused physically or sexually. Women don't just have to worry about being harassed outside; it can also happen inside their own houses. Over the past few million years,

women's position in India has changed a lot. In old times, they had the same rights as men. During the Middle Ages, they didn't have as many rights, but now they do. There are now women working in high positions in India. Technology is changing quickly and new gadgets are being made all the time in the 21st century, but women and girls are still having trouble. Even though everyone in our society knows how important it is to keep women safe, it is still our job to make sure they are properly protected. Furthermore, we need to make sure that women always feel safe when they are outside of their homes, even when they are by themselves. Since women aren't as physically fit as men, it would be helpful for them to have someone lend a hand.

The best way to lower your chances of being a victim of a violent crime like a robbery, sexual attack, or rape is to know how to defend yourself and find tools that can help you get out of dangerous situations. If a woman gets lost with her friends on a night out, is being followed by someone with bad intentions, or doesn't know how to get back home, this device will protect her and get help for her when she needs it by texting or calling her friends and the control center to let them know where she is and how she's doing



IOT, or the "Internet of Things," is a high-tech system for automating and analyzing data. It uses networking, big data, sensors, and AI to create full systems for a product or service. Any business or system can use these methods to get better performance, openness, and control. The unique

ability and freedom of IOT systems to work in any setting makes them useful across many businesses. They use smart gadgets and strong supporting technology to improve processes, data gathering, automation, and a lot more.



In this system, we use IOT to store the sensor values in the cloud, so these data can be used for the future references. We also store captured image in the cloud. These data can be check by any person whenever they need.

DESCRIPTION:

NODE MCU(ESP8266):It is an open source IOT platform. It includes firmware which works on the ESP8266 WI-FI SOC module from espressif systems and hardware , which is based on the ESP-12 module. It is based on the ELUA project and built on the espressif Non-OS SDK for ESP8266.ESP8266WI-FI modules includes a CP2102 TTL to USB chip for programming and debugging and it is a breadboard friendly and can simply be powered using its micro USB port.

HEARTBEAT SENSOR: The heartbeat sensor is based on the principle of photo

Phlethysmography. It measures the change in volume of blood through any organ of the body which causes a change in the light intensity through that organ (a vascular region).the flow of the blood volume is decided by the rate of heart pulses and since light intensity absorbed by blood, the signal pulses are equivalent to the heart beat pulses. When the threshold value of heart beat sensor crosses, the device will get activated automatically and making alert call via cloud (THINGSPEAK) to family members or someone.It is used monitor the heartbeat of the women who wears the gloves.

MPU6050 SENSOR : It is a sensor based on MEMS (Micro Electro Mechanical Systems) technology. Both the gyroscope and the accelerometeris embedded inside a single chip of the sensor. This chip uses (Inter Integrated Circuit) I2C protocol for communication. An accelerometer works on the principle of piezo

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electric effect and this principle is used in this system. It is used to monitor the fall detection i.e. it will monitor when women falls due to attack or she get faint.

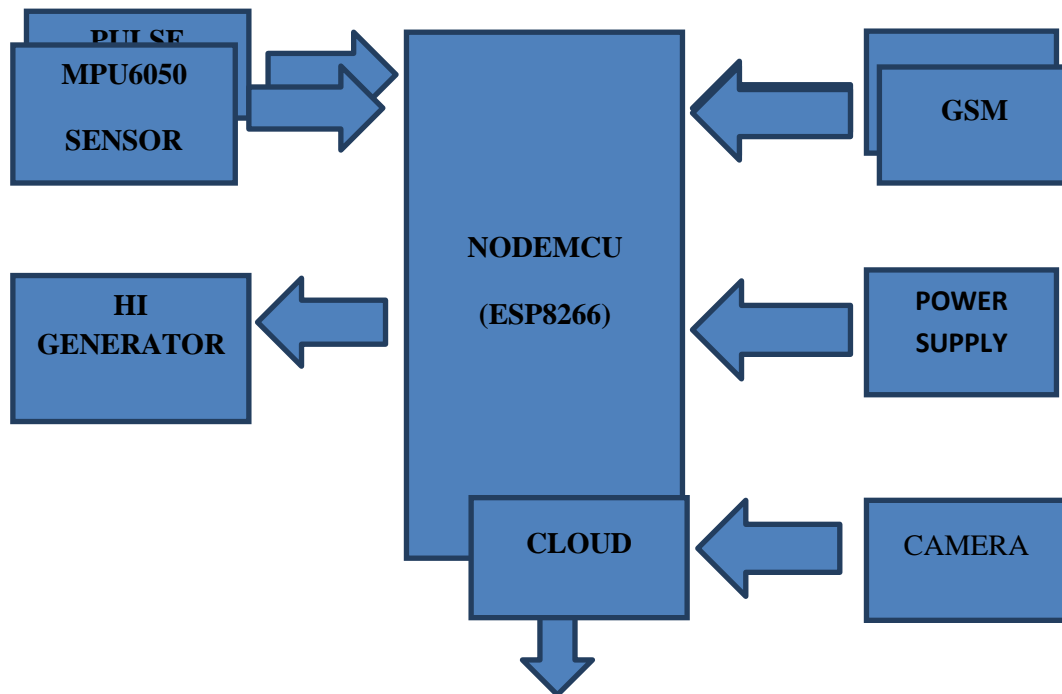
GPS:The working of GPS (Global Positioning System) is based on the 'trilateration' mathematical principle. The position is determined from the distance measurements to the satellites. It is a global navigation satellite system that provides both geolocation and time information to a GPS receiver anywhere on the earth surface where there is an unobstructed line of sight to four or more GPS satellites. Obstacles such as mountains and other buildings block the relatively weak GPS signals.

GSM:GSM system was developed as a digital system using TDMA(Time Division Multiple Access) technique .This technique used for communication purposes .A GSM digitizes and reduces the data and then sends it down through a channel with the two different streams of client

data, with each in its own particular time slot. This digital system has an ability to carry from 64kbps to 120Mbps of data rates.

HIGH VOLTAGE GENERATOR: when the input voltage 3v is given , it produces the output as 400kv. When the sensor values is higher than the threshold, then it produces the voltage. It produces the shock when women who wears the gloves touches anyone.

THINGSPEAK :THINGSPEAK is an Open Source Internet Of Things(IOT) application Software.API(Application Program Interface) is to store and retrieve data from things using the HTTP protocol over the internet or with local area network. THINSPEAK was originally launched by iobridge in 2010 as a service in support of IOT applications, that allows to save sensor data in the cloud and develop IOT applications. Also, platform provides apps that let you analyze and visualize data. A channel is that where you send your data to be stored.

ARCHITECTURAL DIAGRAM:**GH VOLYAGE****WORKING PROCEDURE:**

When women are in trouble or must act quickly, this tool will help them get through it. It's going to look like gloves. For the person who wears the gloves, a pulse tracker will check her pulse value every 5 seconds and store it in the cloud. The MPU6050 sensor will send a warning message to the person's parents, a nearby police

station, or any recorded phone number if their pulse becomes irregular, they pass out, or they fall because they are being attacked. They will also be tracked and their location will be sent to the registered phone number or saved in the cloud. To protect themselves from attackers, a high voltage generator will shock the glove when the pulse value changes in a strange way. The attackers'

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pictures will also be taken with a camera and saved in the cloud so they can be checked later.

PURPOSE:

The system that is in place is not strong enough to protect women from attackers. The main goal of this suggested system is to protect women in dangerous situations and also to help them defend themselves against attackers. The hardware and software solutions are both part of this suggested system. current system either makes the software program or the gadgets that are built into the system. But in our setup, both hardware devices and software applications are in sync with the main cloud computer through Wi-Fi.

The other purpose of this proposed model are:

- 1) Accurate tracking of women who wears the gloves.
- 2) Fast process.
- 3) Low cost of development.

APPLICATIONS:

- 1) It will not only useful for women security system, but also it will useful for child tracking system.
- 2) Wireless connectivity.
- 3) Easy to maintain.
Compact in size.

CONCLUSION:

A society's women should all feel safe and protected. That is our major goal with this project. We can solve some of the problems by putting this real-time method into action. It will help protect women when they are in dangerous situations. We will work on both the hardware and software for this system, and the data will be stored in the cloud so it can be used again in the future. For everyone

who feels afraid, this new idea will help.

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