

Smart Threat Alert and Tracking system for Women

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Abstract-

In today's world women are less secure and have many issues regarding their security purpose. They have to undergo among various difficult situations and have to prove themselves every time in all critical conditions. So, for their security and safety purpose government has provided security through rules and regulation to the society. Although there are many existing systems for security purpose need of advanced smart security system is increased. In order to overcome such problems smart security system for women is implemented. This project describes about safe and secured electronic system for women which comprises of microcontroller and sensors such as Touch sensor, sound sensor, tilt sensor A buzzer, IOT and GPS are used in this project. When the women are in threat, the device senses the parameters and device gets activated and traces the location of the victim using the GPS module. By using the IOT module the victim's location is sent to the registered database and notified in app.

1. INTRODUCTION

Safety is the most wanted power for everyone in today's world. Technology is the best way to achieve it. That's the reason to develop this project that can act as a rescue device and protect at the time of danger. The motivation behind the project is an attempt to focus on a security system that is designed to provide more security for women's. In this system we can find the exact location of the person and also we can find the exact picture of the trouble maker using camera.

2. PROPOSED METHOD

The Block diagram for Smart threat alert and tracking system for women is shown in the below fig. It is Wireless technology and it is used to find the exact location of the women. The wide range of communication is possible. The whole project is divided into four parts. First one is touch sensor, second one is tilt sensor, third one is sound sensor and the fourth one is camera. Touch sensor uses your body as a part of circuit. When you touch the sensor pad, the capacitance of the circuit is charged and is detected. The detected change in capacitance results in output changing state. Tilt sensor are little devices as they draw absolutely no power. They could easily be used in any places causing it to be activated when shaken. But otherwise not causing the battery to run down. Sound sensor detect the intensity of the sound environment, It is used to identify the presence of sound (or) below the particular frequency sound doesn't recognize the volume of the sound

Camera is used to capture the image of the trouble maker. Didn't want separate camera

we can access our own mobile phone camera.

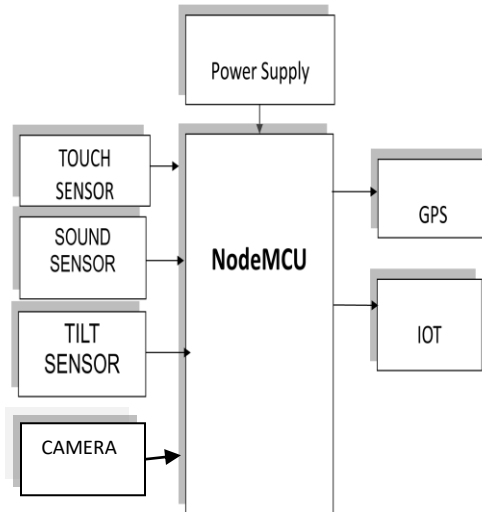


Fig.1 Block Diagram of smart threat alert and tracking system for women

3. IMPLEMENTATION

Software Used

The program is written in Arduino Integrated Development Environment (IDE). Here, the version used is 1.6.1. It connects to the Arduino hardware to upload programs. But before uploading the program there is a need to select appropriate Microcontroller so, “Arduino Uno” from the Tool menu has been chosen. And for proper communication with computer and Arduino Uno boards there is a need to select COM port from the Tool menu.

Hardware Used

This paper consists of the following hardware’s:

NODE MCU

Node MCU is a open source IOT platform. It includes firmware by which runs out on the WI-Fi and the hardware is based on the ESP-12 module. The term “NODEMCU” by default refers to the firmware rather than the development kits. The firmware uses lua scripting language.

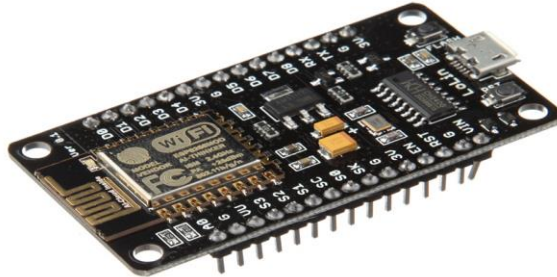


Fig.3 Front side surface of node MCU

Touch sensor

Touch sensors are also called as tactile sensors and are sensitive to touch, force or pressure. They are one of the simplest and useful sensors. The working of a touch sensor is similar to that of a simple switch. When there is contact with the surface of the touch sensor, the circuit is closed inside the sensor and there is a flow of current. When the contact is released, the circuit is opened and no current flow. Touch sensors are making their way into many applications like mobile phones, remote controls, control panels, etc. Present day touch sensors can replace mechanical buttons and switches. Touch sensors with simple rotational sliders, touch pads and rotary wheels offer significant



Figure 4 shows the structure of Touch sensor

Sound sensor

Sound is the generalized name given to “acoustic waves”. Audio sound Transducers includes both input sensors and that convert sound into electrical signal such as a microphone and output actuators that converts electrical signal back into sound such as a loud speaker

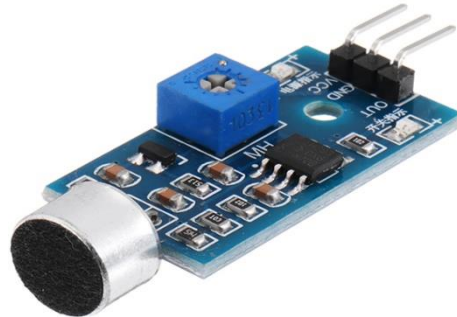


Figure 4 shows Sound sensor

Tilt Sensor

A tilt sensor can measure the tilting in often two axes of a reference plane in two axes. In contrast , a full motion would use at least three axes and often additional sensors. One way to measure tilt angle with reference to earth’s ground plane is to use an accelerometer. Typical application can be found in the industry and in the game controllers. In aircraft the ball in turn co ordinators or turn and bank indicators is sometimes referred as an inclinometer.

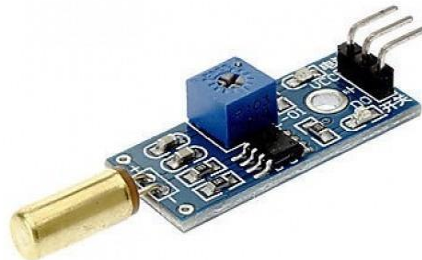


Fig.5 Tilt Sensor

SIMULATION DIAGRAM WITH RESULT

The design of the Smart threat alert and tracking system for women are show in Figure 6,7 and Figure 8. Figure 6 shows the Simulation output fot the touch sensor similary Figure 7 shows the Simulation output for the tilt sensor similary Figure 8 shows the Simulation output for the sound sensor

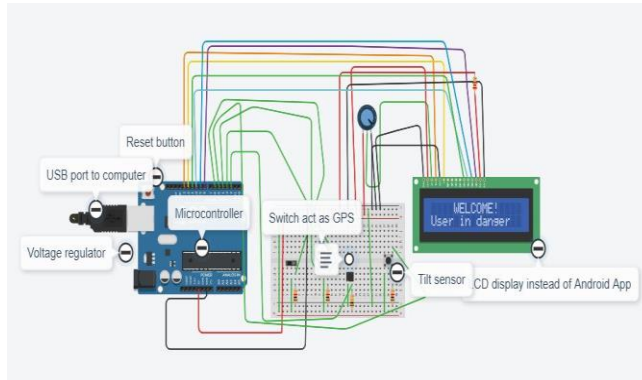


Fig.6 Touch Sensor Output

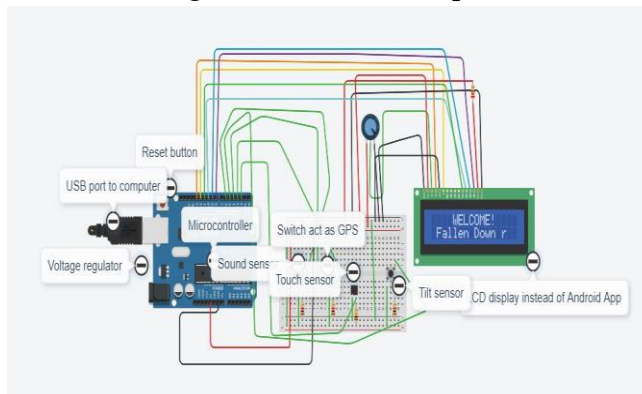


Fig.7 Tilt Sensor Output t

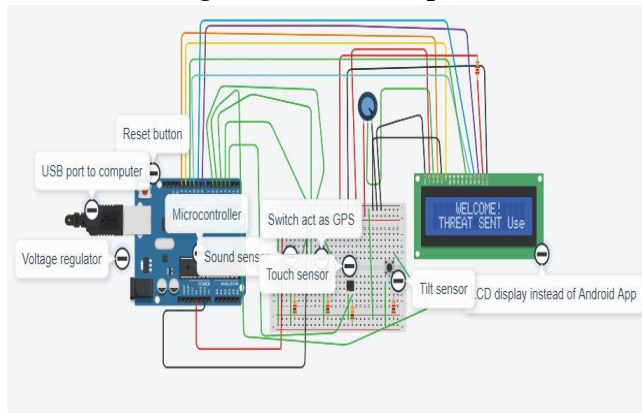
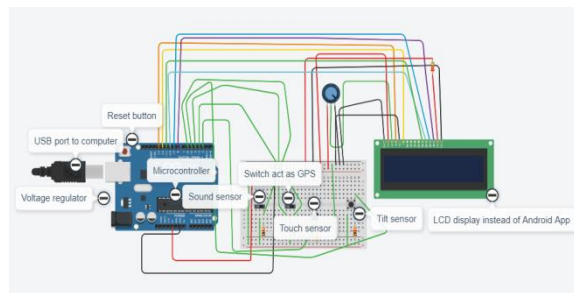


Fig.8 Sound Sensor Output t

COMPARISON WITH EXISTING SYSTEM

The major advantage of this system over other systems is that it provides more security to women. And we find the exact location of the person. It is more compact So we can be kept our self. In this project longer distance is possible to communicate. And also monitors outside parameter to assess the potential threat.

SIMULATION



CONCLUSION

This project provides more security to women This system will transmit the location of the women through secured IOT protocol to the caretaker with minimum interaction. The threat for women will be reduced and can be easily tracked.

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