

Safe Home Smart Home

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Abstract

Electronic commerce is a recently emerging technology changing the structure of an organization. This project, "SAFE HOME SMART HOME," is based on the Home security system. This entire project consists of Arduino, which connects the other peripheral devices like an ultrasonic sensor, GSM module, Piezo Buzzer, Fire sensor module. In case any fire or flame is founded in front of the fire sensor, it will detect, and at the same time, Piezo buzzer starts alarming to indicate the fire is burning. Otherwise, any objects movements are founded in front of an ultrasonic sensor from the distance of 30cm then it will detect and pass this signal into Arduino, which is connected through wire then the Arduino Uno will send this signal to the GSM module then it will transmit the message to the mobile phone with the particular mobile number that indicates the message security alarm

Index terms - Arduino Uno, ultrasonic sensor, Fire sensor, GSM module

I. INTRODUCTION

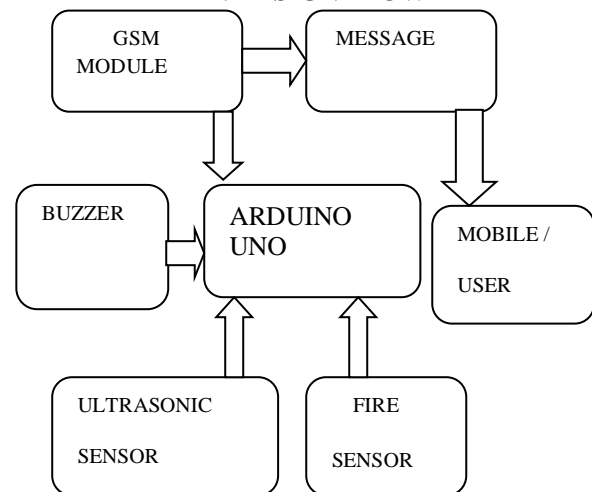
Most of the peoples prefer security at home nowadays; likewise, it used a security system based on the functions of the Arduino Uno and GSM module. It consists of normally closed reed switches that were connected to secret doors and windows. The Ultrasonic sensor detects the movements in front of it and alerts the users in the home, and also fire sensor will detect the fire. This is a good product which is based on the security system with its advent both the manufactures and consumers will have benefited security system is very much important in nowadays to alert the users. This is a home-based security system in which the Ultrasonic sensor and Fire sensor will detect the objects' movements in front of it, and it will send the immediate message to the user of the home with the help of the GSM module. However, this will alert the users, and it will start to alarm. We can send the message notification to their smartphones to be secure the home. Our main objectives of the project are to keep the user secure to safeguard their homes by placing our system behind the doors or windows, and it will be monitoring the security through their smartphones. The user will also have the ability to be secure through their smartphones.

II. LITERATURE SURVEY

As per our knowledge, only a few papers were found in the literature for the "HOME SECURITY SYSTEM" for making our home safe and smart. The

home security system was implemented by Covina k, Sai Krishna Prasad, k Sairam Susheel (2014) interference exposure function for smart home using laser rays International Journal for scientific research and development (IJSRD) (2)176-178. This finding interference method is better SMS based function using GSM module was planned to use internet service to send the message or to warn the house user as a substitute of the ordinary SMS. The smart home automation that it uses by GSMModule and the IOT (Internet of things) in Wi-Fi Technology the Wi-Fi technology consists of three Mini components, web, server, cloud and monitor Users the interface Arduino module, Wi-Fi three 3 inputs, and 3 outputs. The GSM module is used to send messages to the user; the Wi-Fi module is used to share through the user, server, and stored in the cloud. For the server Connection, the application should be installed on Android smartphones. The cloud-based service Proposed system has good modulating, and it has Configurability characteristics with very low, then Power consumption.

III. DESIGN FLOW



A. Arduino UNO

It is an open-source microcontroller, and it depends on the atmega32p, and it was developed by Arduino c.c. This is a board which has many sets of analog and digital input and output pins that has annexation to various portables and expansion board and other circuits. This board consists of 14 digital pins, 6 analog pins, and it can be programmed with Arduino IDE (Integrated Development Environment) connected via a 'type B USB cable.



B. Ultrasonic sensor

The ultrasonic sensor is also called as Ultrasonic transducers. This is a type of acoustic sensor. It divides into three board categories transmitter, receivers, and transceivers. Transmitters have the function of converting an electrical signal into ultrasound. Receivers have the function of converting ultrasound into an electrical signal. Ultrasonic sensors are worked in a system that appraises targets by depicting the emulated signals.

C. Fire sensor

Fire sensors are also called a Flame detection sensor module, which is very sensitive to fire flame, but they also can recognize ordinary light. It is also used as a fire alarm or flame alarm. Its operating voltage is about 3.3v-5v. It also recognizes a flame in a wavelength of 760nm-1100nm. The detection point is about 60 degrees.

D. GSM Module

GSM (Global System for Mobile communication). It is a mobile communication-based system. It was developed at Bell laboratories in 1970. It is very important for the mobile communication system, and it is widely used in the world. It is a digital and open technology used for transmitting the data services that operates at 850MHz, 900MHz, 1800MHz, and 1900MHz frequency bands. It was improved as a digital function using the Time Division Multiple Access (TDMA) technique for the communication goal. A GSM computerizes and diminishes the data, then bends it down via a channel with two different client data streams, each in its time slot.

E. Buzzer

Buzzers are mainly for signaling purposes, while the buzzer senses any sensing device on it. It is connected to the microcontroller

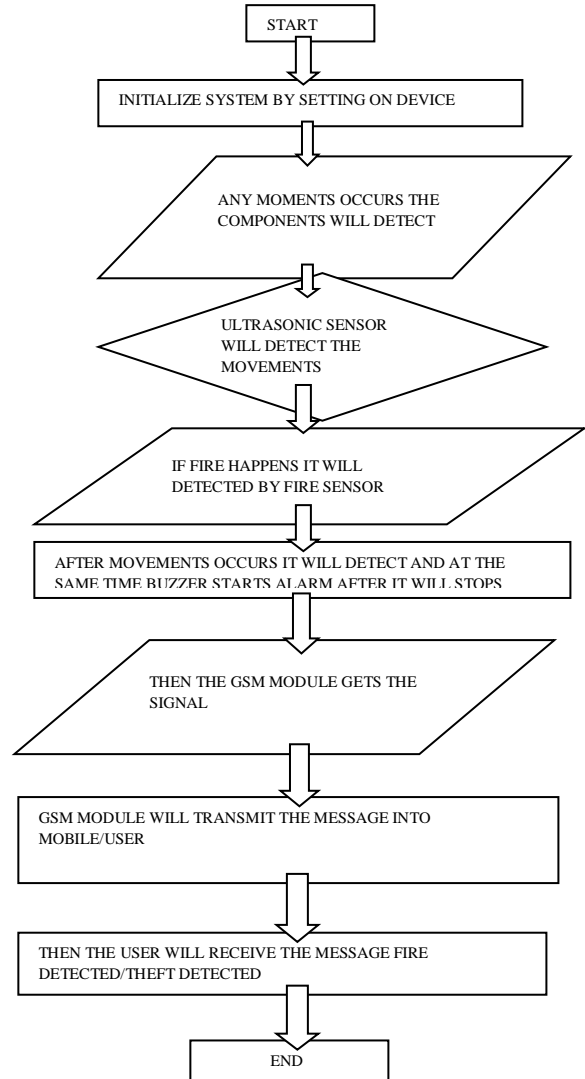
ALGORITHM

1. Start the process.
2. Initialize the system by setting on the device.
3. Any moments occur the components will detect.
4. Ultrasonic sensor will detect the moments.
5. If a fire happens, it will have detected by the fire sensor.
6. After movements occur, it will detect, and at the same time, the buzzer starts alarm after it will stop.
7. Then, the GSM module gets the signal.
8. GSM module will transmit the message to the mobile/user.

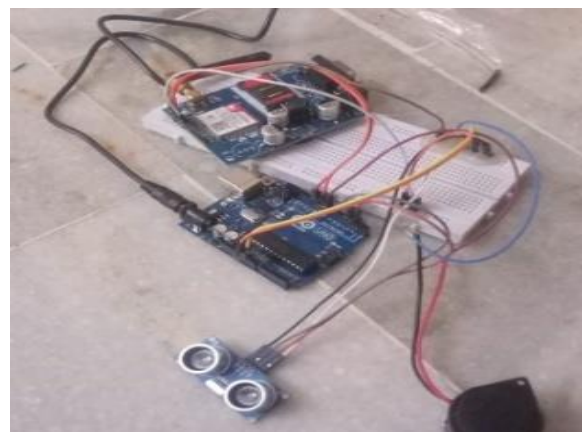
9. Then the user will receive the message fire detected/fire detected

10. End the program.

IV. FLOW CHART



V. RESULT



VI. ADVANTAGES

- It can be used for safety purposes.
- Smart home systems can save time and money.
- Smart home data would be valuable to hackers.

VI. FUTURE SCOPE

- Accessible to bank security.
- Alert the user by email notification attached with image data when fingerprint mismatch is detected.
- Remote lock control through a web application.

VII. APPLICATION

- It can be utilized in home, office, and bank.
- It can be used in important and secured places for our protection and safety.
- Similarly, in fire forms, the fire sensor module detects and sends the signals to the microcontroller, and it alerts the homeowner.

VIII. CONCLUSION

Safety can be assumed in the absence of human action by automating the thing made using GSM. Here, by invasion can be discovered

and also if the thing is working or not can be accurate using the data sent to the user. This data can be used for conservation of the device and on the condition the registered user with any data about the invasion thereby, this methodology can find its application in many applied such as home, office safety function and soon.

REFERENCES

- [1] Govinda k, Sai Krishna Prasad K, Sairam Susheel interference detection for smart home using laser ray's international journal for scientific research and development (2).
- [2] Nivetha M., Sundaresan S, "Automated Drinking Water Distribution using Arduino," International Journal of Civil Engineering, Volume 4 Issue 5 2017.
- [3] Jayashri B, Arvind S 2013 design application of security for smart home based on GSM technology international journal of smart home (7).
- [4] Karri V, Daniel Lim J S 2005 publishing and gadget via SMS later a security interference 1st international conf. on sensing technology north New Zealand
- [5] Ravi Kant, Prajit Paul, Abhishek Pandit, Rimpali Seal, and Sanchari Mukhopadhyay, "An Innovative Approach for a Smart Home," International Journal of Electronics and Communication Engineering, Volume 3 Issue 2 2016.
- [6] S.M.Kannan, R.Krishnavenishri, S.Kamalika, and B.Kanagalakshmi, "Solar and Iot Based Health Monitoring, Controlling and Tracking System for Soldiers" SSRG International Journal of Electrical and Electronics Engineering 5.8 (2018): 11-15.