

A Review paper on Smart Home Security System using GSM Module

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Abstract:- GSM Module is the devices which can be used in many ways. It keeps you connected with others. Two GSM Module can also be Communicate at any time. Hence to keep the eye on the House, for the security purpose, this device can be beneficial GSM Module can send and receive messages to the owner and the system both. Now a day's almost everyone have smart phones and if we could stay connected with our houses through smart phone then it could be a method to reduce the chances of getting damaged of our property through any mean. In this paper, We will study some of the related papers and will discuss about them.

Keywords:- Arduino Uno, Smart Home, Security System, GSM Module, Door Lock.

I. Introduction

Now a days, Security has become the most challenging task. Everyone want to be safe but in present scenario no one is safe not even in their own houses. Home is a place where we keep our asset and our capital. But we can never be sure about the security of that asset behind us. We generally lock houses when going out of the house. But just locking the home is not enough, there must be a system which keep track of the activities and report to the owner accordingly and work according to the response of the owner. GSM Module could fit for the purpose as every body have mobile phones now a days and could receive messages from the system through GSM Module and can send message to the system for immediate action to be taken.

II. Literature Review

According to Suresh S. et al[19], "The system designed for Home observance and Security system consists of sensors that are meant to collect the information that may be employed by the owner to create sensible choices. Passive Infrared Sensor (PIR) is employed to find the motion and therefore the temperature sensing element is employed to find the temperature of the space. Numerous modules specifically the PIR module, temperature module and therefore the GSM module communicate with one another to coordinate and increase the safety of the system. In this, the PIR sensing element and therefore the Temperature sensing element are connected to the Arduino board. The digital signal is distributed to the board. The GSM module is employed to send and receive signal from the Arduino board. The received signal is distributed to the house owner through a text message via GSM module's path. If the owner needs to modify off the alarm, he sends an indication to the GSM module. The GSM module can send the signal to the Arduino board. The Arduino board converts this signal into the sensing element comprehensible format and sends it to the sensors. The sensors are transitioned in real time. the most element is that the Arduino board. The motion detection, temperature sensing element and GSM's code is burned within the Arduino chip. On activating the system, the SMS is straight away sent to the house owner. the required signaling is embedded within the GSM module.

According to Md. Mahmudul Islam et al[14], "A project for watching the speed and force in induction motors in real time by using ZigBee based mostly wireless device network. associate embedded system is employed for deed electrical signals from the motors during a noninvasive manner. The process for speed and force estimation is finished regionally. Embedded system is employed to regulate the speed of the motor. The values calculated by the embedded system are transmitted to a watching unit through ZigBee based mostly wireless device network. A wireless watching system for induction motor was accomplished exploitation ZigBee. therein project work voltages, currents, powers, temperature of the motor were measured and monitored from the management computer within the room. To implement this, a ZigBee module was connected to a programmed digital signal controller which might transmit the information to ZigBee organiser that was connected to a computer through RS232 serial communication. A paper thereon project work was revealed on IEEE Students' Conference on Electrical, physics and engineering 2014 (SCEECS 2014) [3]. A parameter watching system for induction motors supported ZigBee protocol was developed, that was capable to perform such operations as running

the motor although RF, stopping it, activity and watching most parameters of the motor like part currents, part voltages, wiring temperature, speed. All of those values may be transferred to the host laptop, displayed on the interface, depicted diagrammatically, transferred into associate surpass file to store them for a old. A paper thereon project work was revealed on Gazi University Journal of Science on 2011 [4]. A digital system had been developed for condition watching, designation and superordinate management for electrical systems parameters like voltage and current exploitation wireless device networks (WSNs) supported ZigBee. Its main feature is its use of the ZigBee protocol because the communication medium between the transmitter and receiver modules. It illustrates that the new ZigBee normal performs well industrial environments. A paper thereon project work was revealed on International Journal on engineering and Engineering (IJCE), 2011.

According to GONG Shang-fu et al[6], "In this paper, the system consists of 5 parts: ARM9 management unit, ZigBee wireless device module, USB camera, GPRS module and user terminal. so as to watch and manage home appliances, the illuminations, curtain and numerous sensors, it uses ZigBee to ascertain a family wireless native spacenetwor and these collected environmental parameters are communicated with ARM controller via ZigBee. once AN exception happens in home instrumentation, knowledge monitored by sensors exceeds the planned threshold, the sensors right away inform the ARM controller. in step with the received signals, ARM controller can flip TV, air condition, lights and also the gas throw, and also the warnings are sent to user terminal (mobile phone or PC) in real time through the net or GPRS network. effort home things through collected knowledge or video in Remote and Real Time observance System, users are able to management indoor devices. This theme uses ARM9 chip of S3C2440 because the main processor, SDRAM as memory, Flash because the kernel and filing system storage chip, bitscreen to show period knowledge and to input user settings, and additionally use TI CC2430 ZigBee module, Vi-micro USB camera, ZC301P DSP chip, Siemens MC39i GPRS module. At the identical time, several sensors in numerous sorts are accustomed observe this indoor surroundings in real time, as well as MQ-2 smoke device, HC-SR501 pyroelectric infrared device (PIR), DS18B20 temperature device and MQ-4 fossil fuel sensor[6-7]. The RTC module provides the hardware clock for the system, so the system will recover the right system time when powering off

III. Problems in Previous Papers

After studying all the papers, we have come to know that lots of work have already been done in the field of Home automation and Home security but the real problem is each system have different area of work and perform different task that means, there are systems which is used to measure the temperature or fire in the building and systems which used Cameras and GPRS System. But there is no such system available yet which have all the features and could perform every task, in short one for all system. There is one more problem in all these systems and that is every decision is to be taken by the system itself and there is no intervention of the owner of the system that means the system will behave same even in the situation of false alarm. These are some of the area where a little bit of work is required.

IV. Future Work

As we have discussed in the problems, first thing is to combining all the related systems to make an overall system which could work with high efficiency and might perform several task such as Prevention of entry of unauthorized person in the house, Detection of fire in the house and to let the owner know about any mis-happening going on in the house in the absence of the owner. We could use the GSM Module to let the owner stay connected with the house and to control the system from any location outside the house. Forthcoming system should also be capable enough to recognize the owner and must be connected to the various government department for the emergency case.

V. Conclusion

As we have seen in literature section that lots of work have been done in the field of Home Security but yet there are something which is not touched. In any of the security system there must be coordination among all the system for proper functioning. Security is the issue which is needed in the time of emergency, hence the system must be connected with those who could help in the time of emergency. A lot of work has done in this field and many more is required to make the shelter of individual safe from any fraudulent or any mis-happening.

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