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IOT Based Wireless Home Security System

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Abstract: - Smart homes are gaining popularity these days as a way to provide a convenient, comfortable, and safe living environment. For the urban people, security and safety have always been a basic requirement. There is a lot of promise and scope for remote access, control, and monitoring of network connected appliances with the usage of the Internet and its applications. The project entails.. With theuse of Internet and its applications, there is much Smart homes are gaining popularity these days as a way to provide a convenient, comfortable, and safe living environment. The project includes a PIR module which constantly monitoring the home or work space to be monitored.This report deals with discussion of different intelligent home automation systems and technologies from a various features standpoint. The main attraction of any automated system is reducing human labor, effort, time and errors due to human negligence. The System will inform the owner about any unauthorized entry or whenever the door is opened by sending a notification to the user.After the user gets the notification,he can take the neccesary actions.This report present a survey on all such system.The main advantages of such a system includes the ease of setting up,lower costs and low maintenance.

Key Words— ***Attendance, body identification, Recognizer.***

I. INTRODUCTION

The technology for home security system has evolved since the early 1900's and this technology are important features for modern home [1]. In the 1900s home security system wasexpensive and ineffective [2]. This was because the electronic devices still consume a lot of power and the price of the electronics was also expensive. In addition, communication system between devices was still using the cable so that the installation process was difficult and expensive. Today most home security systems useGSM [3-4]and Wi-Fi [5-6] technology for their communications systems. This technology benefits thehome security system because it consumes less power, is low-cost and reliable [7]. Inaddition to wirelesscommunication systems, home security systems are also developed using electronic devices such as smoke detector, sound detection, touch sensors, etc. [8]. Thissystems can also be used to secure banks,offices, residential areas, locker dan vehicles etc. [9-10]. In this paper, the research is focused to developan eco-friendly home security system by using ESP8266. This ESP8266 module will reduce the cost and the power consumption of the system developedby reducing the use of wireless router as the connecting devices. This system also provides monitoring mechanism through android smartphone.

In this paper, the system was developed using wireless technology so that the system was safe, low-costand easy toinstall. Each installed sensor will be connected to the local network via ESP8266 module that communicates with router. The PIR sensor module is a module designed to detect suspicious movements when no resisdents are at home.

In every 3 min a burglary,robbery or a break-in is taking place in India and its time we reconsidered the safety levels of our homes. Robberies,burglaries and thefts continue to plague the length and breadth of this country.As per the National Crime Records Bureau(NCRB),2,44,119 cases of robbery,theft ,burglary took place in residential premises in 2017.This was a jump of over 10%from 2016 when the number of such cases stood at 2,20,854.The financial loss due to these thefts and burglaries are staggering.In 2017 value of property stole from residential premises was in excess of Rs.2065 crores,a 40% jump from Rs.1,475 crores stolen the previous year.

II. LITERATURE SURVEY

1. Md. Kamal Hossain,International Journal of Modern EmbeddedSystem (IJMES) 6 Dec 2014.
2. A.Alheraish and M.S.H Khaiyal propose a home automation systemusing sms.
3. In the work of A.R Delgado GPRS communication is used as abackup for an internet based home automation.

4. Researcher S.R Das developed an ios based home automationsecurity system using GPRS.

IV. Software:

III. METHODOLOGY

We will build a viable solution to our problem which washome safety based on theliterature survey, since we have fully investigated many areas that are directly related to our project. Inour project mainly we concern about home safety.When we leave the home we did not no what to be happen.In our prroject there is PIR sensor whose range is upto 7meter.When human body came in this range then PIR sensor detected the body because the human hot bodywhich transmit the infrareds and this can be detected by PIR sensor and at the output we get positive voltage after that it goes towords the NODEMCU ESP 8266 microcontroller which used for iot application.This is wifimodule and it is used in IOT by using ESP8266 the message goes towords the surover.Then the home owner get the message on Gmail.
The following figure shows the project system circuitdesign.

I. Circuit diagram:

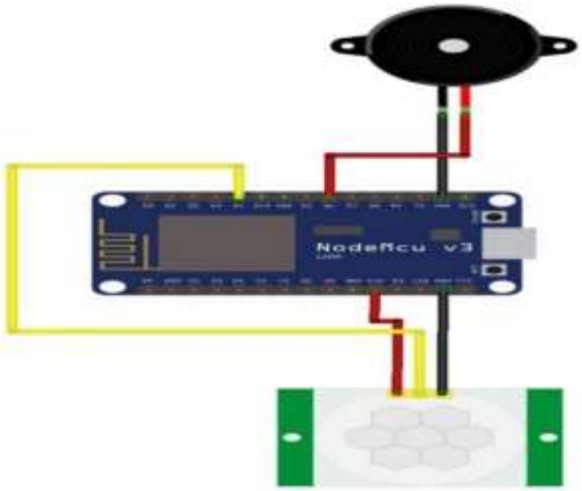
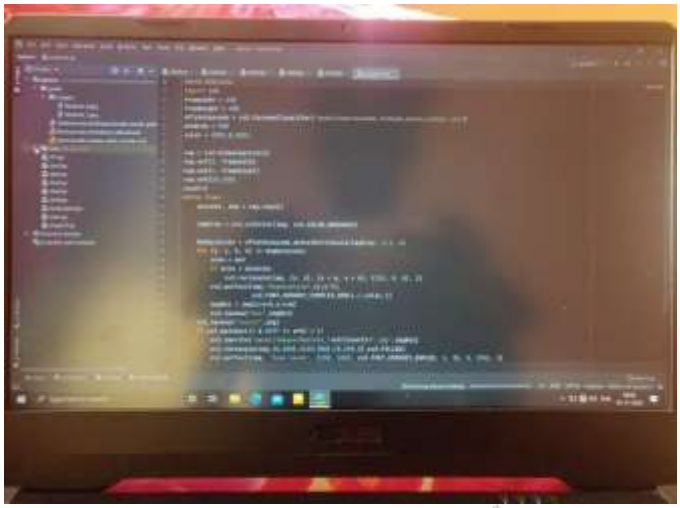


Figure no.1 circuit diagram

IV. HARDWARE REQIUREMENT

- NODEMCU
- PIR SENSOR
- DC-DC CONVERTER
- PCB
- BREADBOARD
- MALE-FEMALE WIRE

We use the programming in ESP8266 which is cprogramming.



I. IMPLEMENTATION

•To begin, connect ESP8266 to the necessarycomponents as shown in the diagram:

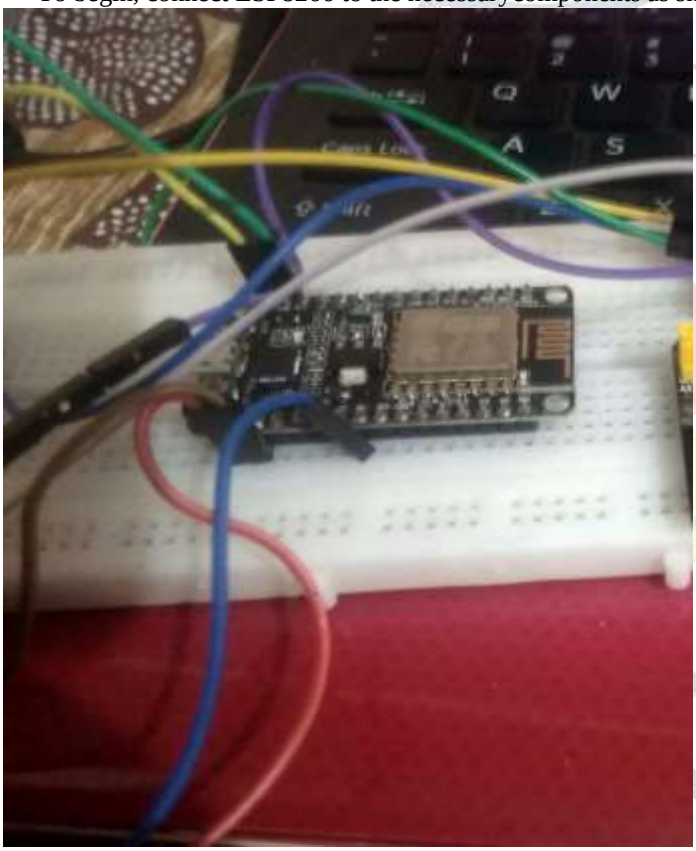


Figure 3: The project system set-up.

Step 1: First we connect with the Wi-Fi.

Step 2: PIR sensor detects any foreign obstaclewithin the radius of 7-12 meter.

Step 3: After this PIR sensor gives positive voltageas output of PIR sensor.

Step 4: Then it goes to the NODEMCU ESP 8226 microcontroller.

Step 5: In this we make programming after detection a person it give the information to the server.

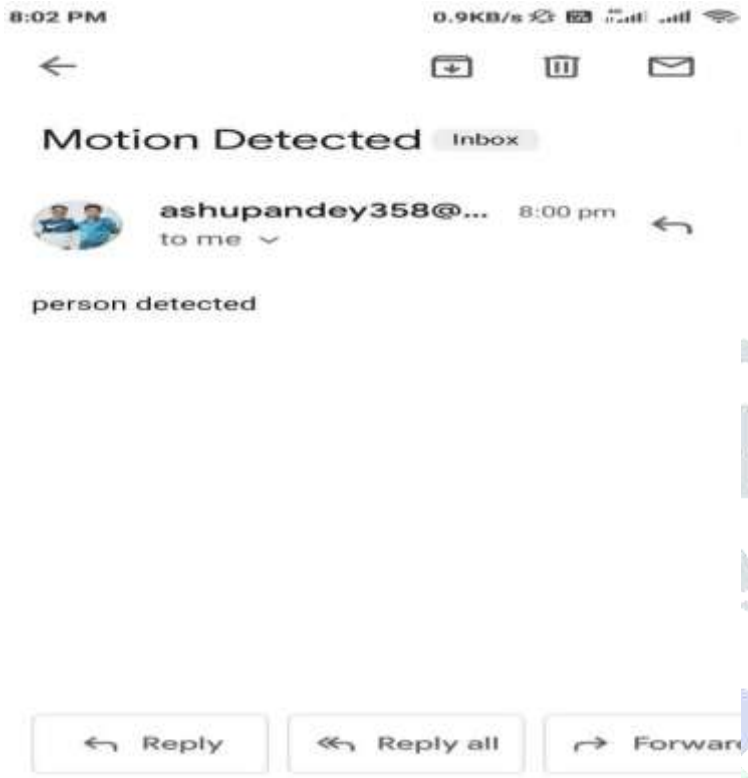
Step 6: Through the server we can protect our house such that any thief tries to come near to door, it will send an message on the registered number

Step 7: Then owner knows that some foreign obstacle cameOn the door.

Step 8: Same way we can protect anything just by placing thedevice. We will get alerts before something happens.

RESULTS

We got the following results after completing all oftheimplementation steps.



Body detection of enrolled student

The following are the findings of the implementation test.

Figure 6: motion detection on Software

V. CONCLUSION

The project work that will be carried out in this thesis would bemainly focused to design and develop efficient and convenient motion detection surveillance i.e. an Anti-Theft device to solvesecurity problems which will help to reduce/stop theft. This system is suitable for small personal area surveillance. I.e. personal office cabin, bank locker room, parking entrance.

Whenever the motion is detected through. The main Advantage ofthe project is Easy to implement, Low cost with High quality

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