

Survey on Arduino based Security System

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ABSTRACT

In this paper description about present security system is needed for user convenience and safety is given. The environment seen a rapid introduction of network enabled digital technology. To overcome this we introduce Arduino based security which based on microcontroller and sensor. This technology provides exciting and new opportunities to increase the connectivity of devices within the home or commercial for the purpose of security. In this project focused on sensor based security in which there are sensors, camera, motion detectors, and embedded kits are used.

Keywords

Home Security, Security System, Sensors, Embedded circuit

1. INTRODUCTION

In present time Home/Office and many other place security is most important. In our absence these places are not secure. For make these palaces secure many people's keep guards and many people prefer electronic security systems. In present time many types of security systems are available in market. These security systems are very accurate and easy to control and cheaply available and the most important thing is that they can be operated on low Voltage (Up to 12 Voltage).

2. EXISTING SYSTEM

Wi-Fi has used for two purposes. First, it is the chosen communication standard for multimedia applications in the home. Second, it has used to provide access to the home automation system from Wi-Fi enabled devices, as an alternative to the Zigbee based local controller [2].

In previous systems, there is a use of smart cards for access the system which is not that much secure. Smart card can be stolen or misused by the intruders [4].

Based on the IEEE802.11 standard, wireless home network is known as Wi-Fi, which provides a medium for transferring media files [3]. However, it is high cost and high power consumption. A Service of Home Security System on Intelligent Network (HSSIN), which is home security and diversified service control network architecture. It has based on the TCP/IP standard communication protocol [7].

In door lock and latch use of key to lock the home but, there is many possibilities of creating a duplicate key or master key to unlock door latch or door lock, so there are lots of probability to break the security of home.

In proposed system, use of any type of key to secure the home is avoided. This system uses security pin code to secure from unauthorized access. Those user having that security pin code only they can enter into that home.

3. PROBLEM STATEMENTS

Primary objective is to prevent any event that may pose a security or safety concern from implementation in the home networks. Security is a main concern in day-to-day life. Everyone wants to be as more secure as possible. Knowing your home is protected provide a peace of mind both when you are away and when you are at home. Security is much important even if you have better public safety agencies (police, fire etc.) in your area. So we would like to implement project do everything possible to make your home and company secure rather than just relying on others.

3.1 System Architecture

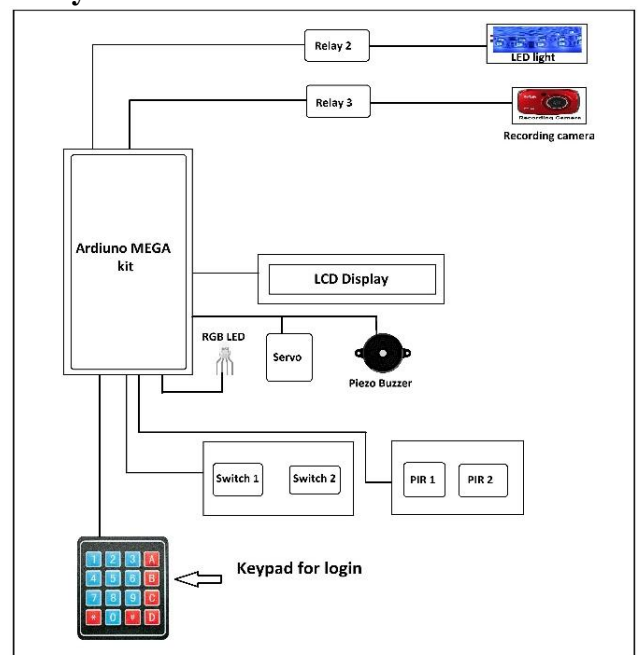


Figure: 1 System Architecture

3.2 Hardware Requirements

Hardware's required for implementation of security system are given below:

1. Arduino Mega

Arduino is open source electronics prototyping platform composed of a microcontroller, a programming language, and IDE. Arduino is tool for making interactive applications, designed to simplify task for beginners but still flexible enough for experts to develop complex projects.

The Arduino Mega is a microcontroller board based on the ATmega2560. It has 54 digital input/output pins (of which 14 can be used as PWM outputs), 16 analog inputs, 4 UARTs (hardware serial ports), a 16 MHz crystal oscillator, a USB

connection, a power jack, an ICSP header, and a reset button. It contains everything needed to support the microcontroller; simply connect it to a computer with a USB cable or power it with a AC-to-DC adapter or battery to get started.

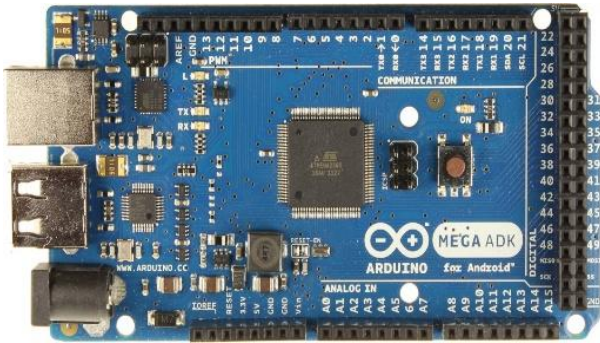


Figure: 2 Arduino Mega 2560

2. PIR Motion Sensor

PIR sensors allow you to sense motion, almost always used to detect whether a human has moved in or out of the sensor's range. They are small, inexpensive, low-power, easy to use and don't wear out. For that reason they are commonly found in appliances and gadgets used in homes or businesses. They are often referred to as PIR, "Passive Infrared", "Pyroelectric", or "IR motion" sensors.



Figure: 3 PIR Motion Sensor

Also have buzzer, an LCD, Reed Switch and digital camera.

4. CONCLUSION

Hence implemented a security system using Arduino microcontroller, sensors and camera. Implementing a security system give user a better privacy and safety. It has also provide peace of mind. This system try to characterize better security solutions to the users and then examine whether those tasks can be performed effectively or not.

4.1 Future Scope

The system can be extended for extra security like using IP camera in existing system to ensure that the camera is working or not.

5. ACKNOWLEDGEMENTS

Thank to our guide and various technological experts who researches about malware detection and improve the result by implementing new methods. Also like to thank various web search engines for providing details on different issues on malware detection and about other related techniques.

6. REFERENCES

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