SMART DOOR LOCKER SECURITY SYSTEM USING IOT

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ABSTRACT: Smart Door Locker Security System is a process for enhancing the quality of residents life by facilitating a secure environment. Since less alertness worry on door locking system. So to overcome this problem, this project suggest the use of Internet Of Things(IOT) to provide secure access only to the authenticated person then the door will opens and light's will on. The project is aimed at developing an application for the "optimized locking and unlocking a system using mega controller" Smart Door Locker Security System playing a major role which benefits in decreasing a work by managing some technologies. It is used to transmit a signal to door from a mobile by using wireless system. This lets the user to unlock a door from inside or outside a house with a Wi-Fi range. The ideal purpose of the work is, if the door is not locked in First floor or in any other floor, the user from ground floor they can open the door from mobile phone or Laptop, which makes a person to reduce its energy or save time. The major components of the system are Latest MEGA Board, Servo Motor and Wi-Fi MODULE which forms and develops an activity. The open source Software and Hardware is used to complete a task. In case of unauthenticated person the door will remain closed. It can also deliver alert message to the mobile device and alarmed when the door lock is physically damaged and any fire in the house.

1. INTRODUCTION

Today, technology has become an integrated part of people's lives. It has, and continues to influence many aspects of daily life and has allowed better social interaction, ease of transportation, the ability to indulge in entertainment and media and has helped in the development in medicine. The creation of many devices such as mobile phones and computers have caused many people to rely on technology to communicate with their friends, store information such as pictures, movies, documents, and music. The internet has become a common interface that many devices use in order to simplify the daily life of many people. The Internet has given people the ability to search for information, store their own information in the cloud while also giving them better ways of managing information. From the time of its introduction, the amount of people that use mobile phones and the internet to communicate with other people has increased dramatically to become one of the major means of communication. Smart phones have allowed people to connect to the internet without the need for a computer, while still offering the same functionality but through different means. With the introduction of better hardware and better software, smart phones have become powerful devices and have become an important part of people's daily lives. A major aspect is how the smart phone is able to connect and communicate with other devices. For example, smart phones can be used as a mouse for a computer, or it can connect to the speakers of cars allowing consumers to play their own music. There are many applications of this sort. A field that is recently gaining popularity is home automation which can also use smart phones as information or functionality hubs.

The purpose of the system is to create convenient and easy-to-use system for users. Smart Home Automation System plays a major role in helping reduce the work by using some Technologies especially for children , old aged people and physically challenged. The proposed work is to send a signal to door from a Computer or Tablet or mobile devices by using wireless system. This allows the user to lock and unlock a door from inside or outside a house with a Wi-Fi range available. The ideal purpose of the work is, if the door is not locked in First floor or in any other floor, the user from ground floor they can open the door or unlock the door from mobile phone or Laptop, which makes a person to reduce its energy or save time. The major components of the system are Latest mega Board, Servo Motor and Wi-Fi standard protocol for wireless communication which combines and forms an activity. The open source Software and Hardware with embedded device is used to give a complete task.

2. EXISTING SYSTEM

In RFID technology someone tries to open the locker it will be sensed and sends the indication message to the user via GSM. Using Arduino Uno method, user will open your door only when the right password is entered and it will start beeping when a wrong password is entered. In fingerprint method, the locker will be opened only when the

unique graphical security is drawn on the screen and also the pattern can be easily identified by unknown person and that person can easily open the locker without any exception from the user.

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3. PROPOSED FEATURES

The wireless LAN module fixed on the board receives the transmitted signal and transmits to the microcontroller. The microcontroller passes the data to the servo motor in order to complete the operations on the Door. The working principles and design of a full system is shown in our proposed work. This proposed work system of design consists of four major components. They are mega controller Board, Servo Motor and web page. Optimized door locking and unlocking using controller has modules like

- Controlling dc motor using controller
- Developing web page
- Pairing with a device
- Fire sensing and water spraying.

4.Hardware

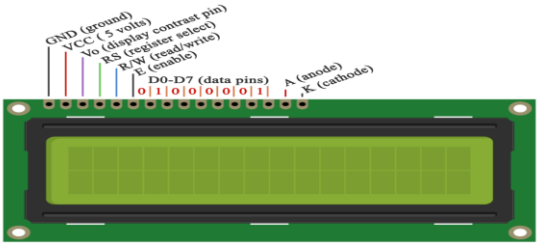
Mega microcontroller

The Mega 2560 is a microcontroller board based on the ATmega2560 (datasheet). 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.

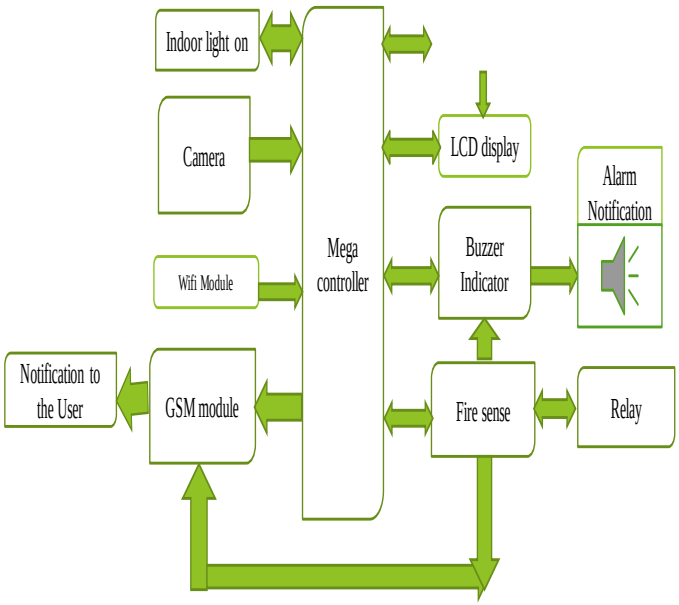
Fire sensor:

In this project we are using an **IR based fire sensor**. It is based on the YG1006 sensor which is a high speed and high sensitive NPN silicon phototransistor. It can detect infrared light with a wavelength ranging from 700nm to 1000nm and its detection angle is about 60°.

LCD (LIQUID CRYSTAL DISPLAY)



5. DESIGN AND ARCHITECTURE



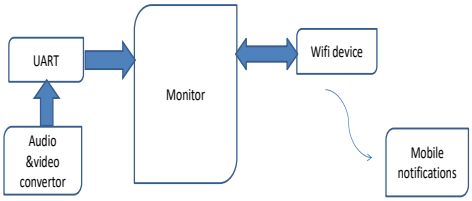
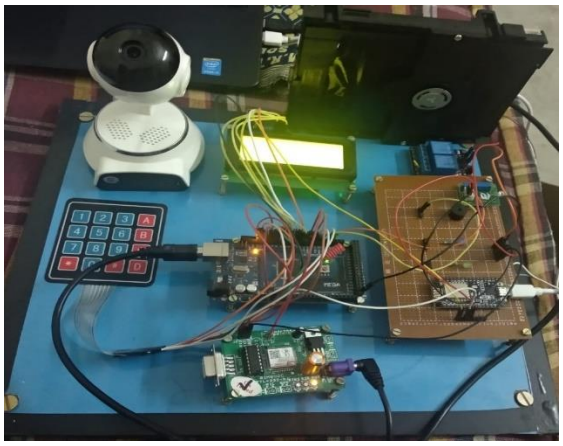
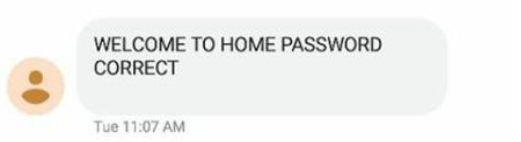


Fig 5.1.Architecture Diagram





5. CONCLUSION

Internet of things is one of the hugest revolutions in the technological field. It is the concept that describes the idea of connecting everyday physical objects to the internet trying to digitalize it. As we mentioned before it is expected to have more than 18 billion devices connected . The risks we are facing are the security aspects when connecting these devices and applications to the internet. The problem is that each of these devices and applications have it is own security gaps that should be considered making it hard to standardize the security aspects in all the devices.

Understanding the basics principles of IoT architectures is a must when developing a product that is going to interact with the nearby environment. The product of this thesis is a fully functional smart door application. This system follows the typical IoT infrastructure Where the smart phone application works as the user-centric interaction point. The developed APIs can be seen as the "delegate"-part and the Bluetooth beacons can be interpreted as the "sensors". It was important that the product followed this typical infrastructure as we wanted our prototype to act and behave like a common IoT-product.

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