Laser Security with Automatic Gateway System

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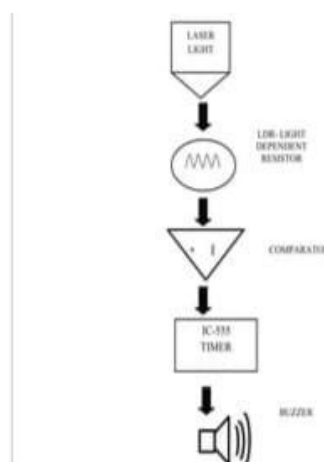SVERI's College of Engineering, Pandharpur, Maharashtra, India

Abstract*: Today crime is increasing day by day also security technique is increasing that are lot of ways , So we decided to project on protect from such crime works . Project related to home security also include gateway system which related to gate security. LASER light is cover large area .We know that LASER goes through large distance .In this project LASER is used when person will cross the LASER then buzzer or alarm will ringing, light beam of LASER on the person .The LASER security system is low cost system and gives better performance. Gateway system is used for security purpose .The gateway system for industry, companies ,school and many purposes. Use of gate that reduces crimes and reduce human forces .In gateway security system biometric also used for security purpose, which improves security level of gateway system .With the verification of finger the gate will be open. The main task of the system is to reduce manual work.*

Keywords: Arduino Uno, Fingerprint, 12 V Adapter, DC Motor , LDR sensor, LED, DC Motor.

I. INTRODUCTION

The LASER security is the high technology innovations that is used for home security purposes. This is best solution of security purposes .That system is the invisible as well as long distance. This paper is about solving the problem regarding security of unauthorized people trespassing in our home, shops or offices. Security issues can be fixed using traditional locks but there is always possibility of someone opening the lock even without breaking it with the use of duplicate key. Security is one of the important factor. A gate is a point of entry to a space enclosed by walls, or an opening in a fence. Gates may prevent or control entry or exit, or they may be merely decorative. Today many gate doors are opened by an automated gate operator. Those gates come with many special features. The need for automatic gates has been on the increase in recent times. The Dc motor is used for opening and closing the gate. simple words, we can say that we are implementing a door access system using Arduino which make use of fingerprints to identify whom to allow and who not to allow inside our homes, offices, shops, etc. We are trying to

implement it using a normal and simple door lock which is fitted in every home so as to minimize the cost of the device as a product. With a laser security system, you use a series of laser beams and detectors across your yard and around your house with a series of mirrors as well.

II. METHODOLOGY

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The single-phase electric motor, the Arduino Uno IR sensor buzzer, and the relay circuit are the electrical parts used to build the control circuit for the automatic gate .Magnetic connections, control keys. both heat overload valves and circuit breakers. Cables, breakers, an alert circuit, and signal lights. The purpose of this experiment is to implement a door-locking mechanism that opens or closes the lock on the door automatically with a key code. Lasers produce a narrow beam of light in which all of the light waves have very similar wavelengths. The laser's light waves travel together with their peaks all lined up, or in phase. This is why laser beams are very narrow, very bright, and can be focused into a very tiny spot.

LASER light travels to very long distances without any distortion LASER has high information carrying capability. Therefore, it can be used in data communication It is free from electromagnetic interference. LASER provides minimum signal leakage.
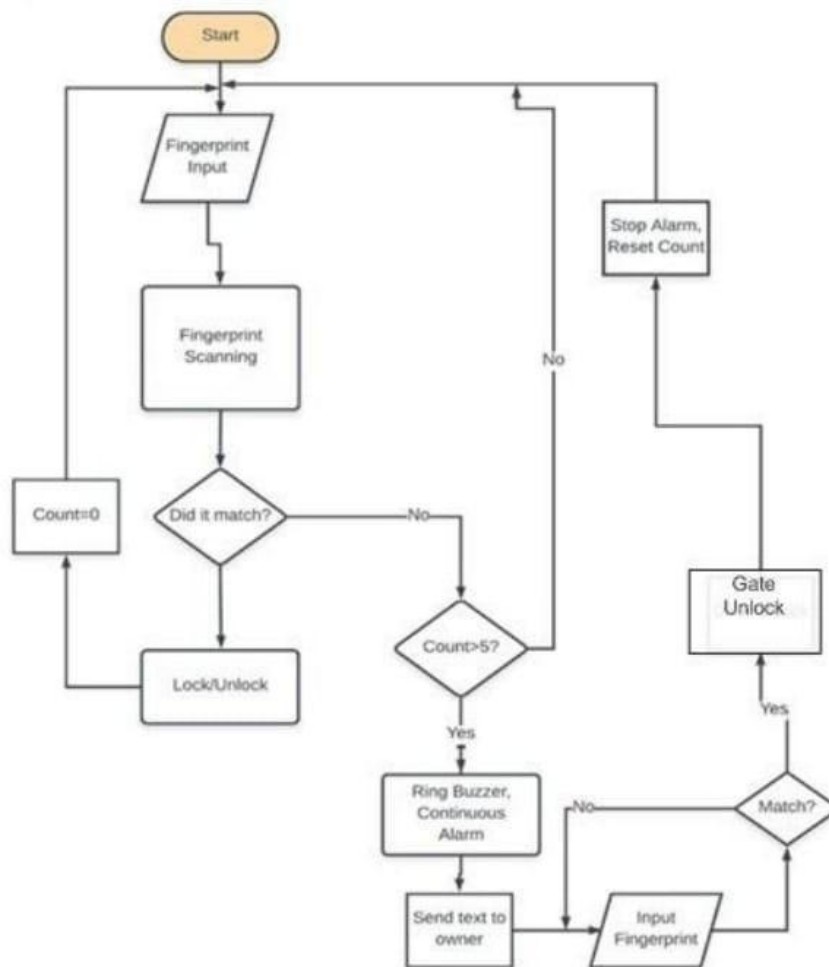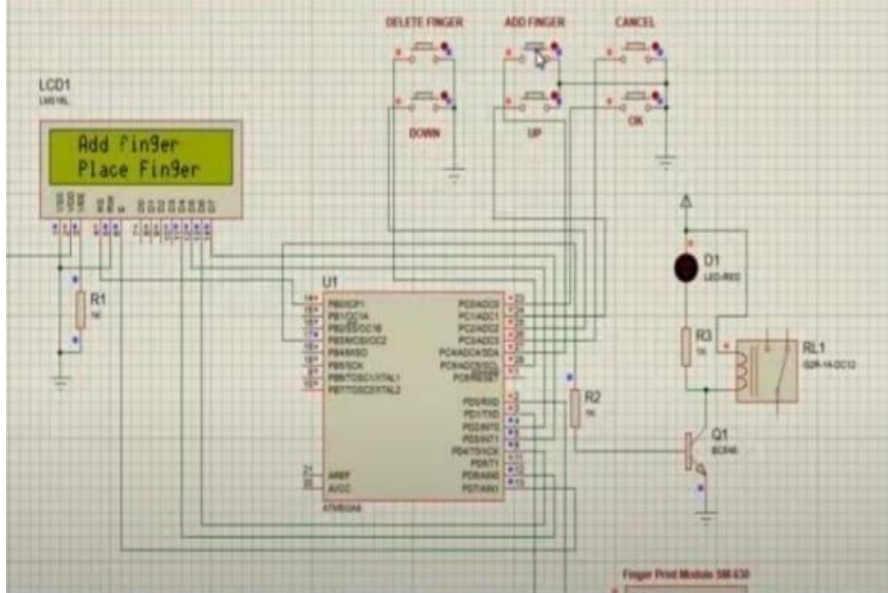
2.1 Flow Chart of the System

Fig. flow chart of system

III. MODEL IMPLEMENTATION

Simulation:

Fig 2: Model of implementation of LASER security with automatic gateway system.

Here we designed different parameters of the security .The project is implementation of the security implementation. This is Arduino based used for the monitoring purposes ,also biometric is used for verification on fingerprints. The dc motor is opening and closing the door . In this project Buzzer is used for the ringing .Overall used for security purposes.

Fig :Real implementation of LASER Security with automatic gateway system

IV. LITERATURE REVIEW

"Arduino Based Smart Fingerprint Authentication System"

Authors: Meenakshi

Meenakshi et al. has proposed "Arduino Based Smart Fingerprint Authentication System". fingerprint locking system is a locking system that uses a fingerprint sensor module to secure the user's fingerprint. The fingerprint sensor module uses an Arduino or a Raspberry Pi to operate. In the proposed system, there is three-level security. Any two levels of security users have to face to unlock the system. This is the ideal option for avoiding the hassles of a stolen or lost key or illegal access. The authorized user must register his or her fingerprint in the system. The registered person's mobile number is then added to GSM, and a permanent image password is assigned to this user. As a first step, the

unauthorized individual must choose unauthorized as the user type. The admin receives a random picture. The person must properly choose the random image. Otherwise, the system will go back to the first page.

"Smart Door Locking System Using IoT"
Authors: Patil et al.
The internet of things, or IoT, is a wireless link that works in a door lock. With the help of IoT-enabled applications, the user may unlock the door with his smartphone. The servo library is introduced after the application is developed by creating a string variable that contains the unique device ID for the lock. The essential concept underlying the door lock's operation is the ID supplied by the Android phone via the created app.

A Keyless Entry System Based on Arduino Board with Wi- Fi Technology."
Author: Areed and Marwa
A keyless entry system that focuses on the use of an Arduino circuit board, a Wi- Fi module, and the PHP programming language to provide access to a closed door. The suggested solution, which uses an Arduino Uno board and a Wi-Fi shield to unlock the door without a key, is described. The internet connection allows the system to unlock the door from any place, unlike traditional systems, which have a limited range

"Development of an RFID Based Access Control System in the Context of Bangladesh"
Author: Kishwar Shafin
Kishwar Shafin et al. has proposed "Development of an RFID Based Access Control System in the Context of Bangladesh." A magnetic door lock is administered through an RFID reader in the suggested system, which begins the authentication and validation of the user or regulates access in short. In addition, the systems keep track of each user's access and exit records in the form of a log report for each access. To avoid unforeseen circumstances, the administrator of the central subsystem can terminate the validity of any user at any moment.

"Fingerprint based locking system",
Author: Ajinkya Kawale
Like everything in the human body, these ridges form through a combination of genetic and environmental factors. The genetic code in DNA gives general orders on the way skin should form in a developing fetus, but the specific way it forms is a result of random events. With the help of interfacing, fingerprints can be used to create secure and impenetrable door locks and several lock systems. Interfacing is a method of establishing communication between Microcontroller and the Interface. Fingerprint interfaces are generic and can communicate with any microcontroller. It is a combination of hardware (i.e. the Interface) and Software (i.e. the source code to communicate, also called as the Driver). In simple words, to use LED as output device, LED should be connected to a port pin of the microcontroller and there has to be a program running inside the microcontroller to make it on or off or blink or dim. This program can be developed using any programming language like Assembly, C, Basic etc

V. RESULT

The Fingerprint gate lock using Arduino, we are showing the components and connected them to the power supply. This system is based for improving the security which will register the owner's fingerprint into the Arduino using the fingerprint sensor, and this system we have given 5v power supply to Arduino through the code uploading wire. When you put your thumb on fingerprint sensor after registering yourself the lock will be unlocked and you repeat this process aigan then the solenoid lock will be got locked. The process of locking and unlocking requires less than 1 second so this is why the Solenoid lock is used inside this project.

VI. CONCLUSION

Keeping the installation cost in mind we planned to develop a system that should be affordable to both large and small firms. This design can be improved by more intensive development and additional features such as more locks can be added to the system. Thus we do not need to spend so much for just one lock if this can be used to control several

doorways. A system to save prints without the use of a computer could have been made, but it will require more parts than the ones we used. In order to maintain security properly, the whole mechanism should be placed inside the door panel or on the other side of the door. A system for batteries could also be made or even solar powered. One of the main advantages of this system is its flexibility. Several other systems can be implemented with this system. The system is very secure. Fingerprints are unique and the sensor is able to identify all of the prints during testing. It provides greater control for access to restricted places. There are some drawbacks of this system such as this system is complicated and difficult to make any change in the hardware as it is a closed system. Also it needs high power to operate so providing continuous power through batteries is a challenge sometimes. A power failure will make it unworkable. In that case, we can, connect the system with an IPS or add rechargeable batteries to the system

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