# **Electrical Line Man Safety using Finger Print Sensor**

<sup>1</sup>Dr.Irala Suneetha <sup>2</sup>K.Amani, <sup>3</sup>T.MuraliKrishna Reddy, <sup>4</sup>U.Nithishna, <sup>5</sup>D.Charan

<sup>1</sup> Professor & HOD, Department of ECE, Annamacharya Institute of technology and sciencess, Tirupati <sup>2345</sup>B.Tech Student, Department of ECE, Annamacharya Institute of technology and sciencess ,Tirupati

<sup>12345</sup>Email:iralasuneetha.aits@gmail.com,kaperlaamani@gmail.com,muraliperimidi@gmail.com,

nithishna58@gmail.com, charandama@gmail.com,

ABSTRACT- Electrical mishaps to lineman are ascending amid electric line fix because of absence of correspondence between the support staff and electric line man. This proposed framework gives an answer that guarantees security of electric lineman i.e., line man on distinguishing a blame in electric line the line man detects his finger in unique finger impression scanner and the primary line is turned off which is again exchanged on subsequent to comprehending the blame by again detecting his finger, along these lines it spares the life of lineman taking a shot at electric line. The proposed framework is completely worked on Arduino.

Keywords: - Fingerprint scanner, Arduino, RFID Reader.

# I. INTRODUCTION

An electrical switch is a consequently worked electrical change intended to shield an electrical circuit from harm brought about by over-burden or short out. The primary goal of this undertaking is to spare line man by making such a defensive framework controlled through unique impression scanner. In this proposed framework if there is any blame in line the line man detects his finger because of which fundamental line is turned off after that he deals with line taking care of the issue and after that again faculties his finger and switch on the electrical line. These days, electrical mishaps to the line man are expanding, while at the same time fixing electrical lines because of absence of correspondence between upkeep staff and electrical line man. This undertaking gives an answer for this issue to guarantee electric line man wellbeing. It exceptionally easy to keep up so it is extremely helpful for the line man. The parts which is required for our model is effectively accessible in the market. The principle idea of our venture is to spare the life of line man. The fundamental part of our venture is the Fingerprint scanner which is required to detect the finger.

#### II. EXISTING METHODOLOGY

On the off chance that there is any blame in line the line man sends the secret key because of which the primary line is turned off. After he works a SMS is send to switch on the electrical line. Because of numerous electrical lines the secret phrase for specific line might be fell. The system issue will influence the best possible working of the framework, Since it contain a GSM modem. There ought to be adequate equalization in the SIM moreover.

## 2.1. DISADVANTAGE OF EXISTING METHOD

Nowadays there is no security the password may be hacked. While sending SMS some tower problem. In case of emergency this is not suitable.

# III. PROPOSED METHODOLOGY

This below figure is an overall block diagram of arduino based electronic circuit breaker which consists of finger print scanner.

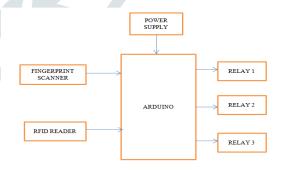


Fig1:Block diagram

In the above square graph, unique finger impression is selected by a lineman. This module is associated with the arduino. On the off chance that the unique finger impression put away in the scanner is coordinated with the confirmed unique mark, arduino is turned on .This makes on or off the hand-off which controls the electric line. After the fulfillment of the work, above process is rehashed in a similar way by the lineman. At the point when an individual's finger physically changed, unique finger impression scanner

does not mull over this. In such cases, individual can have the trouble to recognize themselves and getting entrance. In such cases, RFID tag is utilized.

#### A. FLOW CHART

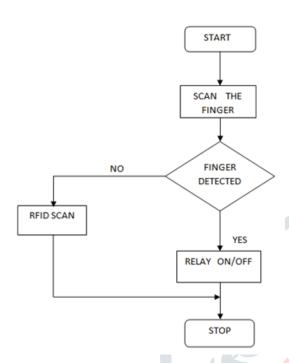


Fig 2: flow chart

# B. RELAY MODULE

We can control High Voltage electronic devices using exchanges. A Relay is extremely a switch which is electrically worked by an electromagnet. The electromagnet is started with a low voltage, for example 5 volts from a microcontroller and it pulls a contact to speak to the choosing minute a high voltage circuit.



Figure 3: Relay Module

#### C.ARDUINO UNO

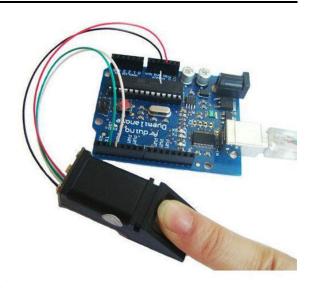


Figure 4: Arduino Uno

Arduino is a microcontroller board and it depends on ATmega328P. Board comprises of 14 advanced information/yield pins. Out of which 6 input pins are utilized as PWM yields, 6 as simple sources of info, quartz gem of 16MHz, having USB association, control supply snap, an ICSP header and reset catch. Just we can associate the Arduino board to the PC utilizing USB association with get begin. Likewise we can supply capacity to it with AC – to – DC connector or we can utilize battery to begin. As we contrast Arduino UNO board and other it varies from the procedure board which doesn't utilize FTDI USB – to – sequential driver chip. Rather than that the ATmega8U2 is modified as USB – to – sequential converter.

# D.FINGER PRINT SCANNER

Unique mark scanners are security frameworks of biometrics. This is utilized on the grounds that each individual finger impression is exceptional in nature. Information duplication is disposed of by utilizing this scanner. This module performs numerous capacities like enrolment of the finger, preparing, finger coordinating, seeking and layout stockpiling. Up to 162 fingerprints can be put away in the on board FLASH memory.

## E.RFID READER

RFID utilizes electromagnetic fields to consequently distinguish and follow labels appended to objects. The labels contain electronically put away data. These labels gather vitality from an adjacent RFID peruser's examining waves. Dynamic labels contain battery and it work many meters from the RFID peruser. The label require not be inside light of sight of the peruser.



Koothattukulam, Kerala 2Student, Electronics& communication.

[4] R. E. Mueller and E. F. Richards, "Temporary protective grounding of distribution circuits," in Proc. 21st Annu. North-Amer. Power Symp., 1989, pp. 270-280.

[5] Guide for Protective Grounding of Power Lines, IEEE Std 1048-2 pp. 14, 25

Fig: RFID Reader

RFID is used for security purpose. It consists of microchip and coil. To recognize the identity of RFID tag, RFID tag sends the signal to reader, the signal is received by coil and unique ID is identified by chip. If is predefined the gate is open otherwise the gate is not open. It is widely used in identification badges.

## IV CONCLUSION

Thus the "ELECTRONIC CIRCUIT BREAKER FOR LINEMAN SAFETY USING FINGER PRINT SCANNER" has been designed and tested successfully. It has been developed by integrated features of all the hardware components used. It provides a new approach to the security of the lineman and it completely eliminates the electrical accidents to the lineman during the electric line repair. In order to note the power usage in a particular area in a timely manner, this power usage is uploaded in the internet.

## **REFERENCES**

- [1] Electric Line Man Protection Using User Changeable Password Based Circuit Breaker 1J. Veena, 2G. Srivani, 3Afreen, 4M. Sunil Kumar, 5J.Santhosh, 6K.B.V.S.R.Subrahmanyam 1,2,3,4,5BE Students, 6Associate Professor, SR Engineering College.
- [2] National Electrical Safety Code Committee, Accredited Standards Committee C2 Rule 441 Table 441-1 AC Live Work Minimum Approach Distance (2002 Edition, page 228) IR540.
- [3] ELECTRIC LINE MAN SAFETY SYSTEM WITH OTP BASED CIRCUIT BREAKER Athira P Nair1, Josephin J2, Anjana A S3, Athira C P4, Sebin J Olickal5 1Student, Dept. of Electronics& communication, BTC College of Engineering,

