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Line Man Safety using NodeMCU ESP8266

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Abstract: *It is designed to control lap wave by using android request for the security of electrical electrician. Reproving electrical misfortune to electrician are happening throughout electric line repair due to lack of communication and teamwork in the middle of the continuity employees and electric substation employees. The suggested structure gives a mixture that to ensures security of continuity employees, i.e., line man. The control to turn on/off the lap wave will be continued by the electrician only because this system has an order such that a robot request is needed to work the lap wave on/off. This structure is completely controlled by arduino called ATMEGA 328P. The activation or deactivation of the lap wave is indicated by a lamp that turns on or off. Furthermore, in future it can be increased by using shadow technology in which it helps to store the complete information about the electric repair, i.e., title of line man, title of lane on which he is working, date and hour etc. Hence, it is used to reduce the electric misfortunes for line men.*

Keywords: NODMCU 8266, Adaptor, Mobile request, Convey board.

I. INTRODUCTION

Nowadays, electrical misfortunes to the line man are increasing, while mending the automatic lines due to the lack of communication in the middle of the automatic substation and continuity employees. This gives a mixture to this problem to ensure line man security. In this proposed structure the control of the automatic lines be placed with electrician. This structure is arranged in such a way that continuity employees or line man has to enter the unique user id and word of identification to ON/OFF the automatic line. Now if there is any fault in automatic line then line man will switch off the power supply to the line by entering into their own log in page and comfortably repair the automatic line, and after coming to the substation line man switch on the supply to the particular line by entering their login page. All electrician , specially those who give out with live automatic equipment, use personal protective equipment (PPE) as protection against inadvertent contact. This cover soft gloves, soft sleeves and protective blankets. When working with energized power lines, electrician must be use protection to eliminate any contact with the energized line. The requirements for PPEs and associated allowable emf depends on relevant regulations in jurisdiction as well as company policy. Linemen must also wear special soft insulating gear when working with live wires to protect against accidental contact with the wire. The requirements for PPEs and associated allowable emf depend on applicable regulations in jurisdiction as well as company policy. The buckets linemen sometimes work from insulated with fibergl ass. The idea of creating line man security is raised in past years by observing several automatic accidents occurring to lineman in several cases. Some ways of providing security for lineman are introduced by experts, but they are failed in providing 100% safety. One way is got success in providing partial safety for line man i.e., keypad word of identification based lap wave controlling for line man safety. In this system, lineman can switch ON/OFF the power supply by entering the unique word of identification given for him. So no one can control power supply without interference of lineman. But, there are some difficulties in this structure are 1) There must be a physical contact in the middle of lineman and lap. 2) Keypad is misused by someone because it must be located at transformer. To avoid those difficulties, use android request in the place of keypad to control the power supply. So, by using the robot request it can control power supplies without physical contact. The main objective of this structure is to provide 100% safety for lineman while working at electric poles and to overcome the difficulties faced in the earlier ways. It providing android request for controlling, it ensures full safety for lineman and avoids him from electric shocks. This structure will be used in several ways in future because the entire process is controlled by smart phone. Nowadays, smart phone is commonly used by each and every person in day to day life. So, it is very adaptable and reliable for use. If use Bluetooth for communication, it will be operated in 10m-20m. Use this in

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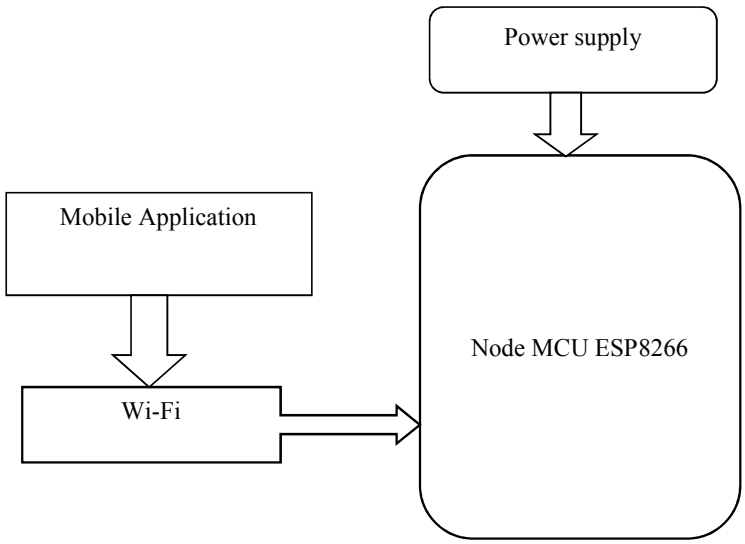
wide range, it can connect through Internet Of Things (IOT). By using cloud automation in communication, it can store the entire data regarding each and every repair or work done by lineman in database.

1.1 Block Diagram



II. METHODOLOGY

2.1 NODEMCU-8266

NODEMCU-8266 is a low-cost open source IoT platform. It initially included firmware which runs on the ESP8266 Wi-Fi SoC from Es press if Systems, and hardware which was based on the ESP-12 module. Later, carry for the ESP32 32-bit MCU was added.

- Power: Adapter
- Developer: ESP8266 Open source Community
- Memory: 128kBytes
- Storage: 4MBytes
- CPU: ESP8266(LX106)

2.2 Impart Board

Impart boards are computer boards with an array of imparts and switches. They have input and output terminals and are designed to control the voltage supply. Impart boards provide independently programmable, real-time control for each of several onboard relay channels.

- AC bulb: It is used as load also used to switch ON\OFF the structure. We can replace the AC to another structure like big power.
- Adapter: 12V power supplies (or 12VDC power supplies) are one of the most common power supplies in use today. In general, a 12VDC output is obtained from a 120VAC or 240VAC input using a combination of transformers, diodes and transistors. 12V power supplies can be of two types: 12V regulated power supplies, and 12V unregulated power supplies.12V regulated power supplies come in three styles: Switching regulated AC to DC, Linear regulated AC to DC, and Switching regulated DC to DC.
- 7805 button: The LM7805 is a voltage button that outputs +5 volts. Like most other buttons in the market, it is a three-pin IC; input pin for accepting incoming DC voltage, ground pin for establishing ground for the button, and output pin that supplies the positive 5 volts.

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2.3 Mobile Request

Blynk request is a platform wish IOS robot apps to control robot, raspberry pi, and the likes over the internet. It's a digital dashboard where you can build a graphic interface for your project by simply dragging and dropping widgets.
You can download the Blynk app from play store if you an android user. You can also install this app on IOS app store.
Now lets see how to use this request for IOT project. First open the request and create a new account using your email ID. Then click on New project.

III. SOFTWARE

Arduino IDE ArduinoIDE(Integrated Development Environment) is the software for Arduino. It is a text editor like a notepad with different features. It is used for writing code, compiling the code to check if any errors are there and uploading the code to the Arduino

3.1 Advantages

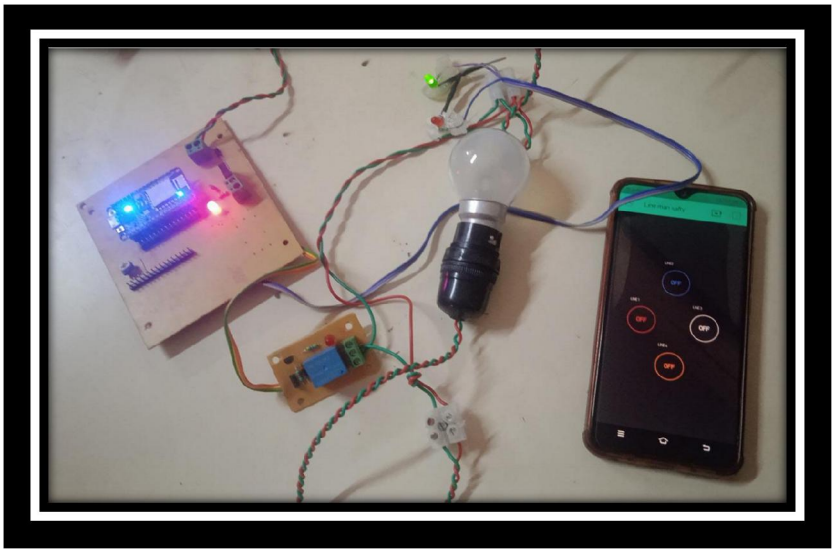
- It can work on a single given known pass word.
- It is effecting in providing safety to the working staff.
- It is economical.
- It can be simply installed.

IV. WORKING

The request be made up
of three phases they are Login phase, Wi-Fi connecting phase and operating page. These t plays their role in the working of project login phase consists of separate code for every lineman so that only few can operate the request

1. Open the application
2. When we enter the indication signal for switch off the household power supply, the Node MCU ESP8266 receives the corresponding signal and switch on the household power supply. This entire status is displayed in LCD show as shown in the below figure If we want to switch off the power supply, we need to click on the household button designed in the application.
3. When we enter the indication signal for switch off the Transformer ability supply, the Node MCU ESP8266 receives the corresponding signal and switch on the household power supply. This entire status is displayed in LCD show as shown in the below figure If we want to switch off the power supply, we need to click on the Transformer button designed in the application.

V. RESULT AND DISCUSSION



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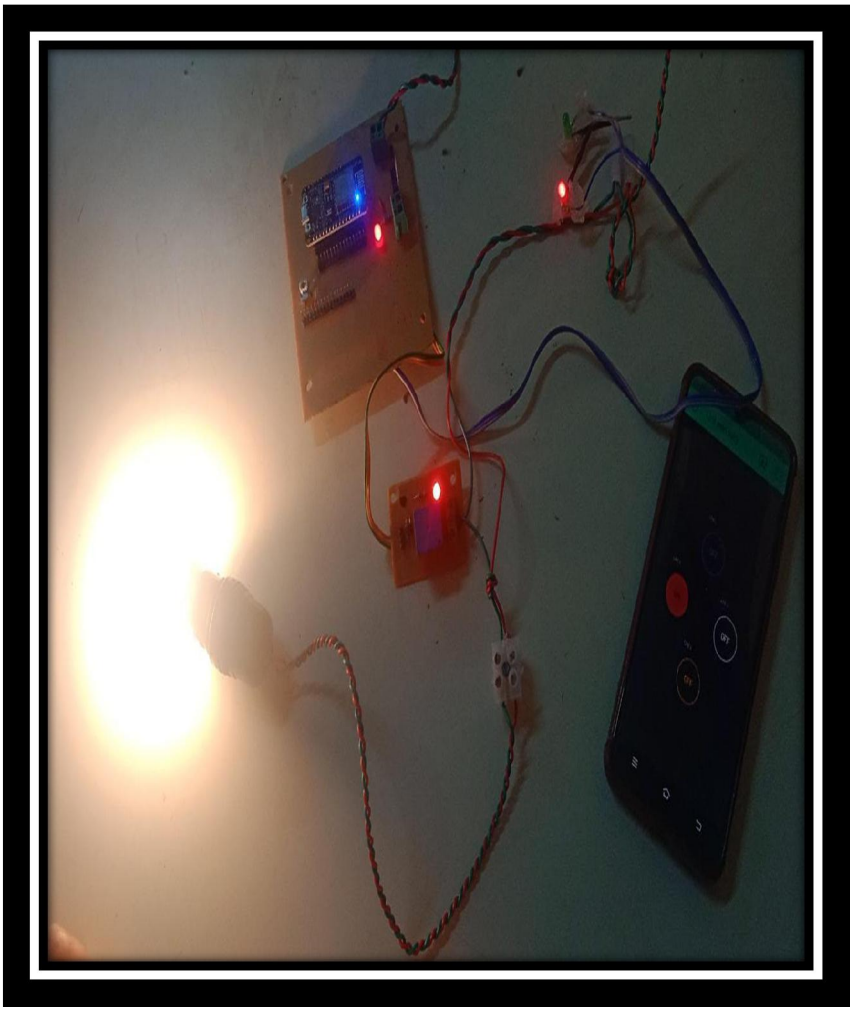

VI. CONCLUSION

It can end that in our day to day life there isa need of developing technology because it does not require manual effort and also provides complete safety for line man. It also reduce the corporeal work for lineman like climbing posts and walls etc. Due to the rapid development of technology using smart phone is very reliable and flexible So it is the better technology to ensure the line man safety and power saving

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