KC College of Engineering &Management Studies & Research

MINI PROJECT - I

SE- Electronics & Telecommunication

Home Automation using Blynk App

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By

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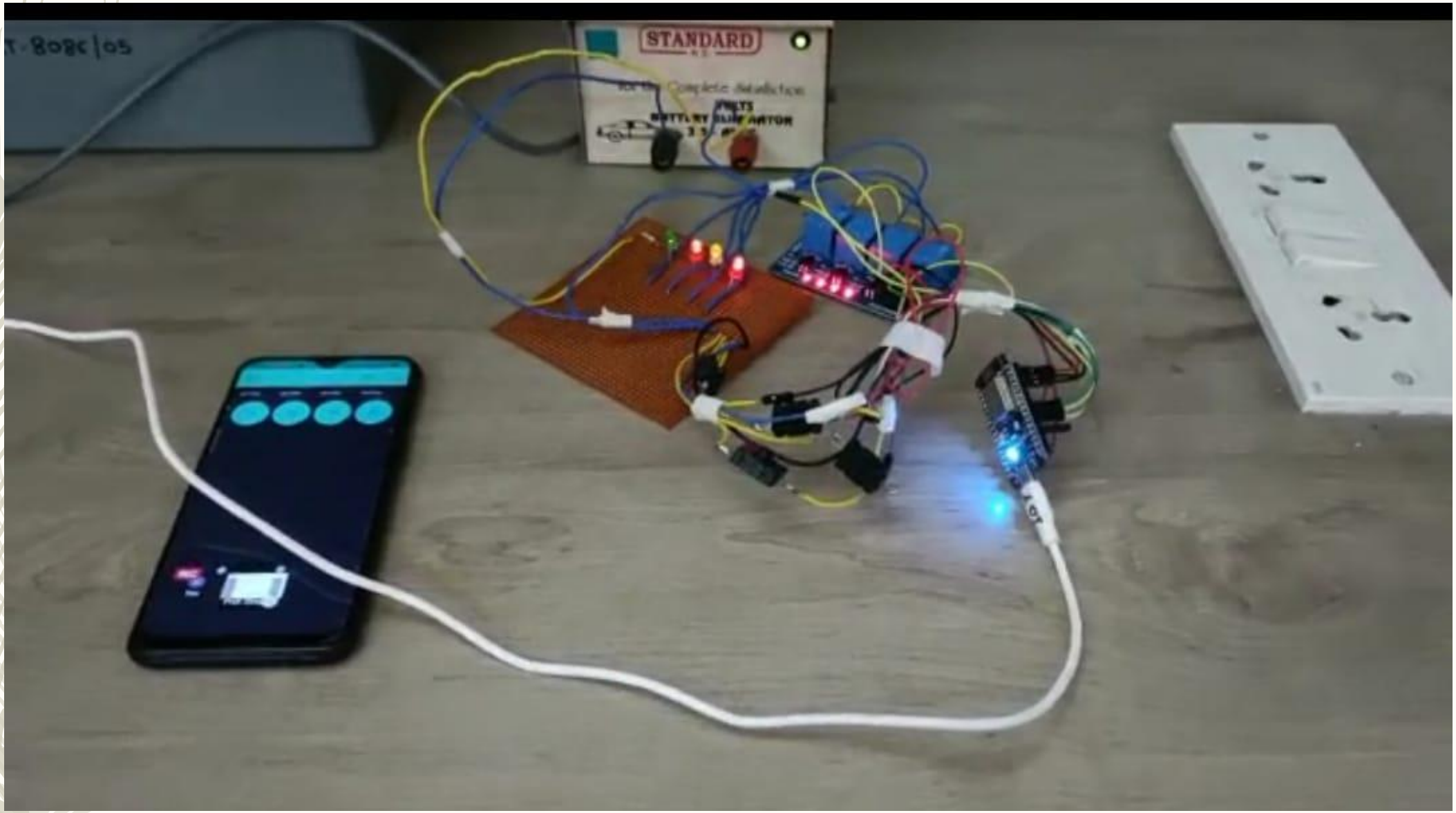
INTRODUCTION

- Today we are living in 21st century where automation is playing an important role in human life. Home automation allows us to control household appliances like light, door, fan, AC etc.
- Home automation not only refers to reducing human efforts but also energy efficiency and time saving.
- The main objective of home automation and security system is to control home appliances by using different techniques like android application, web pages, GSM when a person is away from home.
- Main purpose of home automation is "**SAVE ELECTRICITY**". With this technology everyone can control the home equipment or office equipment automatically. The system is secured, userfriendly, reliable, flexible and affordable.

HOME AUTOMATION

- Easy Home or Home automation plays a very important role in modern era because of its flexibility in using it at different places with high precision which will save money and time by decreasing human hard work. Prime focus of this technology is to control the household equipment’s like light, fan, door, AC etc.
- A person can control his home appliances by using an android application present in his mobile phone which will reduce the human hard work.


STANDARD

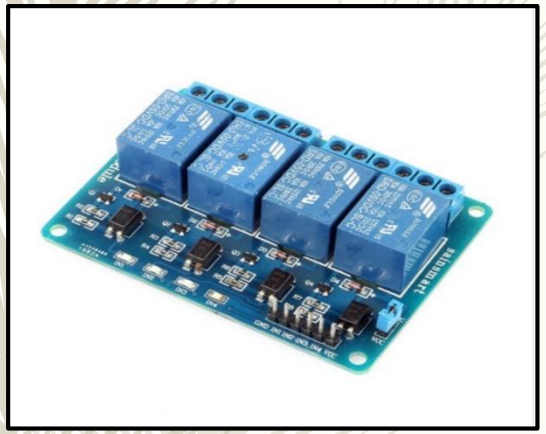
Literature review

- Generally the Art of controlling the home appliances automatically & sometimes remotely is called home automation system. Home Automation systems are highly increasing to Comfort in life and also improving quality of life. As we are in the Era of never ending growth of internet and its applications So, the topic of home automation systems getting most popularity due to its countless advantages. This paper focus on the studies and review of multiple home automation systems designed for disable peoples from multiple features standpoints.
- This research will be helpful for the disable persons to find an efficient and usable system with respect to the categories divided for the comparison.
- Keywords: Home Automation System; Gesture Hand-Machine Interface (GHMI); Disability; HM2007; D1,D2,D3 categories for Disabilities

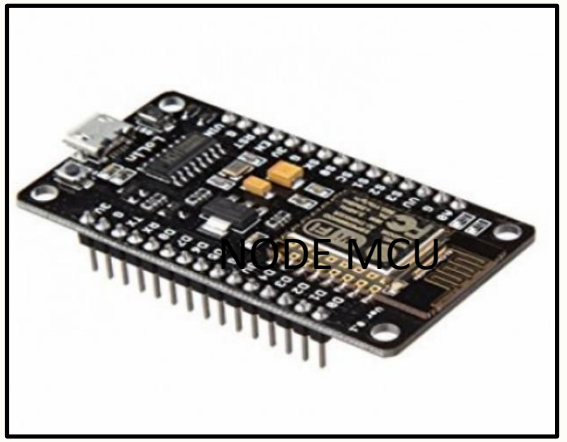
Project Objective

- To provide an automatic control on the home appliances with the help of android phone.
- Controlling home-appliances by using **Wifi** with the help of **Blynk app**.

Components Used



RELAY MODULE

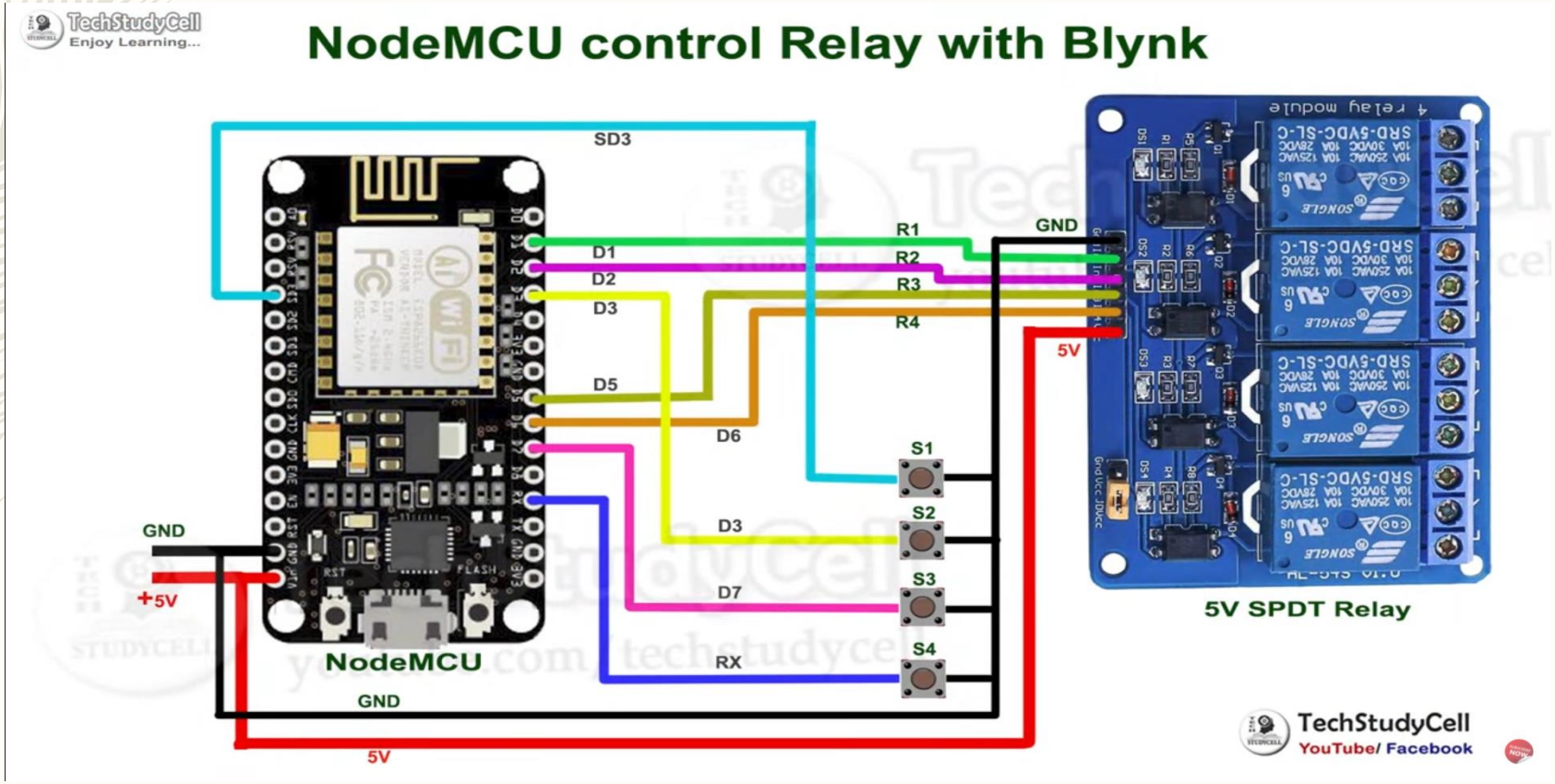


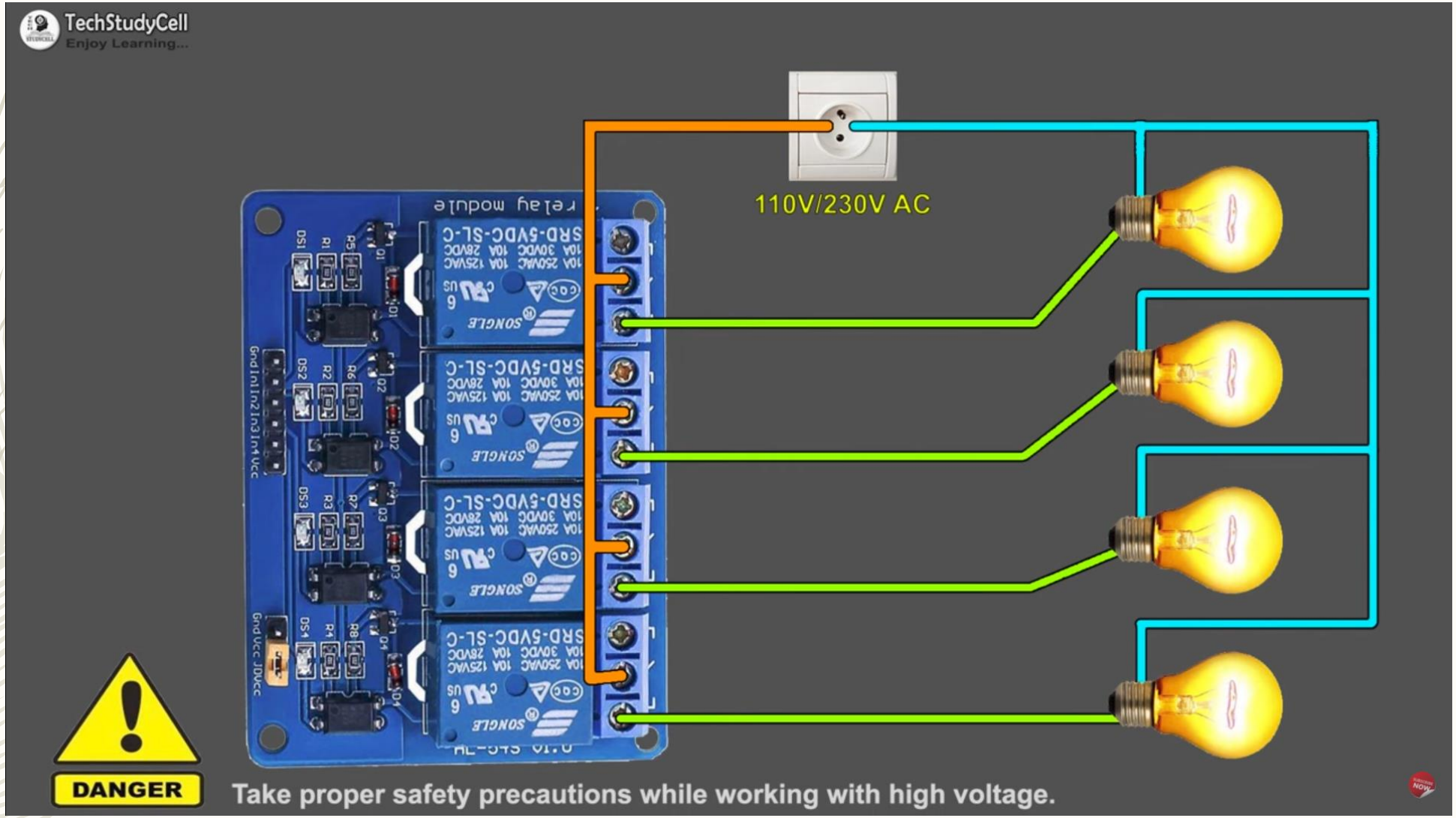
NODE MCU

SWITCHES

CONNECTING WIRES

Circuit Diagram

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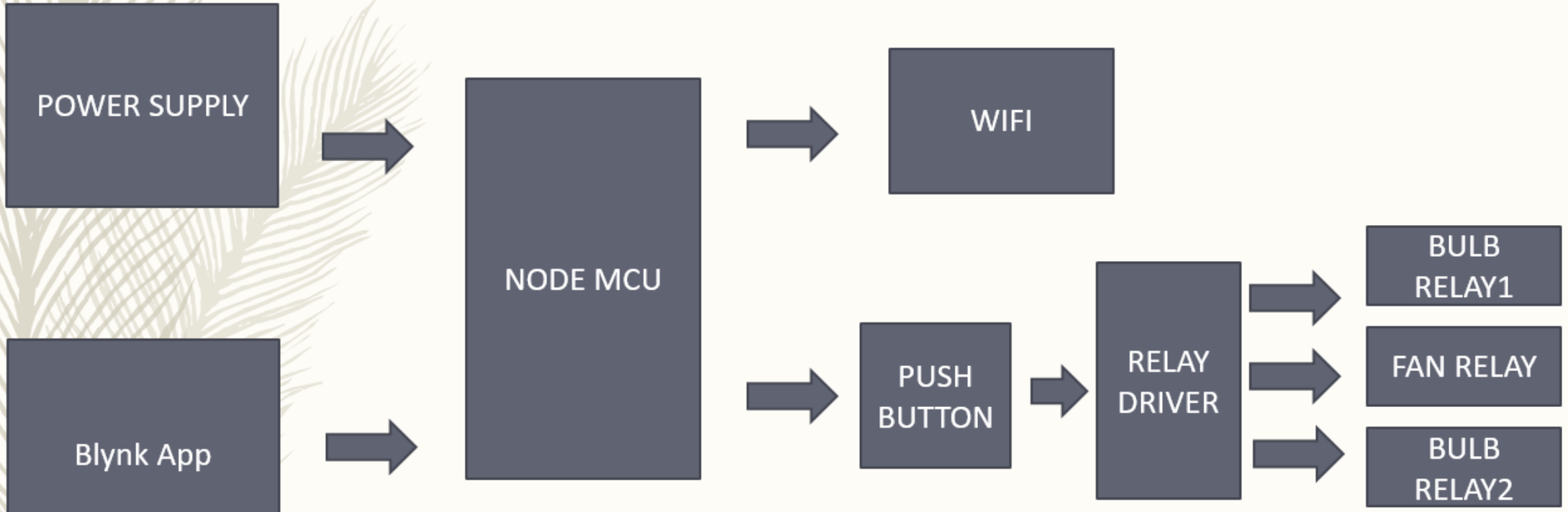
110V/230V AC
relay module
SRD-5VDC-SL-C
DANGER
Take proper safety precautions while working with high voltage.

Block Diagram



Methodology

- Arduino is used in controlling the system.
- Home automation is used to control the Electrical home appliances from anywhere with the help of any android phone.
- Arduino is connected with the Node MCU , which is further connected to the Relay module and the switches .
- D1, D2, D5 ,D6 are connected to the Relay module with the Node MCU .D3, D7, RX, SD3 is connected to the switches from the NODE MCU and this switches are also connected to the ground wire which is connected from Node MCU to the Module.
- The module then has connection with the LEDs .With the help of Blynk app which is connected to the wifi and Node MCU , we can easily control the Automation process .
- If the LEDs are on then it will blink in the app .
- From there we can on or off the LEDs .
- The control of the LEDs can be done by both from the switches as well as from the app .

Working of Model

- Wifi Home automation works with the help of Blynk app. This app consist of various types of buttons and it can also work with the push button.
- We can also address the real time status of Home-automation and the Blynk app.
- The Blue LED on the Node MUC indicates that it is connected to WiFi . It can also work without WiFi with the help of push button according to which button is being pressed Blynk app will work only when the WiFi is on and LED light turns Blue and at same time it can be also controlled with push buttons.
- Switch buttons can also be used insteed of push buttons.
- We can operate the appliances through wifi using our smart phones.

ADVANTAGES

- Managing the appliances of our home devices from one place.
- **Remote control of home functions**. We are able to control your home's functions from a distance. We can even check to see if we left the lights on.
- **Increased energy efficiency**. Depending on how you use your smart-home technology, it's possible to make your space more energy-efficient.
- **Flexibility** for new devices and appliances. Smart home systems tend to be wonderfully flexible when it comes to the accommodation of new devices and appliances and other technology.
- It is very **easy to use**.

DISADVANTAGES

- **Cost: Extremely expensive**:
  Although a lot of smart home devices are now affordable for many, but still it is extremely expensive to fully equip a home with smart devices. However, most computing technology becomes progressively more powerful & less expensive and this will be undoubtedly applicable for smart home devices as well.
- Almost all smart devices derive their functionality from some form of wireless communication (Wi-Fi or Bluetooth). As with all digital communications, there is potential for hackers to intercept wireless communications and use this to gain access to your smart home devices. It will have adverse effect on devices.
- Smart home devices are usually linked to companion apps . If hackers gain access to these apps then it could have considerable security implications, as they will be able to control access to your home.
- The basic requirement for the smart home system is the internet. Without a good and strong internet connection, you will not be able to take control of this.

Future scope of the work

- Our work focuses on the study of the security aspect of existing home automation system and find out the flaws.
- This paper shows pros and cons of existing home automation system.
- For future work in home automation system we are focusing on making home automation system more robust and economical.
- We can develop techniques that can analyze user behaviors and can predict and analyze the result to identify and prevent intrusion.

CONCLUSION

- The home automation using **Internet of Things has been experimentally proven to work satisfactorily by connecting simple appliances to it** and the appliances were successfully controlled remotely through internet.
- It is concluded that all the home automation system techniques uses wireless technology.Arduino, GSM and Android based home automation techniques have been implemented in order to provide ease to the people to control their home appliances. Different home automation techniques using Arduino, GSM and Android are given with their design, implementation and flowcharts which gives the successful layout of their strengths and weaknesses.
- Main purpose of home automation system is to provide ease to people to control different home appliances with the help of the android application present in their mobile phones and to save electricity, time and money.

References

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THE END