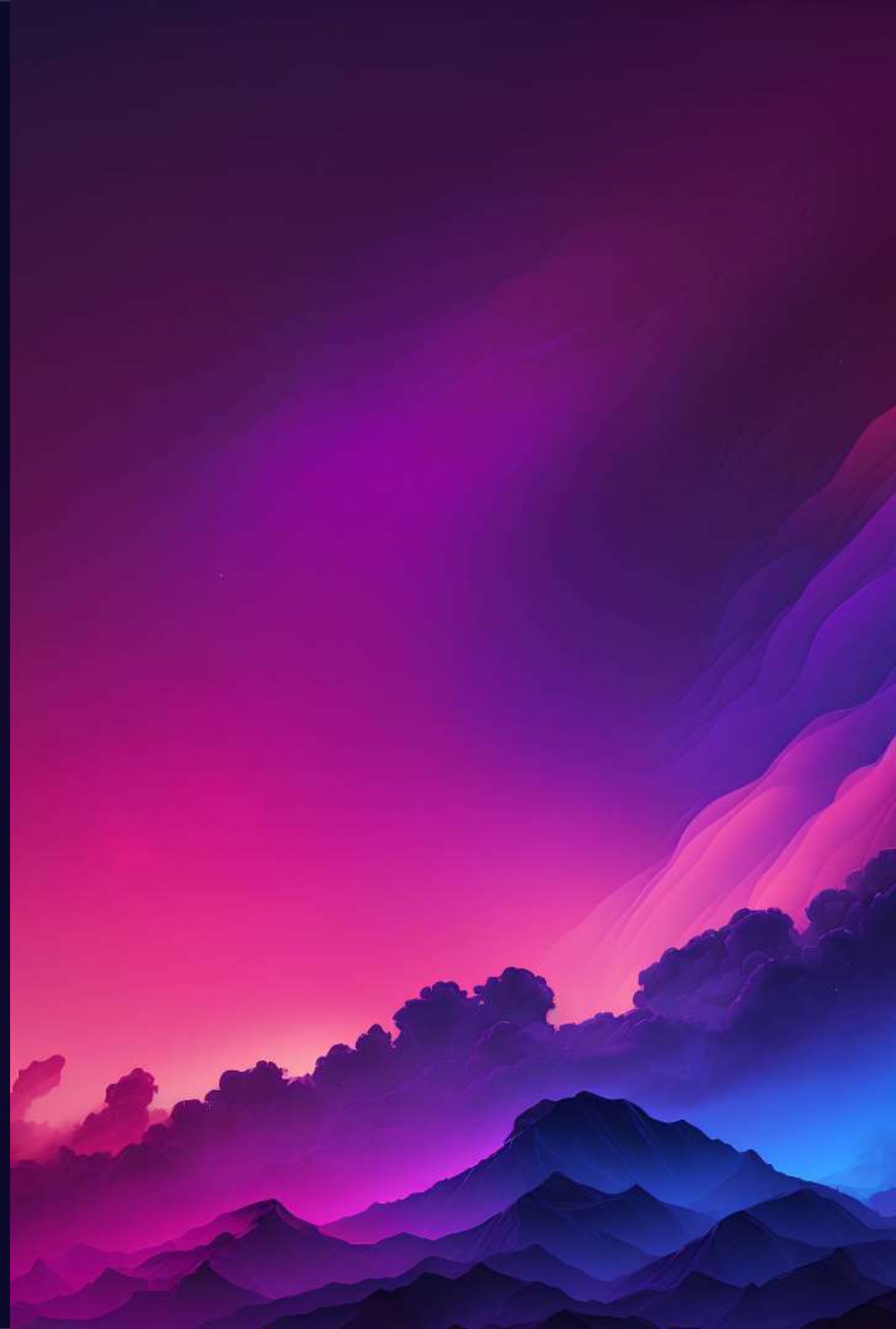
Revolutionize Your Home Lighting with Arduino Bluetooth

In this presentation, I develop the project which says the importance of using a home lighting control system, how Arduino and Bluetooth technology works, and how to create and program your own lighting system from start to finish.

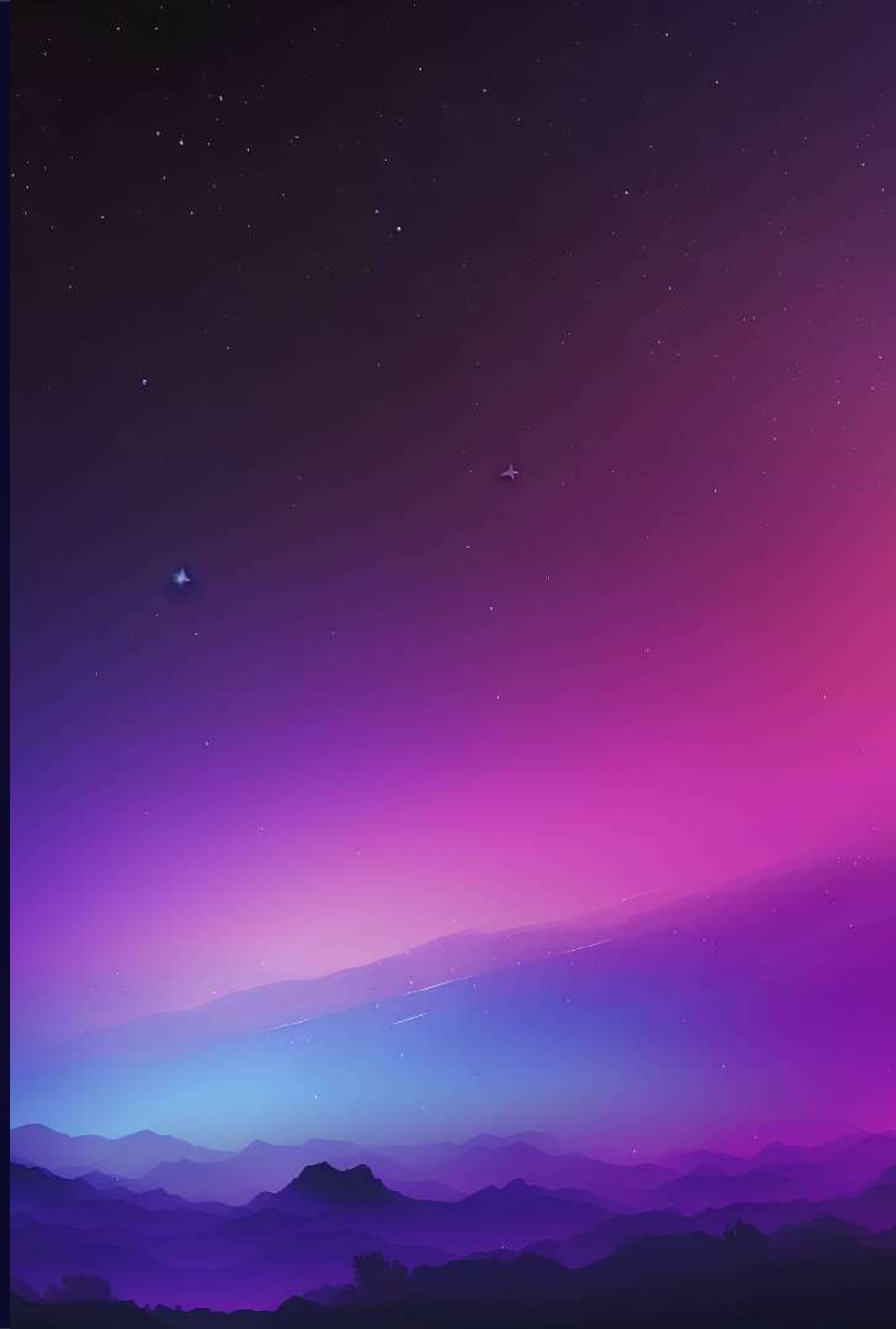
Protect Your Home with Smart Security

Discover how to make your home safer with smart security technology. In this presentation, we'll explore the latest trends in home security and show you how to use smart devices like cameras, sensors, and alarms to keep your home secure. With smart security, you can have peace of mind knowing your home is protected 24/7.



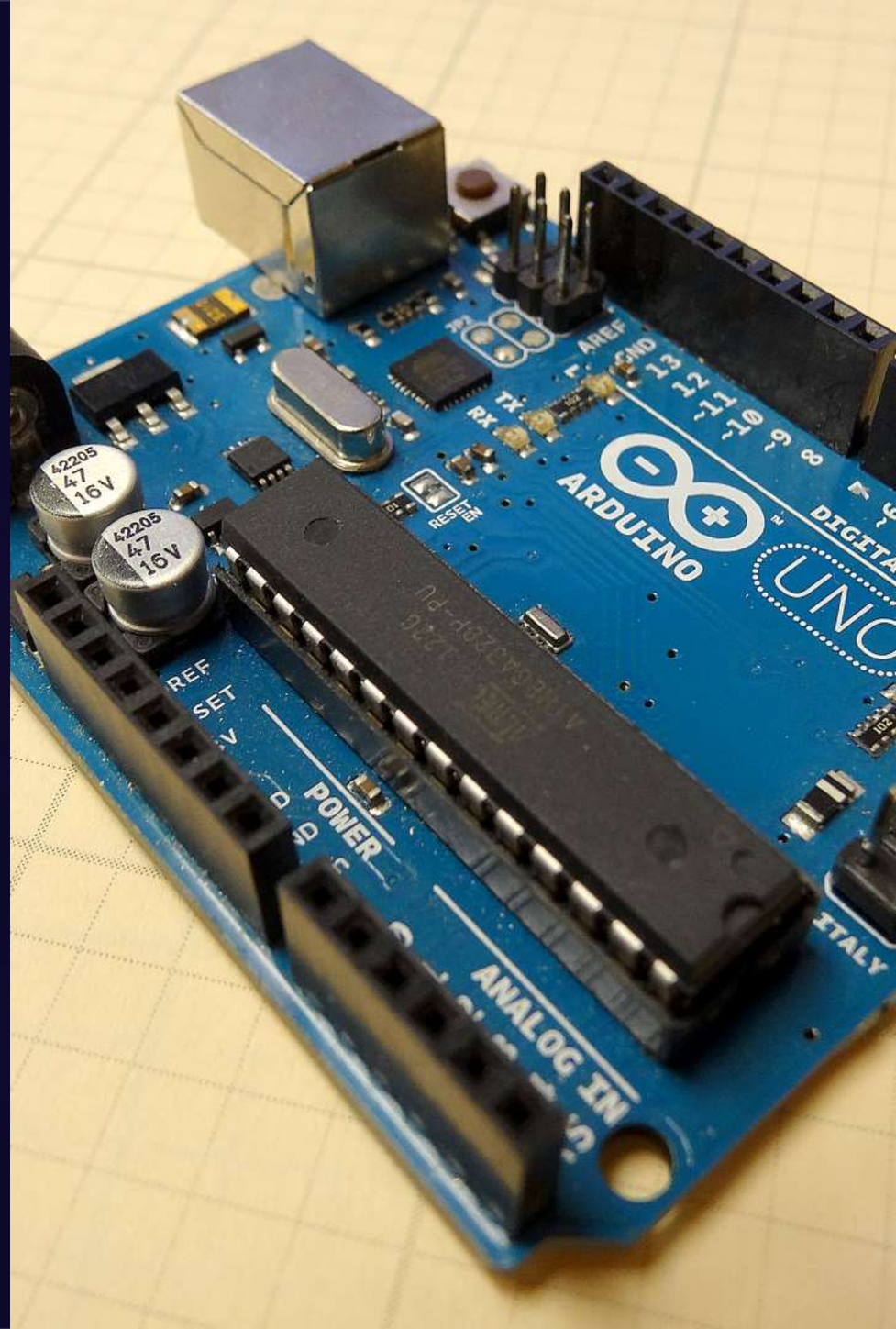
A Brief on Embedded Systems

Embedded systems are computer systems that are designed to perform specific tasks. They are used in a wide range of applications, including consumer electronics, medical devices, and automotive systems. Embedded systems are designed to be reliable, efficient, and low-cost, and they often operate in real-time environments where timing is critical.



Learn to Code Your Home Lighting with Our Easy Tutorial

Take your home lighting control project to the next level with our step-by-step tutorial on coding with Arduino. We'll show you how to set up your circuit, write and upload code, and customize your lighting system to fit your needs. Get started today!



Overview of Arduino

1

What is Arduino?

Arduino is an open-source platform that allows you to create interactive electronic projects.

2

How does it work?

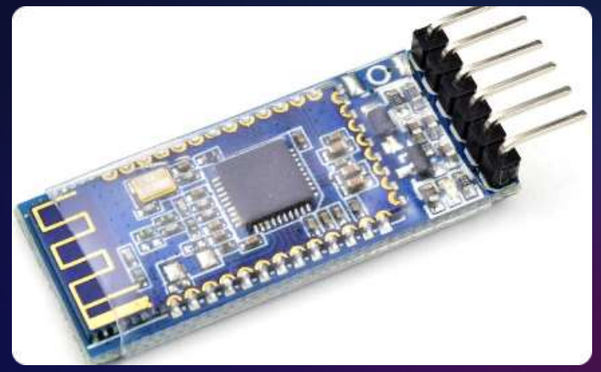
Arduino boards use microcontrollers to read inputs and turn on and off outputs, allowing for endless possibilities.

3

Why use Arduino?

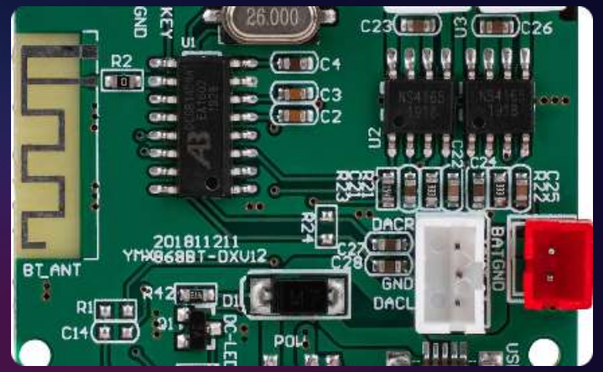
Arduino is affordable, easy to use, and has a large community of enthusiasts who share their knowledge and projects.

Introduction to Bluetooth Module



What is a Bluetooth module?

A Bluetooth module is a device that allows wireless communication between different devices over short distances. The Bluetooth has a range of 10-100 meters, 2.4 GHz bandwidth and 3Mbps speed.



How does it work?

Bluetooth modules use radio waves to transmit data between devices and require both a transmitter and receiver. the android app on the phone is portable. It is also fast and cost effective system

Why use Bluetooth?

Bluetooth is a convenient and versatile wireless technology that can be used for a variety of applications including home automation.

Home Lighting Control System

What is a home lighting control system?

A home lighting control system is an automated system that allows you to control your lights remotely using a computer or smartphone.

Why use a home lighting control system?

A home lighting control system can save you energy and money, enhance your home security, and improve your overall quality of life.

How does it work?

A home lighting control system uses a central hub and wireless communication technology to connect all your lights and control them remotely.

Components and Materials Required

1

What do you need?

You will need an Arduino board, a Bluetooth module, a relay module, some LED lights, wires, and a power source.

2

What are the specifications?

The Arduino board should have at least 6 pins and the Bluetooth module should support serial communication. The relay module should have enough channels to control all your lights.

3

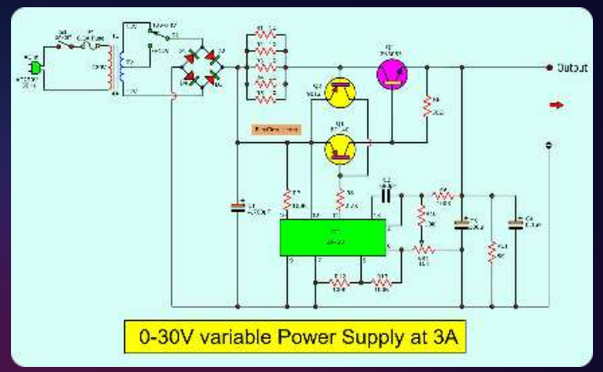
Where can you get them?

You can purchase the components and materials online or at your local electronics store.

System Implementation

How do you assemble the system?

You will need to connect the Arduino board to the relay module and Bluetooth module, and wire the LED lights to the relay module.



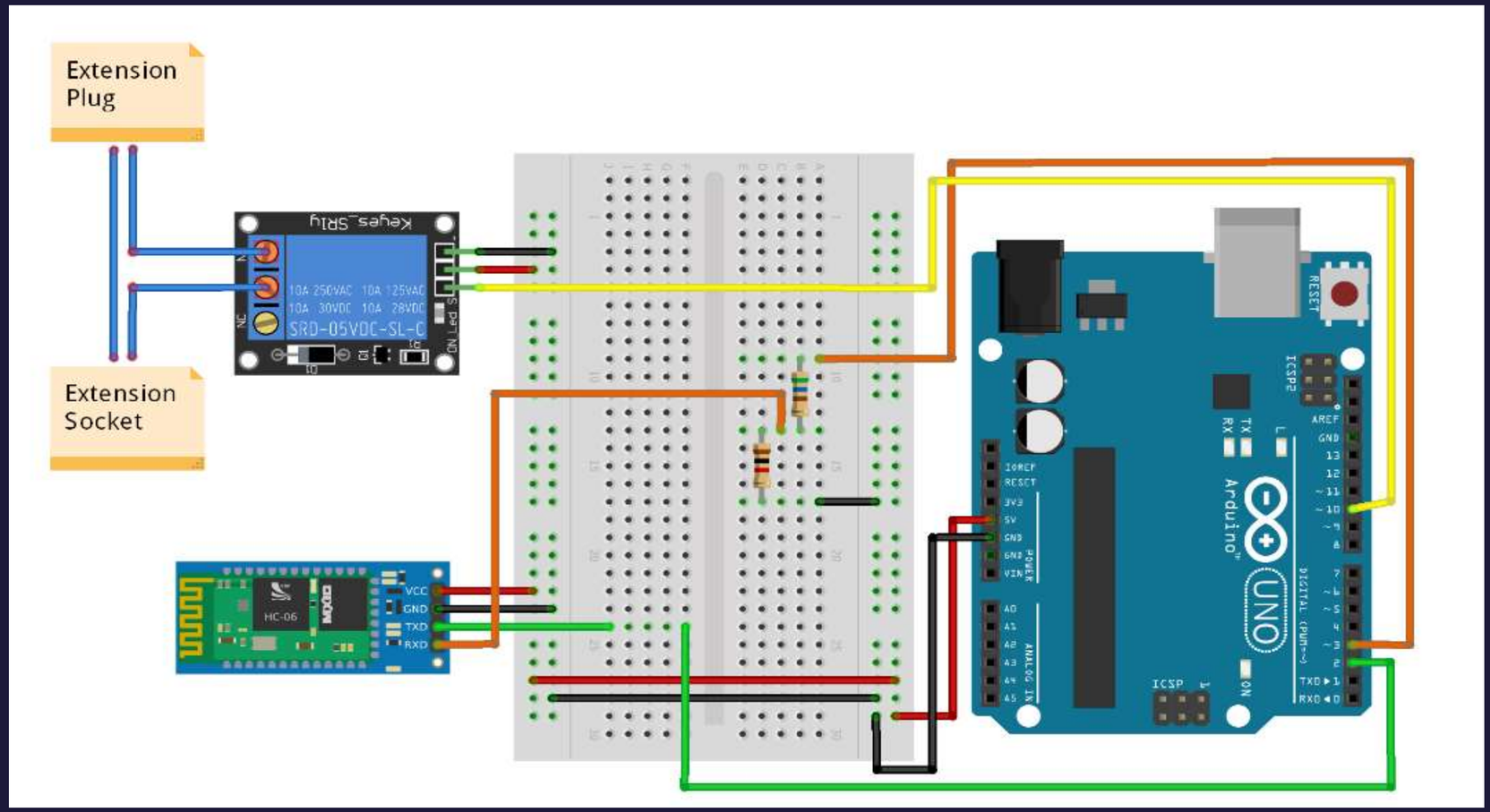
What does the circuit diagram look like?

The circuit diagram should show the wiring connections between all the components and help you troubleshoot any issues.

What are some wiring tips?

You should always use the correct gauge wire, label your wires, and use wire nuts or solder connections to ensure a secure connection.

CIRCUIT DIAGRAM



Arduino Programming

1 How do you program the Arduino?

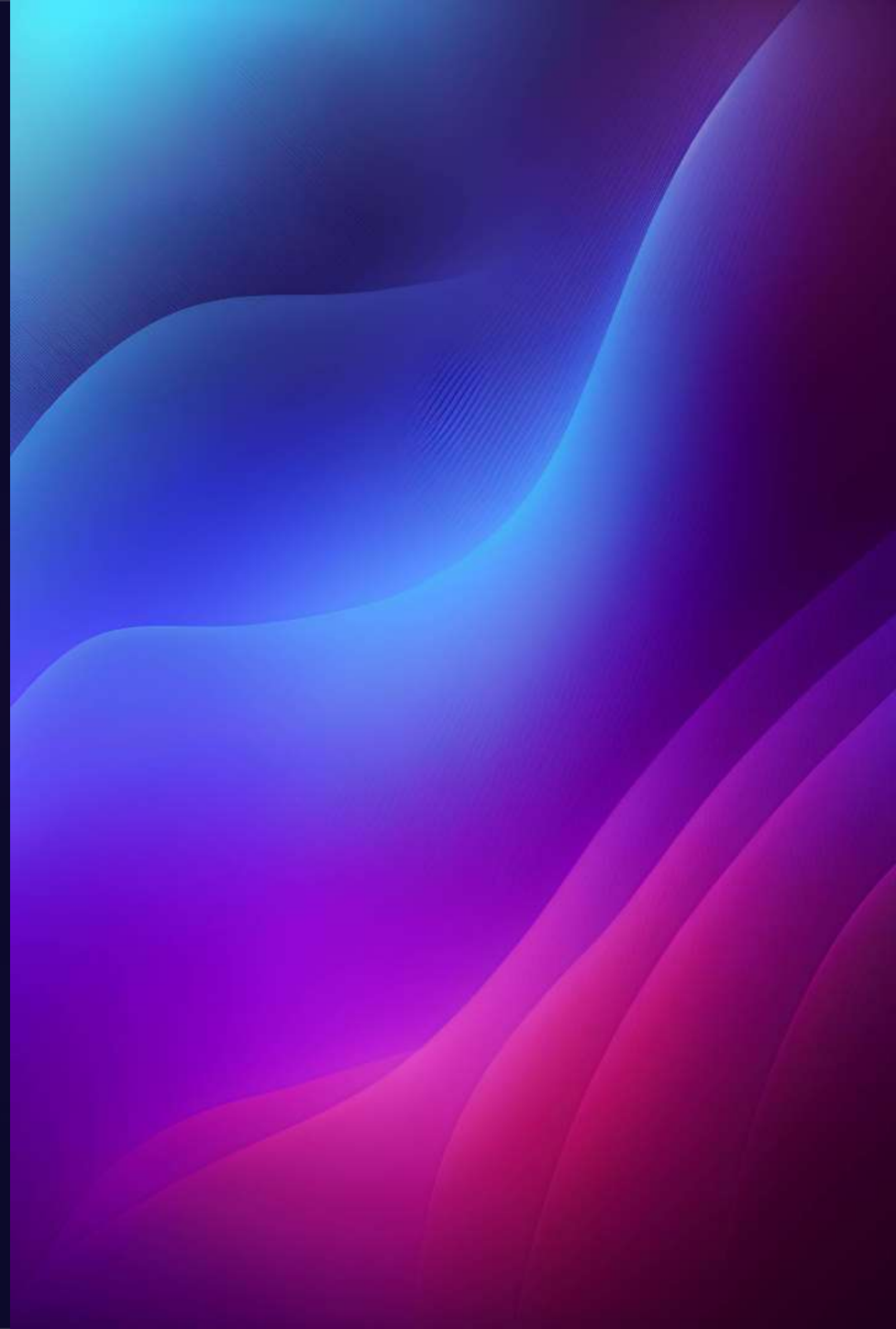
You can use the Arduino IDE software to write and upload code to your Arduino board.

2 What does the code structure look like?

The code structure should include setup and loop functions, along with any necessary libraries and functions.

3 How can you control the lights with Bluetooth?

You can use the Bluetooth module to receive commands from your smartphone or computer and activate the corresponding LED lights through the relay module.



CODING

```
Void setup() {

Serial.begin(9600);

pinMode(10,OUTPUT);

}

Void loop() {

int Incoming_value = Serial.read();

Serial.print(Incoming_value);

If(Incoming_value ==‘1’)

 {

digitalWrite(10,HIGH);

}

Else

digitalWrite(10,LOW);
}
```

Testing and Troubleshooting

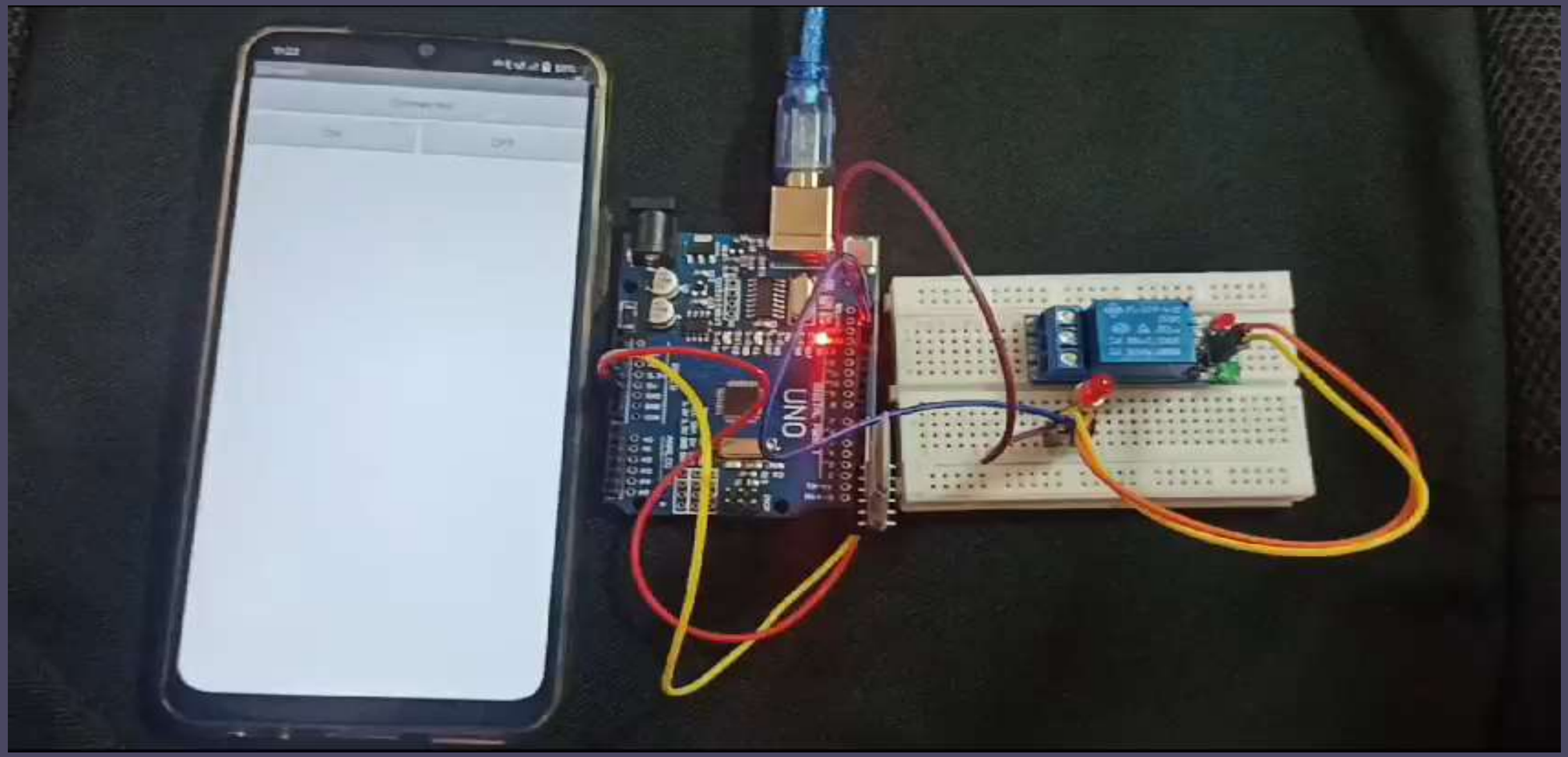
Testing

- Use a multimeter to test the voltage and current of each connection
- Use the serial monitor in the Arduino IDE to test the Bluetooth module and ensure proper communication

Troubleshooting

- Check your wiring connections and make sure they match the circuit diagram
- Make sure you are using the correct code and have uploaded it properly to your Arduino board
- Test each component individually to identify any faulty parts

VIDEO DEMO



Conclusion

Benefits of Home Lighting Control System

A home lighting control system can save you energy, improve your home security, and enhance your overall quality of life.

Potential Applications

The skills and knowledge you gain from building and programming a home lighting control system can be applied to other Arduino and home automation projects.

Recap of Key Points

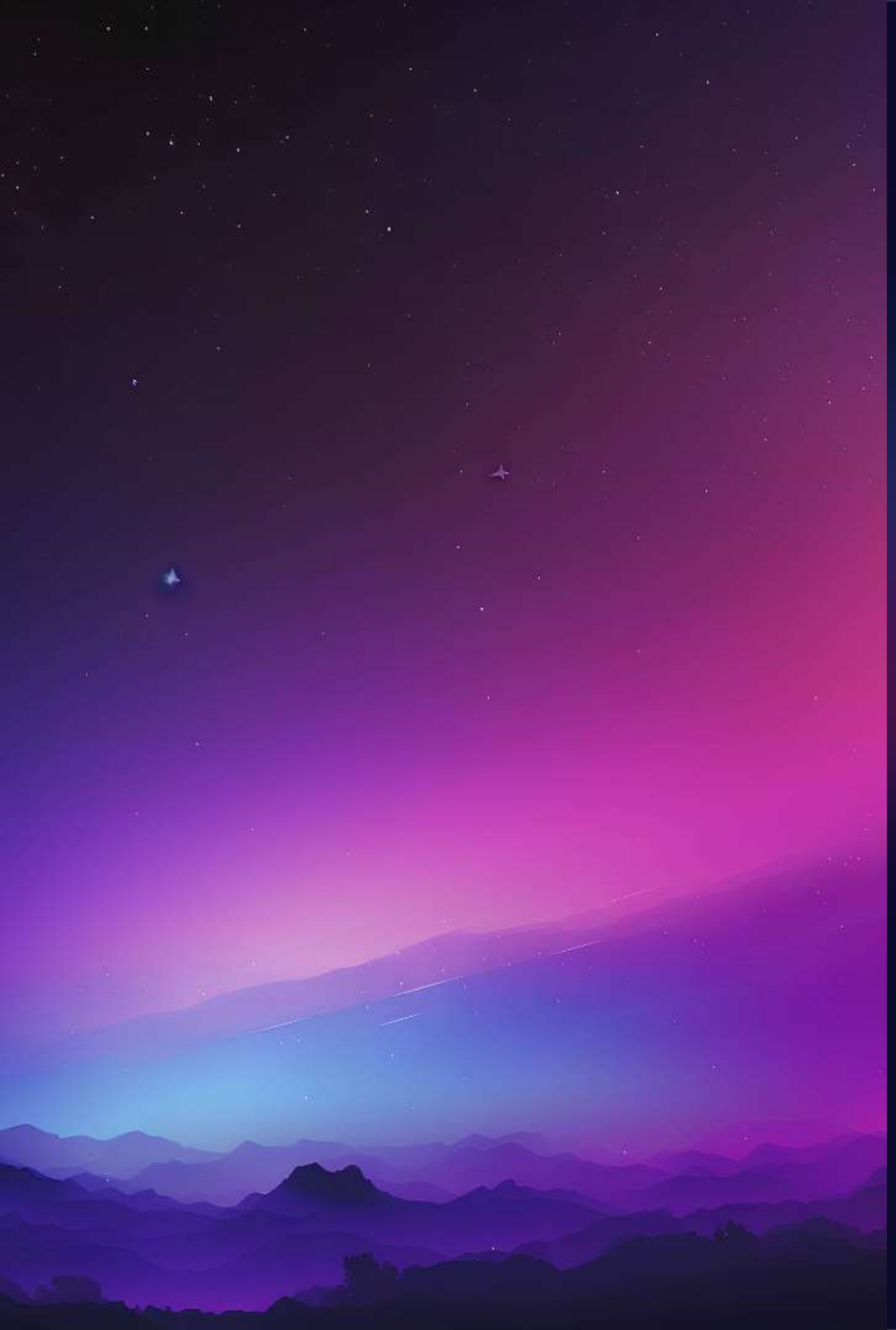
In this presentation, you have learned about the importance of home lighting control systems, the basics of Arduino and Bluetooth technology, and how to create and program your own lighting system from start to finish.

Conclusion-II

The primary aim of this paper is to design a home lighting system based on arduino Bluetooth interface using android smartphone as platform. A working designed has been developed to control the lighting status using android Bluetooth-enabled phone and Bluetooth modules through arduino. All communication pass through the microcontroller for lighting status and interface for the control of lighting. The bluetooth module transmits and receives commands from the bluetooth-enabled phone. Arduino Remote app communicates among Bluetooth devices. Android application, Arduino Remote, proved to be very efficient and convenient. It is concluded that the design of lighting system using arduino microcontroller and bluetooth module using android smartphone as platform can effectively control home lighting remotely and wirelessly…

Thank You for Your Attention

I hope you have understood about home lighting control systems and building your own lighting system.



THANK YOU !!!