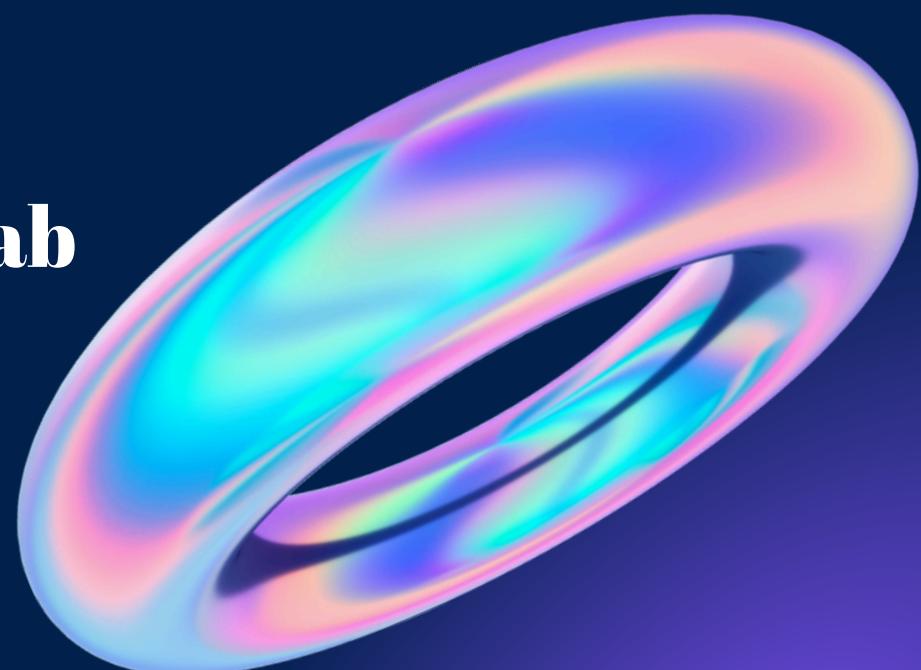


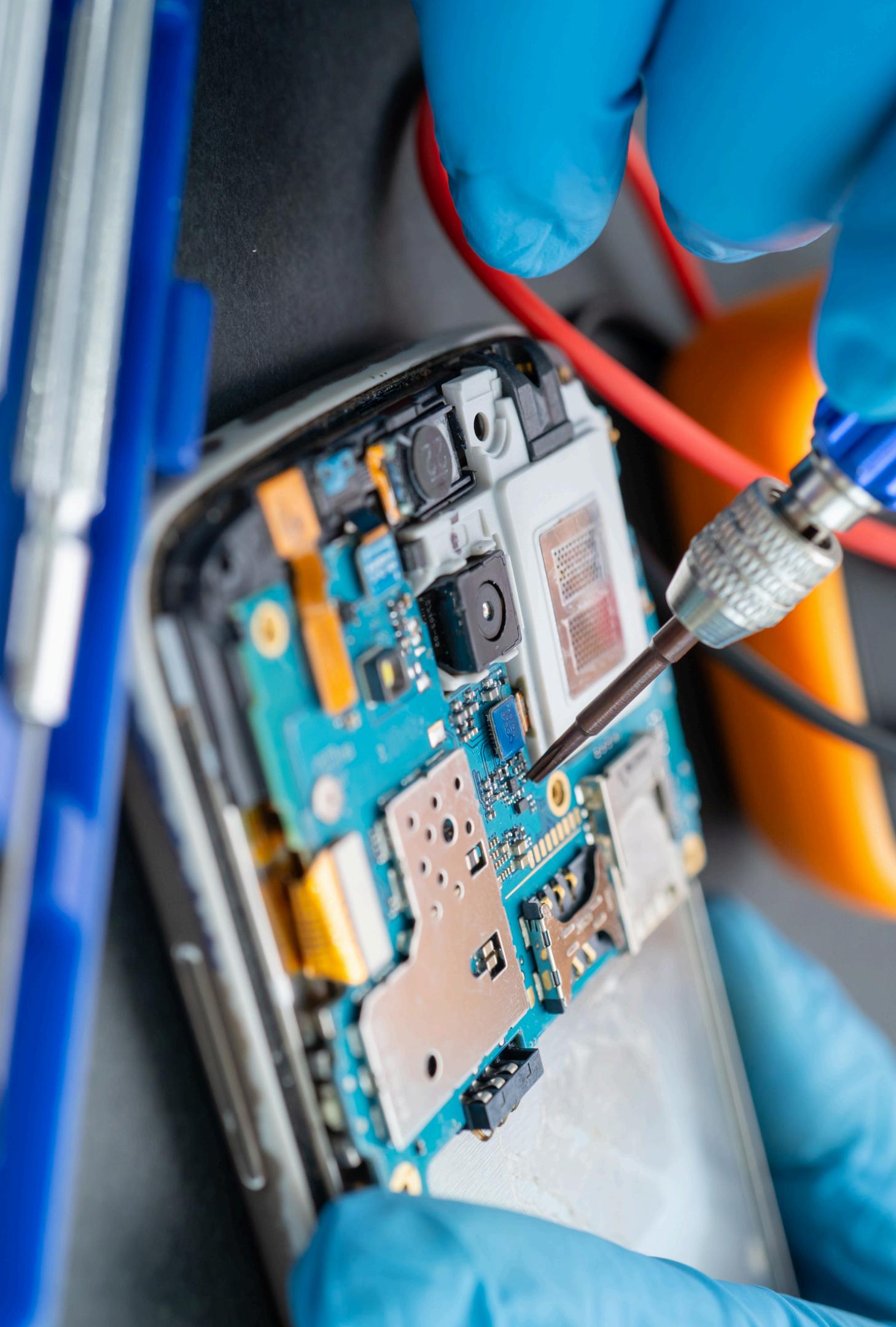


Voice Controlled Home Automation with Arduino and Bluetooth



Mini Project

Introduction To Internet of things + Lab
(CS1702)

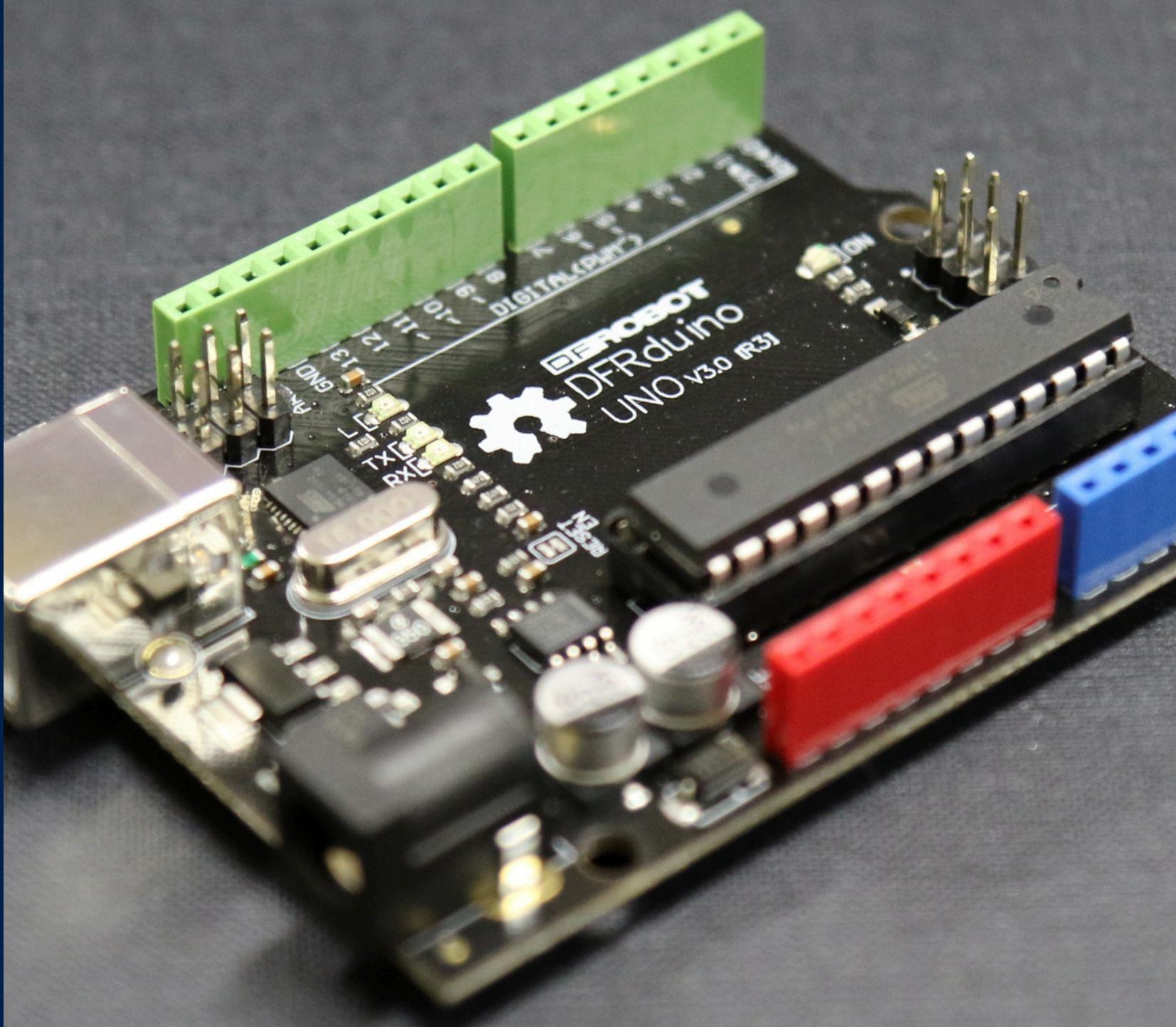


AIM OF OUR PROJECT:

- Enable voice-controlled operation of home appliances
- Increase accessibility for individuals with disabilities
- Enhance convenience and efficiency in daily routines
- Facilitate integration and expandability of home automation system

COMPONENTS REQUIRED:

- Arduino Uno
- HC-05 Bluetooth Module
- 2-Channel Relay Module(5v)
- 2 Holders
- 2 Bulb
- 220V Electrical wire with a 2-pin male socket
- Sun board piece
- Jumper wires
- Nutes and bolts
- Smartphone
- Buzzer



Arduino Code:

```
#include<SoftwareSerial.h>
// Define 2 channel relay pins
const int Light1 = 6; // Relay pin 1 (IN1)
const int Light2 = 5; // Relay pin 2 (IN2)
/* Create object named bt of the class SoftwareSerial */
SoftwareSerial bt(2, 3); /* (Rx,Tx) */
void setup() {
    bt.begin(9600); /* Define baud rate for software serial communication */
    Serial.begin(9600); /* Define baud rate for serial communication */
    // Set Relay pins as OUTPUT
    pinMode(Light1, OUTPUT);
    pinMode(Light2, OUTPUT);
    digitalWrite(Light1, HIGH);
    digitalWrite(Light2, HIGH);
}
void loop() {
    String data="";
    char ch;
    while (bt.available()) /* If data is available on serial port */
    { ch = bt.read(); /* Print character received on to the serial monitor */
        data=data+ch;
    }
}
```

```
Serial.print(data);
// Control the devices using voice command
if ((data == "turn on buzzer")||(data == "turn on the buzzer")) // turn on Device1
{
digitalWrite(Light1, LOW);
delay(200);
}
else if ((data == "turn off buzzer")||(data == "turn off the buzzer")) // turn off Device1
{
digitalWrite(Light1, HIGH);
delay(200);
}
// Control the devices using voice command
else if ((data == "turn on light two")||(data == "turn on light to")||(data == "turn on light 2")) // turn on Device2
{
digitalWrite(Light2, LOW);
delay(200);
}
else if ((data== "turn off light two")||(data == "turn off light to")||(data == "turn off light 2")) // turn off Device2
{
digitalWrite(Light2, HIGH);
delay(200);
}
}
```



Impact:

- **Accessibility:** Enhances independence for people with disabilities.
- **Energy Efficiency:** Reduces energy waste and utility costs.
- **Convenience:** Simplifies daily tasks with hands-free control.
- **Technological Advancement:** Demonstrates innovative home automation.
- **Educational Value:** Provides learning opportunities in electronics and programming.

A large, abstract graphic on the left side of the slide features concentric circles in shades of blue and cyan. Overlaid on these circles is a grid of binary digits (0s and 1s) in a light blue color. The binary code is arranged in several diagonal bands across the entire circle.

Future applications of our project:

- **Healthcare:** Integration for patient care and monitoring.
- **Smart Cities:** Control of city infrastructure for efficiency.
- **Industrial Automation:** Voice-operated machinery in factories.
- **Elderly Care:** Assistance for seniors in smart homes.
- **Education:** Interactive learning with voice commands.
- **Environmental Monitoring:** Remote control of sensors and data collection.