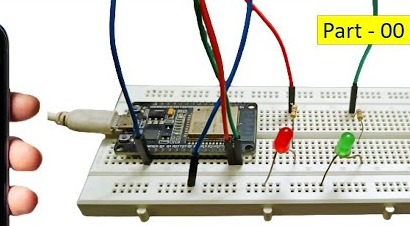
14.Control ESP 32 using Bluetooth of Android phone(Practical)

**Playstore: Arduino Bluetooth control app(Install)**

**Switch on Bluetooth in your mobile phone–select the bluetooth device name**

**NOTE:Open app--- Go to Settings –Go to Buttons and slider—select command buttons configuration-select buttons one by one—give the symbol as per given in code**

**Then select your devicename in the app**

****

#include "BluetoothSerial.h"

#if !defined(CONFIG\_BT\_ENABLED) || !defined(CONFIG\_BLUEDROID\_ENABLED)

#error Bluetooth is not enabled! Please run `make menuconfig` to and enable it

#endif

#define RedLed 22

#define GreenLed 23

String recv = "";

BluetoothSerial SerialBT;

void setup() {

  Serial.begin(115200);

  pinMode(RedLed, OUTPUT);

  pinMode(GreenLed, OUTPUT);

  SerialBT.begin("ESP32\_LED\_Control"); //Bluetooth device name

  Serial.println("The device started, now you can pair it with bluetooth!");

}

void loop()

{

  while (SerialBT.available()) // Read until the bluetooth client is sending.

  {

    char string = SerialBT.read();

    recv = recv + string;

    delay(1);

  }

  if (recv == "A")

  {

    digitalWrite(RedLed, HIGH);

  }

  if (recv == "a")

  {

    digitalWrite(RedLed,LOW);

  }

  if (recv == "B")

  {

    digitalWrite(GreenLed, HIGH);

  }

  if (recv == "b")

  {

    digitalWrite(GreenLed,LOW);

  }

  if (recv == "AB")

  {

    digitalWrite(RedLed, HIGH);

    digitalWrite(GreenLed, HIGH);

  }

  if (recv == "ab")

  {

    digitalWrite(RedLed, LOW);

    digitalWrite(GreenLed, LOW);

  }

  recv = ""; // clearing the string.

}

Output:

The device started, now you can pair it with bluetooth!

14.Duplex Bluetooth Communication Between ESP 32 and Android Phone(Skill)

Note: Install Serial Bluetooth Terminal and Pair ESP32\_BT

#include "BluetoothSerial.h"

BluetoothSerial SerialBT;  // Create Bluetooth Serial object

void setup() {

    Serial.begin(115200);

    SerialBT.begin("ESP32\_BT"); // Bluetooth device name

    Serial.println("Bluetooth Started. Waiting for connections...");

}

void loop() {

    // Sending message to Android phone

    SerialBT.println("Hello from ESP32!");

    // Receiving message from Android phone

    if (SerialBT.available()) {

        String receivedData = SerialBT.readStringUntil('\n');

        Serial.print("Received: ");

        Serial.println(receivedData);

        // Send acknowledgment back to phone

        SerialBT.println("ESP32 received: " + receivedData);

    }

    delay(2000); // Send data every 2 seconds

}

Output:

Bluetooth Started. Waiting for connections...

Received: hi esp 32

Received: hi esp 32

Received: hi esp 32

Received: hi esp 32

Received: hi klh

Alternate code

#include "BluetoothSerial.h"

BluetoothSerial SerialBT;

void setup() {

  Serial.begin(115200);

  SerialBT.begin("ESP32\_BT"); // Name of your Bluetooth device

  Serial.println("Bluetooth Started! Ready to pair...");

}

void loop() {

  // Check if data is available from the Android phone

  if (SerialBT.available()) {

    String receivedData = SerialBT.readString();

    Serial.print("Received from Android: ");

    Serial.println(receivedData);

    // Echo the received data back to the Android phone

    SerialBT.println("Echo: " + receivedData);

  }

  // Check if data is available from the Serial Monitor

  if (Serial.available()) {

    String sendData = Serial.readString();

    SerialBT.println(sendData); // Send data to the Android phone

    Serial.println("Sent to Android: " + sendData);

  }

}

Output:

hellloooo

hellloooo

hellloooo

hellloooo

Received from Android: hi hello

Received from Android: hi hello

Received from Android: hi hello