

Task:-Smart Home IOT System

```
// Define pin for controlling the relay
int relayPin = 7; // Relay connected to digital pin 7

// Variable to store incoming Bluetooth data
char bluetoothData;

void setup() {
  // Set the relay pin as output
  pinMode(relayPin, OUTPUT);
  // Turn relay OFF initially
  digitalWrite(relayPin, LOW);

  // Initialize serial communication (for Bluetooth)
  Serial.begin(9600);
}

void loop() {
  // Check if data is available to read from the Bluetooth module
  if (Serial.available()) {
    bluetoothData = Serial.read(); // Read the incoming data

    // Turn ON the bulb (activate relay) if data is '1'
    if (bluetoothData == '1') {
      digitalWrite(relayPin, HIGH); // Turn ON relay
    }
    // Turn OFF the bulb (deactivate relay) if data is '0'
    else if (bluetoothData == '0') {
      digitalWrite(relayPin, LOW); // Turn OFF relay
    }
  }
}
```