IOT PROJECT CODE

TITLE: Smart Helmet Ignition Control System

Receiver Code (ESP8266 + Blynk)

```
#define BLYNK_TEMPLATE_ID "TMPL31GCSePPx"

#define BLYNK_TEMPLATE_NAME "IOT"

#define BLYNK_AUTH_TOKEN "02CDVp7N_YIOQvcK5kphHMtb16SmXa02"


#define BLYNK_PRINT Serial


#include <ESP8266WiFi.h>

#include <BlynkSimpleEsp8266.h>

#include <RCSwitch.h>


// Blynk authentication

char auth[] = BLYNK_AUTH_TOKEN;


// WiFi credentials

char ssid[] = "POCO M4 5G";

char pass[] = "123456789";


// RF receiver object

RCSwitch rf = RCSwitch();


// Motor pins

int Motor1 = D5;

int Motor2 = D6;
```

```cpp
// Timing variables
unsigned long lastSignalTime = 0;

unsigned long signalTimeout = 2000; // 2 seconds


bool motorState = false;


// Function to turn motor ON
void motorON() {
  digitalWrite(Motor1, HIGH);

  digitalWrite(Motor2, LOW);

  motorState = true;


  Serial.println("Motor ON");

  Blynk.virtualWrite(V0, "Helmet Detected");

  Blynk.virtualWrite(V1, "Ignition ON");


  delay(5000);
}


// Function to turn motor OFF
void motorOFF() {
  digitalWrite(Motor1, LOW);

  digitalWrite(Motor2, LOW);

  motorState = false;


  Serial.println("Motor OFF");

  Blynk.virtualWrite(V0, "Helmet Not Detected");

  Blynk.virtualWrite(V1, "Ignition OFF");
```

```
}

void setup() {
 Serial.begin(9600);

  // Connect to Blynk
 Blynk.begin(auth, ssid, pass);

  // Enable RF receiver on D2
 rf.enableReceive(D2);

 pinMode(Motor1, OUTPUT);
 pinMode(Motor2, OUTPUT);

 motorOFF();
 Serial.println("System Started...");
}

void loop() {
 Blynk.run();

  // Check RF receiver
 if (rf.available()) {
  String data = String(rf.getReceivedValue());
  Serial.println("RF DATA: " + data);

  lastSignalTime = millis();
```

```
    if (data == "9863") {
     if (!motorState)
       motorON();
    }
    else if (data == "9864") {
     motorOFF();
    }


    rf.resetAvailable();
   }


   // Auto motor OFF if RF signal is lost
   if (motorState && (millis() - lastSignalTime > signalTimeout)) {
    Serial.println("NO RF SIGNAL → AUTO MOTOR OFF");
    motorOFF();
   }
                                             }
```

Transmitter Code (Arduino + IR Sensor + RF Module)

```
#include <RCSwitch.h>


RCSwitch mySwitch = RCSwitch();


int IR1 = 9;


void setup() {
 Serial.begin(9600);


 // Enable RF transmitter on pin D10
```

```cpp
  mySwitch.enableTransmit(10);

  Serial.println("433MHz Arduino Transmitter Ready...");

  pinMode(IR1, INPUT);
}

void loop() {
 int x = digitalRead(IR1);

 Serial.print("IR1 = ");
 Serial.println(x);

 if (x == 0) {
  long codeToSendon = 9863;
  mySwitch.send(codeToSendon, 24);

  Serial.print("Sent RF Code: ");
  Serial.println(codeToSendon);
 }
 else if (x == 1) {
  long codeToSendoff = 9864;
  mySwitch.send(codeToSendoff, 24);

  Serial.print("Sent RF Code: ");
  Serial.println(codeToSendoff);
 }
```

```
  delay(3000); // Send signal every 3 seconds

}
```