**#define BLYNK\_PRINT Serial**

**#include <ESP32Servo.h>**

**#include <Wire.h>**

**#include <LiquidCrystal\_I2C.h>**

**#include <WiFi.h>**

**#include <WiFiClient.h>**

**#include <BlynkSimpleEsp32.h>**

**#define BLYNK\_TEMPLATE\_ID "TMPL6icGhdRhL"**

**#define BLYNK\_TEMPLATE\_NAME "Final Project"**

**#define BLYNK\_AUTH\_TOKEN "OKA8Nt-WV9dUvn96gGc5wvCELo3UTpyK"**

**const int YellowbuttonPin = 4;**

**const int GreenbuttonPin = 5;**

**const int YellowledPin = 2;**

**const int GreenledPin = 15;**

**#define SERVO\_PIN1 27**

**#define SERVO\_PIN2 14**

**#define SERVO\_PIN3 19**

**#define SERVO\_PIN4 25**

**Servo servo1;**

**Servo servo2;**

**Servo servo3;**

**Servo servo4;**

**LiquidCrystal\_I2C lcd(0x27, 16, 2);**

**int buttonState1 = 0;**

**int previousButtonState1 = 0;**

**int buttonState2 = 0;**

**int previousButtonState2 = 0;**

**bool systemOn = false;**

**char auth[] = BLYNK\_AUTH\_TOKEN;**

**char ssid[] = "Wokwi-GUEST";**

**char pass[] = "";**

**BLYNK\_WRITE(V0)**

**{**

**int paramValue = param.asInt();**

**if (paramValue == 1)**

**{**

**systemOn = true;**

**digitalWrite(5, HIGH);**

**lcd.clear();**

**lcd.setCursor(0, 0);**

**lcd.print("System is On");**

**Blynk.virtualWrite(V1, "System is On");**

**Blynk.virtualWrite(V3, " "); // Clear the text on the Label widget (V3)**

**}**

**else**

**{**

**systemOn = false;**

**digitalWrite(5, LOW);**

**lcd.clear();**

**lcd.setCursor(0, 0);**

**lcd.print("System is Off");**

**Blynk.virtualWrite(V1, "System is Off");**

**Blynk.virtualWrite(V3, " "); // Clear the text on the Label widget (V3)**

**}**

**}**

**BLYNK\_WRITE(V2)**

**{**

**int paramValue = param.asInt();**

**if (systemOn && paramValue == 1)**

**{**

**digitalWrite(YellowledPin, HIGH);**

**Blynk.virtualWrite(V3, "RIPE");**

**lcd.clear();**

**lcd.setCursor(0, 0);**

**lcd.print("Ripeness: RIPE");**

**// Perform servo movements for button press**

**servo2.write(25);**

**delay(1000);**

**servo4.write(90);**

**delay(1000);**

**servo3.write(50);**

**delay(1000);**

**servo4.write(5);**

**delay(1000);**

**servo3.write(0);**

**delay(1000);**

**servo1.write(180);**

**delay(1000);**

**servo2.write(25);**

**delay(1000);**

**servo3.write(50);**

**delay(1000);**

**servo4.write(90);**

**delay(1000);**

**servo4.write(0);**

**delay(1000);**

**servo3.write(0);**

**delay(1000);**

**servo2.write(0);**

**delay(1000);**

**servo1.write(0);**

**delay(1000);**

**lcd.clear();**

**}**

**else**

**{**

**digitalWrite(YellowledPin, LOW);**

**delay(100);**

**Blynk.virtualWrite(V3, " ");**

**}**

**}**

**BLYNK\_WRITE(V4)**

**{**

**int paramValue = param.asInt();**

**if (systemOn && paramValue == 1)**

**{**

**digitalWrite(GreenledPin, HIGH);**

**Blynk.virtualWrite(V3, "UNRIPE");**

**lcd.clear();**

**lcd.setCursor(0, 0);**

**lcd.print("Ripeness: UNRIPE");**

**// Perform servo movements for green button press**

**servo2.write(25);**

**delay(1000);**

**servo4.write(90);**

**delay(1000);**

**servo3.write(50);**

**delay(1000);**

**servo4.write(5);**

**delay(1000);**

**servo3.write(0);**

**delay(1000);**

**servo1.write(90);**

**delay(1000);**

**servo2.write(25);**

**delay(1000);**

**servo3.write(50);**

**delay(1000);**

**servo4.write(90);**

**delay(1000);**

**servo4.write(0);**

**delay(1000);**

**servo3.write(0);**

**delay(1000);**

**servo1.write(0);**

**delay(1000);**

**lcd.clear();**

**}**

**else**

**{**

**digitalWrite(GreenledPin, LOW);**

**delay(100);**

**Blynk.virtualWrite(V3, " ");**

**}**

**}**

**BLYNK\_CONNECTED()**

**{**

**Serial.println("Connected");**

**Blynk.syncVirtual(V0);**

**}**

**bool programEnabled = true; // To enable/disable the program**

**void setup()**

**{**

**pinMode(YellowbuttonPin, INPUT);**

**pinMode(GreenbuttonPin, INPUT);**

**pinMode(YellowledPin, OUTPUT);**

**pinMode(GreenledPin, OUTPUT);**

**servo1.attach(SERVO\_PIN1);**

**servo2.attach(SERVO\_PIN2);**

**servo3.attach(SERVO\_PIN3);**

**servo4.attach(SERVO\_PIN4);**

**servo1.write(0);**

**servo2.write(0);**

**servo3.write(0);**

**servo4.write(0);**

**lcd.begin(16, 2);**

**lcd.init();**

**lcd.backlight();**

**Blynk.begin(auth, ssid, pass);**

**}**

**void loop()**

**{**

**Blynk.run();**

**if (systemOn)**

**{**

**buttonState1 = digitalRead(YellowbuttonPin);**

**buttonState2 = digitalRead(GreenbuttonPin);**

**if (buttonState1 != previousButtonState1)**

**{**

**if (buttonState1 == HIGH)**

**{**

**lcd.clear();**

**lcd.setCursor(0, 0);**

**lcd.print("Ripeness: RIPE");**

**Blynk.virtualWrite(V3, "RIPE");**

**delay(100);**

**digitalWrite(YellowledPin, HIGH);**

**servo2.write(25);**

**delay(1000);**

**servo4.write(90);**

**delay(1000);**

**servo3.write(50);**

**delay(1000);**

**servo4.write(5);**

**delay(1000);**

**servo3.write(0);**

**delay(1000);**

**servo1.write(180);**

**delay(1000);**

**servo2.write(25);**

**delay(1000);**

**servo3.write(50);**

**delay(1000);**

**servo4.write(90);**

**delay(1000);**

**servo4.write(0);**

**delay(1000);**

**servo3.write(0);**

**delay(1000);**

**servo2.write(0);**

**delay(1000);**

**servo1.write(0);**

**delay(1000);**

**lcd.clear();**

**}**

**}**

**else**

**{**

**digitalWrite(GreenledPin, LOW);**

**delay(100);**

**Blynk.virtualWrite(V3, " ");**

**}**

**if (buttonState2 != previousButtonState2)**

**{**

**if (buttonState2 == HIGH)**

**{**

**lcd.clear();**

**lcd.setCursor(0, 0);**

**lcd.print("Ripeness: UNRIPE");**

**Blynk.virtualWrite(V3, "UNRIPE");**

**delay(100);**

**digitalWrite(GreenledPin, HIGH);**

**servo2.write(25);**

**delay(1000);**

**servo4.write(90);**

**delay(1000);**

**servo3.write(50);**

**delay(1000);**

**servo4.write(5);**

**delay(1000);**

**servo3.write(0);**

**delay(1000);**

**servo1.write(90);**

**delay(1000);**

**servo2.write(25);**

**delay(1000);**

**servo3.write(50);**

**delay(1000);**

**servo4.write(90);**

**delay(1000);**

**servo4.write(0);**

**delay(1000);**

**servo3.write(0);**

**delay(1000);**

**servo1.write(0);**

**delay(1000);**

**lcd.clear();**

**}**

**}**

**else**

**{**

**digitalWrite(YellowledPin, LOW);**

**delay(100);**

**Blynk.virtualWrite(V3, " ");**

**}**

**previousButtonState1 = buttonState1;**

**previousButtonState2 = buttonState2;**

**}**

**}**