#include <WiFi.h>

#include <WiFiClient.h>

#include <BlynkSimpleEsp32.h>

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#include <LiquidCrystal\_I2C.h>

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

#define echoPin 18 //echo

#define trigPin 19 //trig

#define ldr 4 //ldr

#define wSensor 2 //water sensor

#define pir1 27 //Parking 1 IR

#define pir2 14 //Parking 2 IR

long duration;

int distance;

char auth[] = "Av-O3r0Q4YBDKiVEknB-FQ5E7J\_\_SXOV";

char ssid[] = "door";

char pass[] = "12345678";

void setup() {

pinMode(trigPin, OUTPUT);

pinMode(echoPin, INPUT);

pinMode(ldr, INPUT);

pinMode(5, OUTPUT); //Street Light

pinMode(15, OUTPUT); //PUMP

pinMode(wSensor, OUTPUT);

pinMode(pir1, INPUT);

pinMode(pir2, INPUT);

digitalWrite(5,LOW);

digitalWrite(15,LOW);

Blynk.begin(auth, ssid, pass);

Serial.begin(9600);

lcd.init();

lcd.backlight();

lcd.setCursor(0,0);

lcd.print("WELCOME");

delay(1000);

lcd.clear();

}

void loop() {

Blynk.run();

//ULTRASONIC

digitalWrite(trigPin, LOW);

delayMicroseconds(2) ;

digitalWrite(trigPin, HIGH);

delayMicroseconds(10);

digitalWrite(trigPin, LOW);

duration = pulseIn(echoPin, HIGH);

distance = duration \* 0.034 / 2;

//level = (distance / 15) \* 100;

lcd.setCursor(0,0);

Serial.println(distance);

//DUSTBIN

if (distance < 4) {

//lcd.clear();

lcd.print("Dustbin is full");Blynk.virtualWrite(V0, "Dustbin is full");}

else if (distance >=14) {

//lcd.clear();

lcd.print("Dustbin is Empty"); Blynk.virtualWrite(V0, "Dustbin is Empty");}

else{

//lcd.clear();

//Serial.println(level);

//val = String((float)level) + " % Filled";

// Serial.println(val);

Blynk.virtualWrite(V0, "Partially Filled");

lcd.print("Partially Filled");

}

//LDR

int light = digitalRead(ldr);

//Serial.println(light);

if (light == 1) {digitalWrite(5, HIGH);}// 5 Street Light pin

else {digitalWrite(5,LOW);}

//PUMP

int water = digitalRead(wSensor);

Serial.println(water);

if(water == 1){ digitalWrite(15,HIGH);} // 15 Pump pin

else {digitalWrite(15,LOW);}

//parking

int space1 = digitalRead(pir1);

int space2 = digitalRead(pir2);

if (space1 == 0)

{

lcd.setCursor(0,1);

lcd.print("P1Empty");

Blynk.virtualWrite(V1, "Parking lot 1 Empty");

}

else {

lcd.setCursor(0,1);

lcd.print("P1 Full ");

Blynk.virtualWrite(V1, "Parking lot 1 full");}

if (space2 == 0){

lcd.setCursor(8,1);

lcd.print("P2Empty");

Blynk.virtualWrite(V2, "Parking lot 2 Empty");}

else {

lcd.setCursor(8,1);

lcd.print("P2 Full ");

Blynk.virtualWrite(V2, "Parking lot 2 Full");}