Ejercicio

A)

void setup()

{

pinMode(2, OUTPUT);

pinMode(3, OUTPUT);

pinMode(4, OUTPUT);

}

void loop()

{

digitalWrite(2, HIGH);

digitalWrite(3, LOW);

digitalWrite(4, LOW);

delay(900);

digitalWrite(2, LOW);

digitalWrite(3, HIGH);

digitalWrite(4, HIGH);

delay(900);

}

Ejercicio

B)

const int buttonPin = 2;

const int potPin = A0;

const int redPin = 9;

const int greenPin = 10;

const int bluePin = 11;

bool ledState = false;

bool lastButtonState = HIGH;

int colorState = 0;

void setup() {

pinMode(buttonPin, INPUT\_PULLUP);

pinMode(redPin, OUTPUT);

pinMode(greenPin, OUTPUT);

pinMode(bluePin, OUTPUT);

}

void loop() {

// Leer el estado del botón

bool buttonState = digitalRead(buttonPin);

// Si el botón se presiona (cambio de HIGH a LOW)

if (buttonState == LOW && lastButtonState == HIGH) {

ledState = !ledState; // Alterna el estado del LED

delay(50); // Anti-rebote

}

// Actualizar el último estado del botón

lastButtonState = buttonState;

// Si el LED está encendido, ajustar los colores con el potenciómetro

if (ledState) {

int potValue = analogRead(potPin);

// Mapear el valor del potenciómetro a diferentes rangos para RGB

int redValue = 0, greenValue = 0, blueValue = 0;

if (colorState == 0) { // Rojo

redValue = map(potValue, 0, 1023, 0, 255);

} else if (colorState == 1) { // Verde

greenValue = map(potValue, 0, 1023, 0, 255);

} else if (colorState == 2) { // Azul

blueValue = map(potValue, 0, 1023, 0, 255);

}

analogWrite(redPin, redValue);

analogWrite(greenPin, greenValue);

analogWrite(bluePin, blueValue);

// Cambio de color cada vez que se presiona el botón

if (buttonState == LOW && lastButtonState == HIGH) {

colorState = (colorState + 1) % 3; // Cambia entre 0, 1, 2

delay(50); // Anti-rebote

}

} else {

analogWrite(redPin, 0);

analogWrite(greenPin, 0);

analogWrite(bluePin, 0);

}

}

Ejercicio

C)

bool boton = false;

//

void setup()

{

pinMode(2, OUTPUT);

pinMode(3, OUTPUT);

pinMode(4, OUTPUT);

pinMode(5, OUTPUT);

pinMode(6, OUTPUT);

pinMode(7, OUTPUT);

pinMode(8, OUTPUT);

pinMode(9, OUTPUT);

pinMode(10, OUTPUT);

pinMode(11, OUTPUT);

pinMode(12, INPUT\_PULLUP);

pinMode(A0, INPUT);

}

void loop()

{

if( digitalRead(12) == LOW)

{

boton = !boton;

int tiempo = analogRead(A0);

int x = map ( tiempo , 0 , 1023, 200, 1500);

digitalWrite(2, HIGH);

delay(x);

digitalWrite(3, HIGH);

digitalWrite(2, LOW);

delay(x);

digitalWrite(4, HIGH);

digitalWrite(3, LOW);

delay(x);

digitalWrite(5, HIGH);

digitalWrite(4, LOW);

delay(x);

digitalWrite(6, HIGH);

digitalWrite(5, LOW);

delay(x);

digitalWrite(7, HIGH);

digitalWrite(6, LOW);

delay(x);

digitalWrite(8, HIGH);

digitalWrite(7, LOW);

delay(x);

digitalWrite(9, HIGH);

digitalWrite(8, LOW);

delay(x);

digitalWrite(10, HIGH);

digitalWrite(9, LOW);

delay(x);

digitalWrite(11, HIGH);

digitalWrite(10, LOW);

delay(x);

digitalWrite(11, LOW);

delay(x);

}else{

digitalWrite(2, LOW);

digitalWrite(3, LOW);

digitalWrite(4, LOW);

digitalWrite(5, LOW);

digitalWrite(6, LOW);

digitalWrite(7, LOW);

digitalWrite(8, LOW);

digitalWrite(9, LOW);

digitalWrite(10, LOW);

digitalWrite(11, LOW);

}

}