#include<VarSpeedServo.h>

VarSpeedServo servo1; //Servos

VarSpeedServo servo2;

VarSpeedServo servo3;

const int button1 = 12; //Buttons

const int button2 = 13;

int LED = 8;

int button1Presses = 0; //Button values

boolean button2Pressed = false;

const int pot1 = A0; //Potentimeters

const int pot2 = A1;

const int pot3 = A5;

int pot1Val; //Potentimeter values

int pot2Val;

int pot3Val;

int pot1Angle;

int pot2Angle;

int pot3Angle;

int servo1PosSaves[] = {1,1,1,1,1,1}; //position saves

int servo2PosSaves[] = {1,1,1,1,1,1};

int servo3PosSaves[] = {1,1,1,1,1,1};

void setup() {

servo1.attach(6); // Set up everything and will run once; attach servos and define the pin modes

servo2.attach(5);

servo3.attach(3);

pinMode(button1, INPUT);

pinMode(button2, INPUT);

pinMode(LED,OUTPUT);

Serial.begin(9600);

}

void loop() {

// put your main code here, to run repeatedly:

pot1Val = analogRead(pot1); // This will read the values from the potentimeters and store it...

pot1Angle = map(pot1Val, 0, 1023, 0, 179); // ... and this will map the values from the potentiometers to values the servos can use and store it for later use

pot2Val = analogRead(pot2);

pot2Angle = map(pot2Val, 0, 1023, 0, 179);

pot3Val = analogRead(pot3);

pot3Angle = map(pot3Val, 0, 1023, 0, 179);

if(digitalRead(button1) == LOW){ // This will check how many times button1 is pressed and save the positions to an array depending on how many times it is pressed; switch/case works like a if statement

button1Presses++;

switch(button1Presses){

case 1:

servo1PosSaves[0] = pot1Angle;

servo2PosSaves[0] = pot2Angle;

servo3PosSaves[0] = pot3Angle;

Serial.println("Pos 1 Saved");

digitalWrite(LED, HIGH);

delay(1000);

digitalWrite(LED, LOW);

delay(2000);

break;

case 2:

servo1PosSaves[1] = pot1Angle;

servo2PosSaves[1] = pot2Angle;

servo3PosSaves[1] = pot3Angle;

Serial.println("Pos 2 Saved");

digitalWrite(LED, HIGH);

delay(2000);

digitalWrite(LED, LOW);

delay(2000);

break;

case 3:

servo1PosSaves[2] = pot1Angle;

servo2PosSaves[2] = pot2Angle;

servo3PosSaves[2] = pot3Angle;

Serial.println("Pos 3 Saved");

digitalWrite(LED, HIGH);

delay(3000);

digitalWrite(LED, LOW);

delay(2000);

break;

case 4:

servo1PosSaves[3] = pot1Angle;

servo2PosSaves[3] = pot2Angle;

servo3PosSaves[3] = pot3Angle;

Serial.println("Pos 4 Saved");

digitalWrite(LED, HIGH);

delay(4000);

digitalWrite(LED, LOW);

delay(2000);

break;

case 5:

servo1PosSaves[4] = pot1Angle;

servo2PosSaves[4] = pot2Angle;

servo3PosSaves[4] = pot3Angle;

Serial.println("Pos 5 Saved");

digitalWrite(LED, HIGH);

delay(5000);

digitalWrite(LED, LOW);

delay(2000);

break;

case 6:

servo1PosSaves[5] = pot1Angle;

servo2PosSaves[5] = pot2Angle;

servo3PosSaves[5] = pot3Angle;

Serial.println("Pos 6 Saved");

digitalWrite(LED, HIGH);

delay(6000);

digitalWrite(LED, LOW);

delay(2000);

button1Presses = 0;

break;

}

}

if(digitalRead(button2) == LOW){ // Pretty self-explnatory here

button2Pressed = true;

Serial.println(" Starting playback ");

delay(2000);

}

{if(button2Pressed){ // if the boolean button2Press is true, then the servos will run though all their saved positions

for(int i = 0; i < 6; i++){

servo1.write(servo1PosSaves[i],30);

servo1.wait();

servo2.write(servo2PosSaves[i],25);

servo2.wait();

servo3.write(servo3PosSaves[i],25);

servo3.wait();

Serial.println(" potentimeter Angles: ");

Serial.println(servo1PosSaves[i]);

Serial.println(servo2PosSaves[i]);

Serial.println(servo3PosSaves[i]);

Serial.println(i);

delay(300);

}

button2Pressed = false;

}

else

{

servo1.write(pot1Angle,150); // These will make the servos move to the mapped angles

servo1.wait();

servo2.write(pot2Angle,150);

servo2.wait();

servo3.write(pot3Angle,150);

servo3.wait();

Serial.println("potAngle values");

Serial.println(pot1Angle);

Serial.println(pot2Angle);

Serial.println(pot3Angle);

Serial.println("b1 and b2 values");

Serial.println(digitalRead(button1));

Serial.println(digitalRead(button2));

}

}

delay(300);

}