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#include <Servo.h>

Servo servo1;
Servo servo2;

const int TRIG_PIN = 9;
const int ECHO_PIN = 10;
const int DISTANCE_THRESHOLD = 10; // centimeters

// Joystick pins
const int joystickXPin = A0;
const int joystickYPin = A1;

// Joystick values
int joystickXValue;
int joystickYValue;

// The position of the servos
int servo1Position;
int servo2Position;

void setup() {
  Serial.begin(9600);
  pinMode(TRIG_PIN, OUTPUT);
  pinMode(ECHO_PIN, INPUT);
  servo1.attach(8);
  servo2.attach(10);
  servo1.write(0);
  servo2.write(90);
}

void loop() {
  // Read the value of the joystick
  joystickXValue = analogRead(joystickXPin);
  joystickYValue = analogRead(joystickYPin);

  // Map the joystick values to servo motor position
  servo1Position = map(joystickXValue, 0, 1023, 75, 105);

  // Write the servo1 to its new position
  servo1.write(servo1Position);

  // Generate 10-microsecond pulse to TRIG pin
  digitalWrite(TRIG_PIN, HIGH);
  delayMicroseconds(10);
  digitalWrite(TRIG_PIN, LOW);

  // Measure duration of pulse from ECHO pin
  long duration = pulseIn(ECHO_PIN, HIGH);

  // Calculate the distance
  float distance = 0.017 * duration;

  // Print the distance to Serial Monitor

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Serial.print("Distance: ");
Serial.print(distance);
Serial.println(" cm");

// Map the distance to servo2 motor position
servo2Position = map(distance, 0, DISTANCE_THRESHOLD, 0, 180);

// Write the servo2 to its new position
servo2.write(servo2Position);

// If an object is detected within 10 cm, activate the servo1
if (distance < DISTANCE_THRESHOLD) {
  for (int i = 0; i < 3; i++) {
    for (int j = 0; j < 10; j++) {
      servo1.write(j);
      delay(100);
    }
    for (int j = 10; j >= 0; j--) {
      servo1.write(j);
      delay(100);
    }
  }
}
}
```