// PROJECT  :ServoKnob

// PURPOSE  :Strengthened version of the Servo | Knob example

// COURSE   :ICS3U

// AUTHOR   :C. D'Arcy

// DATE     :2024 05 10

// MCU      :328P

// STATUS   :Working

// REFERENCE:https://docs.arduino.cc/learn/electronics/servo-motors/

// REFERENCE:https://www.arduino.cc/reference/en/libraries/servo/

#include <Servo.h>  // Day 1: Library Use

Servo myServo;      // create servo object to control a servo

#define SPEED   15  // the angular rotation pace

#define POTGND  A0  // configure the potentiometer

#define POTPIN  A1  //

#define POTVCC  A2  //

#define SERVO   9   // Must use this pin to access Timer1

uint16\_t reading;   // variable to store the value from the analog input

void setup() {

  Serial.begin(9600);

  while (!Serial);

  pinMode(POTGND, OUTPUT);    // configure the potentiometer

  pinMode(POTVCC, OUTPUT);    //

  digitalWrite(POTGND, LOW);  //

  digitalWrite(POTVCC, HIGH); //

  myServo.attach(SERVO);      // attaches the servo on pin 9 to the servo object

}

void loop() {

 // reads the value of the potentiometer (value between 0 and 1023)

 reading = analogRead(POTPIN);

 // scale it for use with the servo (value between 0 and 180)

 reading = map(reading, 0, 1023, 0, 180);

 // set the servo position according to the scaled value

 myServo.write(reading);

 // permit servo to reach and hold the requested position

 delay(SPEED);

 // echo the horn position

 Serial.print(myServo.read());

 Serial.println("°");

}

// PROJECT  :ServoSweep

// PURPOSE  :Strengthened version of the Servo | Sweep example

// COURSE   :ICS3U

// AUTHOR   :C. D'Arcy

// DATE     :2024 05 10

// MCU      :328P

// STATUS   :Working

// REFERENCE:https://docs.arduino.cc/learn/electronics/servo-motors/

// REFERENCE:https://www.arduino.cc/reference/en/libraries/servo/

#include <Servo.h>    // Day 1: Library

Servo myServo;        // create servo object to control a servo

#define SERVO   9     // control pin for the servo (Timer1)

#define SPEED   15    // the angular rotation pace

void setup() {

  Serial.begin(9600);

  while (!Serial);

  myServo.attach(SERVO);  // attaches the servo to pin 9 (Timer1) to the servo object

}

void loop() {

  // rotate from 0° to 180° in steps of 1°

  for (uint8\_t pos = 0; pos <= 180; pos++) {

    myServo.write(pos);     // tell servo to go to position in variable 'pos'

    delay(SPEED);           // permit servo to reach and hold the requested position

    Serial.print(myServo.read());

    Serial.println("°");

  }

  // rotates from 180° to 0° in steps of 1°

  for (int16\_t pos = 180; pos >= 0; pos--) {

    myServo.write(pos);     // tell servo to go to position in variable 'pos'

    delay(SPEED);           // permit servo to reach and hold the requested position

    Serial.print(myServo.read());

    Serial.println("°");

  }

}

