Initialize

Servo myservo;

*const int button1 = 2;*

*const int button2 = 3;*

*int bv1 = 0;*

*int bv2 = 0;*

*int pos = 0;*

Set up pin modes & pin attachments

*pinMode(button1, INPUT\_PULLUP);*

*pinMode(button2, INPUT\_PULLUP);*

*myservo.attach(9);*

Else

Rotate servo to midpoint (such that it can rotate in both directions)

*myservo.write(45);*

Reading inputs from pushbuttons

*bv1 = digitalRead(button1);*

*bv2 = digitalRead(button2);*

Update the angle and rotate motor

*pos = pos+22;*

*delay(100);*

*myservo.write(pos);*

Reading inputs from pushbuttons

*pos = pos-22;*

*delay(100);*

*myservo.write(pos);*

If bv1 = 0

Else if bv2 = 0

Initialize

*Stepper mystepper (2048,8,10,9,11);*

*const int button1 = 2;*

*const int button2 = 3;*

*int bv1 = 0;*

*int bv2 = 0;*

*int step = 0;*

Else if bv2 = 0

Set up pin modes & motor speed

*pinMode(button1, INPUT\_PULLUP);*

*pinMode(button2, INPUT\_PULLUP);*

*mystepper.setSpeed(15);*

`

Update angle and rotate stepper motor

*mystepper.step(256);*

*delay(100);*

Update angle and rotate stepper motor

*mystepper.step(256);*

*delay(100);*

If bv1 = 0

Else

Reading inputs from pushbuttons

*bv1 = digitalRead(button1);*

*bv2 = digitalRead(button2);*

yReading ≥ 0

yReading < 0

Else

If xReading > 0

yReading > 0

yReading ≤ 0

While

Rotate stepper motor

*mystepper.step(-30);*

Set stepper motor speed

*rpm = map(yReading, 0, -6, 0, 17);*

*mystepper.setSpeed(rpm);*

Update reading input from joystick

*yReading = readAxis(A1);*

Update angle and rotate servo motor

*pos = pos-22;*

*delay(100);*

*myservo.write(pos);*

Self-defined function for reading signals from joystick

*int readAxis(int thisAxis)*

*{*

*int reading = analogRead(thisAxis);*

*reading = map(reading, 0, 1023, 0, range);*

*int distance = reading - center;*

*if (abs(distance) < threshold)*

*{*

*distance = 0;*

*}*

*return distance;*

*}*

If xReading > 0

Update angle and rotate servo motor

*pos = pos+22;*

*delay(100);*

*myservo.write(pos);*

Update reading input from joystick

*yReading = readAxis(A1);*

Rotate stepper motor

*mystepper.step(30);*

Set stepper motor speed

*rpm = map(yReading, 0, 6, 0, 17);*

*mystepper.setSpeed(rpm);*

While

Reading inputs from joystick

*int xReading = readAxis(A0);*

*int yReading = readAxis(A1);*

Set up pin attachment for servo motor, rotate it to midpoint (such that it can rotate in both directions), and set up motor speed

*mystepper.setSpeed(15);*

*myservo.attach(7);*

*myservo.write(90);*

Initialize

*Stepper mystepper(2048,8,10,9,11);*

*Servo myservo;*

*const int xAxis = A0;*

*const int yAxis = A1;*

*int step = 0;*

*int pos = 0;*

*int range = 12;*

*int threshold = range / 4;*

*int center = range / 2;*

*int rpm = 0;*