Define parameters

#define echoPin 11

#define trigPin 12

const int button1 = 2;

const int button2 = 3;

int bv1 = 0;

int bv2 = 0;

int pos = 0;

int angle;

double Setpoint = 8.14;

double Input;

double Output = 0;

double Kp=0.01, Ki=30, Kd=0.03;

long duration;

Servo myservo;

PID myPID(&Input, &Output, &Setpoint, Kp, Ki, Kd, DIRECT);

Bv2 = LOW

Bv1 = LOW

Decrease Setpoint by 0.1 cm

Setpoint = Setpoint - 0.1;

delay(20);

Increase Setpoint by 0.1 cm

Setpoint = Setpoint + 0.1;

delay(20);

else

Result display

Serial.print(Input);

Serial.print(",");

Serial.println(Setpoint);

PID control

myPID.Compute();

angle = round(Output);

myservo.write(angle);

Read inputs from pushbuttons

bv1 = digitalRead(button1);

bv2 = digitalRead(button2);

Initialize

Serial.begin(9600);

pinMode(button1, INPUT\_PULLUP);

pinMode(button2, INPUT\_PULLUP);

pinMode(trigPin, OUTPUT);

pinMode(echoPin, INPUT);

digitalWrite(trigPin, LOW);

myservo.attach(9);

myservo.write(42);

myPID.SetMode(AUTOMATIC);

myPID.SetTunings(Kp, Ki, Kd);