```
1-#include <Servo.h>
#include <Keypad.h>

//Setting Keypad configs
const byte ROWS = 4; //four rows
const byte COLS = 4; //four columns
char keys[ROWS][COLS] = {
  {'7','8','9','/'},
  {'4','5','6','*'},
  {'1','2','3','-'},
  {'O','0','=','+'}
};
byte rowPins[ROWS] = {23, 25, 27, 29}; //connect to the row pinouts of the keypad
byte colPins[COLS] = {31,33, 35,37}; //connect to the column pinouts of the keypad

Keypad keypad = Keypad( makeKeymap(keys), rowPins, colPins, ROWS, COLS );
//Servo
Servo servo;  // create servo object to control a servo

int potpin = 0;  // analog pin used to connect the potentiometer
int val;   // variable to read the value from the analog pin


void setup() {
  servo.attach(9,1000,2000);  // attaches the servo on pin 9 to the servo object
   Serial.begin(9600);
}
void loop() {
  // put your main code here, to run repeatedly:
```

```
  for(int i=0;i<=90;i++){


    servo.write(i);

    Serial.println(i);

    delay(10);

    }


    delay(10);

    for(int i=90;i>=0;i--){


    servo.write(i);

    Serial.println(i);

    delay(10);

    }




}




2-#include <Servo.h>

#include <Keypad.h>


//Setting Keypad configs

const byte ROWS = 4; //four rows

const byte COLS = 4; //four columns

char keys[ROWS][COLS] = {
```

```
    {'7','8','9','/'},

    {'4','5','6','*'},

    {'1','2','3','-'},

    {'O','0','=','+'}

};

byte rowPins[ROWS] = {23, 25, 27, 29}; //connect to the row pinouts of the keypad

byte colPins[COLS] = {31,33, 35,37}; //connect to the column pinouts of the keypad


Keypad keypad = Keypad( makeKeymap(keys), rowPins, colPins, ROWS, COLS );

//Servo

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


int potpin = 0;  // analog pin used to connect the potentiometer


void setup() {

  servo.attach(9,1000,2000);  // attaches the servo on pin 9 to the servo object

   Serial.begin(9600);

}

void loop() {

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

  static String degree="";

  char key = keypad.getKey();

  if(key == '='){


    int value = degree.toInt() - 180 ;

    Serial.print(value);

    value = map(value , -180, +180 ,0 , 180);

    servo.write(value);

    delay(5000);
```

```
    degree="";



    }else if(key=='0' || key=='1' || key=='2' || key=='3' || key=='4' || key=='5' || key=='6' || key=='7' ||
key=='8' || key=='9' ) {



    degree+=key;



    }




}




3-#include <Servo.h>

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


int potpin = 0;  // analog pin used to connect the potentiometer

int flag=0; //if flag=0 the number is + ;

void setup() {

  servo.attach(9 , 1000 , 2000);  // attaches the servo on pin 9 to the servo object

  Serial.begin(9600);

  servo.write(90);

}

void loop() {

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

```arduino
if (Serial.available() > 0) {

  int data = Serial.read();
  static int number = 0;

  if(data == (int)'-'){
    flag=1;

  } else if(data == (int)'=')
  {
    Serial.println("\n Degree:");
    int numberQ = -1 * (number);
    if(flag==1){
      numberQ = -1 * (numberQ);
      flag=0;
    }
    int value = map(numberQ ,-360 ,+360 ,0 ,180);
    servo.write(value);
    Serial.println(numberQ);
    number = 0;
    numberQ =0;
    delay(100);
  }else if((char)data == '0' ||(char)data == '1' ||(char)data == '2' ||(char)data == '3' ||(char)data == '4'
||(char)data == '5' ||(char)data == '6' ||(char)data == '7' ||(char)data == '8' ||(char)data == '9'){

    number = number*10 + (data - (int)'0');
  }
}
```

```
}


4-
#include <Servo.h>
Servo servo;  // create servo object to control a servo
int val;
void setup() {
  // put your setup code here, to run once:
  servo.attach(9,1000,2000);  // attaches the servo on pin 9 to the servo object
  Serial.begin(9600);


}


void loop() {
  // put your main code here, to run repeatedly:
  Serial.print("Potentiometer: ");
  val = analogRead(A0);          // reads the value of the potentiometer (value between 0 and 1023)
  val = map(val, 0, 1023, 0, 180);    // scale it to use it with the servo (value between 0 and 180)
  Serial.println(val);
  servo.write(val);
  delay(1000);


}
```