

Menoufia University

Faculty of Electronic Engineering

Embedded Systems (Lab.)

(servo motor)

DEPARTMENT:

➡ **Department of Engineering and Computer Science, 4rd year**

STUDENT NAME:

● **امجد مجدي فتحي سيد احمد**

➡ **سكشن (1)**

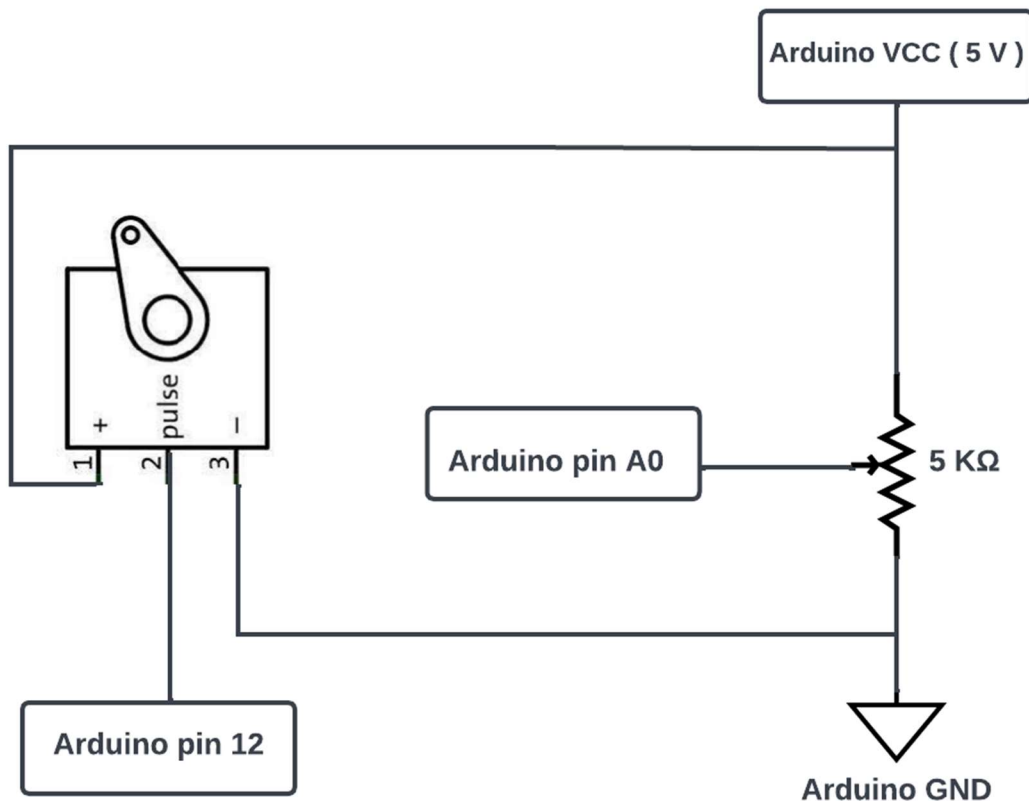
➡ **مجموعه (8)**

Task #4 (LM35):

We are going to have a servo motor connected with Arduino and the Arduino will read the analog value coming from the potentiometer and the servo movement is controlled by changing the potentiometer value. Display the results using serial communication.

Required components for this lab:

- ↪ Breadboard
- ↪ Wires (male - male)
- ↪ 1 potentiometer (5K Ω or 10K Ω).
- ↪ 1 servo motor.

Circuit diagram:

Code:

```
#include "Servo.h"
#define pot A0
#define servo 12

Servo servoMotor;

int potReading = 0 ;

void setup() {
    Serial.begin(9600);
    pinMode(pot, INPUT);
    servoMotor.attach(servo);
}

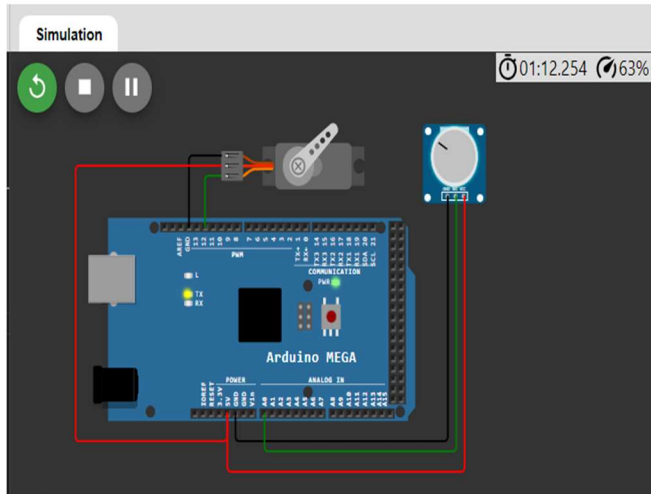
void loop() {
    int potReading = analogRead(pot);
    float servoValue = potReading * (180 / 1023.0);

    servoMotor.write(servoValue);

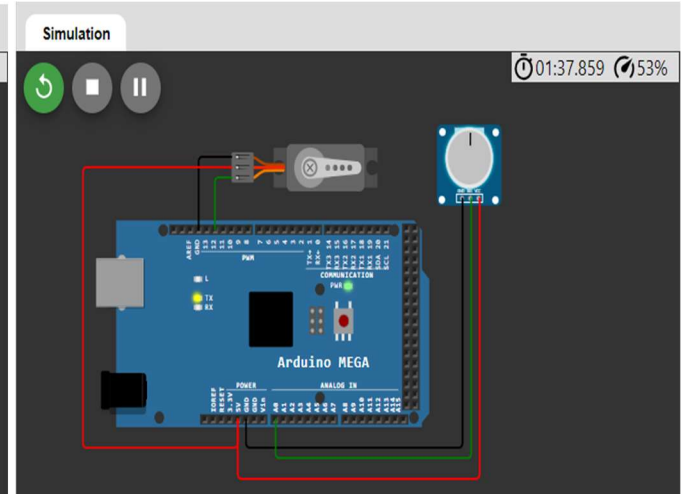
    Serial.print("Analog Reading: ");
    Serial.print(potReading);
    Serial.print(", Degree Of Servo: ");
    Serial.println(servoValue);
    delay(100);
}
```

Simulation:

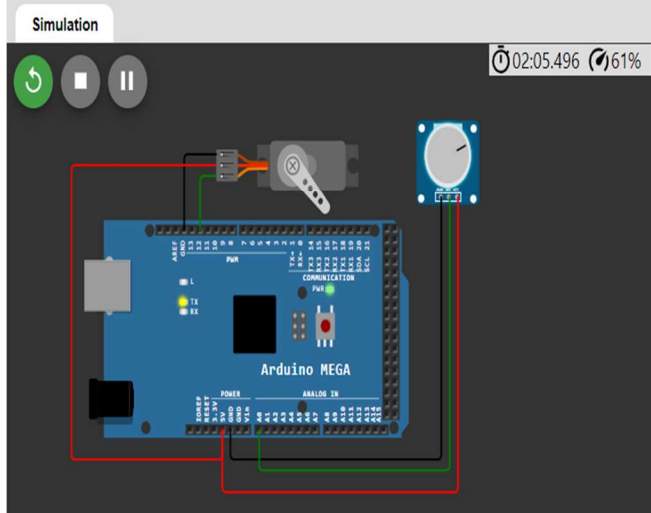
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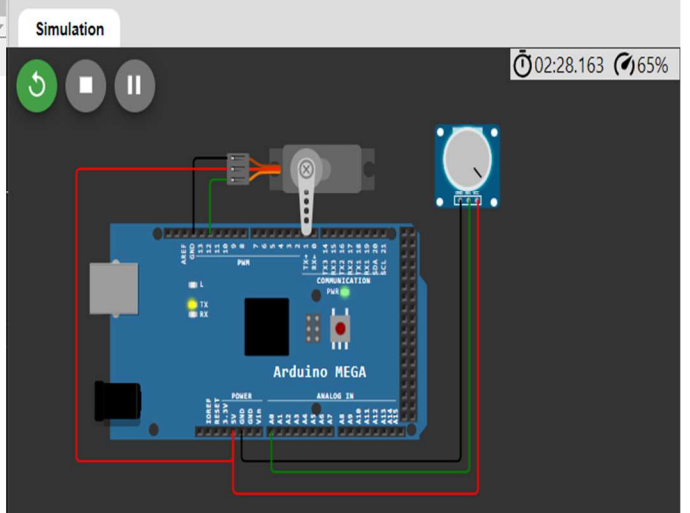
Analog Reading: 289, Degree Of Servo: 50.85
 Analog Reading: 289, Degree Of Servo: 50.85
 Analog Reading: 289, Degree Of Servo: 50.85
 Analog Reading: 289, Degree Of Servo: 50.85



Analog Reading: 514, Degree Of Servo: 90.44
 Analog Reading: 514, Degree Of Servo: 90.44
 Analog Reading: 514, Degree Of Servo: 90.44
 Analog Reading: 514, Degree Of Servo: 90.44



Analog Reading: 763, Degree Of Servo: 134.25
 Analog Reading: 763, Degree Of Servo: 134.25
 Analog Reading: 763, Degree Of Servo: 134.25
 Analog Reading: 763, Degree Of Servo: 134.25
 Analog Reading: 763, Degree Of Servo: 134.25



Analog Reading: 1023, Degree Of Servo: 180.00
 Analog Reading: 1023, Degree Of Servo: 180.00
 Analog Reading: 1023, Degree Of Servo: 180.00
 Analog Reading: 1023, Degree Of Servo: 180.00
 Analog Reading: 1023, Degree Of Servo: 180.00

My Simulation to run code:

<https://wokwi.com/projects/396003103905647617>

Or Scan QR Code:

