

Course Name: Internet Of Things Lab

Course code: 21CSP-344

Experiment 2.3

Aim: Assemble and Controlling of multiple actuators using Arduino Uno for any IoT Application.

Objectives:

- Learn about servo motor.
- Learn how to assemble multiple actuators.

Hardware:

- Arduino
- LED
- Motor
- Buzzer

Description:

Arduino:

It is an open-source electronics platform. It consists ATmega328 8-bit Micro controller. It can be able to read inputs from different sensors & we can send instructions to the micro controller in the Arduino. It provides Arduino IDE to write code & connect the hardware devices like Arduino boards & sensors.

Servo Motors:

Servo motors are popular in IoT because of their precision, accuracy, and ability to provide feedback about their position or angle. Servomotors have three wires: power, ground, and signal. The power wire is typically red, and should be connected to the 5V pin on the Arduino board. The ground wire is typically black or brown and should be connected to a ground pin on the board. The signal pin is typically yellow or orange and should be connected to PWM pin on the board.

Code:

```
#include <Servo.h>
```

```
Servo myservo;
```

```
int pos = 0;
```

```
void setup() {
```

```
    myservo.attach(8);
```

```
}
```

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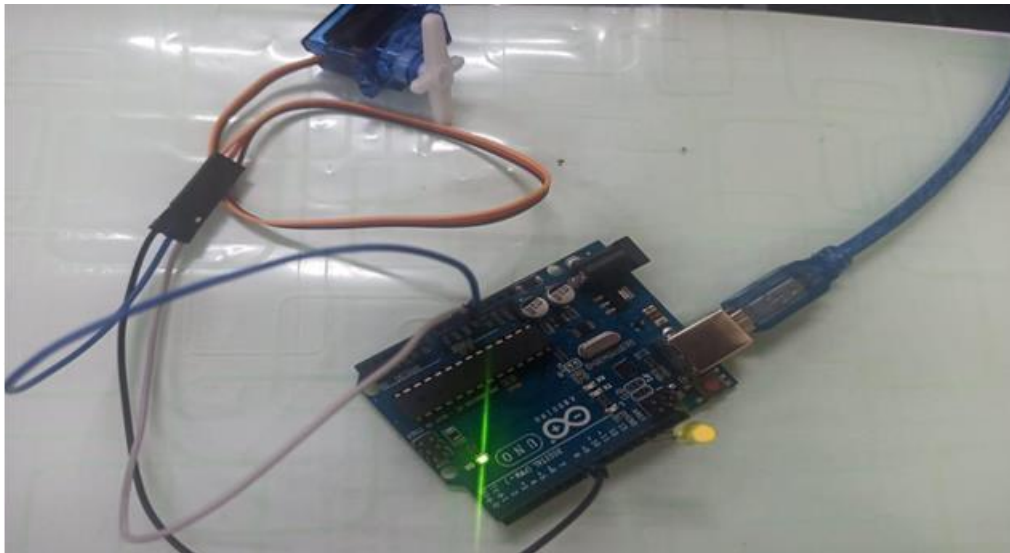
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```
void loop() {
  for (pos = 0; pos <= 180; pos += 1) {
    myservo.write(pos); // Set servo position
    delay(15);
  }

  for (pos = 180; pos >= 0; pos -= 1) {
    myservo.write(pos); // Set servo position
    delay(15);
  }

  digitalWrite(13, HIGH);
  delay(1000);
  digitalWrite(13, LOW);
  delay(500);
}
```

Output:



Learning Outcomes:

1. *Learn the use of sensors.*
2. *Learn to perform task on real hardware without using any virtual platform.*
3. *Learn to know about how servo motor works.*