## Experiment 2.3

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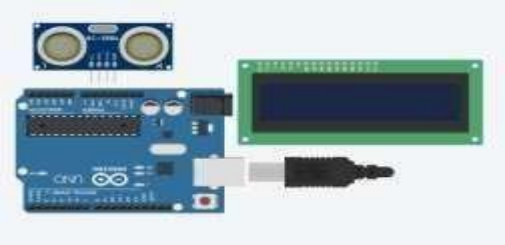
**Branch: BE-CSE** **Section/Group: IOT_627-B**
**Semester: 05** **Date of Performance: 20/09/24**
**Subject Name: IOT** **Subject Code: 22CSP-329**

1. **Aim:** To Assemble and Controlling of actuators using Arduino Uno.

2. **Objective:**
   1. Learn about interfacing.
   2. Learn about IoT programming.

3. **Hardware Required:**
   1.Arduino Uno R3
   2.Servo Motor, Led
   3.Male to Female Jumper Wire
   4.Software: Arduino IDE



4. **Procedure:**
   1.Setup the Circuit:

   2.Blue LED: Connect the anode to pin 2 and the cathode to groundvia a resistor.

   3.Red LED: Connect the anode to pin 3 and the cathode to groundvia a resistor.

   4.Motor: Connect one terminal to pin 6 and the other to pin 7.

   5.Upload Code:
   6.Upload the provided code to the Arduino using a USB cable

   7.The blue LED will turn on, and the motor will spin in one directionfor 1 second.

   8.Both will turn off for 1 second.

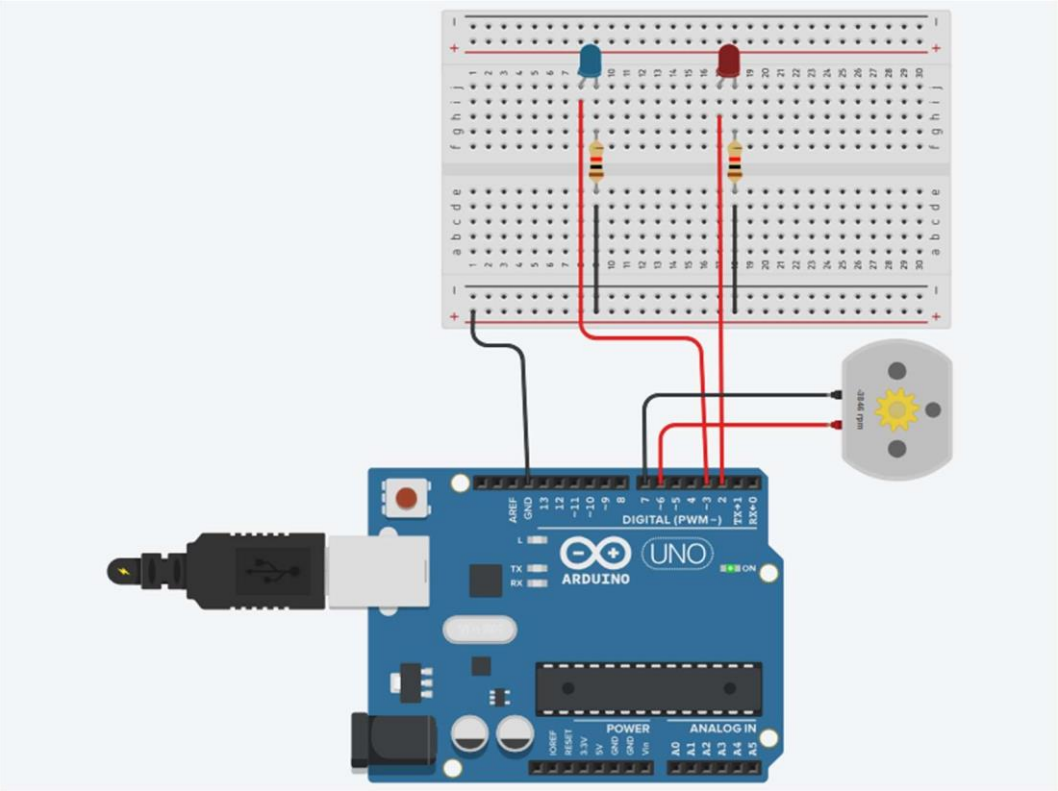
   9.The red LED will turn on for 1 second, then turn off.

   10.The motor will reverse direction for 1 second, stop, and the cyclewill repeat.

**5.Code:**

```
const int blueLedPin = 2;
const int redLedPin = 3;
const int motorPin1 = 6;
const int motorPin2 = 7;

void setup() {
pinMode(blueLedPin, OUTPUT);
 pinMode(redLedPin, OUTPUT);
pinMode(motorPin1, OUTPUT);
pinMode(motorPin2, OUTPUT);
}

void loop() {
digitalWrite(blueLedPin, HIGH);
digitalWrite(motorPin1, HIGH);
digitalWrite(motorPin2, LOW);
 delay(1000);

digitalWrite(blueLedPin, LOW);
digitalWrite(motorPin1, LOW);
digitalWrite(motorPin2, LOW);
delay(1000);

digitalWrite(redLedPin, HIGH);
delay(1000);

digitalWrite(redLedPin, LOW);
delay(1000);

digitalWrite(motorPin1, LOW);
digitalWrite(motorPin2, HIGH);
 delay(1000);
digitalWrite(motorPin2, LOW);
delay(1000);
}
```

**6.Output:**




## 7.Learning Outcomes:

1.Learn how to control multiple LEDs using Arduino digital pins

2.Understand motor direction control using digital outputs.

3.Gain experience in using delays to manage timing in Arduino projects.

4.Practice wiring and setting up basic components like LEDs and motors on a breadboard

5.Develop skills in writing and uploading Arduino code for automated hardware control.