

Experiment No. : 03

Statement :

Make a light intensity meter that represent light intensity on 5 LEDs, such that all LEDs would glow for maximum light, no LED would glow for dark condition, and likewise for in between light intensities.

Date of Exp. : xx/xx/xxxx

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```
const int LDRPin = A0; // LDR connected
to analog pin A0 const int ledPin1 = 1;
// LED connected to
digital pin 2 const int ledPin2 = 2;
// LED connected to
digital pin 3 const int ledPin3 = 3;
// LED connected to
digital pin 4 const int ledPin4 = 4;
// LED connected to
digital pin 5 const int ledPin5 = 5;
// LED connected to
digital pin 6
```

```
void setup() {
  pinMode(ledPin1,
  OUTPUT);
  pinMode(ledPin2,
  OUTPUT);
  pinMode(ledPin3,
  OUTPUT);
  pinMode(ledPin4,
  OUTPUT);
  pinMode(ledPin5,
  OUTPUT);
  Serial.begin(9600); // Initialize serial communication for
  debugging
}
```

```
void loop() {
```

```
int lightIntensity = analogRead(LDRPin);    // Read analog value
from LDR
int brightness = map(lightIntensity, 0, 1023, 0, 5); // Map the
analog value to number of LEDs to light up

// Turn off all
LEDs
digitalWrite(ledPin
1, LOW);
digitalWrite(ledPin
2, LOW);
digitalWrite(ledPin
3, LOW);
digitalWrite(ledPin
4, LOW);
digitalWrite(ledPin
5, LOW);
```

```

// Turn on LEDs based on mapped
brightness value if (brightness >=
1) {
    digitalWrite(ledPin
1,          HIGH);
    digitalWrite(ledPin
2,          HIGH);
    digitalWrite(ledPin
3,          HIGH);
    digitalWrite(ledPin
4,          HIGH);
    digitalWrite(ledPin
5, HIGH);
}
if (brightness >= 2)
{
    digitalWrite(ledPin
1, HIGH);
    digitalWrite(ledPin
2, HIGH);
    digitalWrite(ledPin
3, HIGH);
    digitalWrite(ledPin
4, HIGH);
    digitalWrite(ledPin
5, HIGH);
}
if (brightness >= 3) {
    digitalWrite(ledPin1,
HIGH);
    digitalWrite(ledPin2,
HIGH);
    digitalWrite(ledPin3,
HIGH);
    digitalWrite(ledPin4,
HIGH);
    digitalWrite(ledPin5,
HIGH);
}
if (brightness >= 4)
{
    digitalWrite(ledPin

```

```
1, HIGH);
digitalWrite(ledPin
2, HIGH);
digitalWrite(ledPin
3, HIGH);
digitalWrite(ledPin
4, HIGH);
digitalWrite(ledPin
5, HIGH);
}
if (brightness >= 5) {
  digitalWrite(ledPin1,
HIGH);
  digitalWrite(ledPin2,
HIGH);
  digitalWrite(ledPin3,
HIGH);
  digitalWrite(ledPin4,
HIGH);
  digitalWrite(ledPin5,
HIGH);
}

delay(50); // Small delay to prevent rapid reading
}
```

