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## Topik 8 - Praktikum Smart Farming V2 dengan Monitoring Suhu, Kelembaban, Intensitas Cahaya dan Display berbasis Mobile Apps/IoS

### 1. Challenge : Lampu Otomatis berdasarkan Intensitas Cahaya

<https://wokwi.com/projects/396505167014568961>

Wokwi simulation interface showing a light sensor circuit. The code in sketch.ino is as follows:

```
1 const float GAMMA = 0.7;  
2 const float RL10 = 50;  
3  
4  
5  
6 void setup() {  
7   Serial.begin(115200);  
8   pinMode(12, OUTPUT);  
9 }  
10  
11 void loop() {  
12   int analogValue = analogRead(25);  
13   float voltage = analogValue * 5/4095.0;  
14   float resistance = 2000 * voltage / (1 - voltage / 5);  
15   float lux = pow(RL10 * 1e3 * pow(10, GAMMA) / resistance, (1 / GAMMA));  
16   Serial.print("Lux: ");  
17   Serial.println(lux);  
18  
19   if (lux >= 50){  
20     Serial.print("Status: ");  
21     Serial.println("Terang");  
22   } else {  
23     Serial.print("Status: ");  
24     Serial.println("Gelap");  
25   }  
26   delay(100);  
27 }  
28
```

The simulation output shows the following data:

Status	Lux
Terang	118.60
Terang	111.21
Terang	122.14

Wokwi simulation interface showing the same light sensor circuit. The code in sketch.ino is as follows:

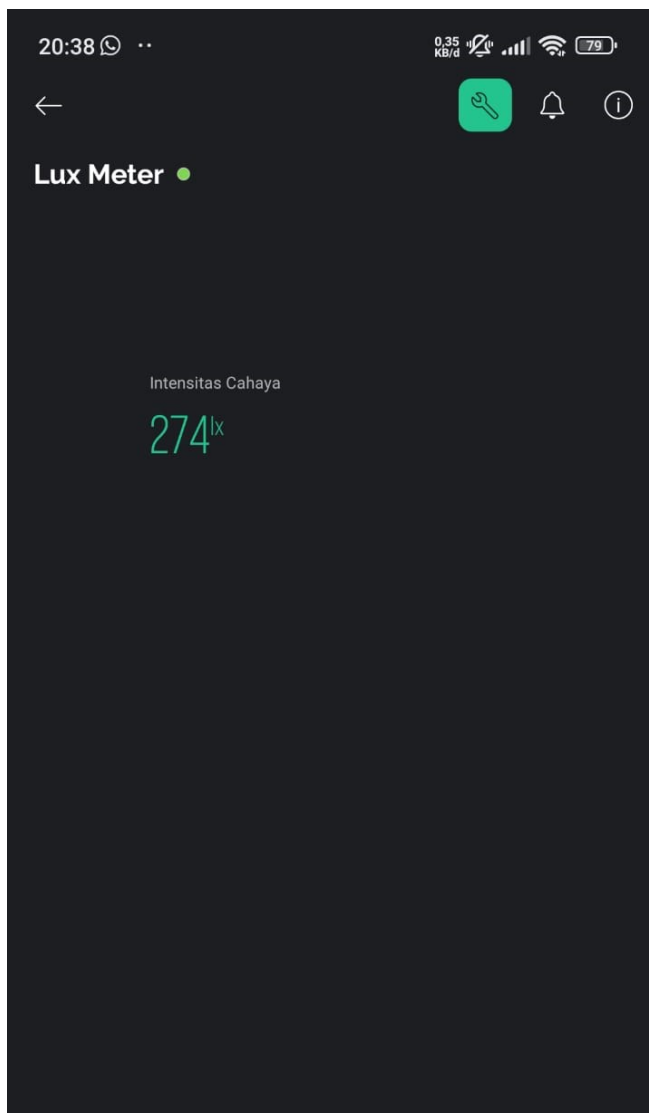
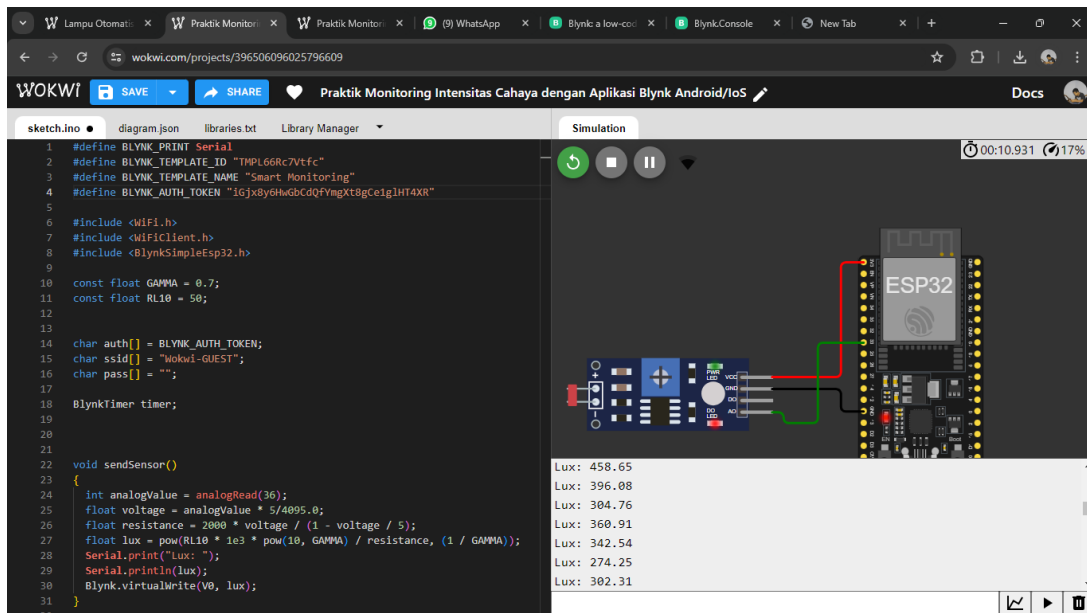
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16   Serial.print("Lux: ");  
17   Serial.println(lux);  
18  
19   if (lux < 50){  
20     Serial.print("Status: ");  
21     Serial.println("Terang");  
22   } else {  
23     Serial.print("Status: ");  
24     Serial.println("Gelap");  
25   }  
26   delay(100);  
27 }  
28
```

The simulation output shows the following data:

Status	Lux
Gelap	113.72
Gelap	147.14
Gelap	125.09

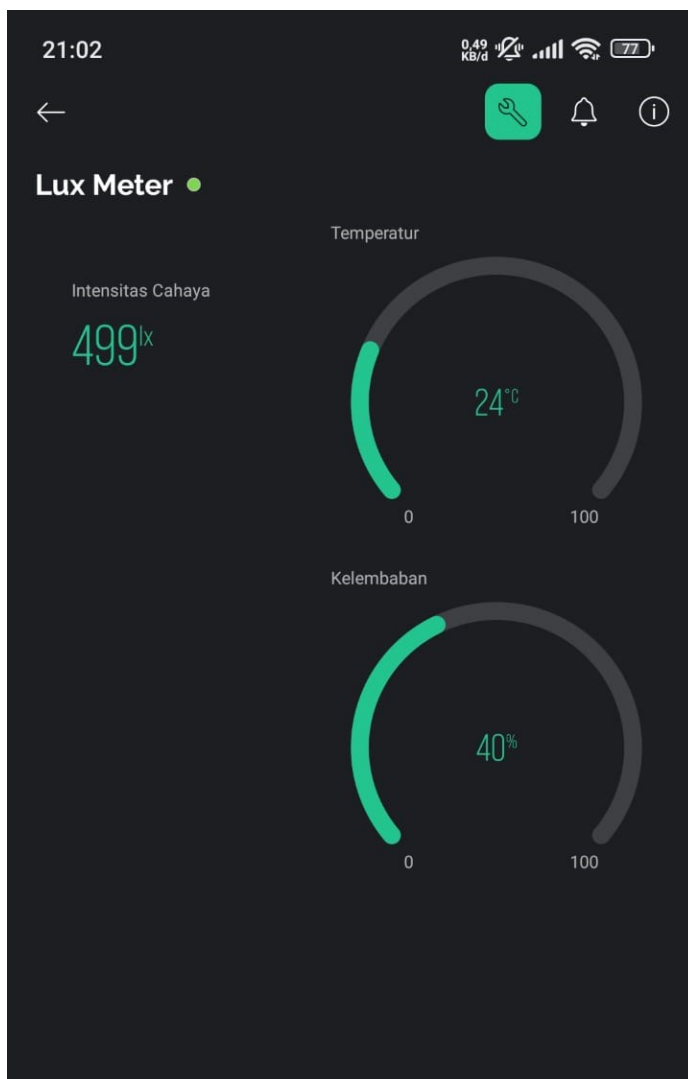
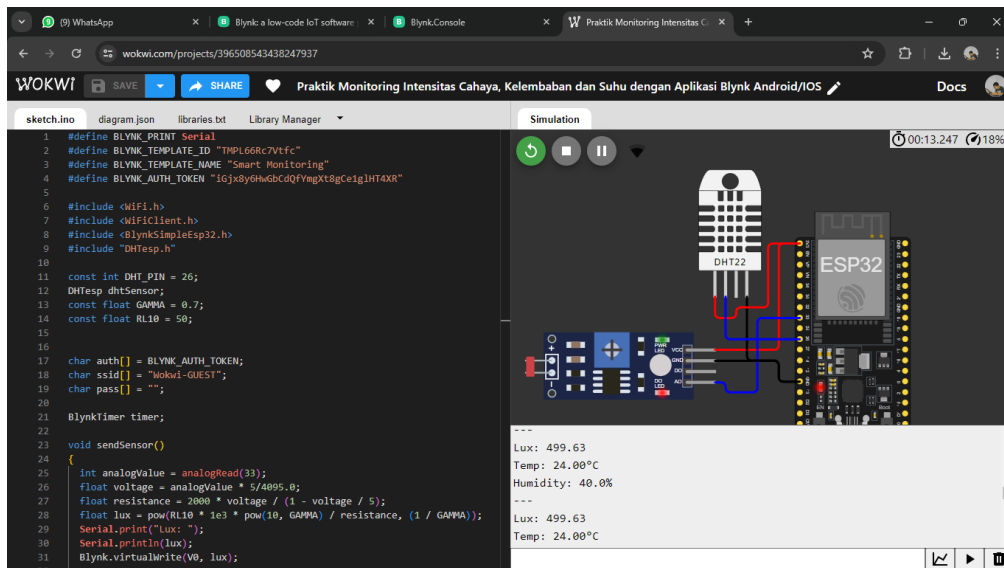
## 2. Praktik Monitoring Intensitas Cahaya dengan Aplikasi Blynk Android/iOS

<https://wokwi.com/projects/396506096025796609>



### 3. Praktik Monitoring Intensitas Cahaya, Kelembaban dan Suhu dengan Aplikasi Blynk Android/IOS

<https://wokwi.com/projects/396508543438247937>



#### 4. Challenge : Case Study

<https://wokwi.com/projects/396509815306597377>

Jika suhu <18 derajat maka led Merah menyala menandakan kondisi untuk menyalakan Heater karena temperature ruang terlalu dingin. Jika suhu  $\geq 19$  derajat led biru menyala menandakan Kondisi untuk menyalakan Cooler, karena temperature terlalu panas.

