19BEC0358 ARPIT PATAWAT

IOT TASK 1 (L37+L38)

AIM – TO MEASURE LIGHT INTENSITY IN THE ROOM AND SEND OUTPUT DATA TO WEBAPI

Software tools:

•TinkerCad

•ThingSpeak

Components required:

• Arduino UNO R3

• LED –Red

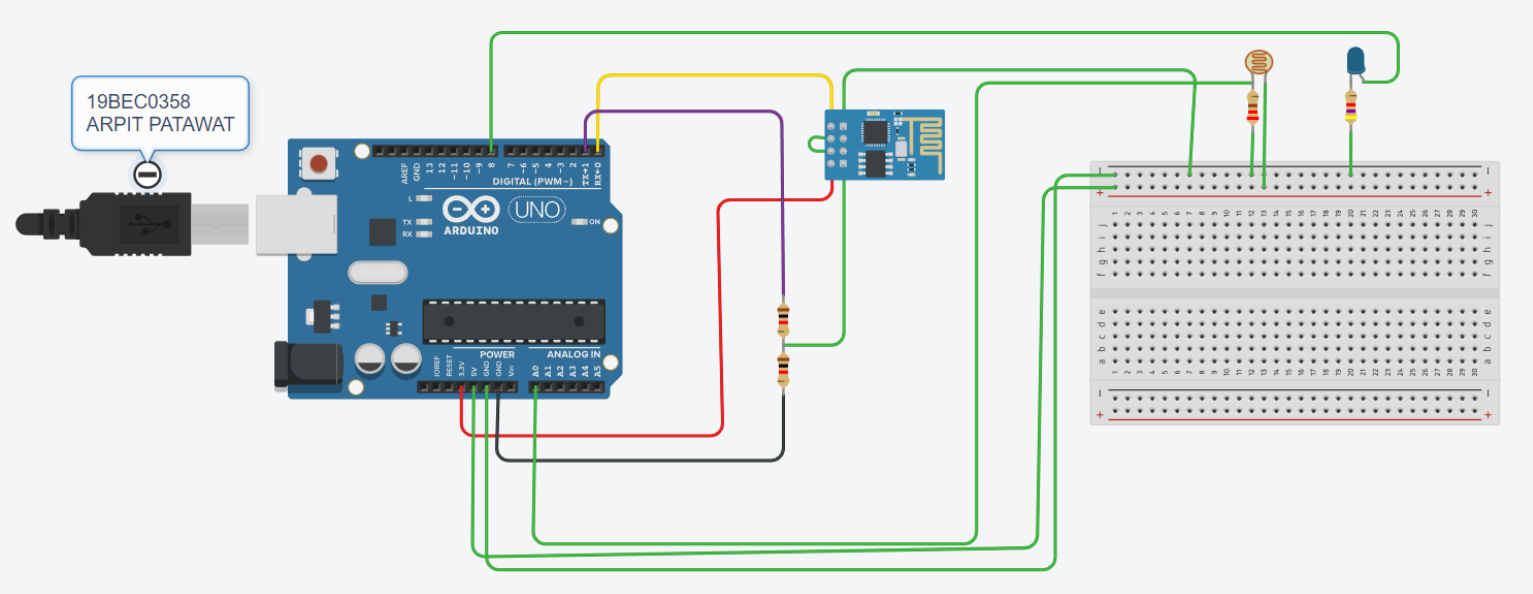
• Resistor –220 ohm

• Resistor –4.7K ohm

• Photoresistor

• Wifi module ESP8266

• Breadboard



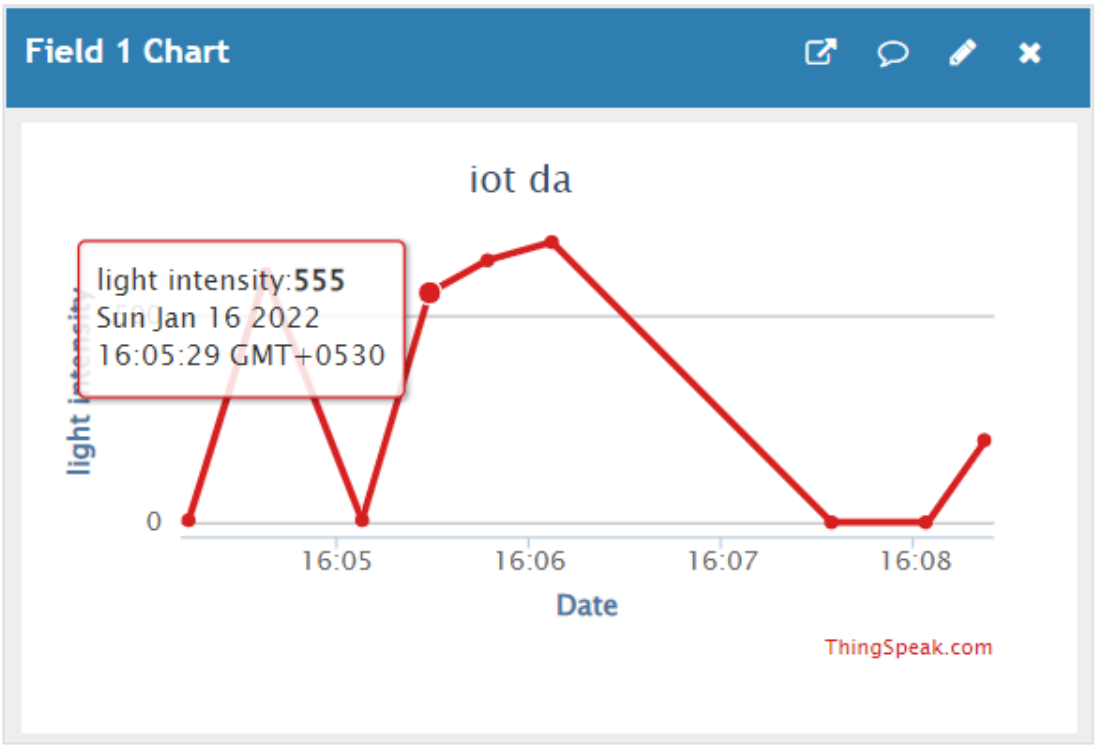
Circuit Diagram →

Code→

```
//19BEC0358 ARPIT PATAWAT IOT DA 1
String ssid     = "Simulator Wifi";  // SSID to connect to
String password = ""; // Our virtual wifi has no password
String host     = "api.thingspeak.com"; // Open Weather Map API
const int httpPort   = 80;
String url   = "/update?api_key=OMPQYIH9IVI2HZBS&field1=";

int setupESP8266(void) {
  // Start our ESP8266 Serial Communication
  Serial.begin(115200);   // Serial connection over USB to computer
  Serial.println("AT");   // Serial connection on Tx / Rx port to ESP8266
  delay(10);       // Wait a little for the ESP to respond
  if (!Serial.find("OK")) return 1;

  // Connect to 123D Circuits Simulator Wifi
  Serial.println("AT+CWJAP=\"" + ssid + "\",\"" + password + "\"");
  delay(10);       // Wait a little for the ESP to respond
  if (!Serial.find("OK")) return 2;

  // Open TCP connection to the host:
  Serial.println("AT+CIPSTART=\"TCP\",\"" + host + "\"," + httpPort);
  delay(50);       // Wait a little for the ESP to respond
  if (!Serial.find("OK")) return 3;

  return 0;
}

void anydata(void) {
  digitalWrite(8,HIGH);
  int sensorValue = analogRead(A0);
  Serial.println(sensorValue);
  // Construct our HTTP call
  String httpPacket = "GET " + url + String(sensorValue) + " HTTP/1.1\r\nHost: " + host + "\r\n\r\n";
  int length = httpPacket.length();

  // Send our message length
  Serial.print("AT+CIPSEND=");
  Serial.println(length);
  delay(10); // Wait a little for the ESP to respond if (!Serial.find(">")) return -1;

  // Send our http request
  Serial.print(httpPacket);
  delay(10); // Wait a little for the ESP to respond
  if (!Serial.find("SEND OK\r\n")) return;
  digitalWrite(8,LOW);

}
```

```
void setup() {
  pinMode(A0,INPUT);
  pinMode(8,OUTPUT);
  Serial.begin(9600);
  setupESP8266();

}

void loop() {

 anydata();

 delay(1000);
}
```

Output→



```
1
AT+CIPSEND=84
GET /update?api_key=OMPQYIH9IVI2HZBS&field1=1 HTTP/1.1
Host: api.thingspeak.com

1
AT+CIPSEND=84
GET /update?api_key=OMPQYIH9IVI2HZBS&field1=1 HTTP/1.1
Host: api.thingspeak.com

1
AT+CIPSEND=84
GET /update?api_key=OMPQYIH9IVI2HZBS&field1=1 HTTP/1.1
Host: api.thingspeak.com

199
AT+CIPSEND=86
GET /update?api_key=OMPQYIH9IVI2HZBS&field1=199 HTTP/1.1
Host: api.thingspeak.com

199
AT+CIPSEND=86
GET /update?api_key=OMPQYIH9IVI2HZBS&field1=199 HTTP/1.1
Host: api.thingspeak.com

199
AT+CIPSEND=86
GET /update?api_key=OMPQYIH9IVI2HZBS&field1=199 HTTP/1.1
Host: api.thingspeak.com
```

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