**GROUP 9**

**EXPERIMENT 4**

**OBJECTIVE: DATA PUBLISH AND SUBSCRIBE IN SAME PROGRAM USING LDR**

**BLOCK DIAGRAM:**

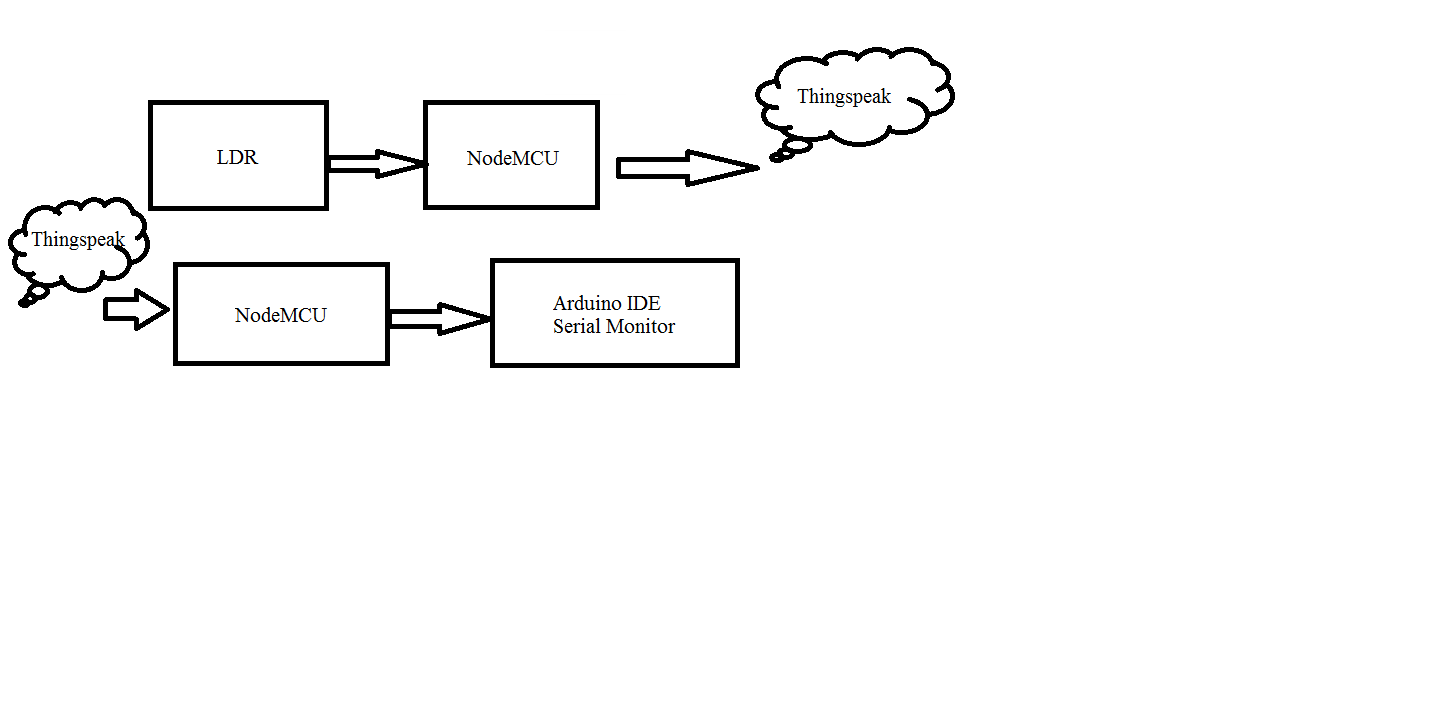
****

FIG 1A

**EXPLANATION:**

The LDR sensor is connected to the Thingspeak IoT cloud server via NodeMCU, and the sensed value from the LDR is sent to the cloud with the help of the wi-fi module in NodeMCU. By using ESP8266 wi-fi module, the uploaded data in Thingspeak is then published and displayed in the Arduino IDE Serial Monitor.

**APPARATUS:**

* LDR
* NodeMCU
* Jumper wire
* USB Cable
* Breadboard

**PROGRAM:**

#include <ESP8266WiFi.h>;

#include <WiFiClient.h>;

#include <ThingSpeak.h>;

const char\* ssid = "Codermaker";

const char\* password = "babi1pal";

WiFiClient client;

unsigned long myChannelNumber = 1397491;

const char \* myWriteAPIKey = "MDG3OGR1VX53M1PL";

const char \* myReadAPIKey = "6Z2VMQTYP5TUKY1N";

int led\_1;

int ldr = A0;

int val =0;

void setup() {

Serial.begin(115200);

delay(10);

WiFi.begin(ssid, password);

ThingSpeak.begin(client);

}

void loop() {

val = analogRead(ldr);

Serial.println(val);

ThingSpeak.writeField(myChannelNumber, 1,val, myWriteAPIKey);

led\_1 = ThingSpeak.readIntField(myChannelNumber, 1, myReadAPIKey);

Serial.println("DATA FROM THINGSPEAK");

Serial.println(led\_1);

delay(15000);

}

**OUTPUT**:

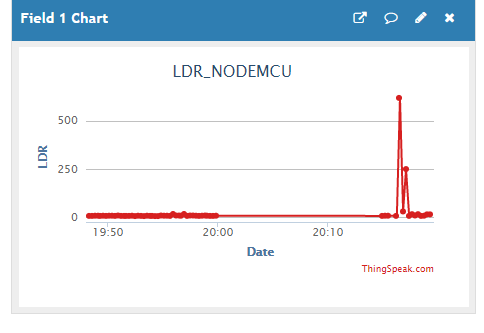


FIG 1B

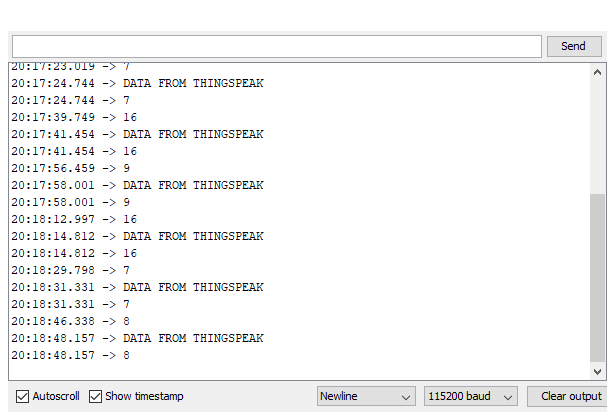


FIG 1C