Air Quality Monitoring

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#define BLYNK_TEMPLATE_ID "TMPL3IQs5F73H"

#define BLYNK_TEMPLATE_NAME "AQM"

#define BLYNK_AUTH_TOKEN "xKg1ful6LQKU2cl4Xbg6t3rnQ1IE-u4z"

#include "MQ135.h"

#include <SoftwareSerial.h>

#define DEBUG true

SoftwareSerial esp8266(9,10); // This makes pin 9 of Arduino as RX pin and pin 10 of Arduino as the TX pin

const int sensorPin= 0;

int air_quality;

#include <LiquidCrystal.h>

LiquidCrystal lcd(12,11, 5, 4, 3, 2);


void setup() {

pinMode(8, OUTPUT);

lcd.begin(16,2);

lcd.setCursor (0,0);

lcd.print ("circuitdigest ");

lcd.setCursor (0,1);

lcd.print ("Sensor Warming ");

delay(1000);

Serial.begin(115200);

esp8266.begin(115200); // your esp's baud rate might be different

 sendData("AT+RST\r\n",2000,DEBUG); // reset module

 sendData("AT+CWMODE=2\r\n",1000,DEBUG); // configure as access point

 sendData("AT+CIFSR\r\n",1000,DEBUG); // get ip address

 sendData("AT+CIPMUair_quality=1\r\n",1000,DEBUG); // configure for multiple connections
```

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 sendData("AT+CIPSERVER=1,80\r\n",1000,DEBUG); // turn on server on port 80
pinMode(sensorPin, INPUT);       //Gas sensor will be an input to the arduino
lcd.clear();
}

void loop() {
MQ135 gasSensor = MQ135(A0);
float air_quality = gasSensor.getPPM();
if(esp8266.available()) // check if the esp is sending a message
  {
  if(esp8266.find("+IPD,"))
  {
    delay(1000);
    int connectionId = esp8266.read()-48; /* We are subtracting 48 from the output because the read() function returns the ASCII decimal value and the first decimal number which is 0 starts at 48*/
    String webpage = "<h1>IOT Air Pollution Monitoring System</h1>";
      webpage += "<p><h2>";
       webpage+= " Air Quality is ";
      webpage+= air_quality;
      webpage+=" PPM";
      webpage += "<p>";
    if (air_quality<=1000)
{
  webpage+= "Fresh Air";
}
else if(air_quality<=2000 && air_quality>=1000)
{
  webpage+= "Poor Air";
}
```
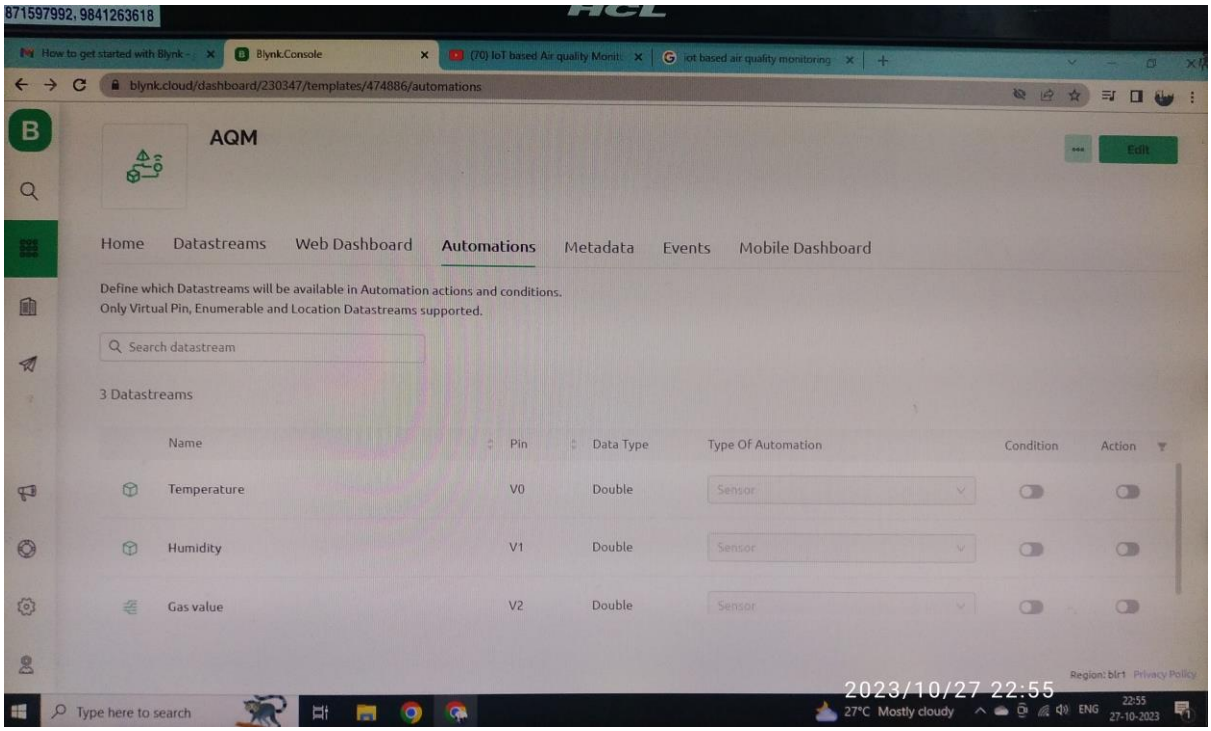
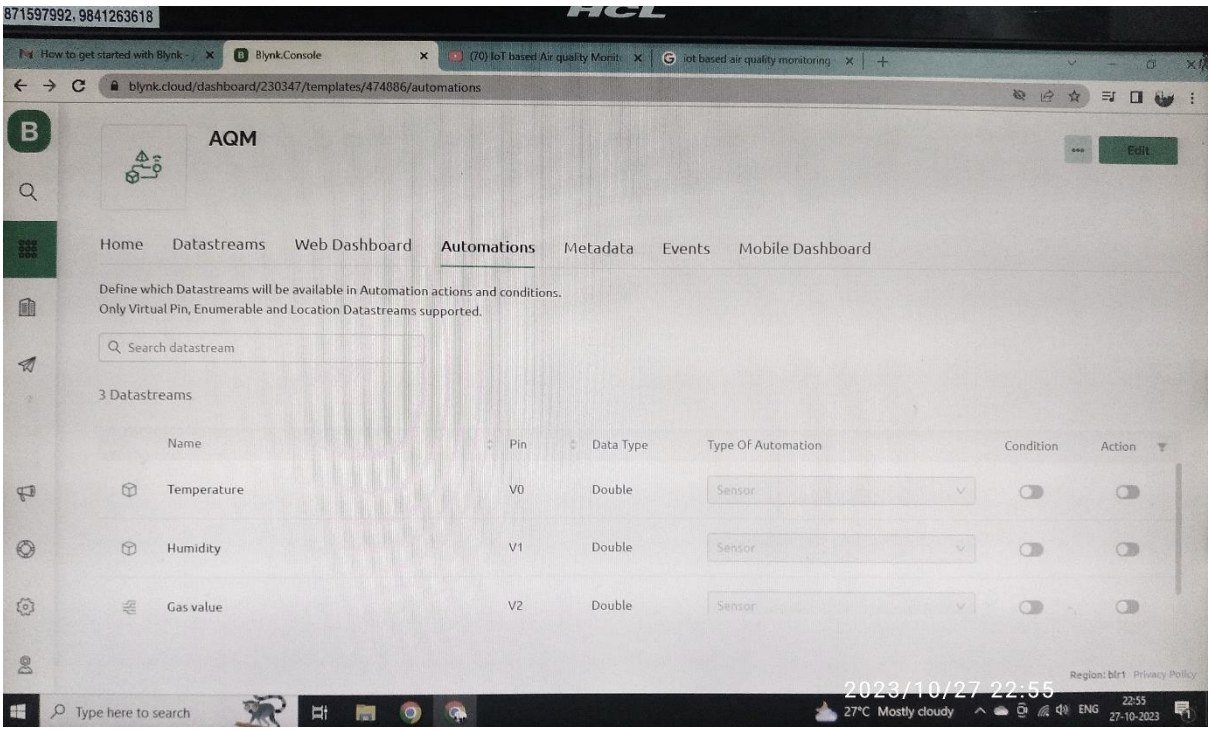
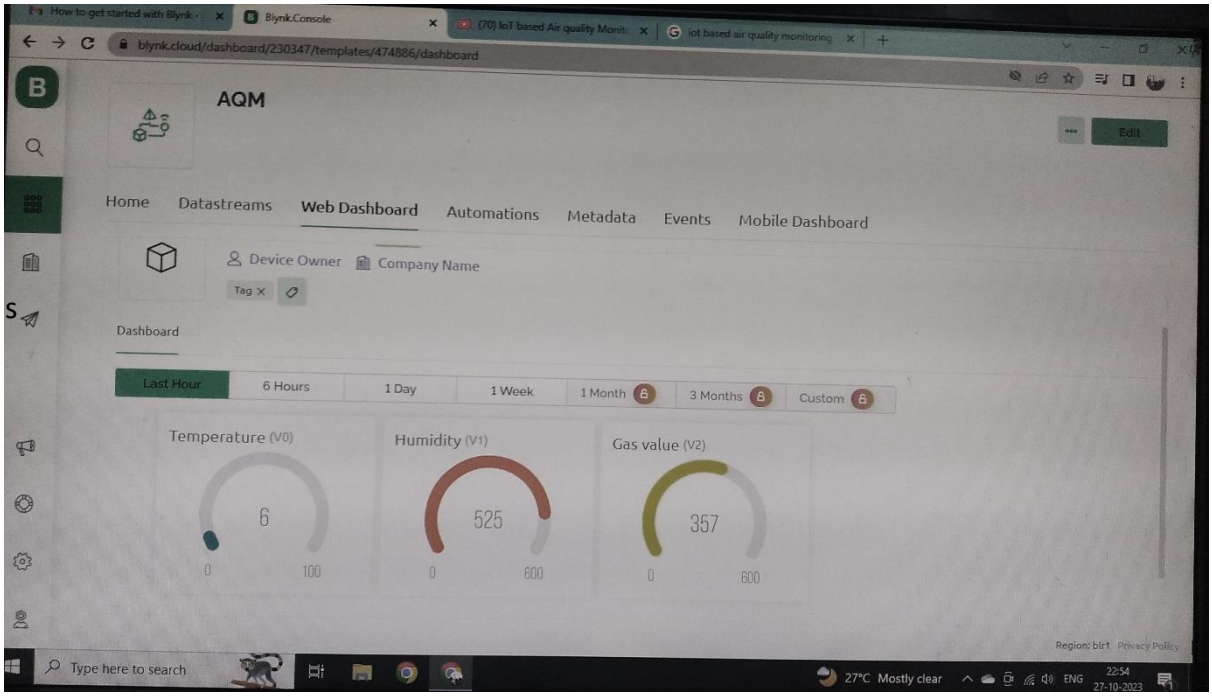

```
else if (air_quality>=2000 )
{
webpage+= "Danger! Move to Fresh Air";
}
webpage += "</h2></p></body>";
   String cipSend = "AT+CIPSEND=";
    cipSend += connectionId;
    cipSend += ",";
    cipSend +=webpage.length();
    cipSend +="\r\n";
    sendData(cipSend,1000,DEBUG);
    sendData(webpage,1000,DEBUG);
     cipSend = "AT+CIPSEND=";
    cipSend += connectionId;
    cipSend += ",";
    cipSend +=webpage.length();
    cipSend +="\r\n";
   String closeCommand = "AT+CIPCLOSE=";
    closeCommand+=connectionId; // append connection id
    closeCommand+="\r\n";
    sendData(closeCommand,3000,DEBUG);
   }
 }
lcd.setCursor (0, 0);
lcd.print ("Air Quality is ");
lcd.print (air_quality);
lcd.print (" PPM ");
lcd.setCursor (0,1);
if (air_quality<=1000)
```

```
{
lcd.print("Fresh Air");
digitalWrite(8, LOW);
}
else if( air_quality>=1000 && air_quality<=2000 )
{
lcd.print("Poor Air, Open Windows");
digitalWrite(8, HIGH );
}
else if (air_quality>=2000 )
{
lcd.print("Danger! Move to Fresh Air");
digitalWrite(8, HIGH);   // turn the LED on
}
lcd.scrollDisplayLeft();
delay(1000);
}
String sendData(String command, const int timeout, boolean debug)
{
   String response = "";
   esp8266.print(command); // send the read character to the esp8266
   long int time = millis();
   while( (time+timeout) > millis())
  {
    while(esp8266.available())
     {
      // The esp has data so display its output to the serial window
        char c = esp8266.read(); // read the next character.
       response+=c;
```

```
    }
    }
   if(debug)
   {
     Serial.print(response);
   }
   return response;
}
```






How to get started with Blynk
Blynk.Console
(70) IoT based Air quality Monit
iot based air quality monitoring
blynk.cloud/dashboard/230347/templates/474886/dashboard
AQM
Edit
Home
Datastreams
Web Dashboard
Automations
Metadata
Events
Mobile Dashboard
Device Owner
Company Name
Tag
Dashboard
Last Hour
6 Hours
1 Day
1 Week
1 Month
3 Months
Custom
Temperature (V0)
6
0
100
Humidity (V1)
525
0
600
Gas value (V2)
357
0
600
Region: blr1
Privacy Policy
Type here to search
27°C Mostly clear
ENG
22:54
27-10-2023