MINI-PROJECT (GROUP – 2)

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Topic : Fog detection System.

Project GitHub Repo Link : https://github.com/Dwivedi1410/Fog-detection-System.git

Code of Sensor module in Arduino IDE :

```
#include <Wire.h>

#include <Adafruit_BMP085.h>

#include <esp8266.h>


#define seaLevelPressure_hPa 1013.25


TwoWire Wire(1); // I2C-1

Adafruit_BMP085 bmp;


ESP8266Class esp8266(1); // UART-1


char *AP = "realme";

char *PASS = "14102003";

char *HOST = "io.adafruit.com";

int PORT = 80;

char *KEY = "aio_MDZA84UjZgA5feWasqXKeV1moRpr";

char *URL = "/api/v2/codeharbour1410/feeds/temperature/data"; // Modify this with your Adafruit username
```

```
int countTrueCommand;
int countTimeCommand;
boolean found = false;

char atcommand[250] = {0,};
char data[250] = {0,};
char payload[250] = {0,};

float getSensorData() {
  return bmp.readTemperature(); // Change this to bmp.readPressure() or
bmp.readAltitude() if needed
}

void sendCommand(char *command, int maxTime, char readReplay[]) {

Serial.print("BMP085 Temperature = ");
Serial.print(bmp.readTemperature());
Serial.println(" *C");



  Serial.print(countTrueCommand);
  Serial.print(". at command => ");
  Serial.print(command);
  Serial.print(" ");
  while (countTimeCommand < (maxTime * 1))
  {
    esp8266.println(command);
    if (esp8266.find(readReplay))
```

```
    {
      found = true;
      break;
    }
    countTimeCommand++;
  }
  if (found == true)
  {
    Serial.println("-> OK");
    countTrueCommand++;
    countTimeCommand = 0;
  }
  if (found == false)
  {
    Serial.println("-> Fail");
    countTrueCommand = 0;
    countTimeCommand = 0;
  }
  found = false;
}

void setup() {
  Serial.begin(115200);
  esp8266.begin(115200);
  delay(2000);

  countTrueCommand = 0;
  countTimeCommand = 0;
```

```
  // Initialize BMP085 sensor
  if (!bmp.begin()) {
    Serial.println("Could not find a valid BMP085 sensor, check wiring!");
    while (1);
  }

  // Connect to WiFi
  sendCommand("AT", 5, "OK");
  sendCommand("AT+CWMODE=1", 5, "OK");
  memset(atcommand, 0, 250);
  sprintf(atcommand, "AT+CWJAP=\"%s\",\"%s\"", AP, PASS);
  sendCommand(atcommand, 10, "OK"); // Increased maxTime for connecting to AP
}

void loop() {
  sendCommand("AT+CIPMUX=1", 3, "OK");
  memset(atcommand, 0, 250);
  sprintf(atcommand, "AT+CIPSTART=0,\"TCP\",\"%s\",%d", HOST, PORT);
  sendCommand(atcommand, 5, "OK");

  memset(atcommand, 0, 250);
  memset(data, 0, 250);
  sprintf(data, "{\"value\": %.2f}", getSensorData()); // Modify this based on your
requirement
  sprintf(payload, "POST %s HTTP/1.1\r\nHost: %s\r\nContent-Type: application/json\r\nX-
AIO-Key: %s\r\nContent-Length: %d\r\n\r\n%s", URL, HOST, KEY, strlen(data), data);
  sprintf(atcommand, "AT+CIPSEND=0,%d", strlen(payload));
  sendCommand(atcommand, 4, ">");
  esp8266.println(payload);
  countTrueCommand++;
```

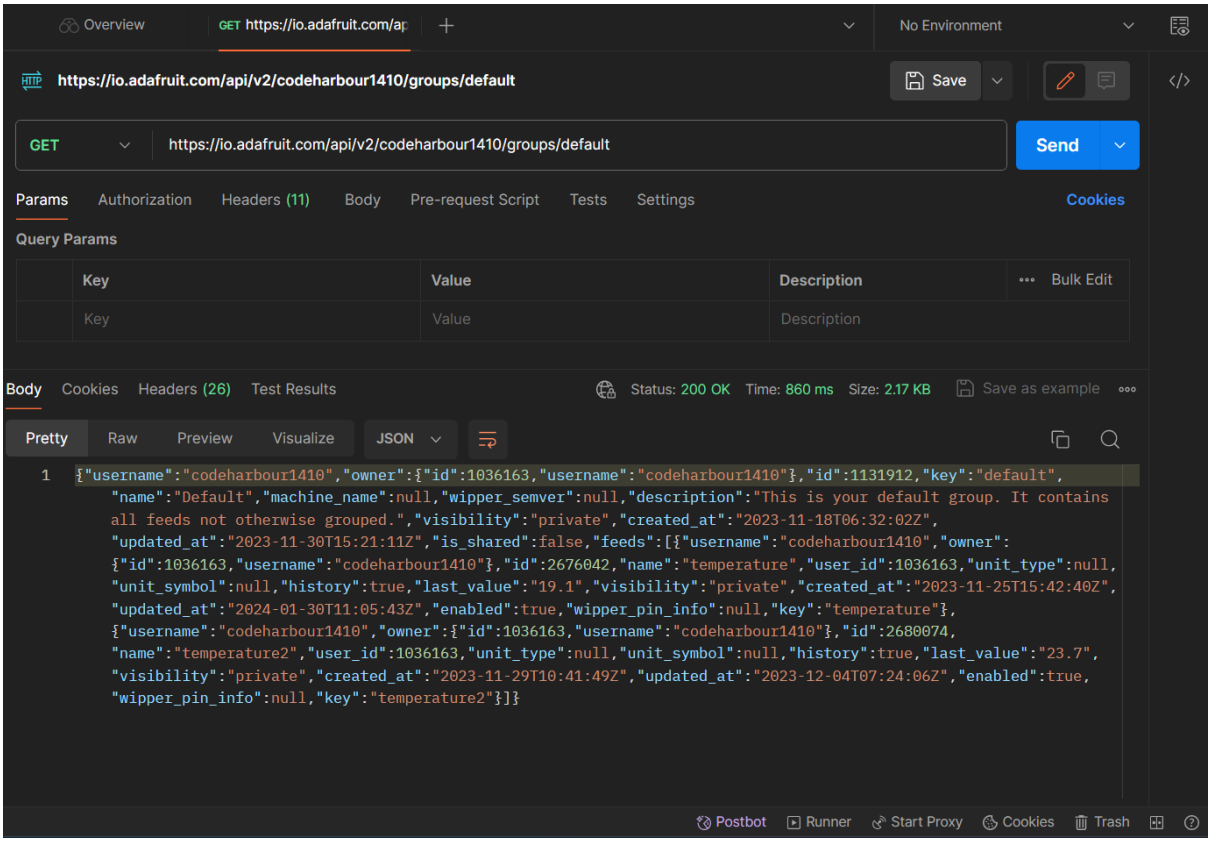
```
  delay(2000);

  delay(2000); // Added delay before closing the connection
  sendCommand("AT+CIPCLOSE=0", 5, "OK");
}
```

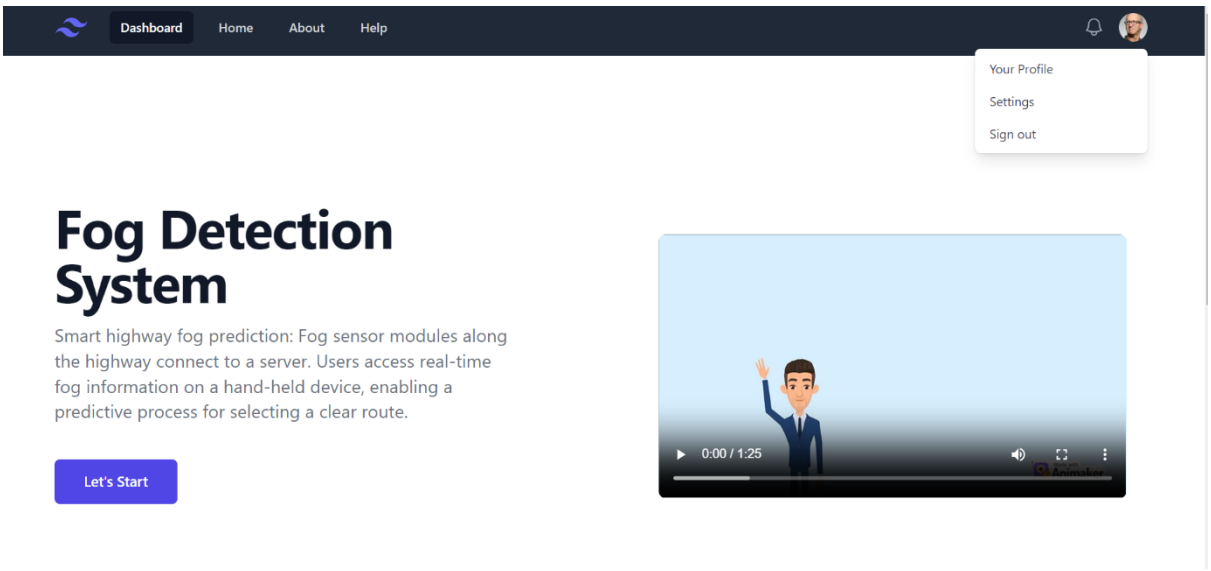
Data base Image :

Created at	Value
2024/01/30 04:35:43PM	19.1
2024/01/30 04:35:39PM	19.1
2024/01/30 04:35:34PM	19.1
2024/01/30 04:35:30PM	19.1
2024/01/30 04:35:25PM	19.1
2024/01/30 04:35:20PM	19.2
2024/01/30 04:35:16PM	19.2
2024/01/30 04:35:11PM	19.2
2024/01/30 04:35:07PM	19.2

Fetching Of Data in PostMan:



Application Images:



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