# Week - 8.

Aim: Write a Program on Arduino to retrieve Temperature and humidity data from the cloud.

Hardware Requirements:

1. Arduino UNO board.
2. Node MCU ESP8266 Breakout Board.
3. DHT-11 temperature and humidity sensor.
4. Jumper wires.
5. Bread Board.

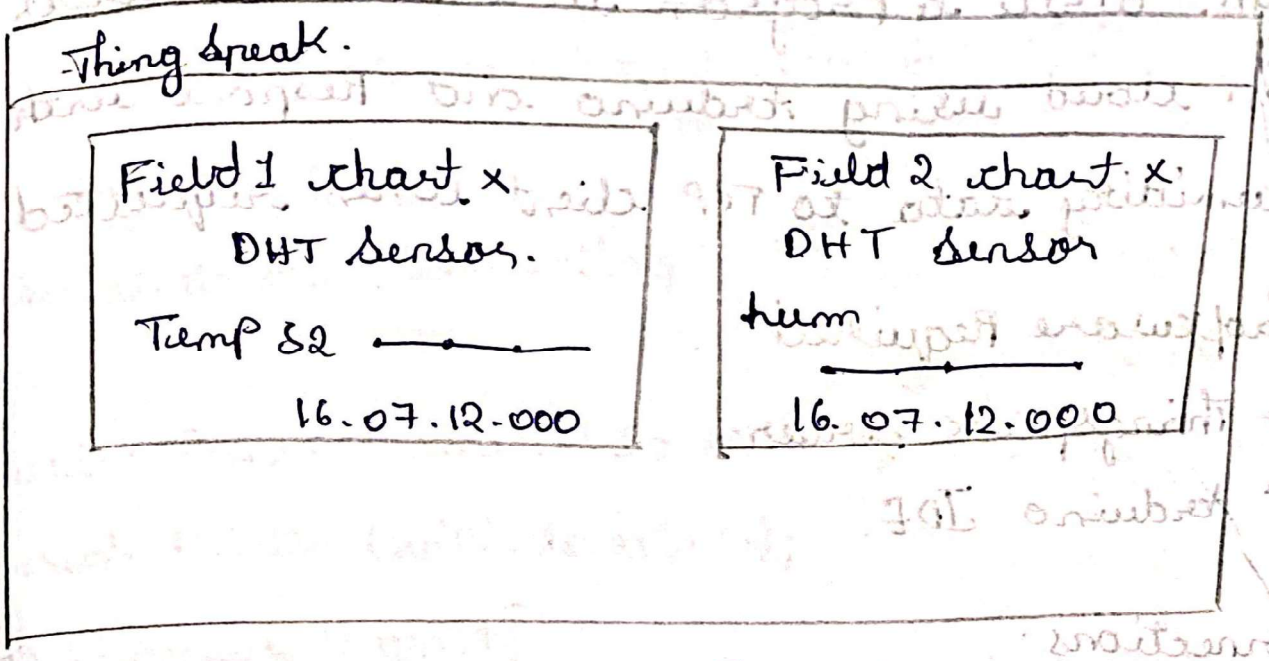
Source code:

```
#include<DHT.h>
#include<ESP8266WiFi.h>
String apikey="****";
Const char *ssid="xxxx";
const char *Server="api.thingspeak.com";
#define DHTPIN D3.
 DHT dht(DHTPIN, DHT11);
 WiFiClient client;
 Void Setup()
{
  Serial.begin(115200);
   delay(1000);
```

```
dht.begin();
Serial.Println("connecting to");
Serial.Println(ssid);
WiFi.begin(ssid, Pass);
while(WiFi.states() != WL_CONNECTED)
{
delay(500);
Serial.Print(".");
}
Serial.Println("");
Serial.println("WiFi connected");
}
void loop()
{
float h = dht.readHumidity();
float t = dht.readTemperature();
if (isnan(h) || isnan(t))
{
Serial.Println("Failed to read from DHT Sensor\");
return;
}
if (client.connect(server, 80))
{
String PostStr = apikey;
```

```
Poststr += "&field1=";
Poststr += String(h);
Poststr += "&field2=";
Poststr += String(t);
Poststr += "\r\n\r\n";
client.Print("X-THINGSPEAKAPIKEY: "+apikey+"\n");
client.Print("Content-Length: ");
client.Print(Poststr.length());
client.Print("\n\n");
client.Print(Poststr);
Serial.Print("Temperature:");
Serial.Print(t);
Serial.Print("degress celcius, Humidity:");
Serial.Print(h);
Serial.Println("% Send to thingspeak.");
}
client.stop();
Serial.Println("Waiting....");
delay(1000);
}
```

output:


Thing Speak.
Field 1 chart x
DHT Sensor.
Temp 52
16.07.12.000
Field 2 chart x
DHT Sensor
hum
16.07.12.000