**Experiment No: 5**

**Node MCU Cloud interfacing and programming using Thingspeak**

**Name of the Student**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_ **Div. & Roll No.\_\_\_\_\_\_**

**Aim**: Uploading the data on cloud using Thingspeak

**Components Required:**

1. Node MCU – 1
2. Micro USB Cable – 1
3. PC/Laptop – 1
4. Connecting Wires
5. Bread Board – 1
6. Temperature Sensor LM 35

**Software Required:**

Arduino IDE

**Theory:** We all are observed LM 35 temperature sensor during practical no. 3.

**Procedure:**

Step 1: Include Wi-Fi and ThingSpeak directories.

Step 2: Note that we already have wi-fi directory installed. If not, install it.

Step 3: Installing Thingspeak. Goto Sketch---Include Library---Manage Libraries---Write in Library Manage ‘Thingspeak’---Install latest version

Step 4: Goto www.google.com. Googlr -thingspeak login---Sign-in

Step 5: Create account if you don’t have one. Use vit.edu mail ID. Location India. Your name etc--- Continue

Step 6: Goto Channels --- My Channels--- New Channel

Step 7: Write Channel name, description (not mandatory)---Create two fields. Field 1- temp in degrees Celsius. Field 2- temp in Fahrenheit. Save.

Step 8: Copy Channel ID and paste it in the code. long myChannelNumber = 1587542;

Step 9: Goto API keys. Copy API key (Write API Key) and paste it in the code. const char myWriteAPIKey[] = "OMVXC2R3UOKGBNV1";

Step 10: Enter the wifi login and password in the code. (Same as in Expt 4). WiFi.begin("Login","Password");

Step 11: Write code for reading data from LM35 temperature sensor (Same as in Expt 3). ThingSpeak.begin(client); ------ Starts thingspeak

ThingSpeak.writeField (myChannelNumber, 1, tempc, myWriteAPIKey); ----- Displays temp in the field in thingspeak.

Step 12: Make hardware connections using node MCU and LM35, to sense and measure temperature.

Step 13: Upload sketch. The data (temp) will be displayed in the serial monitor. Also it will be collected and uploaded on cloud and displayed in the two fields.

Step 14: Observe the outputs.

**Conclusion:**

**(Along with conclusion students has to put here graph that appear on thing speak login and serial monitor output also)**

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