Experiment Number 2.3

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Subject ::	WSN Lab	CODE ::	CSD-331

1. Aim :

Interfacing of Temperature Sensor with Arduino.

2. requiremnets :

1. Tinkercad
2. TMP36
3. ESP8266
4. IFTTT Account

3. Description :

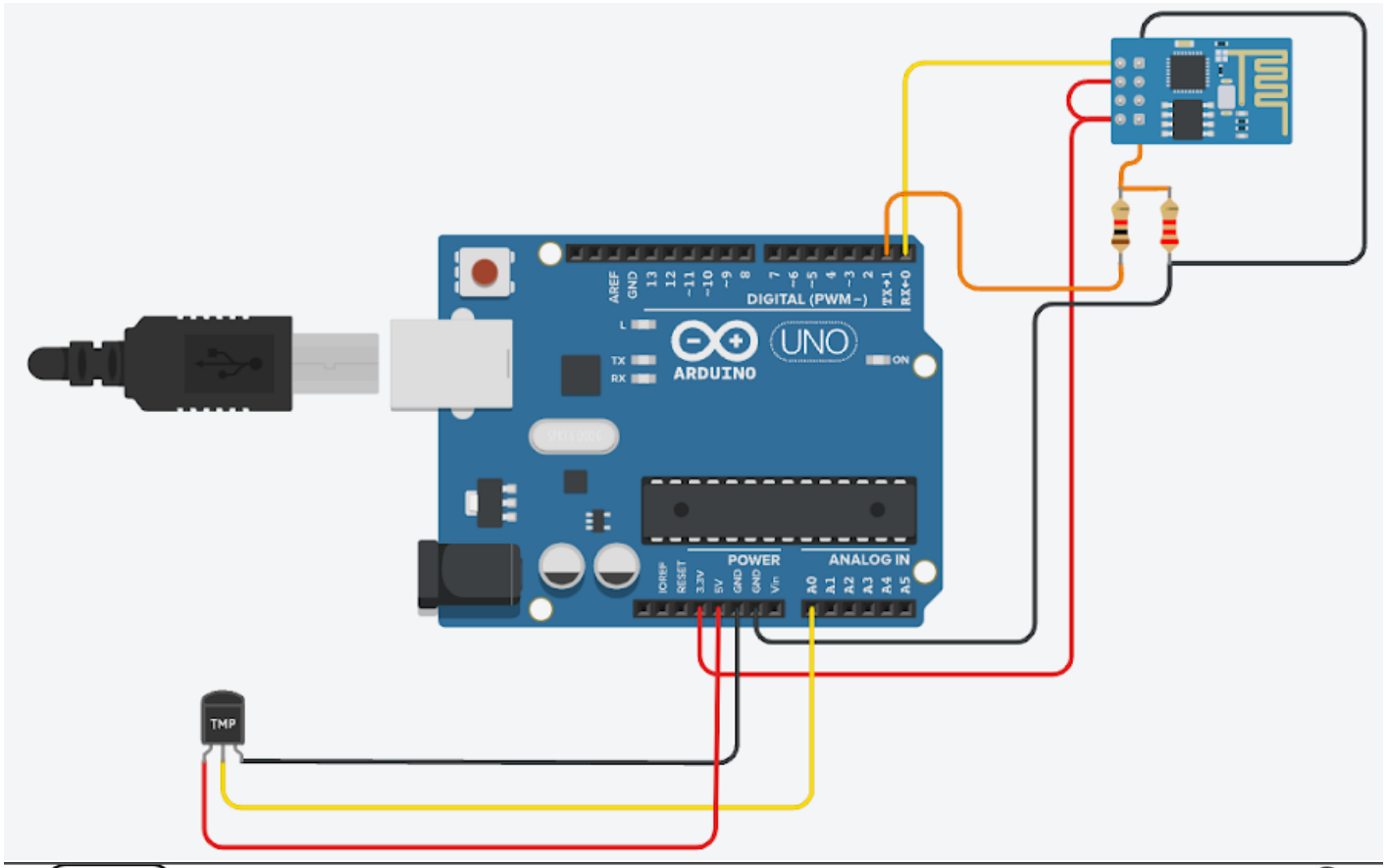
- Webhooks : receives value from the cloud and initiates application or event
- ThingHTTP: send values to webhooks and further webhooks initiates the event
- React : once created, helps in initialising ThingHTTP

4. Source Code :

```
String ssid = "Simulator Wifi"; // SSID to connect to
String password = "";           // Our virtual wifi has no password
String host = "api.thingspeak.com";

const int httpPort = 80;

String uri = "/update?api_key=V6RIT5K8USJM98M27S&field1=";

int setupESP8266(void)
{
    // Start our ESP8266 Serial Communication
    // Serial connection over USB to computer
    Serial.begin(115200);
    // Serial connection on Tx / Rx port to ESP8266
    Serial.println("AT");
    // Wait a little for the ESP to respond
    delay(10);

    if (!Serial.find("OK"))
        return 1;

    // Connect Simulator Wifi
    Serial.println("AT+CWJAP=\"" + ssid + "\",\"" + password + "\"");
    delay(10); // Wait a little for the ESP to respond

    if (!Serial.find("OK"))
        return 2;

    // Open TCP connection to the host:
    Serial.println("AT+CIPSTART=\"TCP\",\"" + host + "\"," + httpPort);
    delay(50); // Wait a little for the ESP to respond

    if (!Serial.find("OK"))
        return 3;

    return 0;
}
```

```
void anydata(void)
{
    int temp = map(analogRead(A0), 20, 358, -40, 125);
    // Construct our HTTP call
    String httpPacket = "GET " + uri + String(temp) + " HTTP/1.1\r\nHost:
        " + host + "\r\n\r\n";

    int length = httpPacket.length();
    // Send our message length
    Serial.print("AT+CIPSEND=");
    Serial.println(length);
    delay(10); // Wait a little for the ESP to respond if (!Serial.find
       (">")) return -1;

    Serial.print(httpPacket);
    delay(10); // Wait a little for the ESP to respond

    if (!Serial.find("SEND OK\r\n"))
        return;
}


void setup()
{
    setupESP8266();
}


void loop()
{
    anydata();
    delay(500);
}
```

5. Circuit :



Cancel

Create your own

Go beyond if this then that with queries, conditional logic, multiple actions, and more! Start free trial

You're using 1 of 3 Applets

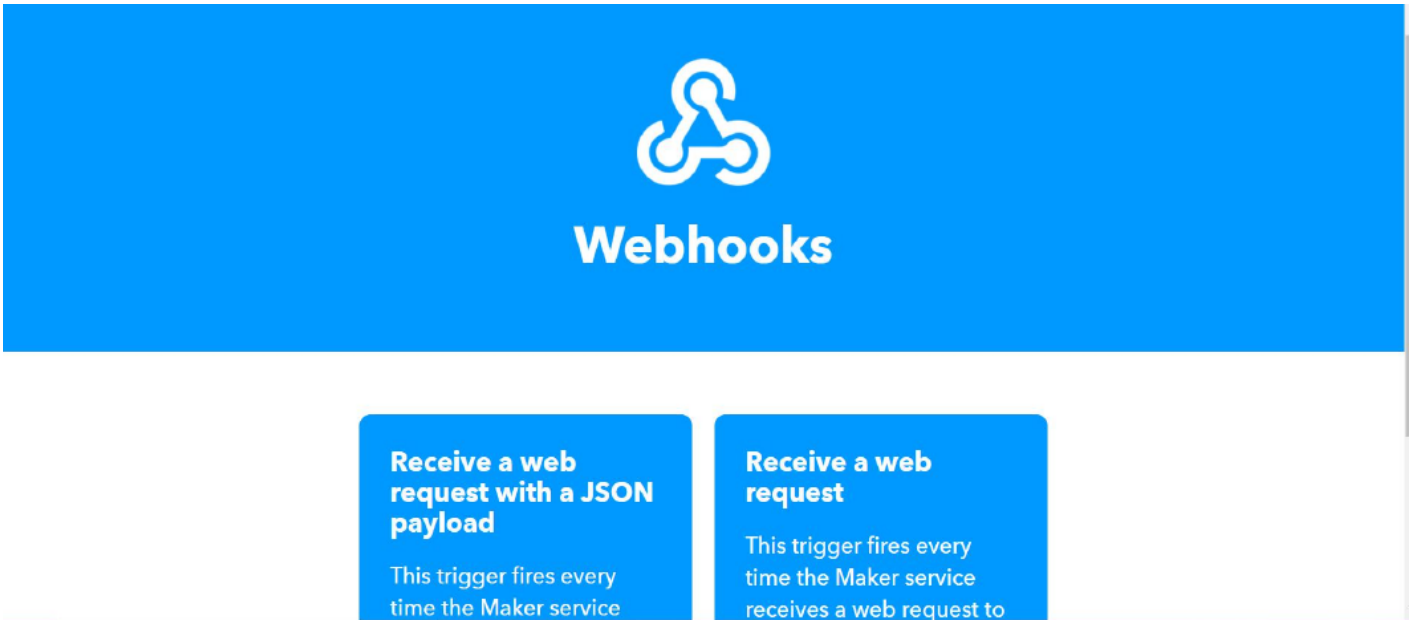
If This Add

Then That

Back

Choose a service

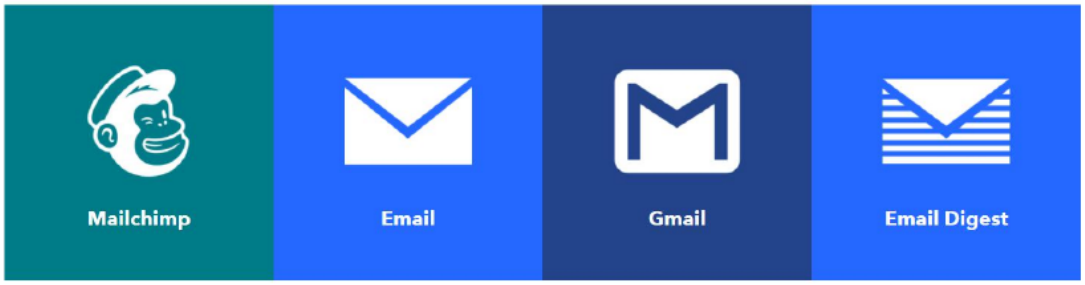
webhooks



Back

Choose a service

mail



Email

Send me an email

This Action will send you an HTML based email. Images and links are supported.

Your key is: dOh0J7xqE7d1kPepxhEtdtsre1Mra2rlqgp_jhT1HCE

Back to service

To trigger an Event

Make a POST or GET web request to:

```
https://maker.ifttt.com/trigger/ Temperature_Sensor /with/key/dOh0J7xqE7d1kPepxhEtdtsre1Mra2rlqgp_jhT1HCE
```

With an optional JSON body of:

```
{ "value1" : "      ", "value2" : "      ", "value3" : "      " }
```

The data is completely optional, and you can also pass `value1`, `value2`, and `value3` as query parameters or form variables. This content will be passed on to the action in your Applet.

You can also try it with `curl` from a command line.

```
curl -X POST https://maker.ifttt.com/trigger/Temperature_Sensor/with/key/dOh0J7xqE7d1kPepxhEtdtsre1Mra2rlqgp_jhT1HCE
```

Regenerate API Key

URL:	https://maker.ifttt.com/trigger/iot/with/key/mUyH9iBBsG9hFP4zPxquxLgOaZvBICd7J3UErLZW9_M
HTTP Auth Username:	
HTTP Auth Password:	
Method:	POST
Content Type:	application/json
HTTP Version:	1.1
Host:	
Headers:	
Body:	{"value1":"%%channel_1498106_field_1%%"}
Parse String:	
Created:	2021-10-11 6:24 am

ThingSpeak™ Channels Apps Devices Support

React Name: iot

Condition Type: Numeric

Test Frequency: On Data Insertion

Condition: If channel
exp_3 (1498106)

field
1 (temp)

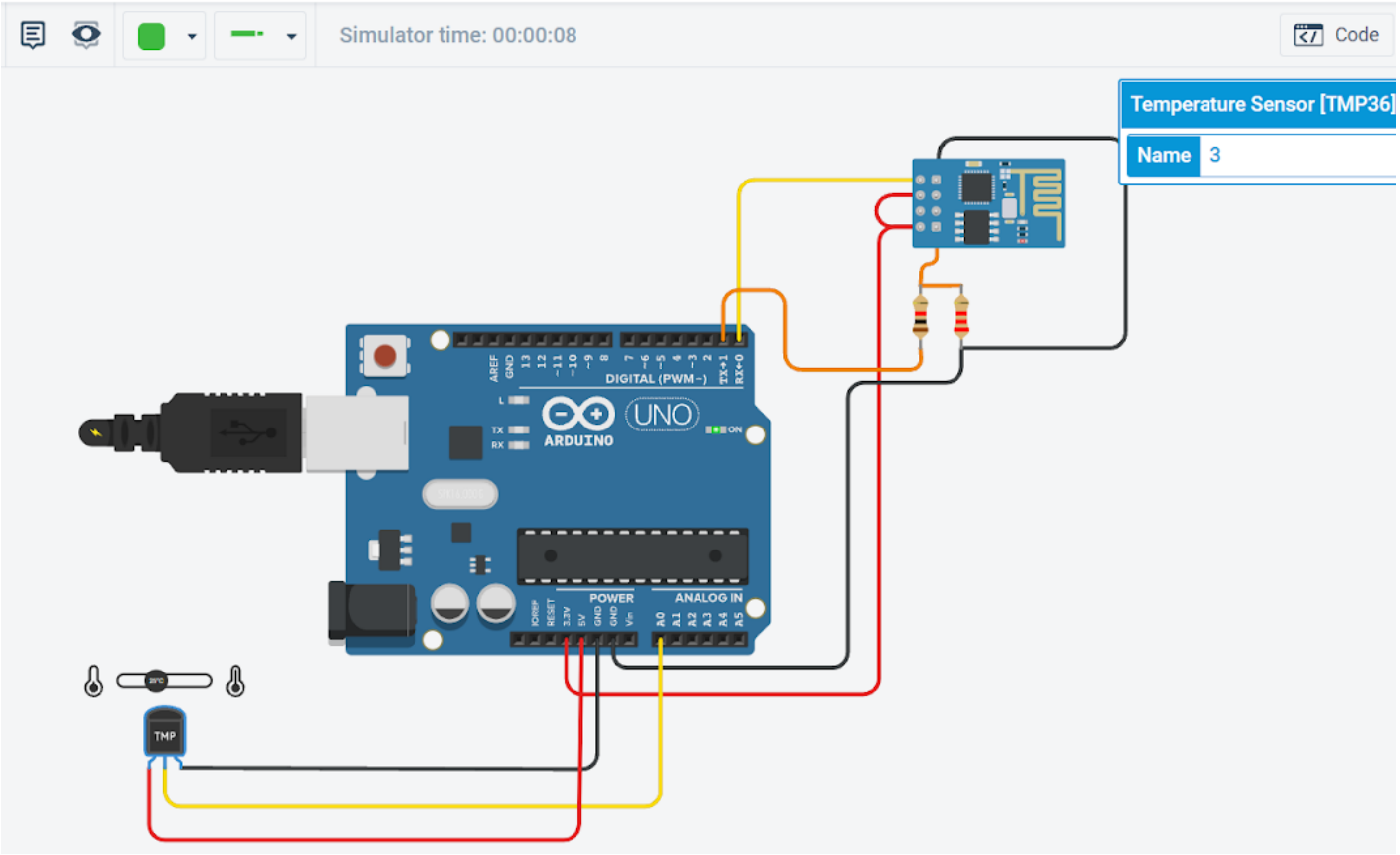
is greater than

30

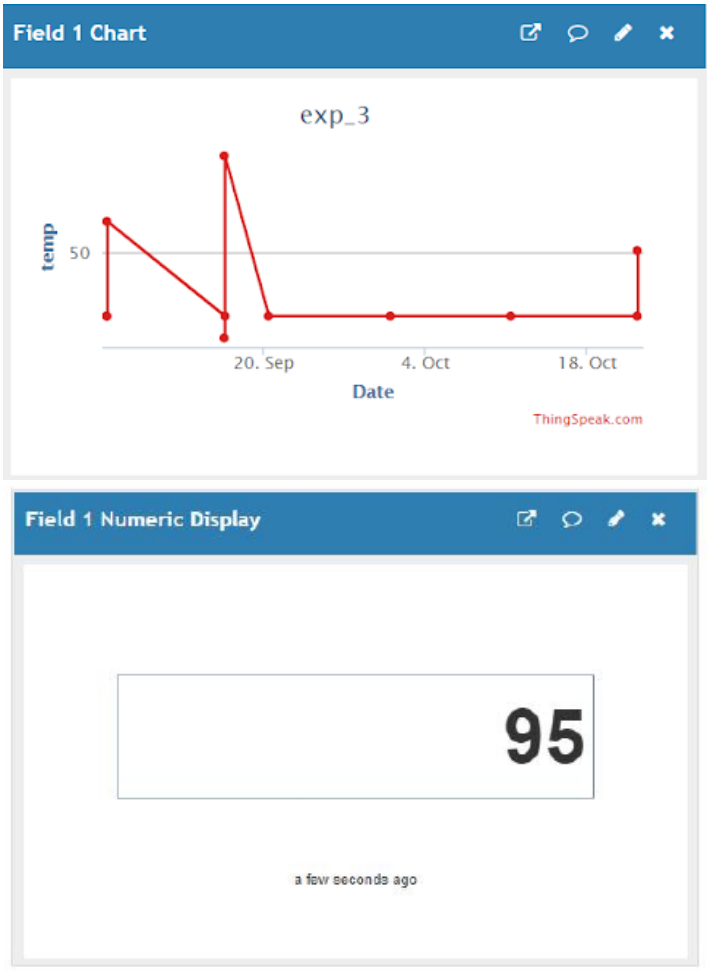
Action: ThingHTTP

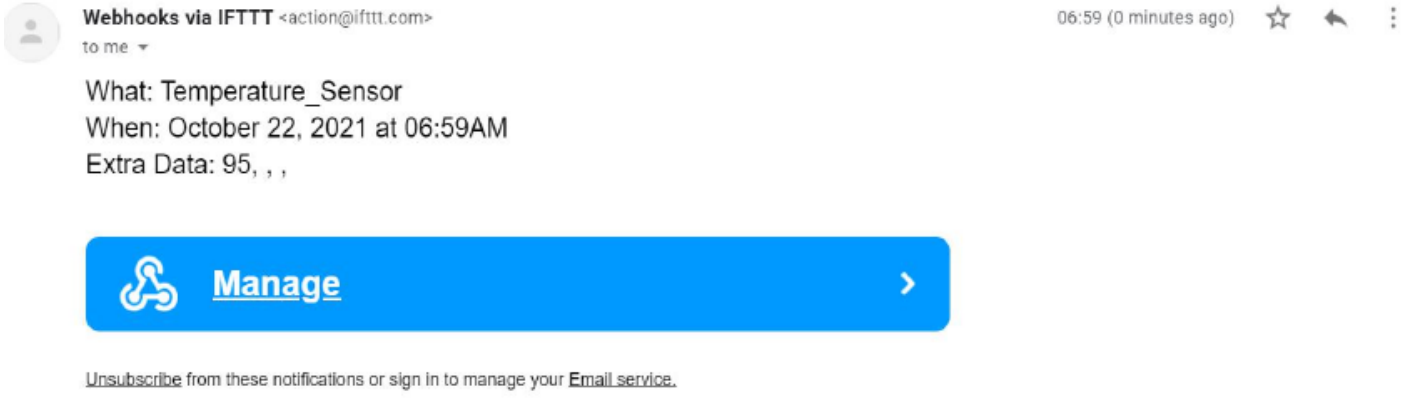
then perform ThingHTTP
iot

Options:
- ○ Run action only the first time the condition is met
- ◉ Run action each time condition is met


Simulator time: 00:00:08
Code
Temperature Sensor [TMP36]
Name 3
DIGITAL (PWM~)
UNO
ARDUINO
POWER
ANALOG IN
TMP

6. Result :


Field 1 Chart
exp_3
temp
50
20. Sep
4. Oct
18. Oct
Date
ThingSpeak.com
Field 1 Numeric Display
95
a few seconds ago


Webhooks via IFTTT <action@ifttt.com>
to me
06:59 (0 minutes ago)
What: Temperature_Sensor
When: October 22, 2021 at 06:59AM
Extra Data: 95, , ,
Manage
Unsubscribe from these notifications or sign in to manage your Email service.

Learning Outcomes :

- I learnt about TemperatureSensor.
- I learnt to work with IFTTT
- I learnt to make ThingHTTP and React

S. No.	Parameters	Marks Obtained	Maximum Marks
1.			
2.			
3.			