

ECEGR 4640: Internet of Things

Date: 10/16/2025

Laboratory 3: IoT Automation using IFTTT

Goal: To trigger an IFTTT Applet from your Raspberry Pi and inversely action the Raspberry Pi from an IFTTT Applet

Background: The IoT automation platform that will be used is the If-This-Then-That (IFTTT) web service, where you can create simple workflow automation chains called Applets. An applet responds to changes in one web service (the *This*), which then triggers an action on another web service (the *That*). The Raspberry Pi can assume the role of both the *This* or the *That*, to either trigger an Applet or perform an action in response to a triggered Applet.

Part 1: Triggering an IFTT Applet from your Raspberry Pi

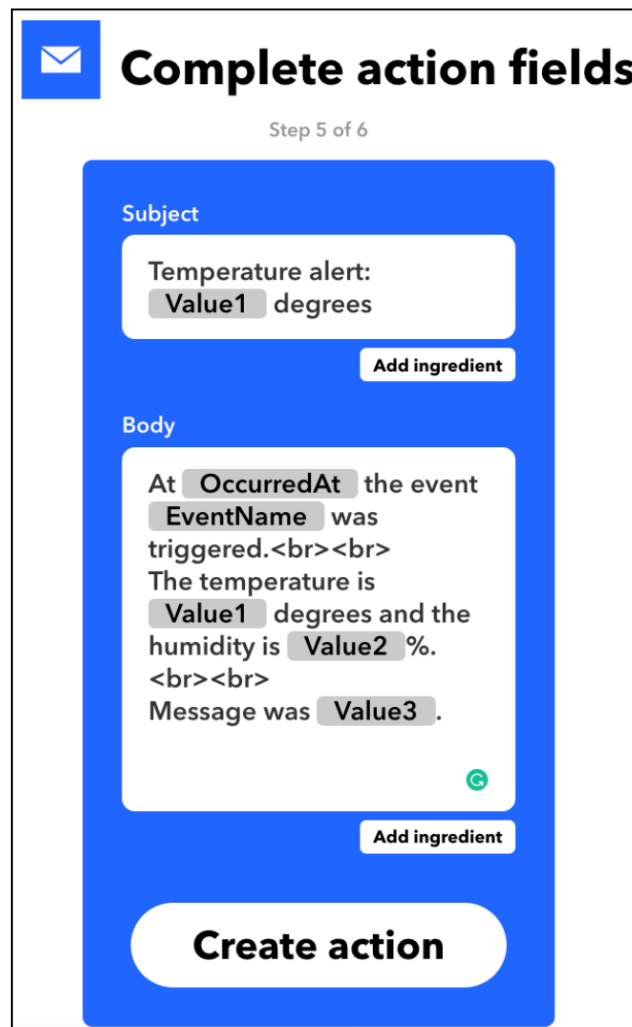


We will use the EnviropHAT sensor to monitor temperature (the *This*), and at a specific temperature will send a special IFTTT Webhook URL. This URL request triggers an Applet, which then sends out an email (the *That*).

1) Create and configure an IFTTT Applet

- Create your IFTTT account at ifttt.com/join and follow the instructions provided in class. Use the gmail account that you created for the Raspberry Pi (or another one that you don't mind receiving alerts on).
- Once logged into IFTTT, click on the 'Create' tab to create your own page for *If This*. Choose the **WebHook** service and select the 'receive a web request' option.

- On the 'Complete trigger fields' page, name the event RPiTemperature and click on the 'Create trigger' button.
- On the 'Create your own' page, configure the *Then That* page and choose the **Email** service – Send me an email.
- On the 'Complete action fields' page, fill in the Subject and Body as shown below. You will notice that some of the text is surrounded by gray boxes; for example, *Value 1* and *OccuredAt*. These are know as ingredients and are replaced dynamically when the Applet is triggered. Create and Finish the page.



The screenshot shows the 'Complete action fields' page for an email action in IFTTT. The page is titled 'Complete action fields' with a blue envelope icon and 'Step 5 of 6' below it. The main content area is blue and contains two sections: 'Subject' and 'Body'. The 'Subject' section has a text input field with the text 'Temperature alert: Value1 degrees' and a small 'Add ingredient' button. The 'Body' section has a text input field with the text 'At OccurredAt the event EventName was triggered.

The temperature is Value1 degrees and the humidity is Value2 %.

Message was Value3 .' and a small 'Add ingredient' button. At the bottom of the blue area is a large white button labeled 'Create action'.

Congratulations! You have just created an IFTTT Applet that sends an email when we trigger it using a Raspberry Pi.

2) Triggering an IFTTT Webhook

- Navigate to the **Webhooks** page – Profile—My Services—Webhooks and click on the Documentation button. This page holds the key pieces of information that we need in order to integrate this Webhook trigger with the Raspberry Pi:
Your key, GET or POST request URL, Event name, JSON body, cURL command-line example, and a test button.
- This information will be used in our Python code, so keep it handy.

3) Triggering an IFTTT Applet in Python

- Copy the Tempiffft.py code provided on Canvas to the Pimoroni—envirophat directory. Update it to include your WebHook key, event name, and trigger thresholds.
- Run the program. If successful, you will receive an output similar to this and the IFTTT Applet was triggered to send you an email alert.

```
Press Ctrl+C to exit.
```

```
INFO:root:Press Control + C To Exit.  
INFO:root:Sensor result 33.657806217321195  
INFO:root:Temperature 33.657806217321195 is >= 20, triggering event RPiTemperature  
INFO:root:Response Congratulations! You've fired the RPiTemperature event  
INFO:root:Successful Request.
```

Part 2: Actioning your Raspberry Pi from an IFTTT Applet



We will create an IFTTT Applet that will trigger when an email is received. We will use the subject of this email to control the LEDs on the EnviroPHAT sensor. We will still use an IFTTT Webhook service, as we did previously, only this time the Webhook service will be installed on the *That* side of our applet and will request a URL that we specify.

1) Using the dweet.io service as an intermediary

- Dweet.io service provide simple messaging for IoT applications. Dweets are considered equivalent to tweets.
- Copy the dweet_led.py code provided on Canvas to the Pimoroni—envirophat—examples directory, and update as needed.
- Run the code. If successful, you will receive an output similar to the following

```
abraham@raspberrypi:~/Pimoroni/envirophat/examples $ python3 dweet_led.py
INFO:main:Thing name 7be707f0 loaded from thing_name.txt
LED Control URLs - Try them in your web browser:
  On    : https://dweet.io/dweet/for/7be707f0?state=on
  Off   : https://dweet.io/dweet/for/7be707f0?state=off
INFO:main:LED off
Waiting for dweets. Press Control+C to exit.
```

- Keep the Terminal open with the program running as will need to copy the URLs in the next step.

2) Creating the IFTTT Applet

- Once logged into IFTTT, click on the 'Create' tab to create your own page for *If This*. Choose the **Email** service.
- On the 'Complete trigger fields' page, select '**Send IFTTT an email tagged**' (make sure it is the option with the word tagged in it).
- On the next page, enter **LED** as the Tag input and click the **Create trigger** button.
- On the Then That page, choose the **Webhooks** service and select 'Make a web request' for the action.
- On the 'Complete actions fields' page, enter the dweet URL that was printed to the Terminal. Your URL should look like this
`https://dweet.io/dweet/for/7be707f0?state=Subject`. Note that 'Subject' can be added through the 'Add ingredient' option.
- The other fields can be left as their default values. Now create the action, review and finish.

3) Controlling the LED from an email

- Make sure that your `dweet_led.py` code is still running.
- Open Gmail (account associated with IFTTT) and compose a new message to trigger@applet.ifttt.com.
- In the subject line, use one of the following to control the LED:
#LED On
#LED Off
- Send the email and wait a moment to watch the LED turn on or off in response to the email.

4) Explore the capabilities of IFTTT! Try to control RGB values of the sensor from an email.

Reference: Practical Python Programming for IoT, Gary Smart.