

Thingspeak and Pi

DAY 1 – SESSION II

About ThingSpeak

ThingSpeak is an IoT analytics platform service that allows you to aggregate, visualize, and analyze live data streams in the cloud. You can send data to ThingSpeak from your devices, create instant visualization of live data, and send alerts.



Collect

Send sensor data privately to the cloud.



Analyze

Analyze and visualize your data with MATLAB.



Act

Trigger a reaction.

Create a Channel

Create New Channel and Fields

https://api.thingspeak.com/update?api_key=6ULNQU9EZKJJFGUR&field1=0

https://api.thingspeak.com/update?api_key=6ULNQU9EZKJJFGUR&field2=1

Update Channel using Python

```
from gpiozero import Button
```

```
from signal import pause
```

```
import requests
```

```
button = Button(21)
```

```
def say_red():
```

```
    print('red')
```

```
    x = requests.get('https://api.thingspeak.com/update?api_key=6ULNQU9EZKJJFGUR&field3=0')
```

```
def say_green():
```

```
    print('green')
```

```
    x = requests.get('https://api.thingspeak.com/update?api_key=6ULNQU9EZKJJFGUR&field3=1')
```

```
button.when_pressed = say_green
```

```
button.when_released = say_red
```

```
pause()
```

Send CPU Temperature to ThingSpeak

```
import psutil
import requests
from time import sleep
while True:
    x = psutil.sensors_temperatures()
    temp = x['cpu_thermal'][0][1]
    x1 =
requests.get('https://api.thingspeak.com/update?api_key=6ULNQU9EZKJJFGUR&field1='+str(temp))
    print(temp)
    sleep(60)
```

Send Mail

```
$ export EMAIL_USER= iotsatish25@gmail.com
```

```
$ export EMAIL_PASS = "enter your password "
```

Python Program

```
import smtplib, ssl
```

```
from email.message import EmailMessage
```

```
import os
```

```
EMAIL_ADDRESS = os.environ.get('EMAIL_USER')
```

```
EMAIL_PASSWORD = os.environ.get('EMAIL_PASS')
```

```
msg = EmailMessage()  
msg['From'] = "iotsatish25@gmail.com"  
msg['To'] = "tcs.satish@gmail.com,theiotusersclub@gmail.com"  
msg['Subject'] = 'IoT Check Alert'  
msg.set_content('This is a plain text email')
```

```
with smtplib.SMTP_SSL('smtp.gmail.com', 465) as smtp:  
    smtp.login(EMAIL_ADDRESS, EMAIL_PASSWORD)  
    smtp.send_message(msg)
```