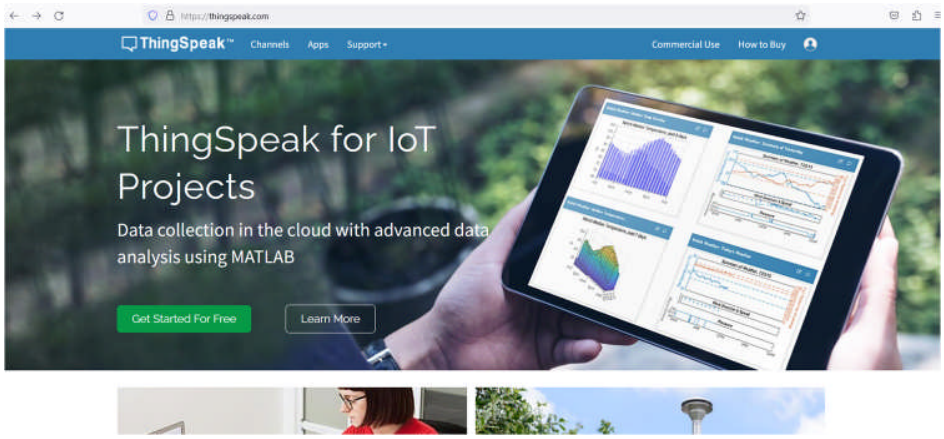
LAB MANUAL 1

Deployment of HTTPS protocol on IoT Devices

Deployment of HTTPS protocol on RaspberryPI with GrovePI

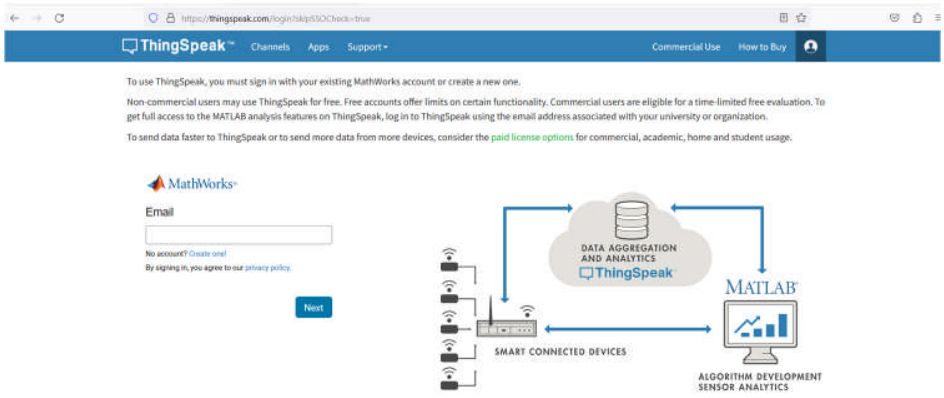
Let’s start work with ThingSpeak.

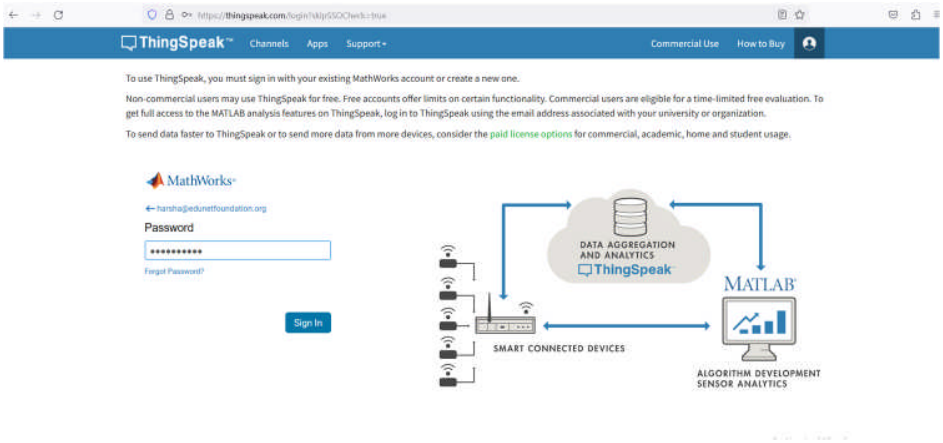
Step 1: Click on this link https://thingspeak.com/



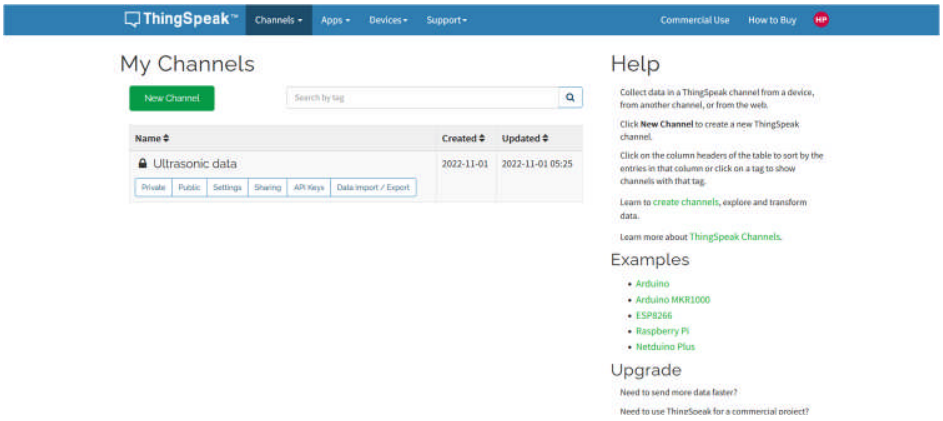
https://thingspeak.com/

Step 2: Create Account on the ThingSpeak

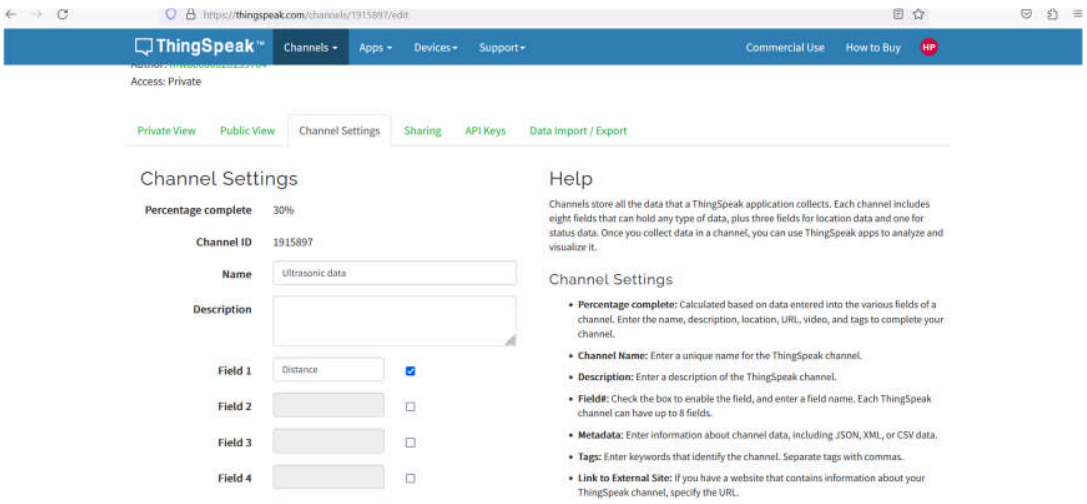




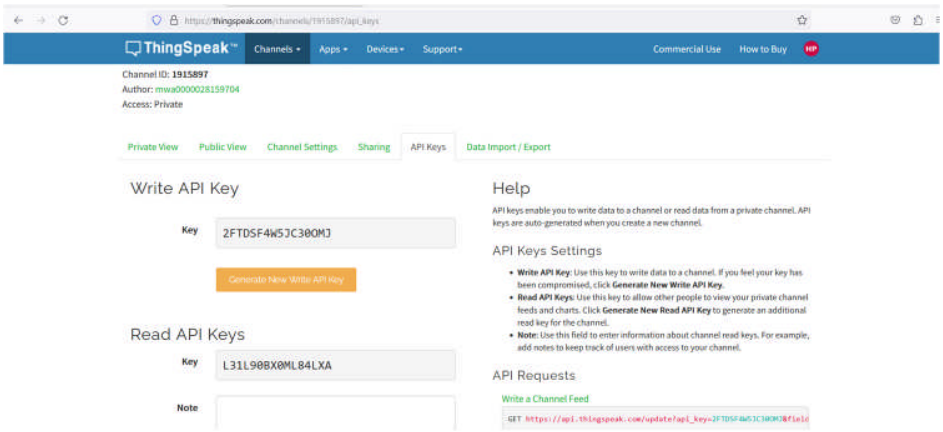
Step 3: Create new Channel



Step 4: Select the appropriate settings



Step 5: Generate API key and Copy key in your code



Step 6: Connect DHT sensor to port D7 and LCD to any I2C ports and run the below code.
Install library using below installation command

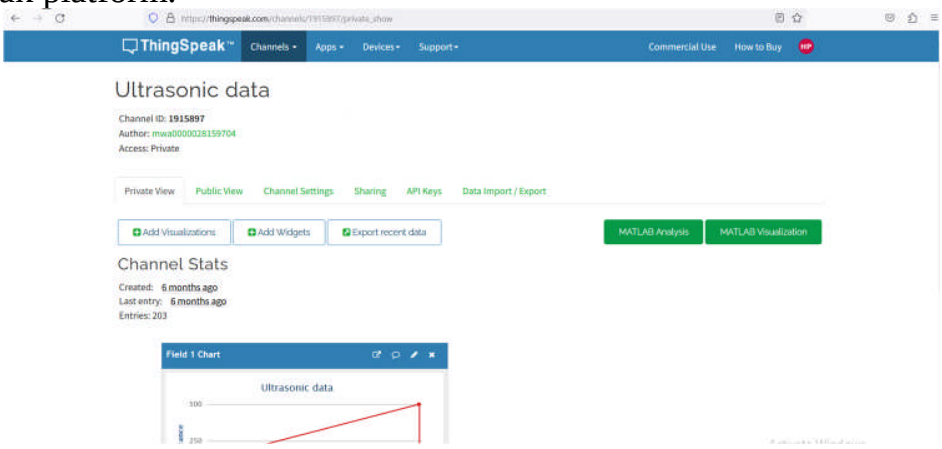
pip3 install thingspeak

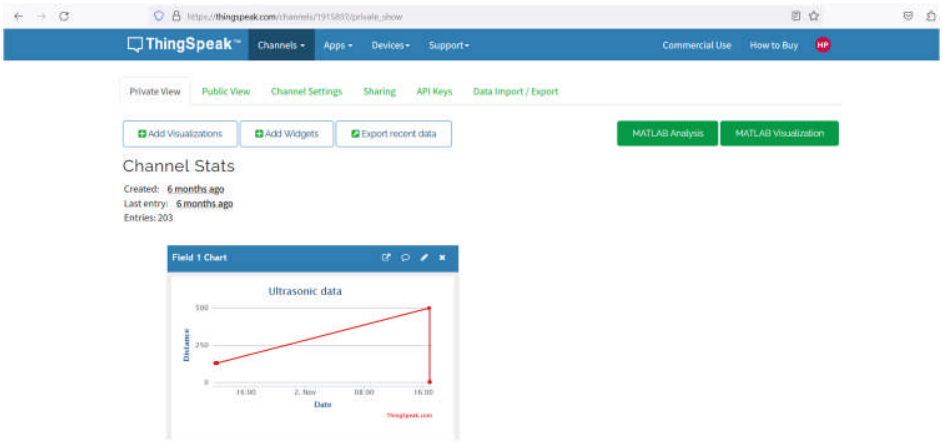
Code-

```
#pip3 install thingspeak
import thingspeak
import time
from grovepi import *

dht_sensor_port = 7
dht_sensor_type = 0

channel_id =  '2224094'
write_key  = 'IN6UY2EWBYPP1173' # PUT YOUR WRITE KEY HERE

# PUT YOUR WRITE KEY HERE

def measure(channel):
  try:
    [ t,h ] = dht(dht_sensor_port,dht_sensor_type)
```

```
    response = channel.update({'field1': t, 'field2': h})
    print(f"Temp:{t} C Humidity:{h}%")
  except:
    print("connection failed")

channel = thingspeak.Channel(id=channel_id,api_key=write_key)
while True:
    measure(channel) # free account has an api limit of 15sec
    time.sleep(15)
```

Now you can timely observe the update in the measured value visible on Thingspeak platform.

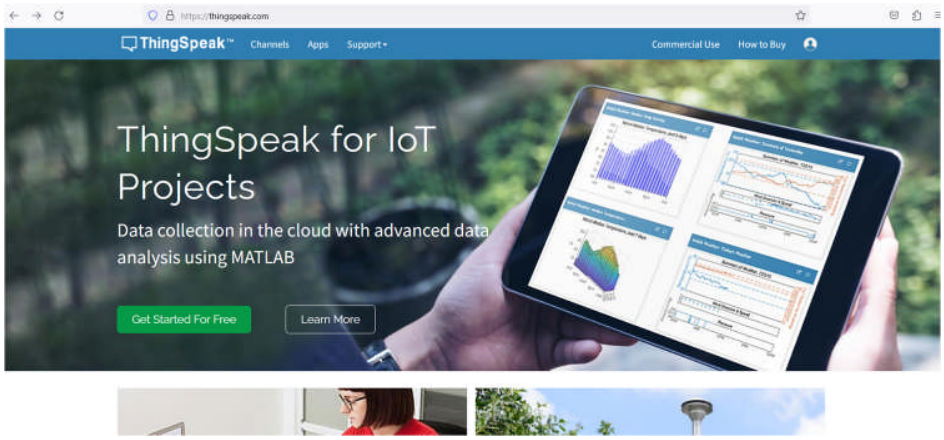




Deployment of HTTPS protocol on RaspberryPI with DFRobot Hat

Lets start work with ThingSpeak.

Step 1: Click on this link https://thingspeak.com/



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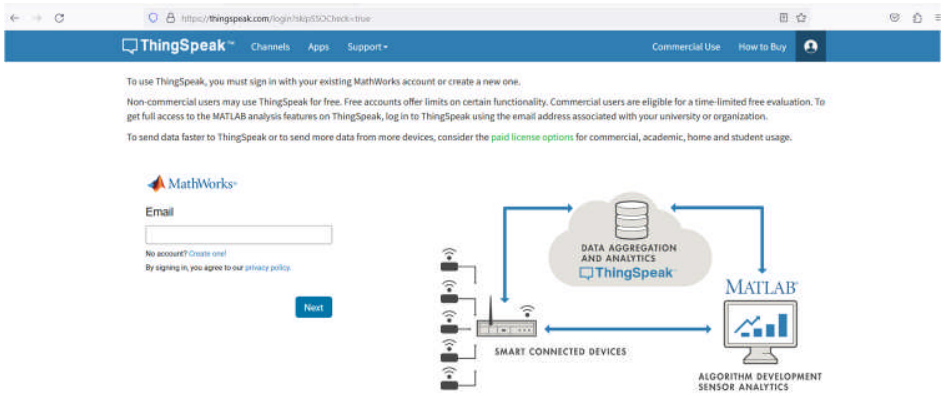
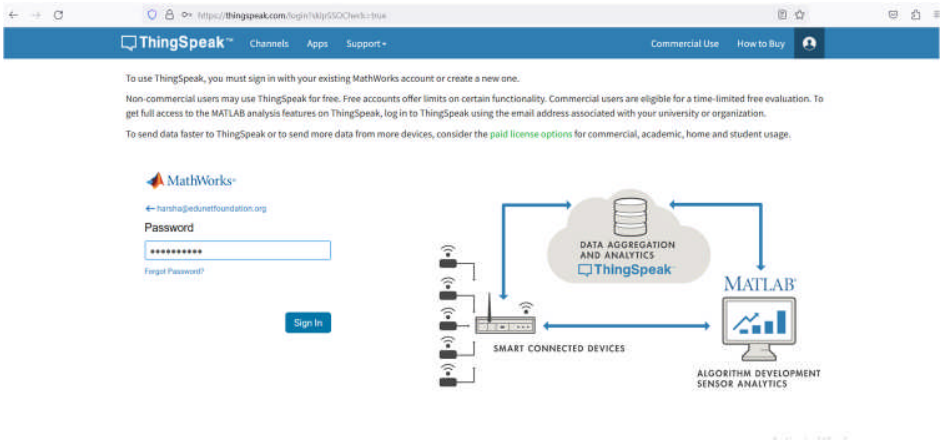
Step 2: Create Account on the ThingSpeak





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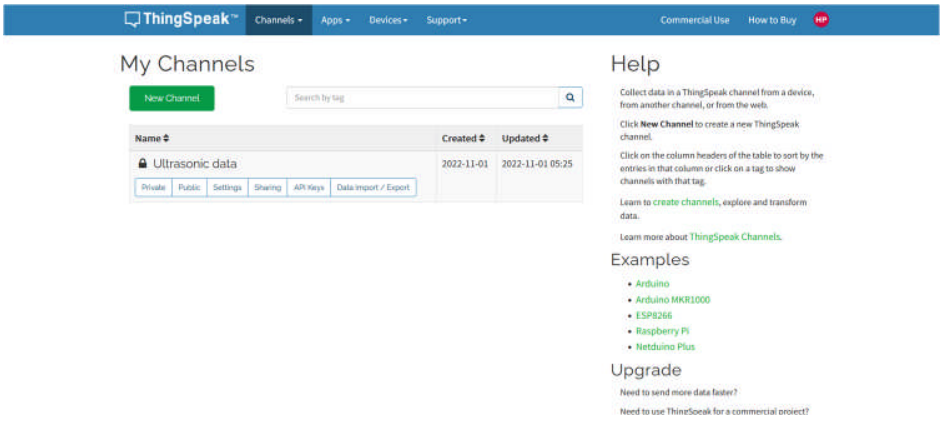

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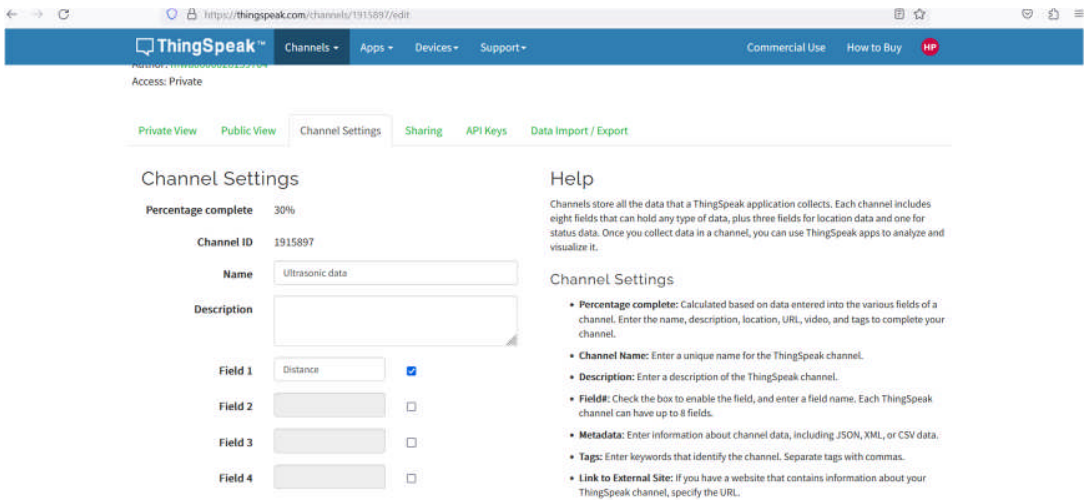

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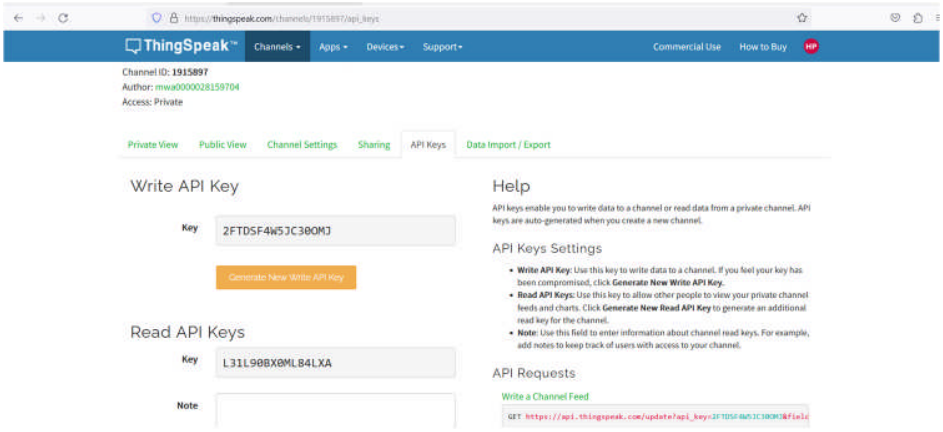

Step 6: Connect LM35 temeperature sensor to Analog port A0 and Soil Moisture sensor to analog port A1 of DFRobot hat. Install library using below installation command

pip3 install thingspeak

Code-

```
#pip3 install thingspeak
from dfadc import *
import thingspeak
```

```
import time
board_detect()
channel_id =  '2465172'
write_key  = 'VJMU8L2I7EWO13LK' # PUT YOUR WRITE KEY HERE
while board.begin() != board.STA_OK:
    print_board_status()
    print("board begin faild")
    time.sleep(2)
print("board begin success")

board.set_adc_enable()
channel = thingspeak.Channel(id=channel_id,api_key=write_key)
while True:
    temp = board.get_adc_value(board.A0)   # A0 channels read
    humidity = board.get_adc_value(board.A1)
    temperature = (temp/4096)* 100+20
    humid = (humidity/4096)* 100
#    print("Temperature = %d C" %Temperature)
#    val=val/4096*100
    print(temperature)
    print(humid)
    response = channel.update({'field1': temperature, 'field2': humid})

    time.sleep(2)
```

Now you can timely observe the update in the measured values visible on Thingspeak platform.