

How to upload Your Raspberry Pi Sensor Data to Thingspeak Website

Things needed:

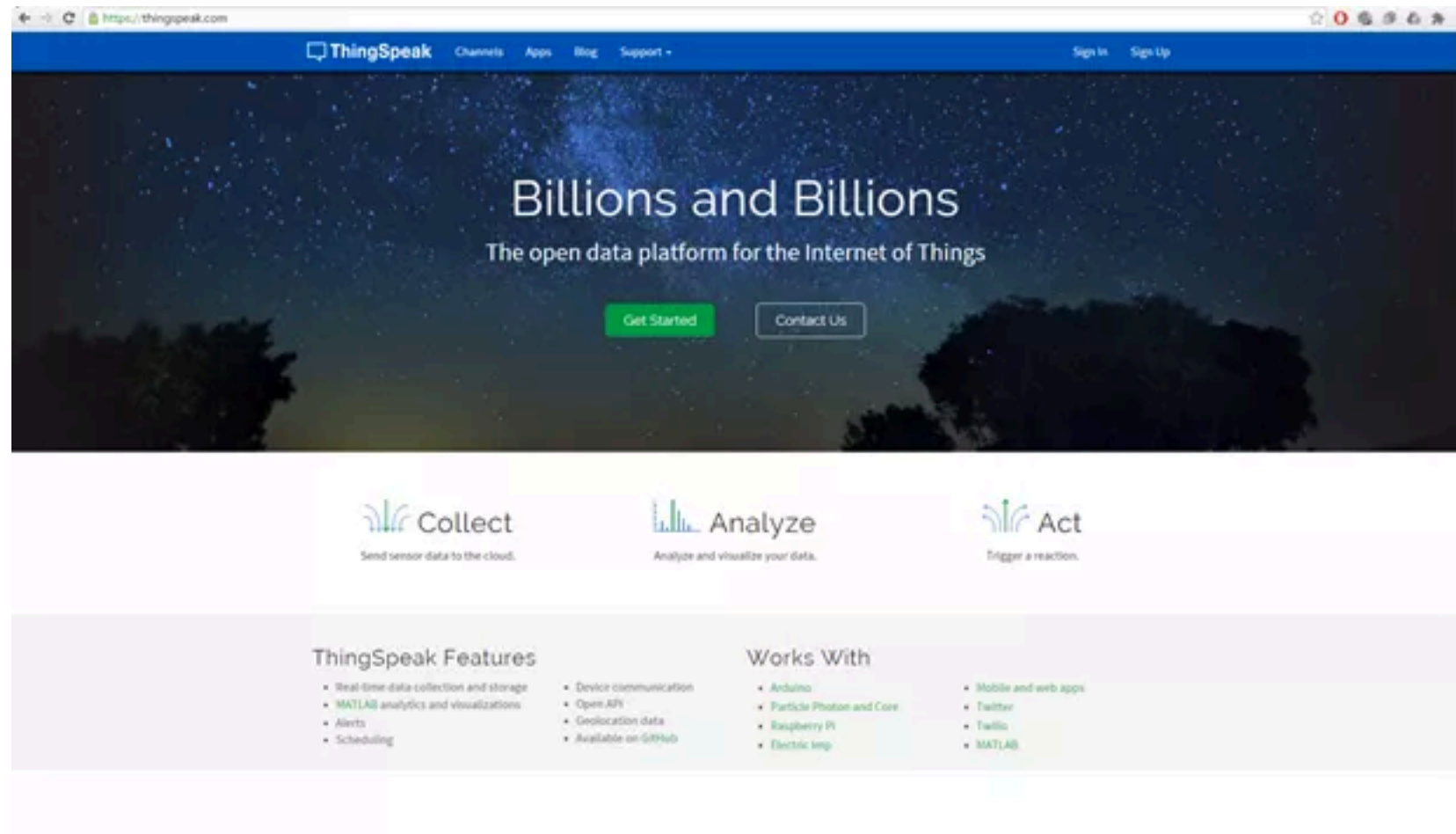
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1. Raspbeery Pi
2. Power Cable
3. Wifi adapter or LAN connection to Raspbeery Pi

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Step 1: Signup for Thingspeak

Go to www.thingspeak.com



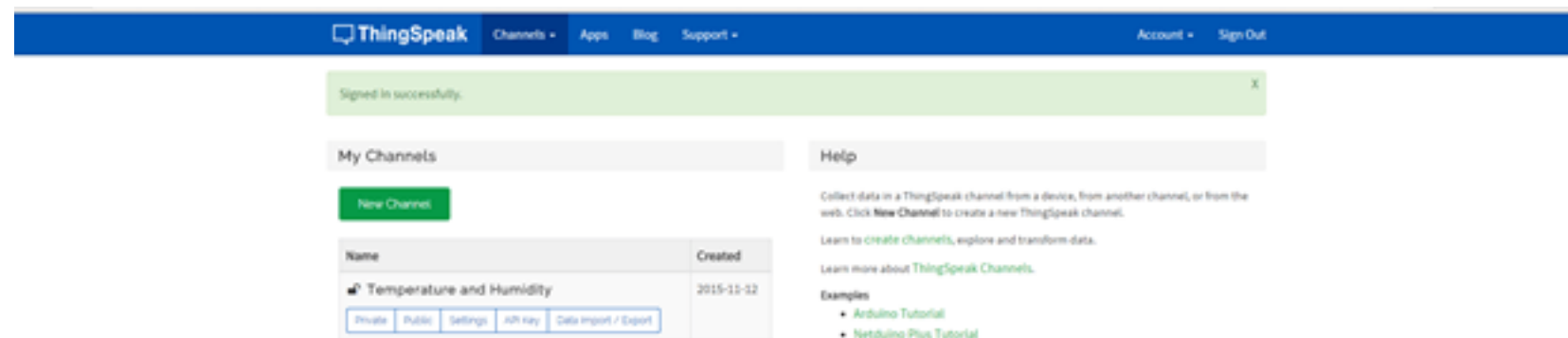
Click on "Sign Up" option and complete the details

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Step 2: Create a Channel for Your Data

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Once you Sign in after your account activation, Create a new channel by clicking “New Channel” button



After the “New Channel” page loads, enter the Name and Description of the data you want to upload

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You can enter the name of your data (ex: Temperature) in Field1. If you want more Fields you can check the box next to Field option and enter the corresponding name of your data.

ThingSpeak Channels Apps Blog Support Account Sign Out

New Channel

Name

Description

Field 1 ☒

Field 2 ☐

Field 3 ☐

Field 4 ☐

Field 5 ☐

Field 6 ☐

Field 7 ☐

Field 8 ☐

Metadata

Tags
(Tags are comma separated)

Help

ThingSpeak Channel

Channels store all the data that a ThingSpeak application collects. Each channel includes eight fields that can hold any type of data, plus three fields for location data and one for status data. Once you collect data in a channel, you can use ThingSpeak apps to analyze and visualize it.

Channel Settings

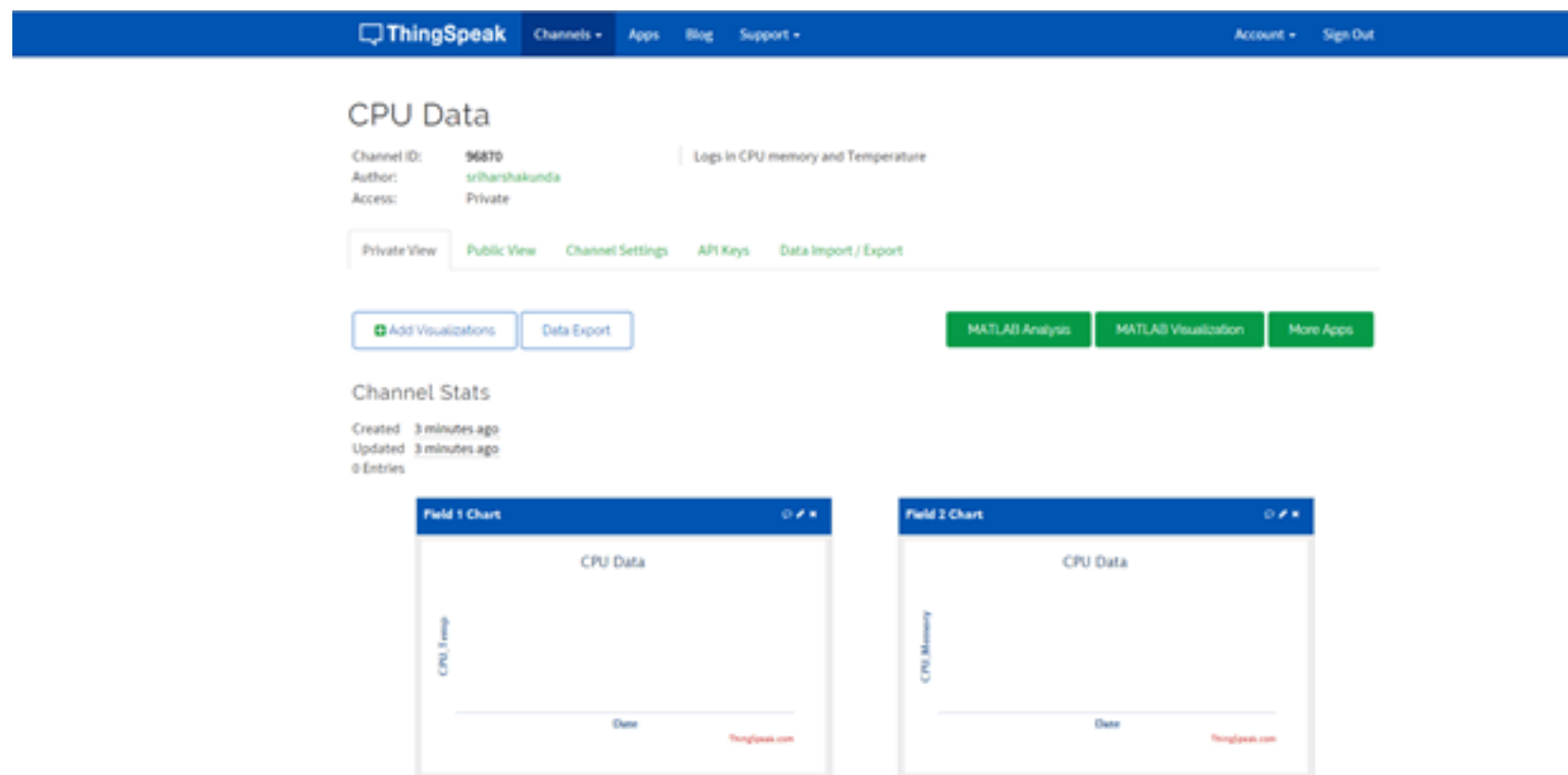
- **Channel Name:** Enter a unique name for the ThingSpeak channel.
- **Description:** Enter a description of the ThingSpeak channel.
- **Field:** Check the box to enable the field, and enter a field name. Each ThingSpeak channel can have up to 8 fields.
- **Metadata:** Enter information about channel data, including JSON, XML, or CSV data.
- **Tags:** Enter keywords that identify the channel. Separate tags with commas.
- **Latitude:** Specify the position of the sensor or thing that collects data in decimal degrees. For example, the latitude of the city of London is 51.5073.
- **Longitude:** Specify the position of the sensor or thing that collects data in decimal degrees. For example, the longitude of the city of London is -0.1275.
- **Elevation:** Specify the position of the sensor or thing that collects data in meters. For example, the elevation of the city of London is 35.052.
- **Make Public:** If you want to make the channel publicly available, check this box.
- **URL:** If you have a website that contains information about your ThingSpeak channel, specify the URL.
- **Video ID:** If you have a YouTube or Vimeo video that displays your channel information, specify the full path of the video URL.

Click on “Save Channel” button to save all of your settings.

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I created two Fields, one is CPU Memory and one for CPU Temperature



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Step 3: Get an API Key

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To upload our data, we need an API key, which we will later include in a piece of python code to upload our sensor data to Thingspeak Website.

Click on “API Keys” tab to get the key for uploading your sensor data.

The screenshot shows the Thingspeak website interface. At the top is a blue navigation bar with the Thingspeak logo and links for Channels, Apps, Blog, Support, Account, and Sign Out. Below the navigation bar, the main content area is titled 'CPU Data'. It shows the Channel ID (96878), Author (sriharshakunda), and Access (Private). There are tabs for Private View, Public View, Channel Settings, API Keys (which is selected), and Data Import / Export. The 'API Keys' tab is active, displaying a 'Write API Key' section with a key field containing 'I2RNEYONZHK71UO' and a 'Generate New Write API Key' button. Below this is a 'Read API Keys' section with a key field containing 'C4Q4XBLDOB6C1SHL' and a 'Note' field. There are 'Save Note' and 'Delete API Key' buttons. On the right side of the 'API Keys' tab, there is a 'Help' section explaining API keys and 'API Keys Settings' with instructions on how to use the keys. At the bottom right, there are sections for 'Create a Channel' and 'Update a Channel' with example API calls.

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Step 4: Modifying the Python Code

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Go to https://github.com/shairjev/iot/blob/master/CPU_Python.py

Download the code into your Raspberry Pi Home folder.

Open the CPU_Python.py file in a notepad.

Edit the line 19 by using **CPU_Temp** instead of **temp**.

Use your Write API Key to replace the **key** with your **API Key**

Save the file to overwrite changes

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Step 5:

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Assuming you have python 2.7 and proper python libraries, go to the folder where you copied the CPU_Python.py file

Type python2.7 CPU_Python.py file

If the code runs properly you should see "200 ok" and something like "58.30" (CPU temperature value)

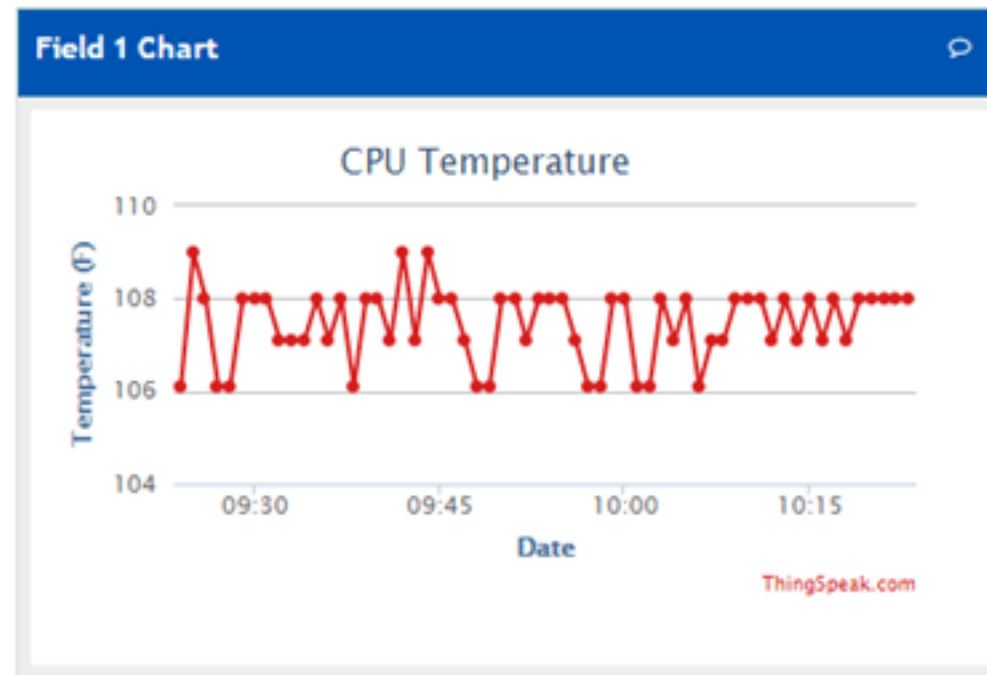
In case if there are any errors uploading the data, you will receive "connection failed" message

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Step 6: Check Thinspeak API and Confirm data transfer

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Open your channel and you should see the temperature uploading into thinspeak website.



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