

Prática 05:

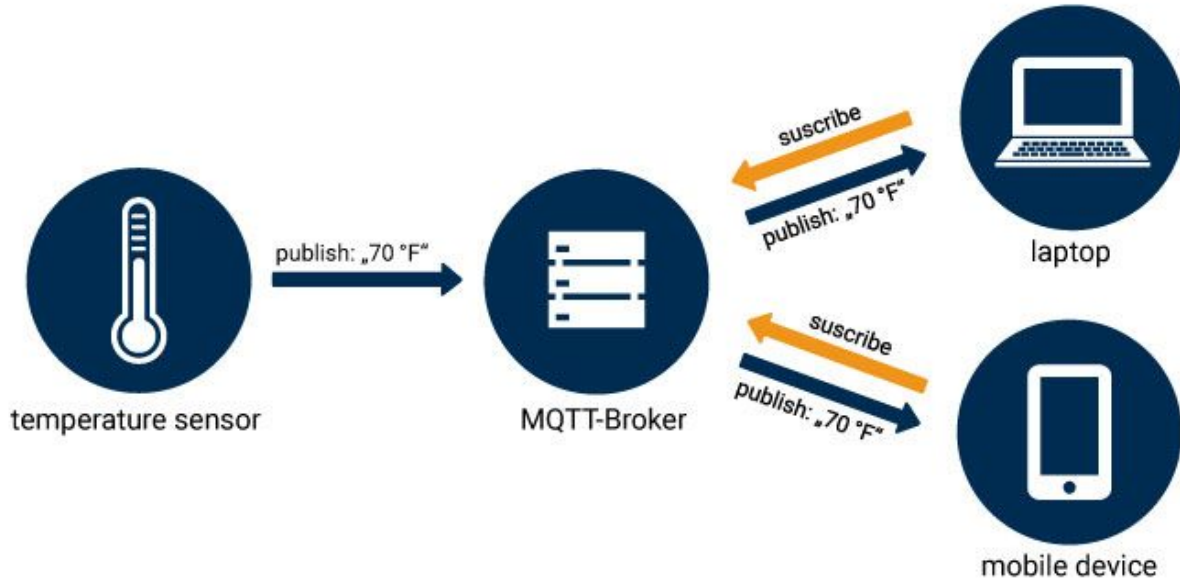
AdafruitIO

Disciplina: **Introdução à Internet das Coisas - IMD0902**

Prof. Heitor Florencio

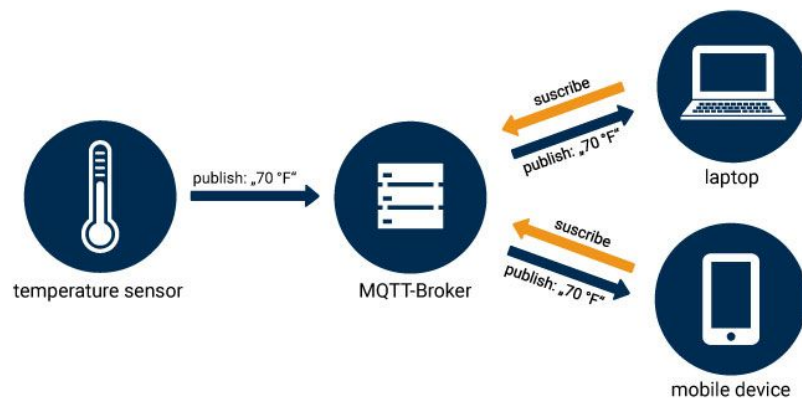
Prof. Leonardo Augusto

Arquitetura do MQTT



Arquitetura do MQTT

- **Servidor**
 - Broker
- **Cientes**
 - Publish
 - Subscribe



Arquitetura do MQTT

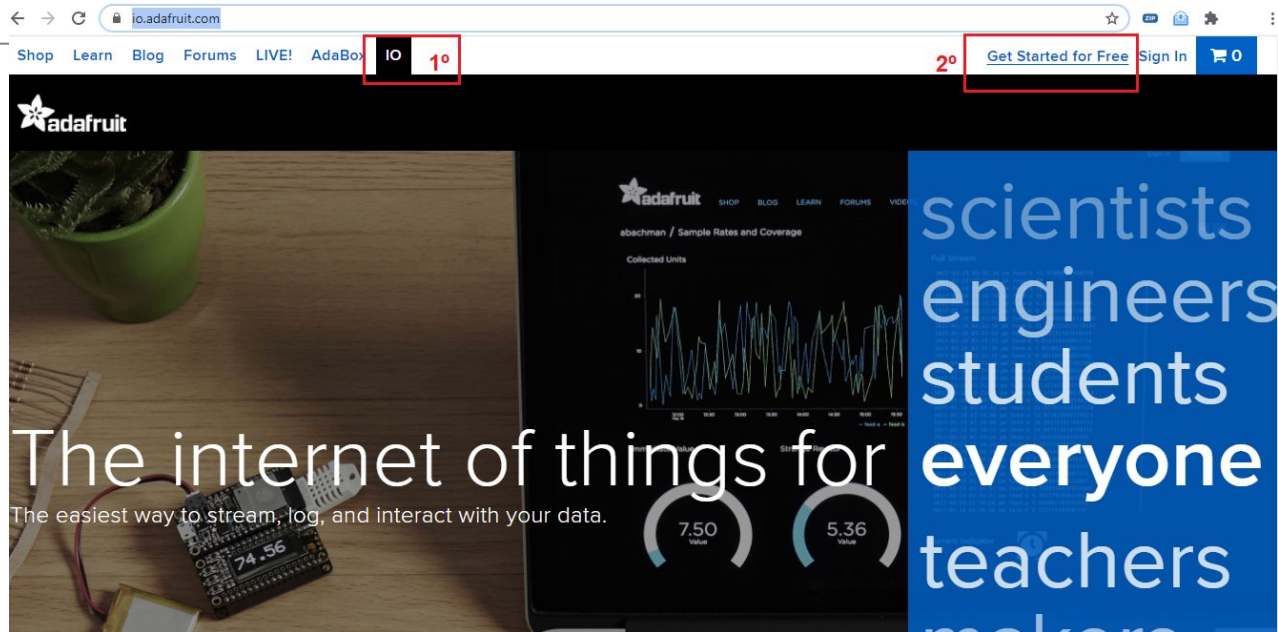
- **Tópico** – “chave” / identificação da informação publicada.
 - É usado para direcionar a informação publicada / enviada a quem assina (quem “dá subscribe”) no tópico.
 - O tópico consiste de uma string (por exemplo: MQTTTesteTopico)
- **Payload** – informação que deseja enviar (propriamente dita).

MQTT-Packet:	
PUBLISH	
	
contains:	Example
packetId (always 0 for qos 0)	4314
topicName	"topic/1"
qos	1
retainFlag	false
payload	"temperature:32.5"
dupFlag	false

Adafruit.IO

Adafruit.IO

Link: <https://io.adafruit.com/>



Adafruit.IO

resses

urity & Privacy

ment Methods

scriptions

er History

Wishlists

Certificates and Coupons

duct Notifications

vsletter Settings

inge Password

vices

FIRST NAME

LAST NAME

EMAIL

USERNAME

GRAVATAR EMAIL

FAVORITE COLOR

TIME ZONE

SAVE SETTINGS

Adafruit.IO - Feeds

Shop Learn Blog Forums LIVE! AdaBox **IO** ^{1°}

Hi, Apogeu dev | Account ▾

0



Profile

^{2°}

Feeds

Dashboards

Triggers

Services

My Key

The Adafruit IO SSL/TLS Certificate was updated. More [details can be found here](#).



The user interface has been updated. If you have any feedback or suggestions [please post on the forums here](#).



> Feeds

^{3°}

+ New Feed

+ New Group

Search



Default

+ New Feed

Group Settings

Feed Name

Key

Last value

Recorded

Adafruit - IO Key

YOUR ADAFRUIT IO KEY

Your Adafruit IO Key should be kept in a safe place and treated with the same care as your Adafruit username and password. People who have access to your Adafruit IO Key can view all of your data, create new feeds for your account, and manipulate your active feeds.

If you need to regenerate a new Adafruit IO Key, all of your existing programs and scripts will need to be manually changed to the new key.

Username

Active Key

REGENERATE KEY

[Hide Code Samples](#)

Arduino

```
#define IO_USERNAME " "
#define IO_KEY " "
```

Linux Shell


```
export IO_USERNAME=" "
export IO_KEY=" "
```


Scripting

```
ADAFRUIT_IO_USERNAME = " "
ADAFRUIT_IO_KEY = " "
```

Adafruit.IO - Feeds


[Shop](#) [Learn](#) [Blog](#) [Forums](#) [LIVE!](#) [AdaBox](#) [IO](#)

Hi, Apogeu dev | [Account](#)  0



 [Profile](#) [Feeds](#) [Dashboards](#) [Triggers](#) [Services](#) [My Key](#)

[Feeds](#) [led](#)

led





Value
1.0

 [Feed Info](#) 



Manage feed key, description, and tags.

[Edit Feed Info](#)



 [Privacy](#) 

This feed is: **public**.

Anyone can see it at this link.

 [Sharing](#) 

Not shared yet

 [Feed History](#) 

Feed history is **ON**

Adafruit.IO - Feeds

The screenshot shows the 'Create a new Feed' modal window on the Adafruit.IO website. The background shows the user's profile page for 'apogeu_dev' with a 'Feeds' tab selected. The modal window has a title bar with a close button (X). It contains the following sections:

- Name:** A text input field containing 'led'. Below it, a message states: 'Maximum length: 128 characters. Used: 3'.
- Key:** A text input field containing 'led'. Below it, a message states: 'Changing the key will change API URLs and MQTT subscription topics. The only characters we permit are lower case english letters ("a" to "z"), numbers, and dash ("-").' A link is provided: 'See our guide to naming things in Adafruit IO for more information about how we handle the formatting of names and keys.'
- Current Endpoints:** A list of endpoints for the feed:
 - Web: `https://io.adafruit.com/feeds/led`
 - API: `https://io.adafruit.com/api/v2/feeds/led`
 - MQTT by Key: `/feeds/led` (This entry is highlighted with a red rectangle in the original image)
- Description:** A text input field containing 'led'.

On the right side of the background page, there is a sidebar with the following sections:

- Hi,** | Account ▾ | 0
- Feed Info** ⚙️: Manage feed name, key, description, and tags.
- Privacy** ⚙️: This feed is: **public**. Anyone can see it at this link.
- Sharing** ⚙️: Not shared yet
- Feed History** ⚙️: Feed history is **ON**

Adafruit.IO - Dashboard

[Shop](#) [Learn](#) [Blog](#) [Forums](#) [LIVE!](#) [AdaBox](#) **IO** ^{1°}

Hi, Apogeu dev | [Account](#) ▾

 0



[Profile](#)

[Feeds](#) ^{2°}

[Dashboards](#)

[Triggers](#)

[Services](#)

[My Key](#)

▸ Dashboards

^{3°}

[+ New Dashboard](#)

Search



Dashboards



Name

Key

Created At

Loaded in 0.2 seconds.

Adafruit.IO - Dashboard

[Shop](#) [Learn](#) [Blog](#) [Forums](#) [LIVE!](#) [AdaBox](#) **IO**

[Account](#) ▾

[0](#)



[Profile](#)

[Feeds](#)

[Dashboards](#)

[Triggers](#)

[Services](#)

[My Key](#)

[Dashboards](#) > [LED](#)



Dashboard Settings

[Edit Layout](#)

[+ Create New Block](#)

[View Fullscreen](#)

Dark Mode ?

on

Block Borders ?

on

Dashboard Privacy ?

off

[Delete Dashboard](#)

[Get Help](#)

[Quick Guides](#)

[API Documentation](#)

[FAQ](#)


[Learn](#)

[IO Plus](#)

[News](#)

Adafruit.IO - Dashboard


[Shop](#) [Learn](#) [Blog](#) [Forums](#) [LIVE!](#) [AdaBox](#) [IO](#) [Account](#) [0](#)


 [Profile](#)


[apogeu_dev](#)


Create a new block


Click on the block you would like to add to your dashboard. You can always come back and switch the block type later if you change your mind.
































[Get Help](#)
[Quick Guide](#)
[API Docume](#)
[FAQ](#)



Adafruit.IO - Dashboard

[Shop](#) [Learn](#) [Blog](#) [Forums](#) [LIVE!](#) [AdaBox](#) [IO](#) [Account](#) [0](#)

 [Profile](#) [apogeu_dev](#)

Create a Toggle Block

A toggle button is useful if you have an ON or OFF type of state. You can configure what values are sent on press and release.

Choose a single feed you would like to connect to this toggle. You can also create a new feed within a group.

Default

Feed Name	Last value	Recorded
<input checked="" type="checkbox"/> led ^{1°}		7 minutes

[Create](#)

1 of 1 feeds selected

[Previous step](#) [Next step >](#) ^{2°}

[Get Help](#)
[Quick Guides](#)
[API Documentation](#)
[FAQ](#)

[IO Plus](#)
[News](#)

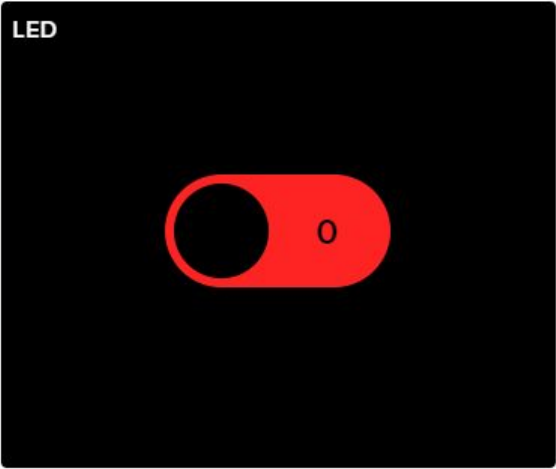
Adafruit.IO - Dashboard

Block settings ×

In this final step, you can give your block a title and see a preview of how it will look. Customize the look and feel of your block with the remaining settings. When you are ready, click the "Create Block" button to send it to your dashboard.

Block Title (optional)

Block Preview



Button On Text

Button Off Text

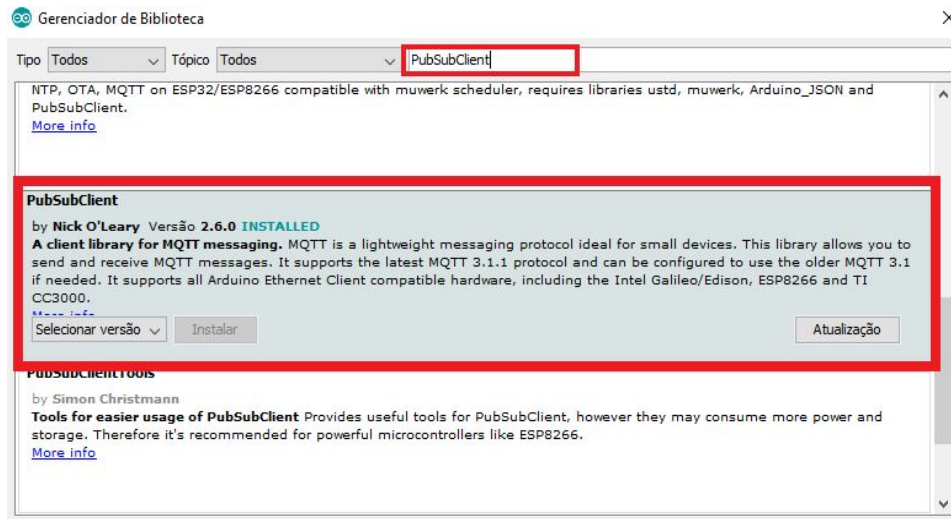
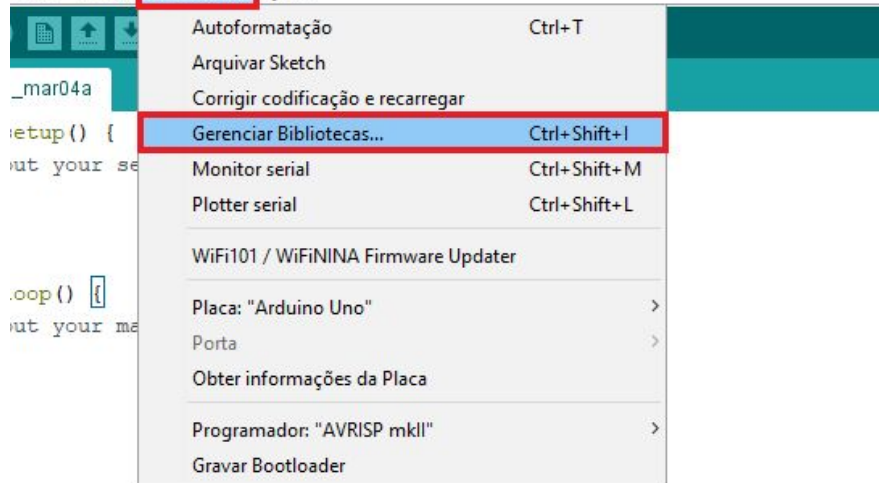
Arduino IDE

Prática

- ❑ Instalar a biblioteca PubSubClient;

_mar04a | Arduino 1.8.12 (Windows Store 1.8.33.0)

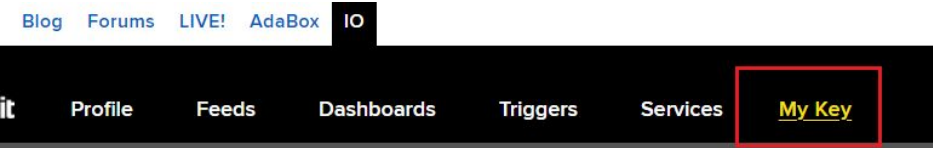
Editar Sketch Ferramentas Ajuda



Prática

<https://drive.google.com/file/d/1d2J8pmTb5x2qRKsknKfl2Djur4cOcWeJ/view?usp=sharing>

Prática



```
const char* mqtt_broker = "io.adafruit.com";  
const int mqtt_port = 1883;  
int mqtt_timeout = 10000;
```

YOUR ADAFRUIT IO KEY

Your Adafruit IO Key should be kept in a safe place and treated with the same care as your Adafruit username and password. People who have access to your Adafruit IO Key can view all of your data, create new feeds for your account, and manipulate your active feeds.

If you need to regenerate a new Adafruit IO Key, all of your existing programs and scripts will need to be manually changed to the new key.



Username

Active Key

REGENERATE KEY

[Hide Code Samples](#)

```
const char* mqtt_usernameAdafruitIO = "user";  
const char* mqtt_keyAdafruitIO = "io_key";
```

Prática

```
mqtt_client.publish("user/feeds/imd0902", String(valor).c_str());  
Serial.println("Publicou o dado: " + String(valor));  
delay(10000);  
mqtt_client.loop();
```

Prática

Desenvolva um dashboard que recebe um valor de string e um float e apresente esses dados em em blocos diferentes.

Create a new block



Click on the block you would like to add to your dashboard. You can always come back and switch the block type later if you change your mind.

