Lab2:
MQTT and LoPy WiFi

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Labs

⅓ Ready to use, tested examples

⅓ Exercise based on the examples

⅓ Your imagination → create new applications

Our Lab equipment

Pycom LoPy 4

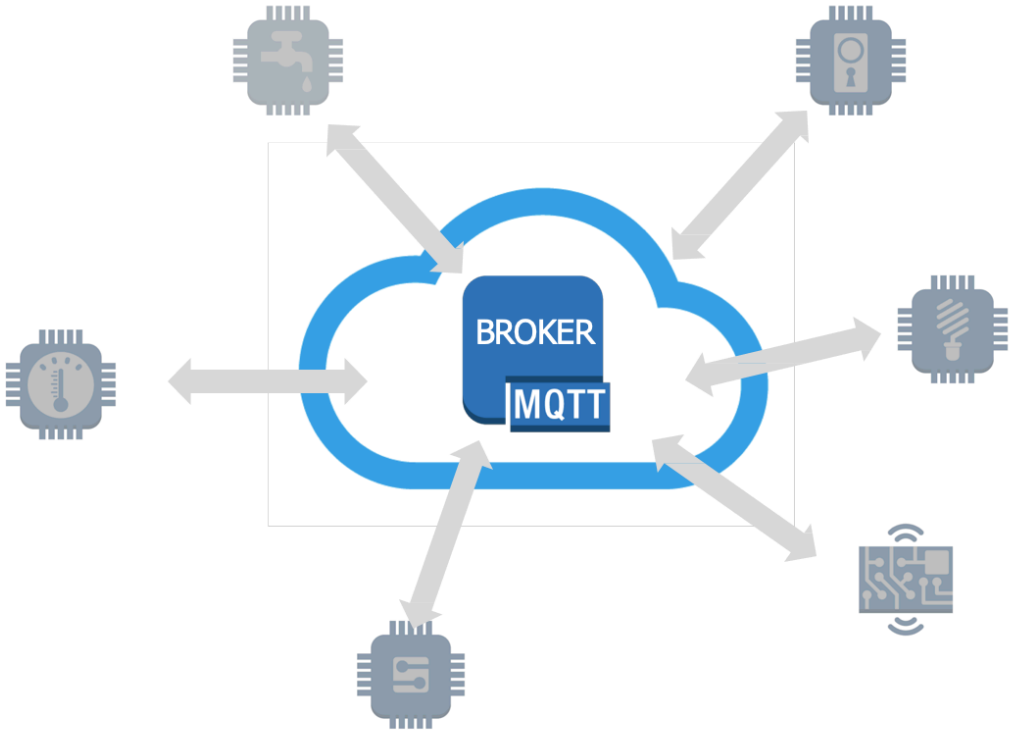
PySense

microUSB Cable

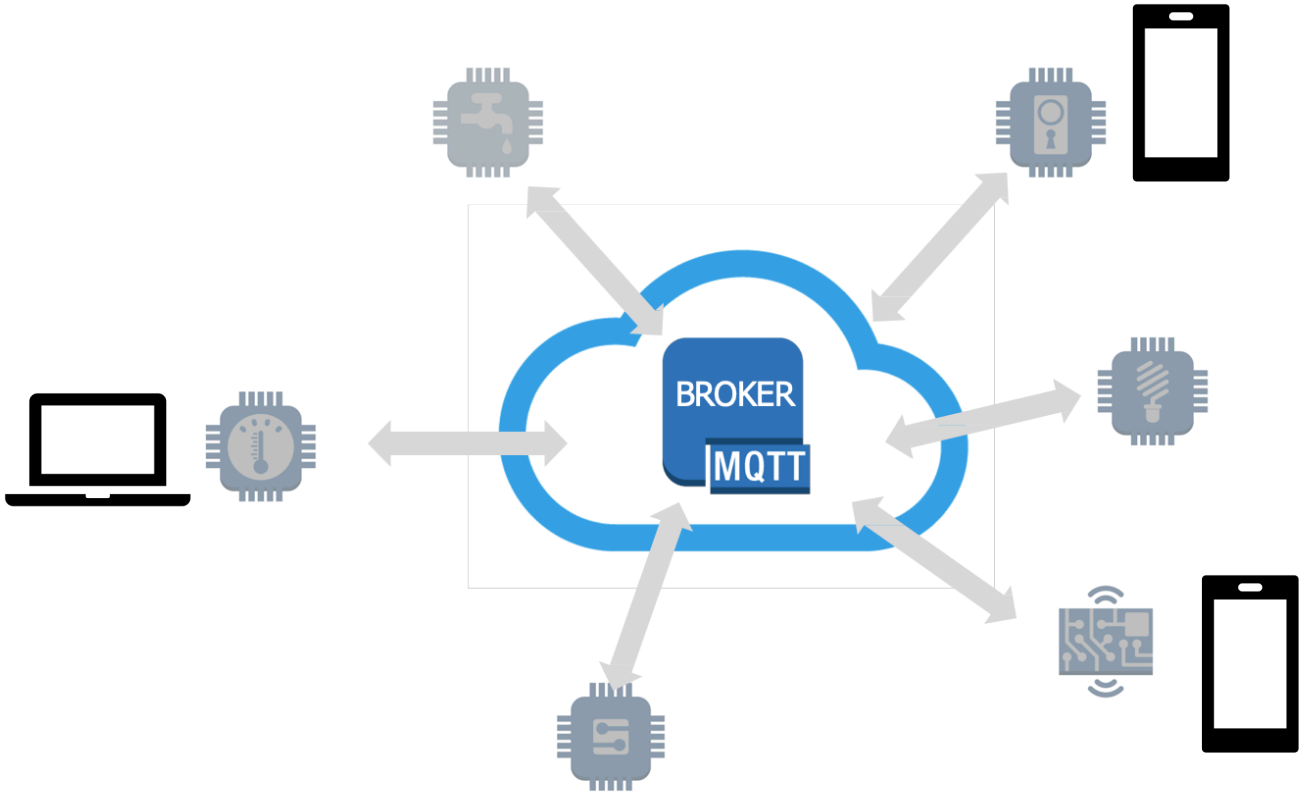
Laptop/Desktop

Smartphone

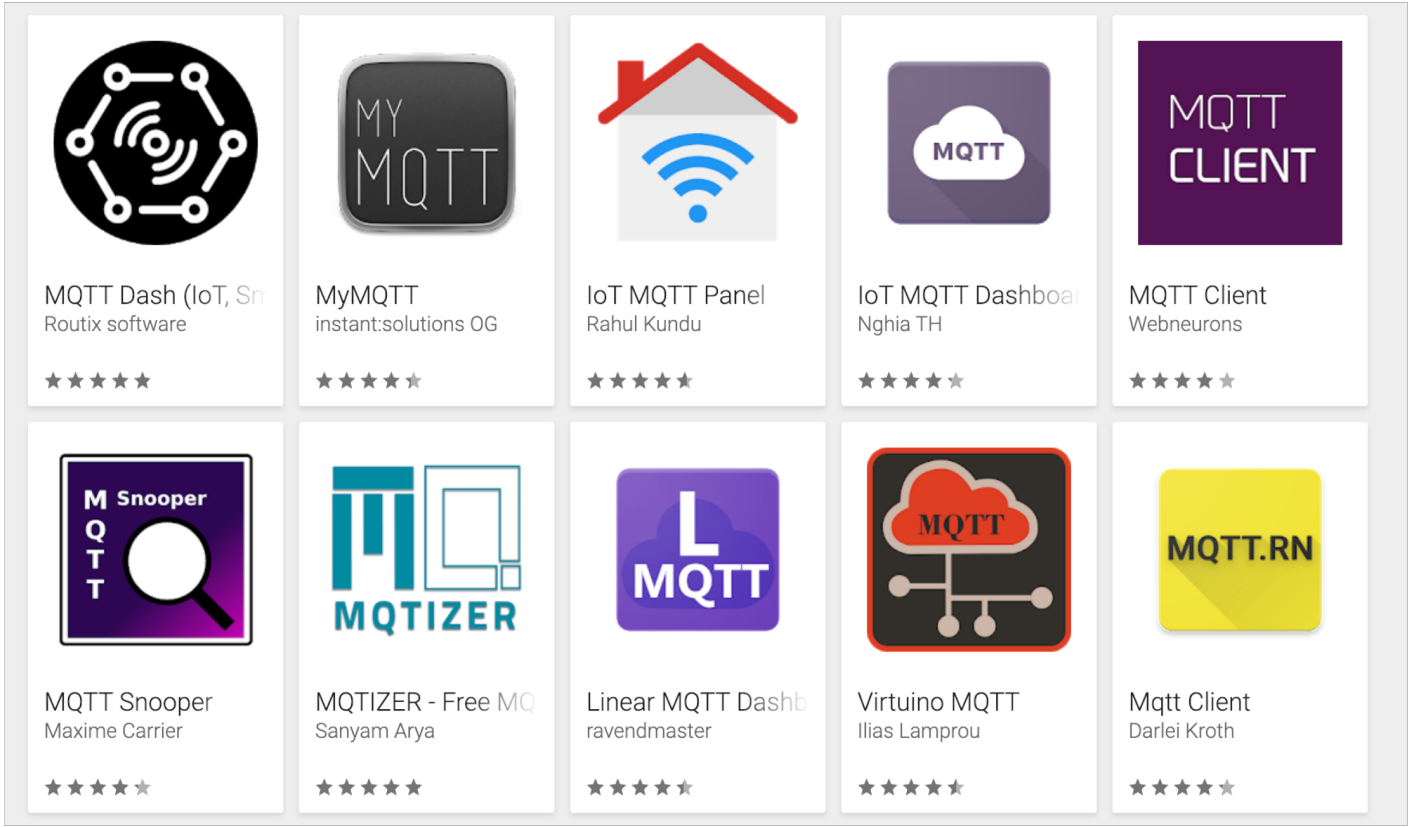
MQTT



MQTT



MQTT: Android



MQTT: iOS


Mqttt
Utilidades
ABRIR
MQTT
Tool

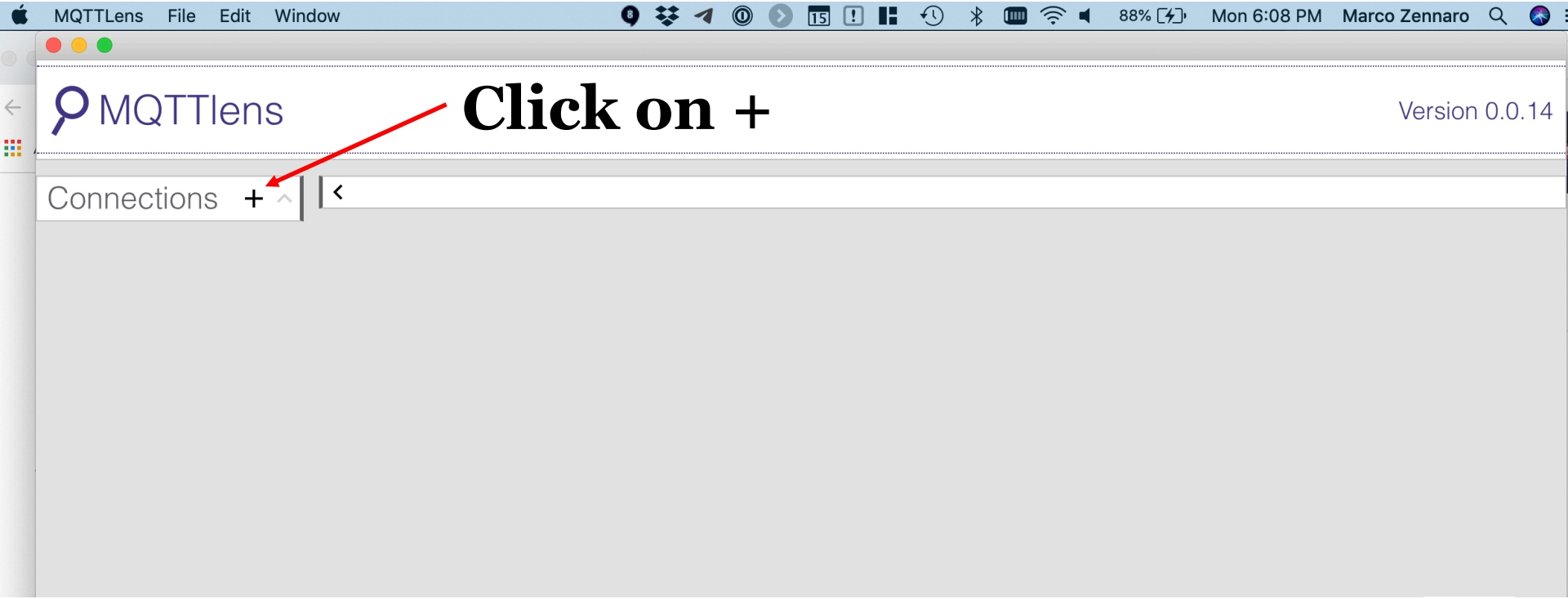

ICPDAS MQ...
Utilidades
ABRIR
MQTT
ICPDAS
UI View
Received Message
ICPDAS/Taichung/DL302/208/
ICPDAS/MQ1/WISE-7255/
DO0 - ON
DI0 - OFF

MQTT: browser

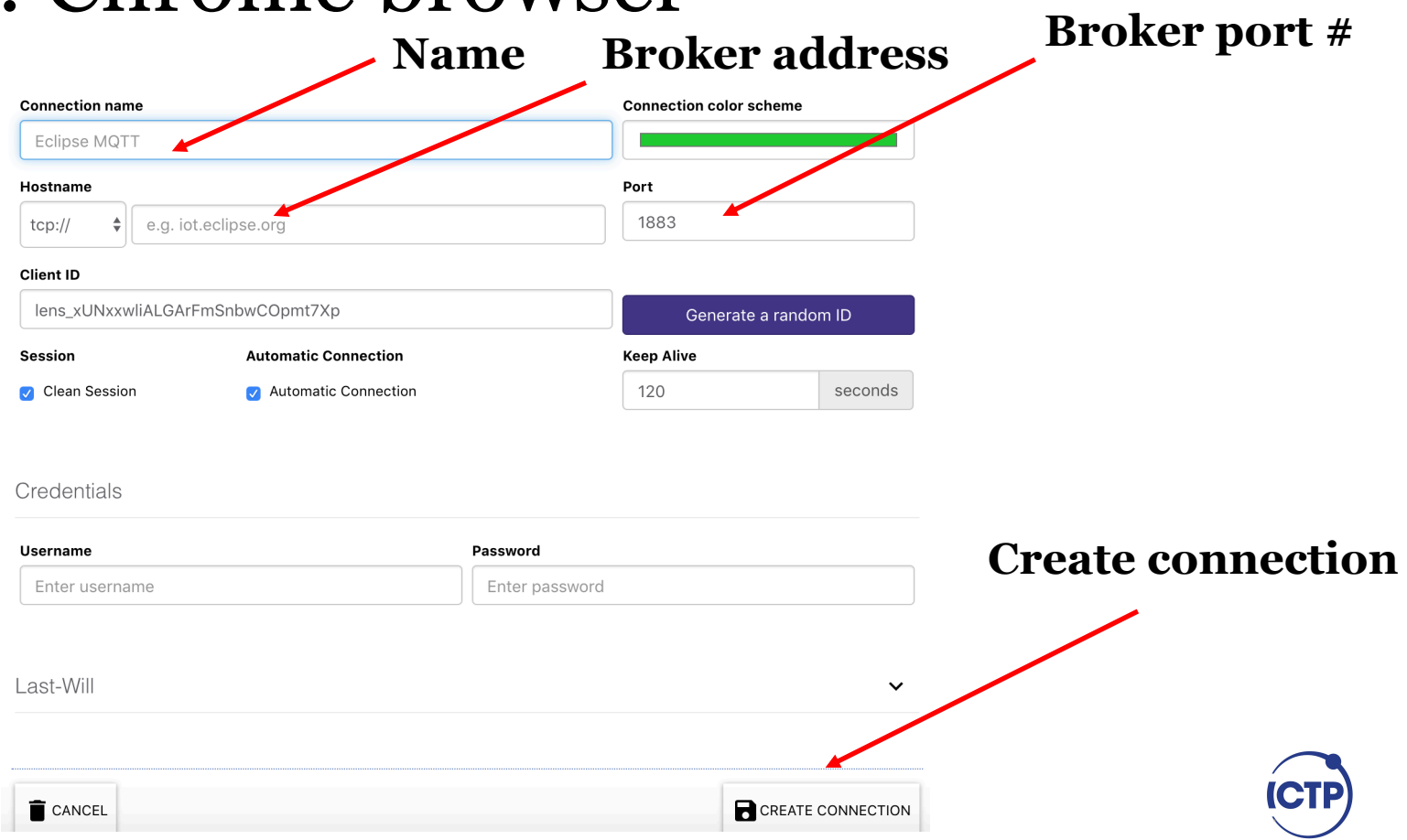
MQTT Lens: a Google Chrome application, which connects to a MQTT broker and is able to subscribe and publish to MQTT topics.

Google for MQTT Lens and install it in Chrome.

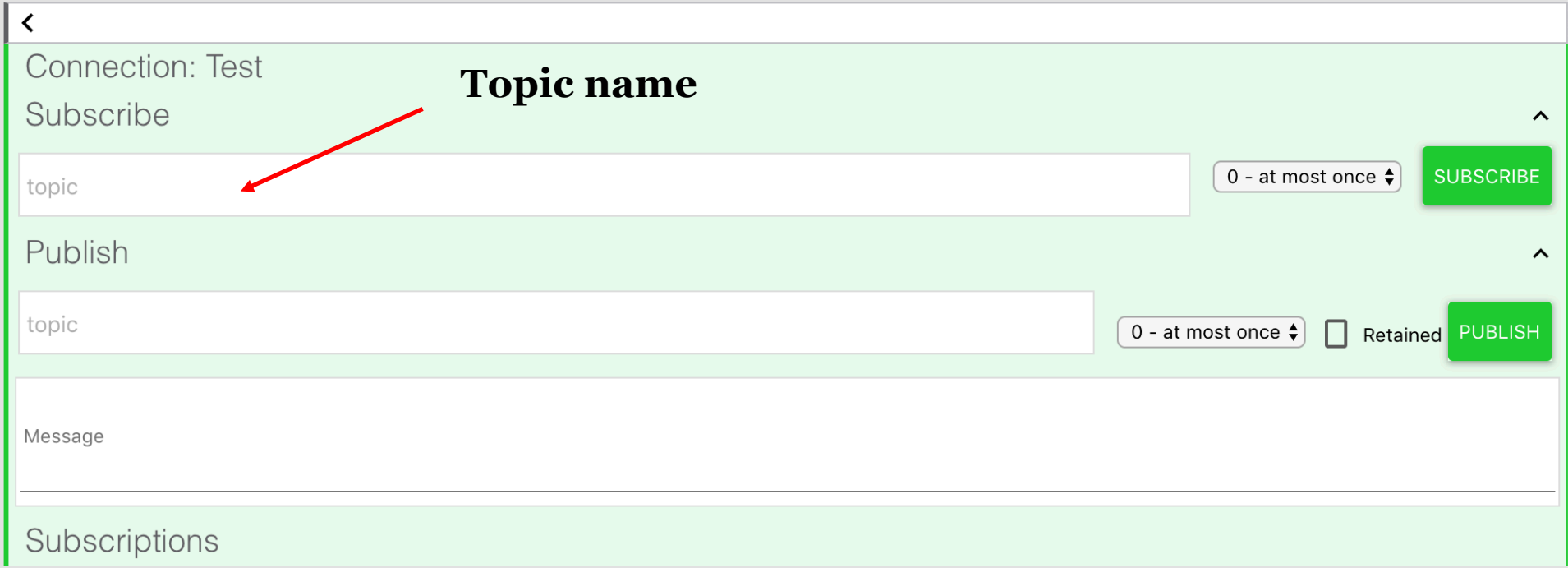
MQTT: Chrome browser



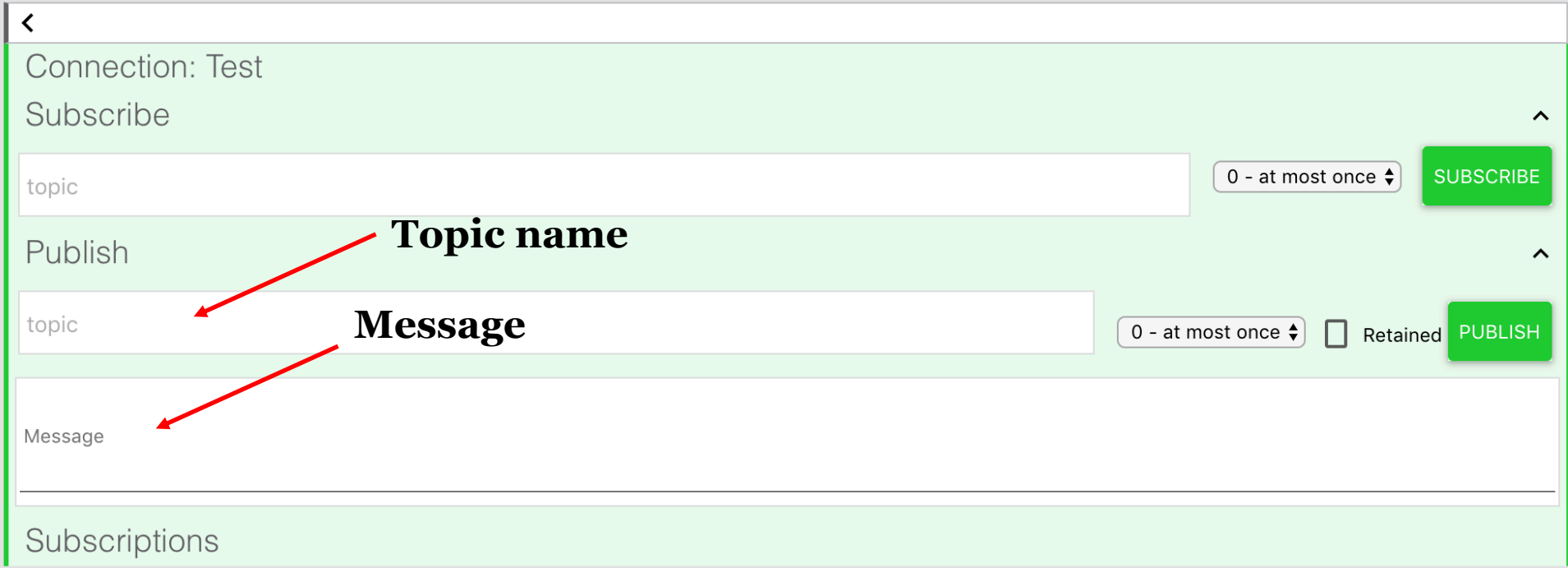
MQTT: Chrome browser



MQTT: subscriber



MQTT: publisher



MQTT: brokers

https://iot.eclipse.org/getting-started/#sandboxes

Hostname: **iot.eclipse.org**

http://test.mosquitto.org/

Hostname: **test.mosquitto.org**

https://www.hivemq.com/mqtt-demo/

Hostname: **broker.hivemq.com**

MQTT: brokers

influx.itu.dk

You can use topic **kampala**

MQTT: brokers

Ports: standard: 1883

encrypted: 8883

List of open brokers:

https://github.com/mqtt/mqtt.github.io/wiki/public_brokers

MQTT: exercise

Divide the class in two groups: one group will publish messages and the other will receive them.

You must first agree on:

1) The broker you will use

2) The topic you will use to publish/subscribe

MQTT: exercise #2

Download this app from the Google Play Store

MQTT: exercise #2

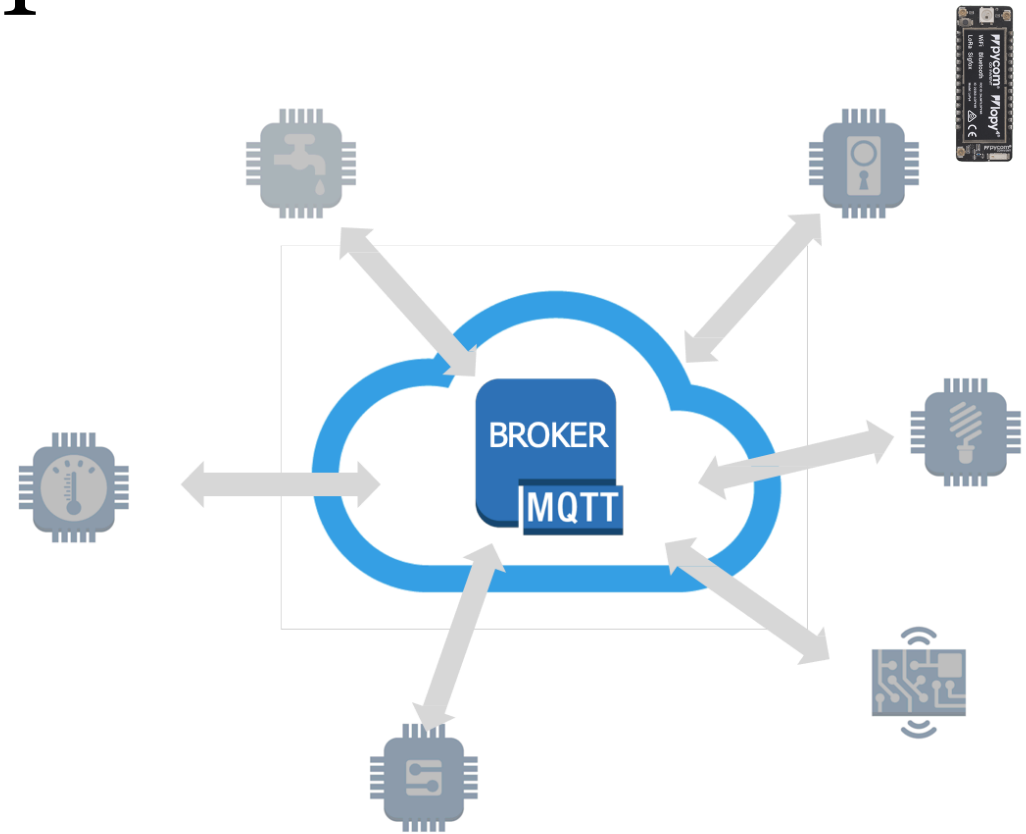
Experiment with the app and send data from your phone's sensors to an MQTT broker.

Can you see the data from an MQTT subscriber?

WiFi

MQTT via WiFi with LoPy

MQTT



WiFi MQTT Publisher example

Open the example in Code/MQTT/publisher directory.

The example code connects to a WiFi Access Point using WPA, connects to an MQTT broker, creates some random data and sends data using a specific topic.

WiFi MQTT Publisher: Exercises

1) Can you receive the data using a subscriber on your phone/browser?

2) Publish using MQTT the values of temperature and humidity of the PySense. Can you receive them?

WiFi MQTT Subscriber example

Open the example in Code/MQTT/subscriber directory.

The example code connects to a WiFi Access Point using WPA, connects to an MQTT broker and waits for messages on a specific topic.

WiFi MQTT: Final Exercise

Divide the class in two groups: the first group publishes temperature and humidity values and the second group changes the LED color according to the temperature value (eg red if temp>30, green if temp<30).

Summary

We learned how to publish and subscribe to MQTT messages using a smartphone or a PC.

We learned how to use WiFi capabilities of the LoPy to connect to an AP, sync the internal clock and read RSSI values.

We sent and received MQTT messages using LoPys.

Feedback?

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