Welcome

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ICTP

Hello

Marco Zennaro, Research Officer, ICTP

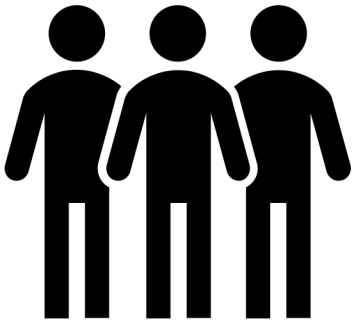
Applied Physics → Telecommunications/ICT4D Lab

Focal Point of the ITU Centre of Excellence in IoT and Big Data and Statistics

Visiting Professor at Kobe Institute of Computing in Kobe, Japan

Have been working in WSN/IoT for 15 years

You?

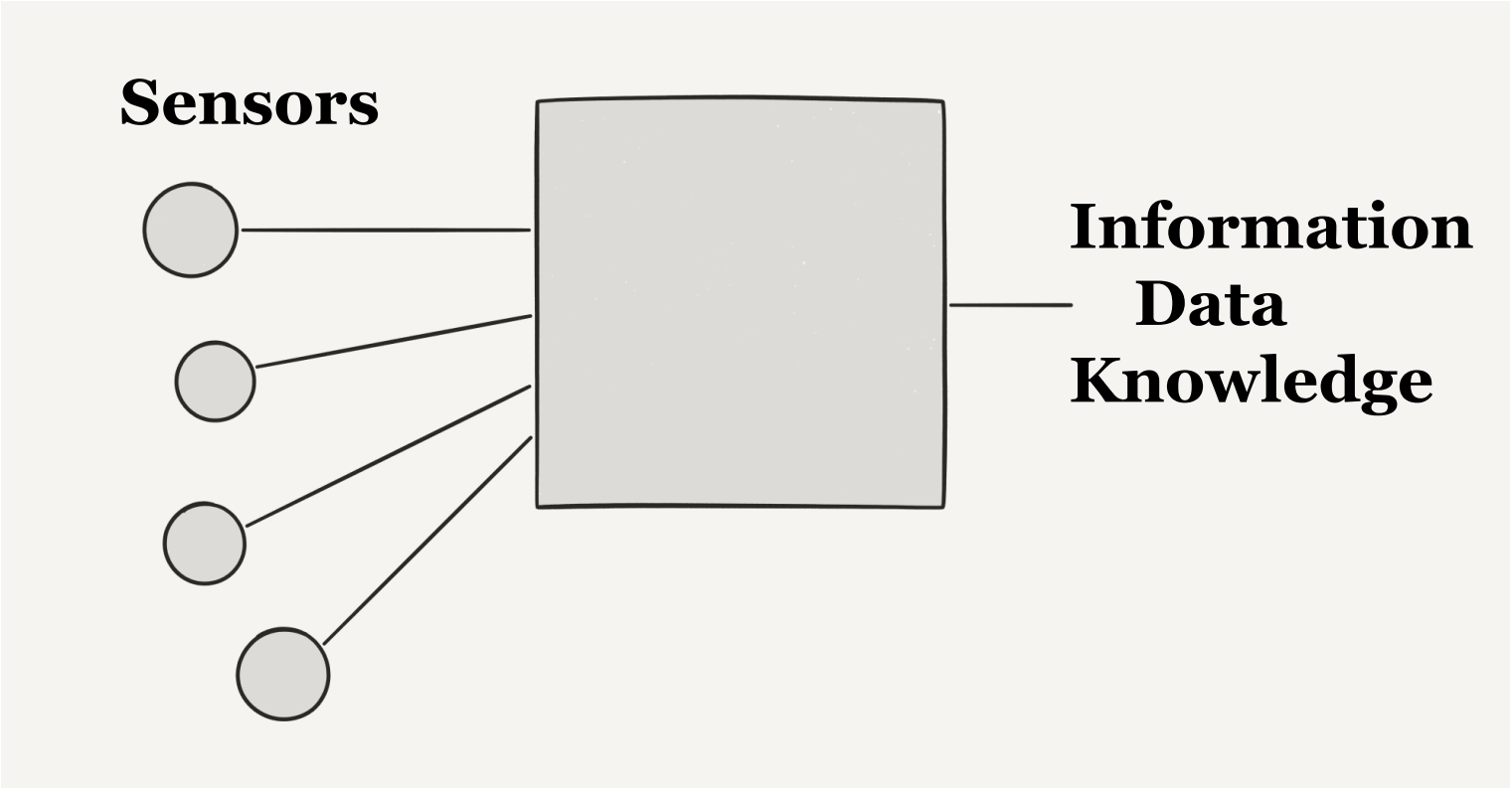


Learning targets

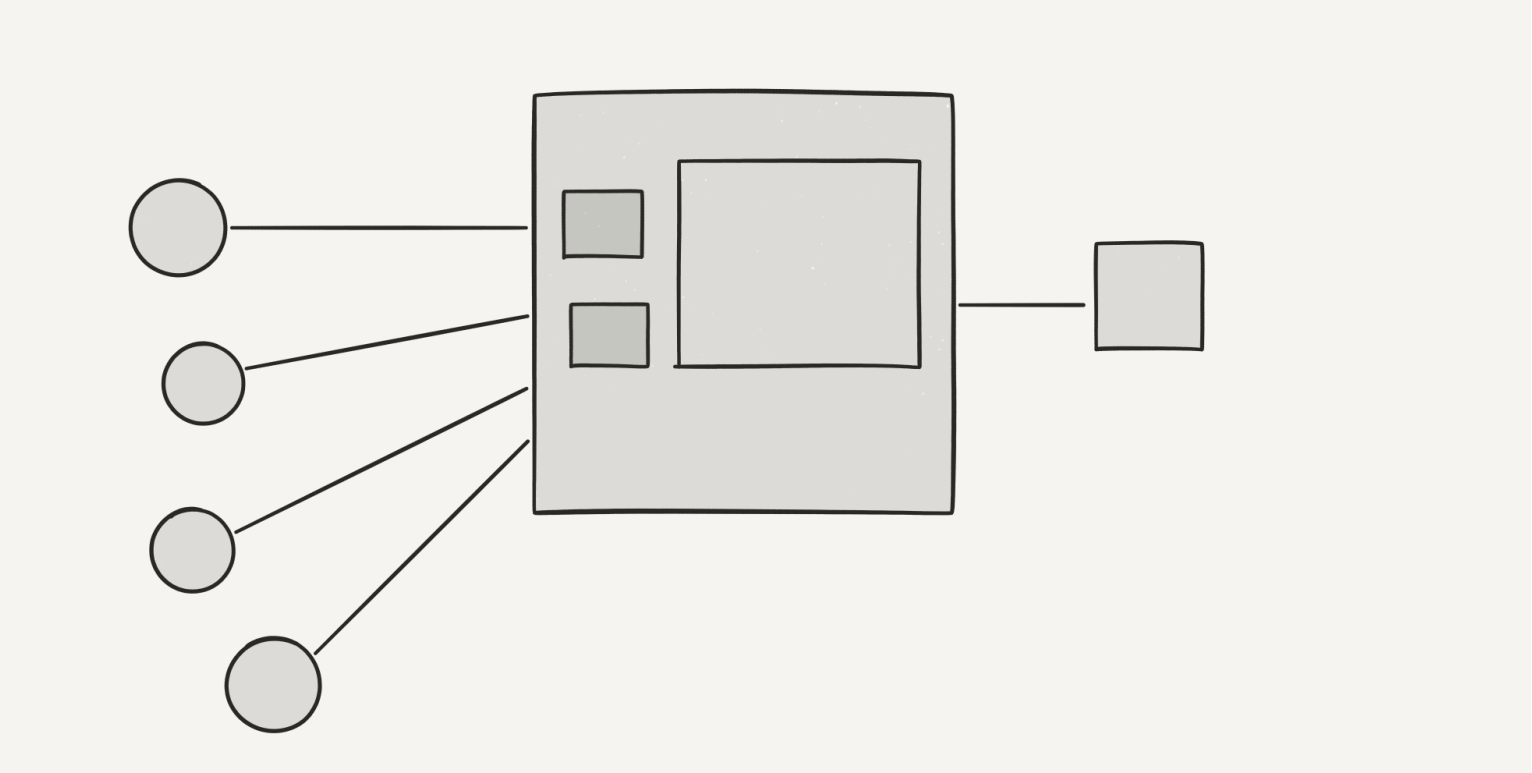
Understanding IoT systems and their fundamental concepts, including the **acquisition**, **transport** and **visualisation** of sensor measurements.

Experimenting with the **software** part, without electronics, of an end-to-end IoT system based on IoT platforms.

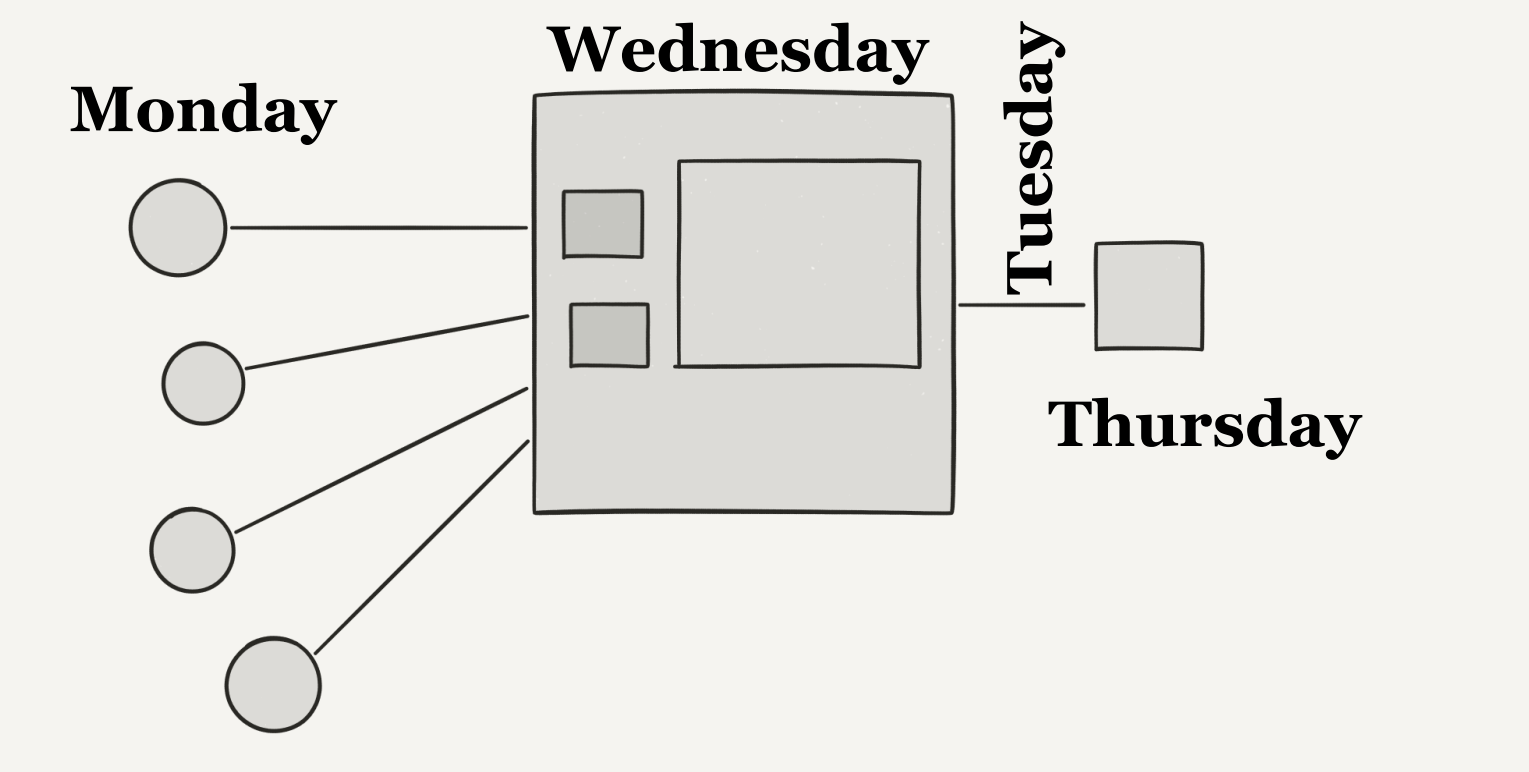
High level view



CS/EE view



Our workshop



Today

Intro to IoT

Labs

Intro to micro python; Pycom intro; Atom; Blink

Sensors (acceleration, light, temperature)

Tuesday

Wireless standards for IoT

Introduction to MQTT

Labs

MQTT with mobile phone + laptop; Saving data to the local flash memory

Wednesday

Intro to TTN

Labs

Installing a gateway; LoRaWAN example: sending temperature via TTN

Ubidots TTN

Thursday

RPiDC: a data center in a RPi (Marco Zennaro, ICTP)

Labs

Installing RPiDC; Using InfluxDB with Python

GitHub

All material (slides, code, examples) will be available on this repository:

https://github.com/marcozennaro/india-pune-2019

Local server

We also have a local server in the lab with the same material + software.

Connect via WiFi to the ssid “iotlab” with password “ilovepython”

ftp (using a browser for example) to 10.3.141.1 and use “pi” as username and “eatmenow” as password

Hands-on sessions

"Be excellent to each other", asking / helping is OK.

Google error messages to fix issues.

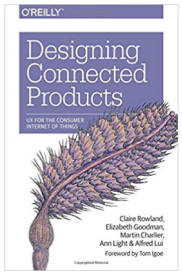
Coping blindly does not lead to new insight.

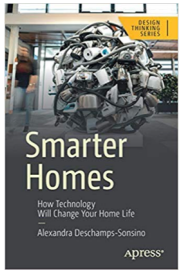
Reading other people's code helps a lot.

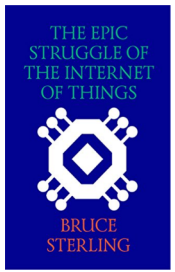
Books on IoT

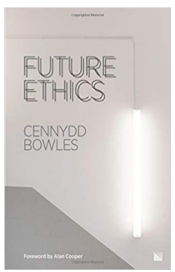
A book is not required for this workshop.

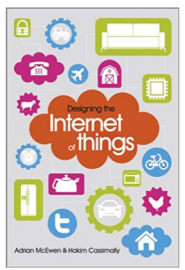
This Wiki has a list of books on a range of topics.











Feedback?

Email me mzennaro@ictp.it