

IoT Workshop 1

13th February, Saturday - 10.30 AM to 5 PM

Important Links

[Workshop 1 Requirements](#)

Agenda

1. Discuss Agenda. What will we cover and what we won't?
2. Introduction to IoT
3. Introduction to IoT Cloud Platform - **Thingsboard**
4. HTTP
5. MQTT
6. CoAP
7. Demo & Further Reading
 - a. Data Visualization in Thingsboard
 - b. Data Processing

Pre-requisites

1. Python
 - a. [Learn Python in Y minutes](#)
 - b. <https://cs231n.github.io/python-numpy-tutorial/> (before Numpy)
 - c. You are free to research a better resource according to your proficiency or skills. Anything not typical of an average Python script/code would be explained.
2. HTTP
 - a. [HTTP Slides](#)
 - b. Following videos demonstrate HTTP with few practical examples
 - i. <https://youtu.be/QIG7wP7R-vE?list=PLvFG2xYBrYAQCyz4Wx3NPoYJOFjvU7g2Z>
 - ii. <https://youtu.be/iYM2zFP3Zn0> (watch until **16:21**)
3. MQTT
 - a. [MQTT Slides](#)

Resources ([Download All](#))

1. [Introduction to IoT Slides](#)
2. [Introduction to Thingsboard Slides](#)
3. [HTTP](#)
 - a. [HTTP Interactive Session Slides](#)
 - b. [Insomnia Endpoints](#)
4. CoAP
 - a. [CoAP Slides](#)
 - b. [CoAP Server Script](#)
5. Demo

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- a. [Dashboards and Rule Chains Slides](#)
- b. [Exported Dashboards and Rule Chain Files](#)
- c. [Data generators](#) (that use different protocols)

Additional resources & Further Reading

- 1. HTTP
 - a. [Mozilla Developer Network](#) (MDN) is a good resource for anything web related including HTTP.
 - b. Request Documentation <https://requests.readthedocs.io/>
- 2. MQTT
 - a. Paho MQTT <https://pypi.org/project/paho-mqtt/>
- 3. CoAP
 - a. CoAP: <https://tools.ietf.org/html/draft-shelby-core-resource-directory-04#page-8>
 - b. Implementation of CoAP in Python : <https://github.com/Tanganelli/CoAPthon>
 - c. Implementation of CoAP in C : <https://libcoap.net/>