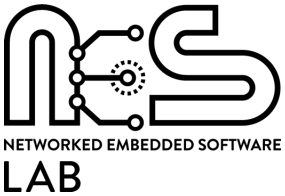
POLITECNICO
MILANO 1863




# Node-RED Lab

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(version 0.1)

# Exercise 1


- Install the **`node-red-node-openweathermap`** extension
- Configure the node with the following data:
  - API Key: **`2caa90098525566a5c251ebb92abd882`**
  - City: **`Milan`**
  - Country: **`IT`**
- **Important**: get your API key before the evaluation lab!
- First, inspect the output of the node when triggered
- Next, develop a flow that creates a file log of the Celsius temperature every minute

# Exercise 2

- Extend the solution to Exercise 1 to read the entire log from the file every minute
- Note: this may be implemented as a separate flow, or as part of the flow of Exercise 1

# Exercise 3

- A UDP **Echo server** is a UDP application that simply bounces back whatever data it gets to the original sender
- Find here a simple Node-RED implementation of an Echo server: **`bit.ly/3GRQ1ZK`**
- Create a flow that sends to the Echo server an object with two properties:
  - A string “The temperature in Milan is”
  - A number with the current temperature as reported by OpenWeatherMap
- Wait for the reply on port 5555
  - …and verify the data is the same as sent earlier!

# MQTT Server

- The exercises coming next use an MQTT server bridging from sensor.community
  - Server name: **`mqtt.neslab.it`**
  - Port: 3200
  - No client ID
  - No authentication
- You cannot use **`eduroam`** or **`polimi-protected`**!
  - Use your own Hotspot
  - Or connect to **`NESLabTeaching`**, password **`DeanBarker`**

# Exercise 4

- Using MQTT, subscribe to **`neslabpolimi/smartcity/milan`** to receive data from **`sensor.community`**
- Use a debug node to show the highest value received so far for
  - Temperature
  - Humidity
  - P2.5
  - PM10
- Note: assume these measures cannot be lower than 0

# By Next Time..

- Install the **`node-red-contrib-chatbot`** extension, which provides a rich set of nodes to build **bots** for Telegram, Facebook Messenger, …
- It has specific requirements of Node.js versions…
  - Post a message on the Forum if in trouble!