HOME CHALLENGE #4: NODE-RED

The goal of this activity is to send MQTT messages to a thingspeak channel (<https://thingspeak.com/channels/1064938>) through a Node-red application.

* In order to accomplish the request to read from .csv file we used the “**timestamp**” and the “csv” blocks.
* The “**mqtt filter**” block is used to filter only the messages with MQTT protocol.
* The “**split**” block is used to divide multiple messages inside a packet, because we noticed that in the .csv file there were multiple lines with more than a message in a single packet.
* The leftmost **“switch”** block uses 4 regular expression pattern to filter only publish messages on the given topics, splitting the flow in two. It also assigns a field value to the message in order to easily distinguish its type downstream. We assigned the *value 1* to all the messages coming from [factory/department1/section1/plc] and [factory/department3/section3/plc] and the *value 2* for the messages from [factory/department1/section1/hydraulic\_valve] and [factory/department3/section3/hydraulic\_valve].
* The “**limit 1 msg/m**” block allows only one message per minute to be sent.
* The second “**switch**” block is used to divide the output of the message limiter between the PLC and the hydraulic valve.
* The last two “**publish**” blocks are needed to send the values to the thingspeak channel.

Immagine che contiene mappa

Descrizione generata automaticamente

The thingspeak layout is composed by two charts (one for the PLC and one for the hydraulic valve) and two lamp indicators that turn on when the actual data value is greater than or equal to 2000.

Immagine che contiene screenshot

Descrizione generata automaticamente

Repository link and contacts

The project repository can be found at the following link: <https://github.com/NonSvizzero/IoT2020>.

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