Homework 2

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April 24, 2022

1 Flow Diagram Nodes

The two aims of the node-red flow were sending the desired data to ThingSpak via MQTT and creating a chart. Both required an independent extraction of the desired date from the provided CSV file and the creation of two distinct messages, properly formatted. The nodes used where:

1. Start: common manually operatable inject node.
2. Read File: opens the provided csv from a local path.
3. Create Chart: executes the following code in order to fetch only the desired 100 lines and formats the messages to populate the chart.

```
var values = msg.payload.split(",");
var code = values[0]
var field5 = values[5];
if (code >= 5577 && code <= 5676){
    msg.payload = field5;
    return msg;
}else{

}
```

4. Chart: plots the values of field5.
5. Create MQTT Packets: executes the following code in order to properly format the MQTT messages.

```
var values = msg.payload.split(",");
var code = values[0];
var field1 = values[1];
var field2 = values[2];
var field5 = values[5];
if (code >= 5577 && code <= 5676){
    msg.topic = "channels/1713080/publish";
    msg.payload = "field1="+field1+"&field2="+field2+"&field5="+field5+"&status=
    return msg;
}else{

}
```

6. Rate limiter: FIFO queue that limits the data rate to 1 msg/30 sec as requested by ThingSpak
7. mqtt Out: sends the created MQTT packets
8. Sent Messages: watches the sent messages for debug purposes.
9. Clean Chart Input + Clean Chart: cleans the chart by sending an empty array to re-execute the code.