Bonus Task: Node-RED RESTful API and Notifications

Objectives:

- Interact with a RESTful API
- Learn to use an event-driven application as Node-RED
- Monitor the state of a resource through RESTful Web Services

Return your Node-Red project and a report by **04.11.2021** in the submission link provided in Moodle

This Bonus task is graded 0-100 and depending on that it can add up to 10% to your final course grade.

The grade will depend on:

- The cleanliness of your solution
- Easiness for running your node-red project
- Report quality
- The results. If your solution does not work, the task grade will be 0

Scenario

A set of workstations is reporting their state, to a remote monitoring system. They update their state through a RESTful API that the remote monitoring system offers.

The remote monitoring system offers the next API endpoints:

Method	Path	Description
GET	/workstations	Gets all workstations
GET	/workstations/{wsID}	Gets the workstation with id {wsID}
POST	/workstations	Creates a workstation
PUT	/workstations/{wsID}	Updates the workstation with id {wsID}
DELETE	/workstations/{wsID}	Deletes the workstation with id {wsID}

The data payload for creating and updating a workstation has the next format:

```
{
    "status":"BUSY",
    "pallets_capacity": 3
}
```

The remote monitoring system is hosted at :

http://iiapi-env.eba-wvpwux6j.us-west-2.elasticbeanstalk.com:80

AUT.840 Industrial Informatics

The workstations can be in any of the next states:

- IDLE
- WORKING
- ERROR

Requirements:

- Create two workstations
- Manipulate their state manually through the API using a REST client
- Create a project in Node-Red that monitor the states of these two workstations continuously
- The Node-Red project should send an alert via email when it detects the next events:

Event	Condition	Email data
workstation_too_long_idle	When a workstation has been more than 3 minutes in IDLE state	Time Workstation ID Event name
workstation_too_long_error	When a workstation has been more than 1 minutes in ERROR state	Time Workstation ID Event name
workstations_too_long_idle	When two workstations have been in IDLE state for more than 2 minutes	Time Workstations ID Event name

- Notice that your solution should send just one email in each event. Is not acceptable that your solution sends several email notifications for the a single event.
- Be careful with the previous point, otherwise you will be sending several emails. Use the debug block to verify that you generate the events correctly before you connect the email block

About the report

- Write your student number and name
- Brief background about event-driven applications
- Node-Red snippets
- Results
- Analyze your results
- How would you improve your solution?
- Conclusions