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Waylay Newbie Exercises

2020-05

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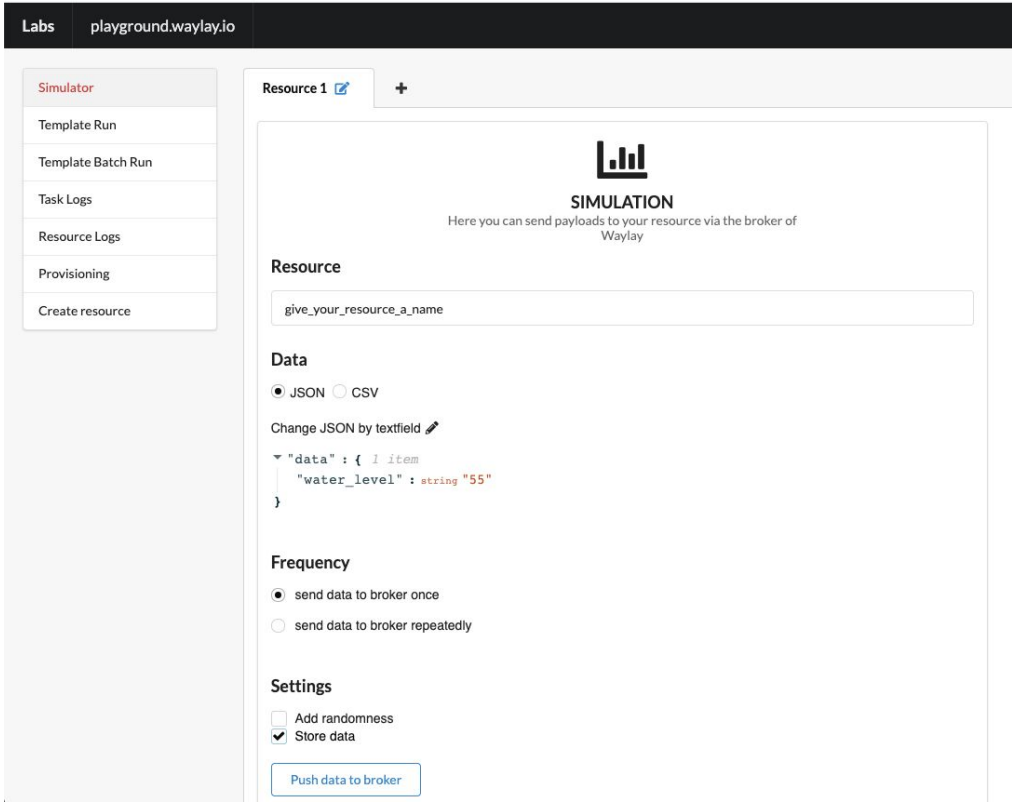
Exercise 1

Exercise 1 – Simple streaming data rule

- We are going to build a simple streaming analytics rule step by step
- We will use ‘Labs’ to simulate a physical device
- Use case:
  - Create an alarm in Waylay when the water level is above a configurable threshold

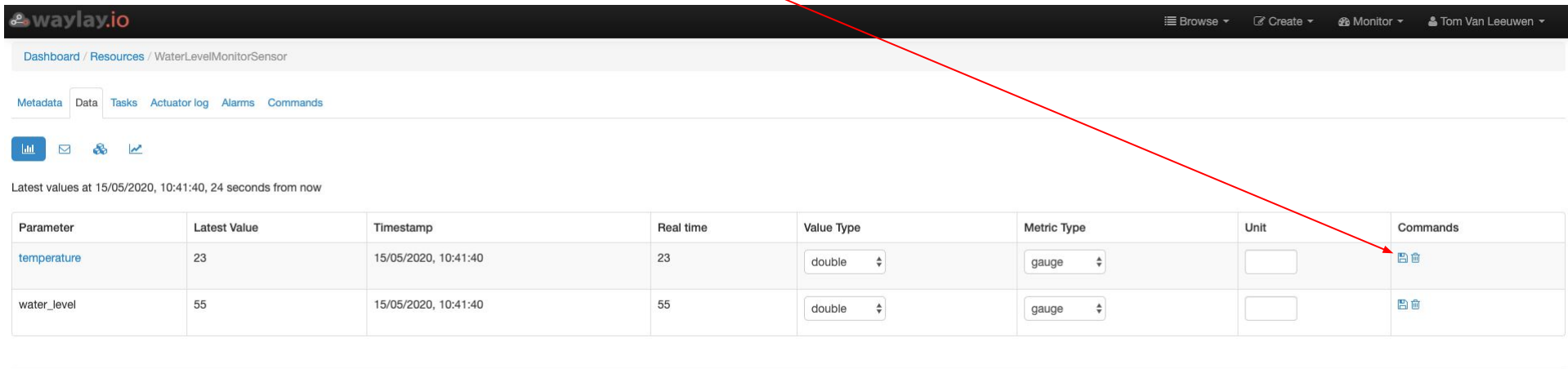
Exercise 1 – Step 1

- Go to ‘Labs’ and shoot some data in Waylay
- This will automatically create a ‘resource’ in Waylay



Exercise 1 – Step 2

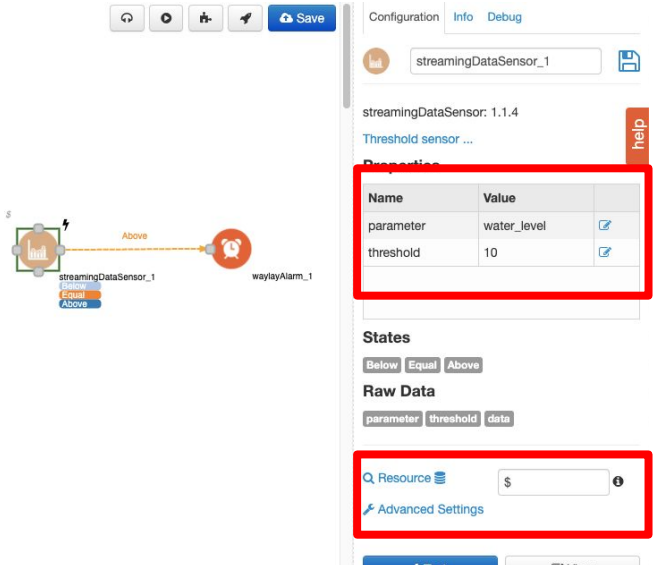
- Go to Resources and find your resource
- Select the ‘data’ tab and click the disk icon next to each variable (=metric). This will store the metric name in the resource meta data

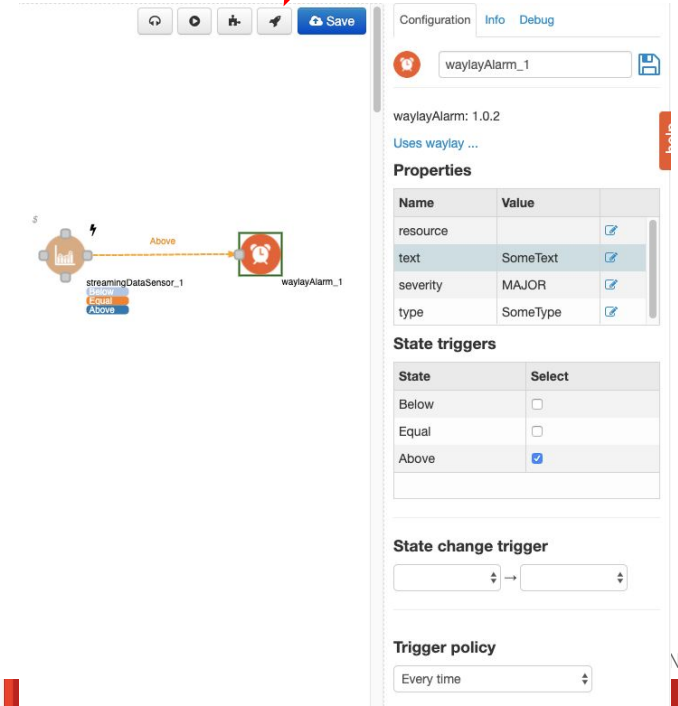


Exercise 1 – Step 3

Rocket icon to launch the rule as a task

- Open the rule designer, which gives you a blank canvas
- Add sensor “streamingDataSensor” and actuator “waylayAlarm” to the canvas and connect them
- Configure them both like this

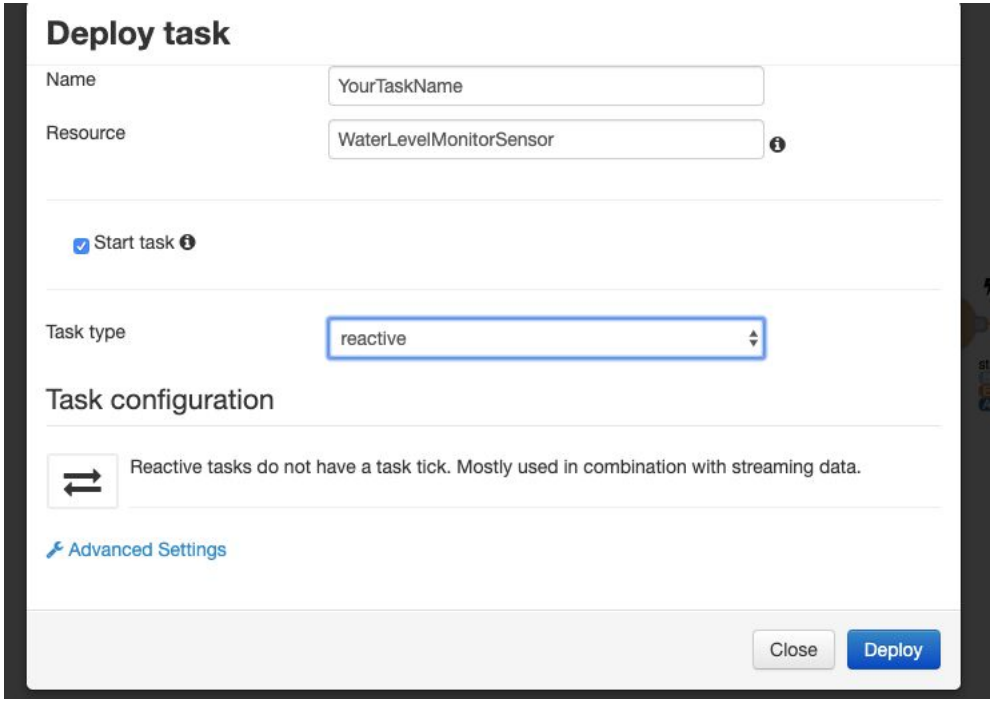




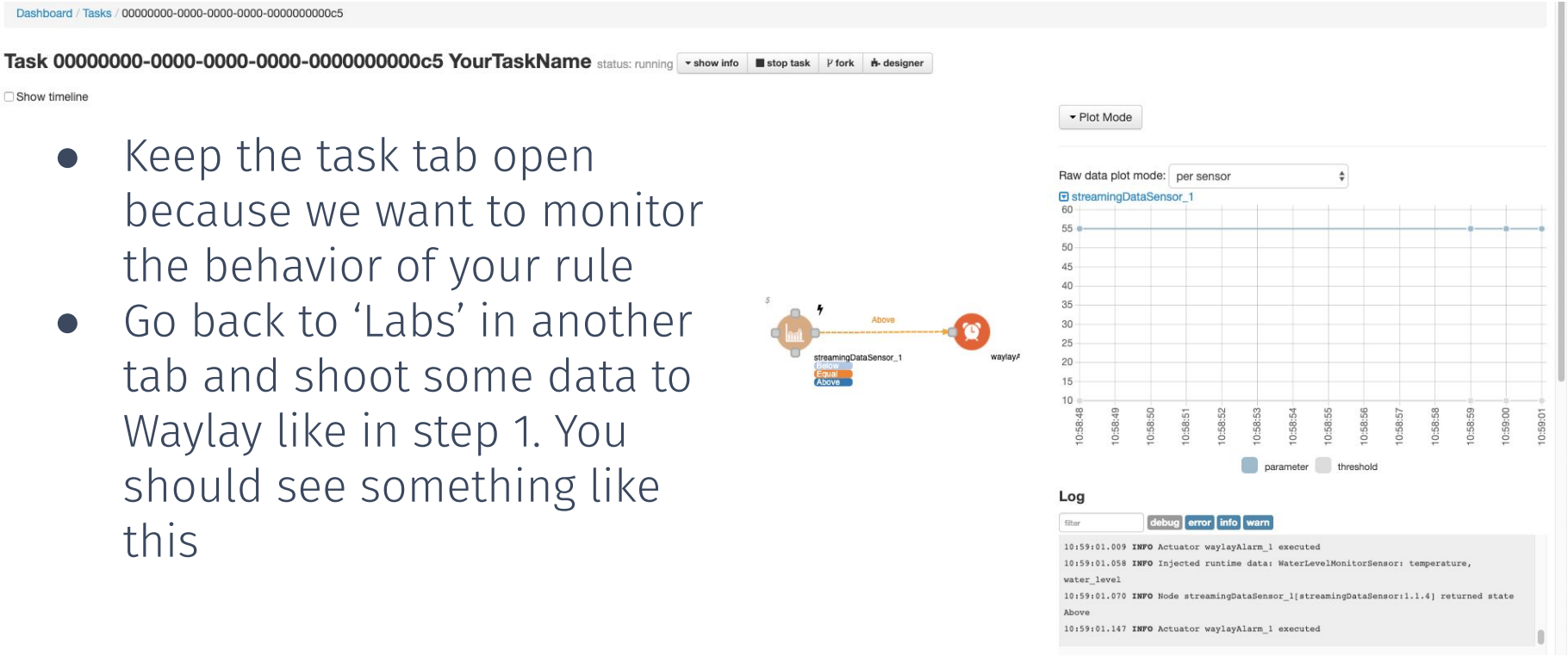
Notice that we are “templating” the resource using ‘$’, which means that we will assign a real resource at runtime

Exercise 1 – Step 4

- Save your rule by clicking the ‘save button’
- Launch the rule by clicking the rocket icon
- Start the task in reactive mode on an actual resource, cfr the resource that you just created in step 1
- Click the ‘view task’ button



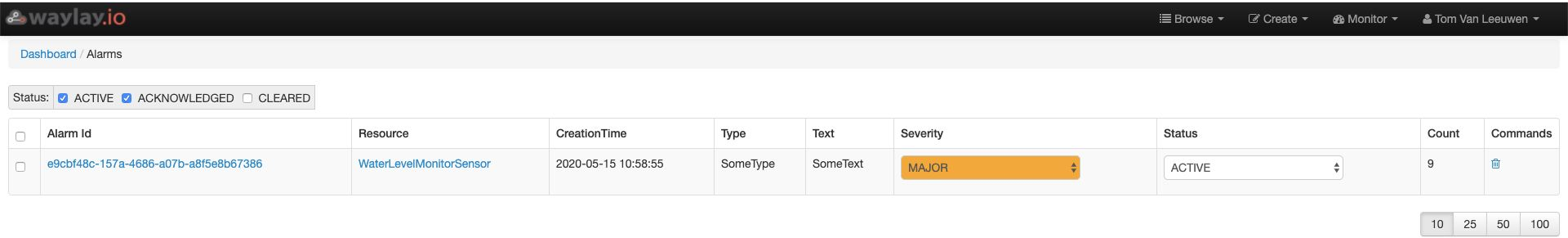
Exercise 1 – Step 5



- Keep the task tab open because we want to monitor the behavior of your rule
- Go back to ‘Labs’ in another tab and shoot some data to Waylay like in step 1. You should see something like this

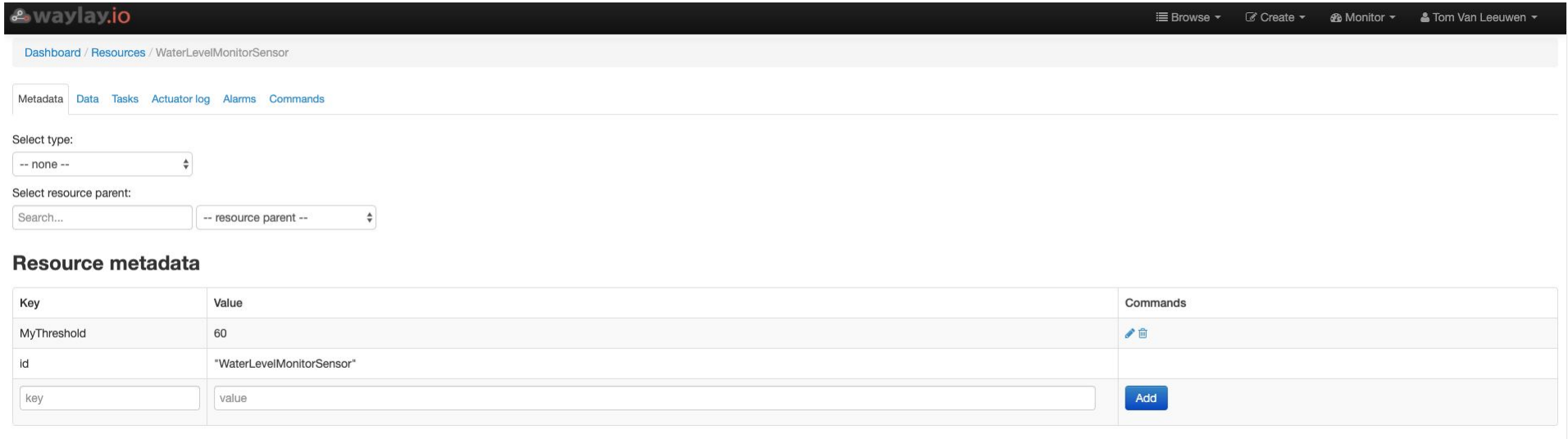
Exercise 1 – Step 6

- Go to the ‘Alarms’ tile and see the alarms that were generated by the rule



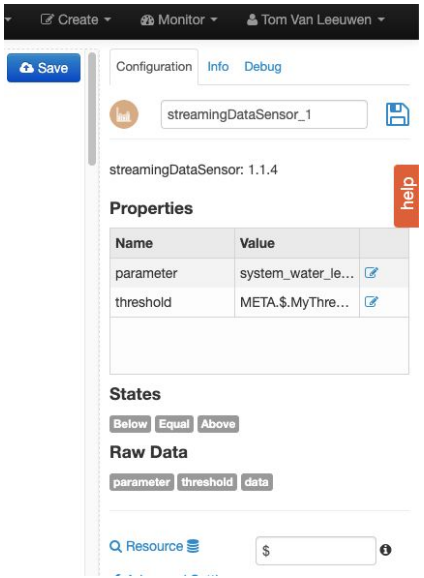
Exercise 1 – Step 7

- Go to your resource and add a new meta data key and value for the threshold



Exercise 1 – step 8

- Go back to your rule and edit the streamingDataSensor ‘threshold’ property and enter
  - ‘META.$.MyThreshold’
- Save your rule
- Launch your rule as a task and view it
- Use Labs to shoot some data into it
- Go to your resource meta data and change the threshold value to a large number (keep the task running)
- Use Labs to shoot new data into it (below the new threshold) => see that the alarm is not triggered
  - Note: your previous task may still be running, which will generate its own alarm



Exercise 1 – What did you just learn

- You learned how to use Labs to simulate data
- You learned how to create a simple streaming analytics rule
- You learned how to create alarms
- You learned how to monitor a running rule
- You learned how to parameterize thresholds using resource meta data

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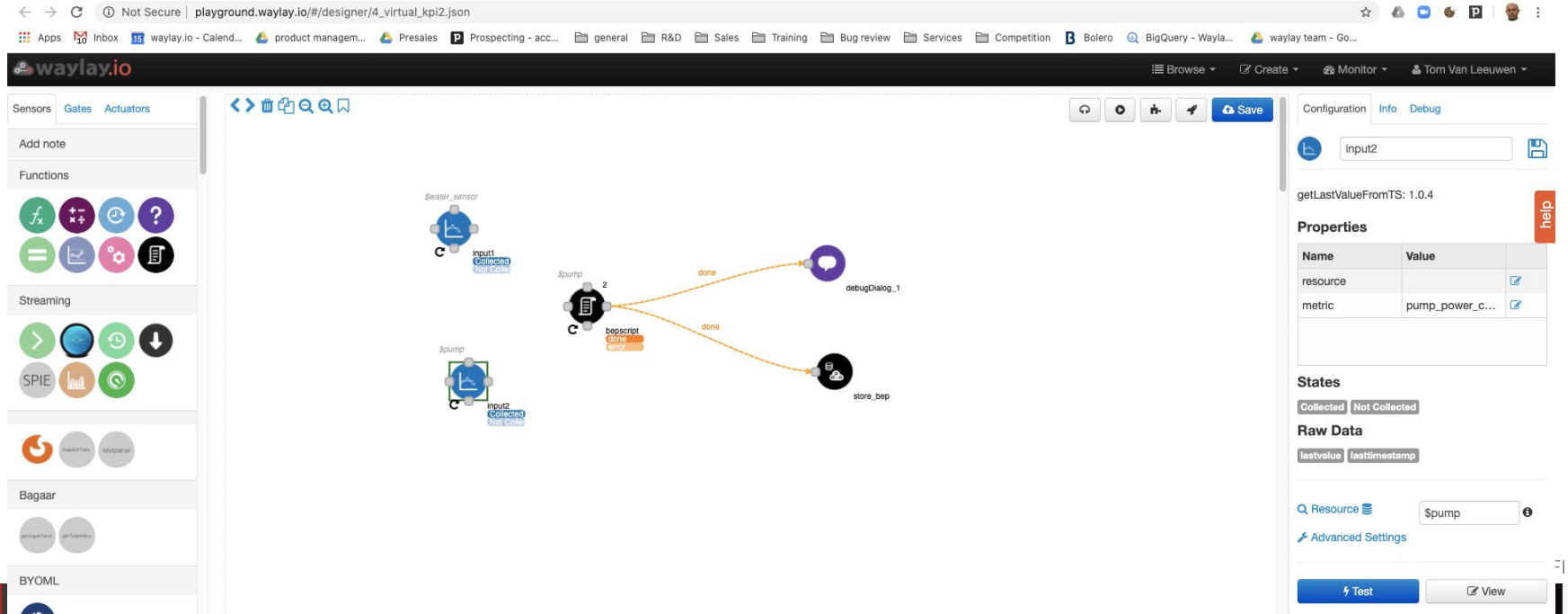
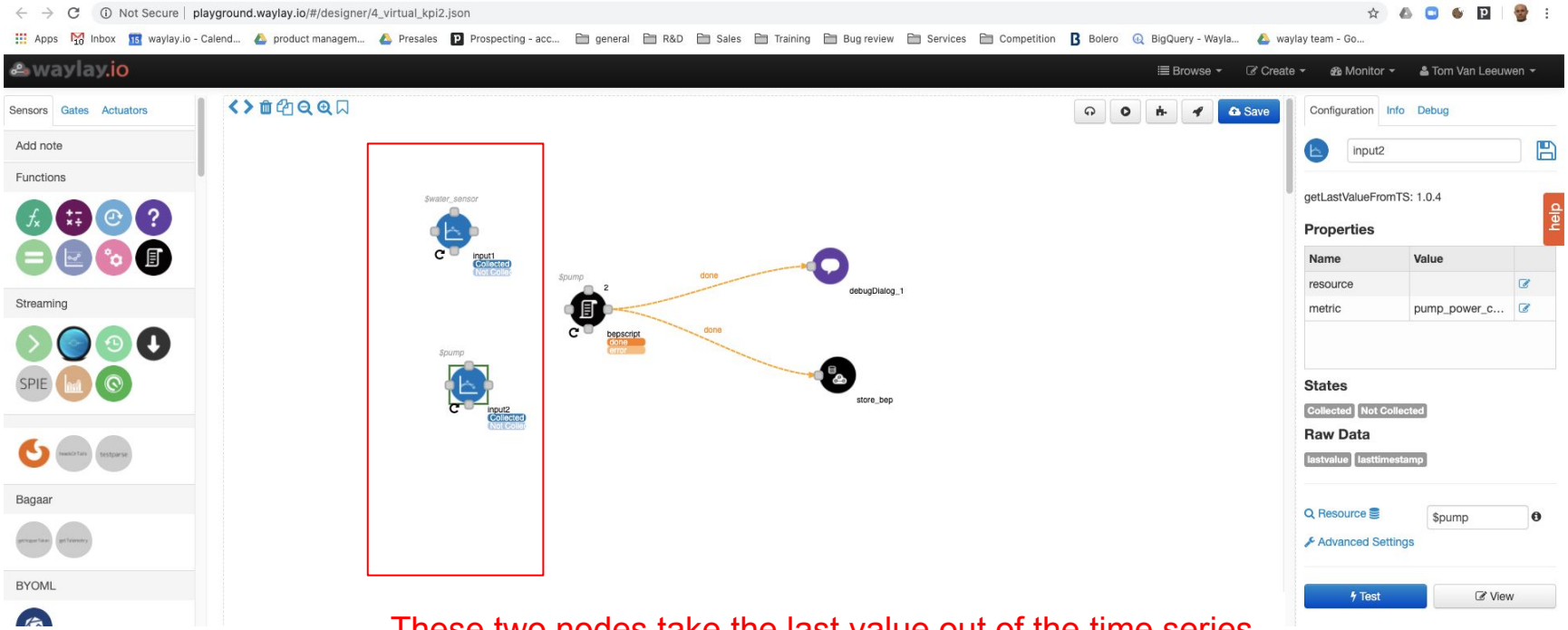
Exercise 2

Exercise 2 – Creating virtual KPIs

- In this exercise we will study the rule ‘virtual_kpi2.json’ available on your environment
- This rule is supposed to run periodically

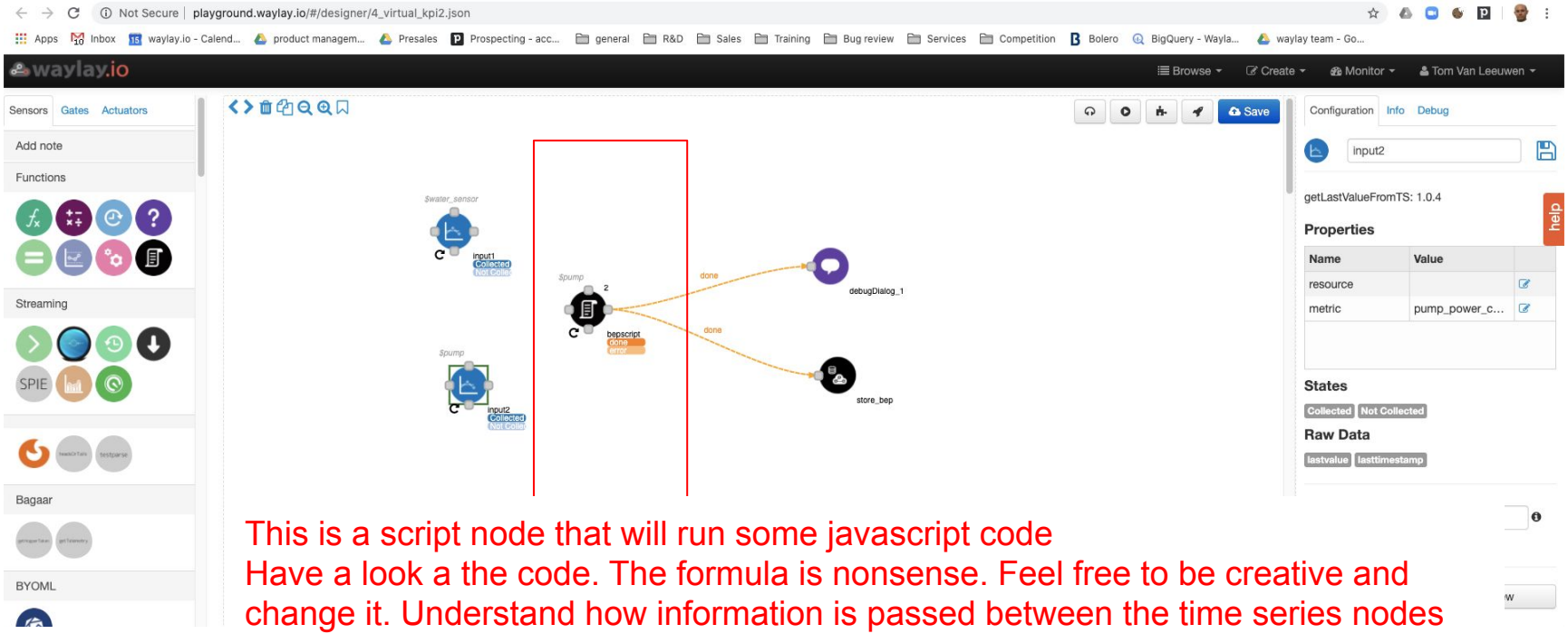


Exercise 2 – step 1



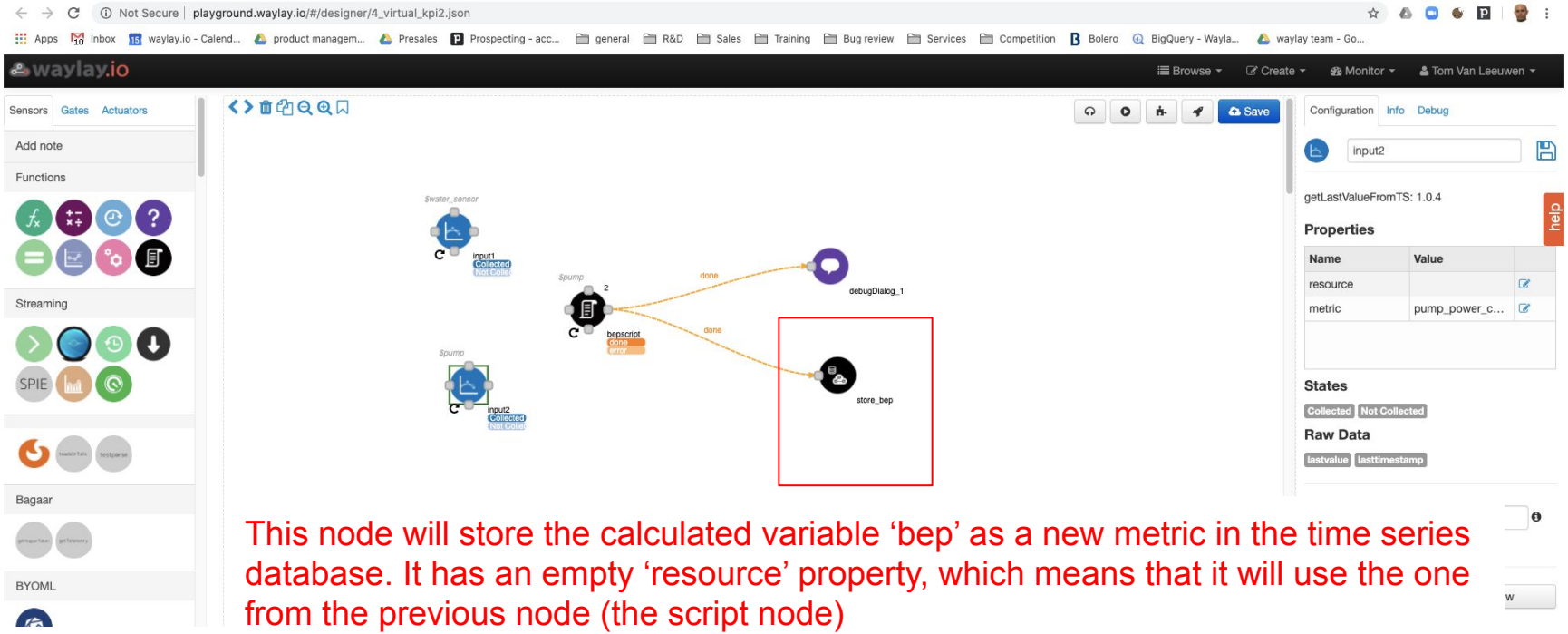
These two nodes take the last value out of the time series data for two different metrics from two different resources
Study the configuration for both of these nodes

Exercise 2 – step 2



This is a script node that will run some javascript code
Have a look a the code. The formula is nonsense. Feel free to be creative and change it. Understand how information is passed between the time series nodes and the script node.
Notice the sequence number 2: this node will only be executed when the time series nodes have finished with retrieving their data

Exercise 2 – step 3



This node will store the calculated variable ‘bep’ as a new metric in the time series database. It has an empty ‘resource’ property, which means that it will use the one from the previous node (the script node)

Study its configuration and understand how data is passed between the nodes in this rule

Exercise 2 - step 4

- You can now launch this rule. Make sure you launch it as a periodic task, set periodicity=1min
- The wizard will ask you to assign resources to
  - $water_sensor
  - $pump
- You can create those using Labs - shoot some data in Waylay for 2 different resources (make sure to set the flag ‘store data’ to ensure that data is stored in the time series database)

Exercise 2 – step 5

- If your task is executing properly and you are shooting some randomized waterlevel and power consumption data in Waylay, your task shall calculate every 1 min the derived/virtual metric ‘bep’ and store it as a new metric for the pump resource
- Go to the ‘Resources’ tile and select the pump resource. See in the data ‘tab’ the new metric bep appearing
- Click the ‘bep’ metric and the Time Series Analytics data explorer will open

Exercise 2 - What did you just learn

- You learned how to use periodic tasks
- You learned how to use historical time series data in rules
- You learned how to combine data from multiple metrics/resources and create a derived/virtual metric

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End