



Improve
QUALITY SERVICES

Test automation, handcuffs or enforcement?

11-10-2016, Pieter Withaar
Testnet najaarsevenement 2016



consult.



train.



practice.

The Automator

Test automation



Handcuffs or enforcement?

I'm an automator

- I automate everything
- Everywhere
- Whenever I can
- I like to automate
- Manual tasks are preventable

```
#!/usr/bin/python
import sys
import json
import urllib2
import re
import time
import datetime
import hashlib, urllib

def open_port():
    pass

def close_port():
    pass

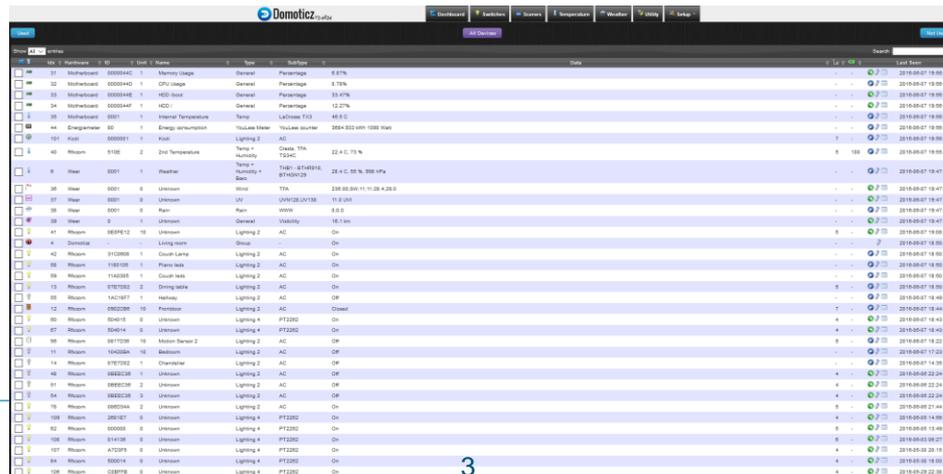
class Domoticz():
    def __init__(self, url):
        self.baseurl = url

    def _execute(self, url):
        req = urllib2.Request(url)
        return urllib2.urlopen(req, timeout=5)

    def get_device_on(self, mid):
        """
        Get the Domoticz device information.
        """
        url = "%s/json.php?command=getDeviceWithLightId=%s&withCommand=On" % (self.baseurl, mid)
        data = json.load(self._execute(url))
        return data

    def get_device_off(self, mid):
        """
        Get the Domoticz device information.
        """
        url = "%s/json.php?command=getDeviceWithLightId=%s&withCommand=Off" % (self.baseurl, mid)
        data = json.load(self._execute(url))
        return data

def flashing(url, device_id):
```



| ID | Name | Type | Subtype | Status | Last Seen |
|-----|----------------------|-----------------|-----------------|---------------------------|------------------|
| 37 | Memory Usage | General | Percentage | 8.57% | 2010-07-19 09:20 |
| 32 | CD/DVD Drive | General | Percentage | 0.76% | 2010-07-19 09:20 |
| 33 | HDD - Sata | General | Percentage | 33.47% | 2010-07-19 09:20 |
| 34 | HDD - IDE | General | Percentage | 12.27% | 2010-07-19 09:20 |
| 35 | Internal Temperature | Temp | Latitude T55 | 48.0 C | 2010-07-19 09:20 |
| 44 | Energy Information | Yield | Yield | 3654.933 kWh (100 Watt) | 2010-07-19 09:19 |
| 101 | Kaon | Lighting 2 | AC | On | 2010-07-19 09:14 |
| 6 | 2nd Temperature | Temp + Humidity | Temp + Humidity | 22.4 C, 73 % | 2010-07-19 09:42 |
| 36 | Weather | Wind | Wind | 216.00 km/h (134.200 mph) | 2010-07-19 07:24 |
| 37 | UV | UV | UV | 11.8 J/m2 | 2010-07-19 07:24 |
| 38 | Rain | Rain | Rain | 0.0 mm | 2010-07-19 07:24 |
| 39 | Visibility | Visibility | Visibility | 16.1 km | 2010-07-19 07:24 |
| 41 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:09 |
| 42 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:10 |
| 38 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:10 |
| 39 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:10 |
| 13 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:10 |
| 35 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 12 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 36 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 37 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 38 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 39 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 14 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 40 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 41 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 42 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 34 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 35 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 36 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 37 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 38 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 39 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 14 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 15 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 16 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 17 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 18 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 19 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 20 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 21 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 22 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 23 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 24 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 25 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 26 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 27 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 28 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 29 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 30 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 31 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 32 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 33 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 34 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 35 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 36 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 37 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 38 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 39 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 40 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 41 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 42 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 43 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 44 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 45 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
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| 47 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 48 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 49 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 50 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 51 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 52 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 53 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
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| 55 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 56 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 57 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 58 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 59 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 60 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 61 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 62 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 63 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 64 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 65 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 66 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 67 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 68 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 69 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 70 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 71 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 72 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 73 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 74 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 75 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 76 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 77 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 78 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 79 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 80 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 81 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 82 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 83 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 84 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 85 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 86 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 87 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 88 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 89 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 90 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 91 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 92 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 93 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 94 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 95 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 96 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 97 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 98 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 99 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |
| 100 | Lighting | Lighting 2 | AC | On | 2010-07-19 09:11 |

I called her Claire



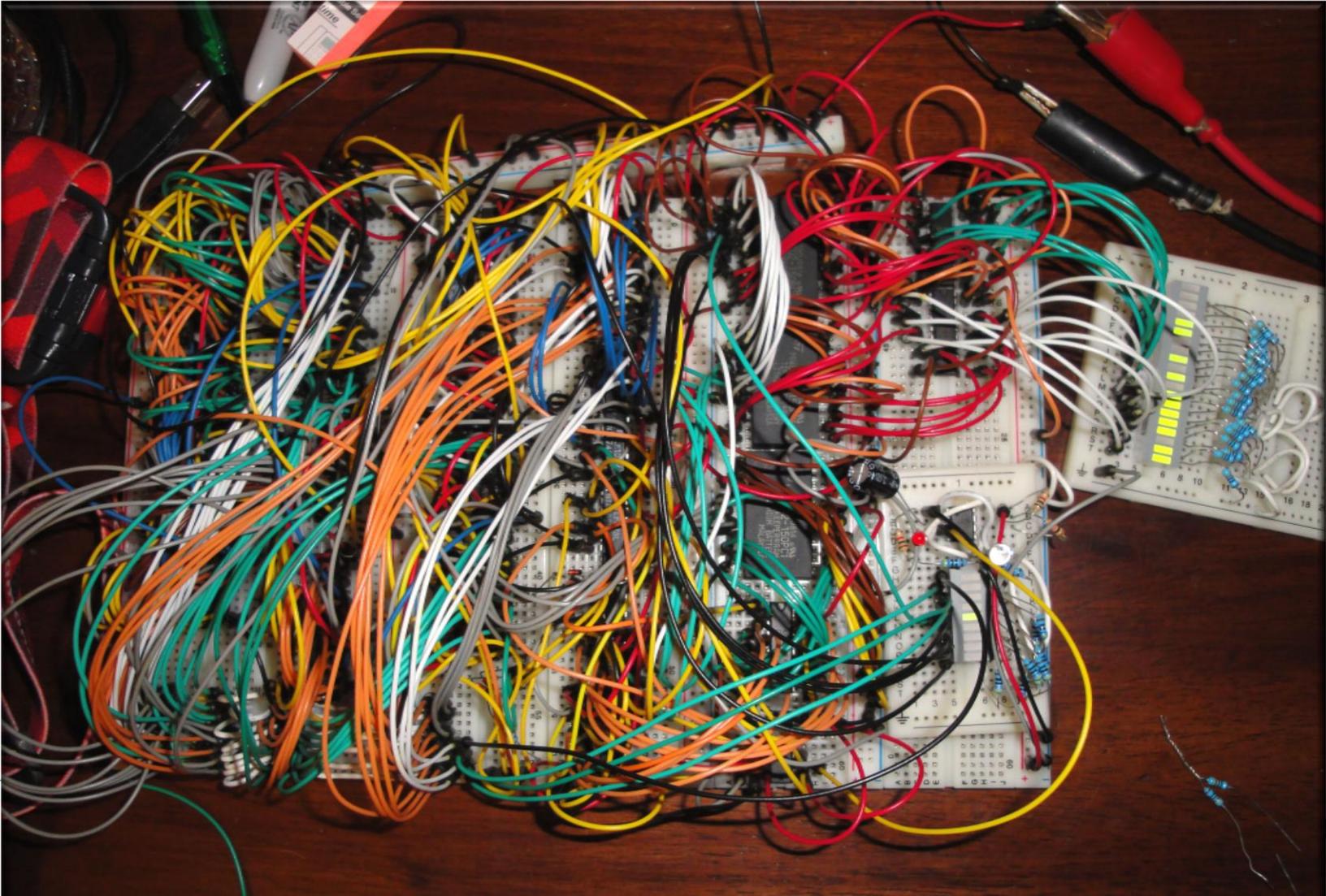
TA Handcuffs or enforcement?

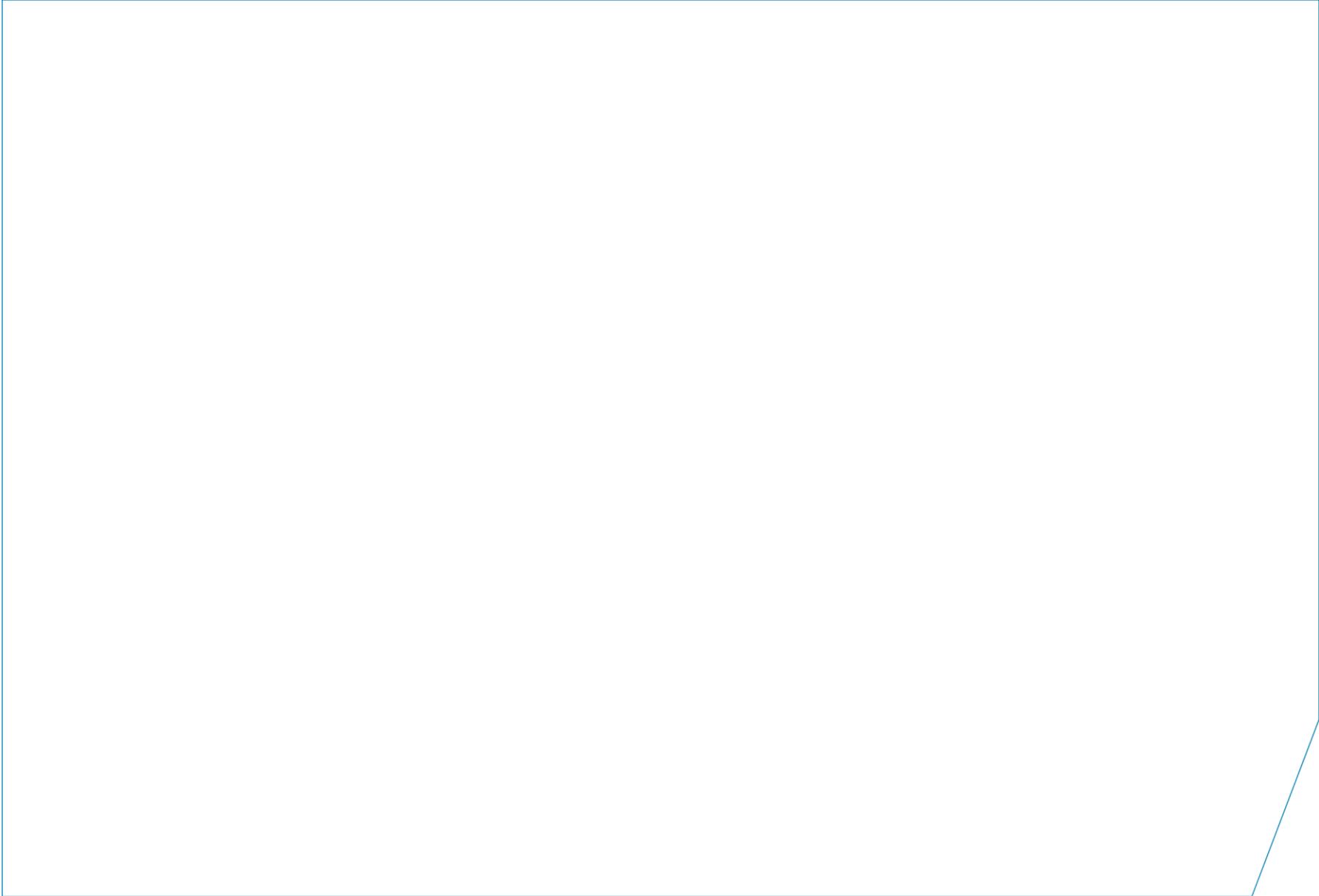
I called her Claire



TA Handcuffs or enforcement?

Automation turned into more automation





Is pushing a button that hard?



Into the deep



Well hello there

under
construction



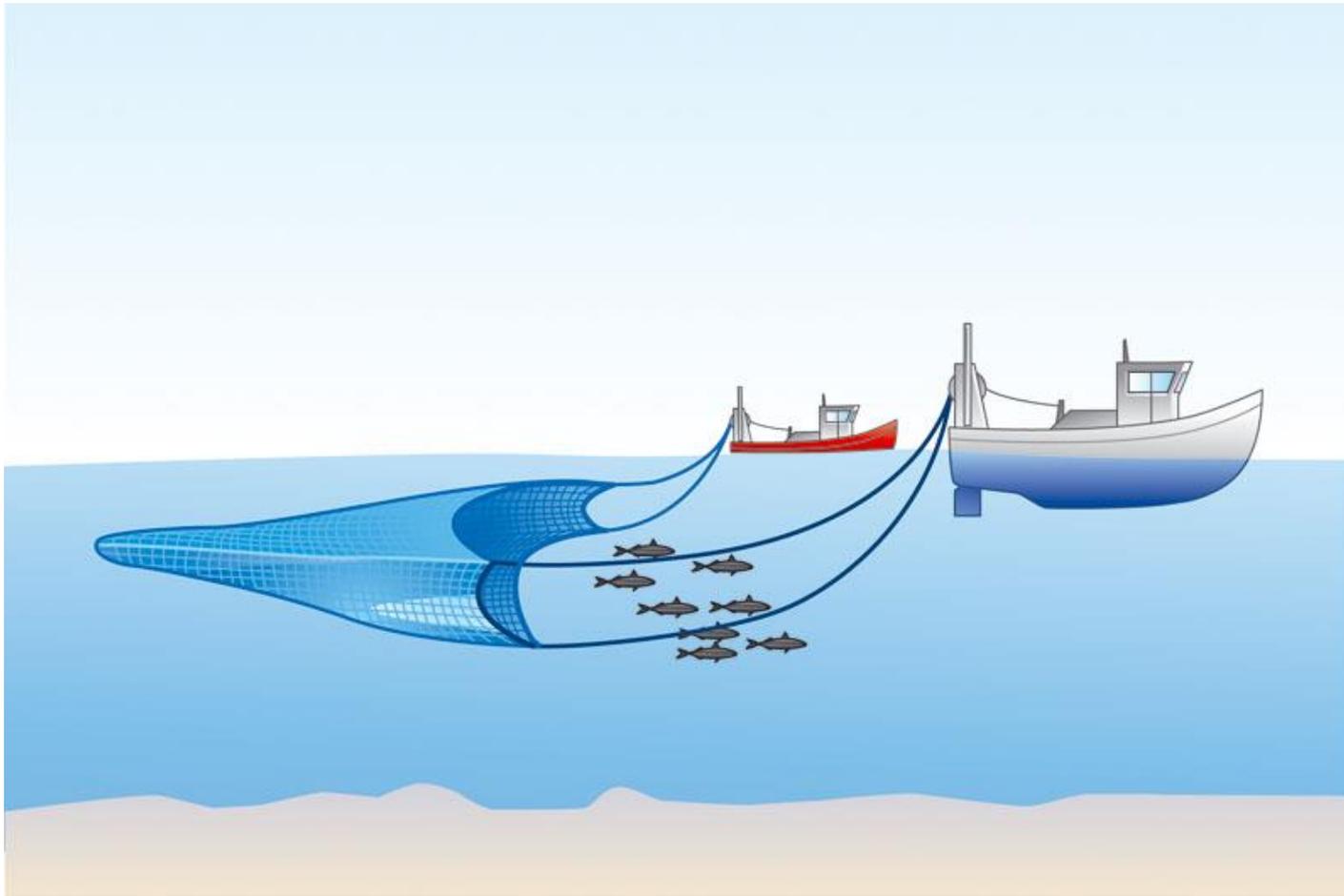
please come back later...

This test is currently under construction.
Check back soon!

I'm a tester

- I like to explore
- Find different angles
- See all the options
- Like problem solving
- Design and perform experiments
- Discover the unknown unknowns

Data trawling method



Both the tester and automator

- Create a lot of automated tests
- Combined they are good
- In solitude it leads to unmaintainable automation

WARNING

DO NOT USE THIS

Feature: I just wanna do loads of almost the same checks
As a end user I want to have the system to be able to do Loads of different things
So I can use it for anything that I can think of

Background:

Given all data here is known in the system, else we cant use it

| User Number | Date of birth | Some interesting feature | The code | Another code | Starting date | End date | Something |
|-------------|---------------|--------------------------|--------------|--------------|---------------|----------|-----------|
| 136130598 | 01-01-1990 | 3333 | Possible | BZN | 01-01-2011 | | B |
| 270322292 | 01-01-1990 | 3333 | AlsoPossible | Vinzcent | 01-01-2011 | | B |
| 262538131 | 01-01-1990 | 3333 | WasPossible | J Smit | 01-01-2011 | | B |
| 096230538 | 01-01-1990 | 3333 | Impossible | Keertje | 01-01-2011 | | B |
| 209574951 | 01-01-1990 | 3333 | Vlosable | Ik ook | 01-01-2011 | | B |
| 095425299 | 01-01-1990 | 3000 | Verlosable | L01_3000 | 01-01-2011 | | B |
| 247185991 | 01-01-1990 | 3000 | Possible | L01_3000 | 01-01-2011 | | B |
| 287037836 | 01-01-1990 | 1000 | Possible | 001 | 01-01-2011 | | B |
| 054799211 | 01-01-1990 | 1000 | Oppertunity | 001 | 01-01-2011 | | B |

And this is also important to have to work

| Some interesting feature | Another code | Type | I dont know why this is in | is it relevant |
|--------------------------|--------------|---------------|----------------------------|----------------|
| 3333 | D* | Give it back | | Yes |
| 3000 | Jo* | Do it natural | | Yes |
| 1000 | Pi* | Test manual | | Yes |

@tagme

Scenario Template: This title makes sure i don't know what is going on

Given i have a employee with code <the code>

When i log in with employee with code <the code>

Then the user number shown on the display is <user number>

| the code | user number |
|----------|-------------|
| 1000 | 054799211 |
| 3000 | 247185991 |
| 3333 | 209574951 |
| 1001 | 054799212 |
| 1002 | 054799213 |
| 1003 | 054799218 |

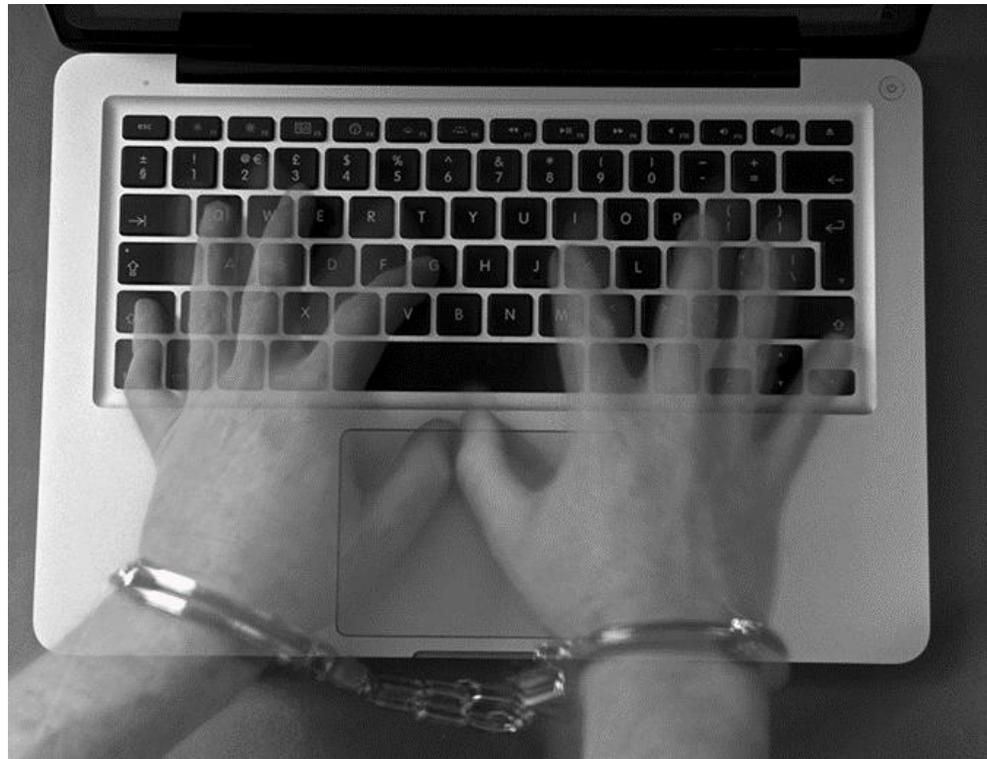
Have you ever found yourself in one of these situations?

- You didn't know what the test actually does?
- Why is this test created, what is it testing?
- At the end of delivery still some automated checks failed, but we still deliver
- With every change many automated checks are failing
- After fixing one automated check the next issue popped up in the following automated check

- “1476 out of 1484 tests passed”
- “The code coverage is at 88%, but we need 90%”
- “The automated suite fails already for a while, we know the issue”
- “When I change the code, many unit test fail”
- “After developing this feature we don’t have time anymore for test automation”
- “The problem with this project is that the requirements are always changing”

Automated test suites

- Tend to slow down agile teams



Automated test suites

- Should give fast insight in product properties

A good automated test

- As fast as possible
- As reliable as possible
 - Fails only on its purpose
 - Can fail (Asserts something)
- Maintainable
- Understandable
- Documented
- Controls it's test context

Lessons learned in software development

- Make functions easy to understand
- Make functions reusable
- Structure and allow for refactoring
- Document your functions
- Test!

The roles

- The automator
 - The one that will automate everything
- The tester
 - The one that explores everything
- The testautomator
 - The one that maintains everything

We need skills and training



The automation minded tester

- The automator
 - The one that will automate everything
- The tester
 - The one that explores everything
- The testautomator
 - The one that maintains everything
- **The automation minded tester**
 - The one that gets insight in everything

The automated minded tester

- Good documentation practices
- Being able to go from a user flow to small functional decompositions
- Developer faced and business faced tests
- Stubs, mocks, dependency injection
- Being able to decide what to automate
- Being able to decide on which level
- Being able to distinguish and determine the purpose of the automation
- Data and environment control

The automated minded tester 2

- Setup / Teardowns on suites, testruns, tests etc
- Test isolation
- Assertions and expectations
- Deterministic and non-deterministic testing
- Polling, callbacks and asynchronous testing
- Application domain
- Sleeps vs Timeouts / explicit waits
- Control time
- Test independence
- Enforcing the team and getting insight
- Test automation reporting

Automate on their purpose

- Design test for what their risk that they mitigate
 - Regression tests focusses on lack of regression
 - E2E test focusses on E2E use
 - Multiple browser compatibility test focus on multiple browser compatibility
 - High impact feature tests focus on high impact features
 - Performance tests focus on performance
- “Do not use regression tests as E2E multiple browser compatibility tests!”

Document properly

WARNING
DO NOT USE
THIS

```
/*  
/* Procedure Name:  
/*  
/* Original procedure name:  
/*  
/* Author:  
/*  
/* Date of creation:  
/*  
/* Dates of modification:  
/*  
/* Modification authors:  
/*  
/* Original file name:  
/*  
/* Purpose:  
/*  
/* Intent:  
/*  
/* Designation:  
/*  
/* Classes used:  
/*
```

The automation minded tester

TA Specific

Programming

Testing

Requirements
Engineering

The test minded automator

TA Specific

Programming

Testing

Requirements
Engineering

Questions?



TA Handcuffs or enforcement?

Questions?



TA Handcuffs or enforcement?

Improve Quality Services BV

Improve

Home
Consultancy & Interim
Training
Sectoren
Kenniscentrum
Over Improve
Nieuws
Contact

English | 🔍



Improve
QUALITY SERVICES

Uw partner in IT-kwaliteit door requirements engineering, kwaliteitsmanagement en testen

adviseren.
leren. doen.

► Consultancy & Interim

U bent op zoek naar capaciteit of expertise in software testing, kwaliteitsmanagement of requirements engineering. Of u wilt een onafhankelijke, deskundige visie op testtrajecten en kwaliteit. Improve is u graag van dienst.

► Training

Improve biedt innovatieve en geaccrediteerde opleidingen en leertrajecten die testers, analisten, requirements engineers en ontwikkelaars hun werk sneller, beter en goedkoper laat doen. Opleidingen vinden plaats bij u, bij ons en online.

Improve Quality Services BV



Process Improvement Skills

Testing

- Context driven
- Agile
- Automation

Quality & Outsourcing (QLM) Requirements Engineering

Quality in IT

- Agile (CAT)
- Context driven testing (RST)
- Test automation
- Requirements Engineering (IREB, CABA)
- ISTQB, TMap
- Mobile (CMAP)

Improve Quality Services BV



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