



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

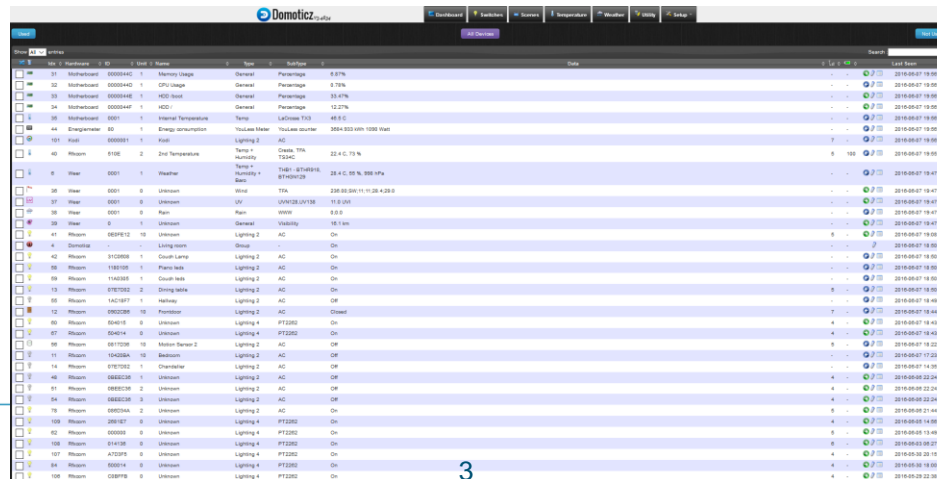
class Domoticz():
    def __init__(self, url):
        self.baseurl = url

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

    def get_device_on(self, aid):
        """
        Get the Domoticz device information.
        """
        url = "%s/json.htm?type=command&pass=switchlightside=turnswitchOn&id=%s" % (self.baseurl, aid)
        data = json.load(self._execute(url))
        return data

    def get_device_off(self, aid):
        """
        Get the Domoticz device information.
        """
        url = "%s/json.htm?type=command&pass=switchlightside=turnswitchOff&id=%s" % (self.baseurl, aid)
        data = json.load(self._execute(url))
        return data

def flashing(url, device aid):
```



ID	Device	Category	Subcategory	Value	Last Seen
1	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
2	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
3	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
4	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
5	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
6	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
7	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
8	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
9	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
10	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
11	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
12	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
13	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
14	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
15	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
16	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
17	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
18	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
19	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
20	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
21	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
22	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
23	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
24	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
25	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
26	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
27	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
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32	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
33	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
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36	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
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38	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
39	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
40	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
41	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
42	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
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46	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
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49	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
50	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
51	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
52	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
53	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
54	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
55	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
56	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
57	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
58	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
59	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
60	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
61	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
62	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
63	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
64	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
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69	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
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71	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
72	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
73	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
74	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
75	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
76	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
77	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
78	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
79	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
80	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
81	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
82	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
83	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
84	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
85	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
86	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
87	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
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93	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
94	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
95	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
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97	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20
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100	Domoticz	General	Domoticz	5.07%	2016-07-19 09:20

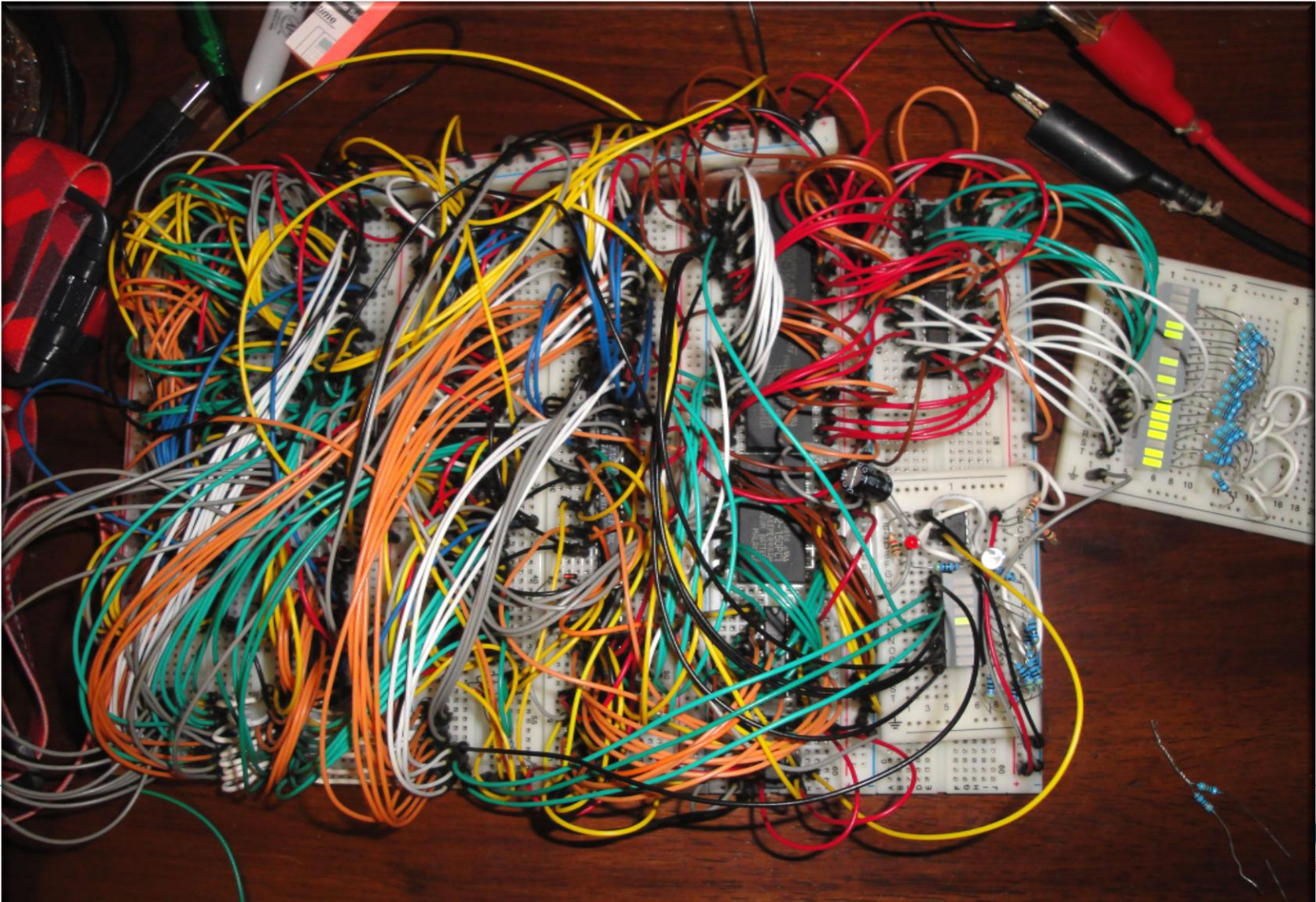
I called her Claire



I called her Claire



Automation turned into more automation



Is pushing a button that hard?



Into the deep



Well hello there

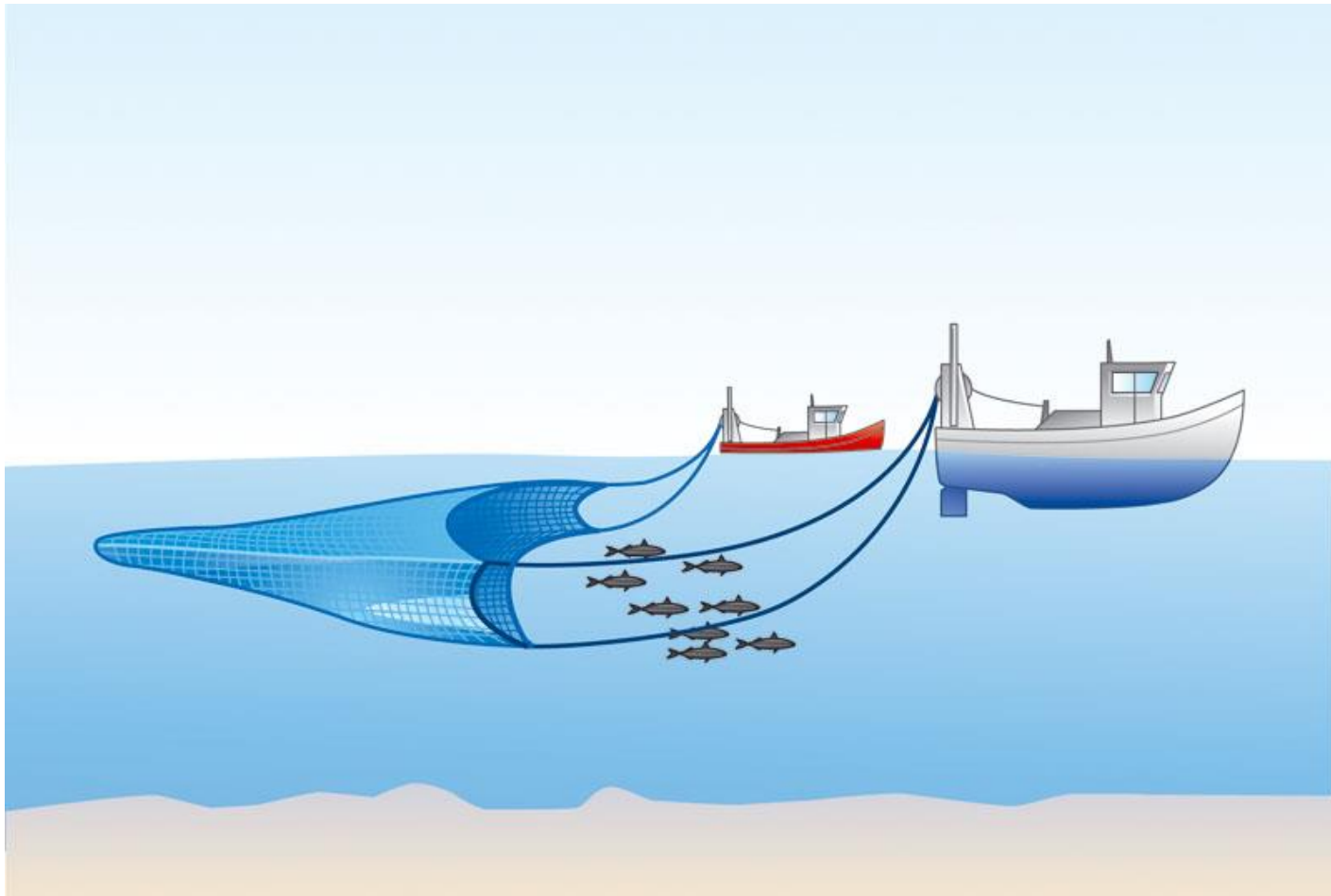


This test is currently under construction.
Check back soon!

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

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	Vinzzen	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

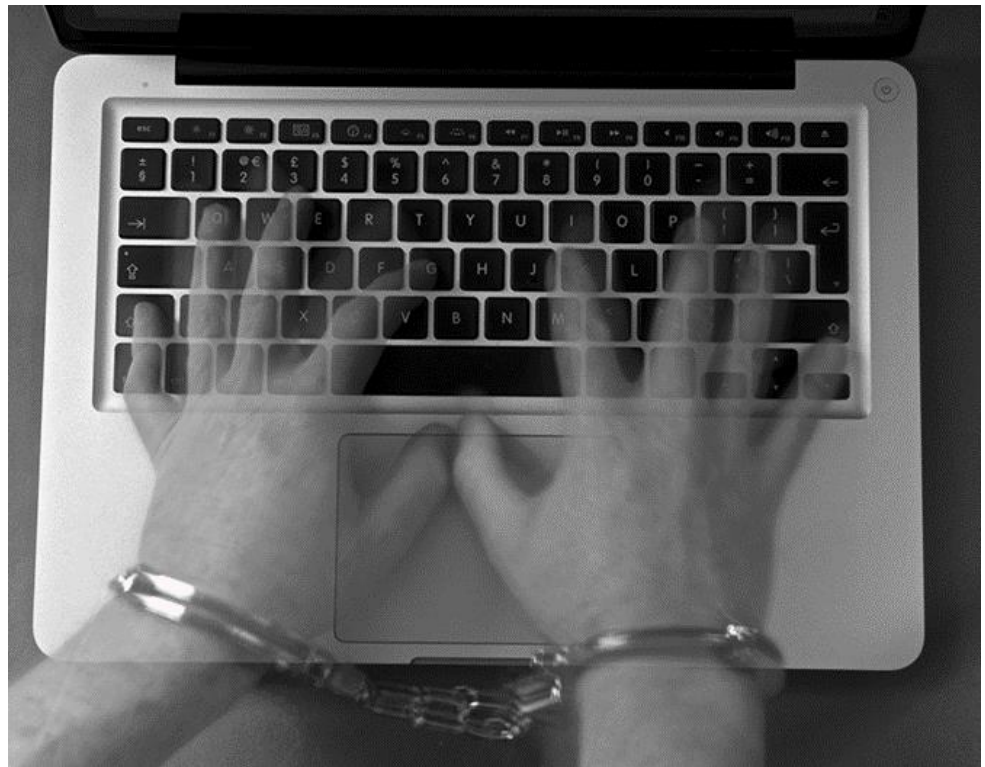
Have you ever found yourself in one of these situations?

- 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?



Questions?



Improve Quality Services BV



The image shows a website layout for 'Improve Quality Services'. On the left is a vertical navigation menu with links: Home, Consultancy & Interim, Training, Sectoren, Kenniscentrum, Over Improve, Nieuws, and Contact. Below the menu are social media icons for LinkedIn, Twitter, and YouTube, and a search bar with the text 'English | Q'. The main content area features a large photograph of four people (three men and one woman) smiling. Overlaid on the bottom left of the photo is an orange box with the 'Improve QUALITY SERVICES' logo and the text 'Uw partner in IT-kwaliteit door requirements engineering, kwaliteitsmanagement en testen'. To the right of the photo, the text 'adviseren. leren. doen.' is displayed. Below the photo, there are two columns of text. The left column is titled 'Consultancy & Interim' and describes services like software testing and requirements engineering. The right column is titled 'Training' and describes innovative and accredited training programs for testers, analysts, and developers.

Improve

Home
Consultancy & Interim
Training
Sectoren
Kenniscentrum
Over Improve
Nieuws
Contact

English | Q

in t y

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)

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