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SELENIUM

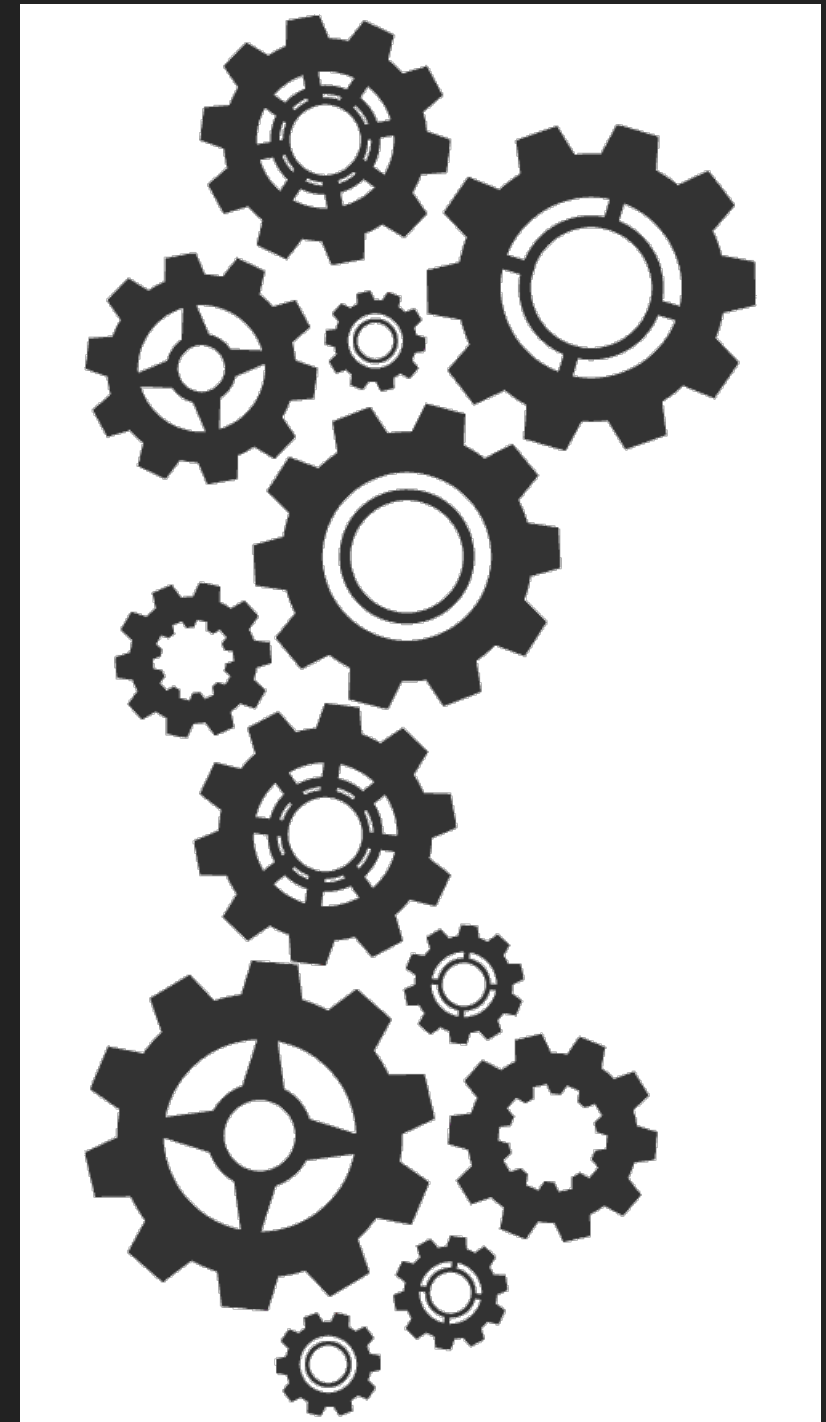
BROWSER AUTOMATION

**IT HAS BECOME INFEASIBLE FOR A SOFTWARE DEVELOPER TO CONSIDER HIMSELF PROFESSIONAL IF HE DOES NOT PRACTICE TEST-DRIVEN DEVELOPMENT.**

**Robert Cecil Martin**  
"Uncle Bob"

# TEST AUTOMATION

- ▶ control the execution of tests and the comparison of actual outcomes with predicted outcomes
- ▶ Unit Testing (xUnit)
- ▶ Graphical User Interface Testing
  - ▶ Selenium



# BLACK BOX VS WHITE BOX

## pluses

- ▶ efficient for big segments of source code
- ▶ code access is not required
- ▶ perspective separation

## minuses

- ▶ limited & blind coverage
- ▶ inefficiency

## pluses

- ▶ efficient in finding problems & hidden errors
- ▶ helps optimising the code
- ▶ maximum coverage

## minuses

- ▶ requires code access
- ▶ requires high level knowledge of internals of the software under test

## UNIT VS INTEGRATION VS ACCEPTANCE TESTS

- ▶ unit (each class / method)
- ▶ integration (multiple units together)
- ▶ acceptance (functionality meets business requirements)

# SELENIUM BROWSER AUTOMATION

- ▶ Jason Huggins at ThoughtWorks
- ▶ portable software testing framework
- ▶ C#, Groovy, Java, Perl, PHP, Python, Ruby and Scala
- ▶ open-source software, released under the Apache 2.0
- ▶ runs on Linux, OS X and Windows

## SELENIUM COMPONENTS

- ▶ Selenium IDE
- ▶ Selenium client API
- ▶ ~~Selenium Remote Control~~
- ▶ Selenium WebDriver
- ▶ Selenium Grid

# SELENIUM IDE

The screenshot displays the Selenium IDE 2.9.1 interface. The title bar reads 'selenium-IDE-todo (untitled suite) - Selenium IDE 2.9.1'. The interface includes a 'Base URL' field, a toolbar with execution controls (Fast, Slow, Run, Stop, Pause, Undo, Redo), and a 'Test Case' sidebar on the left. The main area shows a table of commands and their parameters.

Command	Target	Value
openWindow	http://todo.dev/	myWindow
waitForPopUp	myWindow	3000
selectWindow	myWindow	
verifyTitle	Vue.js • TodoMVC	
type	css=input.new-todo	Write presentation
sendKeys	css=input.new-todo	\${KEY_ENTER}
type	css=input.new-todo	Watch Die Hard Movie #3
sendKeys	css=input.new-todo	\${KEY_ENTER}
type	css=input.new-todo	Dentist appointment
sendKeys	css=input.new-todo	\${KEY_ENTER}

Below the table, the 'Command' dropdown is set to 'openWindow', the 'Target' field contains 'http://todo.dev/', and the 'Value' field contains 'myWindow'. There are 'Select' and 'Find' buttons next to the Target field.

At the bottom, the 'Log' tab is active, showing the command signature **openWindow(url, windowID)** and its arguments:

- url - the URL to open, which can be blank
- windowID - the JavaScript window ID of the window to select

Below the arguments, a description states: 'Opens a popup window (if a window with that ID isn't already open). After opening the window, you'll need to select it using the selectWindow command.'



## SELENIUM WEBDRIVER

- ▶ Selenium 2 codename
- ▶ WebDriver makes direct calls to the browser



**SELENIUM 2**

**LIVE**



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