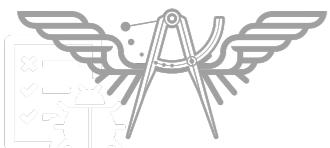


Robot Framework workshop





Somkiat Puisungnoen

Somkiat Puisungnoen

Update Info 1 View Activity Log 10+ ...

Timeline About Friends 3,138 Photos More

When did you work at Opendream? X

... 22 Pending Items

Intro

Software Craftsmanship

Software Practitioner at สยามชัมนาณกิจ พ.ศ. 2556

Agile Practitioner and Technical at SPRINT3r

Post Photo/Video Live Video Life Event

What's on your mind?

Public Post

Somkiat Puisungnoen 15 mins · Bangkok · ⚙️

Java and Bigdata



Facebook somkiat.cc

Somkiat | Home | [Profile](#) [Messenger](#) [Pages](#) | ? ▾

Page Messages Notifications 3 Insights Publishing Tools Settings Help ▾

somkiat.cc
@somkiat.cc

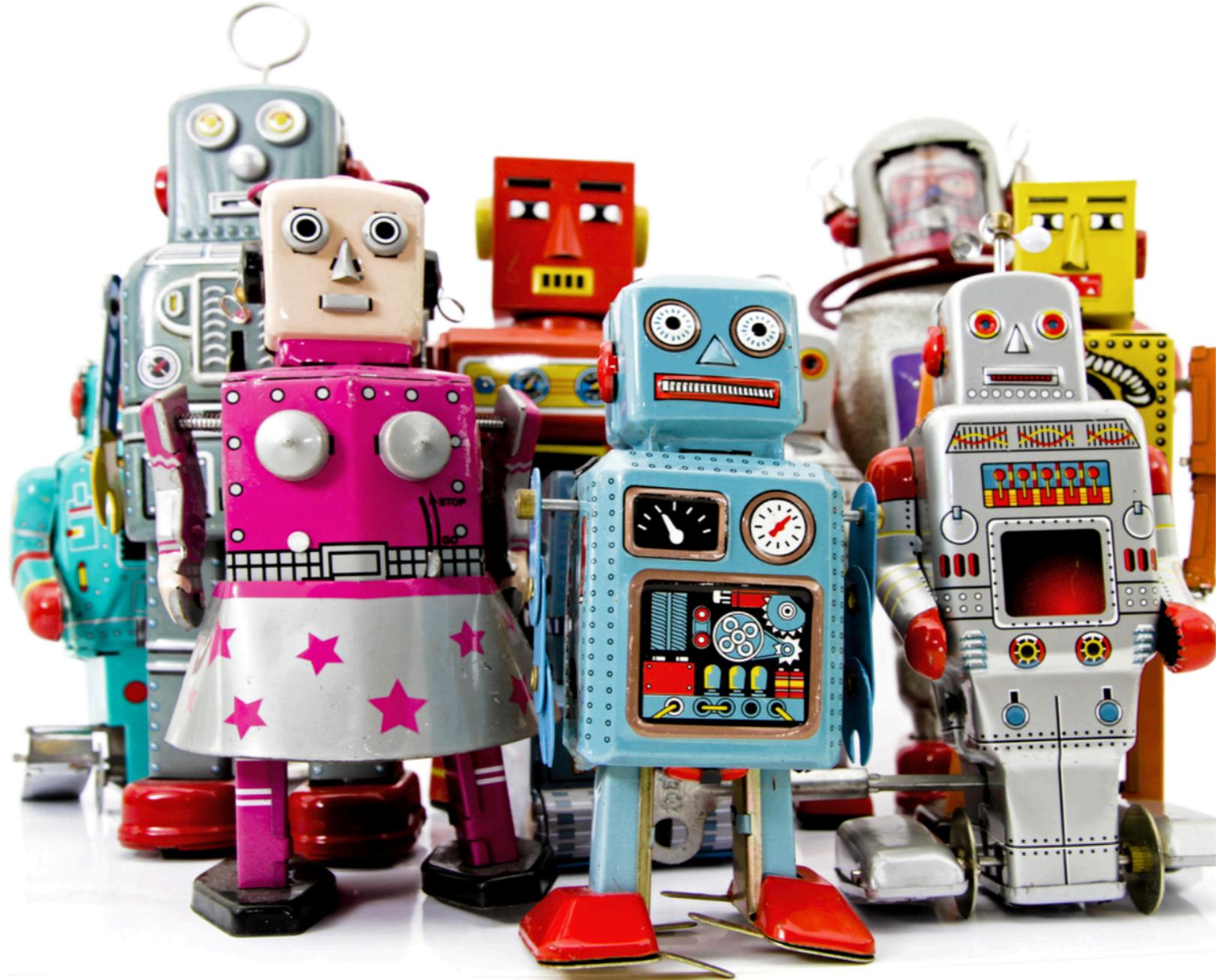
Home Posts Videos Photos

Liked Following Share ... + Add a Button



**[https://github.com/up1/
course-robotframework](https://github.com/up1/course-robotframework)**





Robot Framework Workshop



Agenda

- Acceptance Test-Driven Development (ATDD)
- Test strategies
- Introduction to Robot Framework
- Structure of test case
- Working with Web application
- Workshop

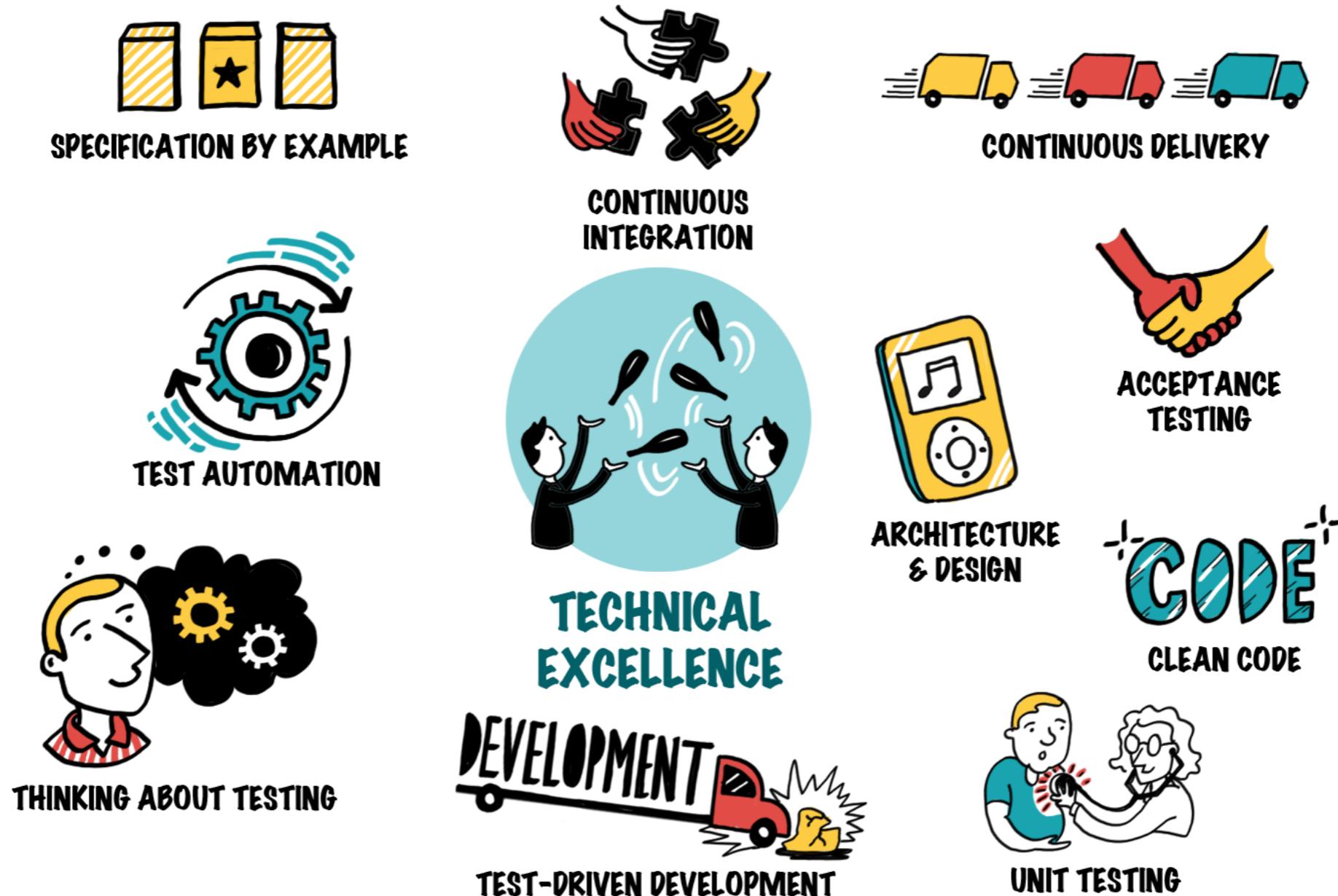


Agenda

- Test life cycle of Robot Framework
- Better test case
- Better test structure with Page Object pattern
- Command lines
- Scaling test with parallel and distributed
- Design pipeline with automated test
- Workshop



Technical Excellence



<http://less.works>

<https://less.works/less/technical-excellence>



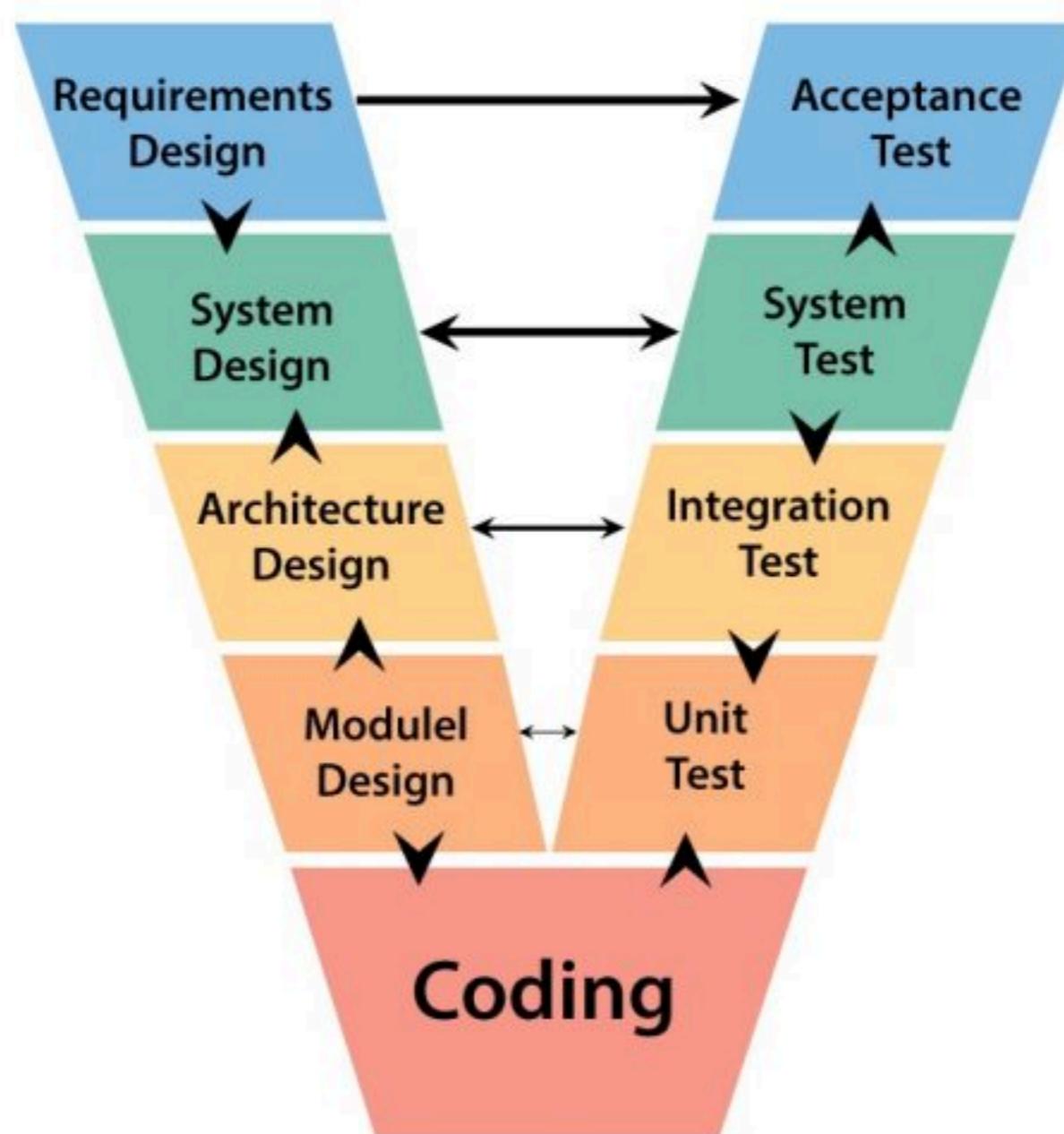
Robot Framework

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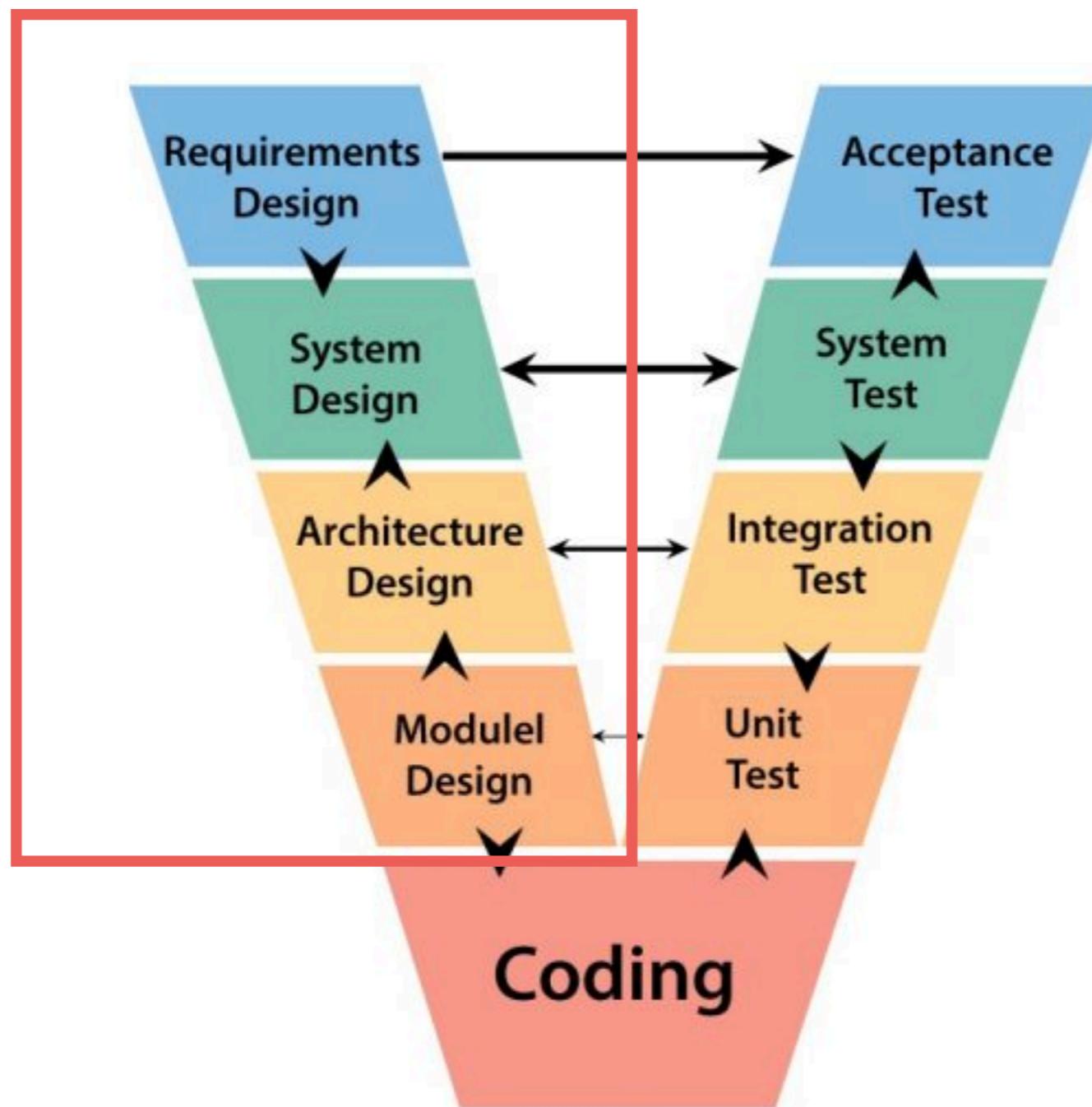
Software Development



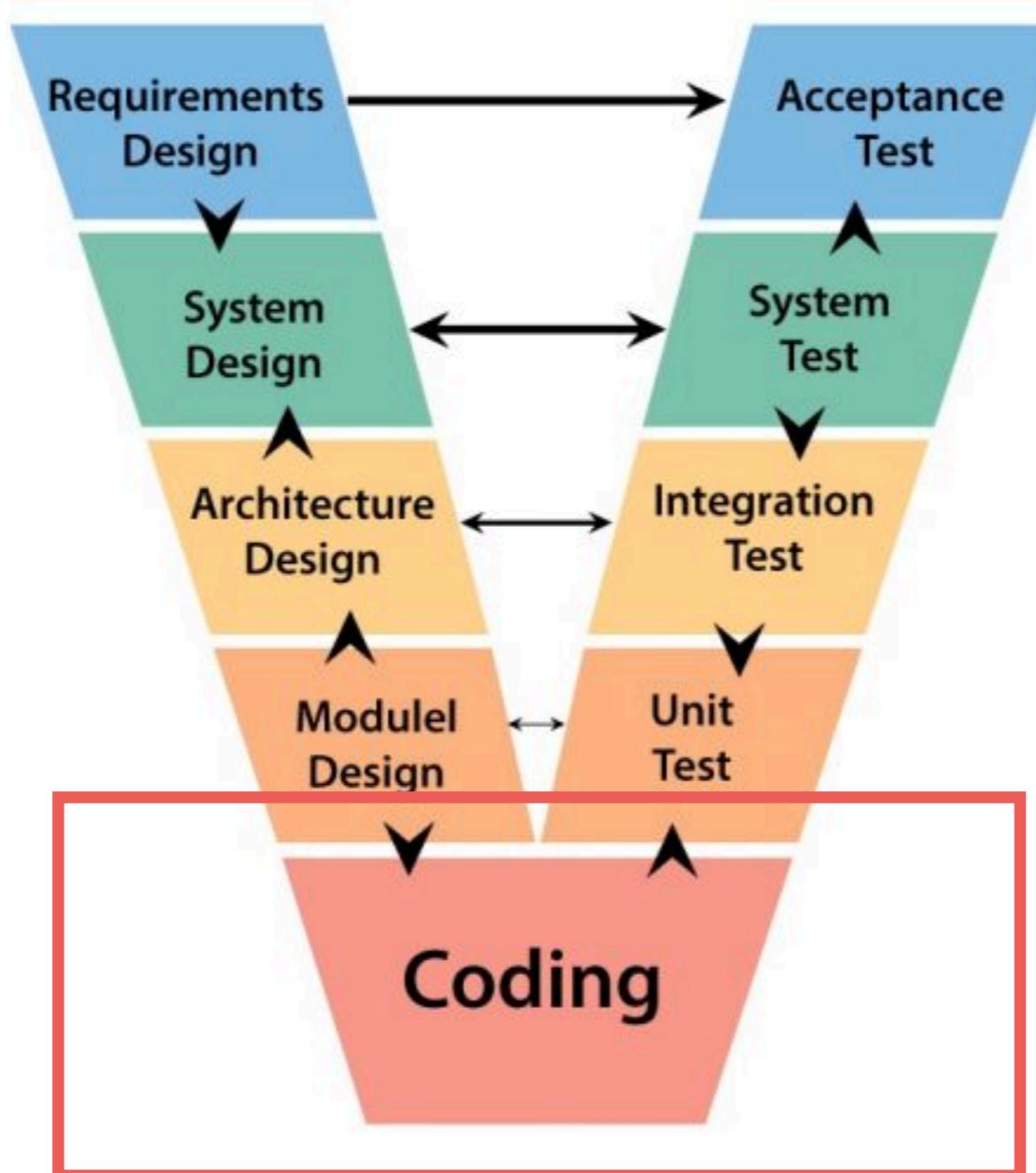
V Model or Waterfall Model



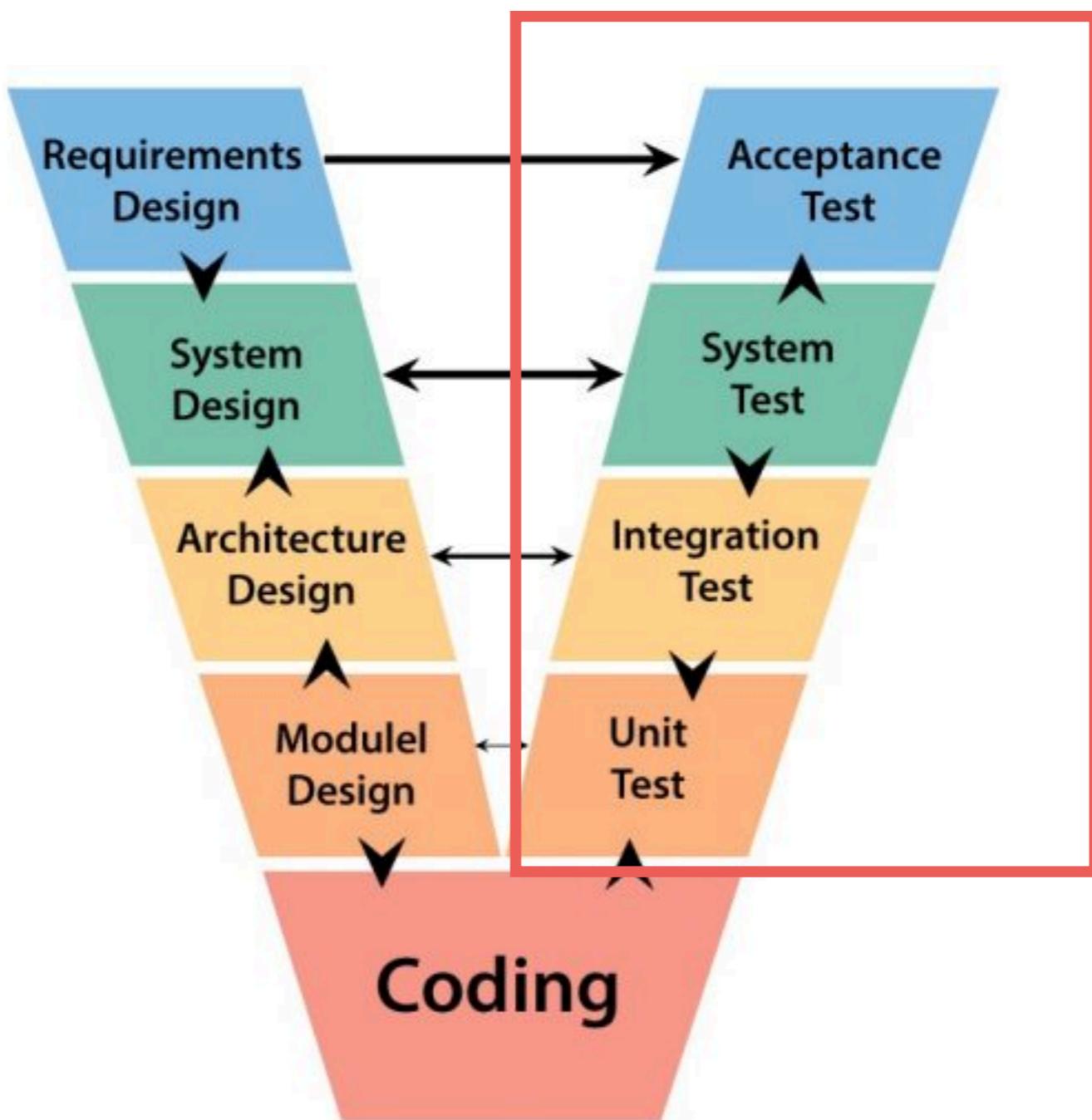
Verification phase



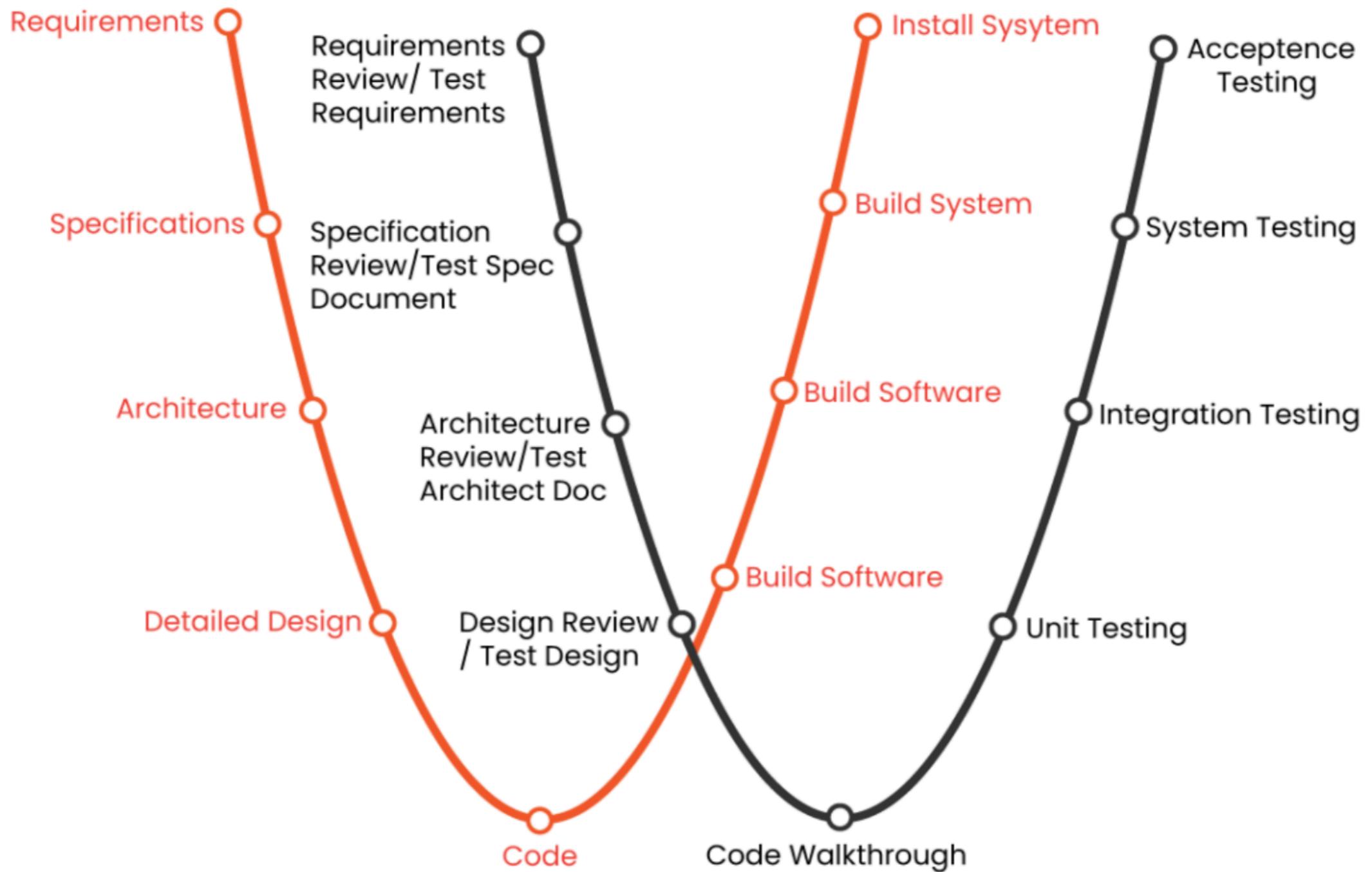
Coding phase



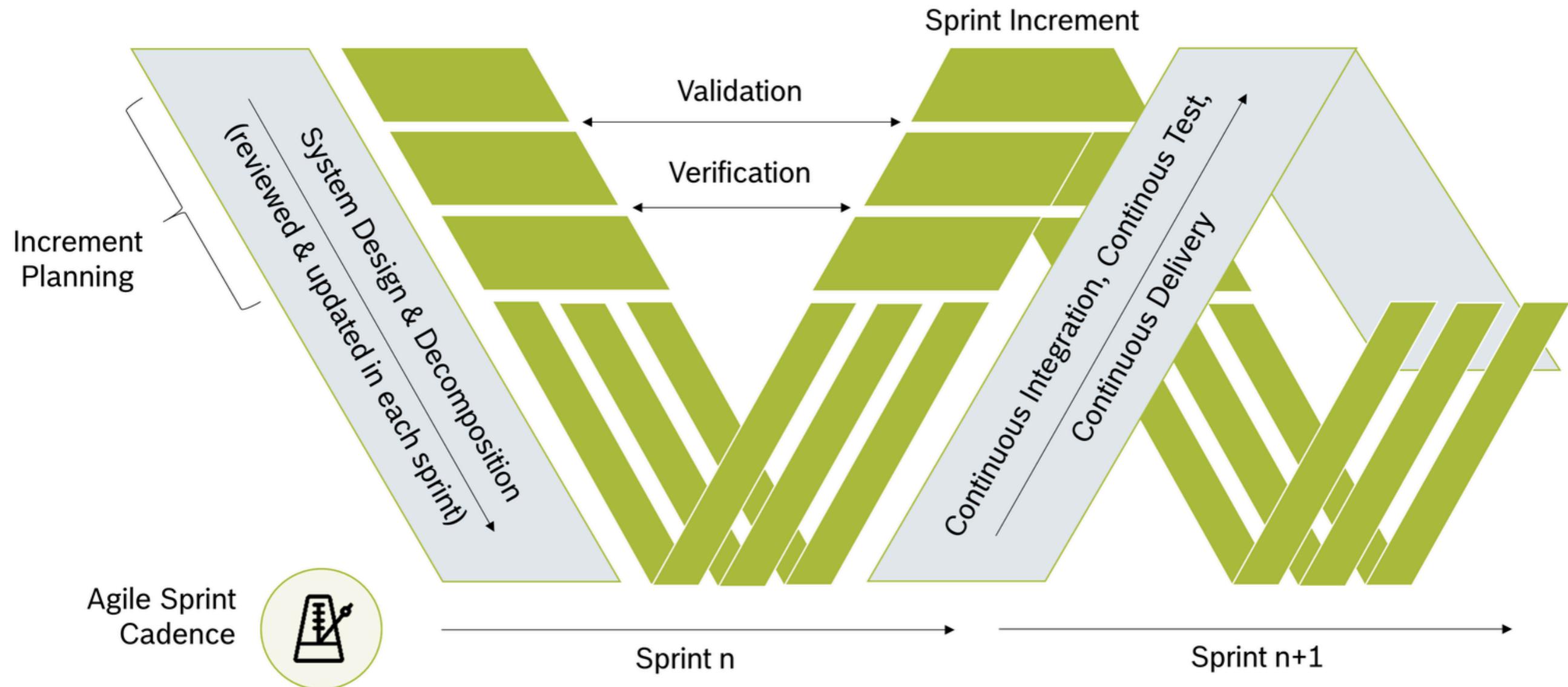
Validation phase



W Model



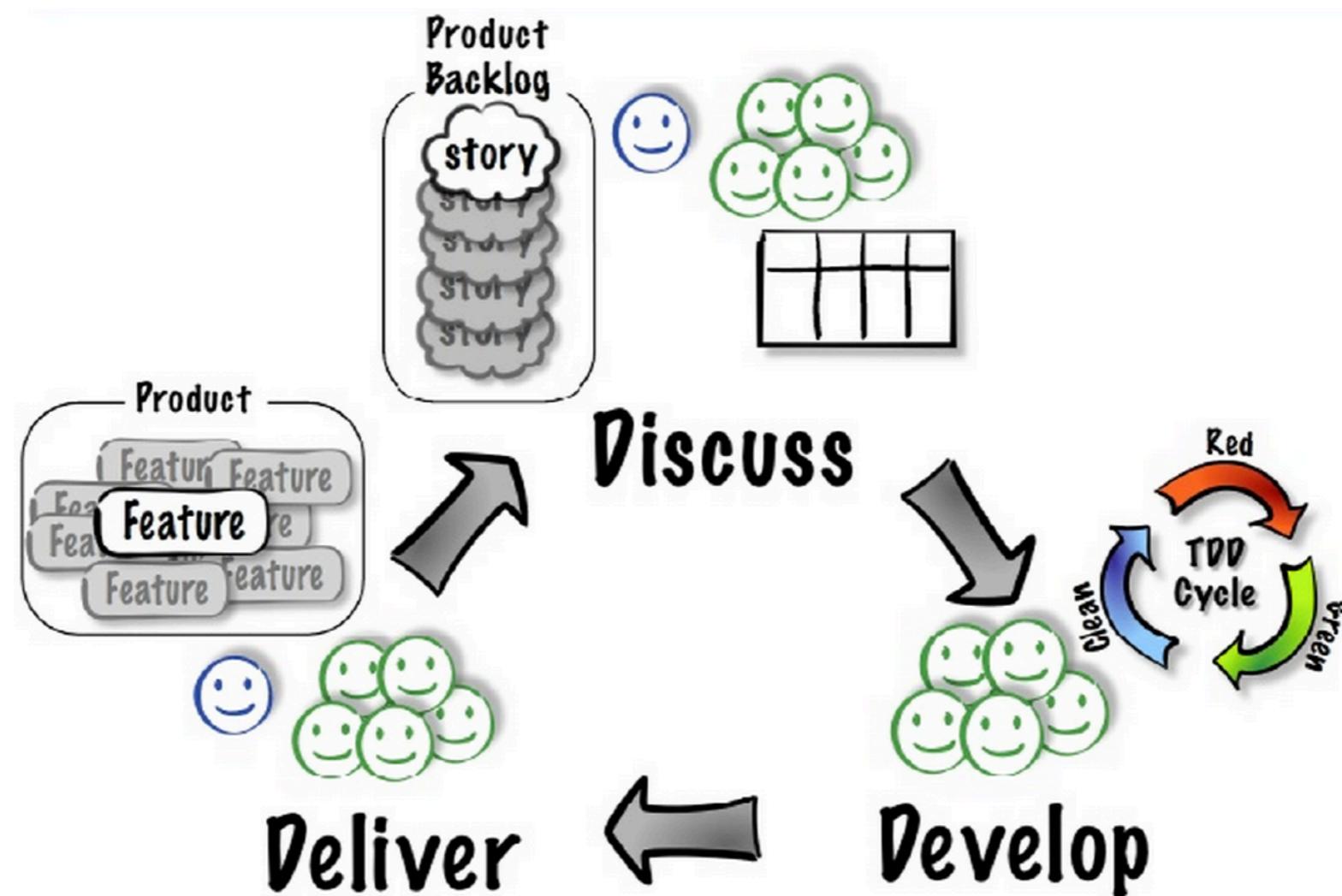
Iterative and Incremental



Acceptance Test-Driven Development (ATDD)

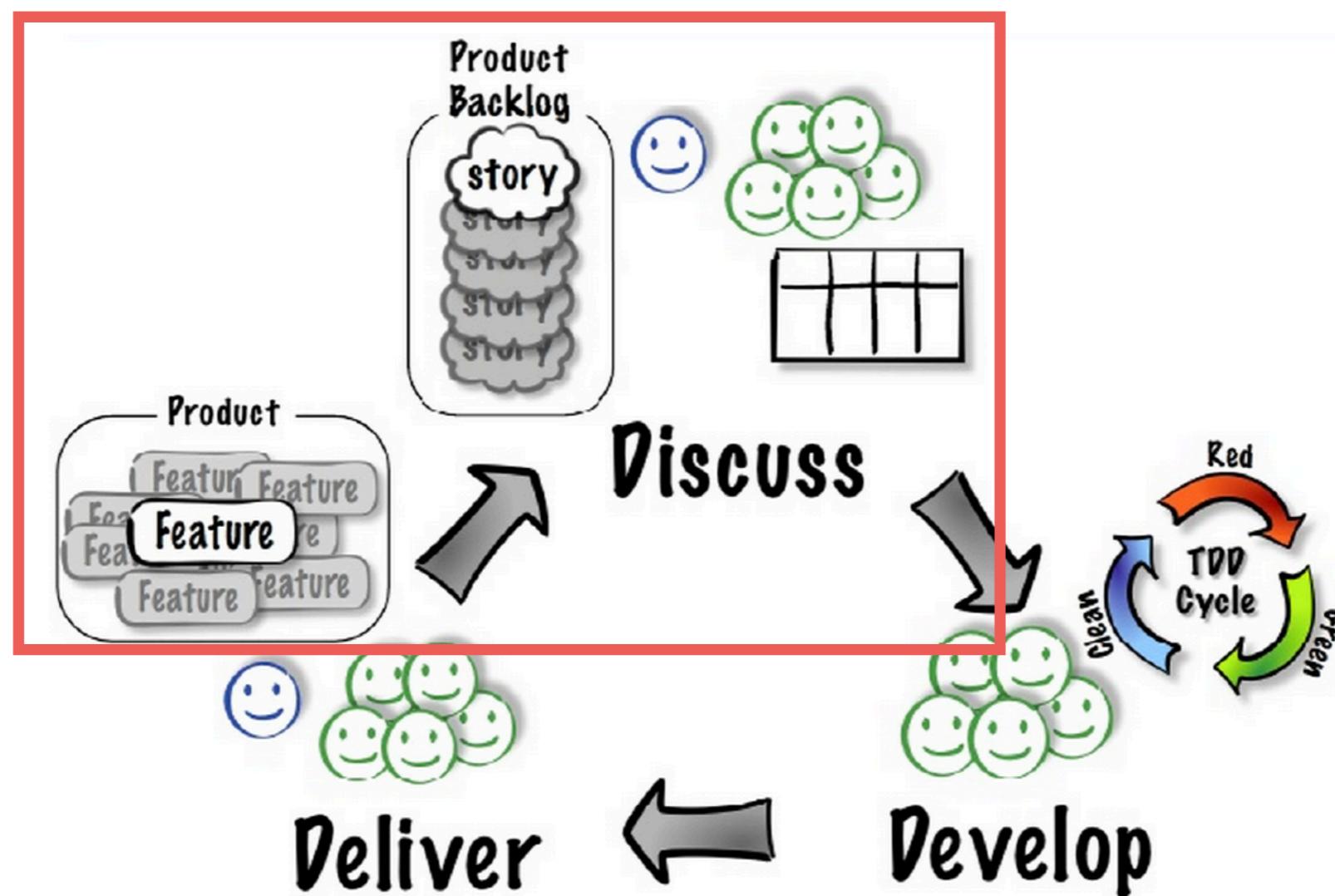


Acceptance Test-Driven Development (ATDD)



Acceptance Test-Driven Development (ATDD)

Discussion process



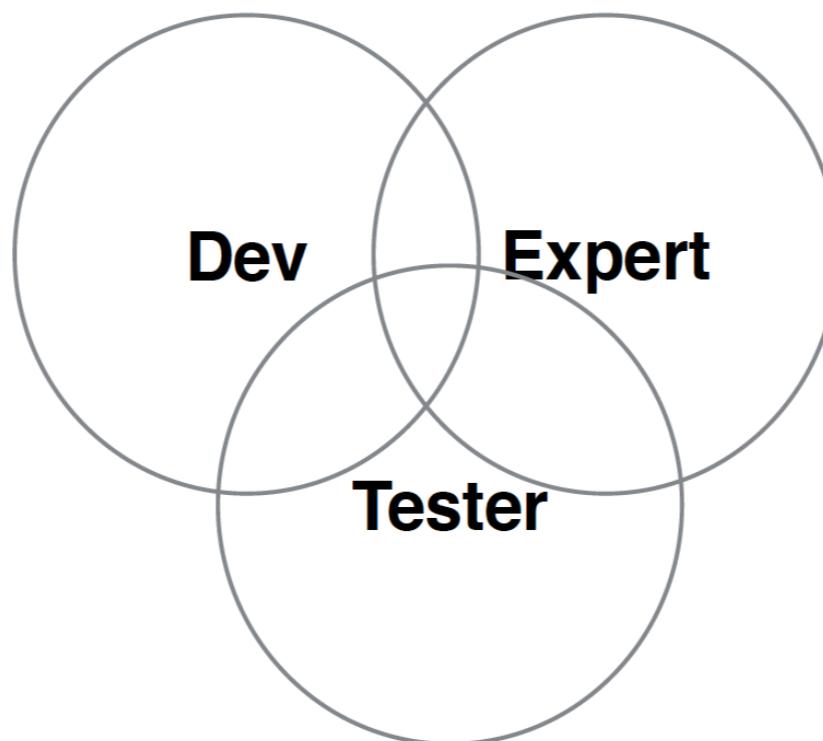
Discussion process

Whole team approach

Share understanding

Clarify solution

Concrete example/data



Decompose or Slicing feature

Feature

Feature
1

Feature
2

Feature
3



Decompose or Slicing feature

Feature Flow/User Story

Feature
1

Flow 1.1

Feature
2

Flow 1.2

Feature
3

Flow 1.3



Decompose or Slicing feature

Feature	Flow/User Story	Task	Task
Feature 1	Flow 1.1	Task 1.1.1	Task 1.1.4
Feature 2	Flow 1.2	Task 1.1.2	Task 1.1.5
Feature 3	Flow 1.3	Task 1.1.3	Task 1.1.6



Example

Login process



Login page

<https://demo-login-workshop.vercel.app>

Login Page

Please input your user name and password and click the login button.

User Name:

Password:

**username=demo
password=mode**



Result page

Welcome and Error page

Welcome Page

Login succeeded. Now you can [logout](#).

Error Page

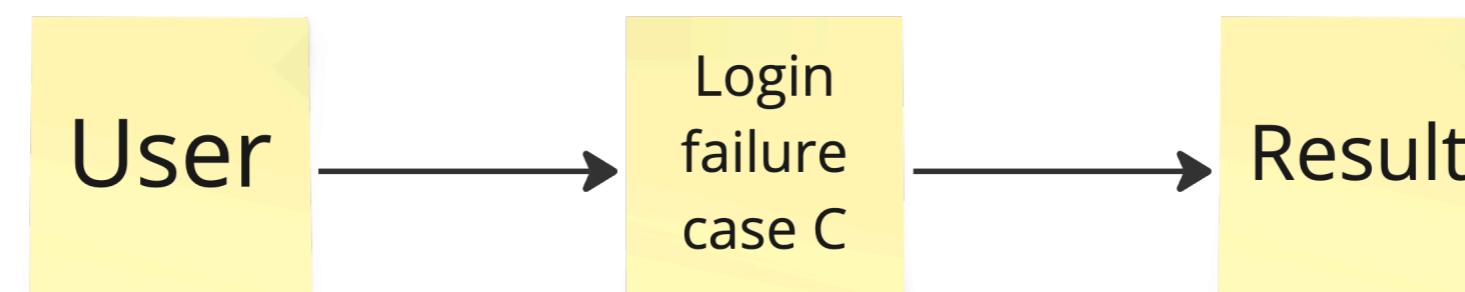
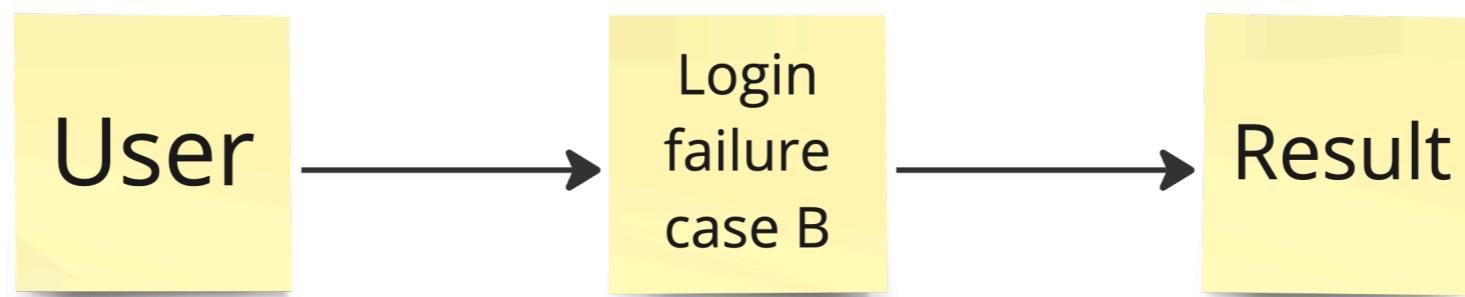
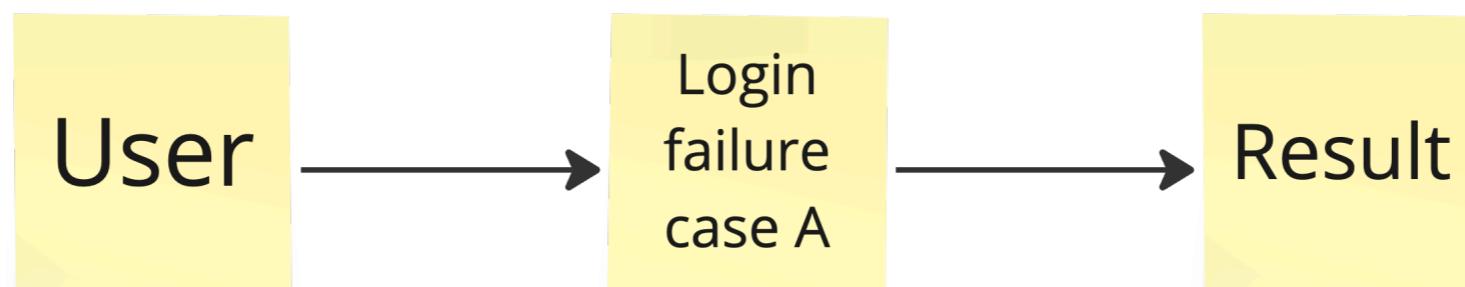
Login failed. Invalid user name and/or password.



Slicing process



Slicing process for fail case



**Test Case =
Business logic + Example Data**



Test Cases

Case name	Input		Expected Result
	Username	Password	
Login success	demo	mode	Show welcome page
Login fail case A	demo	mode2	Show error page
Login fail case B	demo2	mode	Show error page
Login fail case C	demo2	mode2	Show error page



More requirement !!



Password Complexity

Password complexity policies are designed to deter brute force attacks by increasing the number of possible passwords. When password complexity policy is enforced, new passwords must meet the following guidelines:

- The password doesn't contain the account name of the user.
- The password is at least eight characters long.
- The password contains characters from three of the following four categories:
 - Latin uppercase letters (A through Z)
 - Latin lowercase letters (a through z)
 - Base 10 digits (0 through 9)
 - Non-alphanumeric characters such as: exclamation point (!), dollar sign (\$), number sign (#), or percent (%).

Passwords can be up to 128 characters long. Use passwords that are as long and complex as possible.

<https://learn.microsoft.com/en-us/sql/relational-databases/security/password-policy?view=sql-server-ver16>



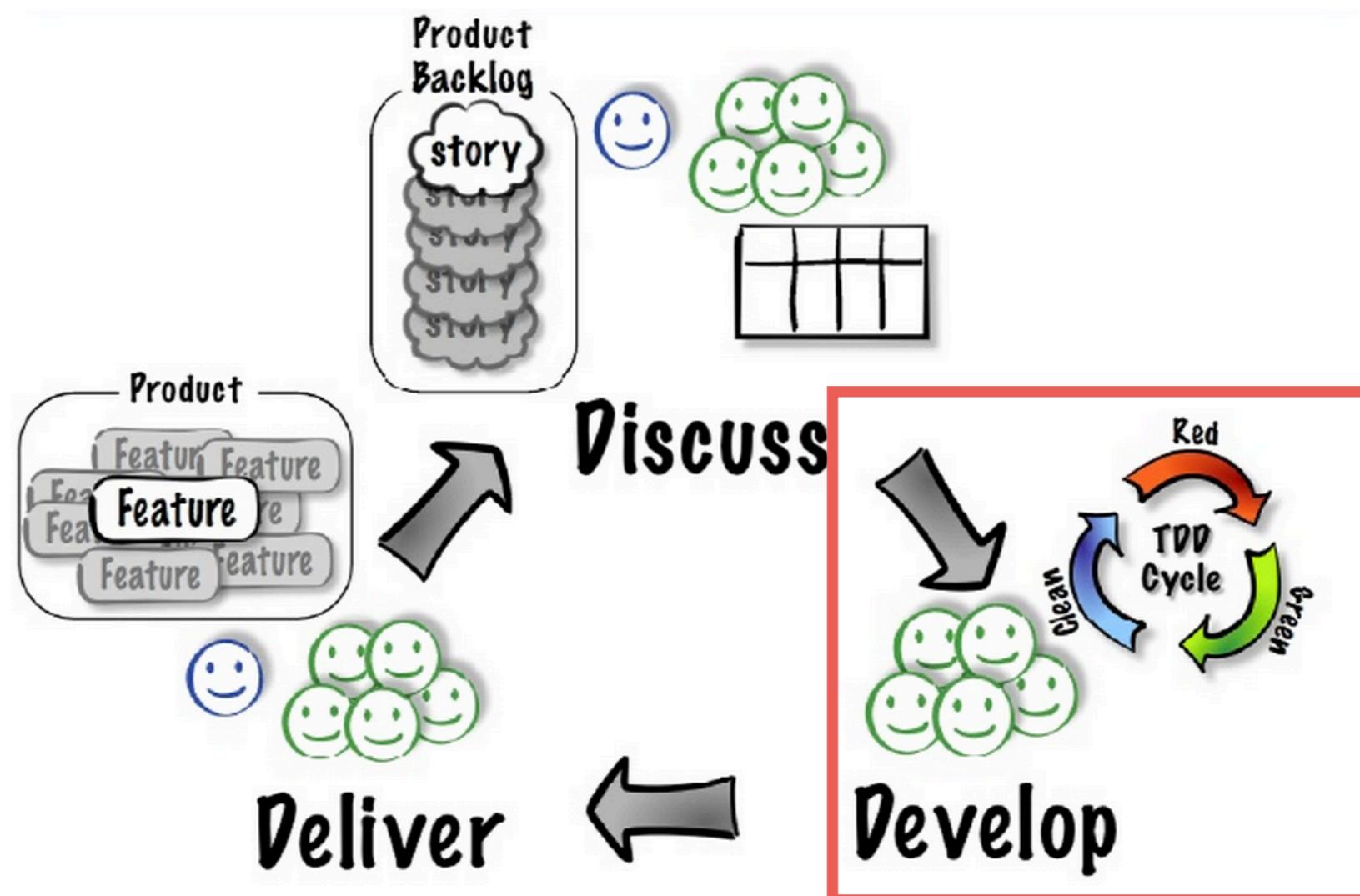
Test Cases ?

Case name	Input		Expected Result
	Username	Password	
Login success	demo	mode	Show welcome page
Login fail case A	demo	mode2	Show error page
Login fail case B	demo2	mode	Show error page
Login fail case C	demo2	mode2	Show error page



Acceptance Test-Driven Development (ATDD)

Development process = Coding + Testing



Development process

Implementation with example/data

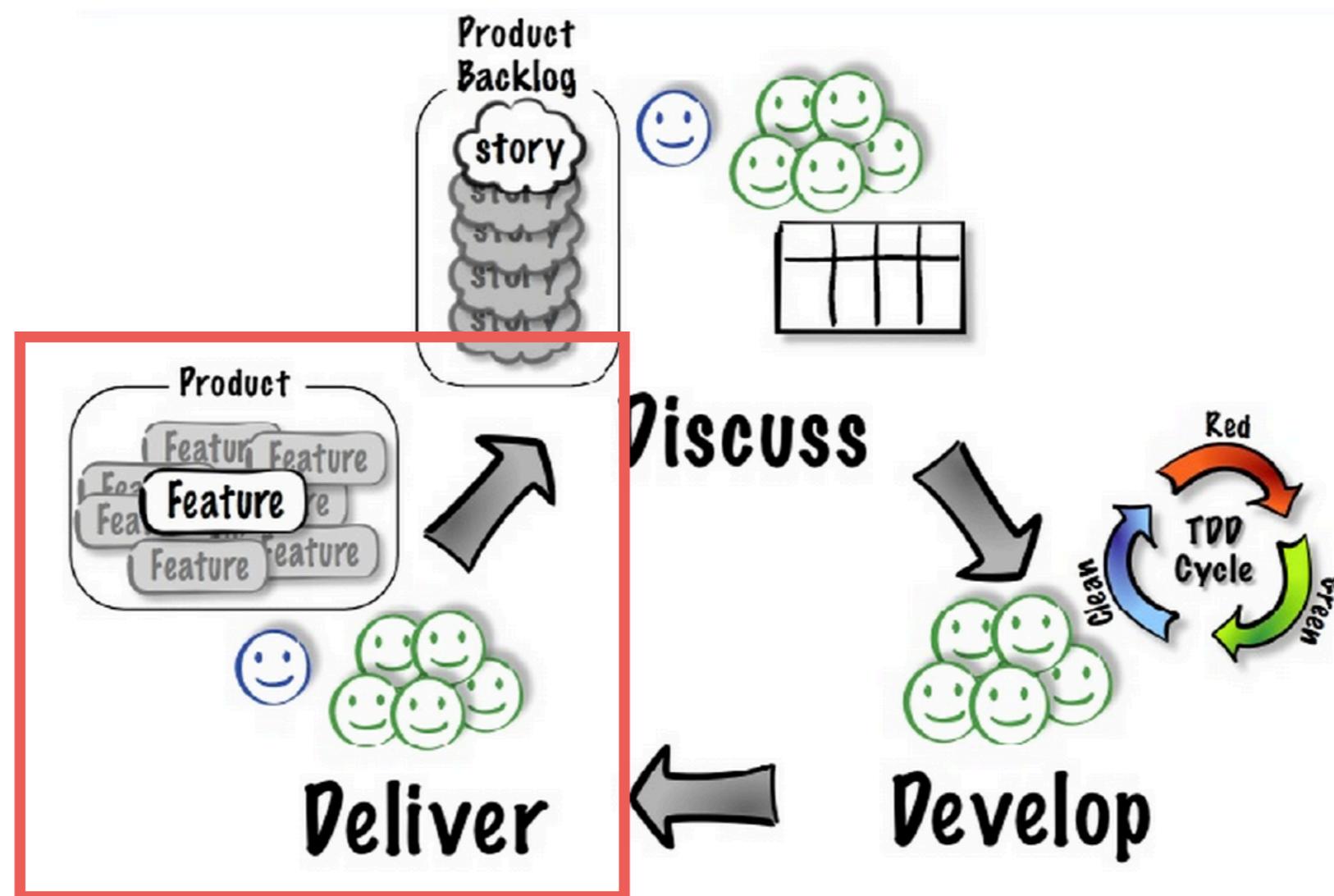
All examples are passed

Done = Coded + Tested



Acceptance Test-Driven Development (ATDD)

Delivery process



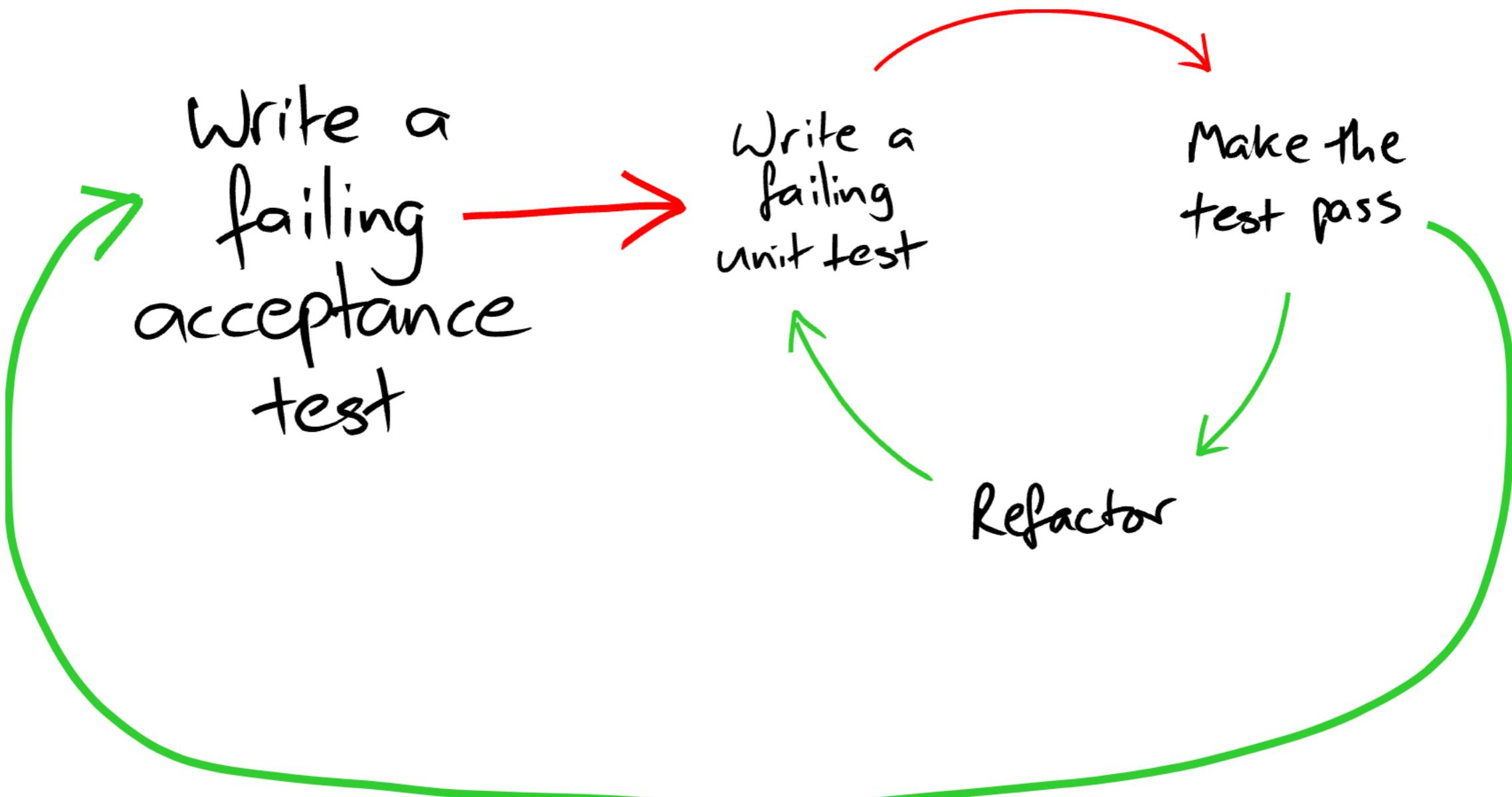
Delivery process

Features are demonstrated to all stakeholders
All examples are passed (new + existed)

Feedback as input to the next discussion

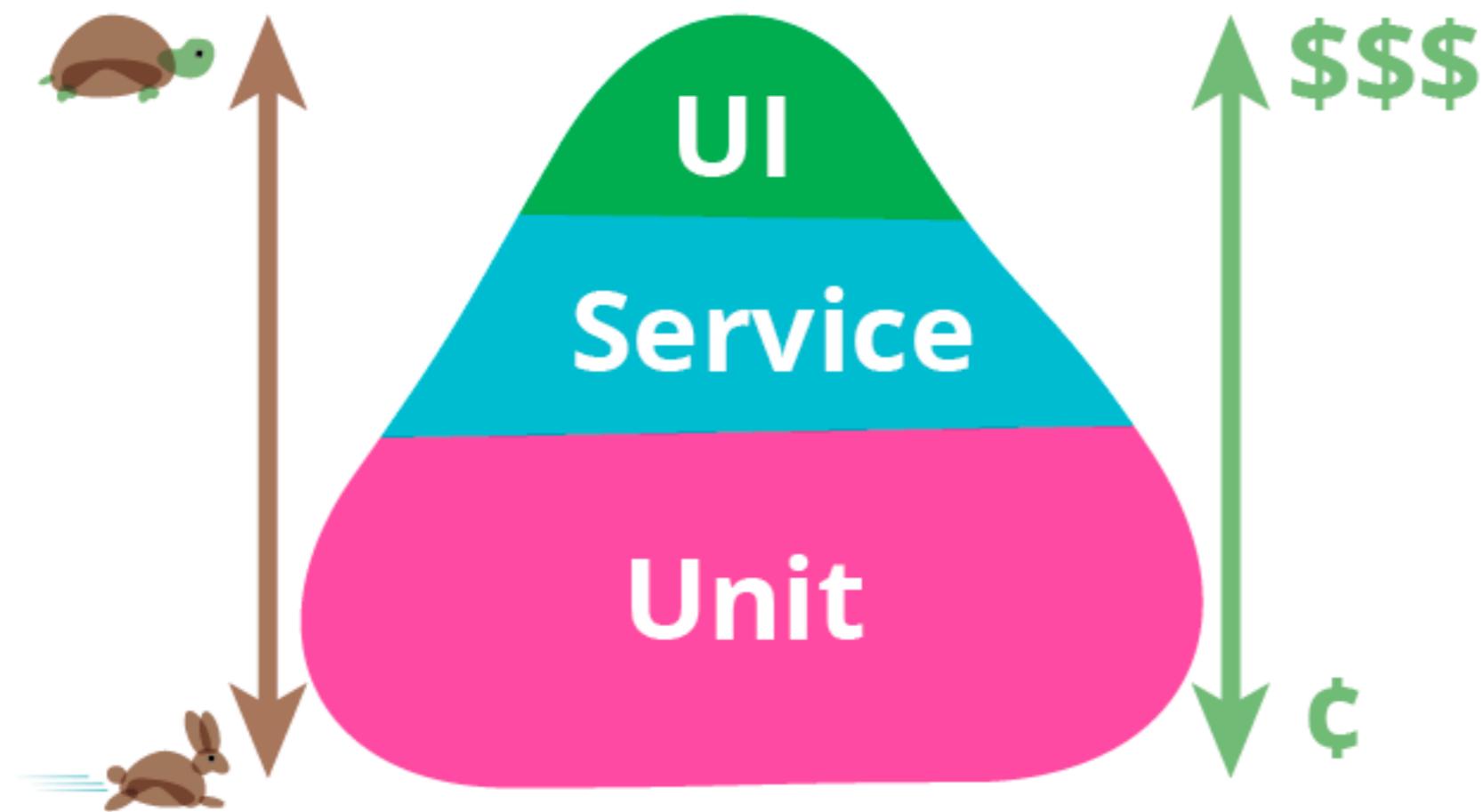


Overall process



Test Strategies

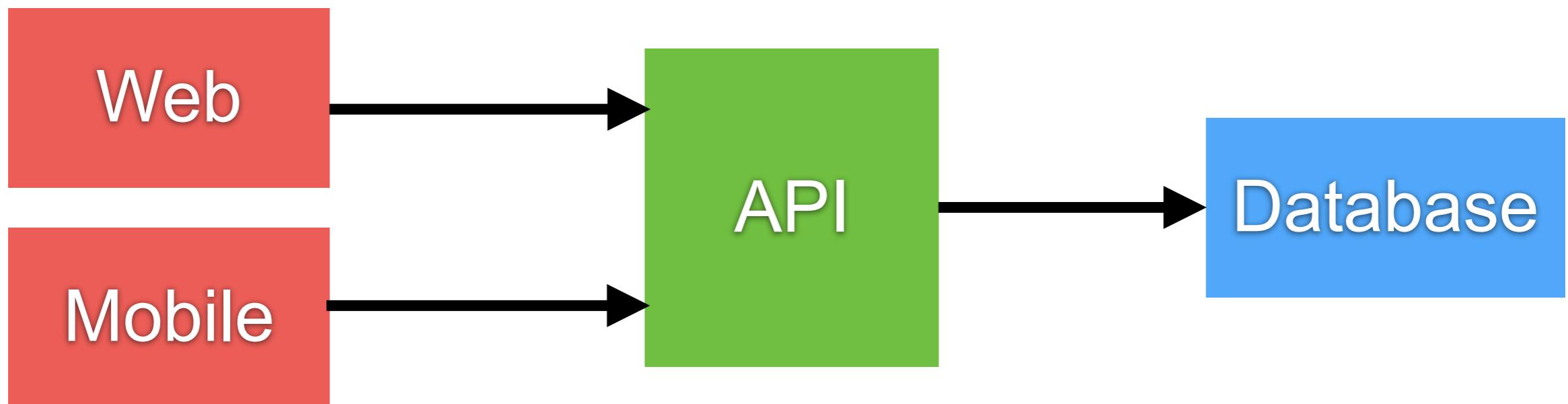




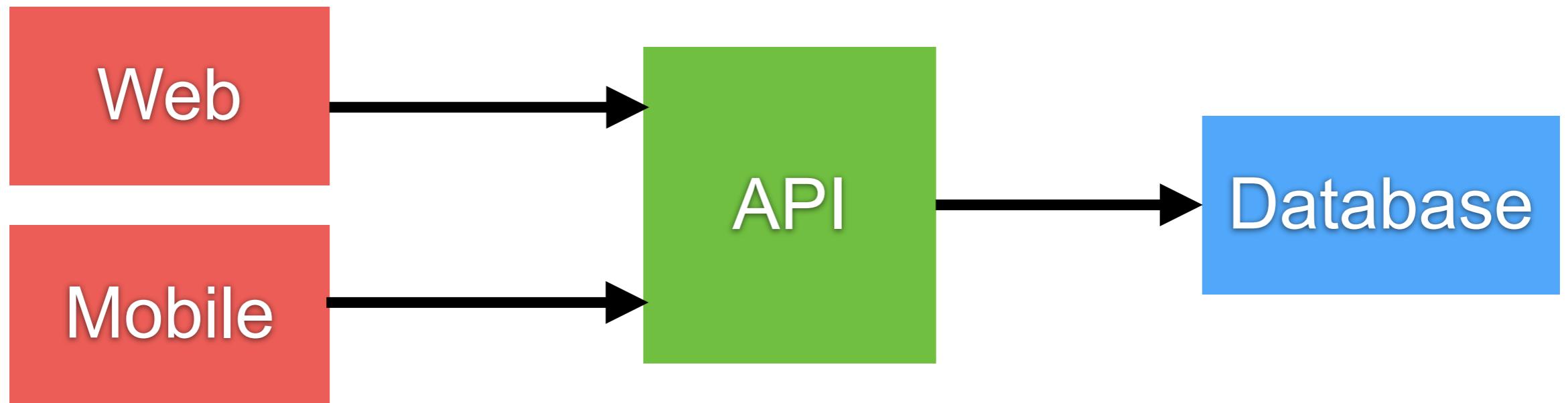
**Why -> What -> How
to test ?**



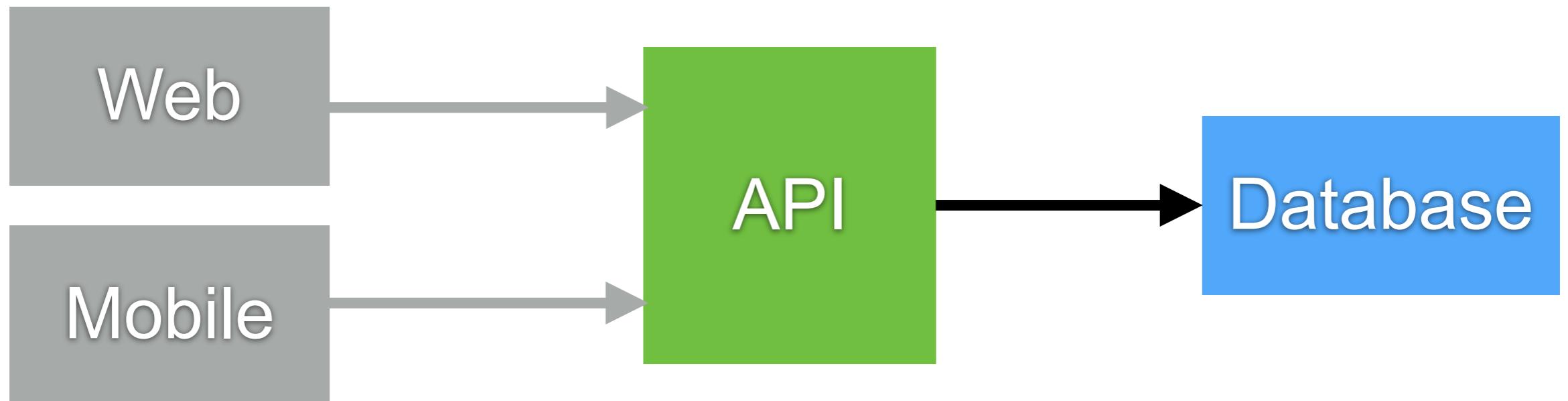
Architecture



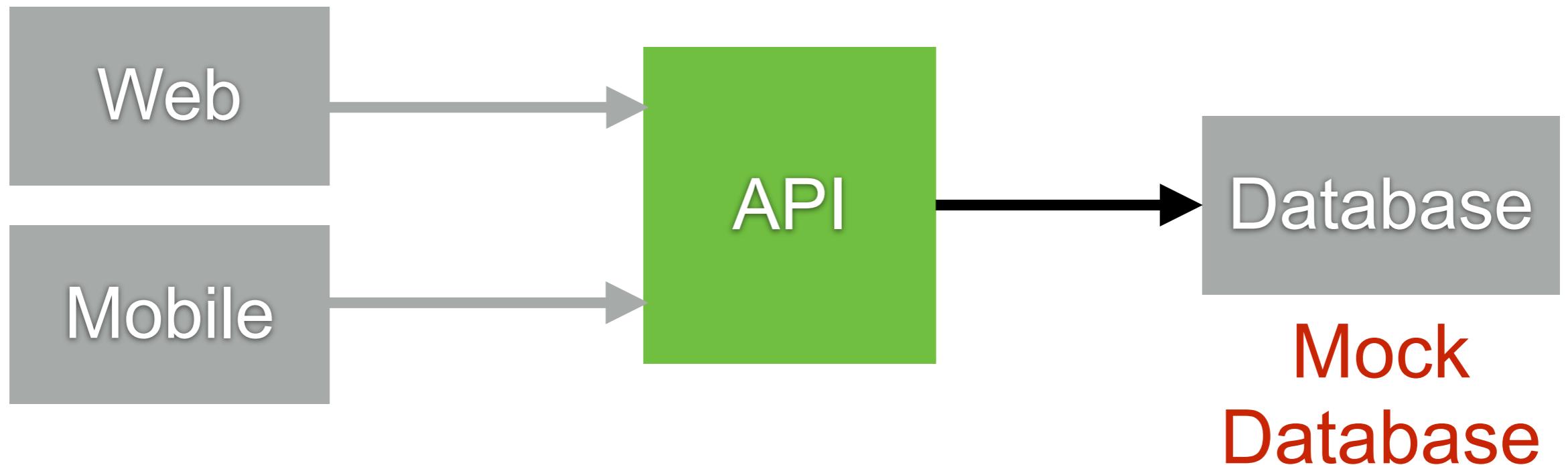
Test ?



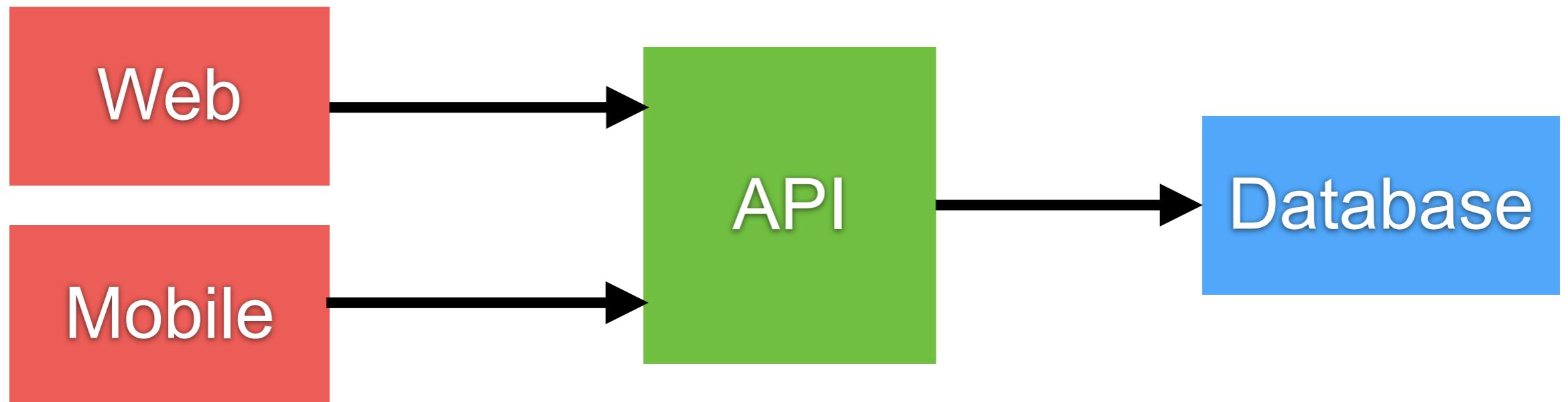
API Testing ?



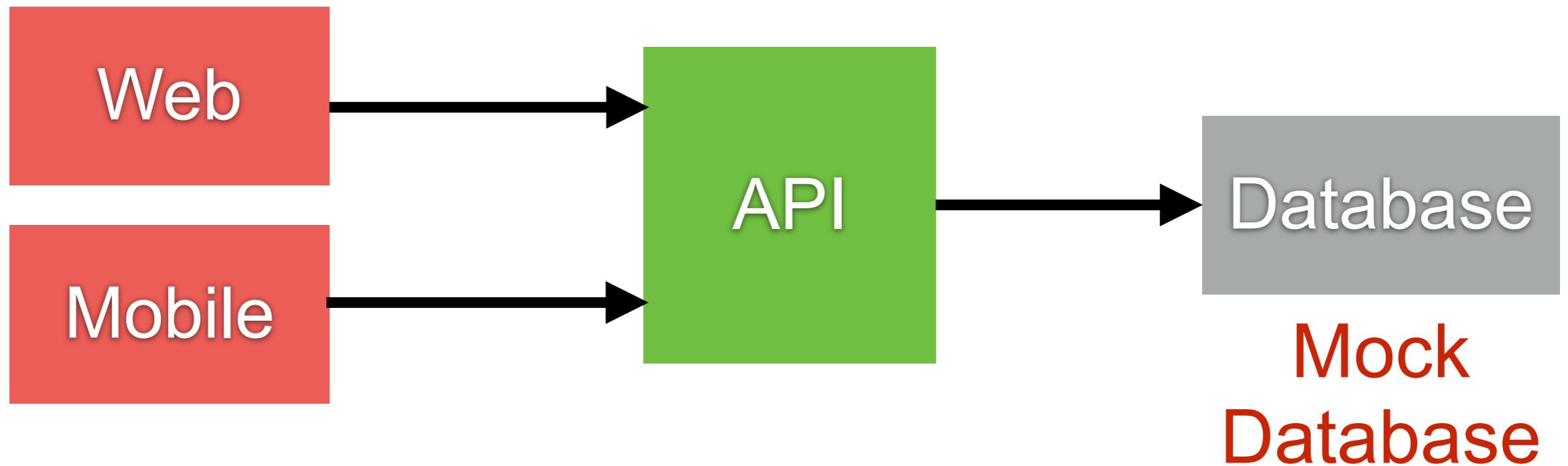
API Testing ?



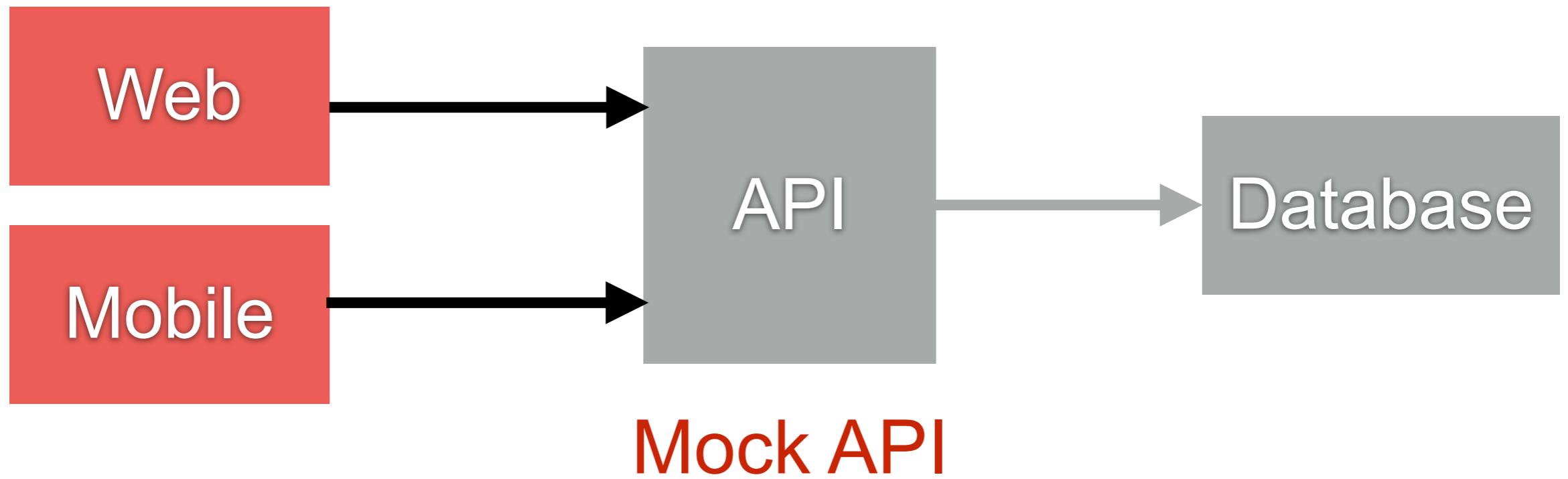
UI Test ?



UI Test ?



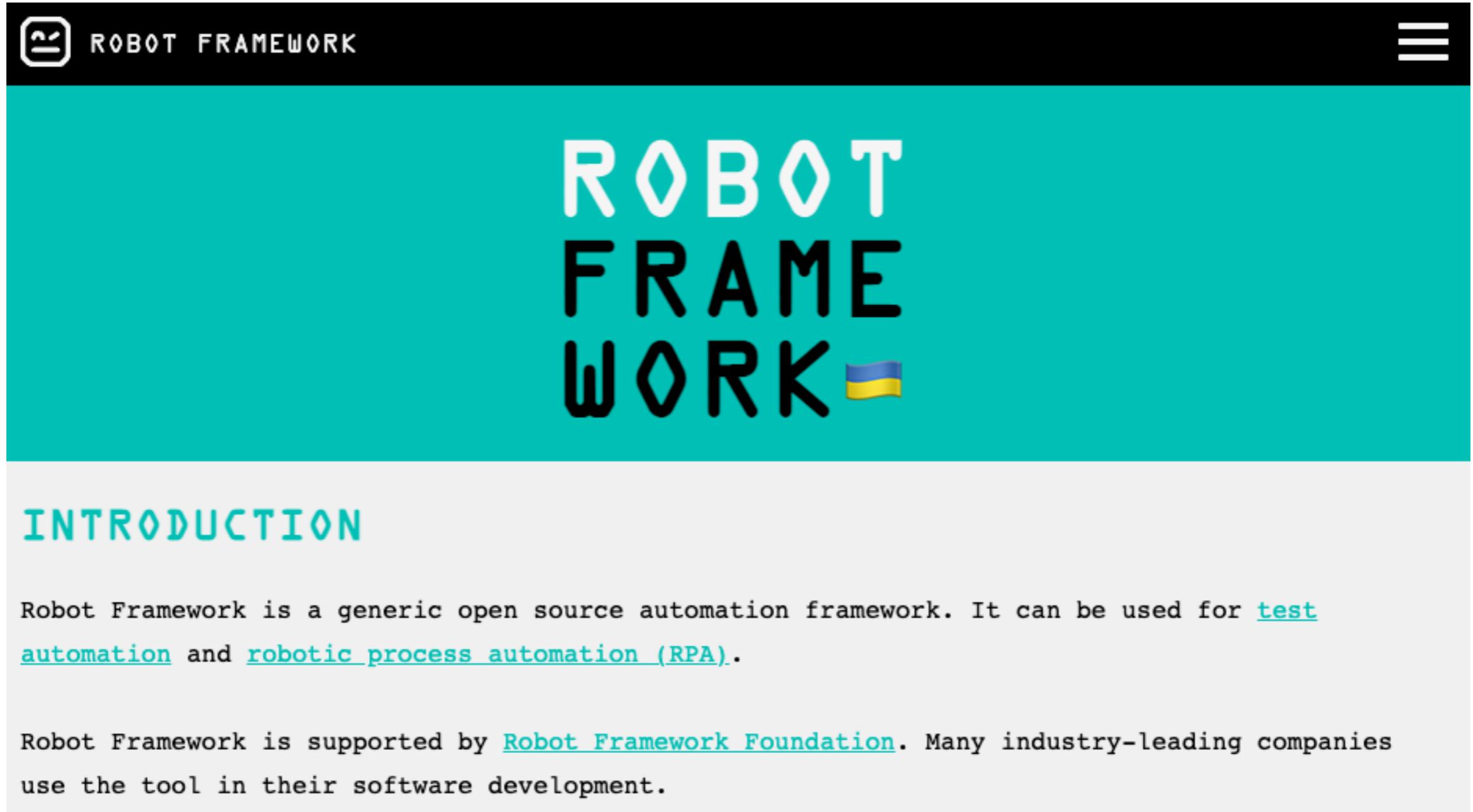
UI Test ?



Introduction with Robot Framework



Robot Framework



The screenshot shows the official website for Robot Framework. At the top, there's a black header bar with the "ROBOT FRAMEWORK" logo on the left and a three-line menu icon on the right. The main title "ROBOT FRAMEWORK" is prominently displayed in large white and black letters on a teal background. A small blue and yellow flag icon is positioned next to the word "WORK". Below the title, the word "INTRODUCTION" is written in a large, bold, light blue font. Underneath, a paragraph of text explains what Robot Framework is and its applications. Another paragraph at the bottom states that it is supported by the Robot Framework Foundation and lists several industry-leading companies.

INTRODUCTION

Robot Framework is a generic open source automation framework. It can be used for [test automation](#) and [robotic process automation \(RPA\)](#).

Robot Framework is supported by [Robot Framework Foundation](#). Many industry-leading companies use the tool in their software development.

<https://robotframework.org/>



Guides for beginner

docs.robotframework.org

Guides User Guide ↗ Standard Library ↗ API Documentation ↗ Slack ↗ GitHub ↗ ⌂ Q Search ⌘ ⌂

Robot Framework Guides

About >

Getting Started >

Libraries >

Examples >

Docker And CI Systems >

Extending Robot Framework >

Re-Execute failed tests

Running tests in parallel

Parsing Test Results

Reporting Test Results

Testcase Styles >

Variables

Robot Framework Guides

Home > Robot Framework Guides

Welcome to ROBOT FRAMEWORK GUIDES



We hope these guides will help you get started with Robot Framework **faster and easier**. If you have any questions, please reach out to our awesome community on [Slack](#).

Getting Started

Set up your machine to use Robot Framework

Test Automation

How to set up Robot Framework for testing

RPA

How to set up Robot Framework for Robotic Process Automation (RPA)

IDE

Install and set up your IDE for coding and debugging

<https://docs.robotframework.org/docs>



User Guide

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- 1.1 Introduction
 - 1.1.1 Why Robot Framework?
 - 1.1.2 High-level architecture
 - 1.1.3 Screenshots
 - 1.1.4 Getting more information
- 1.2 Copyright and license
- 1.3 Installation instructions
 - 1.3.1 Python installation
 - 1.3.2 Installing using pip
 - 1.3.3 Installing from source
 - 1.3.4 Verifying installation
 - 1.3.5 Virtual environments
- 1.4 Demonstrations

2 Creating test data

- 2.1 Test data syntax
 - 2.1.1 Files and directories
 - 2.1.2 Test data sections
 - 2.1.3 Supported file formats
 - 2.1.4 Rules for parsing the data
 - 2.1.5 Localization
- 2.2 Creating test cases
 - 2.2.1 Test case syntax
 - 2.2.2 Using arguments
 - 2.2.3 Failures
 - 2.2.4 Test case name and documentation
 - 2.2.5 Tagging test cases
 - 2.2.6 Test setup and teardown
 - 2.2.7 Test templates

Robot Framework User Guide

Version 6.0.2

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1 Getting started

- [1.1 Introduction](#)
- [1.2 Copyright and license](#)
- [1.3 Installation instructions](#)
- [1.4 Demonstrations](#)

1.1 Introduction

Robot Framework is a Python-based, extensible keyword-driven automation framework for acceptance testing, acceptance test driven development (ATDD), behavior driven development (BDD) and robotic process automation (RPA). It can be used in distributed, heterogeneous environments, where automation requires using different technologies and interfaces.

The framework has a rich ecosystem around it consisting of various generic libraries and tools that are developed as separate projects. For more information about Robot Framework and the ecosystem, see <http://robotframework.org>.

Robot Framework is open source software released under the [Apache License 2.0](#). Its development is sponsored by the [Robot Framework Foundation](#).

Note

The official RPA support was added in Robot Framework 3.1. This User Guide still talks mainly about creating tests, test data, and test libraries, but same concepts apply also when [creating tasks](#).

- [1.1.1 Why Robot Framework?](#)
- [1.1.2 High-level architecture](#)
- [1.1.3 Screenshots](#)

<https://robotframework.org/robotframework/latest/RobotFrameworkUserGuide.html>



Robot Framework

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Build-in Library

LIBRARIES **BUILT-IN** TOOLS

Libraries and tools that are bundled with the framework. Libraries provide the actual automation and testing capabilities to Robot Framework by providing keywords.

Filter by tag

Name	Description	Tags
Builtin	Provides a set of often needed generic keywords. Always automatically available without imports.	LIBRARY
Collections	Provides a set of keywords for handling Python lists and dictionaries.	LIBRARY
DateTime	Library for date and time conversions.	LIBRARY
Dialogs	Provides means for pausing the execution and getting input from users.	LIBRARY
Libdoc	Generate keyword documentation for test libraries and resource files.	TOOL

<https://robotframework.org/?tab=builtin#resources>



3-parties Library

LIBRARIES BUILT-IN TOOLS

Separately developed external libraries that can be installed based on your needs. Creating your own libraries is a breeze. For instructions, see [creating test libraries](#) in Robot Framework User Guide.

Filter by tag

Name	Description	Stars	Tags
SeleniumLibrary	Web testing library that uses popular Selenium tool internally.	1233	WEB, SELENIUM
RPA framework	Collection of open-source libraries and tools for Robotic Process Automation (RPA), designed to be used both with Robot Framework and Python.	805	RPA
HTTP RequestsLibrary (Python)	HTTP level testing using Python Requests internally.	444	HTTP
Browser Library	A modern web testing library powered by Playwright . Aiming for speed, reliability and visibility.	378	WEB
AppiumLibrary	Android and iOS testing. Uses Appium internally.	345	MOBILE

<https://robotframework.org/?tab=libraries#resources>



Software Requirement



Software Requirement



Visual Studio Code



Check

\$pip -V

\$pip install robotframework



Check

\$pip list

redis	4.5.3
requests	2.29.0
robotframework	6.1a1
robotframework-appiumlibrary	2.0.0
robotframework-pythonlibcore	4.1.2
robotframework-seleniumlibrary	6.0.0
selenium	4.8.2
setuptools	58.0.4



Check Robot Framework

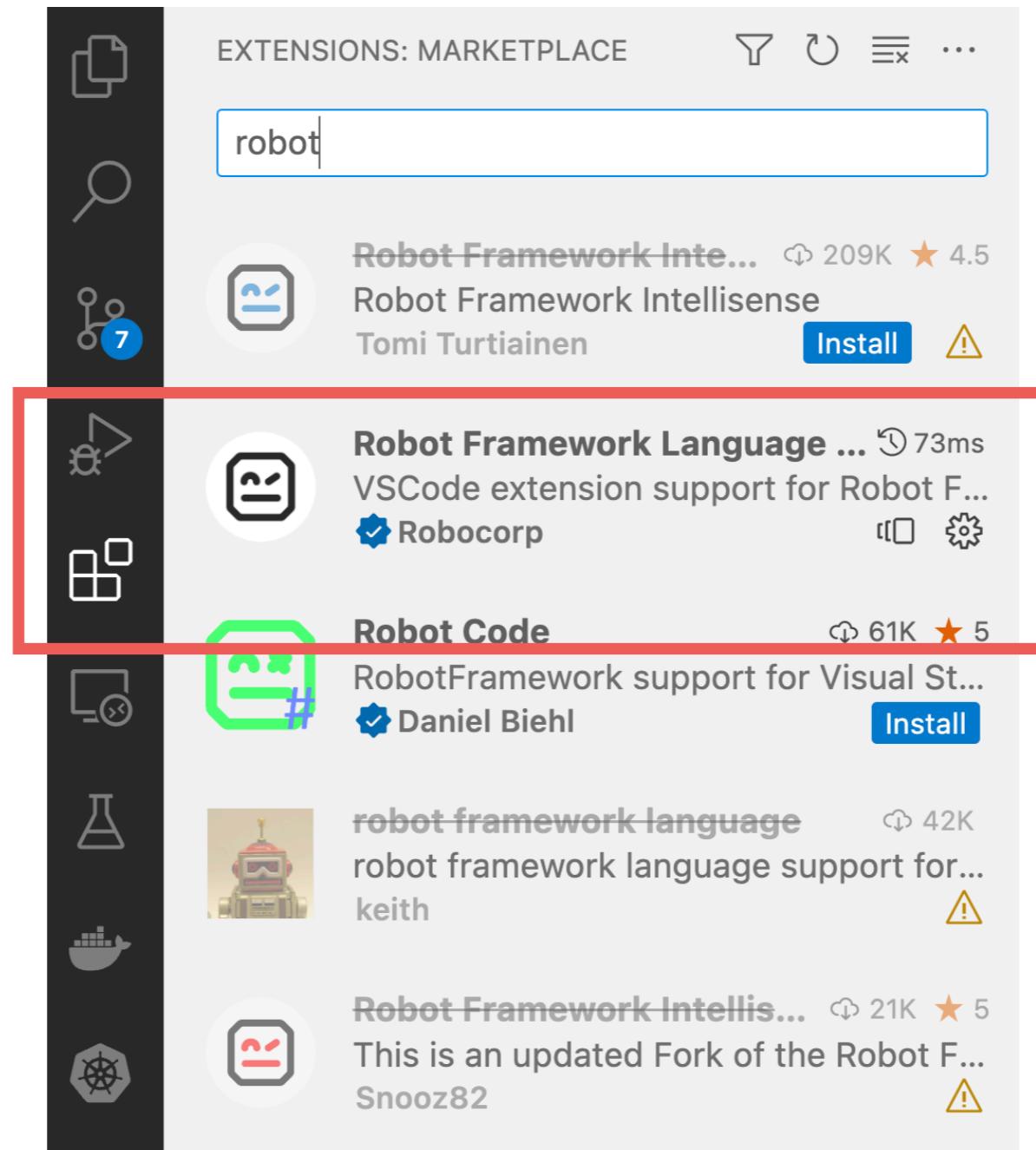
\$robot

[**ERROR**] Expected at least 1 argument, got 0.

Try --help for usage information.



VS Code Extension



EXTENSIONS: MARKETPLACE

robot

Robot Framework Inte... ⚡ 209K ★ 4.5
Robot Framework Intellisense
Tomi Turtiainen **Install** ⚠

Robot Framework Language ... ⚡ 73ms
VSCode extension support for Robot F...
Robocorp ⚡ ⚙

Robot Code ⚡ 61K ★ 5
RobotFramework support for Visual St...
Daniel Biehl **Install**

robot framework language ⚡ 42K
robot framework language support for...
keith ⚠

Robot Framework Intellis... ⚡ 21K ★ 5
This is an updated Fork of the Robot F...
Snooz82 ⚠



Let's start



Write First Test Case



Test Structure

hello.robot

*** Settings ***

*** Variables ***

*** Test Cases ***

*** Keywords ***



Sections

Section Name	Used for
Settings	Import libraries, resource files and variable files Define metadata for test suites and test cases
Variables	Define variables
Test Cases	Create test cases
Tasks	Create tasks
Keywords	Create user keywords

<https://robotframework.org/robotframework/latest/RobotFrameworkUserGuide.html#test-data-sections>



Test Cases

Case name	Input		Expected Result
	Username	Password	
Login success	demo	mode	Show welcome page
Login fail case A	demo	mode2	Show error page
Login fail case B	demo2	mode	Show error page
Login fail case C	demo2	mode2	Show error page



Run test

\$robot hello.robot



UI testing with Robot Framework



UI Testing (Web)

Selenium Library
Browser Library

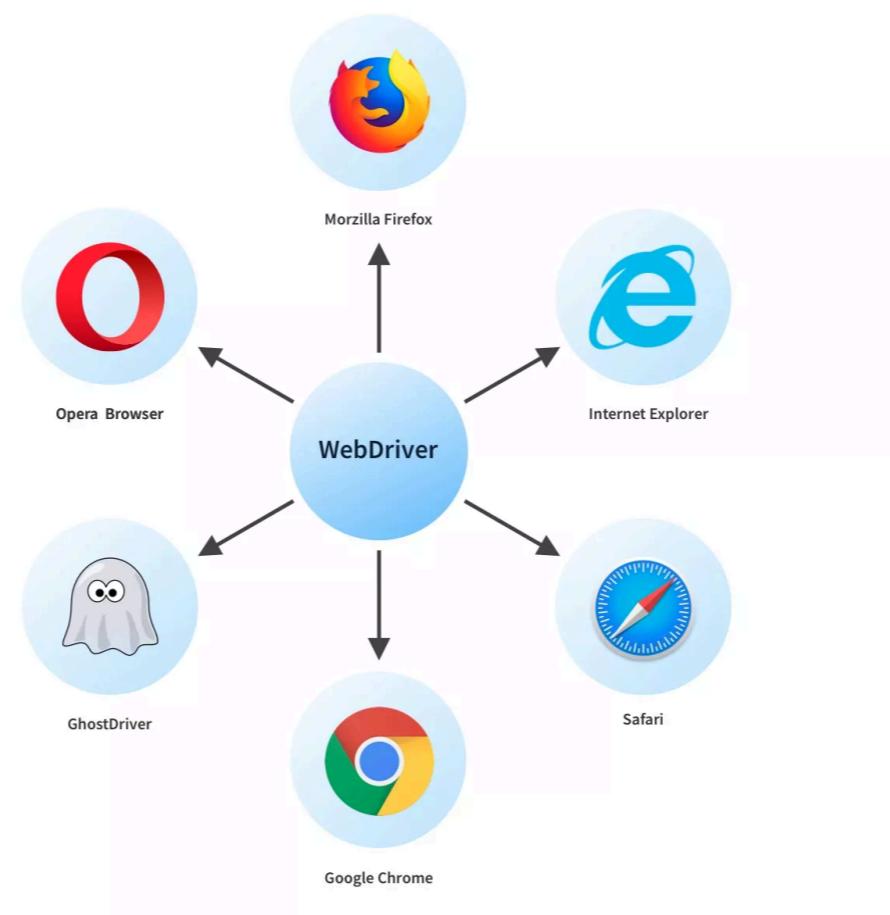


<https://robotframework.org/?tab=libraries#resources>



Selenium Library

Use selenium project
Support multiple web browsers



<https://github.com/robotframework/SeleniumLibrary>



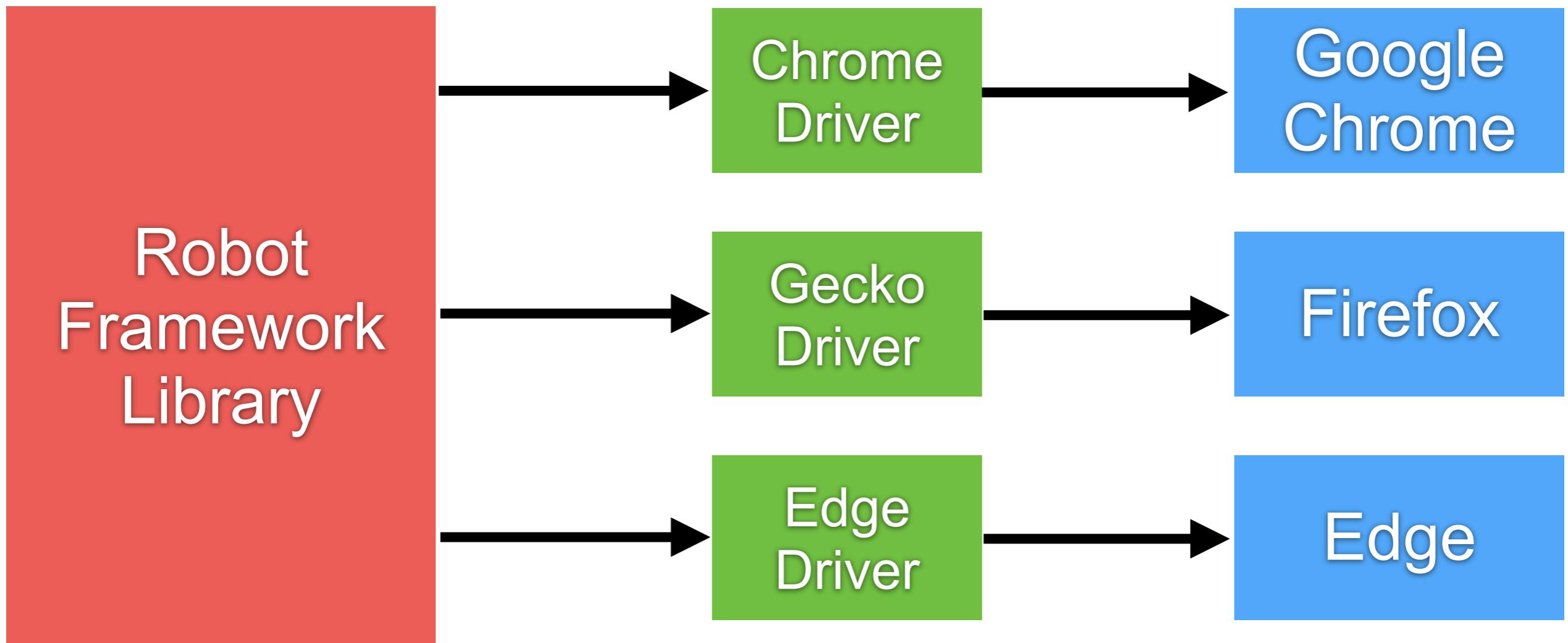
Installation

```
$pip install -U robotframework-seleniumlibrary
```

```
$pip list
```



Selenium Library



<https://github.com/robotframework/SeleniumLibrary>



Selenium Library

List of keywords

SeleniumLibrary

X

Keywords (177) +

- Add Cookie
- Add Location Strategy
- Alert Should Be Present
- Alert Should Not Be Present
- Assign Id To Element
- Capture Element Screenshot
- Capture Page Screenshot
- Checkbox Should Be Selected
- Checkbox Should Not Be Selected
- Choose File
- Clear Element Text
- Click Button
- Click Element

Library version: 6.1.0
Library scope: GLOBAL

Introduction

SeleniumLibrary is a web testing library for Robot Framework.

This document explains how to use keywords provided by SeleniumLibrary. For information about the library, visit the [project pages](#). For more information about Robot Framework, see [http://robotframework.org](#).

SeleniumLibrary uses the Selenium WebDriver modules internally to control a web browser. For information about Selenium in general and SeleniumLibrary README.rst [Browser drivers chapter](#).

- [Locating elements](#)
- [Browser and Window](#)
- [Timeouts, waits, and delays](#)
- [Run-on-failure functionality](#)
- [Boolean arguments](#)
- [EventFiringWebDriver](#)
- [Thread support](#)
- [Plugins](#)
- [Importing](#)
- [Keywords](#)

<https://robotframework.org/SeleniumLibrary/SeleniumLibrary.html>



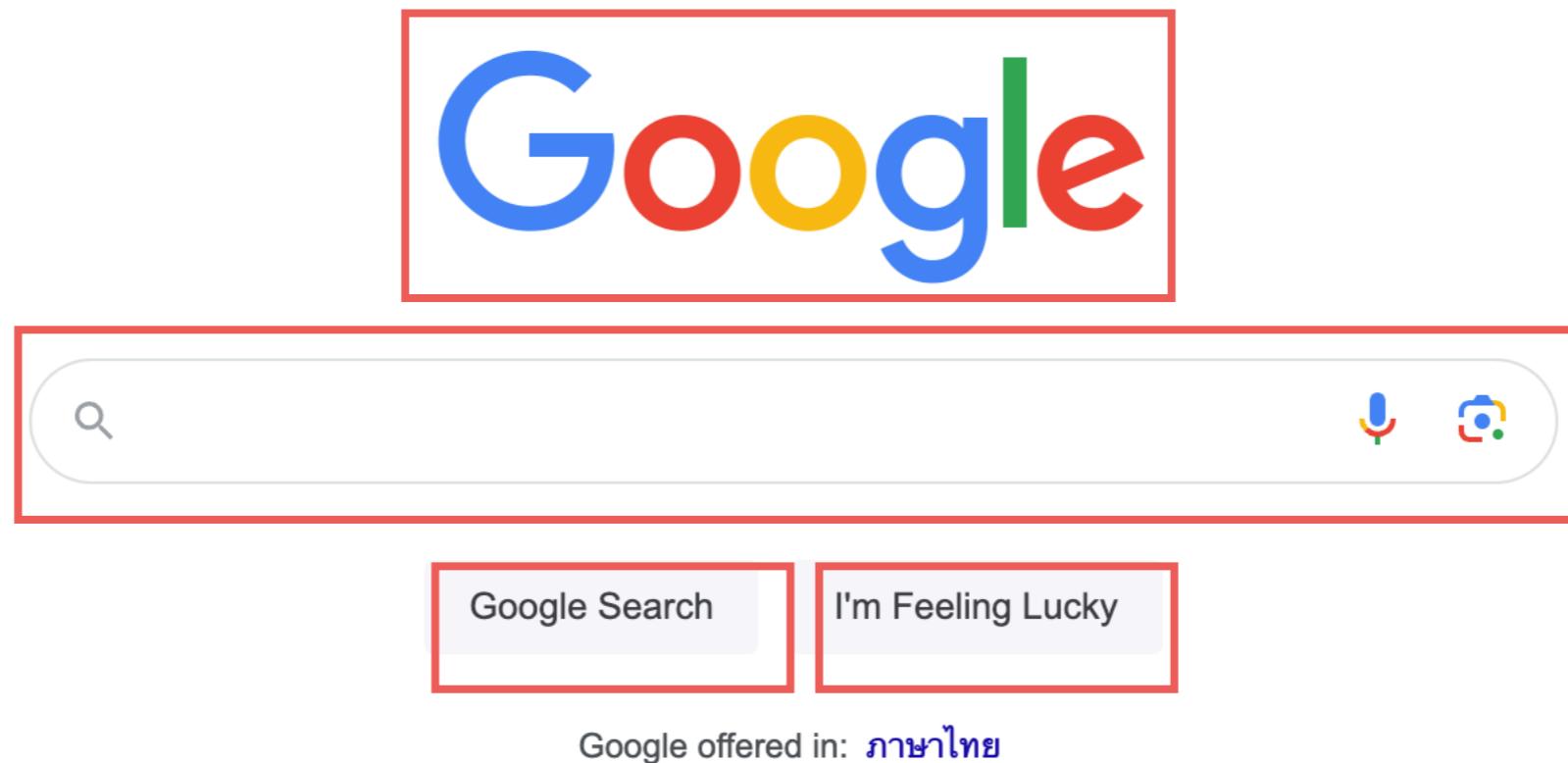
Workshop with First test case

\$robot hello.robot



Web Element Locators !!





How to access ?



Web Element Location

Identifier

id

name

XPath

CSS Selector

Class name



Web Element Location

Strategy	Match based on	Example
id	Element <code>id</code> .	<code>id:example</code>
name	<code>name</code> attribute.	<code>name:example</code>
identifier	Either <code>id</code> or <code>name</code> .	<code>identifier:example</code>
class	Element <code>class</code> .	<code>class:example</code>
tag	Tag name.	<code>tag:div</code>
xpath	XPath expression.	<code>xpath://div[@id="example"]</code>
css	CSS selector.	<code>css:div#example</code>
dom	DOM expression.	<code>dom:document.images[5]</code>
link	Exact text a link has.	<code>link:The example</code>
partial link	Partial link text.	<code>partial link:he ex</code>
sizzle	Sizzle selector deprecated.	<code>sizzle:div.example</code>
data	Element <code>data-*</code> attribute	<code>data:id:my_id</code>
jquery	jQuery expression.	<code>jquery:div.example</code>
default	Keyword specific default behavior.	<code>default:example</code>

<https://robotframework.org/SeleniumLibrary/SeleniumLibrary.html>

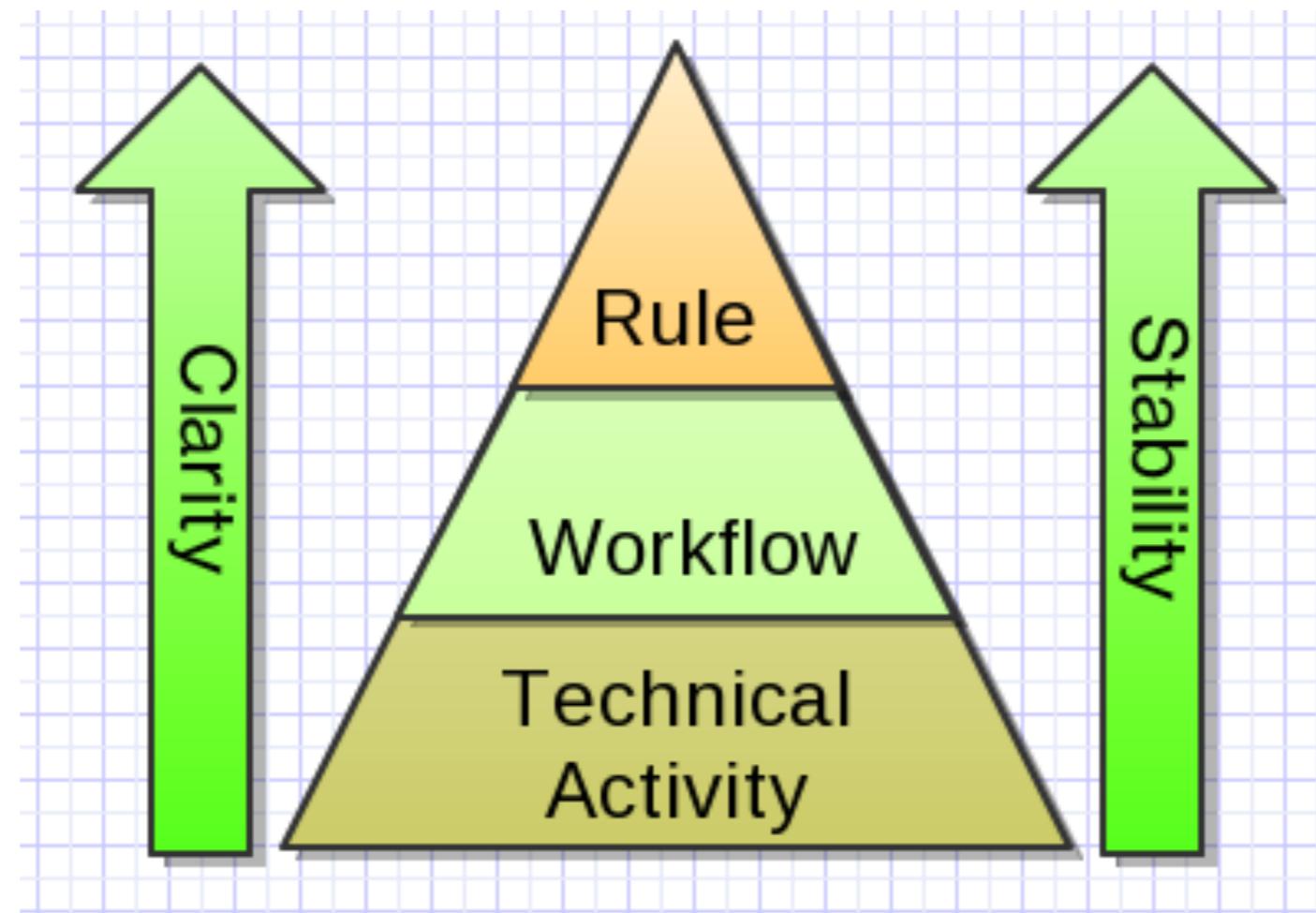


Bad locator === Flaky test

<https://testing.googleblog.com/2016/05/flaky-tests-at-google-and-how-we.html>



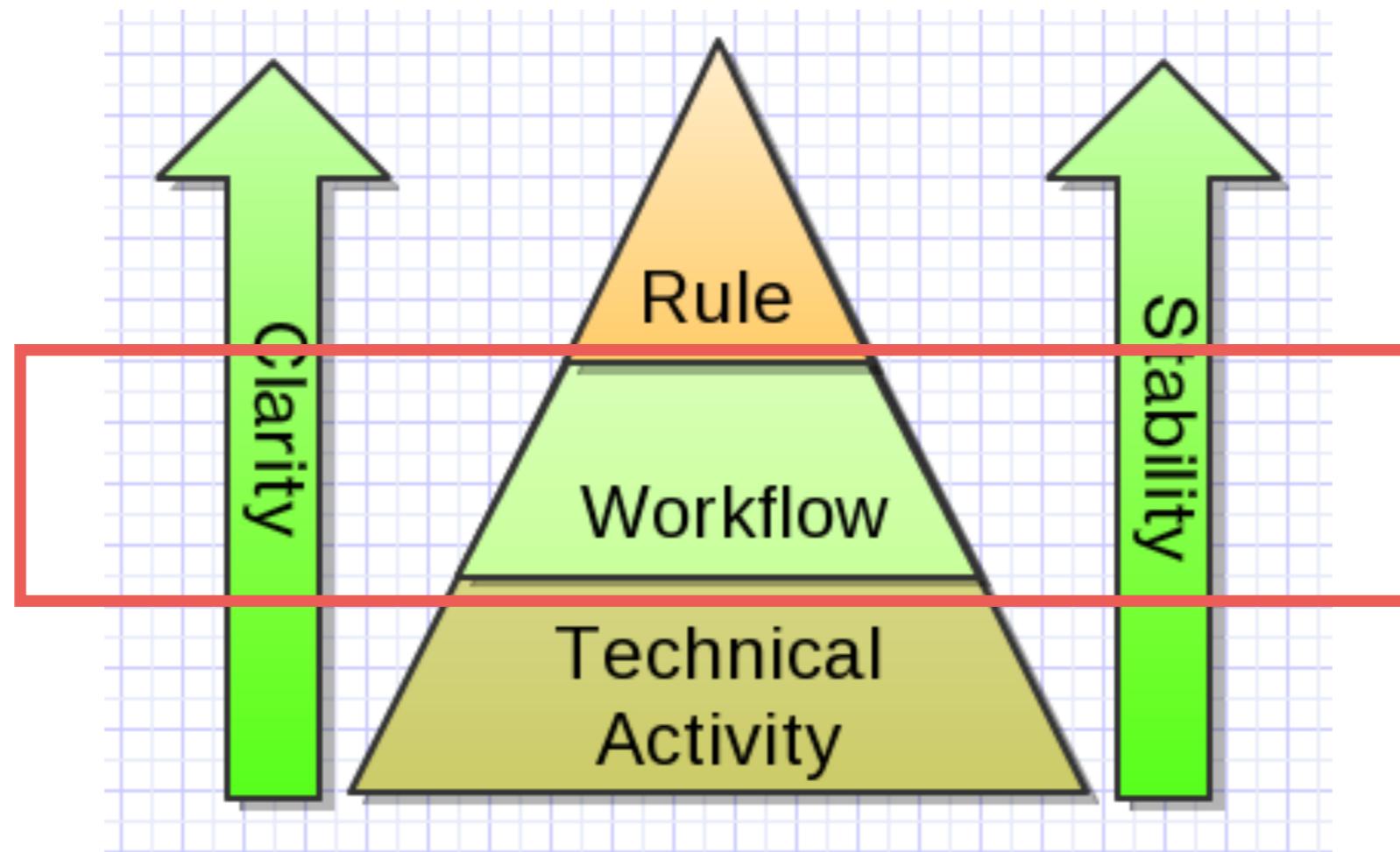
3 levels of UI Automation Test



<https://gojko.net/2010/04/13/how-to-implement-ui-testing-without-shooting-yourself-in-the-foot-2/>



User Interface workflow



<https://gojko.net/2010/04/13/how-to-implement-ui-testing-without-shooting-yourself-in-the-foot-2/>



Recording Tools



Recording Tools

Selenium IDE
Google Chrome Recorder



Selenium IDE

 Selenium IDE

Docs API Plugins Blog Help

Selenium IDE

Open source record and playback test automation for the web

[CHROME DOWNLOAD](#) [FIREFOX DOWNLOAD](#) [LATEST ZIP](#)

 Star 2,392



Web Ready

Simple, turn-key solution to quickly author reliable end-to-end tests. Works out of the box for any web app.



Easy Debugging

Enjoy easier test debugging with rich IDE features like setting breakpoints and pausing on exceptions.



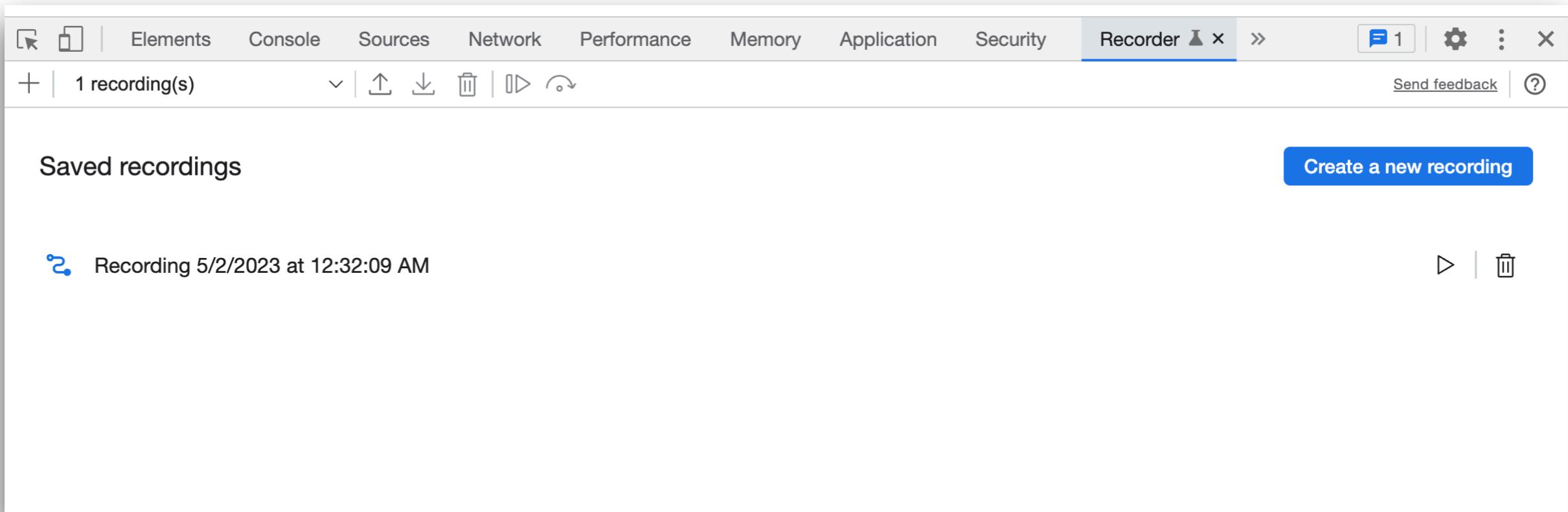
Cross-browser Execution

Run your tests on any browser/OS combination in parallel using the Command-line Runner for Selenium IDE.

<https://www.selenium.dev/selenium-ide/>



Google Chrome Recorder



<https://developer.chrome.com/docs/devtools/recorder/>



Arguments in Keyword

<https://robotframework.org/robotframework/latest/RobotFrameworkUserGuide.html#creating-user-keywords>



Arguments in Keyword

Keyword arguments

Embedding arguments in keyword

<https://robotframework.org/robotframework/latest/RobotFrameworkUserGuide.html#creating-user-keywords>



Keyword arguments

*** Settings ***

Library SeleniumLibrary

*** Test Cases ***

Login fail case with wrong username

 Fill in demo mode

*** Keywords ***

Fill in

 [Arguments] \${username} \${password}

 Input Text id=username_field \${username}

 Input Text id=password_field \${password}



Embedding arguments

*** Settings ***

Library SeleniumLibrary

*** Test Cases ***

Login fail case with wrong username

Fill in with user='demo' and password='mode'

*** Keywords ***

Fill in with user='\${username}' and password='\${password}'

Input Text id=username_field \${username}

Input Text id=password_field \${password}



Grouping test case with Tag

<https://robotframework.org/robotframework/latest/RobotFrameworkUserGuide.html#tagging-test-cases>



Use Tag in test case

*** Test Cases ***

Login fail case with wrong username

[Tags] feature01 done

Fill in with user='demo2' and password='mode'

Login fail case with wrong password

[Tags] feature01 done

Fill in with user='demo' and password='mode2'

Login fail case with wrong username and password

[Tags] feature01 testing

Fill in with user='demo2' and password='mode2'

\$robot -i testing hello.robot

\$robot -e testing hello.robot



Using Variables

<https://robotframework.org/robotframework/latest/RobotFrameworkUserGuide.html#variables>



Variables

Scalar => \${var}

List => @{var}

Dictionary => &{var}

Environment variable => %{ENV_VAR}



Build-in Variables

`${SPACE}`

`${SPACE*5}`

`${EMPTY}`

<https://robotframework.org/robotframework/latest/RobotFrameworkUserGuide.html#built-in-variables>



Use variables from command line

Try to change value in test case ?

*** Keywords ***

Open Login Page

 Open Browser <https://demo-login-workshop.vercel.app/>
 ... browser=chrome

Change URL and browser ?

<https://robotframework.org/robotframework/latest/RobotFrameworkUserGuide.html#built-in-variables>



Use variables from command line

Create new variables

*** Variables ***

 \${URL} https://demo-login-workshop.vercel.app/
 \${BROWSER} chrome

*** Keywords ***

Open Login Page
 Open Browser \${URL}
 ... browser=\${BROWSER}



Use variables from command line

Change data from command line

```
$srobot -v URL:new -v BROWSER:new
```



Test Life Cycle



Testing life cycle

Test case 01

Test case 02



Testing life cycle

Suite Setup

Test case 01

Test case 02

Suite Teardown



Testing life cycle

Suite Setup

Test Setup

Test case 01

Test Teardown

Test case 02

Suite Teardown



Testing life cycle

Suite Setup

Test Setup

Test case 01

Test Teardown

Test Setup

Test case 02

Test Teardown

Suite Teardown



Workshop with Test life cycle



Test Template



Test template

Template per suite
Template per test case

<https://robotframework.org/robotframework/latest/RobotFrameworkUserGuide.html#test-templates>



Template per suite

*** Settings ***

Test Template Flow of login success

*** Keywords ***

Flow of login success

[Arguments] \${input}

Should Be Equal first \${input}



Template per suite

*** Settings ***

Test Template Flow of login success

*** Keywords ***

Flow of login success

[Arguments] \${input}

Should Be Equal first \${input}

*** Test Cases ***

Case 01 data 1

Case 02 data 2

Case 03 data 3



Template per test case

*** Test Cases ***

Success case

[Template] Flow of login success
data 1
data 2
data 3

*** Keywords ***

Flow of login success

[Arguments] \${input}
Should Be Equal first \${input}



Workshop test template



Working with Resource files

<https://robotframework.org/robotframework/latest/RobotFrameworkUserGuide.html#resource-files>



Resource files

Reuse data in settings, variables and keywords

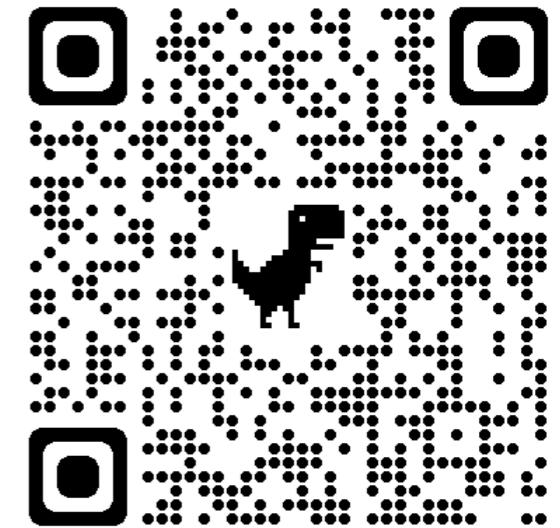
Extension with **.resource** or **.robot**

```
*** Settings ***
Resource my_keyword.resource
Resource my_keyword.robot
```

<https://robotframework.org/robotframework/latest/RobotFrameworkUserGuide.html#test-templates>



More Workshop



Angular File Upload Demos ▾ View on Github Download

Select files

Base drop zone

Another drop zone with its own settings

Multiple
 No file chosen

Single
 No file chosen

Upload queue

Queue length: 0

Name	Size	Progress	Status
Queue progress:			

<http://nervgh.github.io/pages/angular-file-upload/examples/simple/>



Scaling Testing



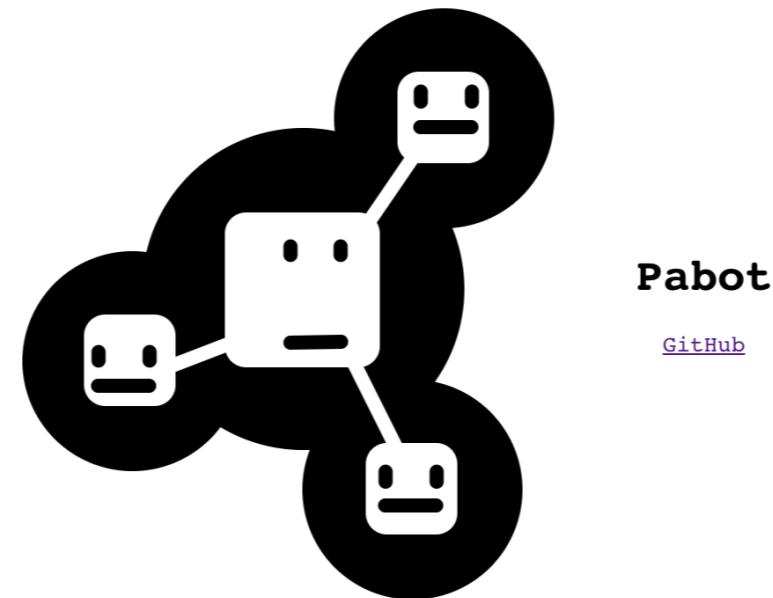
Scaling Testing

- Pabot
- Selenium Grid

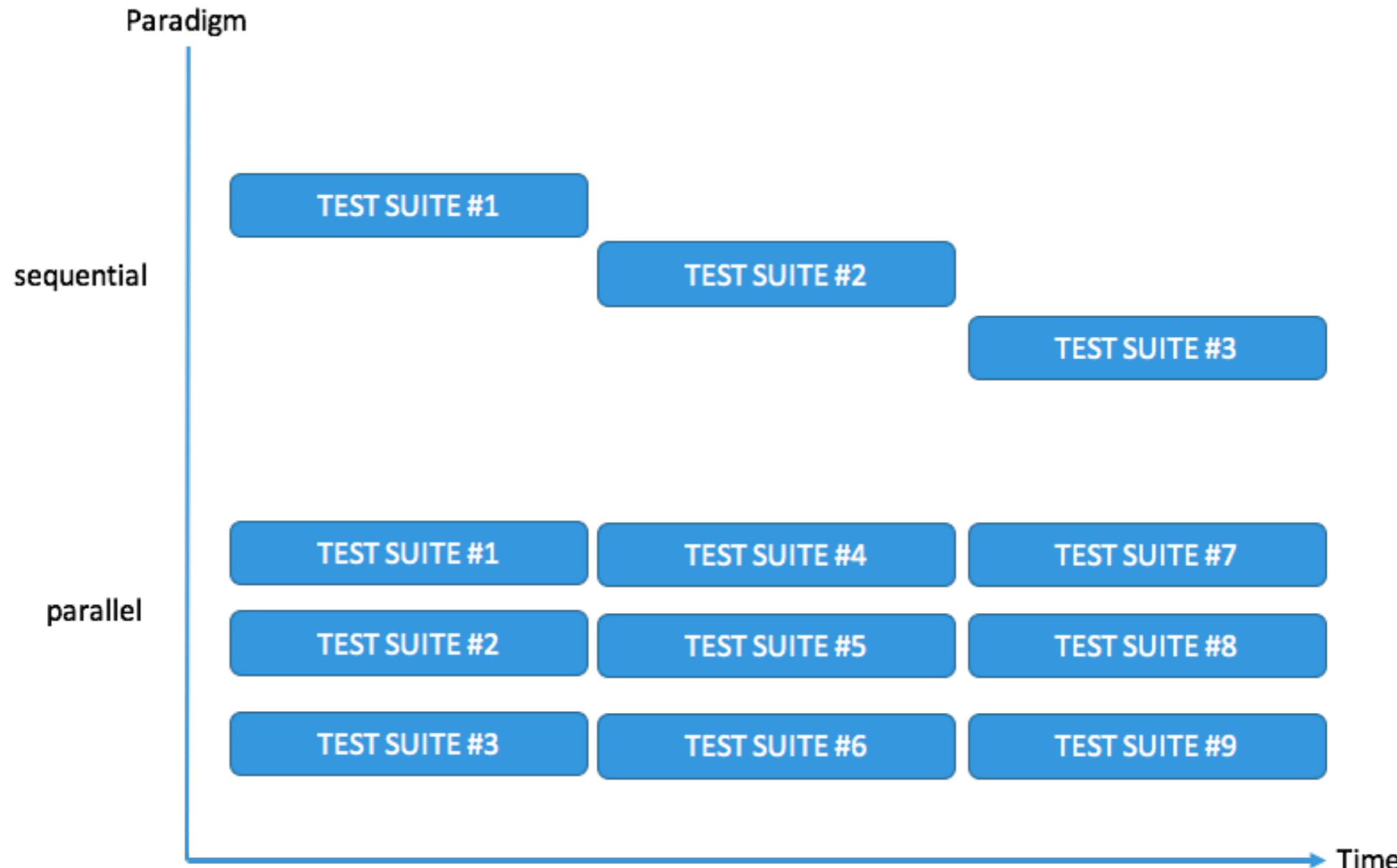


Pabot

Parallel executor for Robot Framework
Split one execution into multiple
<https://pabot.org/>



Test execution



Using Pabot

```
$pip install -U robotframework-pabot  
$pabot
```



Parallel test suites

\$pabot flow_dress_sorting.robot



Parallel test cases

```
$pabot --testlevelspli  
flow_dress_sorting.robot
```



Workshop with Pabot



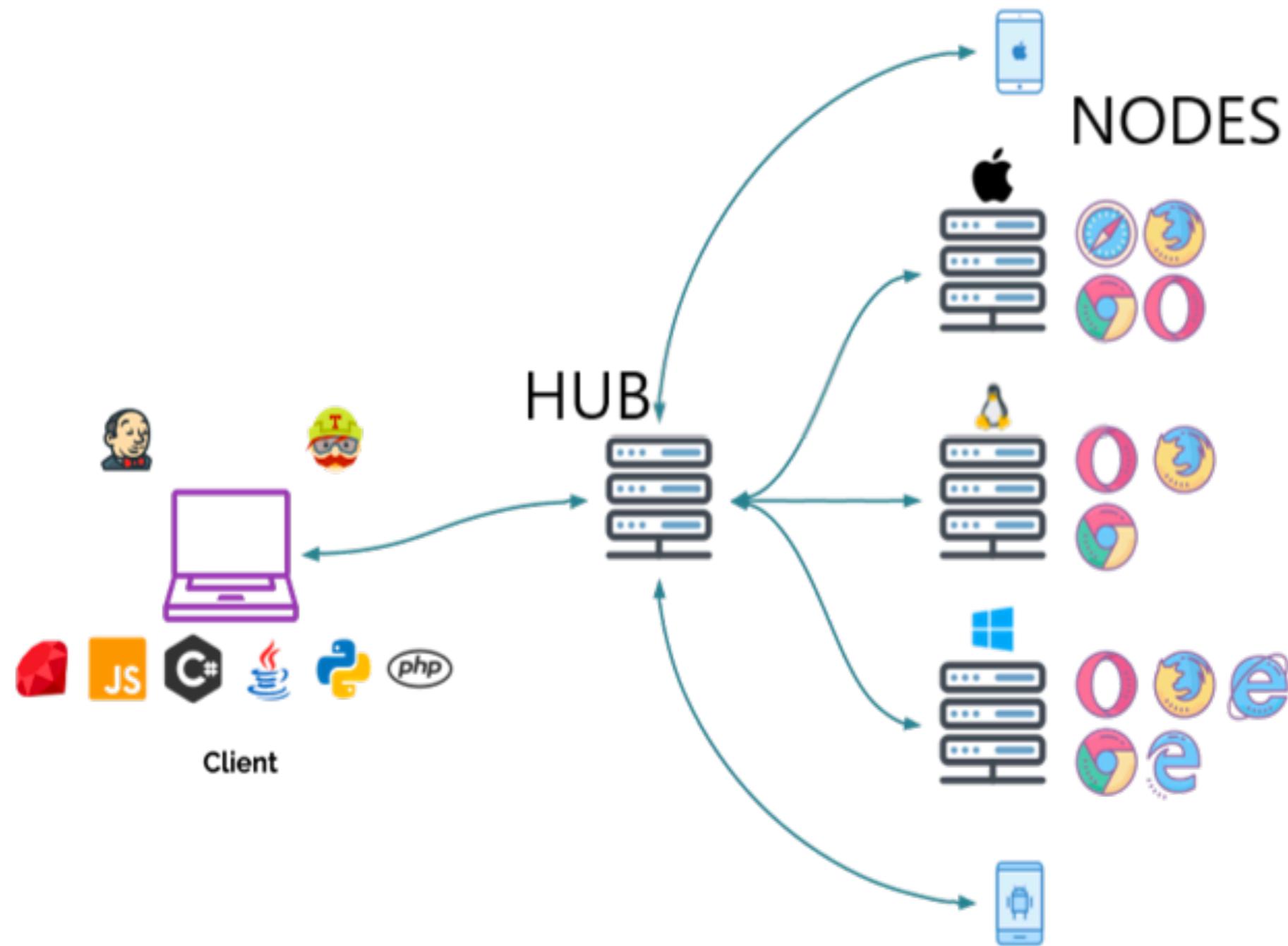
Selenium grid

Run test cases on different machines
Parallel testing

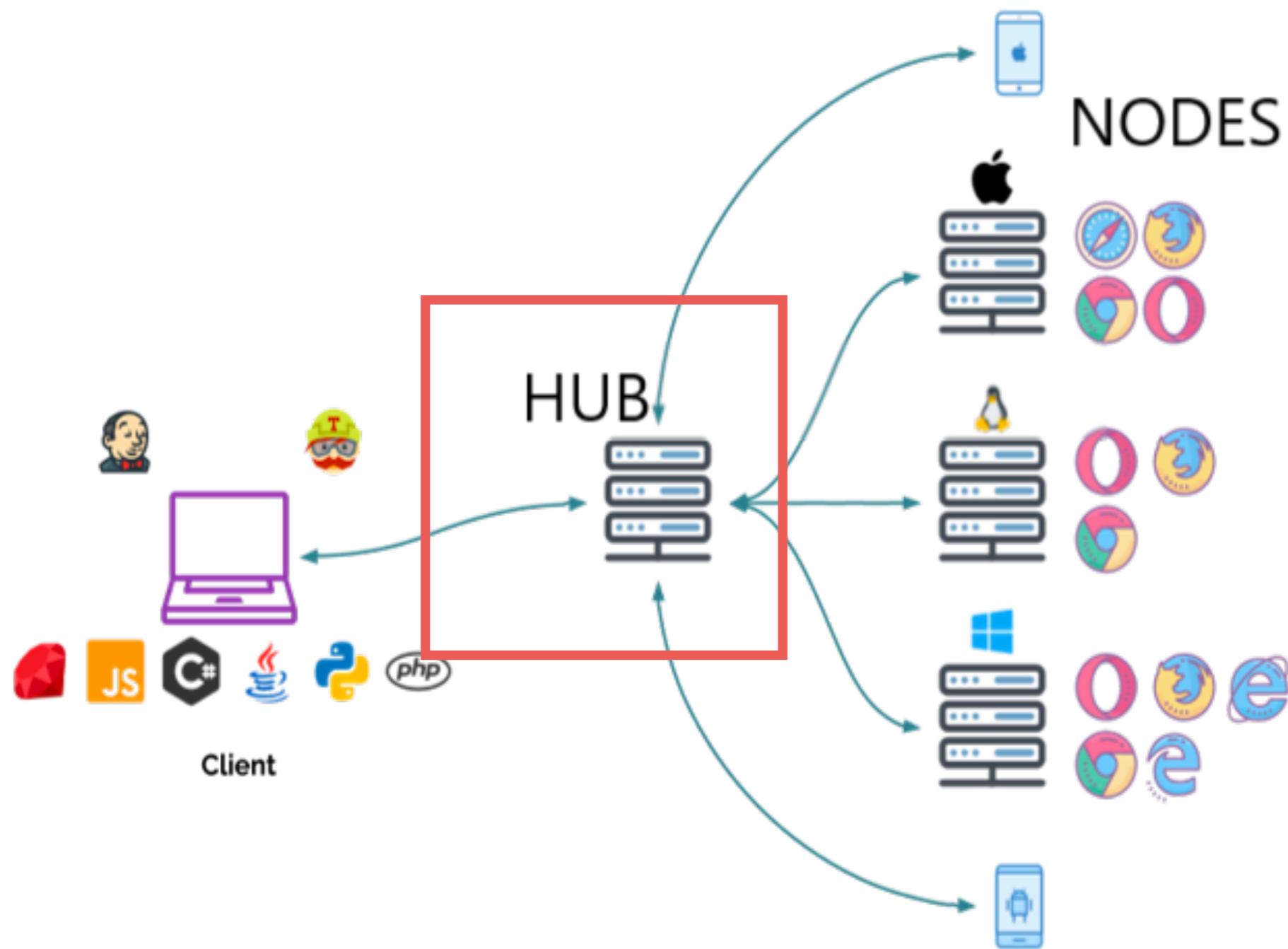
<https://github.com/SeleniumHQ/selenium/wiki/Grid2>



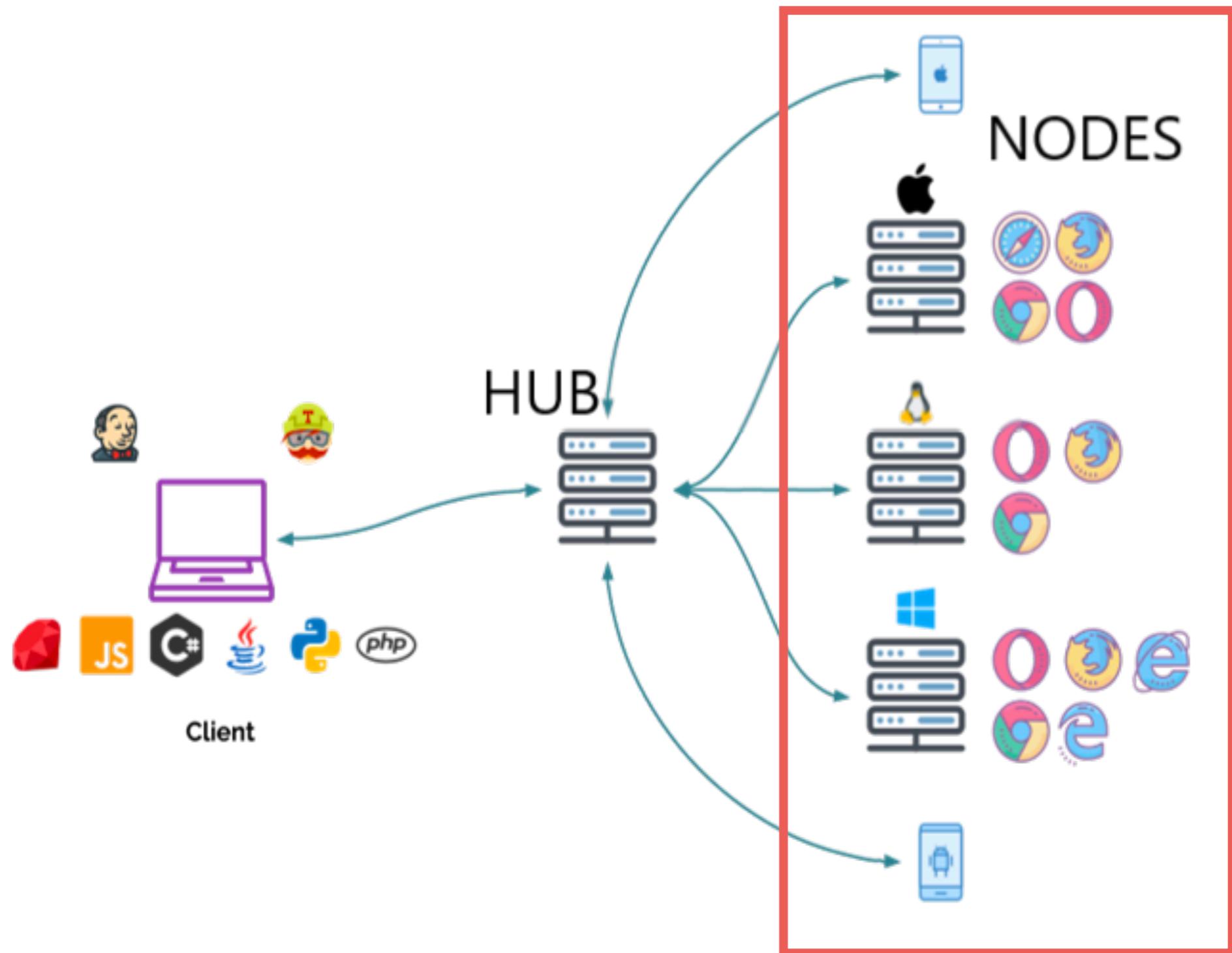
Selenium grid architecture



Selenium grid architecture



Selenium grid architecture



Selenium grid architecture

Hub
Nodes



Download selenium grid

← → C ⓘ Not Secure | selenium-release.storage.googleapis.com/index.html

Index of /

Name	Last modified	Size	ETag
 2.39	-	-	-
 2.40	-	-	-
 2.41	-	-	-
 2.42	-	-	-
 2.43	-	-	-
 2.44	-	-	-
 2.45	-	-	-
 2.46	-	-	-
 2.47	-	-	-
 2.48	-	-	-
 2.49	-	-	-

<http://selenium-release.storage.googleapis.com/index.html>



Download selenium grid 4.0

← → ⌂ ⓘ Not Secure | selenium-release.storage.googleapis.com/index.html?path=4.0/

Index of /4.0/

	<u>Name</u>	Last modified	Size	ETag
	Parent Directory		-	
	selenium-html-runner-4.0.0-alpha-1.jar	2019-04-24 16:17:02	13.52MB	2eca35318710f46d1ba5ed5543a906c9
	selenium-html-runner-4.0.0-alpha-2.jar	2019-07-01 21:32:41	13.76MB	346d72e4f425bfec91c7073a46c96208
	selenium-java-4.0.0-alpha-1.zip	2019-04-24 16:17:01	8.46MB	db9ed262a07c1cd2bb6098263c7f1e7b
	selenium-java-4.0.0-alpha-2.zip	2019-07-01 21:32:33	8.74MB	2d31929580c3d829197eea97ade5f4f0
	selenium-server-4.0.0-alpha-1.jar	2019-04-24 16:16:58	10.62MB	c32b1dd1c12cdb42b48f345d65d657fb
	selenium-server-4.0.0-alpha-1.zip	2019-04-24 16:16:59	10.20MB	7f0bc4bb4fc2a5a7f0a262f62bf782d3
	selenium-server-4.0.0-alpha-2.jar	2019-07-01 21:32:04	10.79MB	d0676e6b3ee508b48416aba603662573
	selenium-server-4.0.0-alpha-2.zip	2019-07-01 21:32:11	10.47MB	fb19d62db44a7b163f1fbc2fff9dff0a
	selenium-server-standalone-4.0.0-alpha-1.jar	2019-04-24 16:17:00	11.98MB	ac553ec987d16d2af8c8e3ef9061772c
	selenium-server-standalone-4.0.0-alpha-1.zip	2019-04-24 16:17:00	11.77MB	1974b11f970bad6e15c84e3840ec3897
	selenium-server-standalone-4.0.0-alpha-2.jar	2019-07-01 21:32:19	12.33MB	d000d97d24389fde5bfb94f450ede780
	selenium-server-standalone-4.0.0-alpha-2.zip	2019-07-01 21:32:27	12.26MB	2466773c71eeddea02004371a5e32324

<http://selenium-release.storage.googleapis.com/index.html>



Start Hub

```
$java -jar selenium-server-standalone-  
      <version>.jar -role hub
```



Start Hub

Open url=http://localhost:4444



Whoops! The URL specified routes to this help page.

For more information about Selenium Grid Hub please see the [docs](#) and/or visit the [wiki](#). Or perhaps you are looking for the Selenium Grid Hub [console](#).

Happy Testing!

Selenium is made possible through the efforts of our open source community, contributions from these [people](#), and our [sponsors](#).



Start Node

```
$java -jar selenium-server-standalone-  
      <version>.jar -role node  
-hub http://localhost:4444/grid/register
```



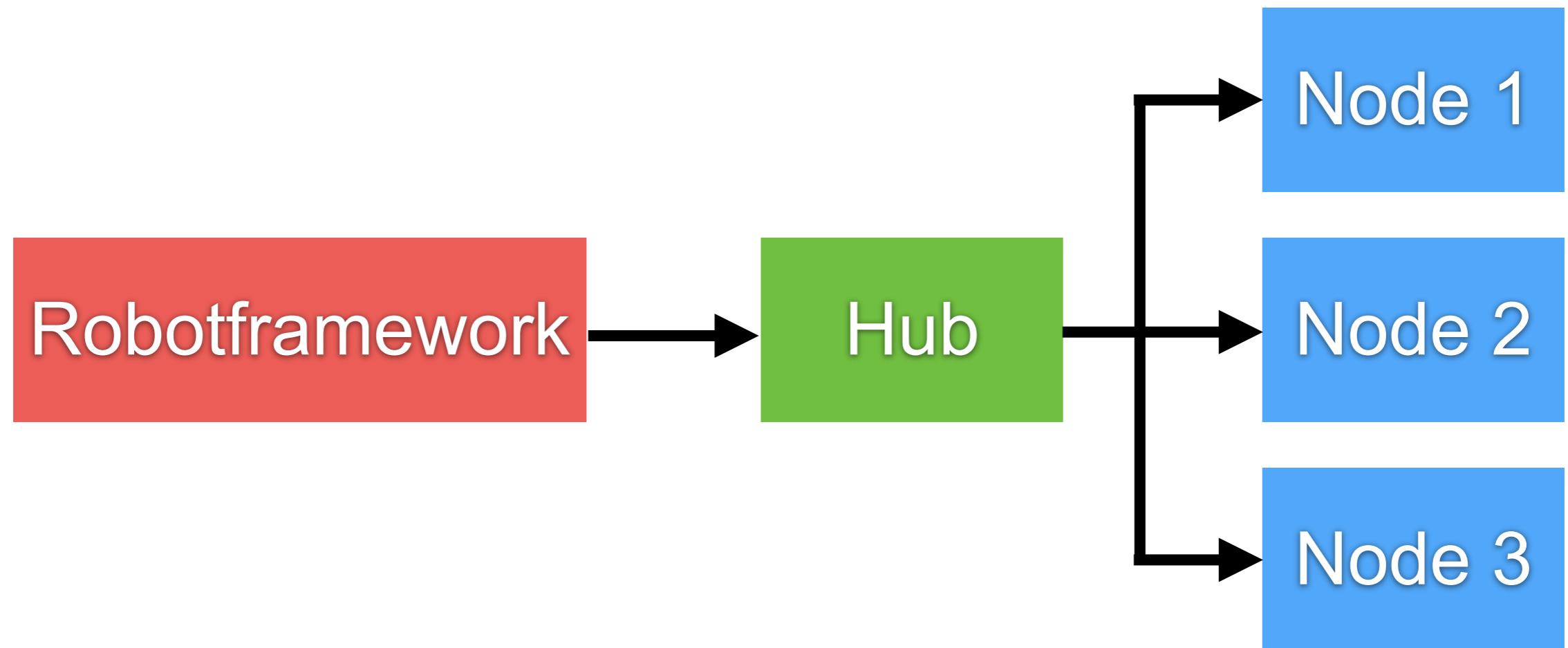
Start Node

Open url=http://localhost:4444/grid/console

The screenshot shows the Grid Console interface. At the top, there is a logo consisting of three colored squares (orange, yellow, and purple) on a grey square with the letters 'Se'. To the right of the logo, the text 'Grid Console v.4.0.0-alpha-2' is displayed. Below this, a dark grey bar contains the text 'DefaultRemoteProxy (version : 4.0.0-alpha-2)' and 'id : http://192.168.1.33:25112, OS : MAC'. The main area has a light blue header with two tabs: 'Browsers' (which is active) and 'Configuration'. Under the 'Browsers' tab, there is a section titled 'WebDriver' with three rows of browser icons. The first row shows five Firefox icons (v:). The second row shows one Internet Explorer icon (v:). The third row shows five Chrome icons (v:). At the bottom left of the main area, there is a link labeled 'View Config'.



Testing with Robotframework



Testing with Robotframework

```
*** Keywords ***
```

```
Open with selenium grid
```

```
  Open Browser    ${URL}
    ...  browser=${BROWSER}
    ...  remote_url=http://localhost:4444/wd/hub
    ...  desired_capabilities=browserName:chrome
```



State of nodes in selenium grid

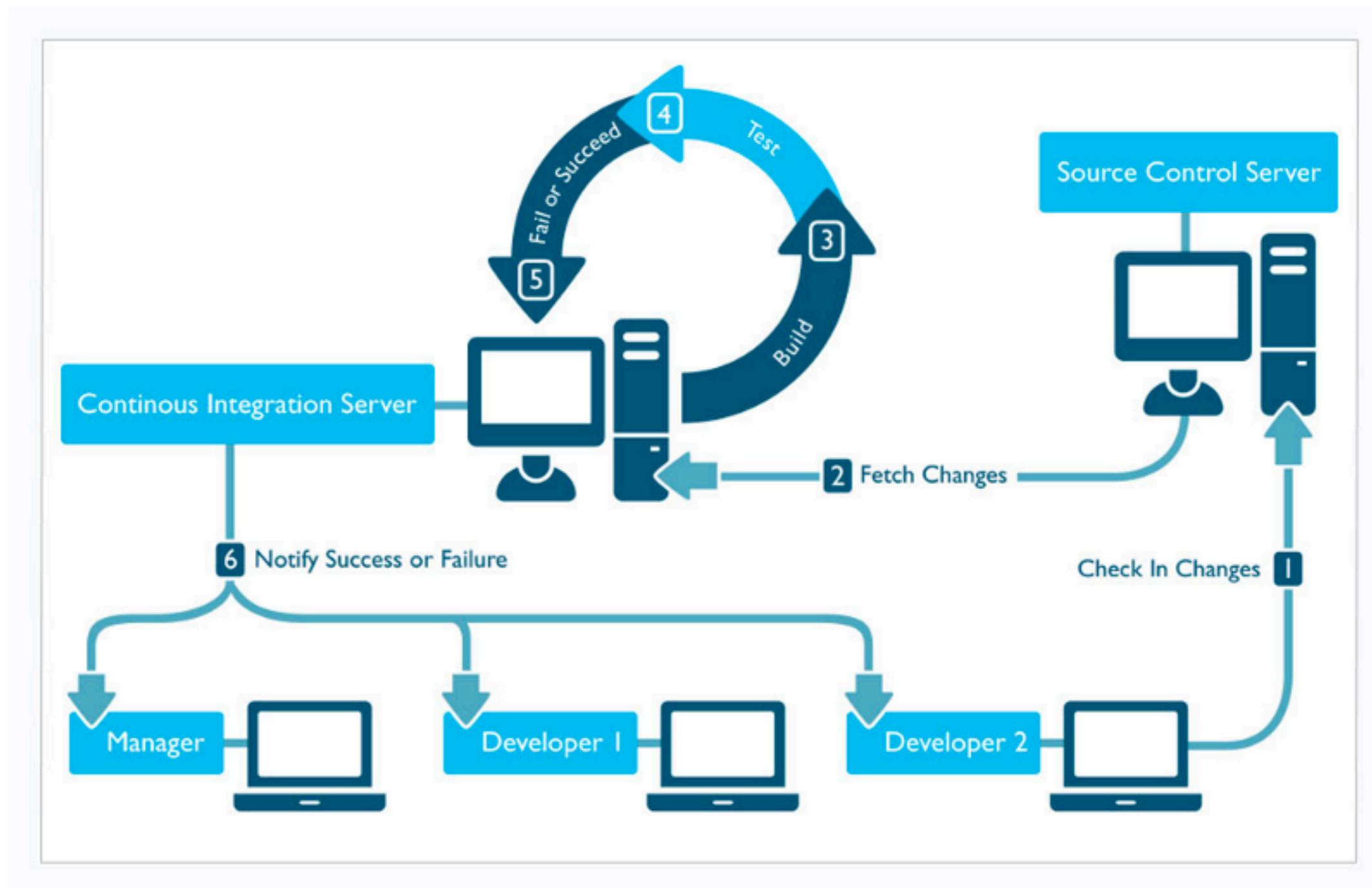
The screenshot shows the Selenium Grid Console interface. At the top, there is a logo consisting of three colored squares (orange, purple, yellow) arranged in a triangle, followed by the letters 'Se'. To the right of the logo, the text 'Grid Console v.4.0.0-alpha-2' is displayed. Below this, a dark blue header bar contains the text 'DefaultRemoteProxy (version : 4.0.0-alpha-2)' and 'id : http://192.168.1.33:29618, OS : MAC'. The main content area has two tabs: 'Browsers' (which is active) and 'Configuration'. Under the 'Browsers' tab, there is a section titled 'WebDriver' with three rows of browser icons. The first row contains five Firefox icons (v:). The second row contains one Internet Explorer icon (v:). The third row contains five Google Chrome icons (v:), with the entire row highlighted by a red rectangular border. At the bottom left of the main content area, there is a link labeled 'View Config'.



Continuous Integration



Continuous Integration process



Close browser in each test case

```
*** Settings ***
Resource ./pages/welcome.robot
Resource ./pages/catalog.robot
Test Teardown Close Browser
```



Workshop with Selenium grid



API testing



API testing

Robot framework
Postman



API testing with Robot

Using RequestsLibrary

```
$pip install -U requests
```

```
$pip install -U robotframework-requests
```

<https://github.com/bulkan/robotframework-requests>



API testing with Postman

Build APIs together

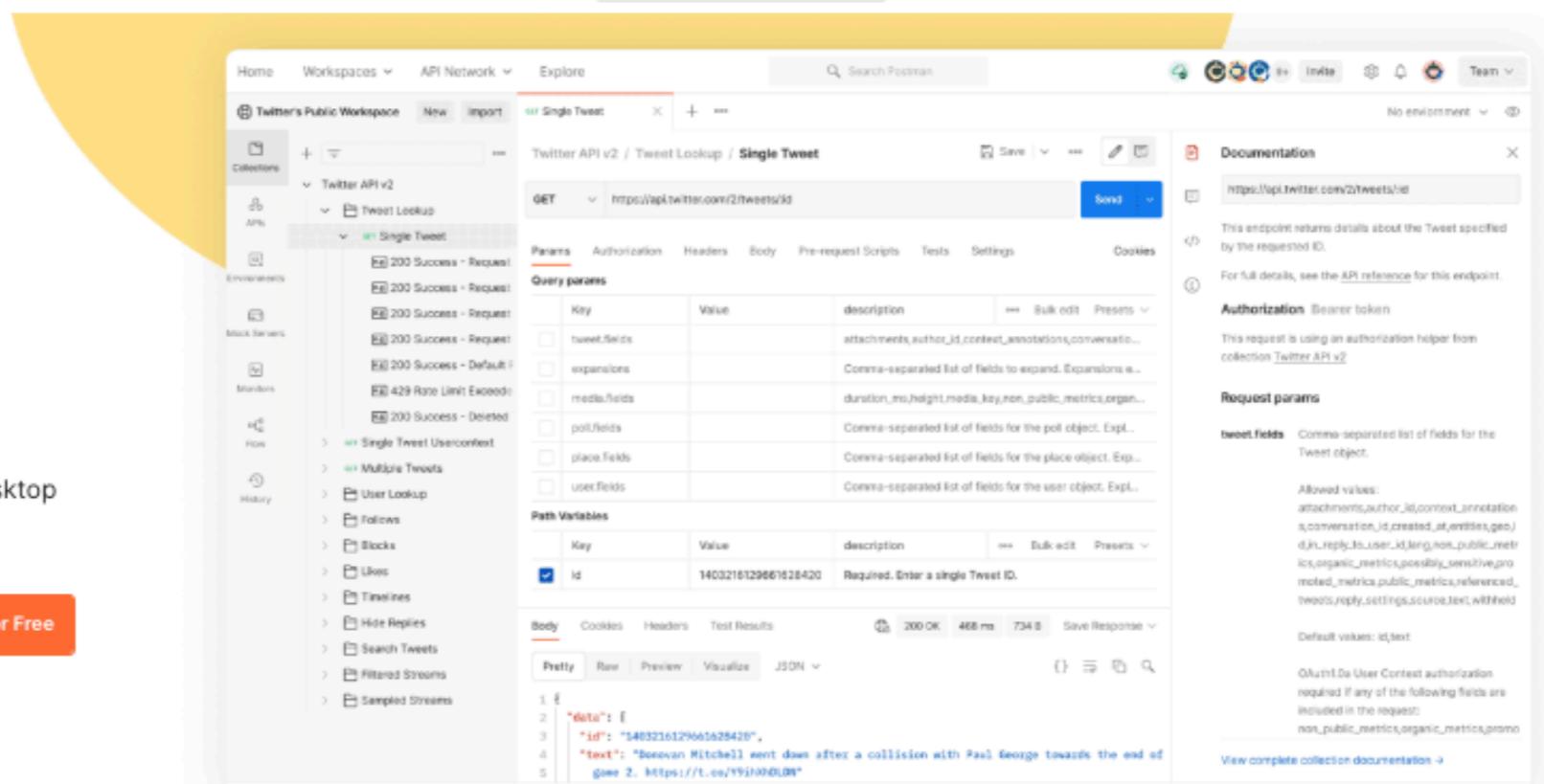
Over 20 million developers use Postman. Get started by signing up or downloading the desktop app.

[Sign Up for Free](#)

Download the desktop app   

What is Postman?

Postman is an API platform for building and using APIs. Postman simplifies each step of the API lifecycle and streamlines collaboration so you can create better APIs—faster.



<https://www.postman.com/>



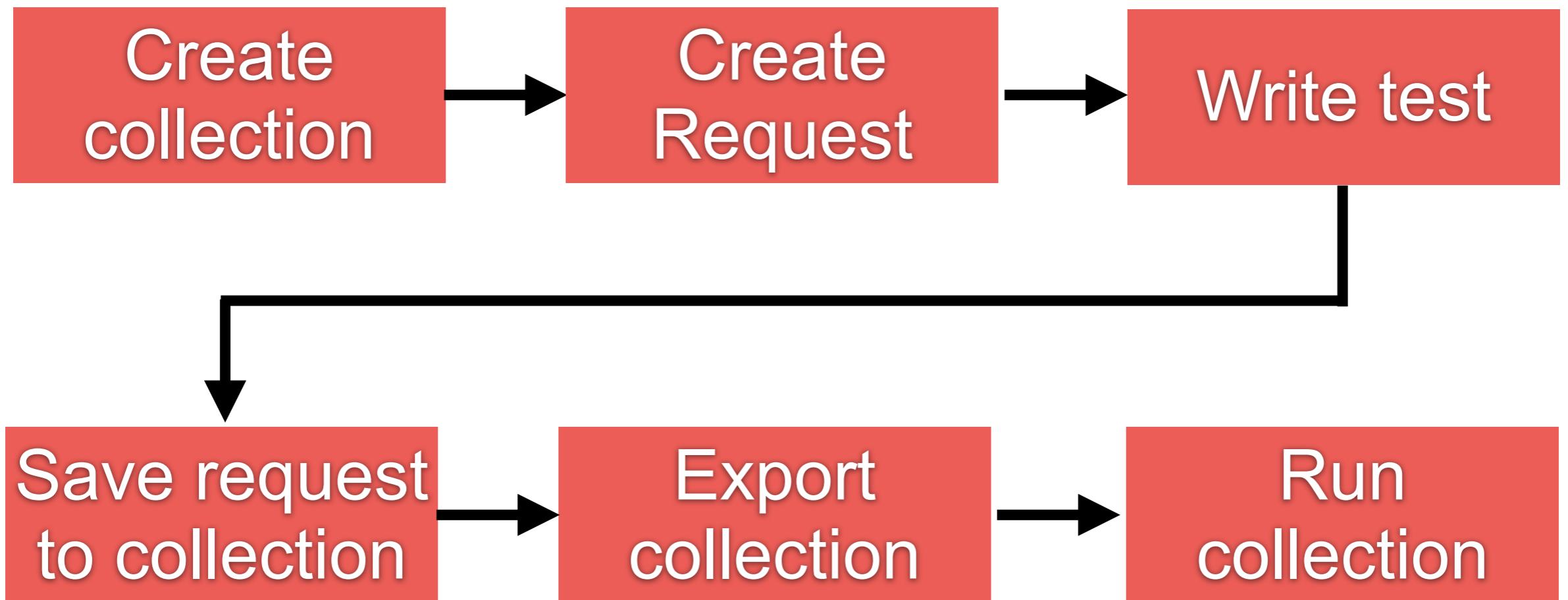
Postman in command line

```
$npm install -g newman  
$newman run <collection file>  
$newman run <collection file> -r cli,junit  
  
$newman run <collection file> -r cli,junit  
--reporter-junit-export outfile.xml
```

<https://www.npmjs.com/package/newman>



Testing Flow



Workshop API testing



Workshop API testing

<https://jsonplaceholder.typicode.com/>

JSONPlaceholder

Fake Online REST API for Testing and Prototyping

Serving ~350M requests per month

Powered by [JSON Server](#) + [LowDB](#)

 [BECOME A PATRON](#)



Workshop API testing

<https://jsonplaceholder.typicode.com/users>

```
[  
  - {  
      id: 1,  
      name: "Leanne Graham",  
      username: "Bret",  
      email: "Sincere@april.biz",  
      - address: {  
          street: "Kulas Light",  
          suite: "Apt. 556",  
          city: "Gwenborough",  
          zipcode: "92998-3874",  
          - geo: {  
              lat: "-37.3159",  
              lng: "81.1496"  
          }  
      },  
  },
```



Command line



TODO

Design first with (Robot keyword)



Tips and Tricks



Google Chrome

Auto closed browser !!

Disabled notification

Disabled camera and audio (media)



Disabled Auto closed browser

*** Settings ***

Library SeleniumLibrary

*** Variables ***

\${url} http://localhost:3000/demo.html
\${browser} chrome

*** Test Cases ***

Disable Camera and Media devices

Open Browser \${url} \${browser}
... options=add_experimental_option("detach", True)



Disabled notification

*** Settings ***

Library SeleniumLibrary

*** Variables ***

\${url} http://localhost:3000/demo.html
\${browser} chrome

*** Test Cases ***

Disable Noti

Open Browser \${url} \${browser}
... options=add_argument("--disable-notifications")



Disabled camera and audio (media)

```
*** Settings ***
```

```
Library SeleniumLibrary
```

```
*** Variables ***
```

```
${url} http://localhost:3000/demo.html
```

```
${browser} chrome
```

```
*** Test Cases ***
```

```
Disable Camera and Media devices
```

```
Open Browser ${url} ${browser}
```

```
... options=add_argument("--use-fake-ui-for-media-stream")
```



Working with CSV file



Working with CSV file

Using csv library from Python 3
Read and Write

<https://docs.python.org/3/library/csv.html>



Working with CSV file

Design first with (Robot keyword)

```
1 *** Settings ***
2 Library      csv_library.py
3
4 *** Test Cases ***
5 Design process
6 | ${result}=    Read      users.csv
7 | Write        $result    new.csv
```



Working with CSV file

Coding with Python (read and write)

```
1 import csv
2
3 def read(filename):
4     with open(filename) as csvfile:
5         spamreader = csv.reader(csvfile)
6         for row in spamreader:
7             for c in row:
8                 print(c, end=' ')
9             print()
```

