

An introduction to Robot Framework

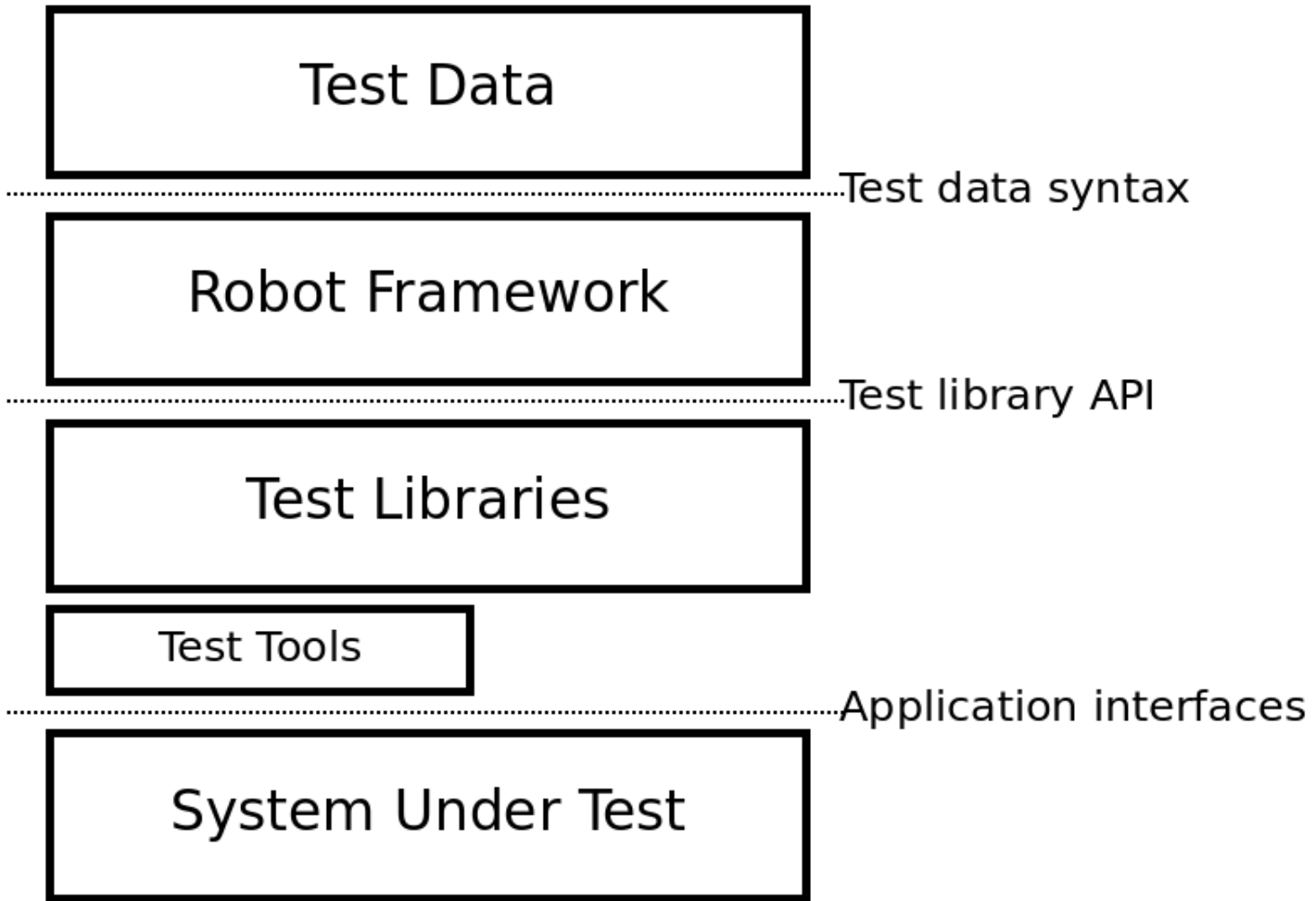
<http://robotframework.org>



Fast facts

- Generic test automation framework
 - Utilizes the keyword-driven testing approach
 - Suitable for both “normal” test automation and ATDD
- Implemented with Python
 - Runs also on Jython (JVM) and IronPython (.NET)
 - Can be extended natively using Python or Java
 - Other languages supported via a remote interface
- Open source
 - Hosted on GitHub, Apache 2 license
 - Sponsored by Nokia Networks
 - Rich ecosystem and very active community

High level architecture



Simple keyword-driven syntax

***** Test Cases *****

Valid Login

Open Browser To Login Page

Input Username demo

Input Password mode

Submit Credentials

Welcome Page Should Be Open

[Teardown] Close Browser

Data-driven tests

***** Test Cases *****

Invalid Username

Invalid Password

Both Invalid

Empty Username

Empty Password

Both Empty

USER NAME

invalid

\${VALID USER}

invalid

\${EMPTY}

\${VALID USER}

\${EMPTY}

PASSWORD

\${VALID PWD}

invalid

whatever

\${VALID PWD}

\${EMPTY}

\${EMPTY}

Gherkin syntax

***** Test Cases *****

Valid Login

Given browser is opened to login page

When user "demo" logs in with password "mode"

Then welcome page should be open

Higher level keywords

***** Keywords *****

Open Browser To Login Page

```
Open Browser      ${LOGIN URL}      ${BROWSER}
Maximize Browser Window
Set Selenium Speed      ${DELAY}
Login Page Should Be Open
```

Login Page Should Be Open

```
Title Should Be      Login Page
```

Input Username

```
[Arguments]      ${username}
Input Text      username_field      ${username}
```

Input Password

```
[Arguments]      ${password}
Input Text      password_field      ${password}
```

Simple test library API

```
class Selenium2Library:

    def input_text(self, locator, text):
        """Types given `text` into text field `locator`."""
        print "Typing text '%s' into '%s'." % (text, locator)
        element = self._element_find(locator)
        element.clear()
        element.send_keys(text)

    def title_should_be(self, title):
        """Verifies that current page title equals `title`."""
        actual = self.get_title()
        if actual != title:
            raise AssertionError("Title should have been '%s' but was '%s'."
                                % (title, actual))
        print "Page title is '%s'." % title
```

Above is real Selenium2Library code but slightly simplified.

Variables

- Easy to create:

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

```
{BROWSER}      Firefox  
{HOST}         localhost:7272  
{LOGIN URL}   http://{HOST}/  
{WELCOME URL} http://{HOST}/welcome.html
```

- Override from the command line:

```
--variable BROWSER:IE
```

Tagging

- Free metadata to categorize test cases
- Statistics by tags collected automatically
- Select test cases to be executed
- Specify which test cases are considered critical

Clear reports

Login Tests Test Report

Generated
20080613 14:13:20 GMT +02:00
1 minute 0 seconds ago

Summary Information

Status: **6 critical tests failed**
 Start Time: 20080613 14:12:08.445
 End Time: 20080613 14:12:39.666
 Elapsed Time: 00:00:31.221

Test Statistics

Total Statistics	Total	Pass	Fail
Critical Tests	10	4	6
All Tests	10	4	6

Statistics by Tag	Total	Pass	Fail
regression	10	4	6
smoke	4	4	0

Statistics by Suite	Total	Pass	Fail
Login Tests	10	4	6
I.Higher Level Login	3	3	0
I.Invalid Login	6	0	6
I.Simple Login	1	1	0

Test Details by Suite

Name	Documentation	Metadata / Tags	Crit.	Status
Login Tests			N/A	FAIL
I.Higher Level Login			N/A	PASS
I.h.Higher Level Valid Login		regression, smoke	yes	PASS
I.h.Even Higher Level Valid Login		regression, smoke	yes	PASS
I.h.Highest Level Login		regression, smoke	yes	PASS
I.Invalid Login			N/A	FAIL
I.i.Invalid Username		regression	yes	FAIL
I.i.Invalid Password		regression	yes	FAIL
I.i.Invalid Username				FAIL

Login Tests Test Report

Generated
20080613 13:39:08 GMT +02:00
1 minute 5 seconds ago

Summary Information

Status: **All tests passed**
 Documentation: Demo test cases for Robot Framework using Selenium test library
 Start Time: 20080613 13:38:36.191
 End Time: 20080613 13:39:08.068
 Elapsed Time: 00:00:31.877

Test Statistics

Total Statistics	Total	Pass	Fail	Graph
Critical Tests	10	10	0	
All Tests	10	10	0	

Statistics by Tag	Total	Pass	Fail	Graph
regression	10	10	0	
smoke	4	4	0	

Statistics by Suite	Total	Pass	Fail	Graph
Login Tests	10	10	0	
I.Higher Level Login	3	3	0	
I.Invalid Login	6	6	0	
I.Simple Login	1	1	0	

Test Details by Suite

Name	Documentation	Metadata / Tags	Crit.	Status	Message	Start / Elapsed
Login Tests	Demo test cases for Robot Framework using Selenium test library		N/A	PASS	10 critical tests, 10 passed, 0 failed 10 tests total, 10 passed, 0 failed	20080613 13:38:36 00:00:32
I.Higher Level Login			N/A	PASS	3 critical tests, 3 passed, 0 failed 3 tests total, 3 passed, 0 failed	20080613 13:38:36 00:00:17
I.h.Higher Level Valid Login		regression, smoke	yes	PASS		20080613 13:38:36 00:00:06
I.h.Even Higher Level Valid Login		regression, smoke	yes	PASS		20080613 13:38:41 00:00:05
I.h.Highest Level Login		regression, smoke	yes	PASS		20080613 13:38:47 00:00:06
I.Invalid Login			N/A	PASS	6 critical tests, 6 passed, 0 failed 6 tests total, 6 passed, 0 failed	20080613 13:38:52 00:00:10
I.i.Invalid Username		regression	yes	PASS		20080613 13:38:57 00:00:01
I.i.Invalid Password		regression	yes	PASS		20080613 13:38:58 00:00:01
I.i.Invalid Username		regression	yes	PASS		20080613 13:38:59

Detailed logs

[-] TEST SUITE: Higher Level Login [Expand All](#)

Full Name: Login Tests.Higher Level Login
Source: /home/jth/workspace/seleniumlib/demo/login_tests/higher_level_login.html
Start / End / Elapsed: 20090415 07:36:29.500 / 20090415 07:36:55.480 / 00:00:25.980
Overall Status: **FAIL**
Message: 3 critical tests, 0 passed, 3 failed
3 tests total, 0 passed, 3 failed

[-] TEST CASE: Higher Level Valid Login [Expand All](#)

Full Name: Login Tests.Higher Level Login.Higher Level Valid Login
Tags: regression, smoke
Start / End / Elapsed: 20090415 07:36:29.533 / 20090415 07:36:36.412 / 00:00:06.879
Status: **FAIL (critical)**
Message: Location should have been '<http://localhost:7272/welcome.html>' but was '<http://localhost:7272/error.html>'

[+] SETUP: resource.Open Login Page

[+] **KEYWORD:** resource.Input Username demo

[+] **KEYWORD:** resource.Input Password mode

[+] **KEYWORD:** resource.Click Login Button

[-] **KEYWORD:** resource.Welcome Page Should Be Open

Start / End / Elapsed: 20090415 07:36:36.340 / 20090415 07:36:36.374 / 00:00:00.034

[-] **KEYWORD:** SeleniumLibrary.Location Should Be \${WELCOME URL}

Documentation: Verifies that current URL is exactly `url`.

Start / End / Elapsed: 20090415 07:36:36.341 / 20090415 07:36:36.374 / 00:00:00.033

07:36:36.373 INFO Verifying current location is '<http://localhost:7272/welcome.html>'.

07:36:36.374 FAIL Location should have been '<http://localhost:7272/welcome.html>' but was '<http://localhost:7272/error.html>'

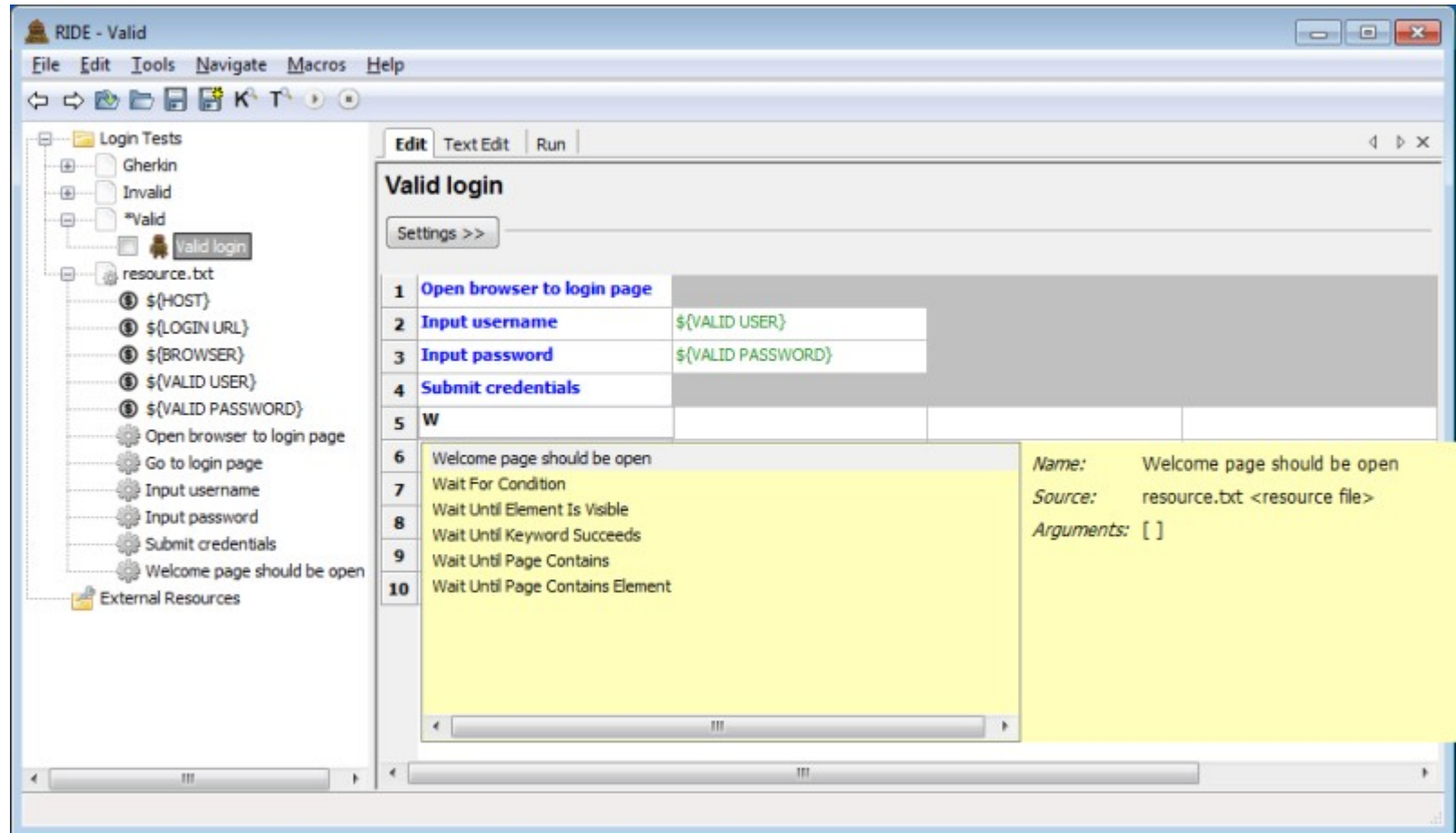
[+] **TEARDOWN:** SeleniumLibrary.Close Browser

Different test libraries

- Standard libraries
 - Included in normal installation
 - OperatingSystem, Screenshot, String, Telnet, XML, ...
- External libraries
 - Must be installed separately
 - Selenium2Library, SwingLibrary, DatabaseLibrary, AutoItLibrary, SSHLibrary, HTTPLibrary, ...
- Project and team specific libraries

Editor support

- RIDE



- Plugins for Eclipse, IntelliJ/PyCharm, SubLime, TextMate, Vim, Emacs, Brackets, Atom, ...

Easy integration

- Test suites are created from files and directories
 - Trivial to store into any version control system
- Simple command line interface
 - Easy to start test execution by external tools
- Output also in XML format
 - All information in machine readable format
 - Outputs from different test runs can be combined
- Plugins for common CI and build tools
 - Jenkins, Ant, Maven

For more information

- Ecosystem front page
 - <http://robotframework.org>
- Project pages
 - <https://github.com/robotframework/robotframework>
- Quick Start Guide
 - <https://github.com/robotframework/QuickStartGuide>
- User Guide
 - <http://robotframework.org/robotframework/#user-guide>
- Demo projects
 - <http://robotframework.org/#documentation>