

WELCOME TO ROBOT FRAMEWORK

"It's my favourite automation toy 🤖" – Many Kasiriha



ABOUT ME

Name: Many Kasiriha

From: Düsseldorf

Job: QA Engineer @  **SCHENKER**

Robot Framework Foundation
Board Member since 2022



@ManyDefects



manykasiriha



@Many



@manykarim



BEFORE ROBOT FRAMEWORK @ **DB** SCHENKER

Different Applications - different Test Tools

- Mixture of commercial and open source **test tools**
 - TOSCA, Quicktest/UFT, SoapUi, Protractor, Fit, ..



SoapUI



Protractor
end to end testing for AngularJS



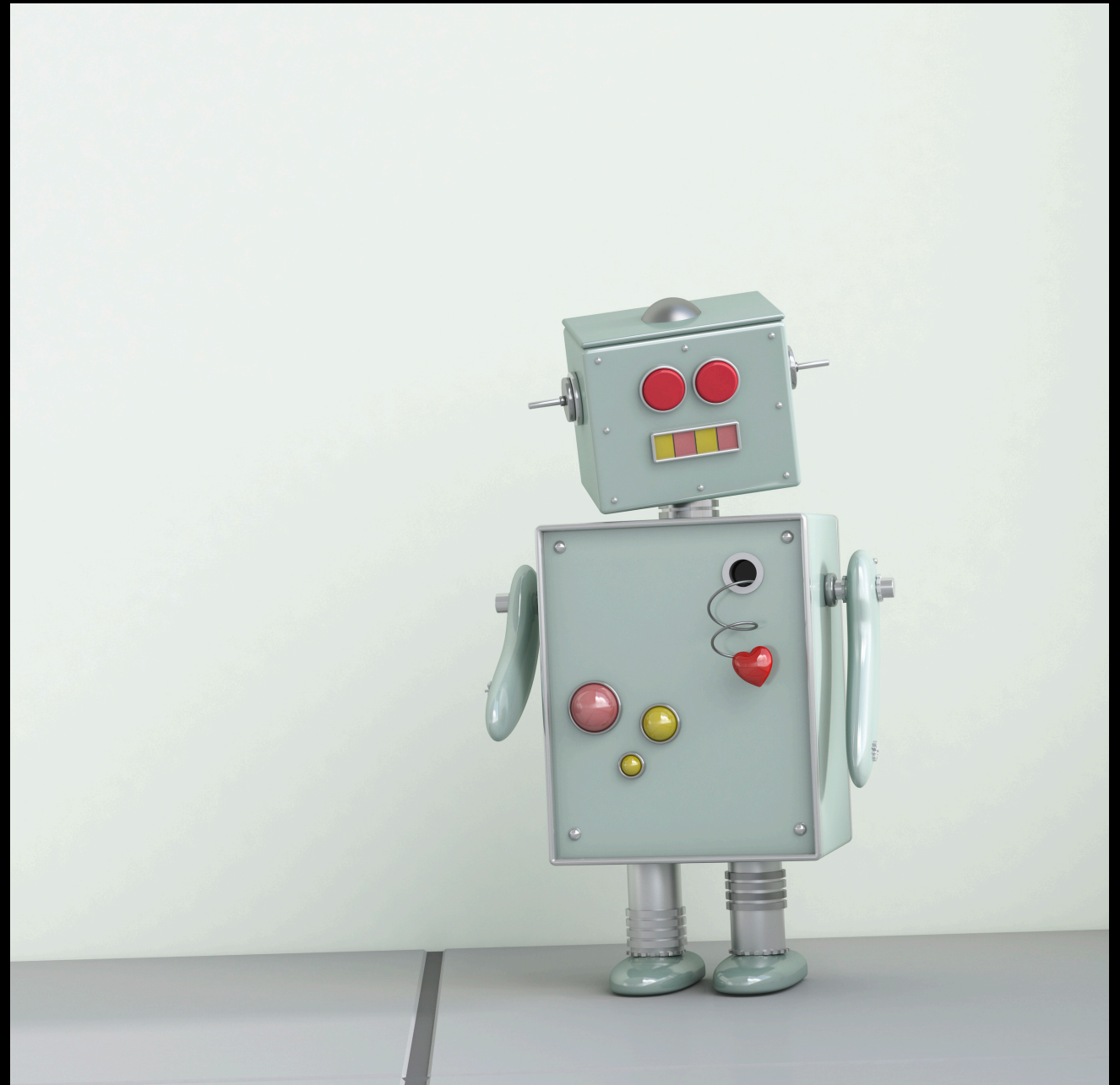
- No **synergies** between projects
- **Tricky** tool customizations
- "Only **Test Automation Engineers** can automate"



ABOUT ROBOT FRAMEWORK

- Created in 2006
by Pekka Klärck
- Open Sourced at Nokia 2008
- Apache 2.0 License
- Written in Python
- Current Version: 6.1.0

robotframework.org





IT'S A GENERIC
AUTOMATION FRAMEWORK



GENERIC AUTOMATION FRAMEWORK

What can it do?

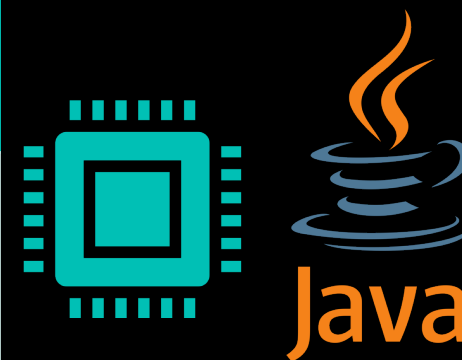
Test Automation ✓

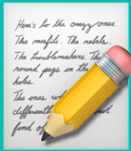
Robotic Process Automation ✓



Libraries

- Browser Automation
- HTTP/Web Services
- Desktop UIs
- Mobile Automation
- Visual Comparisons
- Embedded Systems






EASY AND SIMPLE SYNTAX




EXAMPLE .ROBOT TEST SUITE

MFA Login Testing Page


Username



Password



Multi-Factor Auth Code



Sign in

For Login Information, See:
seleniumbase.io/realworld/signup

Test Case

Keyword

*** Test Cases ***

Login with MFA

Open Login Page

Enter Username and Password

demo_user

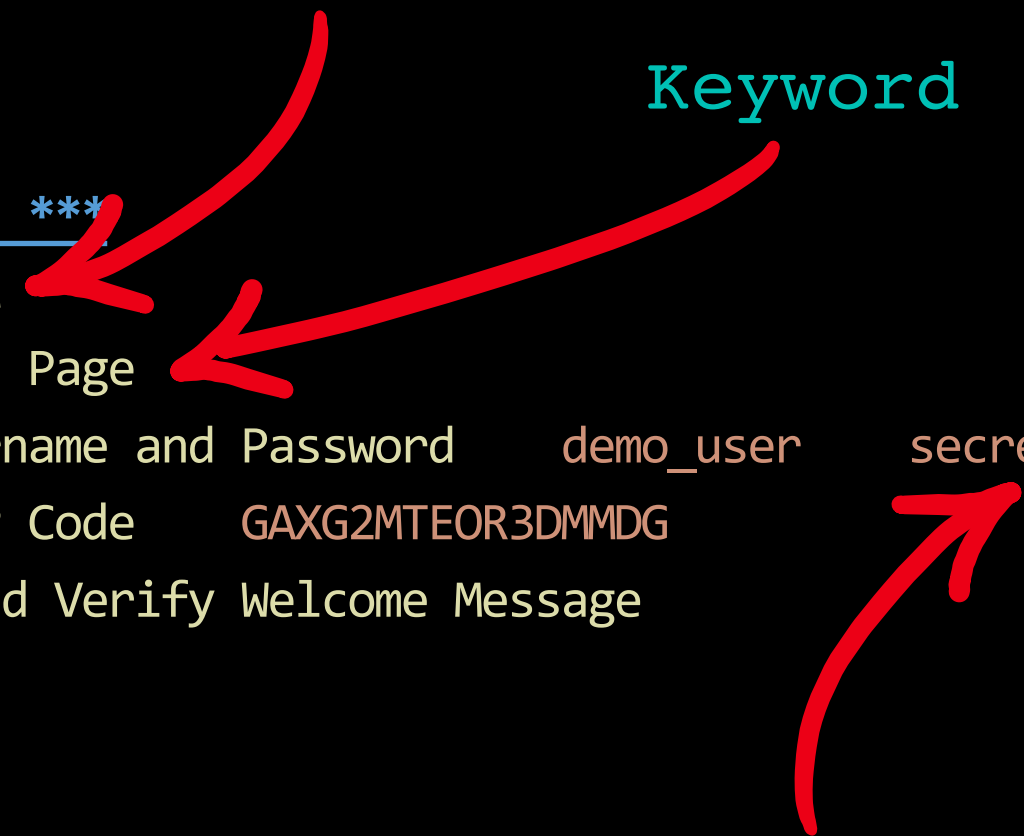
secret_pass

Enter TOTP Code

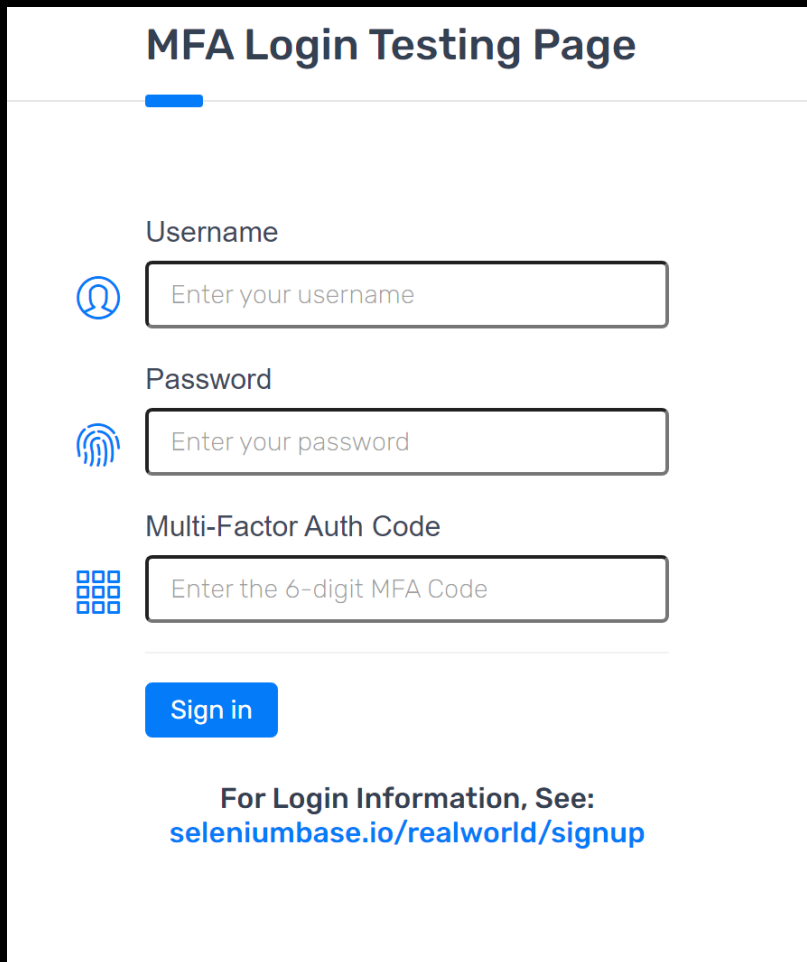
GAXG2MTEOR3DMMDG

Sign In and Verify Welcome Message

Argument



EXAMPLE .ROBOT TEST SUITE



*** Test Cases ***

Login with MFA

```

Open Login Page
Enter Username and Password      demo_user      secret_pass
Enter TOTP Code      GAXG2MTEOR3DMMDG
Sign In and Verify Welcome Message

```

*** Keywords ***

```

Open Login Page
New Page      https://seleniumbase.io/realworld/login

```

User Keyword

Enter Username and Password

KW returns something to a variable

```

[Arguments]      ${username}      ${password}
Fill Text      id=username      ${username}
Fill Text      id=password      ${password}

```

Variable

Enter TOTP Code

```

[Arguments]      ${secret}
${totp}      Get Totp      ${secret}
Fill Text      id=totpcode      ${totp}

```

Sign In and Verify Welcome Message

```

Click      "Sign in"
Get Text      h1 == Welcome!

```

EXAMPLE .ROBOT TEST SUITE

*** Settings ***

```
Library    Browser
Library    totp.py
Test Setup    New Browser
...          browser=${BROWSER}    headless=${HEADLESS}
Test Teardown    Close Browser
```

*** Variables ***

```
${BROWSER}    chromium
${HEADLESS}   False
```

*** Test Cases ***

Login with MFA

```
Open Login Page
Enter Username and Password    demo_user    secret_pass
Enter TOTP Code    GAXG2MTEOR3DMMDG
Sign In and Verify Welcome Message
```

*** Keywords ***

Open Login Page

```
New Page    https://seleniumbase.io/realworld/login
```

Enter Username and Password

```
[Arguments]    ${username}    ${password}
Fill Text    id=username    ${username}
Fill Text    id=password    ${password}
```

Enter TOTP Code

```
[Arguments]    ${secret}
${totp}    Get Totp    ${secret}
Fill Text    id=totpcode    ${totp}
```

Sign In and Verify Welcome Message

```
Click    "Sign in"
Get Text    h1    ==    Welcome!
```



EXAMPLE .ROBOT TEST SUITE

*** Settings ***

```
Library    Browser
Library    totp.py
Test Setup    New Browser
...          browser=${BROWSER}    headless=${HEADLESS}
Test Teardown    Close Browser
```

*** Variables ***

```
${BROWSER}    chromium
${HEADLESS}   False
```

*** Test Cases ***

Login with MFA

```
Open Login Page
Enter Username and Password    demo_user    secret_pass
Enter TOTP Code    GAXG2MTEOR3DMMDG
Sign In and Verify Welcome Message
```

*** Keywords ***

Open Login Page

```
New Page    https://seleniumbase.io/realworld/login
```

Enter Username and Password

```
[Arguments]    ${username}    ${password}
Fill Text    id=username    ${username}
Fill Text    id=password    ${password}
```

Enter TOTP Code

```
[Arguments]    ${secret}
${totp}    Get Totp    ${secret}
Fill Text    id=totpcode    ${totp}
```

Sign In and Verify Welcome Message

```
Click    "Sign in"
Get Text    h1 == Welcome!
```



IF YOU PREFER A BDD/GHERKIN STYLE ...

*** Test Cases ***

Add Two Todos And Check Items

Given ToDo App is open

When I Add A New ToDo "Learn Robot Framework"

And I Add A New ToDo "Write Test Cases"

Then Open Todos should show "2 items left"

*** Keywords ***

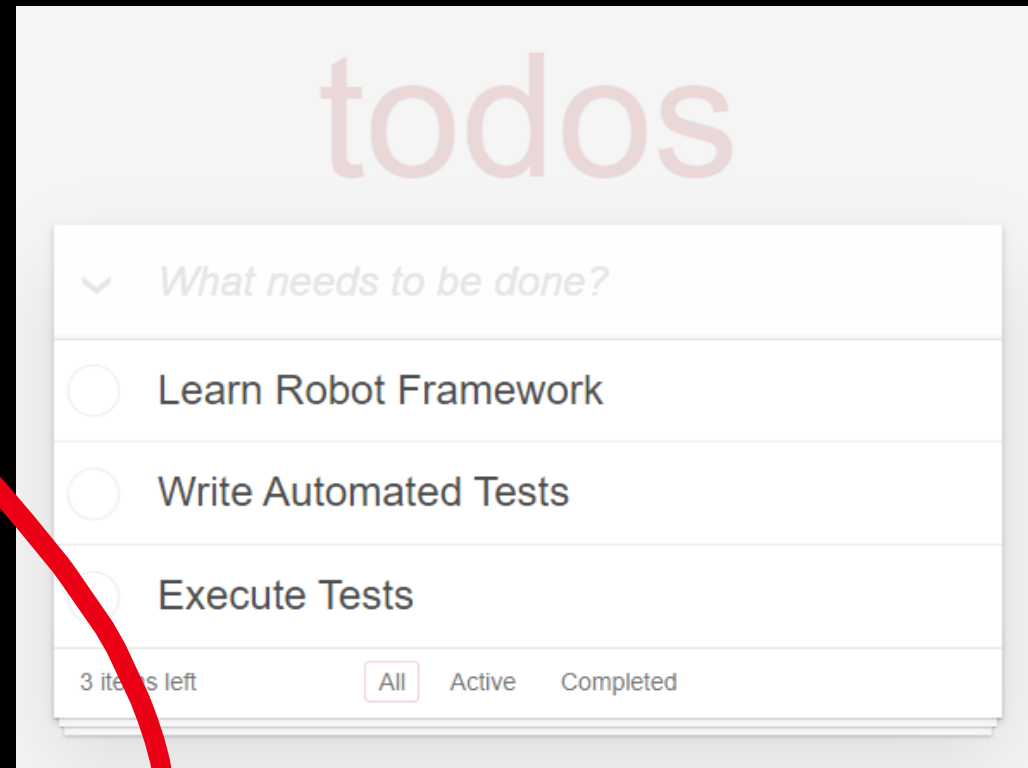
ToDo App is open

New Page <https://todomvc.com/examples/react/>

I Add A New ToDo "\${todo}"

Fill Text .new-todo \${todo}

Press Keys .new-todo Enter



Argument embedded
in Keyword Name



DEMO: TODO APP



todos

What needs to be done?

Double-click to edit a todo

Created by petehunt

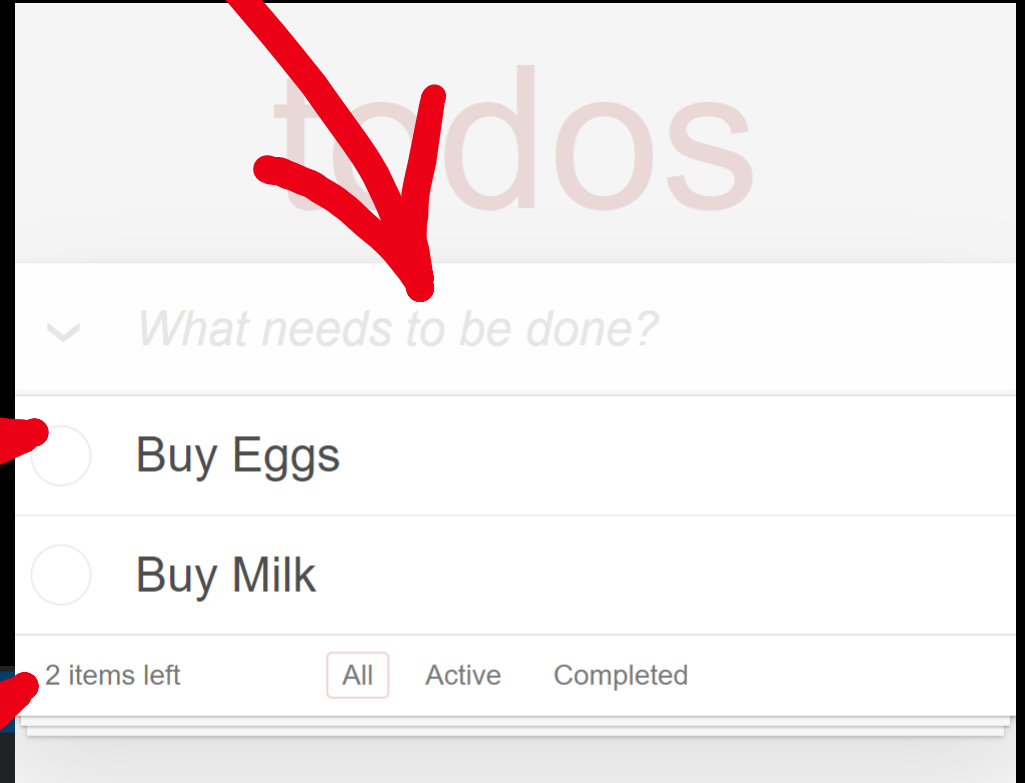
Part of TodoMVC



```
<input class="new-todo" placeholder="What needs to be done?" value="" data-reactid=".0.0.1" type="text"/>
```

```
<div class="view" data-reactid=".0.1.2.$15569f7b-7845-41f9-a1bf-e6f5451e802d.0">  
  <input class="toggle" type="checkbox" data-reactid=".0.1.2.$15569f7b-7845-41f9-a1bf-e6f5451e802d.0.0" checked="" value="" data-reactid=".0.1.2.$15569f7b-7845-41f9-a1bf-e6f5451e802d.0.0.0" />  
  <label data-reactid=".0.1.2.$15569f7b-7845-41f9-a1bf-e6f5451e802d.0.1" data-bbox="375 440 500 510">Buy Eggs</label>  
  <button class="destroy" data-reactid=".0.1.2.$15569f7b-7845-41f9-a1bf-e6f5451e802d.0.2" data-bbox="520 470 585 510"></button>  
</div>
```

```
<span class="todo-count" data-reactid=".0.2.0" data-bbox="697 85 770 503">  
  <strong data-reactid=".0.2.0.0" data-bbox="740 115 770 490">2</strong>  
  <span data-reactid=".0.2.0.1" data-bbox="780 115 810 490"> items</span>  
  <span data-reactid=".0.2.0.2" data-bbox="820 115 850 490"> left</span>  
</span>
```



DEMO: CREATE TESTS





EXPLORER



RF-DEMO



> .venv





CLEAR

LOGS & REPORTS



CLEAR LOGS & REPORTS

Terminal Output when running robot

```
> robot -d results/ tests/todo.robot
```

```
=====  
Add Two ToDos And Check Items :: Checks if ToDos can be added and ... | PASS |  
-----  
Add Two ToDos And Check Wrong Number Of Items :: Checks if ToDos c... | FAIL |  
Text '2 items left' (str) should be '1 items left' (str)
```

```
=====  
Robotframework-Training | FAIL |  
7 tests, 6 passed, 1 failed  
=====  
Output: /workspace/robotframework-training/results/output.xml  
Log: /workspace/robotframework-training/results/log.html  
Report: /workspace/robotframework-training/results/report.html  
gitpod /workspace/robotframework-training (main) $ █
```



CLEAR LOGS & REPORTS

Report.html & Log.html

Robotframework-Training Report

Generated
20230319 19:55:20 UTC+01:00
2 minutes 49 seconds ago

Summary Information

Status: **1 test failed**
 Start Time: 20230319 19:55:10.043
 End Time: 20230319 19:55:20.613
 Elapsed Time: 00:00:10.570
 Log File: [log.html](#)

Test Statistics

Total Statistics	Total	Pass	Fail	Skip	Elapsed	Pass / Fail / Skip
All Tests	7	6	1	0	00:00:10	<div style="width: 85.7%;"><div style="width: 85.7%;"></div></div>
Statistics by Tag	Total	Pass	Fail	Skip	Elapsed	Pass / Fail / Skip
Add ToDo	2	1	1	0	00:00:03	<div style="width: 50%;"><div style="width: 50%;"></div></div>
Mark ToDo	1	1	0	0	00:00:00	<div style="width: 100%;"><div style="width: 100%;"></div></div>
Statistics by Suite	Total	Pass	Fail	Skip	Elapsed	Pass / Fail / Skip
Robotframework-Training	7	6	1	0	00:00:11	<div style="width: 85.7%;"><div style="width: 85.7%;"></div></div>
Robotframework-Training . Tests	7	6	1	0	00:00:11	<div style="width: 85.7%;"><div style="width: 85.7%;"></div></div>
Robotframework-Training . Tests . Webbrowser	7	6	1	0	00:00:11	<div style="width: 85.7%;"><div style="width: 85.7%;"></div></div>
Robotframework-Training . Tests . Webbrowser . ToDo	7	6	1	0	00:00:11	<div style="width: 85.7%;"><div style="width: 85.7%;"></div></div>

Test Details

All Tags Suites Search

Suite:

Test:

Include:

Exclude:

[Help](#)

+ **KEYWORD** And I Add A New ToDo "Write Test Cases"

- **KEYWORD** Then Open ToDos should show "1 items left"

Start / End / Elapsed: 20230319 19:55:12.220 / 20230319 19:55:13.382 / 00:00:01.162

- **KEYWORD** Browser .Get Text span.todo-count, ==, \${text}

Documentation: Returns text attribute of the element found by `selector`.

Tags: Assertion, Getter, PageContent

Start / End / Elapsed: 20230319 19:55:12.221 / 20230319 19:55:13.381 / 00:00:01.160

19:55:13.258 **INFO** Text: '2 items left'

19:55:13.377 **INFO**

React

Example

Source

React + Backbone.js

Demo, Source

Scala.js + React

Demo, Source

TypeScript + React

Demo, Source

React + Alt

Demo, Source

“React is a JavaScript library for creating user interfaces. Its core principles are declarative code, efficiency, and flexibility. Simply specify what your component looks like and React will keep it up-to-date when the underlying data changes.”

React

Official Resources

- Tutorial
- Philosophy
- Support
- Flux architecture example

19:55:13.378 **FAIL** Text '2 items left' (str) should be '1 items left' (str)

todos

What needs to be done?

Learn Robot Framework


Write Test Cases

2 items left

Double-click to edit a todo
Created by petehunt
Part of TodoMVC

```
(welcome-robotframework-py3.10) PS C:\workspace\welcome-robotframework>
```



 OPEN AND
EXTENSIBLE




IT'S EASY TO EXTEND


“Oh no - My App requires Multi-Factor-Auth?”

MFA Login Testing Page


Username



Password



Multi-Factor Auth Code



[Sign in](#)

For Login Information, See:
seleniumbase.io/realworld/signup

Signup Page / Get Login Credentials


Use these creds on seleniumbase.io/realworld/login

Username:
demo_user

Password:
secret_pass

To generate the 6-digit MFA Code:

Scan the QR code with [Google Authenticator](#) (Or copy the Secret Key)



Secret Key : GAXG2MTEOR3DMMDG

TOTP Code: 075871

TOTP TTL : 23



A CUSTOM PYTHON KEYWORD

`totp.py`

```
import pyotp
```

```
def get_totp(secret: str):  
    totp = pyotp.TOTP(secret)  
    return totp.now()
```

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

```
Library    Browser
```

```
Library    totp.py
```

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

```
Login with MFA
```

```
New Page    https://seleniumbase.io/realworld/login
```

```
Fill Text   id=username    demo_user
```

```
Fill Text   id=password    secret_pass
```

```
${totp}    Get Totp    GAXG2MTEOR3DMMDG
```

```
Fill Text   id=totpcode    ${totp}
```

```
Click       "Sign in"
```

```
Get Text    h1 == Welcome!
```





ACTIVE & HELPFUL
COMMUNITY



COMMUNITY

Forum, Slack and RoboCon



Forum

Official Robot Framework
forum.



Slack

Community team chat.
[Click for invite!](#)

Robocon 2024

Feb 6th - 9th
Helsinki, Finland

<https://robotframework.org/>



The 6th ANNUAL ROBOT FRAMEWORK CONFERENCE

BENEFITS SINCE USING ROBOT FRAMEWORK

at **DB** SCHENKER



- Easier training, onboarding and rotation



- Simpler end-2-end tests involving multiple systems



- Share solutions and good practices



- Enable more people to code



- Standardize CI Workflows, Dockerimages, ..



THANK YOU! ANY QUESTIONS ?

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@ManyDefects



manykasiriha



@Many





@manykarim



ROBOT FRAMEWORK

Anything else?

-  Open Source
-  Maintained & Funded

Robot Framework Foundation is a non-profit consortium that fosters the growth of Robot Framework. It was founded by companies with a common interest to **ensure the development of Robot Framework** now and in the future.



JOIN THE FOUNDATION!



CONTROL STRUCTURES AND VARIABLES

Control Structures

- IF/ELSE
- FOR
- WHILE
- TRY/EXCEPT

Variable Types

- Scalars
- Lists
- Dictionaries

*** Variables ***

```
@{List}    Cat    Dog    Monkey
&{Dictionary}  firstname=John  lastname=Smith
```

*** Test Cases ***

IF/ELSE Example

```
IF    ${rc} > 0
    Some keyword
ELSE
    Another keyword
END
```

TRY/CATCH example

```
TRY
    Some Keyword
EXCEPT    Error message
    Error Handler Keyword
END
Keyword Outside
```

For Loop Example

```
FOR    ${animal}    IN    @{List}
    Log    ${animal}
END
```



IS IT PERFECT? - NO

Setting Variables

· `${myvar}` Set Variable My Value

Everything is a String

· `${1}` vs 1
· `${true}` vs true

Simplicity vs. Complexity

· Control Structures (IF, FOR, ..) provide more flexibility but increase complexity

Decentral Ecosystem

· Everybody can release Robot Framework Tools and Libraries





DEMO



[HTTP://BIT.LY/WELCOME-ROBOTFRAMEWORK](http://bit.ly/welcome-robotframework)

