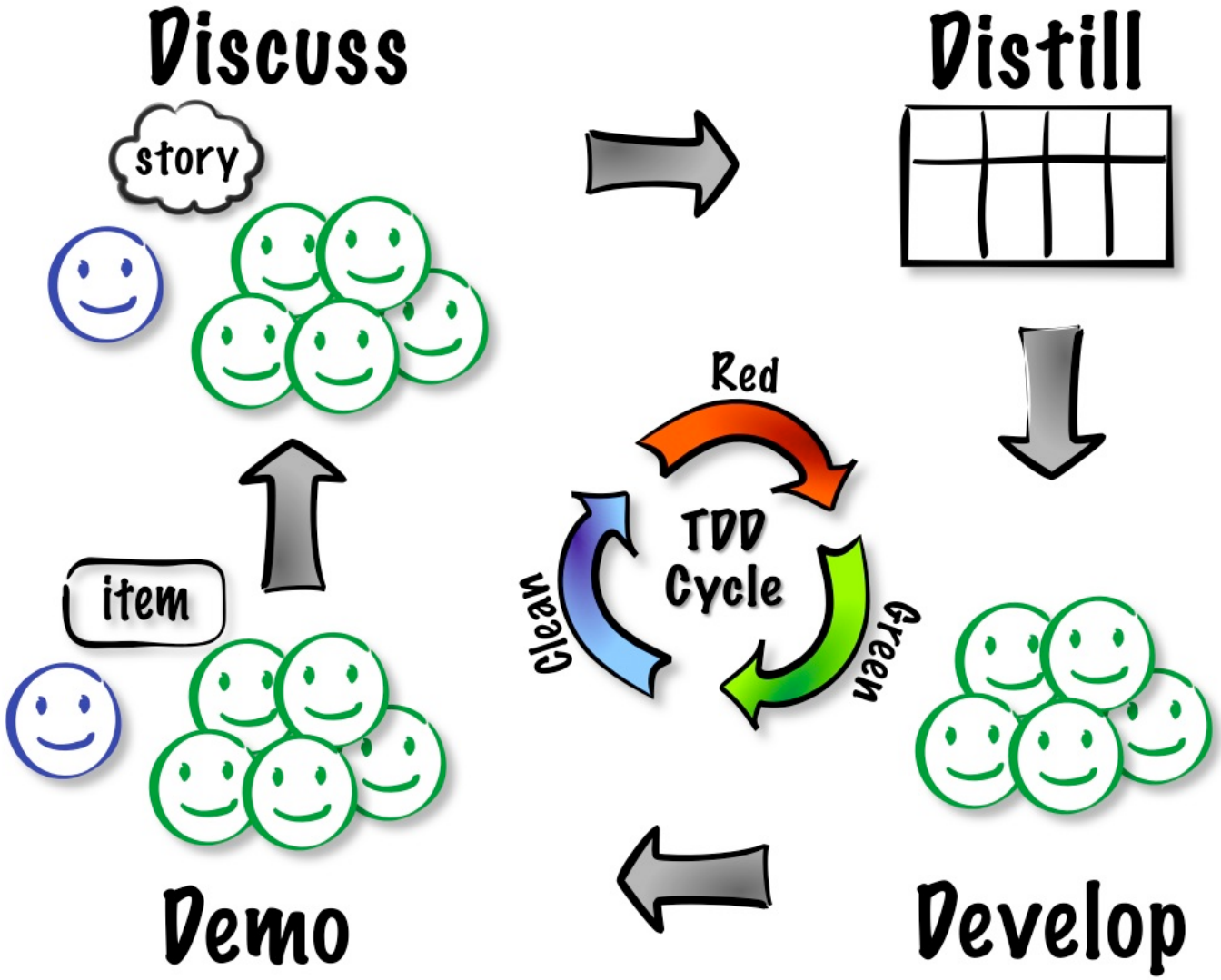
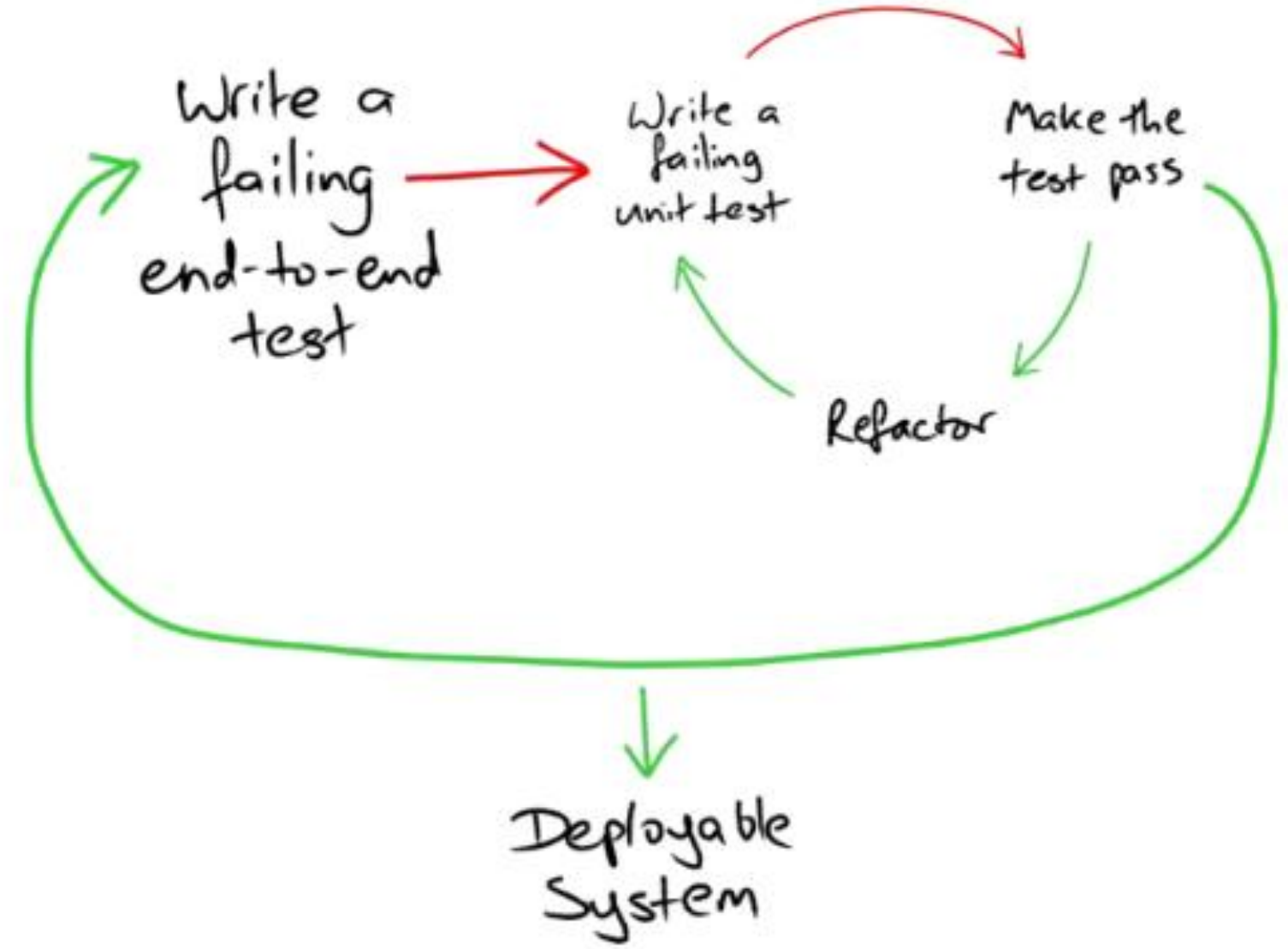
Robot Framework

Development Cycle



http://testobsessed.com/wp-content/uploads/2011/04/atddexample.pdf

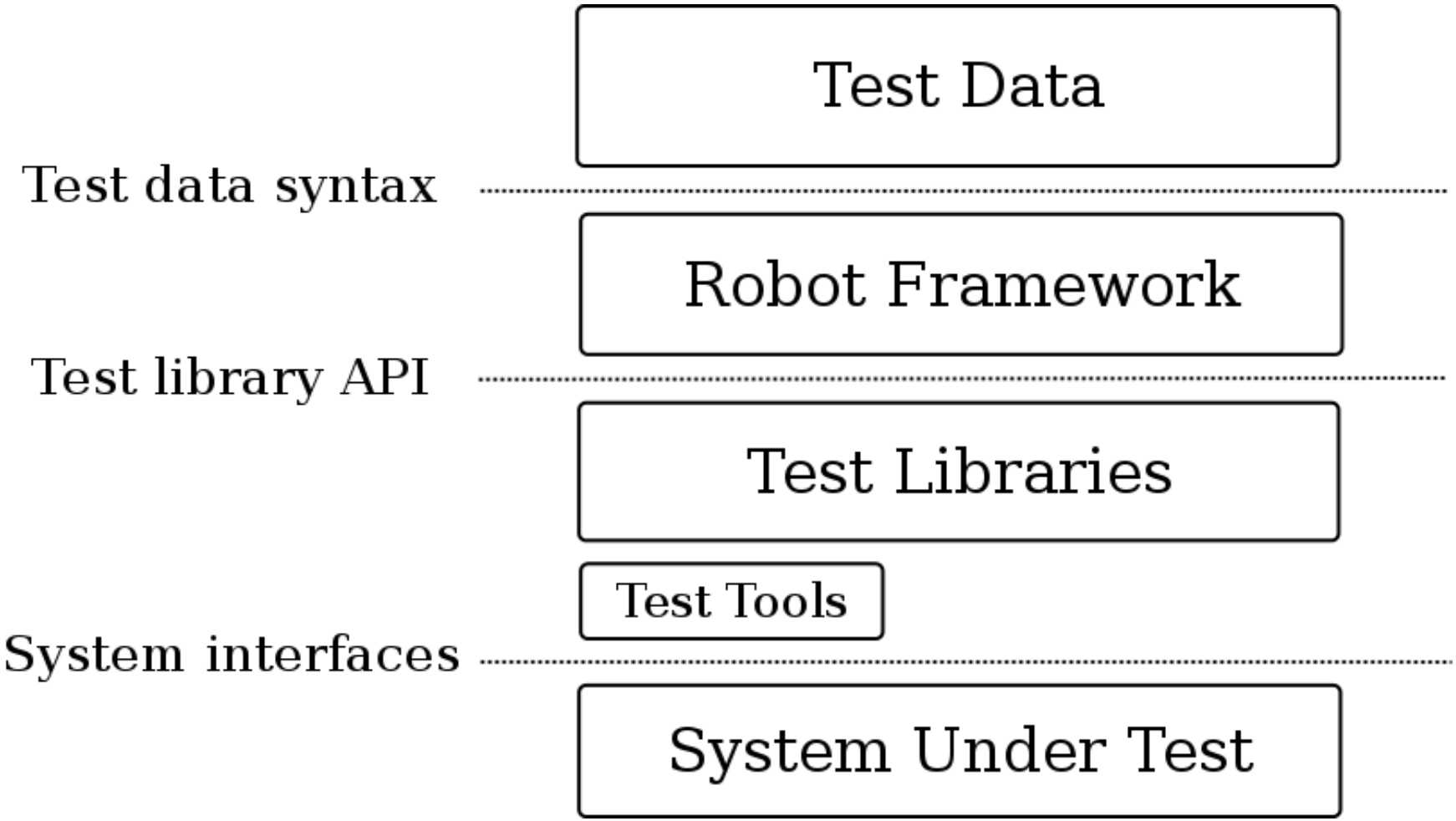
Cycle


Write a failing end-to-end test
Write a failing unit test
Make the test pass
Refactor
Deployable System

Robot Framework

- Test automation framework
- https://code.google.com/p/robotframework/
- Keyword-Driven Development
- Based on Python
- Open source
- Sponsor by Nokia Siemens Networks

Modular


Test Data
Test data syntax
Robot Framework
Test library API
Test Libraries
Test Tools
System interfaces
System Under Test

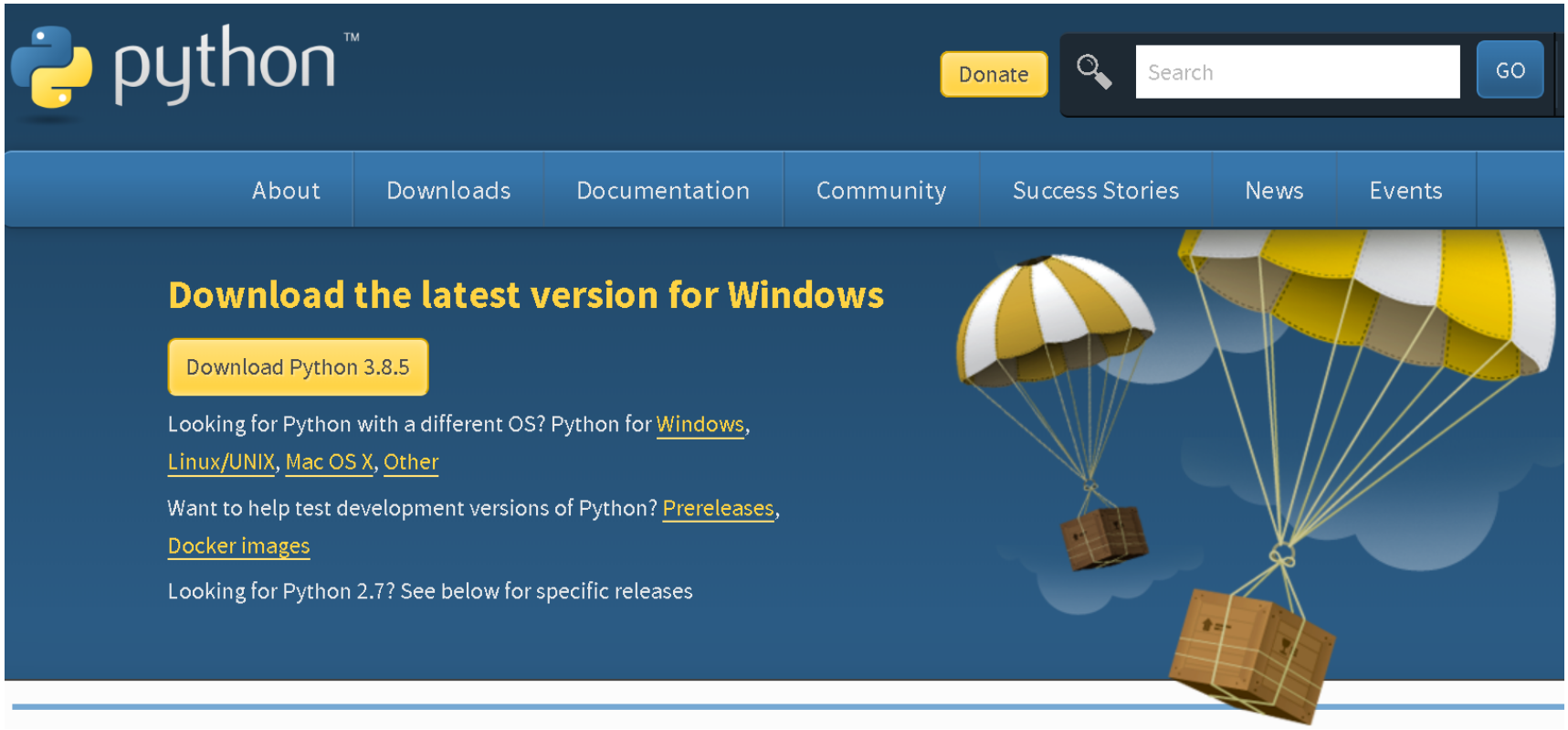
Installation

- Python 3.8.5
- pip
- Robot Framework
- SeleniumLibrary for Robot Framework

Install python (1)

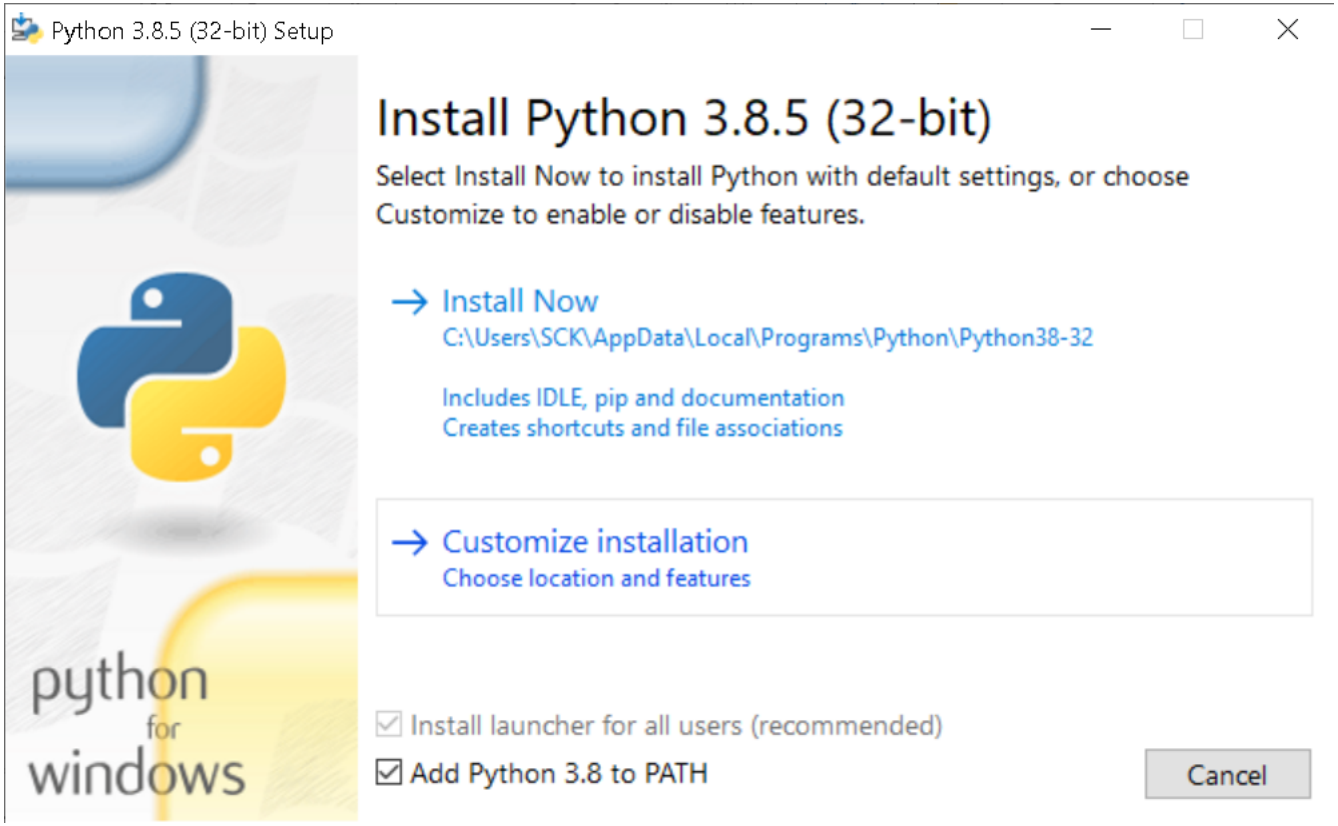
- Download from https://www.python.org/
- Version 3.8.5
- Run -> python-3.8.5.exe
- $python

Install python (1)

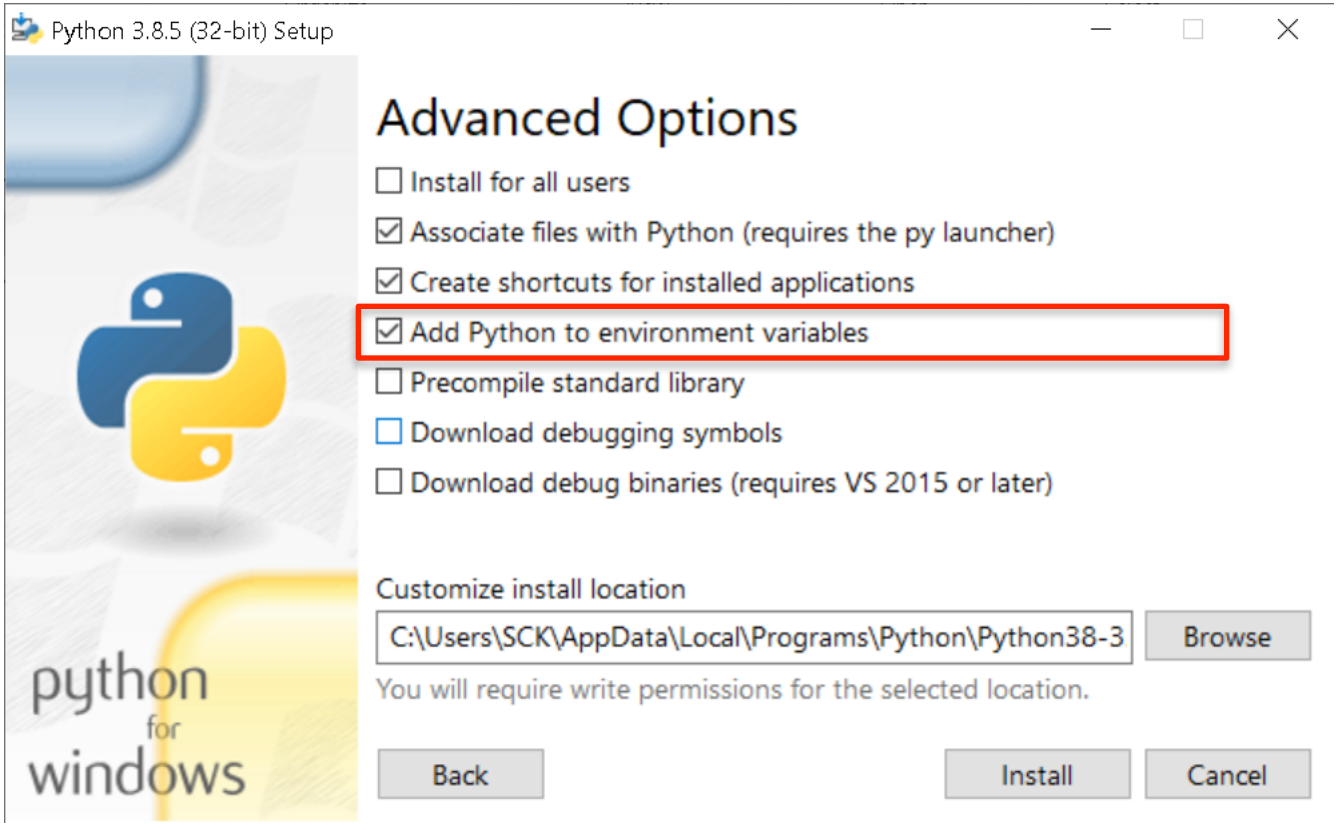


Download from https://www.python.org/

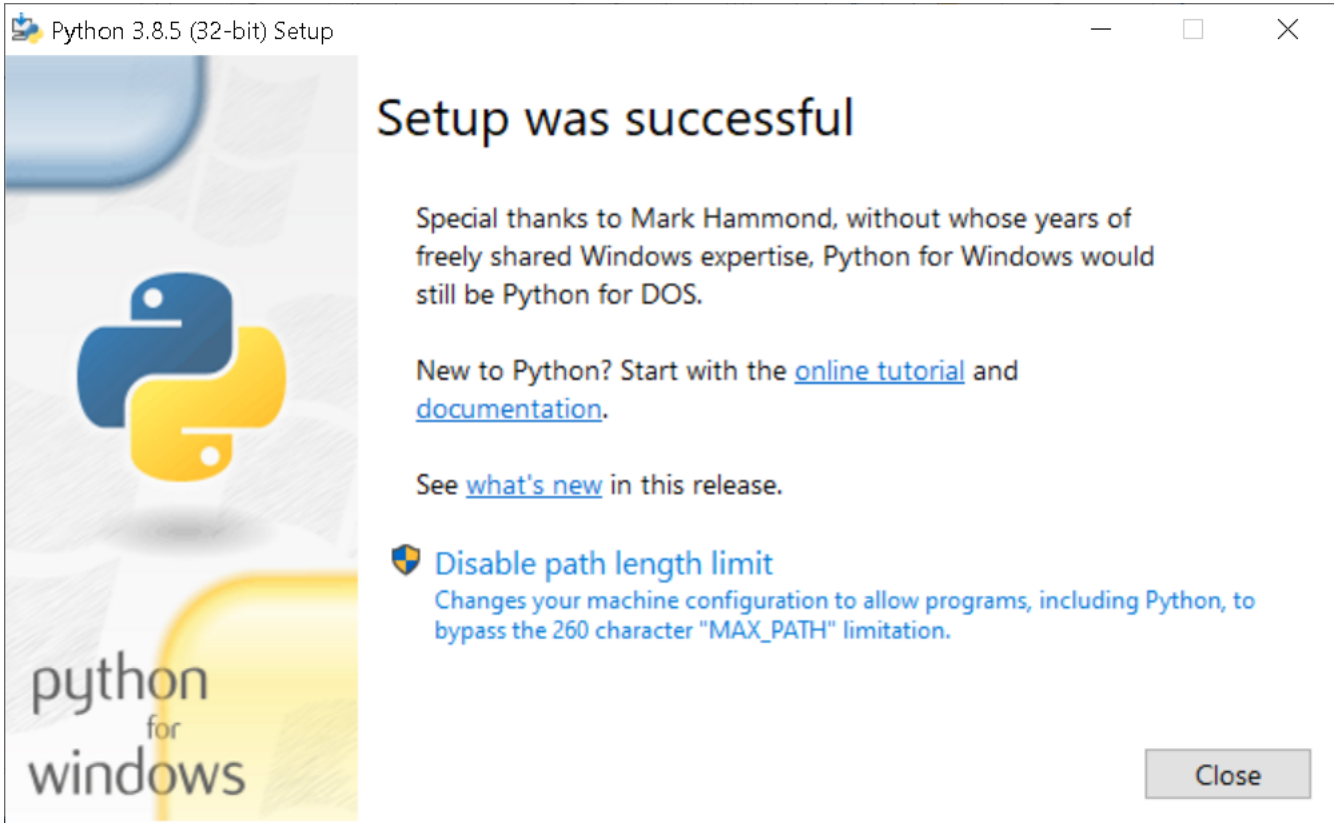
Install python (1)



Install python (1)



Install python (1)



Install pip (1)

- PIP = Package Installation for Python

Install pip (2)

- $pip

```
Usage:
  pip <command> [options]

Commands:
  install                     Install packages.
  uninstall                   Uninstall packages.
  freeze                      Output installed packages in requirements format.
  list                        List installed packages.
  show                        Show information about installed packages.
  search                      Search PyPI for packages.
  wheel                       Build wheels from your requirements.
  zip                         Zip individual packages.
  unzip                       Unzip individual packages.
  bundle                      Create pybundles.
  help                        Show help for commands.

General Options:
  -h, --help                  Show help.
  -v, --verbose               Give more output. Option is additive, and can be used up to 3 times.
  -V, --version               Show version and exit.
  -q, --quiet                 Give less output.
  --log-file <path>           Path to a verbose non-appending log, that only logs failures. This
                              log is active by default at /Users/spock/Library/Logs/pip.log.
  --log <path>                Path to a verbose appending log. This log is inactive by default.
  --proxy <proxy>             Specify a proxy in the form [user:passwd@]proxy.server:port.
  --timeout <sec>             Set the socket timeout (default 15 seconds).
  --exists-action <action>    Default action when a path already exists: (s)witch, (i)gnore,
                              (w)ipe, (b)ackup.
  --cert <path>               Path to alternate CA bundle.
```

Install Robot Framework

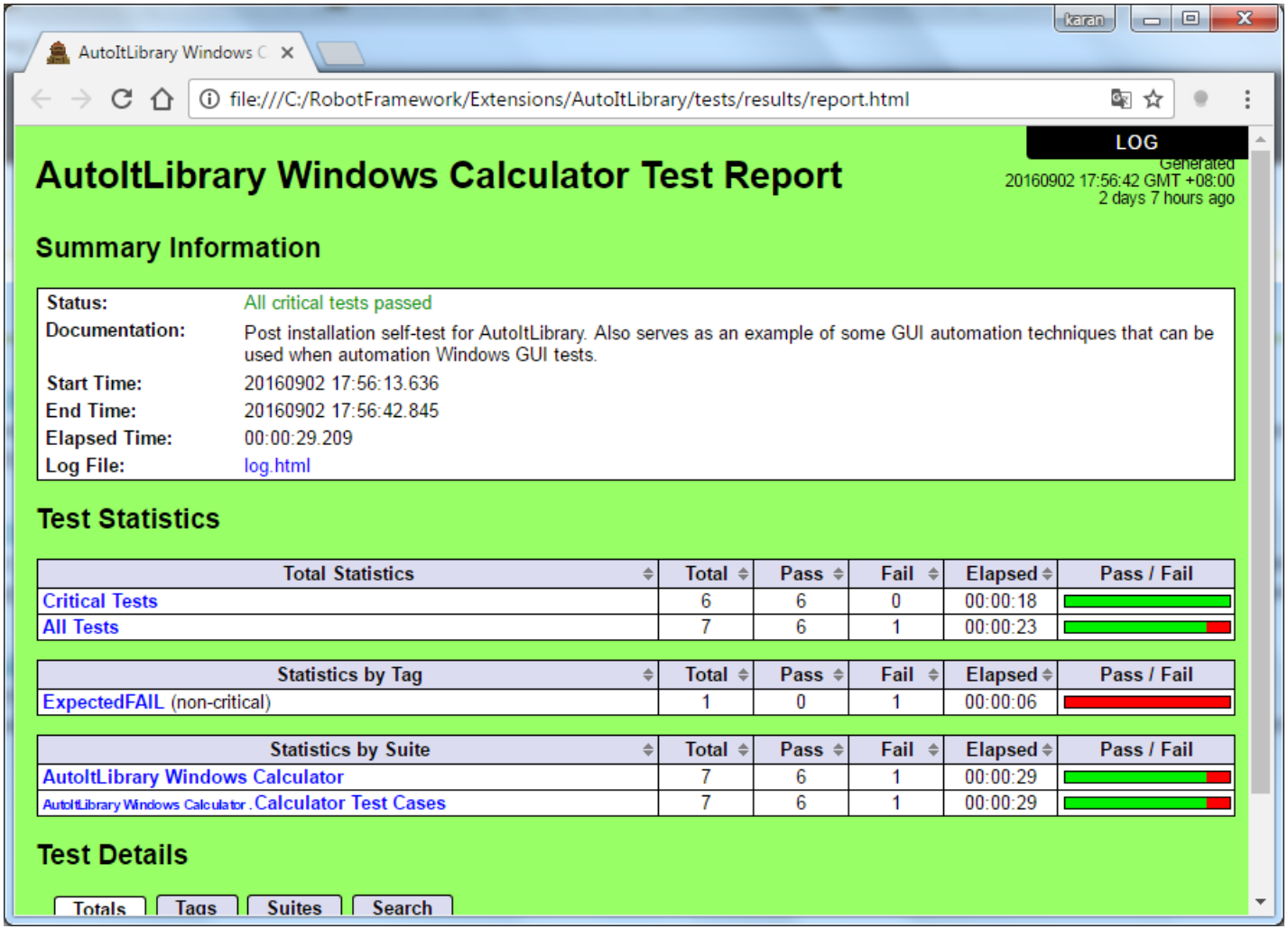
```
C:\Users\SCK>pip install robotframework
Requirement already satisfied: robotframework in c:\users\sck\appdata\local
b\site-packages (3.1.2)

C:\Users\SCK>robot
[ ERROR ] Expected at least 1 argument, got 0.

Try --help for usage information.

C:\Users\SCK>pybot
'pybot' is not recognized as an internal or external command,
operable program or batch file.
```

Install Selenium

$pip install robotframework-seleniumlibrary

https://github.com/robotframework/Selenium2Library
http://robotframework.org/Selenium2Library/Selenium2Library.html

Robot Framework – Test Report



Test Structure

test_000.txt

```
1  *** Settings ***
2
3
4  *** Variables ***
5
6
7  *** Testcases ***
8
9
10 *** Keyword ***
```

Standard Library

Builtin
Provides a set of often needed generic keywords. Always automatically available without imports.

Dialogs
Provides means for pausing the test execution and getting input from users.

Collections
Provides a set of keywords for handling Python lists and dictionaries.

OperatingSystem
Enables various operating system related tasks to be performed in the system where Robot Framework is running.

Remote
Special library acting as a proxy between Robot Framework and test libraries elsewhere. Actual test libraries can be running on different machines and be implemented using any programming language supporting XML-RPC protocol.

Screenshot
Provides keywords to capture screenshots of the desktop.

String
Library for generating, modifying and verifying strings.

Telnet
Makes it possible to connect to Telnet servers and execute commands on the opened connections.

XML
Library for generating, modifying and verifying XML files.

Process
Library for running processes in the system. New in Robot Framework 2.8.

DateTime
Library for date and time conversions. New in Robot Framework 2.8.5.

External Library

Android library
Library for all your Android automation needs. It uses Calabash Android internally.

AnywhereLibrary
Library for testing Single-Page Apps (SPA). Uses Selenium Webdriver and Appium internally.

AppiumLibrary
Library for Android- and iOS-testing. It uses Appium internally.

Archive library
Library for handling zip- and tar-archives.

AutoItLibrary
Windows GUI testing library that uses AutoIt freeware tool as a driver.

Database Library (Java)
Java-based library for database testing. Usable with Jython. Available also at Maven central.

Database Library (Python)
Python based library for database testing. Works with any Python interpreter, including Jython.

Diff Library
Library to diff two files together.

Django Library
Library for Django, a Python web framework.

robotframework-faker
Library for Faker, a fake test data generator.

FTP library
Library for testing and using FTP server with Robot Framework.

HTTP library (livetest)
Library for HTTP level testing using livetest tool internally.

HTTP library (Requests)
Library for HTTP level testing using Request internally.

iOS library
Library for all your iOS automation needs. It uses Calabash iOS Server internally.

ImageHorizonLibrary
Cross-platform, pure Python library for GUI automation based on image recognition.

MongoDB library
Library for interacting with MongoDB using pymongo.

MQTT library
Library for testing MQTT brokers and applications.

Rammbock
Generic network protocol test library that offers easy way to specify network packets and inspect the results of sent and received packets.

RemoteSwingLibrary
Library for testing and connecting to a java process and using SwingLibrary, especially Java Web Start applications.

SeleniumLibrary
Web testing library that uses popular Selenium tool internally. Uses deprecated Selenium 1.0 and is also itself deprecated.

Selenium2Library
Web testing library that uses Selenium 2. For most parts drop-in-replacement for old SeleniumLibrary.

Selenium2Library for Java
Java port of the Selenium2Library.

SSHLibrary
Enables executing commands on remote machines over an SSH connection. Also supports transfering files using SFTP.

SudsLibrary
A library for functional testing of SOAP-based web services based on Suds, a dynamic SOAP 1.1 client.

SwingLibrary
Library for testing Java applications with Swing GUI.

watir-robot
Web testing library that uses Watir tool.

Selenium Keyword

- Open Browser <url> <browser>
- Input Text <locator> <value>
- Click Button <locator>
- Click Link <locator>
- Close Browser

Selenium Keyword

- Wait Until Page Contains <text>
- Page Should Contain <text>
- Title Should Be <text>

More …

Add Cookie · **A**lert Should Be Present · **A**ssign Id To Element · **C**apture Page Screenshot · **C**heckbox Should Be Selected · **C**heckbox Should Not Be Selected · **C**hoose Cancel On Next Confirmation · **C**hoose File · **C**hoose Ok On Next Confirmation · **C**lick Button · **C**lick Element · **C**lick Element At Coordinates · **C**lick Image · **C**lick Link · **C**lose All Browsers · **C**lose Browser · **C**lose Window · **C**onfirm Action · **C**reate Webdriver · **C**urrent Frame Contains · **C**urrent Frame Should Not Contain · **D**elete All Cookies · **D**elete Cookie · **D**ouble Click Element · **D**rag And Drop · **D**rag And Drop By Offset · **E**lement Should Be Disabled · **E**lement Should Be Enabled · **E**lement Should Be Visible · **E**lement Should Contain · **E**lement Should Not Be Visible · **E**lement Text Should Be · **E**xecute Async Javascript · **E**xecute Javascript · **F**ocus · **F**rame Should Contain · **G**et Alert Message · **G**et All Links · **G**et Cookie Value · **G**et Cookies · **G**et Element Attribute · **G**et Horizontal Position · **G**et List Items · **G**et Location · **G**et Matching Xpath Count · **G**et Selected List Label · **G**et Selected List Labels · **G**et Selected List Value · **G**et Selected List Values · **G**et Selenium Implicit Wait · **G**et Selenium Speed · **G**et Selenium Timeout · **G**et Source · **G**et Table Cell · **G**et Text · **G**et Title · **G**et Value · **G**et Vertical Position · **G**et Window Identifiers · **G**et Window Names · **G**et Window Size · **G**et Window Titles · **G**o Back · **G**o To · **I**nput Password · **I**nput Text · **L**ist Selection Should Be · **L**ist Should Have No Selections · **L**ocation Should Be · **L**ocation Should Contain · **L**og Location · **L**og Source · **L**og Title · **M**aximize Browser Window · **M**ouse Down · **M**ouse Down On Image · **M**ouse Down On Link · **M**ouse Out · **M**ouse Over · **M**ouse Up · **O**pen Browser · **O**pen Context Menu · **P**age Should Contain · **P**age Should Contain Button · **P**age Should Contain Checkbox · **P**age Should Contain Element · **P**age Should Contain Image · **P**age Should Contain Link · **P**age Should Contain List · **P**age Should Contain Radio Button · **P**age Should Contain Textfield · **P**age Should Not Contain · **P**age Should Not Contain Button · **P**age Should Not Contain Checkbox · **P**age Should Not Contain Element · **P**age Should Not Contain Image · **P**age Should Not Contain Link · **P**age Should Not Contain List · **P**age Should Not Contain Radio Button · **P**age Should Not Contain Textfield · **P**ress Key · **R**adio Button Should Be Set To · **R**adio Button Should Not Be Selected · **R**egister Keyword To Run On Failure · **R**eload Page · **S**elect All From List · **S**elect Checkbox · **S**elect Frame · **S**elect From List · **S**elect From List By Index · **S**elect From List By Label · **S**elect From List By Value · **S**elect Radio Button · **S**elect Window · **S**et Browser Implicit Wait · **S**et Selenium Implicit Wait · **S**et Selenium Speed · **S**et Selenium Timeout · **S**et Window Size · **S**imulate · **S**ubmit Form · **S**witch Browser · **T**able Cell Should Contain · **T**able Column Should Contain · **T**able Footer Should Contain · **T**able Header Should Contain · **T**able Row Should Contain · **T**able Should Contain · **T**extarea Should Contain · **T**extarea Value Should Be · **T**extfield Should Contain · **T**extfield Value Should Be · **T**itle Should Be · **U**nselect Checkbox · **U**nselect Frame · **U**nselect From List · **U**nselect From List By Index · **U**nselect From List By Label · **U**nselect From List By Value · **W**ait For Condition · **W**ait Until Element Is Visible · **W**ait Until Page Contains · **W**ait Until Page Contains Element · **X**path Should Match X Times

http://robotframework.org/Selenium2Library/Selenium2Library.html

Hello Robot

- Create file **hello.txt**

hello.txt

```
1  *** Settings ***
2  Library      Selenium2Library
3
4
5  *** Testcases ***
6  Hello World
7      Open Browser    http://www.google.com
```

- Run with
  - $**pybot hello.txt**

Keyword Driven Development
(Be careful)

4 Spacebars

Open Browser ⟷ Robot Framework

Only 1 Spacebars

Only 1 Spacebars

Multi Arguments with Empty Value

4 Spacebars **4 Spacebars** **4 Spacebars**

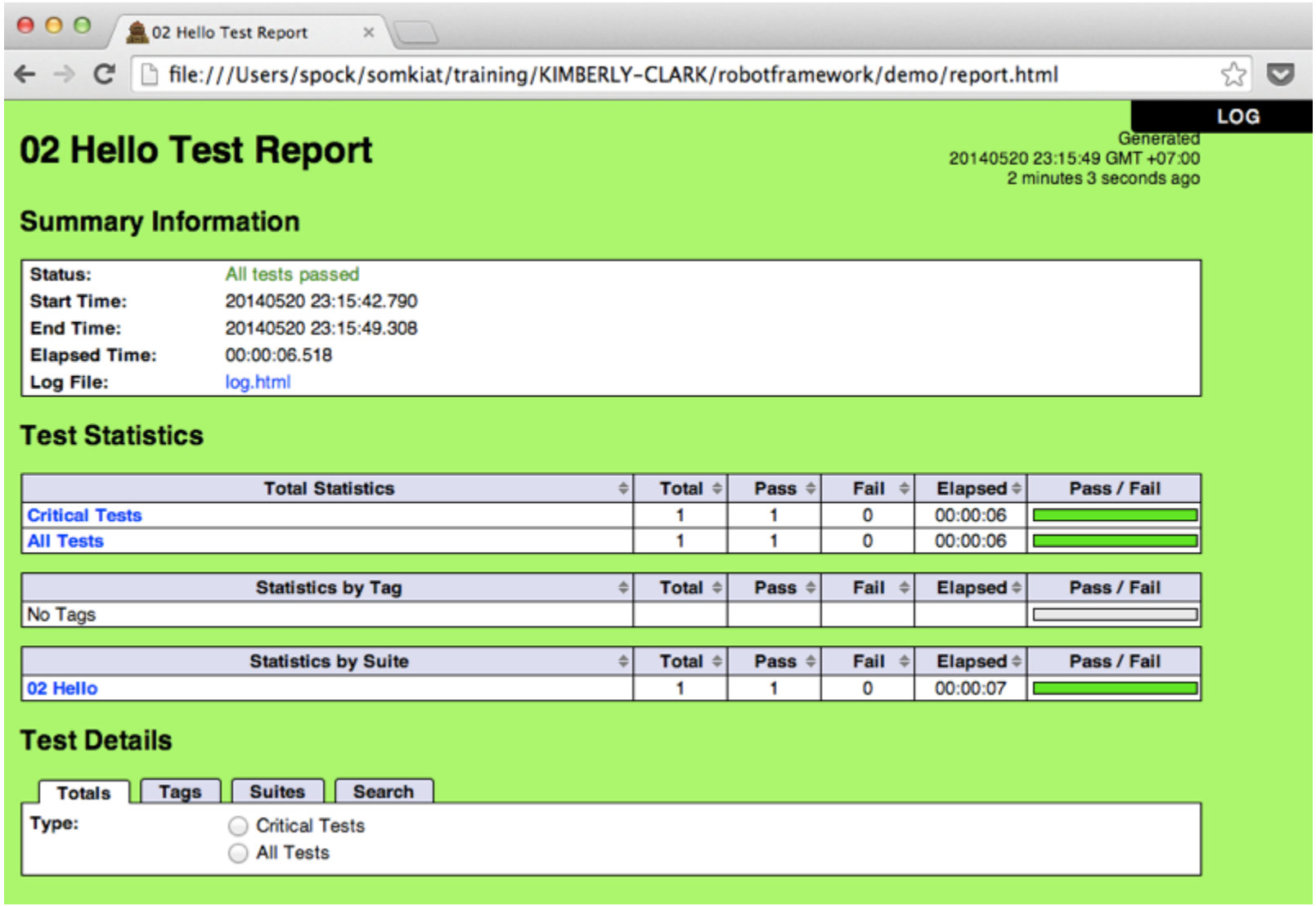
Control Click Calculator *${EMPTY}* *Button29*

Only 1 Spacebars

Report

```
spocks-MacBook-Pro:demo spock$ pybot 02_hello.txt
==============================================================================
02 Hello
==============================================================================
Hello World                                                           | PASS |
------------------------------------------------------------------------------
02 Hello                                                              | PASS |
1 critical test, 1 passed, 0 failed
1 test total, 1 passed, 0 failed
==============================================================================
Output:  /Users/spock/somkiat/training/KIMBERLY-CLARK/robotframework/demo/output.xml
Log:     /Users/spock/somkiat/training/KIMBERLY-CLARK/robotframework/demo/log.html
Report:  /Users/spock/somkiat/training/KIMBERLY-CLARK/robotframework/demo/report.html
```

Report


02 Hello Test Report
file:///Users/spock/somkiat/training/KIMBERLY-CLARK/robotframework/demo/report.html
LOG
02 Hello Test Report
Generated
20140520 23:15:49 GMT +07:00
2 minutes 3 seconds ago
Summary Information
Status: All tests passed
Start Time: 20140520 23:15:42.790
End Time: 20140520 23:15:49.308
Elapsed Time: 00:00:06.518
Log File: log.html
Test Statistics
Total Statistics | Total | Pass | Fail | Elapsed | Pass / Fail
Critical Tests | 1 | 1 | 0 | 00:00:06
All Tests | 1 | 1 | 0 | 00:00:06
Statistics by Tag | Total | Pass | Fail | Elapsed | Pass / Fail
No Tags
Statistics by Suite | Total | Pass | Fail | Elapsed | Pass / Fail
02 Hello | 1 | 1 | 0 | 00:00:07
Test Details
Totals
Tags
Suites
Search
Type:
Critical Tests
All Tests

Workshop

- Create test case with Robot Framework
  - Test www.google.com

work_01.txt

```
*** Settings ***
Library     Selenium2Library


*** Testcases ***
Search Data From Google.com
    XXXXX
    XXXXX
    XXXXX
    XXXXX
    XXXXX
```

Search with Google

work_01.txt

```
1  *** Settings ***
2  Library      Selenium2Library
3
4
5  *** Testcases ***
6  Search Data From Google.com
7      Open Browser    http://google.com
8      Input Text      gbqfq    Somkiat
9      Click Button    gbqfb
10     Wait Until Page Contains   Somkiat
11     Close Browser
```

Question & Answer

References

- http://robotframework.org/#test-libraries
- http://robotframework.org/robotframework/latest/libraries/BuiltIn.html
- http://www.somkiat.cc/install-robot-framework-on-windows/
- http://jackmsw.blogspot.com/2014/05/robot-framework-autoitlibrary-automated.html
- https://www.autoitscript.com/site/