



TEMPLATES

TUTORIAL

TEMPLATES OUTLINE

Part 1: BASICS

- Data-Driven approach
- Basic Concept
- Template Types

Part 2: USAGE AT DIFFERENT LEVELS

- Scope of Templates
- Setups and Teardowns
- Handling Failures (RF 7.2)



Part 3: CONTROL STRUCTURES

- FOR, WHILE, IF/ELSE, BREAK, ..
- New GROUP syntax (RF 7.2)
- Templates & Data-Driver Library

Part 4: STYLE AND FORMATTING

- Different Styles
- Clean Code Templates
- Handling Tags & Documentation

DATA DRIVEN APPROACH (SAME TESTS, DIFFERENT DATA)

Example use cases

- User Login
 - Data: username, password
- Input validation
 - Data: email, phone number, ...
- API testing
 - Data: authorization header, request body, ...
- File validation
 - Data: size, type, creation time stamp, ...

SUMMARY

PART 1

- Template used in Data-Driven approach
- Template is a keyword (user, library, embedded)
- Template keyword should have argument(s)
- Templated test case iterates same keyword
- Each iteration is NOT a test case

-
- **TIP:** Use @{EMPTY} with default arg values
 - **WATCH:** Data column titles not to be confused with Template arguments

```
1  *** Comments ***
2  Tutorial: Templates - Part 1: BASICS > Template Types
3
4
5  *** Settings ***
6  Documentation      Template from user keyword. Here, Template keyword
7  ...                contains arguments with default values.
8
9  Test Template      Should Contain Given Times
10
11
12  *** Test Cases ***
13  Templated Test Case With User Keyword
14
15      WORD            CHAR            COUNT
16      Hello           l              2
17      Robot Framework r              2
18      2512             2              2
19      Robocon         o              3
20      morning         @{EMPTY}
21      @{EMPTY}
22
23  *** Keywords ***
24  Should Contain Given Times
25      [Documentation]  Counts given character in word. Fails if not 2.
26      [Arguments]     ${string}=evening  ${character}=n  ${expected}=2
27      Log             ${string}, ${character}, ${expected}
28      ${count}=       Get Count    ${string}    ${character}
29      Should Be Equal As Integers  ${count}    ${expected}
```

SUMMARY

PART 2

- One suite Template: common, own or none
 - -> Override: `[Template]`
 - Setup & Teardown —Keyword, Test, Suite
 - -> Override: `[Setup]`
 - Fail control:
 - `\${PREV_TEST_STATUS}` for entire test case
 - `\${KEYWORD_STATUS}` for iteration
 - `robot:stop-on-failure` (test-level)
 - `robot:skip-on-failure` (test-level)
 - `robot:exit-on-failure` (test-level)
-
- **TIP:**
 - Use `[Template] NONE` to drop the template
 - Use `[Setup] NONE` to drop test setup
 - **WATCH:**
 - Test Setup in `***Settings***` Section applies to entire test cases, not to each iteration

```
4
5 *** Settings ***
6 Documentation      Common Template for all tests in the suite.
7 ...                The Template can be overridden or removed.
8 ...                Each test case may have its own Template.
9
10 Library            OperatingSystem
11
12 Test Template      File Size Should Not Exceed
13
14
15 *** Test Cases ***
16 HTML
17     log.html         1000000
18     report.html      6000000
19
20 XML
21     [Template]       NONE
22     File Should Exist data/output.xml
23     Log              "No longer Template, normal Test Case"
24
25 TXT
26     [Template]       File Should Not Be Empty
27     data/doc.txt
28     data/another_doc.txt
29
30
31 *** Keywords ***
32 File Size Should Not Exceed
33     [Documentation]  Checks given file size. Fails if exceeds max.
34     [Arguments]     ${file}    ${max_size}
35     ${size}=         Get File Size    data/${file}
36     Should Be True   ${size} < ${max_size}
```

```
21
22 *** Test Cases ***
23 HTML
24     [Tags]          robot:stop-on-failure
25     log.html         1000000
26     report.html      6000000
27
28 XML
29     [Tags]          robot:skip-on-failure
30     output.xml       20000
31     another.xml      1200000
32
33 TXT
34     [Tags]          robot:exit-on-failure
35     doc.txt          36000
36     another doc.txt  50000
37
```

SUMMARY

PART 3

- Templated test cases may include loop(s)
- Supported: FOR, FOR-IN-RANGE, FOR-IN-ENUMERATE
- Supported: BREAK, CONTINUE
- New: GROUP, GROUPS support loops too
- NOT supported: TRY/EXCEPT, WHILE
- Keywords inside Templated test cases NOT possible

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- **TIP:** Use DataDriver Library when dealing with large data tables, dynamic data
 - **WATCH:** Additional keywords cannot be executed inside templated test case loops

```
10 Suite Setup      Log    This is suite setup
11 Suite Teardown   Log    This Is suite teardown
12 Test Setup       Log    This is test setup
13 Test Teardown    Log    This Is test teardown
14
15 Test Template     File Size Should Not Exceed
16
17
18 *** Variables ***
19 @{FILES}          log.html    report.html    output.xml
20 @{BYTES}          5000000     1000000       3000000
21
22 *** Test Cases ***
23 Loop Over Filename
24   FOR    ${file}    IN    @{FILES}
25     ${file}    1000000
26   END
27
```

```
1 *** Settings ***
2 Documentation      Templates and the DataDriver library
3
4 Library            OperatingSystem
5 Library            DataDriver    data/files.csv
6
7 Suite Setup        Log    This is suite setup
8 Suite Teardown     Log    This Is suite teardown
9 Test Setup         Log    This is test setup
10 Test Teardown      Log    This Is test teardown
11
12 Test Template      File Size Should Not Exceed
13
14
15 *** Test Cases ***
16 Size of ${file} Should Not Exceed ${max_size} bytes.
17
18
19 *** Keywords ***
20 File Size Should Not Exceed
21 [Documentation]    Checks given file size. Fails if exceeds max.
22 [Arguments]       ${file}    ${max_size}
23 [Setup]           Log    This Is Iteration Setup
24 ${size}=          Get File Size    data/${file}
25 Should Be True    ${size}<${max_size}
26 [Teardown]        Log    This Is Iteration Teardown
27
```

SUMMARY

PART 4

Style Guide — Templates

- https://docs.robotframework.org/docs/style_guide#test-templates

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Variables

Test Cases Or Tasks

Templated test cases and tasks share the same guidelines. Below are examples for the different cases, depending on how templates are used.

Example 1Example 2Example 3Example 4

```
*** Settings ***
Documentation    Individually named test cases.
***            Tests sorted according to ARG values.
Test Template   Template Keyword

*** Test Cases ***
Test            ARG      SECOND ARG    ANOTHER ARG
Another Test    1111111111    bbb        BBBBBBBBBBBBBBB
One More Test With Long Name 222        cc          CCCCCCCCCCCCCC

Test With Empty      ${EMPTY}    aaaa        AAAAAAAAAA
Another Test With Empty  ${EMPTY}  bbb        BBBBBBBBBBBBBBB
One More Test With Empty  ${EMPTY}  cc          CCCCCCCCCCCCCC

Test With None      ${NONE}    aaaa        AAAAAAAAAA
Another Test With None  ${NONE}  bbb        BBBBBBBBBBBBBBB
One More Test With None  ${NONE}  cc          CCCCCCCCCCCCCC

*** Keywords ***
Template Keyword
[Arguments]    ${arg1}    ${arg2}    ${arg3}
Log Many     ${arg1}    ${arg2}    ${arg3}
```

In Example 1, section name `*** Test Cases ***` and `COLUMN1` are separated by 4 spaces, as well as following columns. The distance is measured between the longest item in the given column and the start of the following column. For example, the longest item in the first column is `1111111111`, therefore, corresponding item in the next column, `bbb` is separated by 4

Test Cases Or Tasks

Keyword

Vertical Spacing

Sections

Settings

Variables

Test Cases Or Tasks

Keywords

Horizontal Spacing

Generic

Settings

Variables

Test Cases, Tasks And Keywords

Comments

Line Continuation

Arguments

Variables

Variables

Variable Scope And Casing

Variable Assignment Syntax

Spaces Or Underscores Variables

Variables Within Settings Section

Variables Section

Test Cases Or Tasks

Keywords

Special Cases

Test Templates

Test Cases Or Tasks

Note On Documentation And Tags

TEMPLATES

RESOURCES

RF Guides – Data Driven Tests

- https://docs.robotframework.org/docs/testcase_styles/datadriven

RF User Guide – Test Templates

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

RF Style Guide – Templates

- https://docs.robotframework.org/docs/style_guide#test-templates



THANKS! QUESTIONS?

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