TEMPLATES

TUTORIAL

RBCN25

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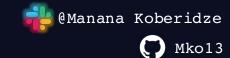# TEMPLATES
OUTLINE

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)

10 min

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 APROACH
(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 <u>keyword</u>
- 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 ***                        WORD          CHAR      COUNT
13  Templated Test Case With User Keyword
14                                            Hello         l         2
15                                            Robot Framework   r     2
16                                            2512          2         2
17                                            Robocon       o         3
18                                            morning       @{EMPTY}
19                                            @{EMPTY}
20
21
22  *** Keywords ***
23  Should Contain Given Times
24      [Documentation]    Counts given character in word. Fails if not 2.
25      [Arguments]    ${string}=evening    ${character}=n    ${expected}=2
26      Log    ${string}, ${character}, ${expected}
27      ${count}=    Get Count    ${string}    ${character}
28      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 overriden 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
```

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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 possilbe

- 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
23    *** Test Cases ***
24    Loop Over Filename
25        FOR    ${file}    IN    @{FILES}
26            ${file}    1000000
27        END
```

```
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
```
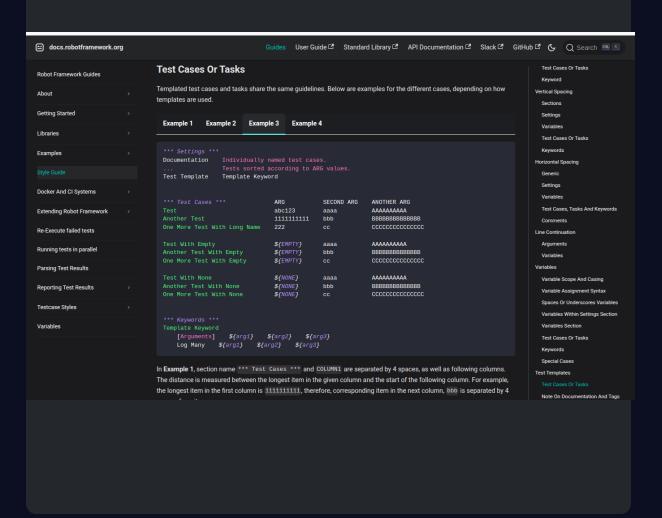
SUMMARY
PART 4

Style Guide — **Templates**

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

TEMPLATES
RESOURCES

RF Guides - **Data Driven Tests**
- o https://docs.robotframework.org/docs/testcase_styles/datadriven

RF User Guide — **Test Templates**
- o https://robotframework.org/robotframework/latest/RobotFrameworkUserGuide.html#test-templates

RF Style Guide — **Templates**
- o https://docs.robotframework.org/docs/style_guide#test-templates

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THANKS!
QUESTIONS?

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