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)

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, ...

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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

```
*** Comments ***
Tutorial: Templates - Part 1: BASICS > Template Types


*** Settings ***
Documentation       Template from user keyword. Here, Template keyword
...                 contains arguments with default values.

Test Template       Should Contain Given Times


*** Test Cases ***                          WORD              CHAR        COUNT
Templated Test Case With User Keyword
                                            Hello             l           2
                                            Robot Framework   r           2
                                            2512              2           2
                                            Robocon           o           3
                                            morning           @{EMPTY}
                                            @{EMPTY}


*** Keywords ***
Should Contain Given Times
    [Documentation]    Counts given character in word. Fails if not 2.
    [Arguments]    ${string}=evening    ${character}=n    ${expected}=2
    Log    ${string}, ${character}, ${expected}
    ${count}=    Get Count    ${string}    ${character}
    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

```
*** Settings ***
Documentation       Common Template for all tests in the suite.
...                 The Template can be overriden or removed.
...                 Each test case may have its own Template.

Library             OperatingSystem

Test Template       File Size Should Not Exceed


*** Test Cases ***
HTML
    log.html      1000000
    report.html   6000000

XML
    [Template]    NONE
    File Should Exist    data/output.xml
    Log    "No longer Template, normal Test Case"

TXT
    [Template]    File Should Not Be Empty
    data/doc.txt
    data/another_doc.txt


*** Keywords ***
File Size Should Not Exceed
    [Documentation]    Checks given file size. Fails if exceeds max.
    [Arguments]    ${file}    ${max_size}
    ${size}=    Get File Size    data/${file}
    Should Be True    ${size} < ${max_size}
```

```
*** Test Cases ***
HTML
    [Tags]    robot:stop-on-failure
    log.html        1000000
    report.html     6000000

XML
    [Tags]    robot:skip-on-failure
    output.xml      20000
    another.xml     1200000

TXT
    [Tags]    robot:exit-on-failure
    doc.txt             36000
    another_doc.txt     50000
```

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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, daynamic data
- WATCH: Additional keywords cannot be executed inside templated test case loops

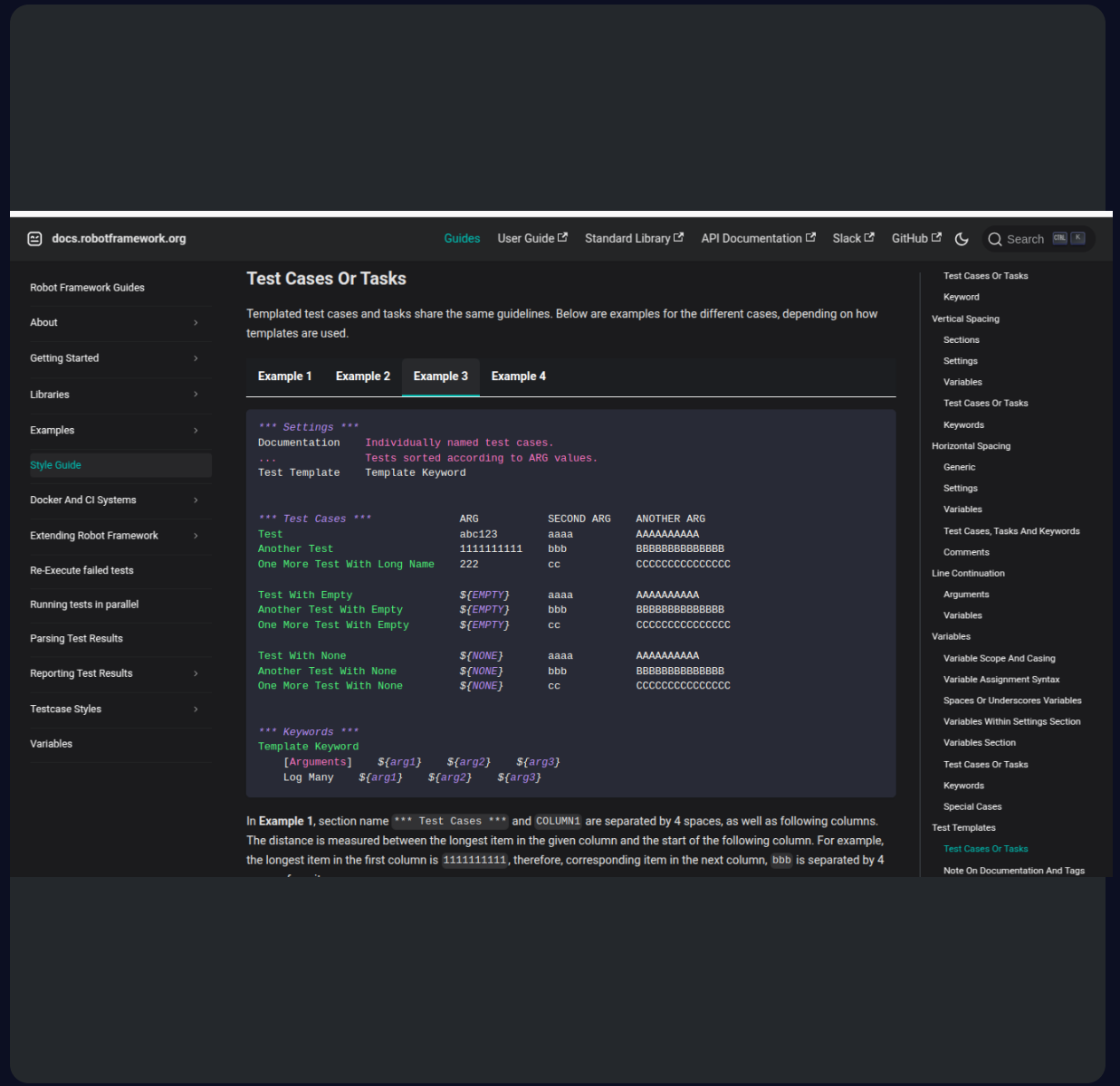
```
Suite Setup         Log    This is suite setup
Suite Teardown      Log    This Is suite teardown
Test Setup          Log    This is test setup
Test Teardown       Log    This Is test teardown

Test Template       File Size Should Not Exceed


*** Variables ***
@{FILES}    log.html    report.html    output.xml
@{BYTES}    5000000    1000000    3000000


*** Test Cases ***
Loop Over Filename
    FOR    ${file}    IN    @{FILES}
        ${file}    1000000
    END
```

```
*** Settings ***
Documentation       Templates and the DataDriver library

Library             OperatingSystem
Library             DataDriver    data/files.csv

Suite Setup         Log    This is suite setup
Suite Teardown      Log    This Is suite teardown
Test Setup          Log    This is test setup
Test Teardown       Log    This Is test teardown

Test Template       File Size Should Not Exceed


*** Test Cases ***
Size of ${file} Should Not Exceed ${max_size} bytes.


*** Keywords ***
File Size Should Not Exceed
    [Documentation]    Checks given file size. Fails if exceeds max.
    [Arguments]    ${file}    ${max_size}
    [Setup]    Log    This Is Iteration Setup
    ${size}=    Get File Size    data/${file}
    Should Be True    ${size}<${max_size}
    [Teardown]    Log    This Is Iteration Teardown
```

SUMMARY
PART 4

Style Guide — **Templates**

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



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

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THANKS!
QUESTIONS?

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