



Open2Test Test Automation Framework for Selenium WebDriver Scripting Standards

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1. Introduction

1.1. Purpose

This document provides details about the various columns used during scripting, the keywords and their descriptions, along with methodologies to be followed while scripting using keywords.

2. Standards for Keyword Scripting

2.1. Getting Started

Before learning about the columns used for keyword scripting, the user should know the keyword script and how the framework is called.

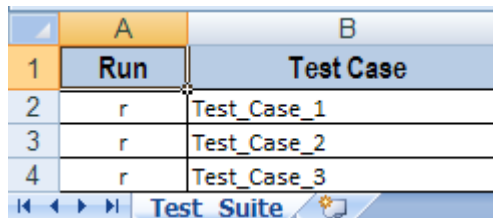
The execution is started by running the file Selenium.Java where the the method FindExecTestscript() is called.

2.2. Column Description of Test Suite

This section describes the columns used in the test suite for keyword scripting.

2.2.1. Column 'A'

The data in the 'Run' column identifies whether the test case is to be run (automated) or not. This column has the letter 'r', which denotes that the test case should be run. If any step in the test suite is not being run, then the corresponding row in the first column is to be left blank.



	A	B
1	Run	Test Case
2	r	Test_Case_1
3	r	Test_Case_2
4	r	Test_Case_3

Figure 1: Column 'Run'

2.2.2. Column 'B'

The second column of the test suite indicates the name of the Test Case that has to be executed. So, if the column A is specified 'r,' it means that the particular test case is going to be executed.

2.3. Column Description of Test Case

This section describes the columns used in Test Case for keyword scripting.

2.3.1. Step (Column 'A')

The data in column 'A' identifies whether the current step in the test case is to be run or not. This column has the letter 'r', which denotes that the current step should be run. If any step in the test case is not being run, then the corresponding row in the first column is to be left blank. All the steps will run based on the data in this column.

A	B	C	D	E
Run	Keyword	ObjectDetails	Action	Description
r	launchapp	http://mobile.goindigo.in/Consumer/home		
r	importdata	D:\path\TestData\TestData.xls	Sheet1	
r	perform	button;Fly	click	
r	perform	button;Booking	click	
r	perform	radio;Oneway	click	
r	perform	input;From	set:Chennai (MAA)	
r	perform	input;To	set:Bengaluru (BLR)	
r	perform	date;Date	click	
r	perform	date;DateSelect	click	
r	perform	button;Search	click	

Figure 1: Column 'Step'

2.3.2. Operation (Column 'B')

The second column of the test case sheet indicates the generic type of action being performed on the application under test (AUT). This column is dedicated to different types of actions that will be performed on a particular object.

A	B	C	D	E
Run	Keyword	ObjectDetails	Action	Description
r	launchapp	http://mobile.goindigo.in/Consumer/home		
r	importdata	D:\path\TestData\TestData.xls	Sheet1	
r	perform	button;Fly	click	
r	perform	button;Booking	click	
r	perform	radio;Oneway	click	
r	perform	input;From	set:Chennai (MAA)	
r	perform	input;To	set:Bengaluru (BLR)	
r	perform	date;Date	click	
r	perform	date;DateSelect	click	
r	perform	button;Search	click	

Figure 2: Column 'Operation'

The keywords that can be used in this column are:

1. **LaunchApp**

'LaunchApp' is used to launch the AUT. This keyword triggers the driver script to launch the application. This will launch the application either in Internet Explorer or in Firefox, depending upon the browser specified in the Selenium.java file.

2. **Perform**

'Perform' is used to perform an operation on a particular object (ex: clicking on a button on a Web page, or typing some text in a textbox). This keyword should be entered in the corresponding row in the second column if any such operations are to be performed.

3. **Check**

'Check' is used to check if the required property of a particular object is attained at runtime. This is a type of validation step (expected result).

4. **Condition**

'Condition' is used to compare two variables, check properties for the existence of windows, etc.

5. **Storevalue**

'Storevalue' is used to store the property values of different objects in different environment variables. These environment variables can later be used as input parameters in various functions and also in scripts.

6. **Wait**

'Wait' is used to place static waits in the keyword script.

7. **Loop**

'Loop' is used to loop a set of actions given in the data table.

8. **Context**

'Context' Keyword is supported to set the context on the page or Dialog/alert.



A detailed description of the keywords is provided in the Open2test Test Automation Framework Keywords List document.

2.3.3. Object (Column 'C')

The third column of the test case sheet is used to indicate the object on which a particular type of action is to be performed. When the object is present in the object repository, the object class and object name are specified in column C (as shown in Example 1).

Example:

Action	Object
Perform	Element;OK
Perform	Textbox;Lastname

In the above example, the object column indicates that some operation has to be performed on an object of class 'WebElement' having the name 'OK.' Similarly, in the next line, some operation has to be performed on an object of class 'Textbox' having the name 'Lastname.'



The object and its name are usually separated by a delimiter ';' as shown in the above example.

A	B	C	D	E
Run	Keyword	ObjectDetails	Action	Description
r	launchapp	http://mobile.goindigo.in/Consumer/home		
r	importdata	D:\path\TestData\TestData.xls	Sheet1	
r	perform	button;Fly	click	
r	perform	button;Booking	click	
r	perform	radio;Oneway	click	
r	perform	input;From	set:Chennai (MAA)	
r	perform	input;To	set:Bengaluru (BLR)	
r	perform	date;Date	click	
r	perform	date;DateSelect	click	
r	perform	button;Search	click	

Figure 3: Column 'Object'

2.3.4. Action (Column 'D')

The fourth column of the test case sheet is used to indicate the specific action being performed on the objects present in the AUT. It contains the details of all the operations or verifications to be performed on the objects listed in the objects column.

Consider the example of the object 'Button' with name Login.

One of the actions that can be performed on a button would be Click. Therefore, in column 4, the above operation is put in the keyword form as "CLICK".

Example : The keyword CLICK on a Login button is as follows:

Action	Object	Operation
Perform	Button;Login	Click

ACTION

If user wants to **check** if the button is enabled before clicking, the syntax would be:

Action	Object	Operation
Check	Element;Login	Enabled:True

CHECKING

Similarly, if the user wants to check whether the object is disabled, the syntax would be:

Action	Object	Operation
Check	Button;OK	Enabled:False

CHECKING

A	B	C	D	E
Run	Keyword	ObjectDetails	Action	Description
r	launchapp	http://mobile.goindigo.in/Consumer/home		
r	importdata	D:\path\TestData\TestData.xls	Sheet1	
r	perform	button;Fly	click	
r	perform	button;Booking	click	
r	perform	radio;Oneway	click	
r	perform	input;From	set:Chennai (MAA)	
r	perform	input;To	set:Bengaluru (BLR)	
r	perform	date;Date	click	
r	perform	date;DateSelect	click	
r	perform	button;Search	click	

Figure 4: Column 'Action'

The most commonly used keywords for specific actions that can be used with the generic keyword '**Perform**' written in Column 'Action' are:

1. **Click**

'Click' is used to perform the click operation on objects (e.g., clicking a Button, linking a Webelement, etc).

2. **Select:<name>**

'Select' is used to select an item from Combobox or Radio button.

3. **Set:<Text>**

'Set' is used to assign a value to an edit field.

4. **set:dt_Parameter**

This function is used to assign the value, which is given in the external test data sheet, to the edit field.

5. **set:#<variable>**

This function is used to assign the value, which is stored in the variable, to the edit field.

Perform the Operations on the Dialog

i. **Case 'OK':** Accept

Perform| Dialog;Dialogtitle|OK

ii. **Case 'Cancel':** Abort the Operation and lay the control in the parent window.

Perform| Dialog;Dialogtitle|Cancel

iii. **Case 'Close':** Close the Dialog and lay the control in the parent window.

Perform| Dialog;Dialogtitle|Close

Note: Dialog title is optional.

The most commonly used keywords for specific actions used with the generic keyword 'Check' written in Column 'Action' are:

1. Checked:<True/False>

This is a Check operation that is used to verify whether a Checkbox is checked or not.

2. Enabled:<True/False>

This is a Check operation that is used to verify whether the given Web object is enabled or not.

3. Exist:<True/False>

This is a Check operation that is used to verify whether the Web object whose name is specified exists or not.

2.3.5. Comments (Column 'F')

The 'Comments' Column is used to enter generic information about the current step being run. It provides a better understanding of the steps being performed in the particular test script and also helps to map the test script to the manual test case.

A	B	C	D	E
Run	Keyword	ObjectDetails	Action	Description
r	launchapp	http://mobile.goindigo.in/Consumer/home		
r	importdata	D:\path\TestData\TestData.xls	Sheet1	
r	perform	button;Fly	click	
r	perform	button;Booking	click	
r	perform	radio;Oneway	click	
r	perform	input;From	set:Chennai (MAA)	
r	perform	input;To	set:Bengaluru (BLR)	
r	perform	date;Date	click	
r	perform	date;DateSelect	click	
r	perform	button;Search	click	

Figure 5: Column 'Comments'

2.3.6. Delimiters

Delimiters are any string characters used to identify the sub-string limits. Delimiters are generally used with the Split function, which is used to split the input into different substrings

Purpose of Delimiters:

Delimiters break down the input values to different strings and take them as keywords to perform any operation concerned with that object.

Delimiters Used in this Framework:

When scripting using the keyword-driven approach, use separators or delimiters appropriately between two keywords. Delimiters that are used in the framework are:

- : (colon)

- ; (semi colon)
- :: (double colon)

Using Delimiters:

There are four columns involved in the keyword-driven approach. The role of delimiters comes in the 'Objects' column (column 3) and the 'Action' column (column 4).

'Objects' column (column 3)

This column is used to define the class and the name of the object. The delimiter used in this column to separate the class of the object and the name of the object is a semi-colon ';'.
Example:


Textbox; <Textboxname>



'Action' column (column 4):

This column usually provides details of the operations that need to be performed on the object. The delimiter used to separate the property and the property values in this column is a colon ':'.
Example:

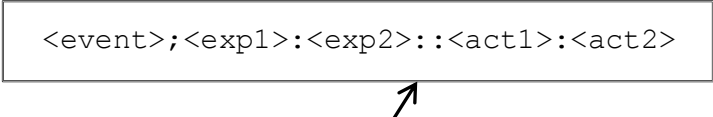
pagetitle:true



To specify multiple parameter use the '::' delimiter. This is used in case of keyword like 'report'

Example:

<event>;<exp1>:<exp2>::<act1>:<act2>



2.3.7. Variables

- To store a value in a variable, an environment variable is used.

Example:

Assignvalue	strName;Smith	
-------------	---------------	--

Here in the variable 'strName', the value 'Smith' is stored.

- To input a value to a field from a variable, the variable should be preceded by '#'.

Example:

Perform	Textbox;<textbox name>	Set:#varName
---------	------------------------	--------------

Here, the value stored in varName is typed into the textbox. Defining a variable requires the use of certain standards. For example, for a variable to store a string value it should be appended with "Str" ex.StrVarName. Similarly, an integer should be appended with "int" and Boolean should be appended with "bln".

3. Sequence of Keywords

While scripting using keywords, some keywords have to be written in combination with other keywords. This section deals with methodologies that should be followed while scripting using keywords.

3.1. Use of 'Conditional Statements'

If the user is implementing an If-Else conditional statement, then the keyword is followed by a semi-colon ';' and the values that indicate the start row and the end row should be separated by a semi-colon ';'.
Example:

Condition	<var1>;comparator;<var2>	
endCondition		

If the condition mentioned is 'True,' execution starts from the startrow and would end at the endrow specified. If the condition specified is 'False,' there would be no effect in the script and the execution would continue as normal.

3.2. Use of 'Loop Statements':

To execute the set of statements up to the number of times mentioned in the 'Loop' and Endloop keywords.

Loop	<Loop Count>	
Endloop		

4. Working on multiple pop ups

Open2Test framework for Selenium web driver support moving across multiple windows.

A. Set the context on page:

```
Context| Browser;WebBrowser |page;Pagetitle (dialog;dialogtitle for  
an alert)
```

Browser and Browser Name are optional values (to support QTP script format). The values will not be considered by Open2Test framework.

If the page title is blank, the context will be set to the next window.

Note: Page Name can be an Has map variable.

B. Perform Operation on the page

For closing the page

```
Perform |page; pagetitle|Close
```

For closing the current page

```
Perform |page;|Close
```

After closing the window the control will be landed in the prior window.

Check/Storevalue Operation on the page:

```
Check| page;pagetitle|exist:True/false
```

```
Check|page;pagetitle|pagetitle:<pageTitle>.
```

```
storevalue| page;pagetitle|exist:VariableName
```

```
Storevalue|page;pagetitle|pagetitle:variableName
```

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