MICRO FOCUS

Silk Test 21.0

Hierarchical Object Recognition

Contents

Hierarchical Object Recognition

When you record window declarations with the Classic Agent, Silk Test Classic records descriptions based on hierarchical object recognition of the GUI objects in your application. Silk Test Classic stores the declarations in an include file (*.inc). When you record or replay a test case with the Classic Agent, Silk Test Classic references the declarations in the include file to identify the objects named in your test scripts.

The object recognition system of the Classic Agent uses a window declaration identifier as the logical name of an object and a tag or multitag as the attribution to uniquely identify an object. To permit robust operation across browsers, Silk Test Classic uses a complicated system of rules to construct the identifiers and associated attributes.

The window declaration identifiers and tags or multitags are constructed hierarchically from information such as HTML object attributes and closest static text. The class dependent caption and windowID construction rules form the basis for the window declaration identifier, single tag, and multitag construction rules. The Index construction rules are class independent.

Using hierarchical object recognition compared to using dynamic object recognition

Use hierarchical object recognition to test applications that require the Classic Agent. Dynamic object recognition requires the Open Agent.

Alternatively, you can combine the advantages of INC files with the advantages of dynamic object recognition by including locator keywords in INC files. Enhancing INC files with locators facilitates a smooth transition from using hierarchical object recognition to new scripts that use dynamic object recognition. With locators, you use dynamic object recognition but your scripts look and feel like traditional, Silk Test Classic tag-based scripts that use hierarchical object recognition.

You can create tests for both dynamic and hierarchical object recognition in your test environment. You can use both recognition methods within a single test case if necessary. Use the method best suited to meet your test requirements.

Open Agent Example

For example, if you record a test to open the **New Window** dialog box by clicking **File** > **New** > **Window** in the SWT sample application, Silk Test Classic performs the following tasks:

- Records the following test:
```
testcase Test1 ()
  recording
    SwtTestApplication.WindowMenuItem.Pick()
```
- Creates window declarations in the include file for Window menu item. For example:
```
window Shell SwtTestApplication
  locator "/Shell[@caption='Swt Test Application']"
  MenuItem WindowMenuItem
    locator "//MenuItem[@caption='Window']"
```

Classic Agent Example

For example, if you record a test to open the **New Window** dialog box by clicking **File** > **New** > **Window** in a sample application, Silk Test Classic performs the following tasks:

- Records the following test:

```
testcase Test1 ()
   recording
     SwtTestApplication.File.New.xWindow.Pick()
```

- Creates window declarations in the include file for File menu, New menu item, and xWindow menu item. For example:

```
Menu File
   tag "File"
   MenuItem New
     tag "New.."
     MenuItem xWindow
       tag "Window"
```

Legend

The effectiveness of recognition is usually not affected by the character length restrictions placed on the caption, windowID, and window declaration identifier.

Term	Description
CST	Closest Static Text
BNT	Browser Nearest Text Check Box
	(Agent CST default, Browser CST option)
Caption	Restricted to 127 characters
WindowID	Restricted to 67 characters
HTML Tag Attributes	- ALT - CONTENT - HREF - HTTP-EQUIV - ID - NAME - SRC - VALUE
>	Interpret as "takes precedence over"
4Test	Produces window declaration identifier, single tag, or multitag
Agent	Produces index, prior text, or location
Extension	Produces WindowID or caption

Relationships and Rules for DOM Processing

The following table lists the fundamental relationships used during DOM processing.

Class	Caption Rules	WindowID Rules
Browser Child	Title -> Page Location (URL)	Page Location (URL)

Class	Caption Rules	WindowID Rules
Browser Child Frame	Title (Frame) -> NAME (Frame) -> Page Location (URL)	None
HtmlCheckBox	Browser CST	NAME -> Class Name Counter
HtmlColumn	Inner Text -> BNT	ID
HtmlComboBox	Not applicable in DOM.	
HtmlForm	NAME -> BNT	ID
HtmlHeading	Text	ID
HtmlHidden	Inner Text -> BNT	NAME
HtmlImage <IMG SRC>	ALT -> BNT	NAME -> HREF
HtmlImage <INPUT type=image SRC>	Not applicable in DOM. Mapped to HtmlPushButton.	
HtmlLink-text <A>HREF text </A>	Inner Text -> Agent CST	NAME -> HREF
HtmlList	Browser CST	NAME
HtmlListBox	Browser CST	NAME -> Blank
HtmlMarquee	BNT	NAME
HtmlPushButton <INPUT type=image SRC>	ALT -> Agent CST	NAME
HtmlPushButton <INPUT type=[reset,submit] SRC><BUTTON>	VALUE -> Agent CST (when '<' is first character of VALUE)	NAME
HtmlRadioButton	BNT	NAME -> Class Name Counter
HtmlRadioList	BNT	NAME -> Class Name Counter
HtmlTable	Caption -> BNT	ID
HtmlText	Text	ID
HtmlTextField	Browser CST	NAME
HtmlTextField	Browser CST	NAME -> FILE_INPUT
XMLNode	VALUE -> NAME	Internally Generated Integer

The following table lists the window declaration identifier rules that are used during DOM processing.

Class	Rule	
All	**Use WindowID option**	WindowID -> Caption -> Index
	Use Caption option	Caption -> WindowID -> Index

Class	Rule
All	The same CST is used for multiple objects of the same class. Postpend WindowID with Index, postpend Caption with Index in brackets.
All	Same CST used for multiple objects of different classes. Postpend WindowID with Index.
All	Only Index exists. Postpend class with Index.

The following table lists the index rules that are used during DOM processing.

Class	Rule
All	Relative to parent. Left to right, then top to bottom.

The following table lists the single tag rules that are used during DOM processing.

Class	Rule
All	User Interface controls Tag selection.

The following table lists the multitag rules that are used during DOM processing.

Class	Rule
Browser Child	Caption is not selectable through user interface.
Browser Child Frame	Caption is not selectable through user interface.
`HtmlCheckBox`	Caption, Index, and WindowID are not selectable through the user interface.
`HtmlColumn`	Selectable through the user interface.
`HtmlComboBox`	Not applicable in DOM.
`HtmlForm`	Caption, Index, and WindowID are not selectable through the user interface.
`HtmlHeading`	Selectable through the user interface.
`HtmlHidden`	Caption, Index, and WindowID are not selectable through the user interface.
`HtmlImage` `<IMG SRC>`	Caption, Index, and WindowID are not selectable through the user interface.
`HtmlImage` `<INPUT type=image SRC>`	Not applicable in DOM. Mapped to `HtmlPushButton`.
HtmlLink-text `<A>HREF text </A>`	Caption, Index, and WindowID are not selectable through the user interface.
`HtmlList`	Selectable through the user interface.
`HtmlListBox`	Caption, Index, and WindowID are not selectable through the user interface.
`HtmlMarquee`	Caption, Index, and WindowID are not selectable through the user interface.
`HtmlMeta`	Caption, Index, and WindowID are not selectable through the user interface.

Class	Rule
HtmlPopupList	Caption, Index, and WindowID are not selectable through the user interface.
HtmlPushButton <INPUT type=image SRC>	Caption, Index, and WindowID are not selectable through the user interface.
HtmlPushButton <INPUT type=[reset,submit] SRC><BUTTON>	Caption, Index, and WindowID are not selectable through the user interface.
HtmlRadioList	Caption, Index, and WindowID are not selectable through the user interface.
HtmlTable	Selectable through the user interface.
HtmlText	Selectable through the user interface.
HtmlTextField	Caption, Index, and WindowID are not selectable through the user interface.
XMLNode	Selectable through the user interface.

HTML Object Recognition

The following table lists the rules for mapping 4Test objects to HTML objects. For additional information about the attribute tags of HTML objects, refer to the *Silk Test Classic Help*.

4Test Class	HTML Tag
HtmlCheckBox	<input type=checkbox>
HtmlColumn	<th>,<td> is column if the <td> is in the first row and there is no <th>
HtmlForm	<form>
HtmlHeading	<h1> <h2> <h3> <h4> <h5> <h6> <th>
HtmlHidden	<input type=hidden>
HtmlImage	<img>
HtmlLink-text	<a href=...><area>
HtmlList	<dl> <dir> <menu>

4Test Class	HTML Tag
HtmlListBox	<select size=1>
HtmlMeta	<meta>
HtmlPopupList	<select size= > if size is larger than 1
HtmlPushButton	<button> <input type=button> <input type=file> <input type=image> <input type=reset> <input type=submit>
HtmlRadioList	<input type=radio>
HtmlTable	<table>
HtmlText	<a> without <href> <abbr> <acronym> <b> <bdo> <big> <blockquote> <center> <cite> <code> <dd> <dfn> <div> <dt> <em> <font> <kbd> <l> <label> <left> <legend> <nobr> <p> <pre> <q> <right> <s> <samp> <small> <span> <strike> <strong>

4Test Class	HTML Tag
	• \<sub\> • \<sup\> • \<tt\> • \<u\> • \<var\> • \<xmp\>
HtmlTextField	• \<input type=file\> • \<input type=password\> • \<input type=text\> • \<textarea\>
XMLNode	

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