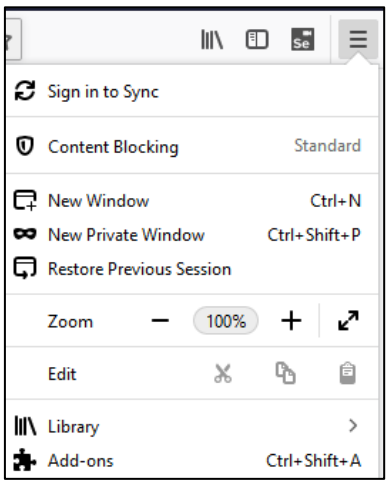
UECS2354 Software Testing
Lab 09: Introduction to Selenium

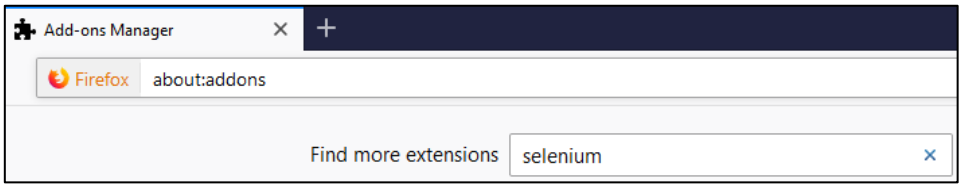
Selenium IDE allows testers and developers to record their actions based on the workflow so that the actions can be repeated.

Setup – Firefox Quantum 66.0.1

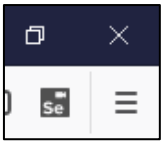
1. Click on the menu button on the top-right corner. Then click on **Add-ons**.



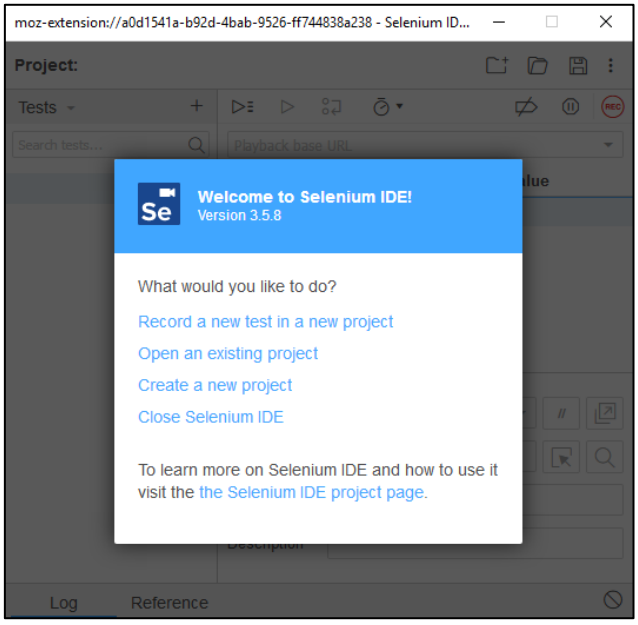
2. Search for **selenium**.



3. Add **Selenium IDE** to Firefox. A button should be added next to the menu button.



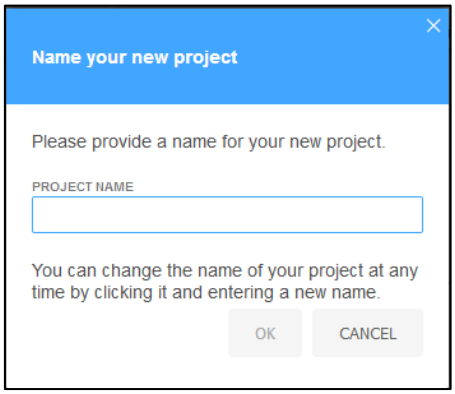
4. Click the Selenium IDE button to launch it. We can choose to record the actions we perform and we can replay it in a later time. That means we can automate the execution of the actions.



5. Selenium is also available in Google Chrome.

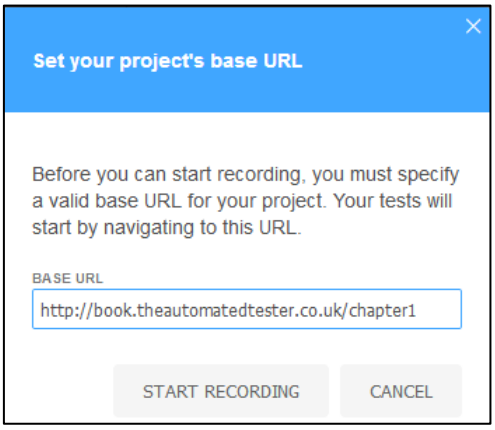
Try It

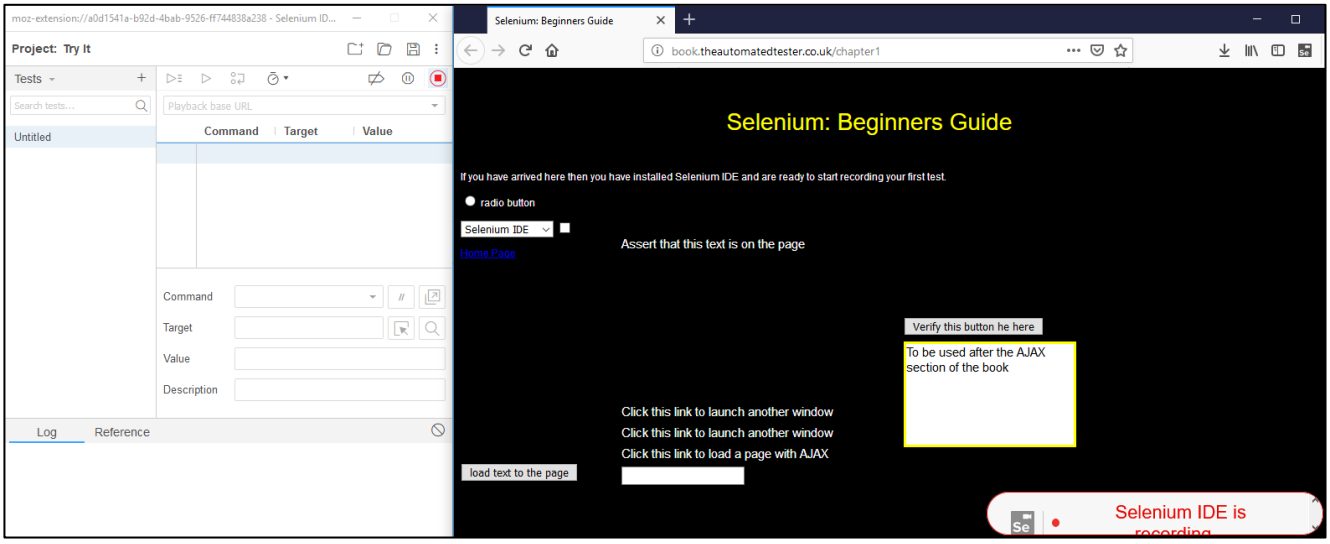
1. Select **Record a new test in a new project**. Enter a name for the project.



2. Enter the base URL. Use the following URL and click on **Start Recording**.

   http://book.theautomatedtester.co.uk/chapter1



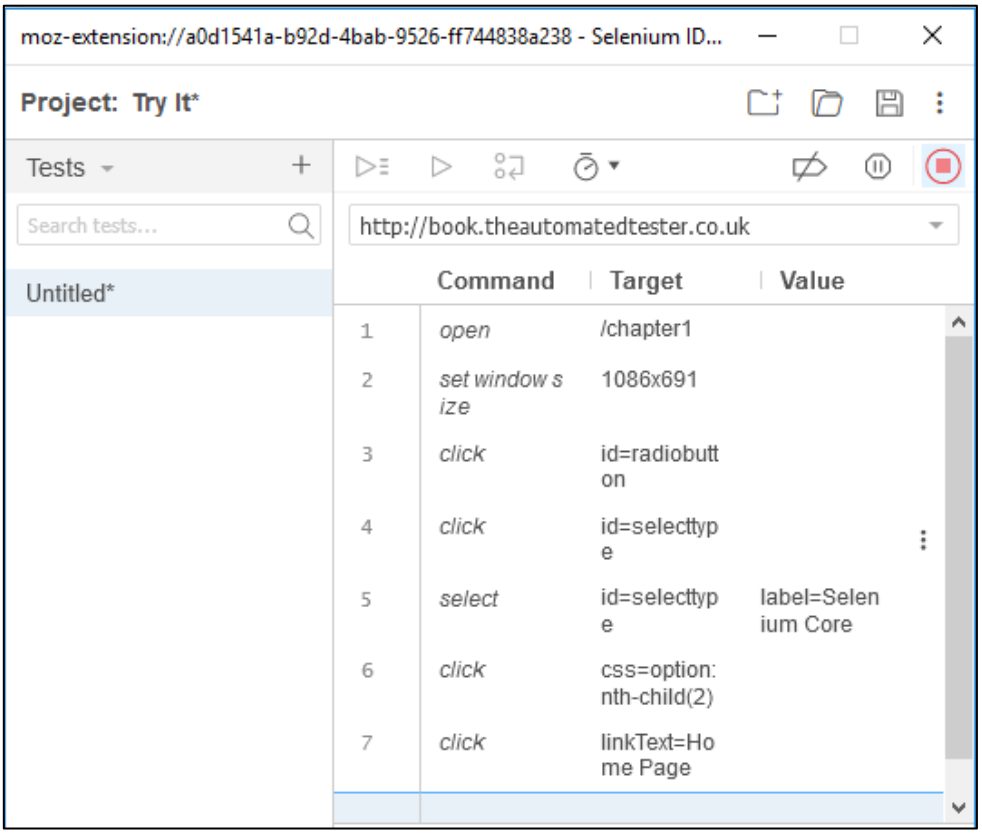


3. Click the **radio button** on the page.

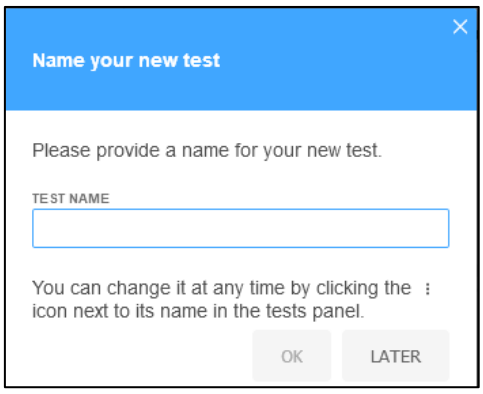
4. Select a value from the **drop-down list**.

5. Click on the **Home Page** link.

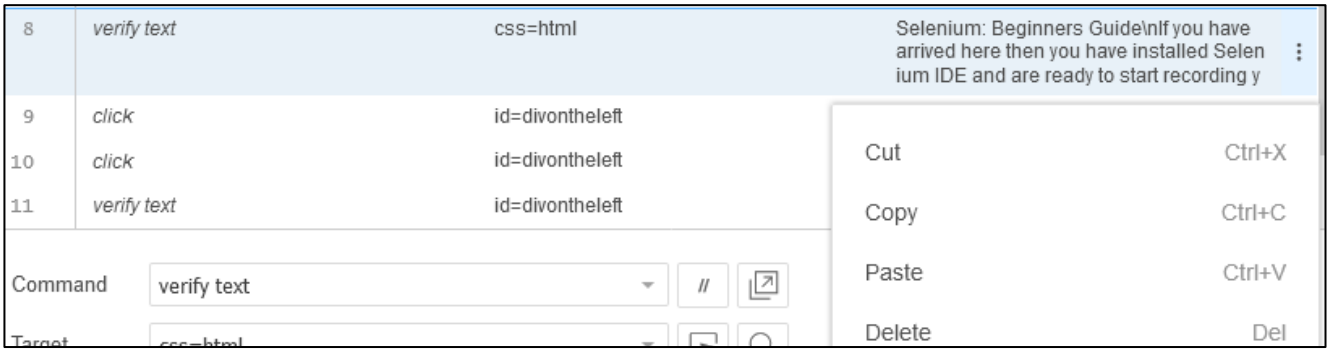
6. Notice that the 3 actions that we performed have been recorded.



7. Click on the **Stop** button on the top-right corner to stop the recording. Give a name to the test.



8. Click on the **Save** button to save the project.
9. We can choose to run all recorded tests or current test .
10. Play current test and observe the actions. If it is too fast, we can adjust the execution speed .
11. It is possible to delete recorded actions. Click on the icon for options.

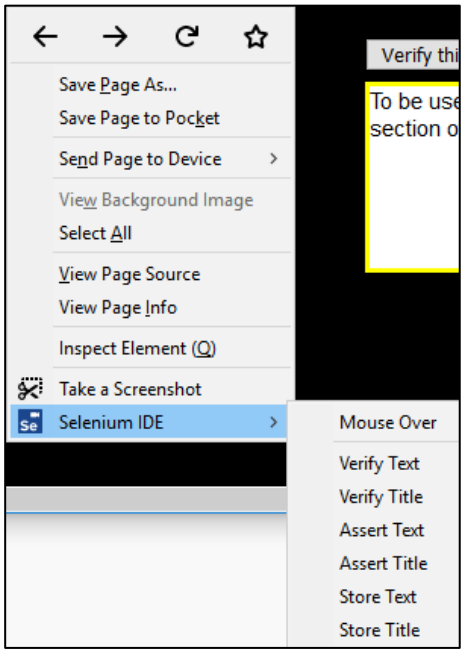


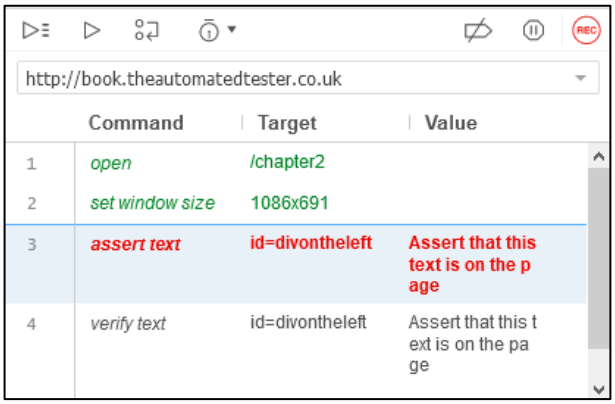
Verify Components

1. Selenium also allows us to validate the existance of certain components on the page by using **assert** or **verify**.

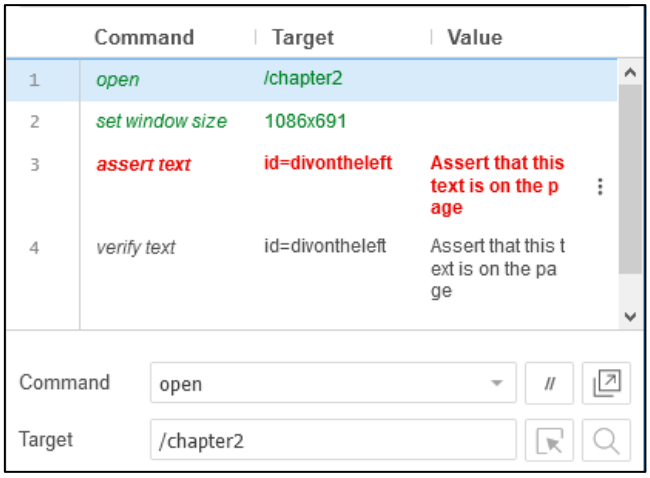
2. Using the same URL, start the recording.

3. Right-click on the text **Assert that this text in on the page** and choose **Assert Text**. Notice that the **assert text** has been recorded. If the text doesn't exist on the page, the test will fail and the execution will stop.

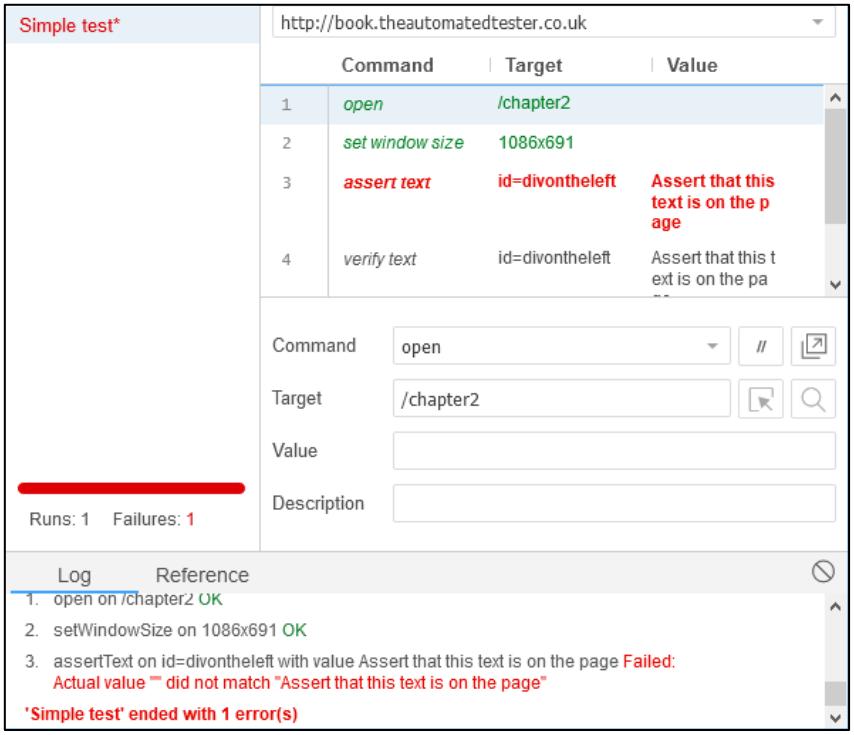




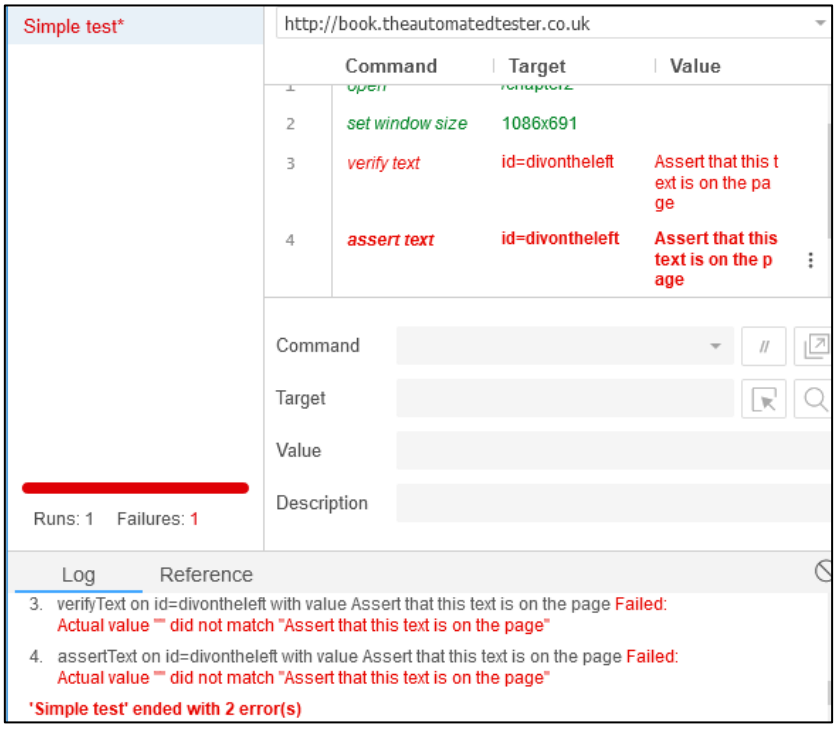
4. Change the **Target** for the **open** command.



5. Remove other actions (click radio button, select from list and click on homepage link) or move the assert text to the top (click on the action and drag to reposition the action in the list).
6. Run the test. The **assert text** command should fail.

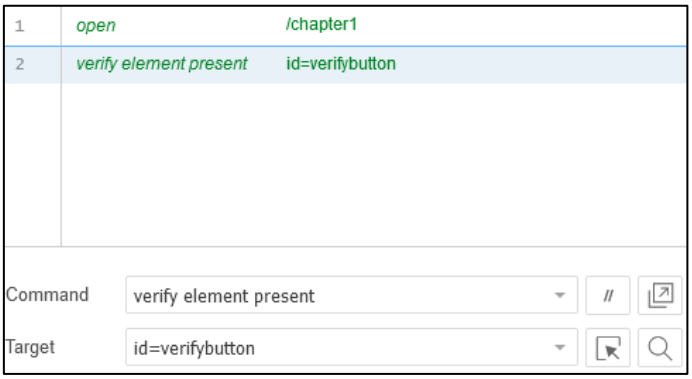


7. Right-click on the text **Assert that this text in on the page** and choose **Verify Text**. Move the verify text action to the top of assert text action and run the test. Notice that when **Verify Text** fails, the test continues to execute.



8. We can add commands other than the verify, assert commands in the right-click menu. For example, to verify the existence of an element, we use the **verify element present** command. We can choose the command from the drop-down list.

9. Next, we need to specify the target element, click on  to select the button **Verify this button be here**.

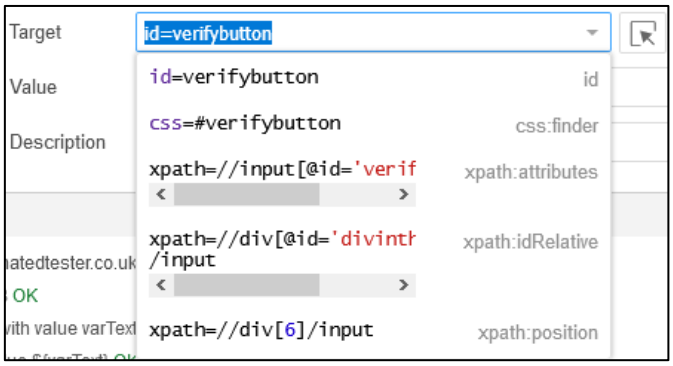


10. Run the test case and it should be passed.

11. When **verify** command is used in the test case, the IDE will throw an Error if the component is not found, and then continue with the rest of the test. However, if **assert** command is used, the test will not continue if item is not found.

Multiple Locators

Selenium IDE will store multiple locators for an element (in Target) which is useful during the playback to the test. If one locator fails, the others will be tried until one is successful.



To see information about an element, right-click on the element and choose **Inspect Element**.

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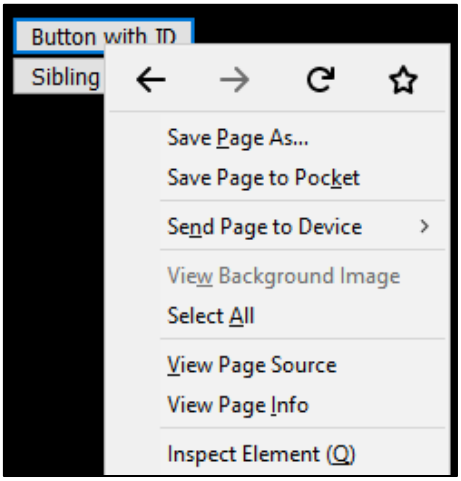
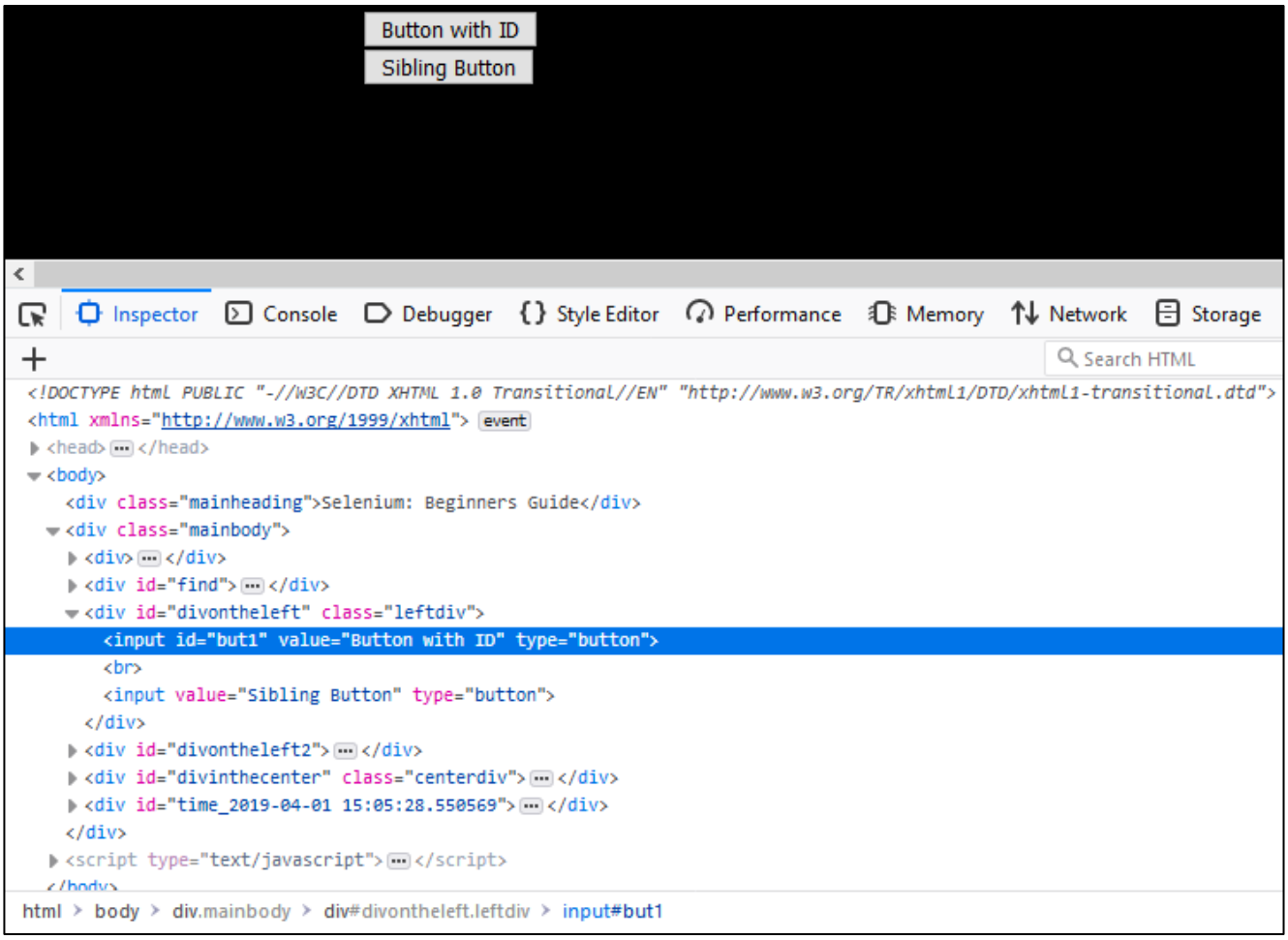
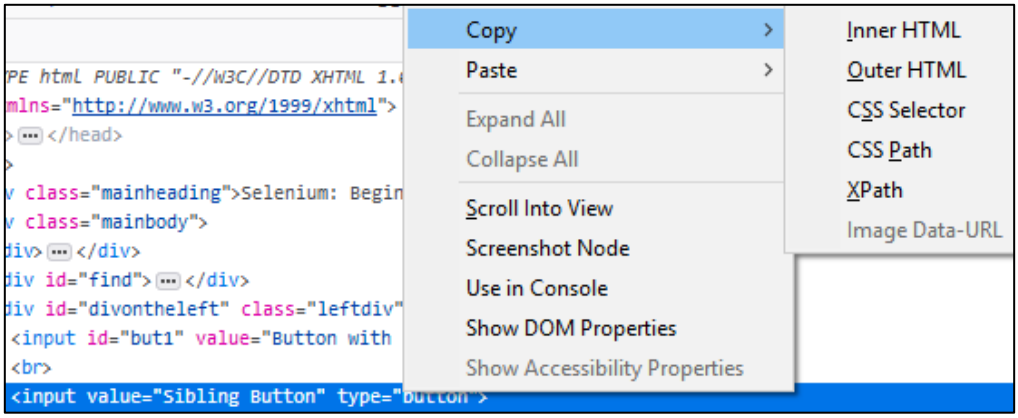




CSS Selector, XPath and other locators for the element can be copied by right-click on the source and choose the appropriate option.



For a complete CSS Selector reference, you may refer to following or other resources.

https://www.w3schools.com/cssref/css_selectors.asp

In general, XPath has the following syntax:

xpath=//tagname[@attribute='value']

where

//	Current node
tagname	Node's tagname (e.g. div, input)
@	Select attribute
Attribute	Attribute name
Value	Attribute value

Example: xpath=//input[@value='Sibling Button']

Test on Multiple Windows

Web application might create a new pop-up windows, the testing might involve multiple windows.

1. Create a new test, set the URL to http://book.theautomatedtester.co.uk/chapter1 and start recording.

2. Click any of the [**Click this link to launch another window**] and a small window will appear. The browser might block the pop-up. Allow the pop-up window manually.

3. In the pop-up window, **verify** [Text within the pop up window].

4. Close the pop-up window.

5. Verify [**Assert that this text in on the page**]. The Selenium IDE should look like the following screenshot.

1	*open*	http://book.theautomatedtester.co.uk/chapter1	
2	*set window size*	998x752	
3	*click*	id=multiplewindow	
4	*store window handle*	root	
5	*select window*	handle=${win7584}	
6	*verify text*	id=popuptext	Text within the pop up window
7	*close*		
8	*select window*	handle=${root}	
9	*verify text*	id=divontheleft	Assert that this text is on the page
10	*close*		

6. Before the pop-up window is selected by the command ***select window***, the parent window is stored by the ***store window handle*** command.

7. When the pop-up window is closed, it will return to the parent window, done by the ***select window*** command with target **handle=$(root)**.

Now Try This:

1. Create a new test, set the URL to http://book.theautomatedtester.co.uk/chapter1 and start recording.
2. Click the first [**Click this link to launch another window**]. **Verify** [Text within the pop up window] in the pop-up window.
3. Back to the parent window (http://...../chapter1) and click the second [**Click this link to launch another window**]. **Assert** [Text within the pop up window] in the pop-up window.
4. Close the first pop-up window by clicking the close button.
5. Close the second pop-up window.
6. **Verify** an element / text in the parent window and stop recording.
7. Run the test and observe the actions.

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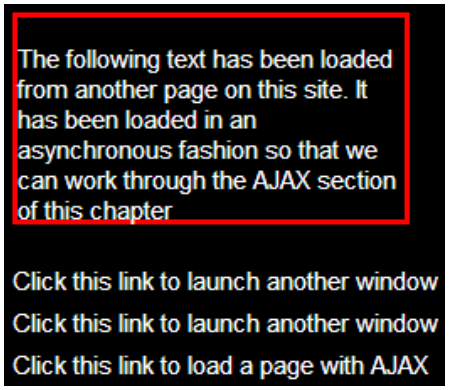
AJAX

1. Create a new test, set the URL to http://book.theautomatedtester.co.uk/chapter1 and start recording.

2. Click on [Click this link to load a page with AJAX]. The page should be filled with some texts as the diagram below.

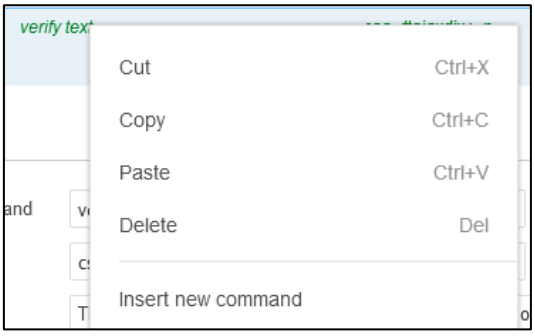


3. Verify the text [The following text….] and stop recording.

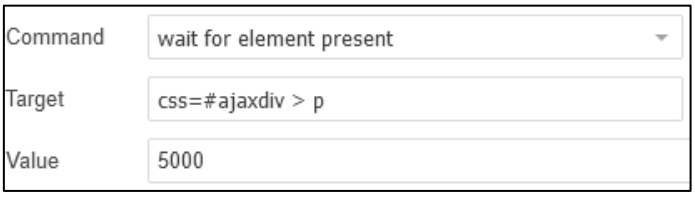
4. Run the recorded test.

5. If the test failed at ***verify text*** (in older Selenium IDE), it means the component contains the text is not loaded yet. New Selenium will wait automatically.

6. In order to wait for a component to be loaded / ready, we need to insert a command before ***verify text***. Right-click on ***verify text*** and choose [Insert new command].



7. Choose [**wait for element present**] from the command dropdown list.



8. As for the **Target**, use the same target in ***verify text***.

9. **Value** is the timeout duration in millisecond.

10. The command list in the test should be similar to the following diagram.

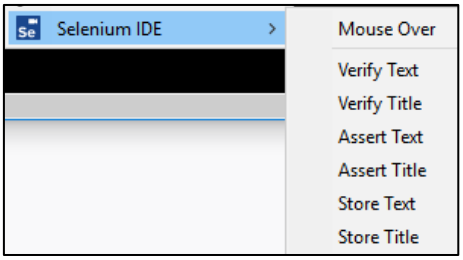
	Command	Target	Value
1	*open*	http://book.theautomatedtester.co.uk/chapter1	
2 //	*set window size*	998x753	
3	*click*	id=loadajax	
4	*wait for element present*	css=#ajaxdiv > p	5000
5	*verify text*	css=#ajaxdiv > p	The following text has been loaded from another page on this site. It has been loaded in an asynchronous fashion so tha

Stored Value for Later Use

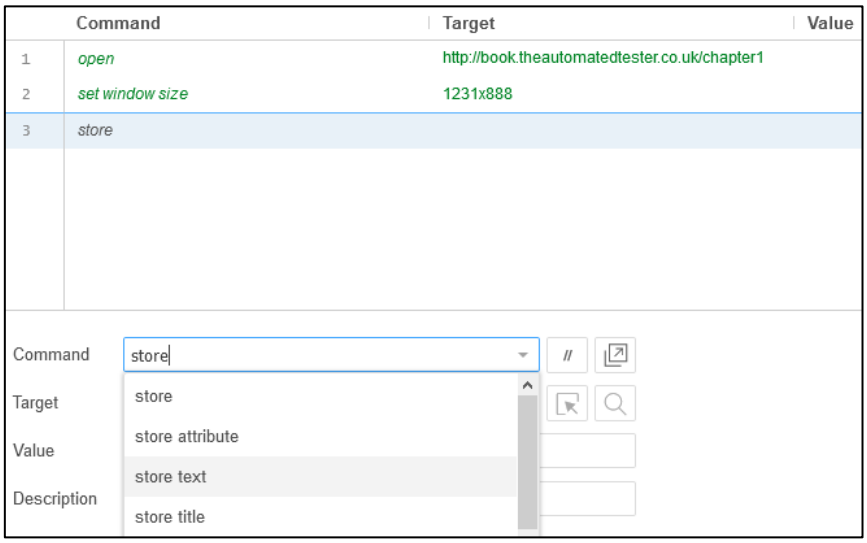
1. Value from a page can be stored for later use.

2. Create a new test, set the URL to http://book.theautomatedtester.co.uk/chapter1 and start recording.

3. Right-click on the text [**Assert that this text in on the page**] and choose **Store Text**.

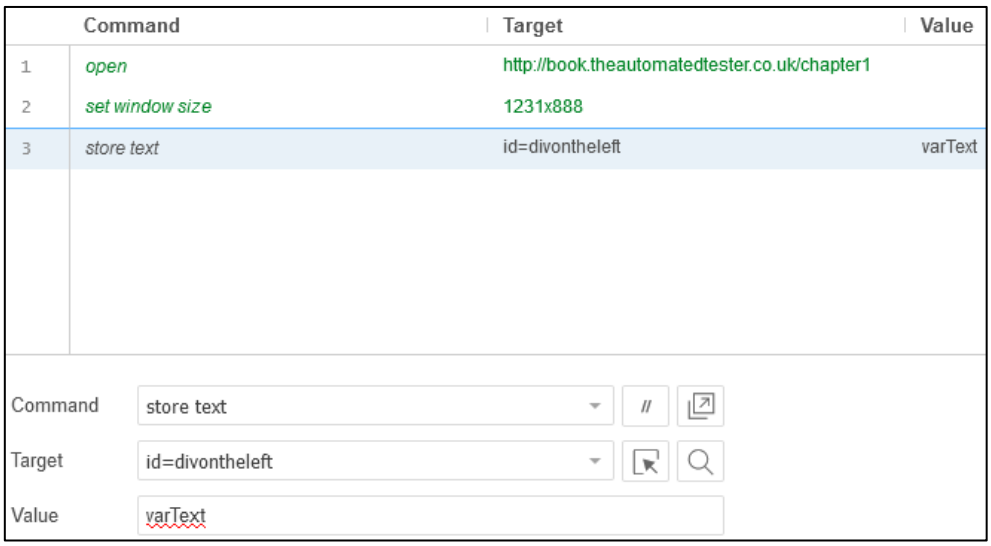


4. If Step 3 doesn't work, click on a blank line to enter a new command. Enter **store text** in the command input box or choose from the drop-down list.

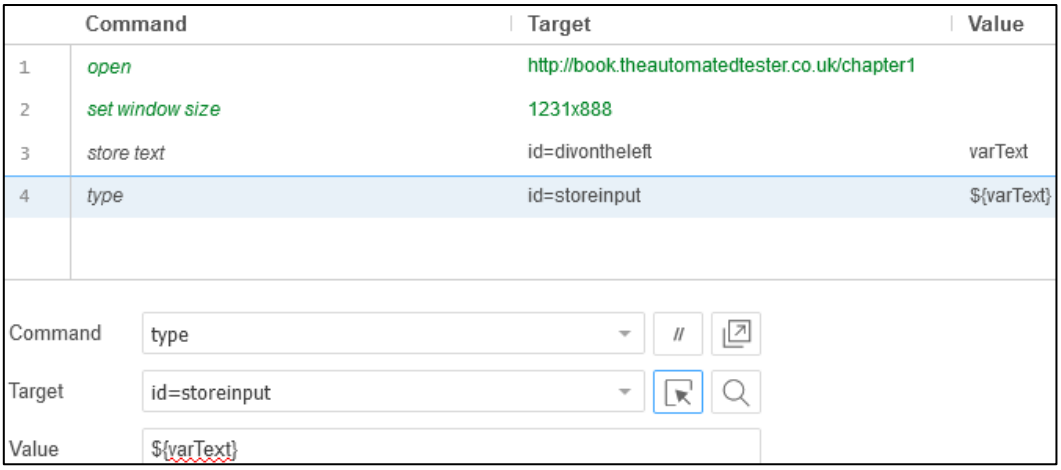


5. Select the target text to be stored. Click on the button. Click on the text [**Assert that this text in on the page**].

6. Enter the variable name in the **Value** textbox, which can be accessed later by ${*variable_name*}.



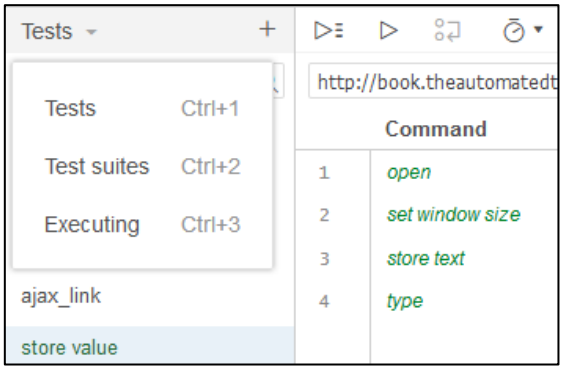
7. To write the stored value to a target, use the **type** command. Click the button to select the target. Example, the textbox under the [Click this link to load a page with AJAX].

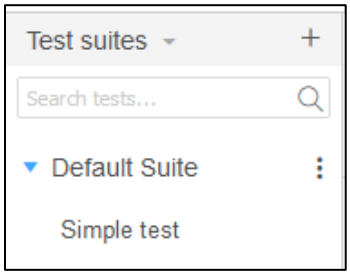


8. Run the test and observe the actions.

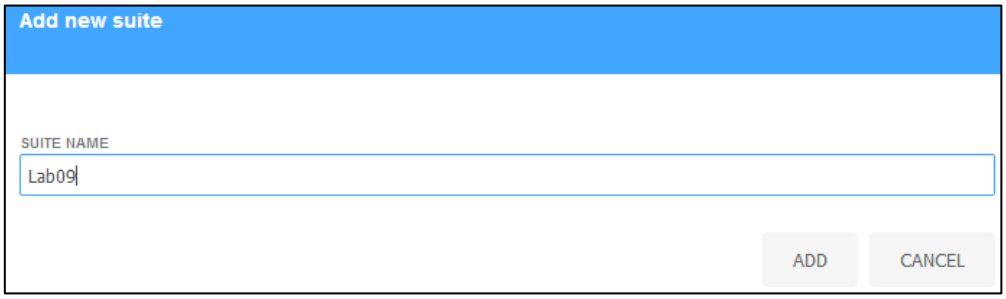
Combine all Tests in a Test Suite

1. All the tests create are listed in the left panel. In order to switch to test suite, click on [Tests] on top of the panel and choose [Test Suite] or press **Ctrl+2**.

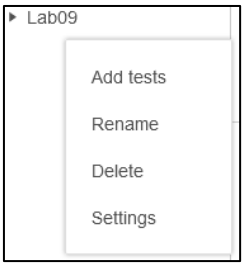


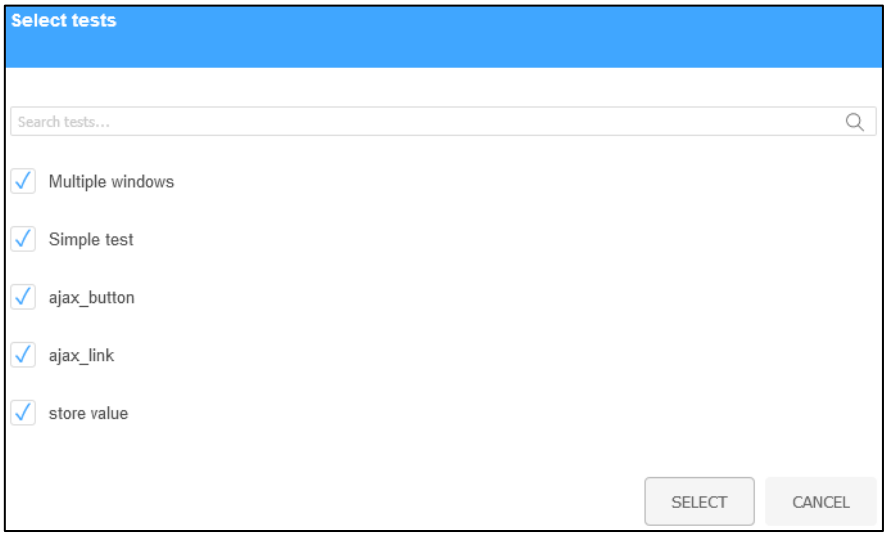


2. Click on the + button to add a new test suite.



3. Click on the ⋮ button next to test suite to add tests to the suite.





Exercise

Try to repeat all the above in Google Chrome.