

# Browser automation DSL Specification

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### I. DSL specifications

Executing actions in a browser to a specific URL	<pre>browser firefox {     //actions }</pre>
Executing actions in multiple browsers	<pre>browser firefox chrome {     //actions }</pre>
Associate DOM elements found by name or id with a variable	<pre>byName "searchbar" &gt; searchBar byId "results" &gt; googleResults</pre>
Executing tasks for each listed DOM elements, on DOM element or on the browser	<pre>searchBar googleResults {     //actions }</pre>
Executing actions on the first element associated with the variable	<pre>searchBar:<b>first</b> {     //actions }</pre>
Executing some actions <b>on DOM element</b>	<pre>fill "potato" click verify "hello"</pre>
Executing some actions <b>on the browser</b>	<pre>wait 3000 go "https://google.com"</pre>

## II. DSL examples

### Example 1 - Google research on firefox and edge

```
browser firefox edge {  
    go "https://google.com"  
    byName "search-bar" > searchBar  
    byId "validate-button" > validateButton  
  
    searchBar:first {  
        fill "potato"  
    }  
  
    validateButton {  
        click  
    }  
  
    wait 3000  
    byName "results" > googleResults  
  
    googleResults:first {  
        verify "https://fr.wikipedia.org/wiki/Potato"  
    }  
}
```

### III. Textual concrete syntax with XText

```
1 grammar org.browser.automation.Bro with org.eclipse.xtext.common.Terminals
2
3 generate bro "http://www.browser.org/automation/Bro"
4
5 BrowserFlow:
6     {BrowserFlow} 'browser' browsers+=Browser+ '{' browserActions+=BrowserAction*'}'
7 ;
8
9 Instanciation:
10     ('byName' | 'byId') STRING '>' variable=ID
11 ;
12
13 BrowserAction:
14     Instanciation | DOMFlow | Go | Wait
15 ;
16
17 DOMFlow:
18     variables+=Variable+ '{' domActions+=DOMAction* '}'
19 ;
20
21 DOMAction:
22     BrowserAction | DOMActionWithStringArg | DOMActionWithNoArg
23 ;
24
25 DOMActionWithStringArg:
26     ('fill' | 'verify') STRING
27 ;
28
29 DOMActionWithNoArg:
30     'click'
31 ;
32
33 Go:
34     'go' STRING
35 ;
36
37 Wait:
38     'wait' INT
39 ;
40
41 Browser:
42     'chrome' | 'edge' | 'firefox' | 'opera' | 'safari'
43 ;
44
45 Variable:
46     ID(':first')?
47 ;
```