Web Browser Automation
With Selenium IDE

By Andrew Weidner

University of North Texas Libraries
Digital Projects Unit Tech Talk
March 28, 2012
1 Selenium IDE Basics
2 Digital Projects: Use Cases
3 Resources
4 Demonstration
Selenium IDE Basics

OR

What It Is and How It Works
"Any tool should be useful in the expected way, but a truly great tool lends itself to uses you never expected."

Eric Steven Raymond
*The Cathedral And The Bazaar*
Firefox Plugin
designed for debugging Web applications
automates complex clickstreams

Any Operating System
running Firefox 3 or later

Current Version: 1.7.2
Selenium GUI
Selenium GUI

Integrated Development Environment
Selenium GUI

Integrated Development Environment

- create
- debug
- run
Selenium GUI

Integrated Development Environment

- create
- debug
- run

HTML Scripts aka Test Cases
Controls

- Speed Slider
- Play Buttons
- Record Button
Selenium Window Elements

open(url)
Arguments:
- url - the URL to open; may be relative or absolute
Opens an URL in the test frame. This accepts both relative and absolute URLs. The "open" command waits for the page to load before proceeding, i.e. the "AndWait" suffix is implicit.
Note: The URL must be on the same domain as the runner HTML due to security restrictions in the browser (Same Origin Policy). If you need to open an URL on another domain, use the Selenium Server to start a new browser session on that domain.
Selenium Window Elements

Script File Name

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Selenium Edit Interface

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Script Components

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1. Commands (Browser Actions)
2. Targets

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Script Components

1. Commands
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Script Components

1. Commands (Browser Actions)
2. Targets (Page Objects)
3. Values

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Selenium Edit Interface

Script Components

1. Commands
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3. Values
   (Menus, Text)
Selenium Edit Interface

Script Components

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Command Syntax

| Command | Target | Value |

Wikipedia Search Script
### Command Syntax

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### Wikipedia Search Script

| open | http://www.wikipedia.org | |
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<td>//div[@id='p-search']/form/fieldset/input</td>
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<tr>
<td>clickAndWait</td>
<td>name=go</td>
<td></td>
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Command Syntax

| Command | Target | Value |

Wikipedia Search Script

```
Wikipedia
open http://www.wikipedia.org

type //div[@id='p-search']/form/fieldset/input

clickAndWait name=go
```

Texas
Selenium GUI Questions ?
Digital Projects: Use Cases

OR

Automated Metadata Editing
"If you have the right attitude, interesting problems will find you."

Eric Steven Raymond
The Cathedral And The Bazaar
Types of Tasks

1. Interface Focus

2. Administrative Automation

3. Full Automation
Interface Focus

Dashboard Housekeeping

less visual clutter = easier to focus
Interface Focus
Interface Focus

| click | id=item-title | |
|       | id=item-date | |
|       | id=item-description | |
|       | id=item-coverage | |
|       | id=item-note | |
Dashboard Databot

less repetitive data entry = improved concentration
Base Realignment And Closure (BRAC) Commission

10,000+ Objects

Incorrect Titles & Dates
Sub-standard Descriptions
Add Value with Subjects & Coverage
### Title

**The name given to the resource**

<table>
<thead>
<tr>
<th>title:</th>
<th>Title value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Title</td>
<td>Memorandum of Meeting - 8/5/05 - BRAC Recommendation # 129, Co-locate Misc Army Leased and National Guard Headquait</td>
</tr>
<tr>
<td>Series Title</td>
<td>2005 BRAC Commission</td>
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**Administrative Automation**
### Title

**Main Title**

- Memorandum of Meeting

**Series Title**

- 2005 BRAC Commission

**Added Title**

- Memorandum of Meeting – 8/5/05 – BRAC Recommendation # 129, Co-locate Misc Army Leased and National Guard Headquar
<table>
<thead>
<tr>
<th>click</th>
<th>css=image[alt=&quot;add&quot;]</th>
</tr>
</thead>
<tbody>
<tr>
<td>select</td>
<td>//div[@id='main']/div/div[4]/div/select</td>
</tr>
<tr>
<td>storeValue</td>
<td>//div[@id='main']/div/div[2]/div/input</td>
</tr>
<tr>
<td>type</td>
<td>//div[@id='main']/div/div[4]/div/input</td>
</tr>
<tr>
<td>type</td>
<td>//div[@id='main']/div/div[2]/div/input</td>
</tr>
<tr>
<td>setCursorPosition</td>
<td>//div[@id='main']/div/div[2]/div/input</td>
</tr>
</tbody>
</table>
Full Automation

Dashboard Cruise Control

automated editing = improved accuracy

automated editing = more time for __________
Congressional Research Service (CRS) Reports

10,000+ Objects

>5,000 did not have Creation Dates

Creation Date was present in the Identifier
### Full Automation

<table>
<thead>
<tr>
<th>Identifier</th>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRS Report Number</td>
<td></td>
<td>RL31785</td>
</tr>
<tr>
<td>Accession or Local Control No</td>
<td></td>
<td>RL31785 2005-05-26</td>
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Full Automation
Full Automation
The last two commands Publish the record & Close the tab. The next script in the suite runs on the next tab until there are either no more scripts or no more tabs.
Quality Control Commands

assertValue: tests the value of menu / text input
(supports regular expressions for text)

assertElementPresent: tests for presence of object

assertElementNotPresent: tests for non-presence of object
Resources

OR

Selenium for Fun and Profit
DPU Wiki
  Other HowTos > Install and Use Selenium

Selenium Documentation
  http://seleniumhq.org/docs/02_selenium_ide.html

Google Groups
  Selenium Users & Selenium Developers

Selenium in the Cloud
  http://saucelabs.com/
Useful Firefox Plugins

Firebug: dynamically view page source for debugging
Power Debugger: adds a “Pause On Fail” button
Highlight Elements: highlights elements during test runs
Favorites: opens and executes favorite scripts & suites
Linky: opens multiple links for batch processing

Further Inquiry

Selenium WebDriver/Server/Grid: set of tools for running tests across multiple machines & operating systems. Supports other browsers & programming languages.
Questions ?
Demonstration

UNT Libraries Toolkit

Portal To Texas History Slideshow