



Watir Demo For Inaugural Meeting of CRUSERS (Calgary Ruby Users)

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Using Ruby and Watir to Automate Web Testing

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Outline



1. Introduction To Ruby
2. Watir and its World
3. Demo
4. Why use Ruby/Watir
5. Other tools
6. More Info
7. Questions



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What is Ruby?



- Full featured Object Oriented scripting language
- Interpreted rather than compiled
 - Perl, VBScript
- **Written by Matz, (Yukihiro Matsumoto)**
 - Started in 1994
- **Written in C**
 - will work on any platform that has a C compiler:
 - Windows
 - Linux
 - MS-DOS
 - Play Station ?

Ruby Programming



- Ruby programs are text files
 - Use tools like cvs, grep
- Use any text editor
 - Windows installer includes SciTE editor
 - Notepad
 - Eclipse (RDT Plugin)
 - Emacs
- Ruby Interactive Shell (irb) allows commands to be typed in directly
 - Like Python, TCL, and Groovy

Ruby Libraries



Existing libraries include:

- Network access, ftp, http, SMTP, POP
- Rdoc (equivalent to javadoc)
- Test::Unit (equivalent to junit)
- database connectivity
- Graphics FOX, TK
- XML, YAML, ZIP, Gmail

RAA (Ruby Application Archive) lists 1382 projects

Rails



- Rails Is Probably The Best Known Ruby Application
- “..open source web framework thats optimized for programmer happiness and sustainable productivity...”
- <http://www.rubyonrails.org/>
- See also
 - <http://www.basecamphq.com/>
 - <http://www.odeo.com/>

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What Does WATIR mean?



- Web
- Application
- Testing
- In
- Ruby

What Is WATIR?



- A library for testing web applications
- BSD Open Source License
- Written by Bret Pettichord and Paul Rogers, and a long list of contributors

What WATIR is Not



- **Watir is not a record/playback tool**
 - Although several recorders exist: WatirMaker, Watir WebRecorder
- **Watir is not a link checker**
 - But you could easily write one
- **Watir is not a test case management tool**
 - But you could use ruby to write one
- **Cant be used for testing Flash, Applets**

How Does Watir Work



- Uses the COM interface of Internet Explorer (IE)
 - also known as ActiveX or OLE
- Allows an external program to control IE
 - Similar interfaces exist for Word, Excel, PowerPoint and Outlook
- Full access to the contents of an HTML page
- Provides different ways to access objects

The DOM



- DOM - Document Object Model
- Interface for programmatically accessing and manipulating the dynamic content contents of a web page
- Methods exist to allow
 - Retrieval
 - Setting
 - Adding, and
 - Removal of objects
- Allows interaction with events
 - capture and respond to user or browser actions.



Accessing an HTML Button

HTML

```
<input type = button name = 'button1'  
  id = 'b_1' value = 'Click Me' >
```

Watir would access this button using

- `ie.button(:id , 'b_1')`
- `ie.button(:name , 'button1')`
- `ie.button(:value , 'Click Me')`
- `ie.button(:index , 1)`

We have the Button - Now What?



- **Click It**

```
ie.button(:id, 'b_1').click
```

- **See if it exists**

```
ie.button(:id, 'b_1').exists?
```

- **Is it Enabled**

```
ie.button(:id, 'b_1').enabled?
```

- **Give it focus**

```
ie.button(:id, 'b_1').focus
```

Watir Supported Elements



- Button
- Radio
- CheckBox
- TextField
 - TextArea and password
- Hidden
- SelectList
- FileFields
- Forms
- Label
- Span
- Div
- P
- Link
- Table - TR TD TH
- Image
- Frames
 - includes Iframes
- Javascript popups
 - in various ways
- New Window popups

Typical Methods



These methods can be used on most elements:

- name
- id
- to_s
- class_name
- enabled?
- disabled?
- click
- flash
- exists?
- focus
- html

Element Specific Methods



- **Select List**
 - select(regexp|string)
 - select_value(value)
- **Radio Buttons**
 - checked?
- **Images**
 - src
 - width
 - height
- **Links**
 - src (if the link is composed of an image)
 - href
 - text

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Demo 1



Login test

(unit test framework)

Demo 2



Dynamic HTML

Demo 3 - AJAX



- Asynchronous java-script + XML.
- Collection of standard web technologies
- Provide a more seamless experience for web application users when combined
- Mechanism for the client (through java-script)
 - to send information to the server
 - to receive a response as XML.
- **Response XML**
 - Can be processed in the background
 - Can be used to dynamically update elements without a page refresh
- Information flows, and screens are updated
- Looks more like in desktop applications than old-fashioned web applications.

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Why Use Ruby / Watir?



- It is “free”
- Tests with a ‘real’ browser
- Numerous ways to access elements
- Ruby is a nice language to use
 - Perl is very cryptic
 - Java needs to be compiled
 - Vbscript – difficult to do includes
- More than functional testing (tool creation)
- Very active community behind Watir

Companies Using Watir



<http://wtr.rubyforge.org/wiki/wiki.pl?WatirUsers>

Company	Location
Presslogic Inc.	Calgary, AB
Honeywell	Bangalore, India
Google Maps	Bay Area
Atomic Object	Grand Rapids, Michigan
Lockheed Martin Information Technology	Richland, WA

What People Say about Watir



- <http://wtr.rubyforge.org/wiki/wiki.pl?WatirTestimonials>
- “Watir is the most compelling alternative for filling the automated acceptance testing need.” – Ward Cunningham
- Already WATIR outperforms QuickTest in many areas.
- In my opinion, WATIR has no peer as a framework to drive functional test automation in Internet Explorer – Chris McMahon

What People Say about Watir



- "I wanted to run around my office dancing and celebrating."
Beth Ferguson
- However, **watir BLEW MY FREAKIN MIND.**
...I can't overstate how much this application is going to change my life... ,
Unknown, 11 May 2005

Compare to Commercial Tools



- Cost – It is free
- Uses a real programming language
 - not proprietary vendor script
- Developers are able to write code for you
- Developers are more likely to want to help
- Integration with unit tests and other developer tools
- Mailing list provides support
- Features can be added easily
- We encourage contributions from the community

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Other Tools



- The tools we will talk about access IE in the same way as WATIR
- Many Other tools, such as httpUnit, that 'act' as a browser also exist
 - HttpUnit
 - jWebUnit
 - HtmlUnit
 - WWW:Mechanize (both Perl and ruby)

Other Tools



- **Perl**
 - Samie
 - <http://samie.sourceforge.net/>
 - Win32::IE::Mechanize
 - <http://search.cpan.org/~abeltje/Win32-IE-Mechanize/>
- **Java**
 - Jiffie
 - <http://jiffie.sourceforge.net/>
 - Avignon
 - <http://www.nolacom.com/avignon/index.asp>
- **Python**
 - Pamie
 - <http://pamie.sourceforge.net/>
- **.net**
 - InSite
 - Still Under development

Other Tools



- These don't apply to a particular language:
- **leUnit**
 - Also A Browser Driver
 - written by James Li in Calgary
 - <http://ieunit.sourceforge.net/>
- **Selenium**
 - A browser driver that works with IE, Mozilla, Safari
 - support for many languages:
 - .net
 - ruby
 - python
 - java
 - <http://selenium.thoughtworks.com/index.html>
 - Future integration with watir a possibility

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More Info



- StarEast, Florida.
- “Scripting For Testers”, Chris Mchon
<http://www.sqe.com/stareast/>
- Previously taught at:
 - Agile2004, Calgary
 - StarWest, 2004, Anaheim
 - StarEast, 2005, Orlando
 - Agile2005, Denver
 - StarWest, 2005, Anaheim

More Info



- The WATIR home page and mailing list
<http://www.watir.com>
- Email Paul: paul.rogers@shaw.ca
- Paul's web site: <http://www.paulrogers.ca>
- Better Software, April 2005,
 - “Watir Works” by Jonathan Kohl and Paul Rogers
- Ruby Home Page:
 - <http://www.ruby-lang.org>
- [comp.lang.ruby newsgroup](http://comp.lang.ruby.newsgroup)

Books on Ruby



- **Programming Ruby**
 - Dave Thomas
- **Ruby In a Nutshell**
 - Yukihiro Matsumoto
- **The Ruby Way**
 - Hal Fulton
- **Ruby Developers Guide**
 - Michael Neumann
- **Sams Teach Yourself Ruby in 21 Days**
 - Mark Slagell
- **Agile Web Development with Rails**
 - Dave Thomas et al

Questions???



- Is it Only Internet Explorer that's Supported?
 - Right now, yes!
- What about Firefox, Mozilla, Opera, Safari?
 - 4 ways to get Mozilla support
 - Selenium
 - JSSH
 - Gtk::MozEmbed
 - Mozilla ActiveX Control
- Other Questions?



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