

Improving SWAT/UI Test Reliability and Efficiency

Who am I

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Goals For This Session

- Attendees will leave with ideas on how to improve the reliability and efficiency of tests, as well as improve overall quality.

Outline

- Sleeps are like Sugar
- The Test Length Sweet Spot
- Safely using innerHTML
- Hidden Dangers of AssertElementDoesNotExist
- Whats next...

Sleeps are like Sugar

- A little isn't bad, but a lot can make you see the doctor
- Dangers of the Sleep
 - The time you set for the sleep is always too slow or too long
 - The command will slow down a test suite
 - Just because the sleep was long enough today doesn't mean it will be tomorrow
- Benefits
 - Can make the test easier to track in development

Common sleep scenarios

- Common sleep scenarios:
 - An asynchronous event is happening on the page that takes longer than SWAT's default timeout
 - An event on the page is waiting for a SQL event (such as a save to finish)
 - A browser takes longer to load (and set its title bar) than SWATS default timeout

Alternatives to sleep

- **AssertElementExistsWithTimeout**
- **AssertDBRecordExistsWithTimeout**
- **AssertBrowserExists**

AssertElementExistsWithTimeout

- Scenario
 - An asynchronous event is happening on the page that takes longer than SWAT's default timeout
- Usage
 - `|AssertElementExistsWithTimeout|IdentifierType|identifier|TimeoutLength|TagName|`
 - `|AssertElementExistsWithTimeout|Expression|id:pageHeader;innerHTML:My Employees|30000|Label|`
- Notes
 - Timeout is in milliseconds
 - A true "wait" command

AssertDBRecordExistsWithTimeout

- Scenario
 - An event on the page is waiting for a SQL event (such as a save to finish)
- Usage
 - |AssertDBRecordExistsWithTimeout|Query|TimeoutLength|
 - |AssertDBRecordExistsWithTimeout|select * from emppers where eepnamelast='longin'|30000|

- Notes
 - Passes when a **row** is found
 - Timeout is in milliseconds
- Creative uses
 - Check for multiple rows in a single SQL statement

```
SELECT *  
FROM (  
    SELECT CASE  
        when count(*) = 2 then 1 else 0 end as LonginCount  
    FROM Emppers  
    WHERE eepNameLast = 'Longin'  
    ) AS INNERSELECT  
WHERE LonginCount = 1
```

AssertBrowserExists

- Scenario
 - A browser takes longer to load (and set its title bar) then SWATS default timeout
- Usage
 - |AssertBrowserExists|browserTitle|timeOutLength|
 - |AssertBrowserExists|Standard Reports|60000|
- Notes
 - Timeout is in currently in seconds though with SWAT 2.16 this may change to milliseconds
 - Created to deal with Reports and Quick Tours
 - Known bug in 2.14, resolved in 2.15

The Test Length Sweet Spot

- “*more what you’d call ‘guidelines’ than actual rules*” – Captain Barbosa
- Shorter tests are easier to run and debug
- Example
 - Test Run = 10 Minutes
 - Bug Fix = 5 Minutes
 - Number of Bugs = 2
 - Worst Case Time To Fix = 40 minutes

Test Length con't

- Rule of thumb I use
 - 200 Assertions
 - 5 Minute Execution time
- Warnings:
 - Every test takes a few seconds to warm up
 - More tests mean more overhead in both maintenance and overall time
- Sometimes you need longer tests, but this is a good guideline to keep in mind

Safely Using InnerHTML

- Different browsers treat innerHTML differently
- Example:
 - IE 7
 - `<option value=fl selected>Florida</option>`
 - IE 8
 - `<option selected value=fl>Florida</option>`
 - FireFox
 - `<option value="fl" selected>Florida</option>`
 - Notice how fl sometimes has quotes and selected was moved around

InnerHTML (Continued)

- Ways to solve the problem
 - Use Parent Element
 - `|parentElement.id=csState;value=fl;selected=true|OPTION|`
 - Use Regular Expressions
 - `|innerHTML:Florida[\w\W]+Georgia[\w\W]+New Jersey|SELECT|`
 - Make good use of attributes
 - `|value=fl;innerHTML=Florida;selected=false|OPTION|`

AssertElementDoesNotExist

- Bad syntax or mistakes can lead to false positives
 - Example: Assert that the element below does not exist
 - `<option value="fl">Florida</option>`
 - Bad SWAT
 - Expression
 - `value=fi;innerHTML:Florida`
 - Notice I used fi instead of fl
 - This would cause a false positive

AssertElementDoesNotExist

- Its slow
 - Runs through the length of a timeout
 - Example
 - Timeout = 5 seconds
 - Command called 10 times in a test
 - Minimum test length = 50 seconds
- Does not mean you shouldn't use it, just that you should use it intelligently

Whats Next

- Next Presentation : Reintroduction to HTML:
Taking SWAT back to the beginning
- Upcoming SWAT features and Macros
 - Download and Verify Standard Reports
 - Pre-compile tests to look for syntax errors
 - Safari support on the Mac

Where to Get Help

- **Email**

- michael_longin@ultimatesoftware.com

- **Websites**

- <http://sourceforge.net/projects/ulti-swat/forums/forum/710558>
 - <http://ulti-swat.wikispaces.com/>
 - <http://devXero.wordpress.com>

Questions



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