Stacking The Automation Deck

Who Is This Guy?

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Where Is This Guy?

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Plan To Write Your Own Framework?

Don’t

At the very least, don’t start there
Stack The Deck
What’s A Framework?

“a skeletal, openwork, or structural frame” *
“A framework calls you” **

* Merriam-Webster
** Attribution unknown

What’s A Stack?

“an orderly pile or heap” *
Not the “classic” computer science definition

* Merriam-Webster
Why A Stack?

Why Not A Framework?
Conceptual Stack

- **Utilities**
  - **Raw Tools**
  - **Abstraction**
  - **Actions**
  - **Behaviors**
  - **Script**

**Reusable groups of actions**

**Domain-specific actions**

**Future-proofing and “help”**

**Reusable helpers**

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A Stack Example

**Scripts**

- TC400:
  - `login("ace", "passwd");`
  - ...

- TC2:
  - `login("gene", "passwd");`
  - `do_something();`

- TC1:
  - `login("peter", "passwd");`
  - `do_something();`
  - `do_something_else();`

**Behaviors**

**Actions**

- `login_link:`
  - `click();`

- `id_field = id;`

- `password_field = pw;`

- `ok_button.click();`

- `logout_link.should_exist();`

- `element = get_element.by_id("foo");`

- `return element;`

- `do_something();`

- `do_something_else();`

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**UH OH!**

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A Stack Example

**Less Maintenance!**
Telecom Company

Utilities
- Script
- Behaviors
- Actions
- Abstraction
- Raw Tools

Utilities
- Script (C++)
- “DSL”
- Test Services
- Test Head
- Proprietary APIs

Telecom Company – Automation Infrastructure (Partial)

User Terminal

Shared Workstation

Single-Board Computers

Proprietary Hardware

System Under Test

Script (C++)

“DSLs”

Test Services

Test Head

Proprietary APIs

Magenic Fast Forward

#STPCon

@pgrizzaffi
E-Commerce Organization – WebSpec

- Raw Tools
- Abstraction
- Actions
- Behaviors
- Script

- Utilities

- Finders
- WebSpec
- “DSL”
- Script (Ruby)

E-Commerce Organization – Selenium

- Raw Tools
- Abstraction
- Actions
- Behaviors
- Script

- Utilities

- Selenium Wrapper
- Selenium
- Finders
- “DSL”
- Script (Ruby)
SaaS Company

Utilities
- Script
- Behaviors
- Actions
- Abstraction
- Raw Tools

Magenic

Utilities
- Script
- Behaviors
- Actions
- Abstraction
- Raw Tools

SpecFlow
- Feature File
- Step File

Selenium
- Wrapper
- Web Service
- Appium

SpecFlow
- Feature File
- Step File

Script (C#/Java)
“DSL”

Models
Wrapper
Selenium
Web Service
Appium
Logging and Error Reports

Layers can make debugging a challenge
Higher layers may hide lower layers’ details
Each layer logs
Context-sensitive
Domain-appropriate

I Just Want To Buy A CD

FileName1, 49: Failed to add “Bark At The Moon” to the cart
FileName2, 107: Couldn’t find the “Add to cart” button when you tried to click it
FileName3, 55: WebElement with ID “flum-lmnop-697142112” could not be found
Outside Of Test Scripts

Script
Behaviors
Actions
Abstraction
Raw Tools

Order Pumper
Finders
Selenium Wrapper
Selenium

Random Link Clicker
Selenium Wrapper
Selenium
Experiences of Test Automation Stack

Testers write tests (in DSTL)

High-level Keywords
structured testware
Structured Scripts

Test Execution Tool runs scripts

easier to write automated tests ➤ widely used
Test Automator(s)
easier to maintain, and change tools ➤ long life

Beware!
Stewardship

What goes in which layer?
It matters and it doesn’t
What matters is that someone is overseeing

General Guidance

Script
Behaviors
Actions

Abstraction
Raw Tools

More Granular
Less Granular
Judicious Access
TL;DR
Stacks are portable – frameworks, non-traditional automation
Use software development idioms
Appropriate logging and error messages are critical
Stewardship required

Question Time!

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