Christopher R. Holmes, HCS Technology Group

Christopher Holmes is a Senior Engineer/ Technical Training Specialist for HCS Technology Group. While a relative newcomer to the industry he has been delivering high quality consulting and training to customers across the south for the last eight years. Christopher has the privilege of being an Apple Professional Service Provider, Apple Certified Trainer and served on the Apple Consultant Network Advisory Council.



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Personal, IT Workflow Automation

The art of repeatability





Agenda

- Automation Philosophy
- Personal Efficiency
- IT Automation
- Web automation
- Workflows



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Automation Philosophy





Why Automate?

People don't automate because they are lazy, but because they are EFFICIENT!

Manually managing hundreds/thousands of devices is tedious and prone to error

You may not write your own complicated automations from scratch, but it is CRITICAL that you understand them so you can tweak to your specific needs

It meets a need. It needs to run, so you don’t have to.

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Automating Mindset

Empower non-programmers to utilize developer tools to solve problems

- Obtain the correct mindset for developing automations while learning the the basics of tools that enable you to automate
  - Automator
  - AppleScript
  - Web automation
- Provide a foundation for learning automating techniques
  - future courses
  - on your own

Non-programmers may be

- programmers-of-the-future
- managers





Automating Mindset

Have you ever noticed that programmers seem to know MANY languages?

- This is (almost) unheard of in Human linguistics

Programming is a mindset

- Some have it naturally
- It is learnable
  - ...provided you can be organized!

Many programmers/scripters/automaters started out NOT with Computer Science but as

- Linguists
- Musicians

A programmer is worth his/her weight in gold

- ...and some charge that!
- But wouldn't you rather know what they know?

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Don’t Hulk out.

It takes patience.



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Making the Transition

A Car Mechanic:

- doesn't learn how to fix one car--learns how to fix "cars"
- applies that mindset to specific makes & models

A Musician

- doesn't memorize every song in a vacuum
  - Keys
  - Tunings

You can be a successful musician or car mechanic (or whatever) without memorizing EVERYTHING about cars or music

- Car mechanic doesn't need to know the physics of tires
- Musician doesn't need to know the physics of sound

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Think Like a Computer

Computers don't actually "think", they "process"

- Step-by-step sequential execution of statements
  - Same order as English reading: start at the top left, work your way to the right of a statement one character/word at a time, and then when one statement is done, execute the next statement
  - Flow Control constructs modify linear execution of statements
- Predictable decisions
  - Bad: "Do we have enough room in the car?"
  - Good: "If I need room for 7 passengers, and I can find out how many seats are available, is the number of seats available greater than or equal to 7?"
- Can't be vague

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Expectations

This session is designed to:

- Briefly present some basic concepts:
- Show some beyond-basic examples that you can take home with you

The focus will be on making sure you can automate independently

- Learn mindset
- Automate in multiple environments
- Read and understand documentation
  - because no programmer knows how to do EVERYTHING off the top of his/her head
  - Many “introductory” books aren’t as introductory as they need to be (they don’t teach mindset)
    - but are a GOLDMINE of info once you have the mindset

This is NOT a “dump demos and facts” presentation

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Expectation

You will NOT become automating experts here… But:

- You will have the basics you will need to do so
  - including knowing how and where to ask questions

Don’t all of you want to be empowered to automate?

- It’s within your reach
  - …unlike creating matter with your bare hands or levitating above traffic
- “Real programmers” (whatever that means) do NOT have everything memorized
  - “Be inspired”

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We work to live, we don’t live to work.

Less time doing repeatable actions means more time doing what you want.



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Personal Automation







WATCHMAN
MONITORING

Unattended error reporting.

I wasn’t paid to say this but make checks available to Christopher R. Holmes

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Back it up. Better yet let BB do it.

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Clipboard

- Keyboard Mistro
- Copy Clip
- iClipboard



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Keyboard Shortcuts

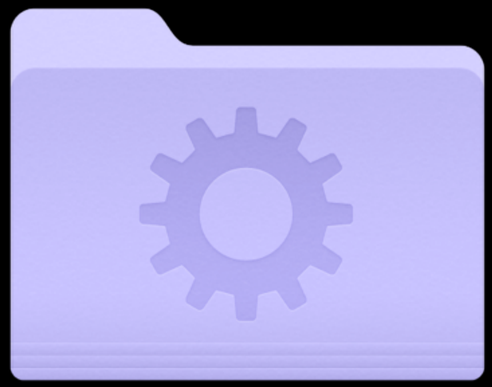
- “⌘A for Select All
- ⌘B for Bold
- ⌘C for Copy
- ⌘D for Duplicate
- ⌘F for Find
- ⌘I for Italic
- ⌘N for New
- ⌘O for Open
- ⌘P for Print
- ⌘Q for Quit
- ⌘S for Save
- ⌘U for Underline
- ⌘V for Paste
- ⌘W for Close
- ⌘Space Bar for Spotlight

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Click less: Automate Finder

- Tags
- Spotlight
- Tags
- Smart Search
- Hazel



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Type Less: Automate Text

- OS X Keyboard (System Preferences/ Keyboard/Text
- Textexpander
- Typinator



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IT Automation





IDE: Workflows, Scripts, Programs

Depending on the tools you use, you will be developing Workflows, Scripts, or Programs (or a combination) to turn your project plan into reality

- We will use the umbrella term **Automation**(s) with a capital A

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Typical OS X IDEs
Integrated Development Environment (IDE)

Safari/FireFox/Chrome

- Built-in:
  - Debugger
- NOT built-in
  - Text editor
  - Source code organizer
  - Documentation
- Automation Languages:
  - JavaScript
  - HTML
  - CSS (Cascading Style Sheets)
- Interpreted



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Typical OS X Integrated Development Environment (IDE)

Xcode

- Built-in:
  - Text editor
  - Source code organizer
  - Object code compiling/linking
  - Documentation
- Automation Languages:
  - AppleScript, Python, Ruby,
  - Objective-C, C, C++, Java
  - Interface Builder (pre-Xcode 4)
  - ...
- Compiled Projects
  - AppleScript
  - Cocoa
  - Carbon
  - Frameworks/Libraries, Kernel Extensions, Plug-ins
  - ...



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Typical Mac OS X IDEs

UNIX CLI

- Built-in:
  - Text editor (`vi`, `nano`/`pico`)
  - Documentation (`man` pages)
- NOT built-in
  - Source code organizer
  - Object code/linking organizer
- Automation Languages:
  - Perl
  - Shells: `bash`, `csh`, `ksh`, etc.
  - Objective-C, C++, Java
  - Python, Ruby
  - ...
- Interpreted or Compiled



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Typical OS X
Integrated Development Environment (IDE)

AppleScript's Script Editor

- Built-in:
  - Text editor
  - Documentation
- Automation Languages:
  - AppleScript
- Interpreted or Compiled



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Typical Mac OS X IDEs

Demo



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Typical OS X
Integrated Development Environment (IDE)

Automator

- Built-in:
  - GUI editor and organizer
  - Documentation
- Automation Languages:
  - Automator itself
  - AppleScript (behind-the-scenes)
- Interpreted



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Typical Mac OS X IDEs

Demo



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Web Automation





IFTTT: If This Than That

- Channels, Triggers & Actions
- Pre Made Recipes
- Make your own recipe
- Hardware integration



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Zappier

- Usage Cases:
- Zendesk
- Quickbooks
- Fresbhooks
- *The usual suspects



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Deployment Automation





Deployment Tools

- System Image Utility
- Apple Configurator 2
- Filewave Lighting



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Workflow

Daylite (or your CRM of Choice)

- Document
- Automate
- Delegate



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Closing Thoughts



Methodology

1. Have a goal
2. Make a plan
    - Document what you would do if you served your goal manually
        - pseudo code, OmniGraffle, napkin, …
    - Make sure The Plan contains
        - events and decisions
3. “Be Inspired”
    1. See if it’s been done already, and if so, if you have permission to use that code
    2. If not, know how to look in documentation to see if you have the tools you need





Methodology

1. Adjust your plan based on the reality of automation environments
2. Get help from others
   - “programmer” forums are MUCH less the newbie-hazing entities they were in the past
   - Give credit where it is due
     - “Be inspired” does NOT mean “plagiarize”

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Q & A

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