

Automation In Practice – It's Not What You Think It Is

SE 6367: Software Testing, Validation & Verification


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Who Is This guy?

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- Career focused on automation

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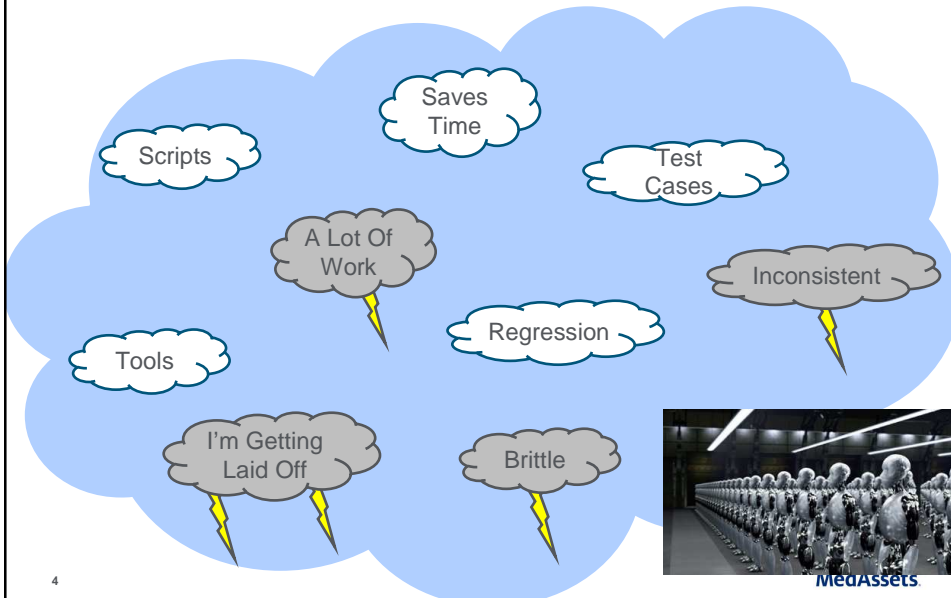
 @pgrizzaffi

What Comes To Mind?

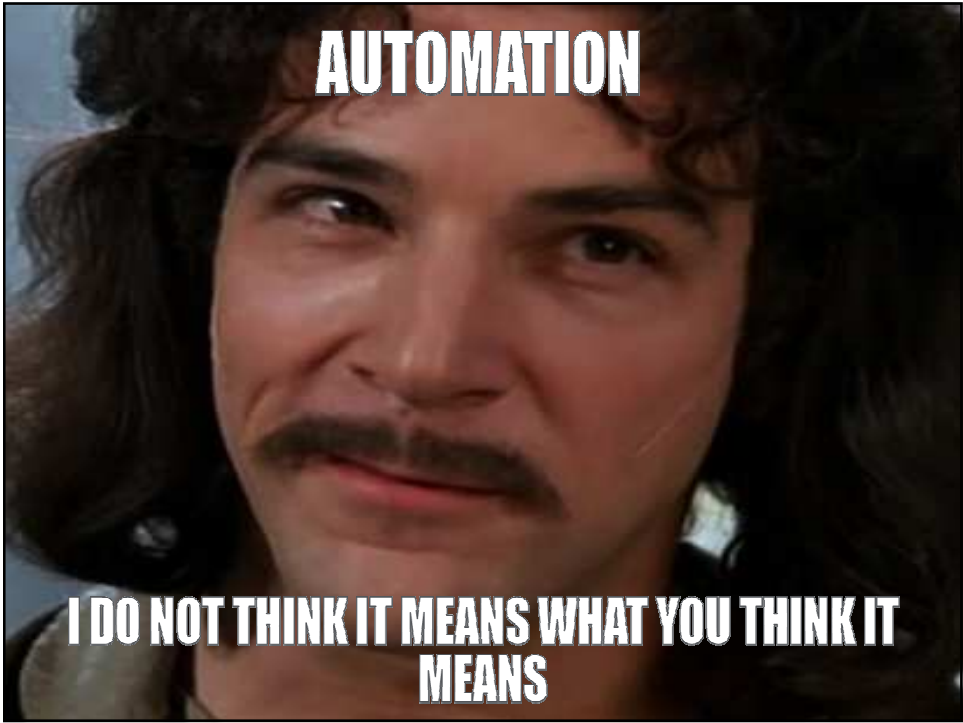


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What Comes To Mind?



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Traditions Can Be Important



Traditions Can Be Important

- Traditional automation
 - Detect behavior changes
 - Reduce effort on smoke and regression
 - Earlier execution, earlier alerts
 - Scheduled execution
- MedAssets has this and it's valuable
- Is there something else?



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What If We Think Differently?



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What If We Think Differently?

- “Let’s help the humans”
- What makes us more efficient or more effective?
- What’s valuable?
- What hurts?
- Instead of “automation”, do we need *assistance*?



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Automation Assist

- Umbrella term for non-traditional automation
 - “Words mean things” – Patrick Amaku
 - Changing meanings is difficult
 - New vocabulary for new concepts
- Things that increase the value of manual effort
 - “Off label” tool usage
 - New tools, applications, scripts
 - Tools not traditionally thought of as automation

Lets Look At Some Examples



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Movin' On Up



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MIRV



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MIRV

- The premise
 - Data center migration for a large, complex product
 - Aggressive dates, limited testing time, limited staff
 - Experience: system will work or “be egregiously broken”
- The solution
 - Scripts based on existing tool to find egregious issues
 - Execute against multiple facilities simultaneously
 - Running on repurposed laptops
 - TestComplete/TestExecute scripts: several weeks of effort
- Why that solution?
 - Quick, shallow checks can maximize humans' value
 - Existing tool reuse reduces effort
 - 7 – 12 business critical incidents prevented



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High Volume Automated Testing



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High Volume Automated Testing

“...a family of testing techniques that enable the tester to create, run and evaluate the results of arbitrarily many tests”

Cem Kaner, J.D., Ph.D.
<http://context-driven-testing.com/?p=69>



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High Volume Automated Testing

- Aka HiVAT
- Research from Florida Institute of Technology (FIT)
- Andy Tinkham
- Interesting facets for MedAssets
 - Many executions
 - Random execution
 - Results vetted by humans



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Scud



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Scud

- The premise
 - Product is large, complex, aging
 - Not feasible to enumerate and follow all paths
- The solution
 - Random menu clicker – “Scud”
 - Looking for things that “don’t seem right”
 - Selenium-based Python script: 32 hours of effort
 - Found four issues in the first week of use



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Scud (cont.)

- Why that solution?
 - Value shown at GameStop
 - TestComplete not appropriate for this activity
 - Open source so broad license usage
 - Not competing for traditional automation licenses
 - Why a scripting language?
 - Learning curve is relatively shallow
 - Development is “faster”
 - Python expertise is available in our area



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Data Regressor



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Data Regressor

- The premise
 - “Regression” testing between software versions
 - Volatile stock market data
 - Takes about 8 hours of effort
- The solution
 - Comparison tool
 - Connect to both servers and compare
 - Time to test reduced 1 minute
 - C++ program: “ROI”: 6 weeks
- Why that solution?
 - Traditional test scripts not appropriate
 - Existing API into the product
 - C++ primary development language
 - Product bug found during first execution



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Zero Remover



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Zero Remover

- The premise
 - Thousands of “golden files”
 - In some cases DB now returns NULL instead of 0.00
 - Manual effort estimate: 4 – 6 weeks
- The solution
 - A program to do the file transformation
 - C# program: 5 hours
- Why that solution?
 - Disposable
 - Windows/.Net shop
 - Easy to distribute executable



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Some Words About Effort

- Effort is a funny thing
- “Lack of” ROI is not necessarily bad
- ROI can be difficult to calculate
- “Opportunity cost” can be easier and as useful
- Think about value

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Takeaways

- This is different
- Nothing wrong with scripting test cases, but that's an implementation
- This is software development
- Situational
- Coverage: direct or indirect
- Tool ecosystem: running, distributing
- Life span: disposable or long term



Questions?

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