31ST ANNUAL SOFTWARE QUALITY CONFERENCE
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THE MANY FACES OF QUALITY

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AGILE TEST AUTOM. AT SCALE

Paper presentation at PNSQC 2013

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Consulting-Services & Customers

Consulting-Services:
- Performance Testing
- Test Automation
- Exploratory Testing

Customers:
SO, YOU’RE BRINGING AGILE METHODOLOGIES TO YOUR WEB APPLICATION DEVELOPMENT PROJECTS?

Great idea… but, as you’ve probably discovered, rapid testing is a headache. Time-consuming, inefficient manual testing routines don’t cut it in the short cycles of modern iterative development. Even for small software projects, test automation is the way to go.

But the variety of disciplines and techniques that have arisen during the rapid evolution of web application technology and testing tools can look formidable to the most seasoned test engineer. To a newbie, they appear downright scary.

If you need to get up to speed on test automation, here’s the book for you. Let author and software test maven Mark Fink walk you through the whole contemporary test automation chain, step-by-step. As you work through the book, you’ll combine open-source test automation tools including Jenkins, Selenium, FitNesse, and JMeter with Mark’s installation scripts to examine a series of test scenarios. In the process, you’ll build a complete automated test suite for a working Ajax demo application — from the ground up.

Writing for test engineers, QA specialists, software developers and project managers alike, Mark answers such crucial questions as:

- How does test automation integrate with an Agile development process?
- How can I efficiently maintain large test suites?
- What do I do with my test results?
- How do I make sure my application will remain stable under test load?
- Once I have masterful test automation, will I still need manual testing?
- How do I manage exploratory testing?

Anything but academic, The Hitchhiker’s Guide to Test Automation introduces concepts and methodologies from across the entire spectrum of software quality assurance, along with practical test cases for you to examine with that working Ajax demo application. When you’ve finished reading, you’ll have a working continuous integration server that you can adapt for testing your own project — and you’ll have all the skills you need to support your iterative development process with well-rounded QA.

MARK FINK

runs an independent consultancy providing software testing services. His combination of academic qualifications with 24 years’ practical experience have made him a popular speaker at international conferences on software test automation and performance testing.

"This is an excellent and highly practical book with many well-documented examples. Read this book to get a comprehensive view of what it takes to succeed in test automation."
Karttel Papke, Team Lead & QA-Manager

HITCHHIKER’S DEMO AT
http://github.com/markfink
Agenda

- Context & Problems
- How to approach this situation
- Activity Testing Pattern
- Emphasis of Scope over Form
What is meant by "Agile Test Autom. at Scale"?

- **Agile** -> no big design up front, release often
- **Modern Web-App** -> Single page app (SPA): HTML, CSS, Javascript (Ajax)
- **Test Automation** -> using continuous integration
- **Scale** -> scope >10 man years, more than 5 developers, high velocity
Continuous Integration

by Dr. Simon Wiest
Evolving with Continuous Integration

- Install & Configure
- Automated Build
- Unit- & Integration- Test
- Reporting & Metrics
- Distributed Build
- Functional Test
- Continuous Delivery

Benefit vs Cost
Jenkins Wall Display

- fitnesse-ajaxdemo-selrunner
- fitnesse-ajaxdemo-winecellar
- fitnesse-jukebox
- jasmine-ajaxdemo-unittests
- jasmine-tutorial-sample
- nosetests-ajaxdemo-backend
Test Automation Methodology

Common Goals:

- Release the application often e.g. every two to four weeks
- Go-Live decision support for each release
- Instant feedback regarding regressions to developers
- Means to identify gaps in the test infrastructure
Method: Activity-Testing Pattern

An excellent model when designing GUI level functional tests is to think about describing the test and the automation at the following three abstraction levels:
## Method: Activity-Testing Pattern

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Business Rule / Functionality</strong></td>
<td>What is the intention of the test, what is it demonstrating or exercising? A good start when implementing tests is using examples which have been gained during specification of the story regarding the feature in question.</td>
<td>Free delivery is offered to customers who order two or more books.</td>
</tr>
<tr>
<td><strong>GUI Workflow</strong></td>
<td>What does a user have to do in order to exercise the functionality through the GUI, on a higher activity level.</td>
<td>Put two books in a shopping cart, enter address details, verify that delivery options include free delivery.</td>
</tr>
<tr>
<td><strong>Technical Activity</strong></td>
<td>What are the technical steps required to exercise the functionality. On this level the API of the automation tool (in this case Selenium) is used. There is no need to wrap the features of the automation tool!</td>
<td>Open the shop homepage, log in with 'testuser' and 'password', go to the '/book' page, click on the first image with the 'book' id, wait for page to load, click on the 'Buy-now' link and so on.</td>
</tr>
</tbody>
</table>

by Gojko Adzic
Emphasizing Scope over Form

James Whittaker, 2012, "How we test at Google"
Hitchhiker's Guide to Test Automation

Tutorial Style:

- Working single page application (SPA)
- Test-Suites to demonstrate different test scopes
- Jenkins job configurations
- Section on performance testing
- Section on exploratory testing
- Samples on Nosetests, FitNesse, Selenium, Jasmine BDD, Jenkins, JMeter, ...
and... it has supercars!
</ Thank You! >

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github  github.com/markfink