STAR WEST
A TECHWELL EVENT

W11

Test Techniques
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Use Soap Opera Testing to Twist Real-Life Stories into Test Ideas

Presented by:

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Hans Buwalda

Hans Buwalda has been working with information technology since his high school years. In his career, Hans has gained experience as a developer, manager, and principal consultant for companies and organizations worldwide. He was a pioneer of the keyword approach to testing and automation, now widely used throughout the industry. His approaches to testing-action-based testing and soap opera testing-have helped a variety of customers achieve scalable and maintainable solutions for large and complex testing challenges. Hans is a frequent speaker at STAR conferences and is lead author of Integrated Test Design and Automation.

Soap Opera Testing

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Agenda

- Introduction

- Underlying architecture: ABT

- Soap Opera's

- Usage

The Challenges for a Test Process

- Testing should be fun

- Testing should be effective

- Testing should be efficient
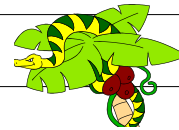
- Testing should be under control

The "mechanical approach"

- Start with long list of requirements

- Make a test case for every requirement

- Use a standardized test technique to translate the requirements into the test cases

- Use (many) people to perform the tests by hand, or to program them

- ….

Some pitfalls with a <u>too</u> mechanical approach

- No fun at all

- Shutting down creativity

- Coverage is only at single requirement level

- Any defects should probably have been found in an earlier test

- Suggests false sense of control

- Test set hard to maintain

- Doesn't catch mistakes in the specifications

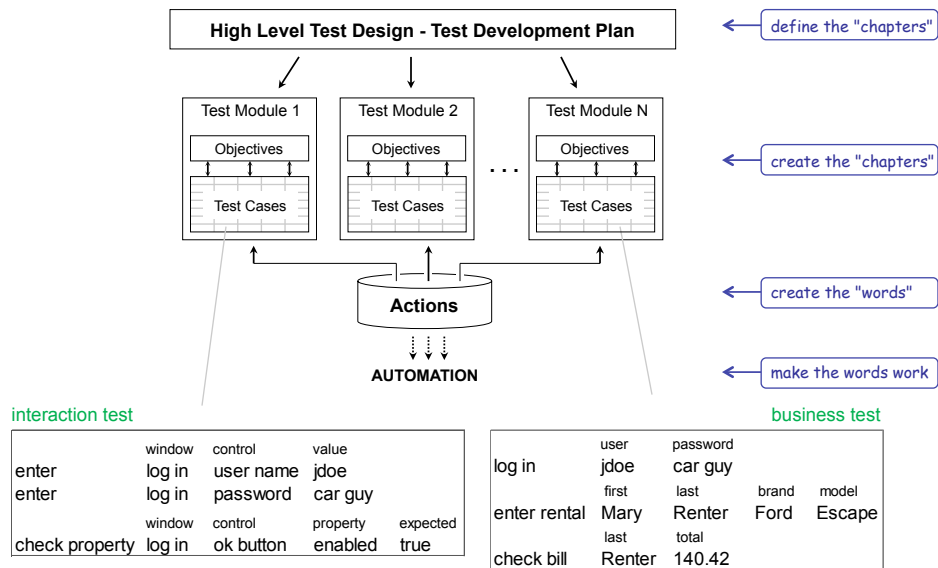## "Jungle Testing"

- Expect the unexpected
  - unexpected requests
  - unexpected situations (often data oriented)
  - deliberate attacks
  - how does a <u>generic</u> design respond to a <u>specific</u> unexpected event?

- Difference in thinking
  - coding bug: implementation is different from what was intended/specified
  - jungle bug: system does not respond well to an unexpected situation

Typical questions to answer with tests

1. Does the system comply with specs

2. Are there unexpected problems

3. Will the system work in practice

Action Based Testing

| | | | High Level Test Design - Test Development Plan | | | ← define the "chapters" |

Test Module 1 — Objectives — Test Cases
Test Module 2 — Objectives — Test Cases
. . .
Test Module N — Objectives — Test Cases

← create the "chapters"

Actions

← create the "words"

AUTOMATION

← make the words work

interaction test

	window	control	value	
enter	log in	user name	jdoe	
enter	log in	password	car guy	
	window	control	property	expected
check property	log in	ok button	enabled	true

business test

	user	password		
log in	jdoe	car guy		
	first	last	brand	model
enter rental	Mary	Renter	Ford	Escape
	last	total		
check bill	Renter	140.42		

Soap Operas

Ashley hears about Jack's deposit when he thought he had to go. Victoria lectures her father about what's wrong with him and Nikki but Victor advises her that it's none of her business Olivia learns Dru has no regrets about leaving and takes great satisfaction in having Lily as her companion. Dru then asks Olivia why she is raking Malcolm over the coals. Stopping by Gina's, Nikki spots Brad and sits with him, admitting she doesn't want to be alone tonight. Victor stops by Mack's party at the Crimson Lights. Ashley takes a home pregnancy test. Worried about Billy, Raul makes call and J.T. claims he doesn't know where Billy is. Raul rushes over and finds Billy out cold in the snow Raul worries when he can't find a pulse. . . .

Properties of Soap Operas

- Agile perspective

- About "real life"

- But condensed

- And more extreme

Soap Operas for testing

- Compare to a TV show with "episodes"
  - consider recurring characters
  - every test is an episode

- Define a scope of the test to develop

- Identify with the business environment

- Which elements would make things difficult

- Draft scenario's (typical some dozen lines)

Examples of story lines when used for testing

Pension Fund

William starts as a metal worker for Industrial Entropy Incorporated in 1955. During his career he becomes ill, works part time, marries, divorces, marries again, gets 3 children, one of which dies, then his wife dies and he marries again and gets 2 more children….

World Wide Transaction System for an international Bank

A fish trade company in Japan makes a payment to a vendor on Iceland. It should have been a payment in Icelandic Kronur, but it was done in Yen instead. The error is discovered after 9 days and the payment is revised and corrected, however, the interest calculation (value dating)…

Example of test lines

	from	to	amount	valuta	trans nr
enter payment	123421344	4124244123	120000	yen	&keep tx1
check value dating	&tx1	$0.47			
wait days	9				
order to reverse	&tx1				
	from	to	amount	valuta	trans nr
enter payment	123421344	4124244123	1200000000	IKr	&keep tx2
check value dating	&tx2	$7,701.56			
. . . .					

Lisa Crispin: Disorder Depot . . .

There are 20 preorders for George W. Bush action figures in "Enterprise", the ERP system, awaiting the receipt of the items in the warehouse.

Finally, the great day arrives, and Jane at the warehouse receives 100 of the action figures as available inventory against the purchase order. She updates the item record in Enterprise to show it is no longer a preorder.

Some time passes, during which the Enterprise background workflow to release preorders runs. The 20 orders are pick-released and sent down to the warehouse.

Source: Hans Buwalda, Soap Opera Testing (article), Better Software Magazine, February 2005

Lisa Crispin: Disorder Depot . . .

Then Joe loses control of his forklift and accidentally drives it into the shelf containing the Bush action figures. All appear to be shredded to bits. Jane, horrified, removes all 100 items from available inventory with a miscellaneous issue. Meanwhile, more orders for this very popular item have come in to Enterprise.

Sorting through the rubble, Jane and Joe find that 14 of the action figures have survived intact in their boxes. Jane adds them back into available inventory with a miscellaneous receipt.

Lisa Crispin: Disorder Depot . . .

This scenario tests
- Preorder process
- PO receipt process
- Miscellaneous receipt and issue
- Backorder process
- Pick-release process
- Preorder release process
- Warehouse cancels

Reasons for scenarios like soaps

- Test collection can be made more compact

- It is more fun to make

- Specialists used more effectively

- Testing more of the application

- Less directly dependent on functional specs, so catching more pitfalls

What is not interesting for soaps

- Screen stuff

- Routine tests

- Any other straight forward compliance testing

Ways to get them

- Coaching end users or business specialists

- Interviews

- Own fantasy

- Workbooks

- Using joint development sessions

Soap Operas (in testing) are <u>not</u> necessarily:

- "Extreme"

- Far fetched

- Long and elaborate

- Pieces of art

- Aggressive or mean

"Killer Soaps"

let me wash this thing...

- More specifically aimed at finding hidden problems

- As mean as you can be

- Run when everything else has passed

- Ask domain experts for input

Structured test development and Soaps

- Soaps are not the natural way to get "coverage"

- Additional techniques can help, examples:
  - Test conditions
  - Test design templates

- Recommendation: do "matching" afterwards

Test Analysis and Test Design

Test Analysis

- what do we need

- functional perspective

separate

and

relate

TEST
OBJECTIVES

Test Design

- situations and scenarios

- creative perspective

TEST
CASES

Example Test Objective

nr   description

...

3.51   it is checked that the exit date is after the entry date

...

test objective	3.51

	name	entry date	exit date
enter employment	Bill Goodfellow	1999-10-02	1999-10-01
check error message	The exit date must be after the entry date.		

Typical questions to answer with tests

1. Does the system comply with specs

2. Are there unexpected problems

3. Will the system work in practice

Questions to answer with a test collection

		mechanical	soaps	soaps + matching
1	does the system comply with specs	***	*	**
2	are there unexpected problems	*	***	***
3	will the system work in practice	**	**	***