

Your Test Cases – Only Better!

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What do I know anyway?

Jessica Parker, PMP® is a multidimensional leader with the ability to drive both strategic and tactical priorities. The expertise she's developed over the past twenty years includes executive leadership, financial management, project management, software quality assurance, business analysis, and data visualization. Jessica has a track record of success solving complex business problems and improving processes at Fortune 500 companies. From a global perspective, she has worked with multinational teams in countries including Australia, Brazil, China, England, France, Germany, India, Ireland, Italy, Philippines, Switzerland, Uruguay.

Topics

- Rethinking the test case
- Reusable test cases – make them modular
- Fewer test cases – make them parameterized
- BONUS: Even fewer test cases and better coverage – use an orthogonal array

Rethinking the test case

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What do you think?

- Test cases should be written with enough detail that anyone off the street can run them and understand what they should do.
- Testing is so easy that you don't need to write test cases – a monkey could do the testing.
- Every possible scenario needs to be documented in test cases.
- Test case writing is fun!
- Test cases should include all of the details – every piece of data needed.
- Updating test cases is almost as much fun as writing them!

Example system: a shopping (e-commerce) website

Reusable test cases - make them modular

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Modular test cases

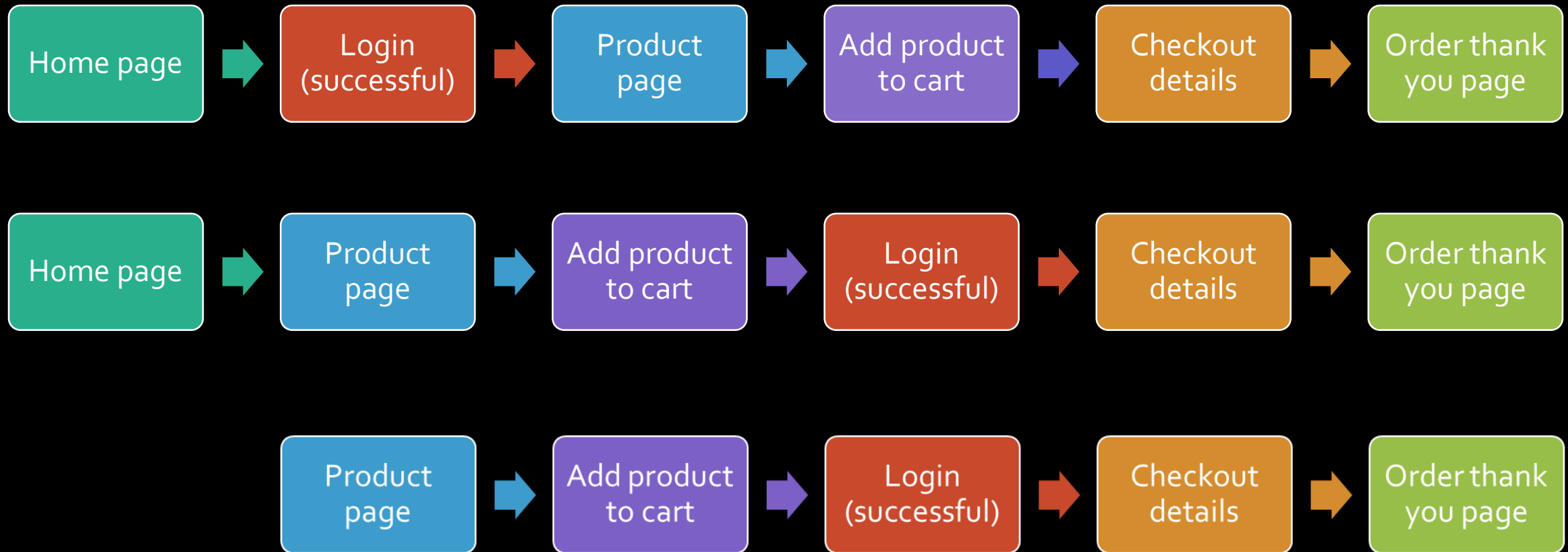
- A modular test case is a test written for one particular object or screen, which can be combined with other modular tests to exercise a logical flow through the system
- Pass data into and out of the test
- Value: reduce rework and test maintenance time



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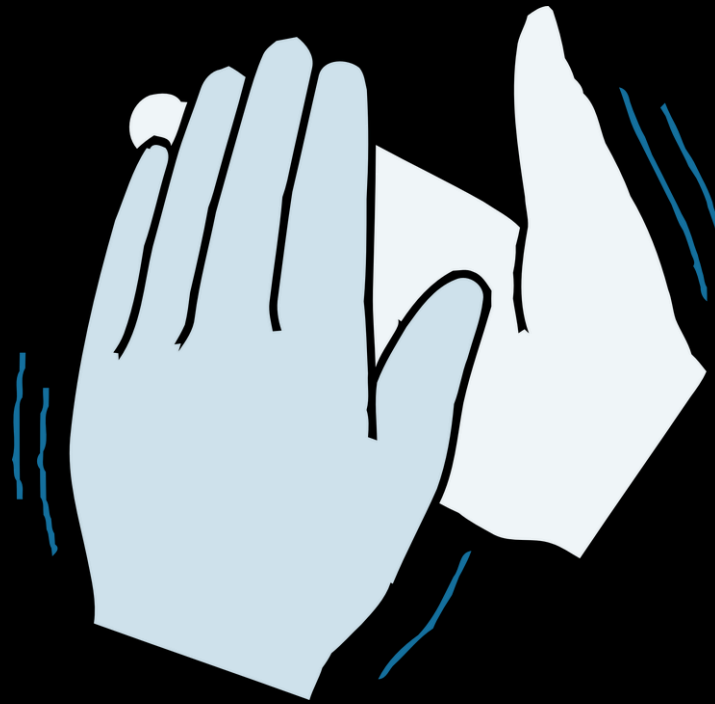
Go with the flow...of the system



Try it with sticky notes

- Think about one of the systems you are currently testing or a website you use regularly
- Write down each module (block) on a separate sticky note
- Combine the sticky notes in a way that represents a valid path through the system

Congrats – you’ve started to build the foundation of your modular test cases!



Fewer test cases –
make them parameterized

Parameterized test cases

- Allow for reuse of test cases with multiple data variations
 - Examples:
 - Names: first name & last name, first name & hyphenated last name, first name & two last names...
 - Addresses: one line, two line, with special characters (, ' - #)...
 - Put data into a numbered list, typically in Excel, which can be attached or linked to the test case
 - Include both positive and negative data variations
- Consider data that changes without changing the expected results.

What are examples of data you need for your tests?

Sample parameterized test case – Excel version

Test Description	Test Data	Step #	Test Procedure	Expected Results
Validate ability to order holiday cards	<site URL>	1	Call LOGIN test	The system displays the "Landing page" for the customer.
		2	Enter cards in search window and click on <u>search</u> button.	"Product Catalog Page" for the selected category should be displayed
	<product>	3	Select the desired template.	"Product detail" page should be displayed along with the selected product features displaying "Bundle Product Features" Product details tab Pricing tab Quantity dropdown
		13	Click on ok button in the <u>popup</u> and then click on <u>add to cart</u> button.	System displays " Save as project" popup.
		14	Click on ' <u>No</u> ' button in the popup.	System displays a Shopping cart page.
		15	Click on <u>Check out</u> Button.	System displays Order summary page.
	<credit card number> <credit card expiration date> <credit card code> <billing first name> <billing last name> <billing address line 1> <billing address line 2> <billing city> <billing state> <billing zip code>		Enter <credit card number> in "Credit Card Number" field Enter <credit card expiration date> in "Credit Card Expiry Date" field ...	
		16	Call BILLING PAGE test	System displays Order confirmation page.

Sample test data sheet

Test Data ID	First Name	Last Name	Address Line 1	Address Line 2	City	State	Zip
TestData001	Annie	Body	200 Southern Blvd	P.O. Box 189	Albany	NY	12209-2018
TestData002	Bill	Board	3219 Art's Way		Village of Little Chute	WI	54913
TestData003	Chip	O'Wood	1521 N Dr Martin Luther King Jr Blvd	Trailer #7	Clovis	NM	88101
TestData004	A.	Mouse	P.O. Box 9		Eek	AK	99578
TestData005	Earl	Leigh-Byrd	375 TRNSP/LGTTF	2510 East Dr Room 3	Scott Air Force Base	IL	62225-5426
TestData006	Ginger	Root	9 1/2 Pitt St.		New York	NY	10013
TestData007	Hope	Ferterbest	5 E St		Lake Lotawana	MO	64086
TestData008	Chip	Monk	1125 Sheridan Avenue	Apartment 56	Chico	CA	95926-2795

What data do you need?

- Think about fields (e.g. first name, last name) rather than the specific values
- Identify those fields where changing the data doesn't change the expected results
- Those fields where changing the data DOES change the expected results should be set aside and may require additional test cases

Even fewer test cases and better coverage –
use an orthogonal array

Why use an orthogonal array

- “There are more distinct imaginable test cases for even a simple software product than can be performed in the natural lifetime of any tester.” – James Bach from <http://www.satisfice.com/articles/pairwise.pdf>
- Consider an orthogonal array to help identify what test cases are needed and ensure all paths through the system have been covered while not having to be exhaustive in your test cases

Sample orthogonal array

Test Case	User Type			Billing address						Payment						Reset password			
	new	existing	anonymous	new	saved	invalid 1st	1 line	2 line	min field entries	max field entries	new	saved	Visa	Visa - invalid 1st	MC		MC - invalid 1st	Amex	Amex - invalid 1st
Acme_Regression_01	x			x		x		x		x	x		x						
Acme_Regression_02		x			x		x					x			x	x			
Acme_Regression_03			x	x				x		x	x						x		
Acme_Regression_04	x			x			x		x		x				x				
Acme_Regression_05		x			x							x	x						
Acme_Regression_06			x	x		x	x				x						x	x	
Acme_Regression_07	x			x			x		x		x				x				
Acme_Regression_08		x			x	x		x				x	x	x					x

Sample Billing Information Page with 3 Modules

2 Billing & Payment *Required

***First Name**

***Last Name**

Company

***Address 1**

Address 2

***Country**

***Zip/Postal Code**

***City** ***State or APO/FPO**

- Gift Cards

Enter a Gift Card

APPLY

Credit Card

***Card Number**

***Card Type** ***Cardholder's Name**

***Expiration Date:** ***Card Verification Code** ?

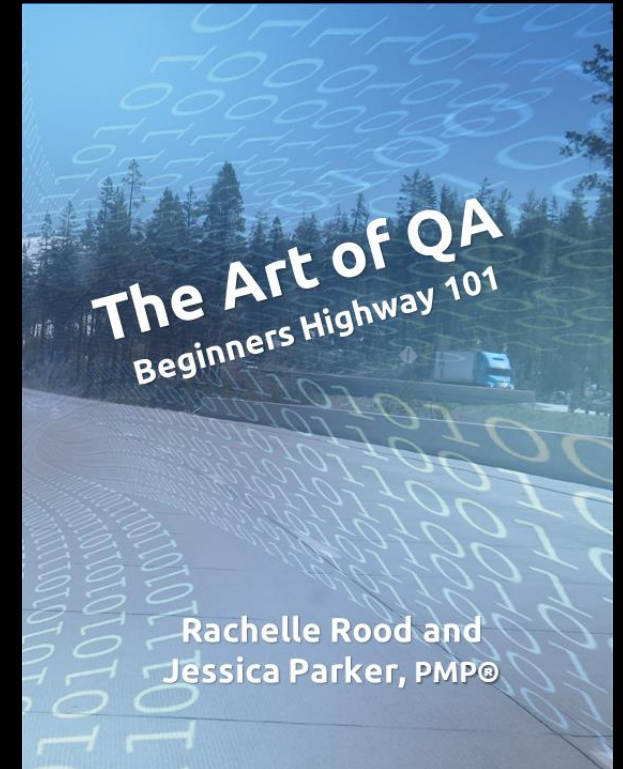
Questions?

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In Summary

- Modular test cases reduce test case creation & maintenance time
- Parameterized test cases reduce quantity of test cases needed
- Orthogonal arrays increase coverage and further reduce quantity of test cases needed



COMING IN MARCH 2019!

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