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TESTING AN ECOMMERCE SHOPPING CART SITE

Karen Johnson
Peapod, Inc.

Testing an E-Commerce Site

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Peapod, Inc.**



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An Introduction

Peapod, Inc.

- ☛ An online grocer serving several major metropolitan areas.
- ☛ Peapod has been in business since 1989.

Karen Johnson, QA Manager of E-Commerce

- ☛ 16 years in IT: 9 years of QA experience, 7 years tech writing
- ☛ Experience with functional, regression, automation, load and performance testing.

Testing an E-Commerce Site

- ☛ Browsers
- ☛ The Cart
- ☛ Cookies
- ☛ Customers
- ☛ Registration
- ☛ SSL: Secure Pages
- ☛ Credit Cards
- ☛ Sessions
- ☛ Servers
- ☛ Regression testing

Browsers

- ☞ Know what browsers your users have
- ☞ Stay current on browser releases
- ☞ Be conscience of what parts of your site are affected by the browser and browser version
- ☞ Tips on what to test with different browsers can be found in my article Mining the Gold from Your Web Server logs – STQE January issue. The article can be found on the sticky minds site.

The cart: adding items

Verify the item is added to the cart

- ☛ Where in the store was the item added to the cart?
For example is there a specials page, discount rack, banner ad, etc.
- ☛ Is the buying functionality the same throughout the store?
For example if the customer buys from the banner ad versus from a regular item page - is the buying functionality the same.

The cart: changing item quantity

Verify item quantity is increased/decreased

- ☛ Are there quantity restrictions?

For example, your site may restrict the quantity that may be purchased.

- ☛ Are there restricted products?

For example, some products may not be shippable in all states. Products such as alcohol have many restrictions.

The cart: removing items

Verify the item is removed from the cart

- ☞ Are there fees, taxes or discounts to be adjusted
For example when the consumer removes an item, (or adds or changes the item quantity) are the corresponding delivery/shipping fees, taxes, and coupons adjusted as needed.
- ☞ Are there item specific details that need to be removed?
For example does an item have gift wrapping or special handling/shipping details or substitution information that needs to be removed from the order details if the item is removed from the order.

Cookies: What they are

According to O'Reilly's book *Javascript: The Definitive Guide**

A *cookie* is a small amount of named data stored by the web browser and associated with a particular web page or web site. Cookies serve to give the web browser a memory, so that it can use data that was input on one page in another page, or so it can recall user preferences or other state variables when the user leaves a page and returns. Cookie data is automatically transmitted between web browser and web server, so CGI scripts on the server can read and write cookie values that are stored on the client.

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Cookies: Facts to know

- ☞ Cookies are small files stored on the client workstation. What information they contain varies completely by the site.
- ☞ Cookies have an expire date. Some cookies are only valid for the length of the session.
- ☞ Cookies have a domain associated to them. This means cookies by your company and your company's domain are not readable by other sites.
- ☞ Cookies have a path which specifies on which pages a cookie can be read.
- ☞ Cookies have a security setting. Most cookies are available on insecure pages but in some cases, a cookie could be valid and read only on a secure page.

Cookies: What to test

- ☛ Test your site's cookies according to the content of the cookie.
- ☛ Test with cookies and without.
- ☛ Test the expire date, domain, path and security setting.
- ☛ Test with Internet Explorer and Netscape.

Cookies: Where to find them and how to remove them

☞ Internet Explorer

The cookie is stored in a separate file and the location depends on the operating system.

Windows 95 and 98

c:/windows/cookies

Windows NT

c:/winnt/profiles/username/cookies

Windows 2000

c:/winnt/cookies

Delete the specific cookie.

Netscape

The cookie is stored in one large file with all the Netscape cookies.

C:/program files/netscape/username/cookies

Delete the file.

Customers

- ☛ What information is maintained about each customer?
- ☛ Is your site customized?
- ☛ What information is stored encrypted?
- ☛ What are the rules for sending emails?

Registration

☛ Unique user id

Verify each user has a unique account.

☛ Address information

Does your site restrict service or delivery based on which state or address the order is being shipped to? Does your site validate the street address during registration?

☛ Passwords

Are they stored encrypted? Are they encrypted in your user logs?

Registration

☛ The overall process

How does the process work? Does registration handle user that use the back and forward buttons in the browser?

☛ SSL

Is the registration process secure? Can the user break out of registration – do the pages rotate from secure to insecure as needed?

☛ Field validation

Are required fields working as expected? Is there javascript for field validation?

SSL: What it is

According to O'Reilly's book *Web Security & Commerce*:

SSL is a layer that exists between the raw TCP/IP protocol and the application layer. While the standard TCP/IP protocol simply sends an anonymous error-free stream of information between two computers (or between two processes running on the same computer), SSL adds numerous features to that stream, including:

- Authentication and non-repudiation of the server, using digital signatures
- Authentication and non-repudiation of the client, using digital signatures
- Data confidentiality through the use of encryption
- Data integrity through the use of message authentication codes

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SSL: Where and how to test

- ☛ verify pages that should be secure are secure
- ☛ verify secure pages cannot be bookmarked
- ☛ verify secure pages work correctly on each server
- ☛ verify secure pages work on at least one version of IE and Netscape

The Credit Card

- ☞ check the credit card types allowed
- ☞ check the expiration dates of the card whether adding or updating the card info
- ☞ check the credit card billing address whether the address is updated or the card is updated

The Credit Card number

Card	Prefix	Length
MasterCard	51-55	16
Visa	4	13 or 16
American Express	34, 37	15
Discover	6011	16

Session

- ☛ Session timeout
- ☛ Unique session IDs
- ☛ Session caching
- ☛ User logs

Servers

- ☛ Server re-directs
- ☛ SSL
- ☛ Configuration files
- ☛ User logs

Regression Testing

- ☛ Create a base set of user scenarios that must be tested each release.
- ☛ Identify for each release the areas of greatest risk and code that could be affected.
- ☛ Balance risk vs likelihood and plan testing accordingly.

More Information

SSL

- ☞ <http://home.netscape.com/eng/mozilla/2.0/handbook/doc/appans/html#C35>
- ☞ <http://www.faqs.org/faqs/computer-security/ssl-talk-faq>

Credit Cards

- ☞ *Web Commerce Cookbook*
By Gordon McComb
Wiley Press

Cookies

- ☞ http://www.netscape.com/newsref/std/cookie_spec.html
- ☞ *Javascript: The Definitive Guide* O'Reilly press

More Information

Web Testing

- ☞ *Testing Applications on the Web*
by Hung Nguyen
Wiley press
- ☞ *The Web Testing Handbook*
by Stefan P. Jaskiel/Steven Splaine
- ☞ seminars by Dale Perry - check SQE for details

Karen Johnson

Karen Johnson is the E-Commerce Quality Assurance Manager at Peapod, Inc. Peapod is an online grocer serving several cities throughout the U.S. Peapod's website can be found at <http://www.peapod.com>

Karen has more than 16 years experience in computer software; for the past nine years she has been involved in quality assurance. In Karen's current position she is responsible for functional, regression, cross browser, load, and performance testing of the company's website. In previous positions, she has been responsible for client-server testing including installation, multiple-user testing, data replication to palm pilots, functional and performance testing. She has worked closely with Oracle, Sybase, SQLServer, Informix, and SQLAnywhere databases. Karen also has seven years experience as a technical writer documenting manufacturing and financial applications.

Karen lives in a suburb of Chicago and can be reached at kjohns@peapod.com