

Web Application Testing

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After the course, student can catch:

- What should be tested in web application testing ? How to test ?
- Common defects in testing web application
- Tips in web application testing
- Usage of Web Link Validator tool
- And more ...

❖ Duration: *2 hours*



1. Web application testing - What and How ?
2. Standards to discover Common defects in testing web application
3. Tips in web application testing
4. Introduction Web Link Validator tool

1. Web application testing

What and How ?

1. Functionality testing
2. Usability testing
3. Interface testing
4. Compatibility testing
5. Performance testing
6. Security testing

1. Web application testing

Functionality testing

- Check all the links:

- Out going the links from the pages
- All internal links
- Links jumping on the same pages
- Links used to send the email from web pages
- Check if there are any orphan pages
- Check for broken link

The image displays two screenshots of web applications side-by-side for the purpose of functionality testing.

Screenshot 1: PatientStudio™

This screenshot shows the homepage of PatientStudio. The header features a green checkmark icon, the text "PatientStudio™", and the tagline "Control the Flow of Patient Information". Below the header, it says "Patient Forms - Appointment Reminders - Communication". The navigation menu includes "Benefits", "Features", "Pricing", "Buzz", "Questions", "Company", and "Blog". On the left, a sidebar lists features: "Invite Your Patients to Complete Forms Online", "Track Your Patient's Progress", "Reminders to Complete Forms", "Custom Forms", "Patient Referral Form for Specialists", "Appointment Reminders – email/text", and "Automated Downloading of patient forms". The right side of the page has a "Sign Up" button, links for "SPF Customers Login" and "Patient Studio Login", a phone number "855-437-1110", an email address "info@patientstudio.com", and social media icons for Facebook, Twitter, and LinkedIn.

Screenshot 2: Jai V. Patel, DDS Family & Cosmetic Dentistry

This screenshot shows a dental practice website. The header features the dentist's name "JAI V. PATEL, DDS" and "FAMILY & COSMETIC DENTISTRY". Below the header, the tagline "CREATING Smiles TO LAST A LIFETIME" is displayed next to a portrait of a smiling woman. The navigation menu includes "Welcome", "About Us", "Featured Services", "Patient Resources", "Our Blog", and "Hours & Locations". A "Call" button with the phone number "720-436-9999" is also present.

1. Web application testing

Functionality testing

- Test forms in all pages:
 - Check all the validation on each field
 - Default values on fields
 - Valid and invalid inputted data
 - Check max length of fields on UI and corresponding fields in DB
 - Check ALT text
 - Try resizing the browser's window to see if strange wrapping occurs around the forms/pages

Got a project? Or want to drop us a line?

* Name

* Email

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* Message

SEND

Get in touch

You can also contact us at:

(+40) 751 250 710

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1. Web application testing

Functionality testing

- Validate your HTML/CSS
 - Validate HTML and CSS for syntax errors
- Database testing
 - Check for data integrity and errors while you edit, delete, modify the forms or do any DB related functionality.

1. Web application testing

Usability testing

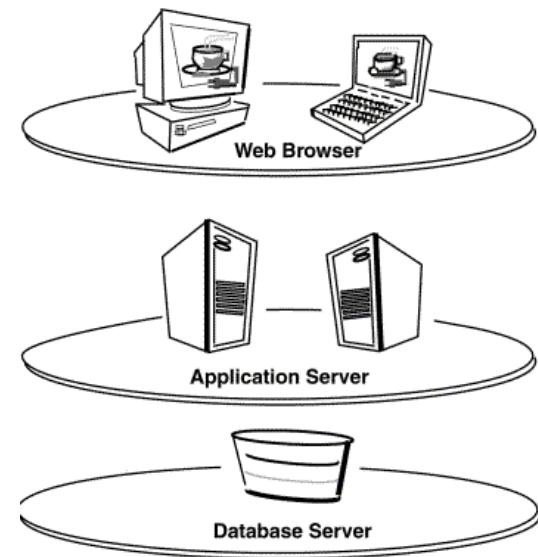
- Test for navigation:
 - Web site should be easy to use
 - Instructions should be provided clearly
 - Check if the provided instructions are correct means whether they satisfy purpose
 - Main menu should be provided on each page. It should be consistent
- Content checking
- Other user information for user help



1. Web application testing

Interface testing

- Check:
 - If database or web server returns any error message for any query by application server then application server should catch and display these error messages appropriately to users
 - What happens if user interrupts any transaction in-between?
 - What happens if connection to web server is reset in between?



1. Web application testing

Compatibility testing

- Browser compatibility:
 - Test web application on different browsers with different versions.



- Operating system compatibility:
 - Test your web application on different operating systems with different OS flavors.



1. Web application testing

Compatibility testing

- **Mobile browsing**
 - Test your web pages on mobile browsers



- **Printing options**
 - Make sure fonts, page alignment, page graphics getting printed properly

1. Web application testing

Performance testing

- Load testing
 - Site should handle many simultaneous user requests
 - Large input data from users?
 - Simultaneous connection to DB
 - Heavy load on specific pages
- Stress testing



Web stress testing is performed to break the site by giving stress and checked how system reacts to stress and how system recovers from crashes

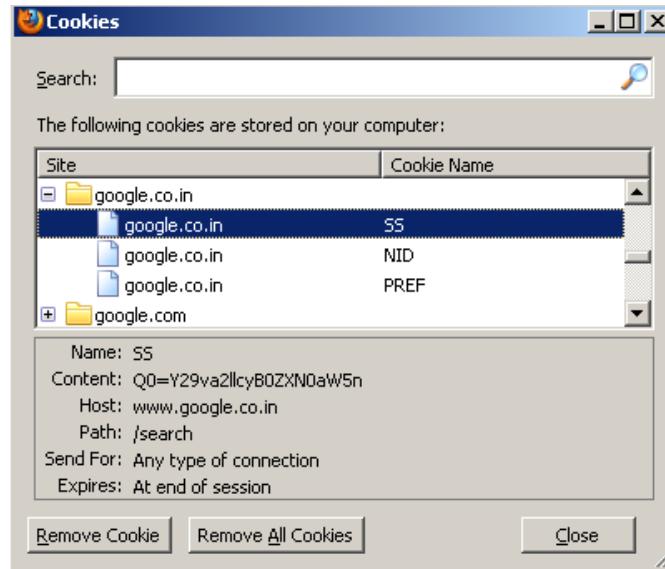


1. Web application testing

Security testing

- Cookies testing:

- Test if the cookies are encrypted before writing to user machine
- Check for login sessions and user starts after session end
- Check effect on application security by deleting the cookies



1. Web application testing

Security testing

- Others Security Testing:

- Test by pasting internal url directly into browser address bar without login. Internal pages should not open.
- If you are logged in using username and password and browsing internal pages then try changing url options directly. Access should denied for this user to view others starts



- All transactions, error messages, security breach attempts should get logged in log files somewhere on web server

2. Standards to discover Common defects

- Alignment of fields, texts, number:
 - All texts should be left-justified
 - All numeric fields are right-justified
 - The fields are vertically left or right aligned.
- Data in combo box/ list box:
 - Data in combo box/ list box should be sorted ascending or descending
 - Each entry in the list can be accessed via appropriate key / hot key combinations
 - Using Alt+Down key combination to drop down combo box (*Alt+Down doesn't run in Netscape 6*)

2. Standards to discover Common defects

- Layouts in all pages:
 - All windows and dialog boxes should have a consistent look and feel.
 - Following items should be the same:
 - Font of text, Color and Background
 - Header and footer
 - Size of Logo
 - Date format, decimal format
 - Symbol for mandatory fields
 - The height of buttons and the distances between them
 - Data in combo box/ list box should be sorted ascending or descending
 - Each entry in the list can be accessed via appropriate key / hot key combinations

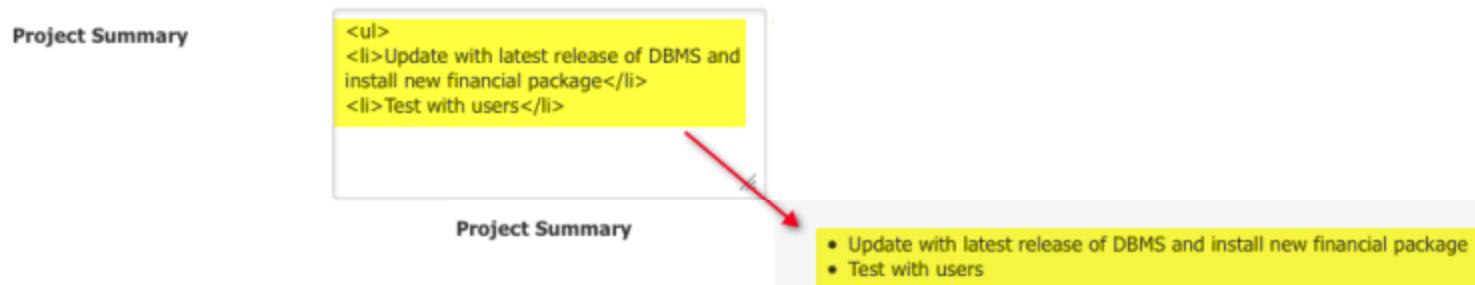
2. Standards to discover Common defects

- Can move between fields by using Tab key and Shift+Tab keys:
 - Users can use Tab key to move to next enterable fields and Shift + Tab keys to previous enterable fields.
 - All read-only fields are avoided in the TAB sequence
 - All disabled fields are avoided in the TAB sequence



2. Standards to discover Common defects

- Cursor location:
 - The cursor is located in the first enterable field when the screen is opened.
 - After an error message occurs, the focus should return to the error field.
- Error by input HTML tags, char ':
 - Should prevent errors when user inputs HTML tags or char ' in text fields. HTML tags can destroy the layout



2. Standards to discover Common defects

- Start date is greater than End date:
 - The logic of date should be checked, user can't type Start date greater than End date, or From date is greater than To date...
- Input constraints:
 - Can't submit form with empty mandatory fields
 - Can't input blank space instead of values in mandatory fields and submit.
 - Can't input more characters in field than max allowed size.

2. Standards to discover Common defects

- Users can't return to Web application after logout:
 - Users can't back to previous page after logout by clicking "Back" button in Toolbars.
 - When users logout, they cannot back to web application, and must input username and password again to login
- Multiple users:
 - The application should support many concurrent users as required.



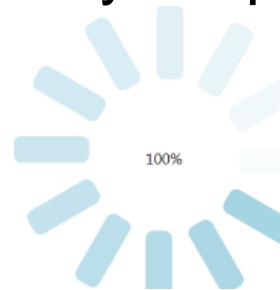
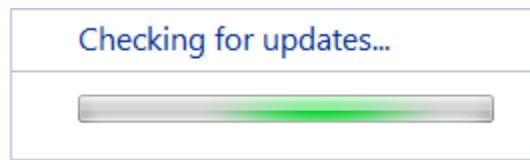
2. Standards to discover Common defects

- Different browsers:
 - The layout in all required browsers should be consistent
Ex: in Netscape, the alignment, the distances, positions of images ... should be correct as in IE
- Images with links have blue borders:
 - Should hide the color of border of the image.
- Show HTML error page:
 - Should display application's error handle page when an error occurs.



2. Standards to discover Common defects

- Using mouse and keyboard:
 - In general, everything can be done using both the mouse and the keyboard.
 - For functions which take much time to run, status of mouse should be changed to "busy" or progress bar should be shown



- All links should be checked:
 - Links should be checked to make sure correct destination.

2. Standards to discover Common defects

- Should check invalid data when submit:
 - In addition to valid data, you should check invalid cases to make sure system under test handles these cases
- Default and Cancel button:
 - There should be a button or menu in the page to allow users cancel and return to previous page
 - Each dialog/ window must have default focus button.



2. Standards to discover Common defects

- Big work-load:
 - The application should support big work-load as required. If not, the system is hung when the number of records is big
- Response time to open a page:
 - Response time to open a page is more than required. Default value of response time for Web application is 3-5 seconds

3. Web application testing Tips

- Web site login security:
 - Use pair bellow:

Username: ' or 1=1--
Password: any
- Refresh:
 - In a window, try to click on any control you see while system is being refreshed
 - Try to click a button many times consecutively
 - After an action is finished, press F5
 - **Demo: Demo-refresh.wmv**



3. Web application testing Tips

- Concurrent access:
 - Two users access to a page and save data at the same time
 - Expect: System allows only a user save data and prompt for other that data has been modified.
 - ***Demo: Demo-concurrence access.wmv***

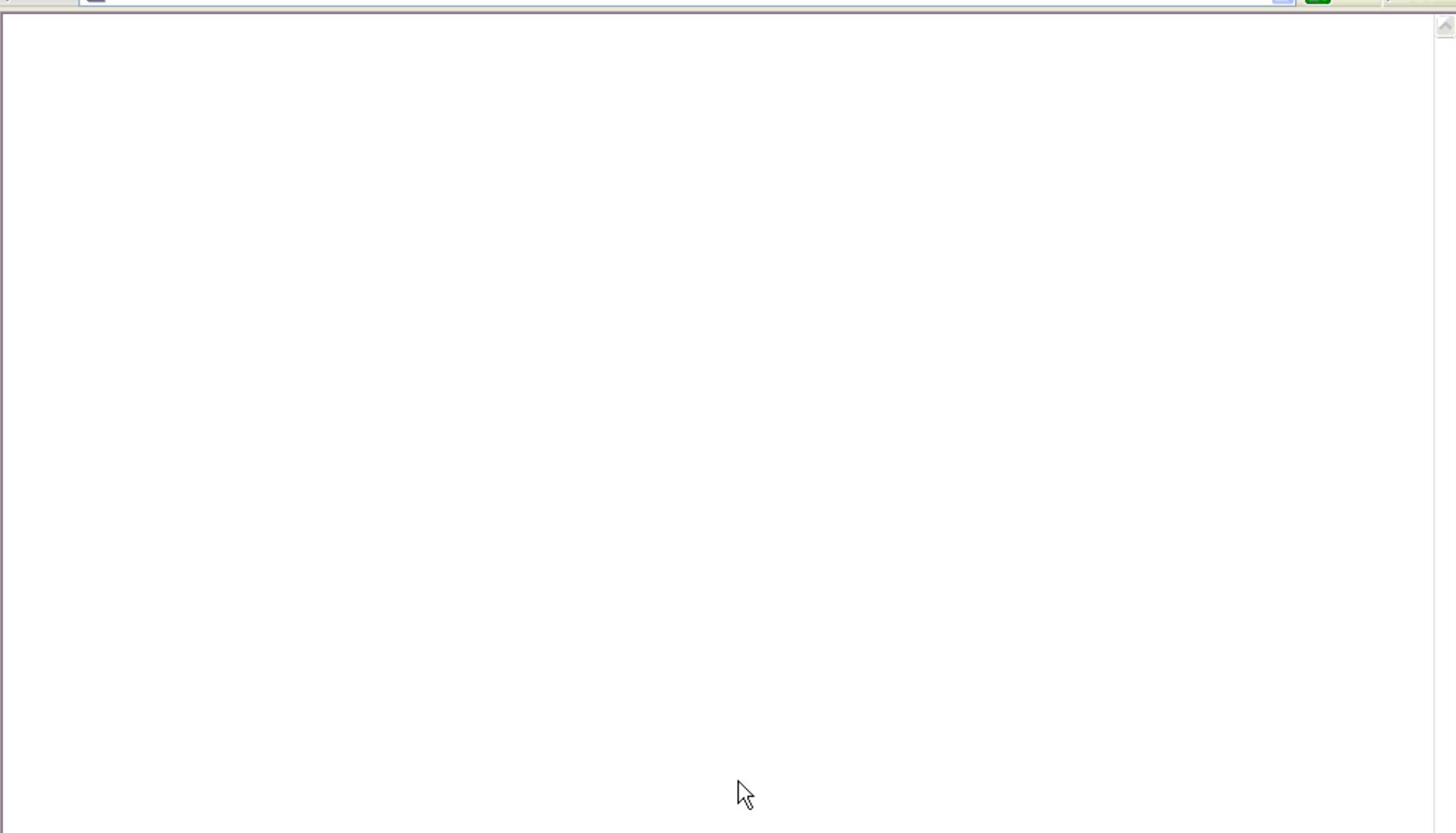
about:blank - Microsoft Internet Explorer

 File Edit View Favorites Tools Help



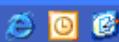
Address about:blank

Go Links



 Done

start



CSTB

 about:blank - Microsoft Word

 about:blank - Microsoft Edge

Untitled - Windows M..



9:27 AM

3. Web application testing Tips

- Issue with dropdown list/combo box:
 - Pay attention to blank value in dropdown list
- Page break:
 - Create many rows to check page break anywhere that can be added rows
 - Switch between pages
- Text area:
 - To make sure that format of text in edit mode and read mode is the same
 - Check max length (line break = 1 character)

3. Web application testing Tips

- Know Third-Party Apps:

There are many third-party applications that can be embedded on our app and with end users, these are part of our app:

- Live chat
- Search plug-ins
- Embedded videos or audio players
- Blogs, forums and message boards
- ...

4. Web Link Validator tool

- What is Web Link Validator tool?
 - The software performs a thorough analysis of Web site pages and includes the following checks:
 - finds broken links (including those using JavaScript and Flash)
 - orphaned files
 - HTML coding and spelling errors
 - slow-loading
 - outdated and small-sized pages
 - switch between pages



4. Web Link Validator tool

- Features of Web Link Validator:
 - Ability to check over 100,000 links to files, HTTP, HTTPS and FTP resources
 - Support for JavaScript and Macromedia Flash (.SWF files) hyperlinks
 - Alternative Internet Explorer-based verification engine
 - Finding spelling errors with the built-in spell checker
 - Ability to create page rules to confirm the presence or absence of specific display text, scripting, forms, etc.

4. Web Link Validator tool

- Download this tool:
<http://www.relsoftware.com/wlv/downloads/>
- Example: report is delivered by Web Link Validator tool
- ***Demo: Web Link Validator - Report.htm***

4. Web Link Validator tool

- Reference:

<http://www.softwaretestinghelp.com/web-application-testing/>

- Recommended readings
 - Sams.Software.Testing.2nd.Edition.Jul.2005





Thank you!