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Designing a Web Site & Web OPAC for School of Library and Information Science Devi Ahilya Vishwavidyalaya, Indore, Madhya Pradesh, India

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Abstract

Today, HTML pages are the standard interface to the internet. They may include animated graphics, sound and video, complete interactive programs, and good old- fashioned text. Millions of web pages are retrieved each day from thousands of web server computers around the world. Today's web sites need to offer more than just access to online catalogues and database. Web sites need to anticipate the user's expectations with design elements that make it easy to find and use information. Organizations, especially libraries, need to take a fresh look at their web sites in the light of usability and accessibility issues. Large, medium, or small – School, public, academic, or special – all libraries and organizations need to keep up-to-date with what's happening in Web design. This brings fresh ideas to the Web environment. Experts will present and discuss user-centered design benchmarks, practical usability testing technique, the do's and don'ts of writing for the Web, and targeting search results for the user while providing for efficient site management.

Keywords: Web Page Design; Web OPAC; HTML; Library Automation Software: Data Base

Introduction

The programming of individual web pages is done though HTML (Hypertext markup Language), which is a subset of SGML (standard graphics markup language) The HTML code describes what the page should look like to the client software (web browser) and describes links to other pages..

The languages itself defines a set of codes or tags that tell the web browser how to display text, image and links. The language standard provides guidelines on how these items should be displayed and put it, is up to the client software to determine the final form.

HTML documents are standard documents that have special markup "tags" embedded in them. These tags are character or characters surrounded by <and>. These tags tell the browser that what the text is and how to display it. Tags can either describe a logical or a physical style. The logical tag tells the browser what a piece or text is; for example, major heading physical tags, on the other hand, tell a browser how to display something, such as italics.

Activities are not available to the academic community through INTERNET. In order to overcome the problem, and to enable the interested candidates, to know more about the School, a website was developed by the researcher. The goal is to make information and services that work for all who need it. Accessible design is good design for everyone and usable for all who visit it.

Objective

- Developing website for School of Library and Information Science, D.A.V.V, Indore which can be used as a standard format for other Schools of studies.
- Developing an error free library automation software for a simple department library
- Creating a data base of books and other reading materials available in the School of Library and Information Science and accessing these details through a web OPAC.

Need

Today's web sites need to offer more than just access to online catalogues and database. Web sites need to anticipate the user's expectations with design elements that make it easy to find and use information. Organizations, especially libraries, need to take a fresh look at their web sites in the light of usability and accessibility issues. Large, medium, or small – School, public, academic, or special – all libraries and organizations need to keep up-to-date with what's happening in Web design. This brings fresh ideas to the Web environment. Experts will present and discuss user-centered design benchmarks, practical usability testing technique, the do's and don'ts of writing for the Web, and targeting search results for the user while providing for efficient site management.

Introduction to HTML

One of the primary foundations of the World Wide Web is the hyper text markup language (HTML). HTML is the primary format in which documents are distributed and viewed on the web. Many of its features, such as platform – independent formatting, structural design and especially hypertext make it a very good document format for the internet and the WWW.

HTML was originally developed by Tim Berners-Lee at CERN in 1989. HTML was envisioned to be a format that would enable scientists use very different computers to share information seamlessly over the network. Several features are necessary. Platform independence, in which a document can be displayed similarly on computers with different capabilities (that is, fonts, graphics, and color). Hypertext, meaning and word or phrase in one document could reference another document, would allow for easy navigation between and with in the many large document on the system. Rigorously structured documents would allow for advanced applications such as converting document to and from other formats, and searching text database.

Today, HTML pages are the standard interface to the internet. They may include animated graphics, sound and video, complete interactive programs, and good old-fashioned text. Millions of web pages are retrieved each day from thousands of web server computers around the world.

Rules of HTML

White space is ignored in an HTML document. White space such as tabs and carriage returns are ignored when parsing HTML this means to insert a carriage return, you need to specify an HTML tag. This also means you can't simply line up columns by putting in multiple spaces. This does allow the designer to make the HTML source look cleaner through.

Tags are not Case Sensitive

< Pre> and <Pre> are exactly the same. Most designers make tags all uppercase to make them easier to spot in documents, but this is not a requirement.

Most Tags occur in Pairs

Tags usually have a start tag and an end tag. End tags have a slash / in front of the tag. For example, <B> will start the bold text, and </B ends it. HTML documents are made up of three parts: The declaration, the header, and the body.

The declaration is simply a tag that defines where the HTML document starts and ends. The tag to use is <HTML> and the closing tag is </HTML>. This goes at the beginning and end of all HTML documents.

The header part contains information about the document. This includes at least the <TITLE> and <BASE> tags. The <TITLE> tag is usually displayed at the top of the browser and should be something that will allow the user to understand what the document contains. The <BASE> tag defines where relative URLs are referenced from. The header is enclosed by <HEAD> and <Head>.

The body document is contained between the <BODY> and </BODY> tags. This

is where the document content is stored along with the tags that describe it.

The HTML language elements also known as markup tags or just tags, begin with the less than symbol (<) and end with a greater than symbol(>). Immediately following the less than symbol is the command name (which is not case sensitive) for many of the commands they are followed with attributes and assigned values. Be careful with the assigned values because they may be case sensitive

Server-Side Scripting

Server-side scripting technologies, such as Microsoft's Active Server Pages (ASP) or macromedia's cold fusion allow dynamic pages to be related easily. All server side scripting languages including the popular ASP, cold fusion JSP and PHP languages, work fairly. Similarly, the idea is that script templates that contain a combination of HTML and scripting language are executed server side to build a resulting web page. Usually, some form of server engine intercepts page requests, and when files with elements certain extensions such as .asp,.cfm, .jsp,.php, or.xhtml –are encountered, the script elements in the page are replaced with the resulting markup output.

Server side scripting languages are often used to build dynamic pages from databases, personalize content for users, or generate reusable components in pages. The syntax for each language is different, and many developers are somewhat religious about the merits of one language over the next, but the fact of the matter is that none of them scales well for extremely high volume sites. Such sites usually require server API programs which are discussed next. Online information about sever side scripting can be found at these URLs:

- ASP Information: http//msdn.microsoft. Com/asp
- ColdFusionInformation:http://www.macromedia.com.software/coldfusion/
- PHP Information:http://www.php.net/
- JSP Information: http://java.sun/products/jsp

Server APIs

Server API (Application Programming Interfaces) programs are special server-side programs built to internet closely with the web server. A simple way to think of server API programs is as plug-ins to a web server. Common APIs include ISAPI for Microsoft's IIS server, NSAPI for the Netscape /I Planet/sun server, apache modules for apache, and Java servlets for Java enabled web servers. The benefit of server API programmers is that, their close interaction with the web server generally translates into high performance. The downside, of course is the complexity of writing such programs and the possibility that an errant server module may actually crash the entire server.

Information about server APIs can be found at these URLs

- Apache module information: http://modules.apache.org/
- ISAPI Filters/ Extension Information: http://msdn.microsot.com
- Java servlet information:http://java.sun.com.priducts/servlet

Basic HTML Tags

The earliest version of HTML contained only a handful of tags. These few tags allow documents to be viewed on much different type of machines in a format that mimics the way to the document is laid out. The HTML specification requires that tags be surrounded by grater than and less than signs <and >. Some tags may be embedded in other tags. To end a tag, you precede it with a front slash /. For example, for preformatted text you would start with <pre> and put your text in then end the preformatted section with</pre>.

The Most common tags available include the following

- TITLE: This tags defines the title of the document. This tag should always give the viewers a descriptive title because they may jump to that document and not work their way to it through your site. Using a title like “example 1” is not a real good idea.
- BASE: This is used to define where relative URLs are referenced from.
- HEAD: This tag is used to separate the body section of the document from the head section.
- BODY: This helps to separate the head section of a document from the body section of the document.
- HTML: This is used to tell the viewer what is HTML and what is not HTML
- H1, H2, H3 H4, H5,: These stand for headings H1 is major headings. H2 is for minor shadings, H3 for major subheadings and so on.
- PRE: This is used for preformatted text. This tells the browser that the text is already formatted. It can be used to set up tables or to allow extra spacing around words.
- I: This stands for italics. It can be used to tell the browser that the text between the opening and closing tag. Should be displayed in italics tags.
- B: This tag stands for bold. it can be used like the italics tags.
- DL: This stands for definition list; a list of items with definitions.
- DT: These are used to identify the definition text in definition list.
- UL: This starts an unordered list. You can also have an ordered list (OL). These require each list item to begin with LI tag.
- LI: This is used inside the up and of tags. It surrounds the different list Items.
- HR: This stands for horizontal rule. It inserts a line at this point. For dump terminals, it uses the underscore for a horizontal line.
- BR: This tag inserts a line break.
- P: This tag signifies the beginning of a paragraph.
- IMG: This allows unlined images to be inserted. It the browser couldn’t display images there would be an ALT option that would display text instead.
- HREF: This stands for hypertext REFerence. This is used to link in other documents.
- INDEX: This can be used to submit information by a script. This is an often used to allow searches.

By using these simple tags we can create very usable documents that can be viewed on any screen. We can also link documents to other documents and have images embedded in with the text. It does not allows us to define the screen color, font size or other attributes to define how a document will look; rather; it allows us to define how it is written.

Here is a simple HTML document:

```
<HTML>
<HEAD>
<TITLE> Test document </TITLE>
</HEAD>
</BODY>

This is line 1.
This is line 2. Note there is no line
Breaks unless we specify them. <Br>like we just did.
<P>
<Ul>
<LI> this is item 1</LI>
<Li>this is item 2.</BR>
</LI>
<HR>
</BODY>
</HTML>
```

Creating Tables

You've probably seen tables as well. These are set up in much the same manner as nested lists. <Table> tag identifies the beginning of the table. The Mtr> and < /TR> tags mark the start and end of each new table row. Within each row, the < td> and </td> tags mark the beginning end of each new piece of data. Column headings follow the < th> tags, the alignment of the elements and border may be specified when the table is declared. A caption may given using the < caption< and </caption >tags. Be sure to use a &/lgt/table to end table.

```
<Table border>
<Caption> table with border <./caption>
<th> column1</th> <th>  column2</th>
<tr>
<td> item </td> <td> item2</td>
</tr>
<tr>
<td>item3</td>item4</td>
</tr>
</table>
<P>
<table>
<caption> table with no border </caption>
```

<th align=”center”> column1<.th>
<tr Aging=”center”
<td> first item in column 1</td> < td> first in column 2</td>
<TR/>
<TR align=”center”>
<td> second item in column 1 M/td> <td> very dry item in column
2</td>
</tr>
</table>

That’s great and everything but if you just wanted text, you’d probably be cantaent with Usenet. It `s time to throw images into the mix.

Adding Image

Browsers can display mage files in your document if they are in either GIF (Graphics interchange Format) or XBM (X Bitmap) format Many browsers also support images stored in JPEG format . Placing Images in your document is rely simple. As shown in the next example. I have a file called “keenSM.GIF” stored in the same place as my HTML document. it is called by the <IMG SRC >tag. Followed by an “=” and the file, surround by quotes.

While fun images are generally large and take a long time to download by a computer using a modern, so it’s always a good idea to keep the number of images in your pages to a minimum.

<IMG ALIGN=”TOP” HEIGHT=”51WIDTH=”75”SRC=”DEENSM. GIF”>This text continues from the top.<p>
<IMG ALIGN=”MIDDLE”HEIGHT=”51” WIDTH =”75”SRC=” “Keensm.gif”> Aligned here with the middle.<p>
<image alt=”the tick cartoon”><p>

Adding Links

Possibly the best part of the web is the ease with which can go from one document to another, or load movies, pictures, sounds and programs. These are accomplished through links. A link gives the location of a file, and the method your computer needs to use to retrieve it. H the link also has a symbol, either a section of text or a picture that the viewer can see and select in a web page.

Links to Other Documents

The basic tag is the for anchor. a link to another web page has this structure: < a href=”link”< click here

The browser would highlight the phrase “click here” on the screen. When the user clicks on the highlighted words. The browser would jump to “link”. There are two types of links: absolute and relative. Absolute links give the full URL (Uniform Resource Locator) to the other file. Relative links give the location of the other file in relation to the current document displayed on the browser.

Absolute links are the full URL of the other file. Web browsers use URLs as a

standard format for the information required accessing other files. Each URL contains the types of file and its location. Like this:
Scheme: //host. Path/filename

In place of type. Insert Rows to divide the Window into horizontal frames, or insert COLS to divide the Window into frames. In place of each size, provide a size for a frame. This can be one of three types:

- **Percent:** of the window size, To specify a frame that's thirty percent of the current Window size, use 30%for size
- **Absolute:** size in pixels. To make a frame that's 200 pixels .use 200 for size
- **Relative:** size A relative sized frames is defined by using an asterisk *for size.Well discuss these size options more latter. For now, let's focus on frames given as a percent of the total Window size.

After you have set up the layout of the frames, you need to tell the browser where to find the web page that goes into each one. This is done using the <FRAMR> tag. The tag works as follows:

<FRAME SRC>= "url">

In place of URL, give the URL of a page, image newsgroup, telnet session, or whatever you want.

Let's look at an example. I've written two simple web pages ,called web page I. html and Web page 2html.that have a picture and a link back to this spot.I'II put each one in a frame. The example gives the HTML source of the page that defines the frame layout. This example is designed to show the basic use of <FRAMESET> and <FRAME>.

Web Server

Web pages are created using HTML syntax. These pages must be organized and stored at a central computer. The organization of web pages into directories and files stored on the HDD of a central computer is called WEB SITE creation. Computers which store web pages in the form of directories and files and provide these files to be read, are called servers. They act like service providers that service the need for information.

The Server Computer Runs Special Software Called Web Server Software that Allows

Web site management

- Accept a client's request for information.
- Respond to a client's request by providing the page with the required information.
- Some of the most popular software, which servers run to allow them to respond to client request for information, is Internet Information server (IIS), Apache web server, Netscape server, and Microsoft personal web server.

Web server software stores and manages web pages. When required, the web server accepts request for these web pages , retrieves this web pages from its HDD, and sends the page back to the client who requested for it.

Web Client/Browser

To access information stored in the form of web pages, users must connect to a web server, once connected an interface that displays the contents of the web page is required. Computers that offer the facility to read information stored in web pages are called web clients.

Web clients run special software called a browser that allows them to:

- Connect to an appropriate server.
- Query the server for the information to be read.
- Provides an interface to read the information returned by the server.

Some of the most popular browser software's that clients run to allow them to query web servers for information is Netscape communicator, Internet Explorer.

2.9.1 Understanding How a Browser communicates with a Web server

As seen earlier, a web server is responsible for sending web pages to a Browser on a client when a browser communicates with a web server; it results into a four step HTTP TRANSACTIO

Introduction

A web site provides the world with a graphical interface to information. Some companies are using the web to deliver 24 hour customer service. Some use the web to provide electronic software distribution, advertise job openings, or sell goods and services. Some places run web sites to collect data from remote computers, such as large scale research projects or international sales forces. Some companies use the web internally to publish their employee handbook or provide an electronic suggestion box.

The World Wide Web I aptly named. By analogy to a spider's web, we can think of the internet as the strands of the spider's web and the servers on the internet like the intersections of the strands. The World Wide Web literally covers the globe. One little known fact about the web is that it not only works on the global internet but it is also a great idea for an intranet. In other words web forms and databases are a terrific way for a company to communicate and deliver data across a LAN or WAN.

The web site can be considered a publishing concept with its own set of evolving expectations. In fact the way the web sites are developed with out any rules. But if the web is to develop into an economically viable entity, where information can be easily count and goods and services contracted it will necessarily take on many of the characteristics of traditional publication

Describing the Design

Description of the design is one of the most important activities for the web site4 design. A different description specifies different images. Client, site , pages and interactivity will be the different factors for describing the web site . There are certain variables under these categories which are also very important and considered for the web site design. The following tables show some of the variables:

Client	Site	Pages	Interactivity
Age	Depth	Text	Controls
Education	Interlinks	Background	Navigation
Needs	Interlinks	Graphics	Feedback
	Response	Video	Input
	Resources	Sound	

3.3: The Functions of Web Graphics

Graphics on the web serve much the same function as they do in traditional publications, with a couple additions:

- A web graphic must add to the communication o f information. If the graphic is used strictly as an embellishment, it must generate the desired effect on the reader, not simply take up space.
- A web graphic must be appropriate in content, scale, file format and style. Use a line illustration to show an abstraction of reality. This allows the reader to focus on the desired information. Use a Photograph when spatial environmental or material information is needed.
- A web graphic must be matched to the causal and technical skills of the intended client. What is the visual acuity and competency of the client?
- A web graphic must to be tailored to the technology available to display it.
- A graphic interface must be intuitive. Your client must easily determine how to navigate through the site and what elements are clickable. The design itself must be coherent. That is, must make sense. One way to achieve this is by presenting a consistent look and feel to your pages. Control panels that move around from page to page, introductions in different sizes and different text fonts, and a variety of buttons and click boxes. Finally, pages must have readability.

Web sites are designed to entertain, inform, communicate and persuade. These cardinal functions largely determine the site's structure and its graphic image informing someone about products, services or information relies heavily on graphic images because information can be, well boring. But a site whose main function is to make information available to the client must allow substance to prevail over form.

3.4: Planning an Effective Design

Effective web site design begins with effective navigational design. A side from the content and graphics, we plan to provide in our site navigation. How will users know where they are or where they are going in our structure? What graphics or screen

elements will tie our pages together and give them a coherent look? How will we efficiently and effectively present the users with what they are looking for?

On the net we simply dodge the site and go somewhere elise. Allowing the user to keep his or her sense of direction and control is important. A site listing on the first page is a start, but there must be continuity to the pages. This could include a navigation bar that is on all pages of a constant link back to the first page. Another method is to provide access to visual map of all the pages at the site which allows the user to immediately go anywhere with a click of the mouse. Each web page created is a virtual interface, a means of interacting with the computer and ultimately with the information at the site. Consistency across these pages not only makes users feel more comfortable with a site but also gives them a sense of location and helps them find what they are looking for more easily. To help create consistency across pages follow these steps.

- Design a graphical element that represents web site. This can be a logo, text element, or product.
- Establish subordination by scaling the graphic. The larger the graphic, the more important the topic. The smaller the graphic, the deeper into the web structure. In addition to making the user more comfortable, graphical elements that are consistent from page to page increase the loading speed of the pages, when most browsers load an image, they cache the information in other words, the browser writes it to the hard drive. This means it only downloads the graphic the first time it is used. ALL subsequent pages that use the element pull it from the cache on the hard drive rather than loading it from the net consistently fusing your graphics is a smart practice both from a design and systems standpoint.

Planning the Home Page

No other aspect of your web site makes an immediate impact than the first screen, a client sees after typing in your uniform resource locator (URL) and pressing the enter key. Everyone has accepted the axiom that “First impressions cont” or “we only have a very few seconds to convince the user that interesting things lies beyond the first page.

Main concern should be to put up pages together and make them effective. Pages should be designed in such a manner that people would like to visit the site frequently. They should find it interesting, informative and worthy of a book mark. In communication the first impression is important. The first page of a web site is vitally impotents the key to first page development is to anticipate the needs of the prospective user. Most of the companies spent time and money in just to know the audience, finding what appeals to them, and what they want. The first page also gives the users a sense of what the site is about. The look and feel of first page should support a site’s purpose and set the atmosphere. This is conveyed through the design layout and graphics

The Splash Graphic Should

- Load quickly. Use either a small, Graphical interchange format (GIF) graphic, a

larger interlaced GIF, or a progressive joint picture experts group (JPEG) GRAPHIC.

- Say something immediately about the company or its services. If the company has a well- known logo, use it dominantly to parlay existing identification. If its name is a market leader, feature if prominently,
- Integrate the function of the page by directing the reader's eye to available interactions.

Creating a Home Plan

Creating a home page plan can be one of the more challenging aspects of designing a web site. Like any new work, it helps to form an outline of what you want to present.

Although home or start pages vary widely from one web site to another, there are identifiable elements common to all. There are five criteria for the first page in a web site:

- Exactly identify the name of the sponsoring body
- Describe the function of the web site in a short passage
- Clearly display topology of the site. The splash page functions as the table of contents. Use it as such.
- Establish the relationship between level one topic and their subordinate subjects. The sections guide the user to major topics in the site. This is done through buttons, clickable areas, or linked wordlists.
- Provide contact information with the host site

Content Organization

One of the tensions in the web developer community is between the web as an advertising medium and the web as an information medium. The web is a new kind of medium with different rules from print., TV, or radio. The whole industry is trying to find out what works best for the web. One thing, we know for sure is that, people go to the web to look for information. Many people think that the web is like a library. When these people see ads on the web, they feel much as they would if they went to the library and found mostly product catalogs.

The web can certainly be used to promote commercial products, but advertising on the web takes a different form than advertising in other media. In print, for example, we can pay to run an ad or we can write an article. Even in print, may people consider articles that we write or articles written about us about much more effective than ads alone?

A web site must do more than advertise. The immediate objective is to draw people to the site by promising information. Then delivering on that promise.

Conclusion

HTML is the basic language for webpage development. HTML language makes uses of HTML are used in layout structure of the document and establish links with other documents for the web page of School of Library and Information Science. Writing the HTML source code in note pad with the help of opening and closing HTML tags.

Scripting language ASP (Active Server Page) are executed server side to build a resulting web page. The script element in the page replaced with result out put. Server side scripting language is used to marked dynamic pages from data base personalize content for users of the School web OPAC

The School of Library and Information Science web page is different from other simple webpage, because it covers the Web- OPAC, where the data is has to be accessed through some other database server. According the need for a web site for the School of Library and Information Science was fulfilled with the completion of this project web site.

This web site will enhance the utility of the information recording the School of Library and Information Science and its activity across the globe. The development of this web site is a step towards implementation of Information Communication Technology in the School of Library and Information science

Suggestion

- Similar home page/website need to be developed for other schools of Studies of the University.
- The OPAC needs further studies with links to electronic resources and other useful web site.
- The MLISC dissertation should made available in internet.

References

[1] Vats, Lokesh, Web Designing With HTML JAVA Script VBScript & Into-to E-Com. - Delhi: Cyber Tech Publications (2001) Page No. 8 – 12, 19-20, 27-28

[2] Bayross, Ivan, Web Enabled Commercial application Development Using HTML, DHTML, JavaScript, Perl CGI. - New Delhi: BPB Publications (2007) Page No. 12, 13

[3] Singh, Umesh Kumar, Internet &web Technology. - Indore, Image Publication ed.2002 Page No.230-231,237-241,243-244.

[4] Powell, Thomas, Web Design: The complete Reference, 2nd ed.-New Delhi: Tata Mc Graw-Hill Publishing Company, 2006 Page No.60-61

[5] Millhollon, Mary Easy Web design. Prentice-Hall of India – New Delhi, 2006

[6] Bayross, Iva Java EE 5 for Beginners. Shroff Publishers & Distributors .- Mumbai, 2007.

[7] Haefel, Richard Monson Java Message Service. Shroff Publishers & Distributors. - Mumbai, 2006.

[8] Chavan, Shirish Java for Beginners. Shroff Publishers & Distributors. - Mumbai, 2007.

[9] MClaugblin, Brett D. Java & XML. Shroff Publishers & Distributors.- Mumbai, 2007.

[10] Richardson, Leonard Restful Web Server. Shroff Publishers & Distributors.- Mumbai, 2007.

[11] Dale, Nell Introduction to Java and Software design. Narosa Publishing House.- New Delhi, 2001.
[12] Louden, Kenneth C. Programming Languages: Principles and Practice. Cengage Learning.- Ausralia,2006.
[13] Schildt, Herbert The Completer Reference Java2. Tata MCgraw-Hill Publishing Company Limited,- New Delhi 2006.
[14] Sebesta, Robert W. Concepts of Programming Languages. Pearson Education.- New Delhi, 2009.
[15] Balagurusamy, E. Programming with Java. Tata MCgraw-Hill Publishing Company Limited,- New Delhi 2007.
[16] Holzner, Steven HTML Black: Comprehensive problem solver. Dreamtech Press,- New Delhi, 2009.
[17] Holzner, Steven Java 6 Programming Black book. Dreamtech Press,- New Delhi, 2009.
[18] Holzner, Steven Java server Programming. Dreamtech Press,- New Delhi, 2009.
[19] Holzner, Steven Web Enabled Commercial Application Development using : Ivan Bayross. BPB Publication.- New Delhi,2010.
[20] Fischer, Mario Web site Boosting: search Engine optimization usability website marketing.- New Delhi, 2008.
[21] Comer, E. Dauglas computer Networks and Internets: with Internet Applications. Pearson education,- New delhi,2011