

Site Navigation

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Abstract (2)

Most *Web pages* are part of bigger structures, usually *Web sites*. One common goal of Web sites is to make navigation of Web pages easy to understand and use. There are two main sides to site navigation: how to design it from the user point of view, and how to implement it from the Web site of view. User perspectives can be seen as a special case of *Web Design Patterns*: tasks for Web-based publishing that have to be addressed for a large percentage of all Web sites. Implementation perspectives look at how to efficiently manage information so that changes to the Web site are easily possible.

Navigation as Design Pattern

Navigating Web Sites (4)

- The Web is a hypermedia system
 - navigation between Web pages is a central issue on the Web
 - navigation of a site can be controlled by the site
 - navigation beyond a site depends on thirs parties
- Standardization vs. Customization vs. Best Practices
 - [too much of a good thing](http://www.teacherxpress.com/) [http://www.teacherxpress.com/] (link overkill)
 - [Mystery Meat Navigation](http://www.connexproject.com/) [http://www.connexproject.com/] (a.k.a. Minesweeper Navigation)
 - [no Flash, no web site access](http://www.cuh2a.com/) [http://www.cuh2a.com/] (bad for [Usability and Accessibility](#) [Usability and Accessibility])
- Navigation should be utilitarian and intuitive
 - any noticeable navigation probably is not well-designed
 - navigation becomes more challenging with the size of a site

Page-Based Navigation (5)

- Navigation embedded as integral part of site/page design
- Allows complete control and freedom over designing navigation
- Makes it hard to have consistent navigation across sites
- Various design patterns for navigation are popular
 - vertical vs. horizontal navigation menus
 - exposed vs. hidden navigation substructures
 - hover vs. click-based substructure display
- “With great freedom comes great responsibility.”

Navigation Metadata (6)

- [Document Metadata](#) [Advanced HTML; Document Metadata (1)] can include navigation information
 - not accessible with most browsers
 - limited in its expressiveness (simple scheme for links)
 - only used by a tiny fraction of Web sites
- Not fundamentally different from [Page-Based Navigation](#) [Page-Based Navigation (1)]
 - the navigation information has to be available on the server
 - it has to be included in the Web page for supporting navigation
- Some advantages over [Page-Based Navigation](#) [Page-Based Navigation (1)]
 - machine-readable for crawling and accessibility
 - does not clutter page content
 - can be used or ignored based on user preferences

Generated Navigation Metadata (7)

```

<head>
  <meta http-equiv="Content-Type" content="text/html; charset=UTF-8"/>
  <title>Site Navigation ; Erik wilde ; UC Berkeley School of
Information</title>
  <meta name="copyright" content="Copyright © 2009 Erik wilde"/>
  <link rel="DCTERMS.license" href="http://creativecommons.org/licenses
/by/3.0/" title="CC 3.0"/>
  <link rel="stylesheet" type="text/css" media="screen, projection, print"
href="hotspot/kilauea/kilauea.css"/>
  <link rel="stylesheet" type="text/css" media="screen, projection"
href="hotspot/hotspot/layout/slidy/slidy.css"/>
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href="hotspot/hotspot/layout/iSchool/iSchool.css"/>
  <link rel="stylesheet" type="text/css" media="print" href="hotspot/hotspot
/layout/iSchool/print.css"/>
  <link rel="author" href="http://dret.net/netdret"/>
  <link rel="contents" href="." title="Web Architecture and Information
Management"/>
  <link rel="glossary" href="http://dret.net/glossary"/>
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Management"/>
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  <link rel="last" href="wrapup" title="Wrapup"/>
  <link rel="prev" href="foundations" title="Foundations"/>
  <link rel="start" href="intro" title="Introduction"/>
  <link rel="first" href="intro" title="Introduction"/>
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  <link rel="chapter" href="forms" title="HTML Forms"/>
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```

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```

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<link rel="chapter" href="pim2" title="PIM2"/>
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title="1: Navigation as Design Pattern"/>
  <link rel="section" href="javascript:Kilauea.instances[0].showSlide(6)"
title="2: Implementing Navigation"/>
    <link rel="subsection" href="javascript:Kilauea.instances[0].showSlide(8)"
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      <link rel="subsection" href="javascript:Kilauea.instances[0].showSlide(11)"
title="2.2: Server-Side Code"/>
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title="Abstract"/>
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title="Page-Based Navigation"/>
              <link rel="bookmark" href="javascript:Kilauea.instances[0].showSlide(5)"
title="Navigation Metadata"/>
                <link rel="bookmark" href="javascript:Kilauea.instances[0].showSlide(7)"
title="Navigation needs Site Information"/>
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title="Frame-Based Navigation"/>
                    <link rel="bookmark" href="javascript:Kilauea.instances[0].showSlide(10)"
title="Disadvantages of Frame-Based Navigation"/>
                      <link rel="bookmark" href="javascript:Kilauea.instances[0].showSlide(12)"
title="Server-Side Includes"/>
                        <link rel="bookmark" href="javascript:Kilauea.instances[0].showSlide(13)"
title="Conclusions"/>
                          <link rel="alternate" href="web-spring09.xml" title="XML"/>
                            <link rel="help" title="Quick Help"
href="javascript:Kilauea.instances[0].help()"/>
                              <script type="text/javascript" src="hotspot/kilauea/kilauea.js"/>
                                <script type="text/javascript">Kilauea.init({#body': {titleSeparator: 2009-03-02
, settings: {showFooter: true, coupleFooter: true, stackBackgrounds: true},
plugins: {}}});</script>

```

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Implementing Navigation

Navigation needs Site Information (9)

- Navigation information spans all/many pages on a site
 - navigation information is included on all/many pages
 - logically, all these pages change when navigation changes
 - practically, there should be a central place for navigation information
- Somewhere, site and page information must be combined
 1. in the browser based on [Frames](#) [Frames (1)]
 2. on the server based on [Server-Side Code](#) [Server-Side Code (1)]

Frames

Frame-Based Navigation (11)

- [Frames](#) [Advanced HTML; Frames (1)] are a simple and easy way to build navigation
 1. create one page with the site navigation
 2. create a frameset for the site
 3. implement the complete site as living in that frameset
- Only one navigation document has to be maintained

Disadvantages of Frame-Based Navigation (12)

- Navigation is not really integrated with contents
 - layout limitations because there have to be distinct Web pages
- The usual problems of frame-based Web sites apply to all pages
 - Printing does not work well
 - Search engines have a hard time indexing and linking to content
 - Bookmarking does not work well for users
- Frames seriously limit the [design](#) [Navigation as Design Pattern (1)] of navigation

Server-Side Code

Server-Side Includes (14)

- Apache calls them *Server-Side Includes (SSI)*
 - virtually all web servers have SSI features
 - SSI is a feature that has to be enabled by the Web master
- Processed on the server side
 - the server must know that a file has to be processed
 - `.shtml` is the most popular convention for *server-parsed HTML*
- Navigation info should be included in an HTML fragment
 1. the fragment contains the navigation structures (as a list or table)
 2. the fragment is included in all pages needing navigation features
 3. if the fragment is changes, all these pages “change”
 4. the tricky part is to make sure that relative links do not break

Running Server-Side Code (15)

```
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN">
<html>
<head>
  <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
  <title>SSI Time Demo</title>
</head>
<body>
  <h1>Local Time (Server-based)</h1>
  <p><!--#echo var="DATE_LOCAL" --></p>
</body>
</html>
```

Running Server-Side Code (16)

```
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN">
<html>
<head>
  <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
  <title>SSI Include Demo</title>
</head>
<body>
  <h1>Content Inclusion (Server-Side)</h1>
  <p><!--#include virtual="demo.txt" --></p>
</body>
</html>
```

Conclusions

(17)

- Site Navigation is essential for site usability and accessibility
- Navigation data should be managed in a single location
- Server-side mechanisms are very useful for site navigation
- SSI is a simple and convenient mechanism for server-side logic