

Web Design Patterns

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Design Patterns

- Goal:
Practical advice and solutions to concrete design problems of Web Development
- Definition:

A pattern is a standard solution
to common and recurring design problems
- Related:
Related (but different) to Object-Oriented Design Patterns
- Hint:
these Web Development patterns should be applied where they actually solve a problem.
- Warning:
as with all design decisions, all consequences should be evaluated and fully understood.

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(Some) Kinds of Websites

- Web Presence
 - “My Homepage” - Let people know you exist
- Company Site
 - Detailed description of a corporation (contact, history, solutions, products, services, customers, documentation)
- E-Commerce Site
 - On-line shopping site, including support for submitting and tracking purchase orders by customers
- Product Site
 - usually published to support the product launch (e.g., a movie, a car, a software release) includes marketing and technical information
- Project Site
 - Support the collaborative work on a project, publishes artifacts, documentation for download
- Informational Site
 - Navigate through large amounts of data, with good search capabilities
- Community Site
 - Communication medium: user registration, forums, on-line presence, calendars, news, chat, private messaging, subscriptions to new content, blogging
- Hybrid Site
 - Some website are a mixture of features provided by the other kinds

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The Homepage

- So much to say, so little time
 - Average time spent reading a homepage:
 - Beginners: **35 seconds**, Advanced users: **25 seconds**
 - Only 25% of users will scroll down a homepage
- 4 main purposes of the homepage:
 - Identify a Website
 - What is this website?
 - Brief website summary
 - What is this website about?
 - Website interesting highlights
 - Why should I continue browsing this website?
 - Website navigation structure
 - Where do I go from here to quickly find what I am interested in?

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Website Navigation

- Problem: help the user find the way in a hyper-text.
 - Where am I?
 - Where do I go from here?
 - Can I go back?
 - Have I been here before?
- Solution: give users clues on the page to answer those questions. **Page = Content + Navigation**
- Warning: choose one navigation style for the entire site and follow it consistently or users will be even more confused!
- Browsing vs. Searching
 - Traverse a hypertext by following interesting links.
(You **do not** know in advance what you are looking for)
 - Traverse a hypertext in order to find some information.
(You know in advance what you want to find)

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Navigation Patterns

- Home Link
- Top Link
- Link vs. Action
- Menus
 - Shortcut drop-down box
 - Teaser menu
- Hierarchical Navigation
 - Directory style
 - Tab (or nested tabs)
- Breadcrumbs
- Site Map
- Most-popular, Most-recent content

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Links

- Links are the basic tool for navigating the Web hypertext.
- Clicking on a link brings user to a new page or to a different section of the current page.
- Home Link
 - ``
 - Helps users that got lost to go back to the homepage.
 - Usually the website logo shown on every page has a link to the homepage
- Top Link
 - `` ``
 - Helps users to scroll back to the top of the page.
 - Only useful in very long pages
- Link vs. Action
 - Navigation links should be visually distinguished from Action links.
 - Actions affect the state of the visit to a website (see POST vs GET)

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- Menus group navigation links as in Desktop applications.
- Are they really a good way to navigate a Website?

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Università della Svizzera italiana Facoltà di scienze informatiche **Shortcut Drop-Down Box**

- Give experienced users direct access to the most important or commonly visited parts of a website
- This solution is used together with other navigation patterns to bypass the existing hierarchical navigation structure of large websites



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Shortcut Drop-Down Box

```
function jump(e) {  
    var url = e.options[e.selectedIndex].value;  
    if (confirm(url))  
        window.location = url;  
}
```

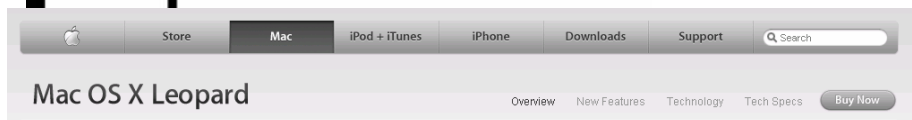
```
<select name="Country" onchange="jump(this)">  
    <option value="http://www.google.com">USA  
    <option value="http://www.google.ca">Canada  
    <option value="http://www.google.ch">Switzerland  
</select>
```

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Tabs



- Present the main navigation of a Website
- Help users keep track of their location context (current tab should be highlighted)
- Variation: nested double tabs, for hierarchical navigation, show the first 2 levels

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Breadcrumbs

Top: [Computers](#): [Software](#): [Software Engineering](#): [Conferences](#) (12)

- Users browse deep into a hierarchical navigation structure while keeping the current page in context of higher level “containers”
- **Jump back to any of the higher levels of the tree with one click**
- Help users learn how information is structured by showing the current path from the root
- Does not take up too much room on the page
- Users may overlook breadcrumbs, but do not get confused by them
- **Warning: do not confuse the navigation history with the navigation hierarchy!**

<http://www.useit.com/alertbox/breadcrumbs.html>

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Navigation Overview

These patterns help interested users get an overview over the navigation structure of a website.

They should not be used as the main solution for navigation

- **Site Map**
 - Give users a top-level view over the whole site.
 - Show them an index with links to the content of the whole site
 - Usually follows the hierarchical navigation structure.
 - Users expect to see all pages listed in the map of a site
- **Top Content**
 - Let users get to the most “important” content of the site quickly
 - Popularity (most visited pages)
 - Freshness (latest pages)

Search Patterns

- Quick Search Box
 - Search Area
 - Advanced Search
 - Wizard, Guided Search
- Help users search for information
- Search Tips
 - Search Autocompletion
 - Search Cloud
- Help users figure out what to search for

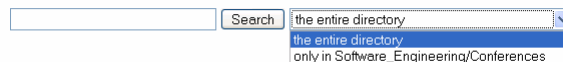
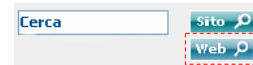
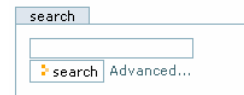
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Quick Search Box

- Problem: users want to quickly locate information within the website
- Solution: add an input box which lets users enter keywords to search the website
- Variation: **Search Area.**
Next to the box add a few links to search-related pages and indexes
- Bad Variation: Search “the Web” option.
If users would like to search the web they would go to a search engine, do not give them the opportunity to escape...



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Helping to Search

- Search Tips
 - Give beginner users help on how to improve their search results, especially if they did not find anything
 - Do not mix with advanced search
- Search Autocompletion
 - Suggest to users more specific search terms as they type their search keyword in the search box
- Search Cloud
 - Show what keywords other users are currently searching for. Instead of showing a histogram, use a larger font size to highlight most frequent keywords

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Data Output Patterns

- Tables and Lists
 - Stepping
 - Paging
 - Scrolling
 - Sorting
 - Filtering
- Preview
 - Tooltip
 - Thumbnail
- Summary and Detail
 - In-place expansion
 - Page Blocks
 - Tabs

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Tables and Lists

- Problem: On-Screen reading of large data collections is hard. Transferring large quantities of data to the browser is slow.
- Solutions: Use these techniques to help users navigate over large collections of similar items.
- Scrolling
 - Web browsers have scrollbars.
 - Do not assume users know how to use them effectively.
 - Warning: Using the CSS overflow property can be annoying if the browser window is made larger and the scroll box does not adapt
- Stepping
 - Show one item at a time and give links to next, previous.
 - Helps with sequential navigation
- Paging
 - Show items “one page” at a time. Pages can contain 10, 50, 100 elements.
 - Provide means of stepping through pages (next, previous page) and also knowing the total number of pages
- Sorting and Filtering
 - Provide means for users to interact with the data collection, by sorting and filtering the items according to their criteria

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Summary and Detail

- Problem: users need to inspect certain items to get more information about them
- Solution: show the detail for the selected item together with the list, to avoid losing context and quickly moving to other items
- Variations:
 - Page blocks (summary list at the top of the page with # links into detail blocks within the page)
 - In-place expansion (show/hide details as the item is selected/deselected)

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- Comment Box
- Data Form
 - Multi-page Form
- Special form widgets
 - Up/Down Counters
 - Date, Date Range
 - Color Picker
 - Rating Stars
- Form validation and feedback
 - Required vs. Optional Fields
 - Client-side vs. Server-side validation

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- Problem: Users want to react about the content of a certain website or page
- Solution: add a comment box, where they can submit their feedback.
- Variations: Comments may be visible to other users or simply logged for the webmaster to see.
 - To attract comments, these should be anonymous. Comments may only be accepted from registered users. Users asking questions should provide their email to get an answer.
- Also known as: Guest Book, Feedback Form

Requests / Feedback

Please feel free to send us your questions and feedback with the form below.

From:

To:

Subject:

Comment:

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Multi-page form

- Break a long form into multiple ones, especially parts of the form depend on previous input.
- Make the user aware that he will have to go through multiple pages before getting the final result

FLÜGE

1 Suchen 2 Angebot 3 Auswählen 4 Buchen 5 Bestätigung

HINFLUG von ZÜRICH nach

RÜCKFLUG von nach ZÜRICH /ZRH

ABFLUG - DATUM 31 Okt 2007 Uhrzeit beliebig

RÜCKFLUG - DATUM 07 Nov 2007 Uhrzeit beliebig

ANZAHL REISENDE

1 Erwachsene

0 Kinder (2 bis 11 Jahre)

0 Kleinkinder (unter 2 Jahre)

0 Jugendliche (unter 25)

0 Studenten

HIN - RÜCKFLUG Hin- und Rückflug Oneway Nur Direktflüge

WEITERE FLUGKRITERIEN

Fluggesellschaft: ALLE AIRLINES Flugklasse: Economy

TARIFANZEIGE NUR verfügbare Tarife anzeigen Alle Tarife anzeigen

EINGABEN LÖSCHEN FLUGANFRAGE STARTEN

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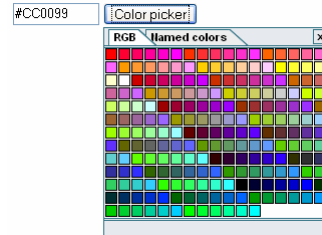
Special Form Widgets

- Up/Down Counters
- Date, Date Range
- Color Picker
- Rating Stars

Oktober 2007						
Mo	Di	Mi	Do	Fr	Sa	So
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	1	2	3	4

HINFLUG: 31.10.2007 RÜCKFLUG: 07.11.2007

Oktober 2007							November 2007						
Mo	Di	Mi	Do	Fr	Sa	So	Mo	Di	Mi	Do	Fr	Sa	So
1	2	3	4	5						1	2	3	4
8	9	10	11	12			5	6	7	8	9	10	11
15	16	17	18	19			12	13	14	15	16	17	18
22	23	24	25	26			19	20	21	22	23	24	25
29	30	31					26	27	28	29	30		



<http://www.dhtmlgoodies.com>

Personalization Patterns

- Anonymous User Tracking (with cookies)
- Persistent Customization
- User Registration
- User Login
 - Public vs. Private website
 - “Forgot Password” reminder

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Content for the Web

- People visit a website looking for information.
- The website content is what matters
 - Good writing makes a difference
 - People will come back for more useful, updated content
- The website design and visual appearance should not get in the way
 - Navigation to help people find what they are looking for
 - (It does not hurt to have a good looking site)
- Writing for a Web-site is different than writing for a printed publication

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Reading a Website

- People are in a hurry to get the information they need – they keep asking themselves:
 - Is what I am looking for on this page?
 - Should I move to a different website instead?
- Reading on-screen is slower than on paper
- **Scan first, Prioritize and later Read**
 - Use simple and concise language
 - Use informative titles for pages and headings
 - Inverse-pyramid writing style
 - State the most important facts first
 - Use and highlight page summaries
 - Split long pages in self-contained logical blocks
 - Do not write “too much”

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