

Usability

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Slides adapted from Daniela Rosner

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Outline

Introduction what is “usability”

Best Practices common solutions

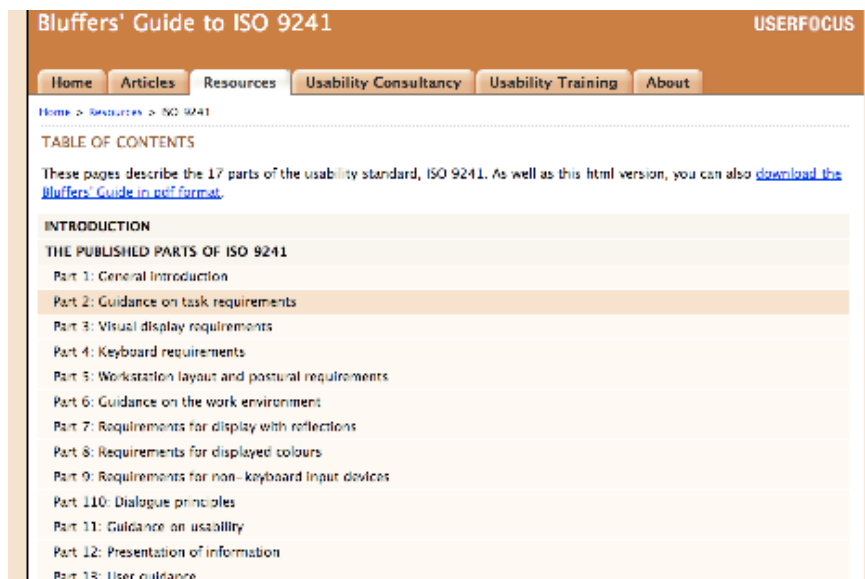
Design Patterns shared languages

New Patterns you design

Definition: Usability

The extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use.

— **ISO 9241-11 (1998)**



The screenshot shows a web page titled "Bluffers' Guide to ISO 9241" with the "USERFOCUS" logo in the top right corner. A navigation menu includes "Home", "Articles", "Resources", "Usability Consultancy", "Usability Training", and "About". The page content includes a breadcrumb trail "Home > Resources > ISO 9241", a "TABLE OF CONTENTS" section, and a list of 17 parts of the ISO 9241 standard. Part 2, "Guidance on task requirements", is highlighted in orange. A link to "download the Bluffers' Guide in pdf format" is also present.

Bluffers' Guide to ISO 9241 USERFOCUS

Home Articles Resources Usability Consultancy Usability Training About

Home > Resources > ISO 9241

TABLE OF CONTENTS

These pages describe the 17 parts of the usability standard, ISO 9241. As well as this html version, you can also [download the Bluffers' Guide in pdf format.](#)

INTRODUCTION

THE PUBLISHED PARTS OF ISO 9241

- Part 1: General Introduction
- Part 2: Guidance on task requirements**
- Part 3: Visual display requirements
- Part 4: Keyboard requirements
- Part 5: Workstation layout and postural requirements
- Part 6: Guidance on the work environment
- Part 7: Requirements for display with reflections
- Part 8: Requirements for displayed colours
- Part 9: Requirements for non-keyboard input devices
- Part 110: Dialogue principles
- Part 11: Guidance on usability
- Part 12: Presentation of information
- Part 13: User guidance

<http://www.userfocus.co.uk/resources/iso9241/index.html>

Definition: Usability

Learnability

Efficiency of use

Memorability

Few Errors

Satisfaction

— Jakob Neilson

The screenshot shows the top of Jakob Nielsen's website. At the top, there is a yellow navigation bar with the text "useit.com: usable information technology" on the left and a search box on the right. Below the navigation bar, the main heading reads "useit.com: Jakob Nielsen's Website". The page is divided into two main columns. The left column, titled "Permanent Content", includes sections for "Alertbox" (Jakob's column on Web usability), "Reports" (with links for "Intranet usability", "Intranet design annual", and "Enterprise portals"), and "News" (with links for "User Experience 2007 Conference", "Page-level building blocks", "Dialogue and workflow design", "Complex applications", and "Enterprise app case study"). The right column, titled "News", includes sections for "User Experience 2007 Conference" (with dates for Barcelona and Las Vegas), "31 full-day tutorials, including a 4-day track on application usability" (with links for "Page-level building blocks", "Dialogue and workflow design", "Complex applications", and "Enterprise app case study"), "Specialized topics from information architecture over translating usability data into design to managing user experience strategy", "Keynote plenary sessions for all attendees" (with topics like "E-commerce User Experience: new research" and "The State of Usability"), and "Financial Times In-house internet aims to recapture staff attention".



Principles

Perceivable

Information and user interface components must be perceivable by users

Operable

User interface components must be operable by users

Understandable

Information and operation of user interface must be understandable by users

Robust

Content must be robust enough that it can be interpreted reliably by a wide variety of user agents



Manifesting Usability

Usability is as important as technical execution.

Build it in

Ensure a usable product by building usability in from the beginning.

Or fix it later

Evaluate completed projects for usability.

Fix what can be fixed.

Implementation may impose constraints.



Building in usability

User-Centered Design

Based on the work of Alan Cooper, et al.

Can be used to design non-technical products including bowling balls and ice cream flavors.

Ideally begins before or coincident with initial product design and development.



Building in usability

The User-Centered Design Process

A product development methodology based on actual user needs, abilities and perceptions.

Offers the most effective path to useful and usable products.

Personas

Are based on actual users.

Put a human face on the amorphous “user.”

Save time by focusing development away from unlikely “edge” cases.



Building in usability

Six phases of UCD

User Research

User Modeling

Requirements Definition

Delivery Method Definition

UI Design

Development Support



Building in usability

Six phases of UCD

User Research

User Modeling

Requirements Definition

Delivery Method Definition

UI Design

Development Support

A lot of UX work is required before any UI design can begin. In the Agile process this is referred to as "iteration 0." Sometimes, there is no project-supplied UI. But there is always UX.

Notice how many phases come before UI Design.



Building in usability

Six phases of UCD

User Research: Who are the users?

User Modeling

Requirements Definition

Delivery Method Definition

UI Design

Development Support



Building in usability

Six phases of UCD

User Research: Who are the users?

User Modeling: What are their needs, abilities and perceptions?

Requirements Definition

Delivery Method Definition

UI Design

Development Support



Building in usability

Six phases of UCD

User Research: Who are the users?

User Modeling: What are their needs, abilities and perceptions?

Requirements Definition: How can the product meet their needs?

Delivery Method Definition

UI Design

Development Support



Building in usability

Six phases of UCD

User Research: Who are the users?

User Modeling: What are their needs, abilities and perceptions?

Requirements Definition: How can the product meet their needs?

Delivery Method Definition: How will the product deliver services?

UI Design

Development Support



Building in usability

Six phases of UCD

User Research: Who are the users?

User Modeling: What are their needs, abilities and perceptions?

Requirements Definition: How can the product meet their needs?

Delivery Method Definition: How will the product deliver services?

UI Design: How will the product appear to and work for the users?

Development Support



Building in usability

Six phases of UCD

User Research: Who are the users?

User Modeling: What are their needs, abilities and perceptions?

Requirements Definition: How can the product meet their needs?

Delivery Method Definition: How will the product deliver services?

UI Design: How will the product appear to and work for the users?

Development Support: How does the test version work for users? How can it be improved before release? How can the next version be improved?



1 User research

Who are the users?

We are not the users. They are not us.

If we're not careful, we'll assume that they are like us, or like someone we know.

The best way to get to know the users is to go to them and see what they're up to.



1 User research

Learn about users'

Goals

Behaviors

Attitudes

Methodologies

Interview

Contextual Inquiry



1 User research

Contextual inquiry

Takes place in task setting

Origins in ethnography

1 or 2 people with recording equipment:

- Note pad
- Audio recorder
- Still camera
- Video camera

List of topics, and ability to follow the user's lead

1 User research



Contextual inquiry would reveal some constraints.

1 User research



Notes and other items external to a system are called **artifacts**.



2 User Modeling

Making sense of user research

Documenting experience

Analyzing data

Finding patterns and clusters

Discovering dimensions

Eliminating edge cases

Developing personas

Writing functional principles

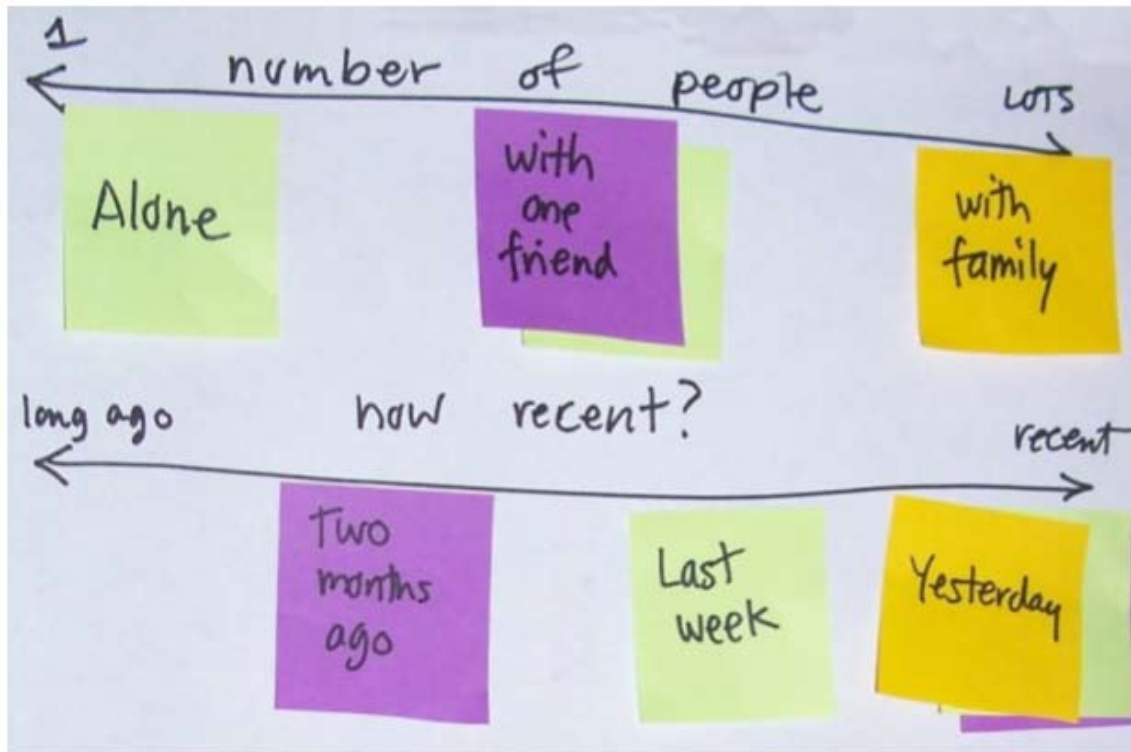
2 User Modeling

Raw data from research phase



2 User Modeling

Filter, cluster and organize



2 User Modeling

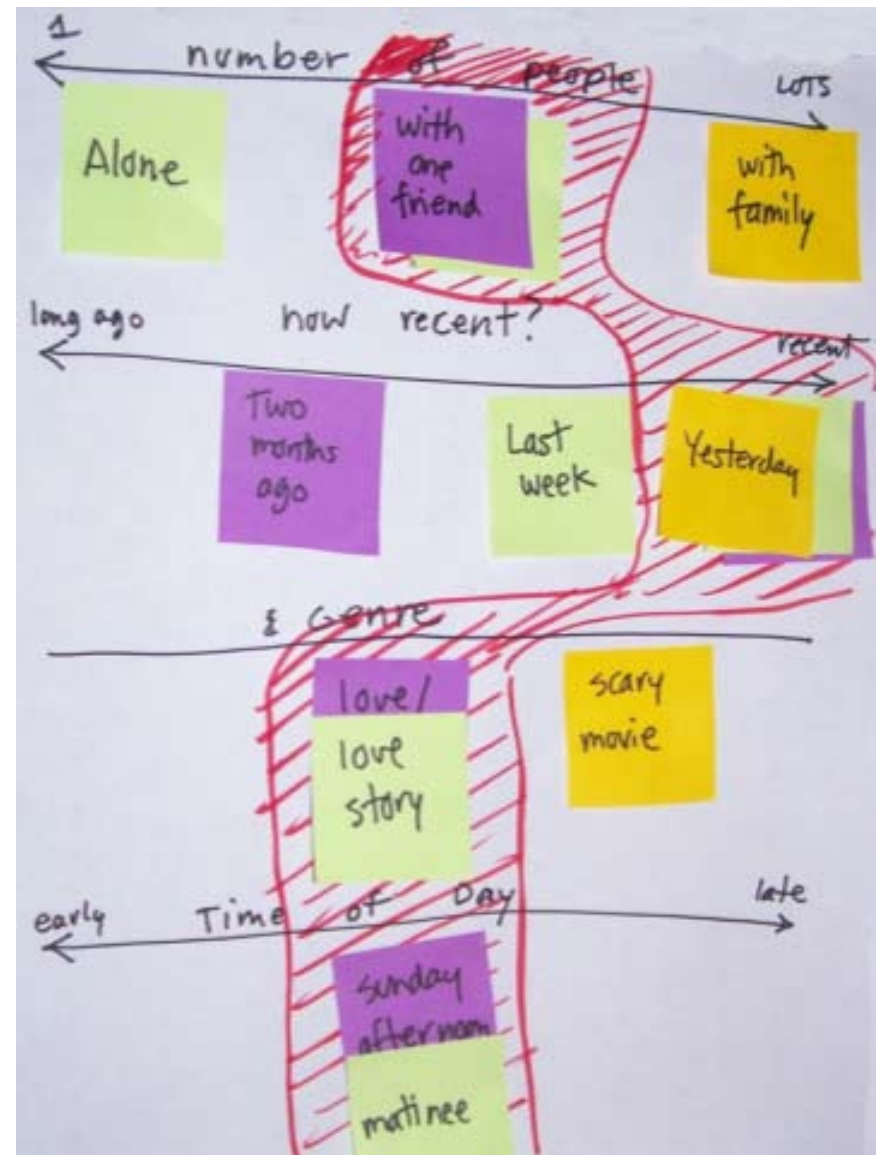
A pattern becomes a persona

“Sylvia”:

- Who: With one person
- When: Yesterday
- What: Love story
- Time: Matinee

A persona is an archetype, not an actual person.

A name & photo is associated, to further humanize each persona.



2 User Modeling

Persona: Example 1

Persona - Jen Yang



Description

Jen is a full-time researcher at Stanford's School of Nursing. Along with her typical activities in the lab, she is a member of a 20 person research project studying nursing in the ER.

Jen is confident in her work and the project study but finds herself fighting with the web-based project site her team uses for "off-line" communication and to store and share project documents...particularly in finding the most current information.

She's familiar with using computer programs to create documents and exchange emails with colleagues and friends. She also likes to do her Christmas shopping on-line.

Goals

- Be "in the loop" on her projects - have the most current project information
- Not to let team members see her work until she is comfortable with it
- Spend her time doing research and minimize the administration overhead including time posting and finding documents on the Project site

Level of Expertise

Office products, email, on-line shopping

Source: The Fluid Project



2 User Modeling

Functional principles

High level statements about product qualities

Stable: subsequent UCD phases will not affect them

Inform subsequent UCD phases, including functional requirements

Examples

- Reminds me when I need it, but does not nag (assists)
- Tells me when something's important (reliable)
- Keeps my friends informed about my schedule (extends)



3 Requirements Definition

Functional requirements

Concrete statements about product features and functions

Stable: subsequent UCD phases will not affect them

Inform subsequent UCD phases, including Delivery Method Definition

Examples

- Two levels of authentication: user and user's designates
- Schedule is exportable to iCalendar format
- Course catalog is always current

4 Delivery Method Definition

Examples

- Web application
- Smart phone application
- Dedicated hardware device



5 UI Design

Wireframe

The wireframe shows a web application interface for managing student information. At the top, there are two placeholder boxes for 'Institution logo' and 'Department logo'. Below them is a breadcrumb trail: 'HOME >> Breadcrumb >> Breadcrumb >> Breadcrumb'. The main content area is divided into a left sidebar and a main panel. The sidebar contains a vertical list of menu items: 'Student info' (highlighted), 'Courses', 'Account', 'Shipping', 'Transcripts', and 'Financial Aid'. The main panel is titled 'Student Information' and includes a help icon (question mark in a circle). It is organized into four sections, each with form fields: 1. 'Personal information' with fields for First name, Last name, Phone, Email, and a dropdown for 'DOB'. Below these are radio buttons for 'Gender' (F and M). 2. 'Parent 1 information' with fields for First name and Last name, and a 'Phone' field. 3. 'Parent 2 information' with fields for First name and Last name, and a 'Phone' field. 4. 'School information' with fields for First name and Last name, and a 'Phone' field. At the bottom left of the main panel is a 'Create new student' button, and at the bottom right is an 'Update' button.

Institution logo Department logo

HOME >> Breadcrumb >> Breadcrumb >> Breadcrumb

Student Information (?)

Personal information

First name Phone DOB
Last name Email Gender F M

Parent 1 information

First name Phone
Last name Email

Parent 2 information

First name Phone
Last name Email

School information

First name Phone
Last name Email

Create new student Update



6 Development Support

Activity

Iterate in response to usability testing



Limitations of UCD

Users may not always

Know enough to act in their own best interest.

Be motivated to meet an organization's goals.

Remediation

Educate the user about the merits of their options.

Communicate the user benefits of the organization's goals.

Make the institution's goals at least not conflict with the user's goals and habits, and at best provide incentives.



Improve Usability

Heuristic Evaluation

Evaluators examine the interface and judge its compliance with recognized usability principles.

User Testing

Run multiple small tests with users to discover interface elements that should be kept, changed, or removed.

Paper Prototypes

Involves creating rough drawings of an interface (on paper) to use as models of a design.

Competitive Analysis

Test interface designs with similar features for similar goals.



Heuristic Evaluation

Visibility of system status

Match between system and the real world

User control and freedom

Consistency and standards

Error prevention

Recognition rather than recall

Flexibility and efficiency of use

Aesthetic and minimalist design

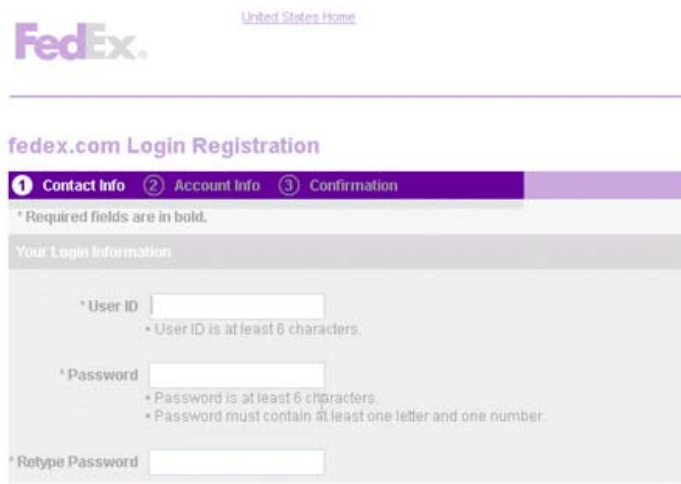
Help users recognize, diagnose, and recover from errors

Help and documentation

Heuristic Evaluation

Visibility of system status

The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.



United States Home

FedEx.

fedex.com Login Registration

1 Contact Info 2 Account Info 3 Confirmation

* Required fields are in bold.

Your Login Information

* User ID

* User ID is at least 6 characters.

* Password

* Password is at least 6 characters.
* Password must contain at least one letter and one number.

* Retype Password



Speak to a R
Call 1-800-41

Mortgage Request STEP 1 2 3 4

Click for Live Chat

Borrower Information

You can learn more about how we protect your information in our [Privacy Policy](#) and by clicking continue you acknowledge receipt of our Privacy Policy and request that LendingTree save the information on your form so that we may assist you with your transaction and facilitate the loan process.

First: Middle: Last: Suffix:

Daytime/Work phone: Evening phone:

Business:

Employment status:

Email address:

Confirm email address:

Create a password:

Please re-enter for accuracy:

Please alert me to money saving tips and special offers via email. Yes No

Heuristic Evaluation

Match between system and the real world

The system should speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.

RATES

Mortgage

Home Equity

CDs

See today's average mortgage rates across the country. Source: [Bankrate.com](#)

Loan Type	Rate	APR
30-yr Fixed	5.98%	6.16%
15-yr Fixed	5.64%	5.92%
5/1 ARM	5.99%	6.94%

» [View rates in your area](#)

Sponsored by:

[Countrywide](#) - Low refi rates. No Closing Cost Refi

Heuristic Evaluation

User control and freedom

Users often choose system functions by mistake and will need a clearly marked “emergency exit” to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.

The left screenshot shows a navigation menu with the following items: AAA Home, Travel, Member Services, Automotive Services, and Financial Services. A red box highlights the menu, and a red 'X' mark is placed over the top of the menu, indicating a lack of clear exit options. The text "Consider AAA for" is visible to the right of the menu.

The right screenshot shows a search bar with the text "Search Music" and a dropdown menu. Below the search bar, there is a promotional banner for "88¢ Every Song. Every Day." and a breadcrumb trail: "You are here: Home Page > Music > Wal-Mart CD Store".

Heuristic Evaluation

Consistency and standards

Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions. Consistency builds the user's feeling of mastery over the interface through recognizability, predictability, empowerment, and efficiency.

Search Results for "pda" from Wired News

Wired News (rss): 1-10 of 350 next >

- [The Toy Will Bring You Joy](#)**
November 25, 2005 Wired News
...need to perform a series of steps on your cell phone to configure it to pair up with The Toy. That's where I hit my first real snag. My laptop and my PDA have Bluetooth, but my cell phone does not. Neither does my roommate's, my neighbor's or my Pilates instructor's. I had a hair appointment in West...
- <http://www.wired.com/news/technology/giftguide2005/0,2926,69597,00.html>**
November 23, 2005 Wired News
...more product info> Magellan eXplorer XL \$360 to \$450 Click for more product info> TomTom GO 700 \$900 Click for more product info> Pocket PC PDA \$750 iPod accessories Whatever your iPod du jour -- be it video, nano or mini -- the right add-ons transform it from a pocket-size amusement to a ...
- [War-Zone Test for Babel-Fish Tool](#)**
November 18, 2005 Wired News
... a project Darpa calls TranTac, is an extension of earlier research spearheaded by SRI that culminated in the Phraselator. That device, essentially a PDA programmed to translate English phrases into other languages, is widely used by troops and medical workers in Afghanistan and Iraq. But the Phrase...



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High Yield Savings Account

• 4.25% APY

Heuristic Evaluation

Error prevention

Even better than good error messages is a careful design which prevents a problem from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.

There were problems with your submission. Please make corrections as noted below.

Please enter a first name.

* First Name:

Please enter a valid email address.

* Email Address:

Please enter a password.

* Create Password:

[6 character minimum](#)

* Re-type Password:

Please review and agree to the [Terms of Service](#) to join the Gallery.

* I agree to use **Kodak EasyShare** Gallery in accordance with the [Terms of Service](#).

Join Now

Yes! Send me special offers and n the KODAK EASYSHARE Gallery Te

Create your own Gallery

- Award-winning, **highest-quality** Kod
- **Share photos** with friends anywhere
- **Quick & convenient** access to your
- New ways to **tell your stories** with Photo Books, calendars, cards and m

Heuristic Evaluation

Recognition rather than recall

Minimize the user's memory load by making objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.

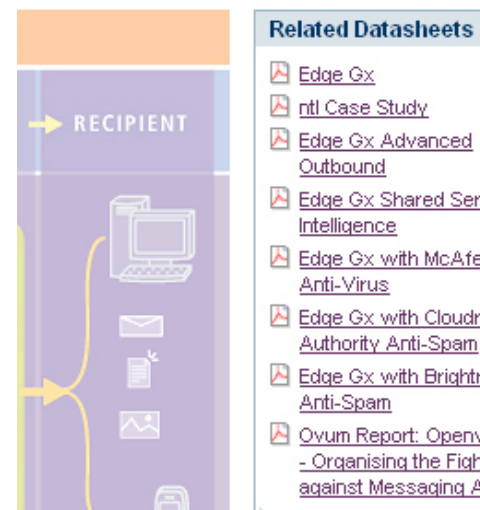
- Please enter a State/Province
- Please enter a Zip/Postal Code
- Please choose a subscription plan for Times Select.

Select a subscription plan

- 14-day free trial into an annual subscription to TimesSelect, \$49.95
- 14-day free trial into a monthly subscription to TimesSelect, \$7.95

Tell us your billing information

Member ID: snokrashe
First Name: Kelly
M.I.:
Last Name: Snow
Address Line 1:
Address Line 2:
City:
State/Province/Region:
Zip/Postal Code:



Heuristic Evaluation

Flexibility and efficiency of use

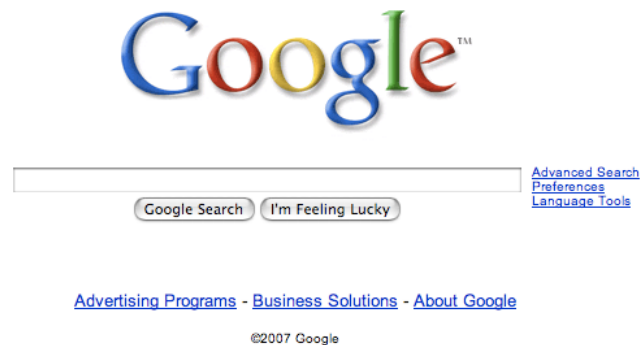
Accelerators – unseen by the novice user – may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.

Home	
Plan A Visit	
Shows & Exhibits	
Education Programs	
Research & Collections	Overview
Space Science Online	Astronomy Research
Support The Adler	Education Research
Infinity Shop	History of Astronomy
	Collections

Heuristic Evaluation

Aesthetic and minimalist design

Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.



Heuristic Evaluation

Help users recognize, diagnose, and recover from errors

Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.

Please enter a password.

* Create Password:

[6 character minimum](#)

* Re-type Password:

Please review and agree to the Terms of Service to join the Gallery.

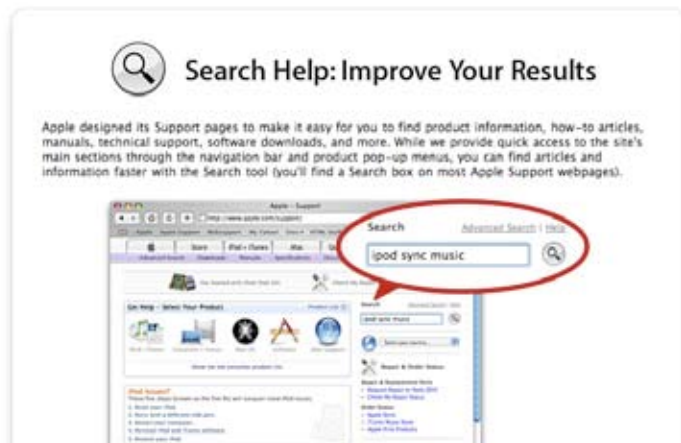
* I agree to use Kodak EasyShare Gallery in accordance with the [Terms of Service](#).

Join Now

Heuristic Evaluation

Help and documentation

Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.



http://www.useit.com/papers/heuristic/heuristic_list.html
<http://www.asktog.com/basics/firstPrinciples.html>



Problems in Web Design

Knowledge about user interface and design is **distributed across many people** and often not shared

Knowledge about what constitutes good user interface is **inconsistent among designers and users**

Each person has their **own agenda** and goals motivating the design of an the interface

Design is not always **valued** as much as compiled code is. If almost anyone can make a web page, how hard can design be?



Confusion in Web Design

According to Jakob Nielsen, multiple studies showed “23% of [web] design elements were done in so many ways that no single approach dominated.” Such design elements included:

- The main navigation schemes (left-hand menu, tabs across the top, navbar across the top)
- Placement of the search feature, which included upper right, upper left, middle, and elsewhere on the page
- The sign-in process.



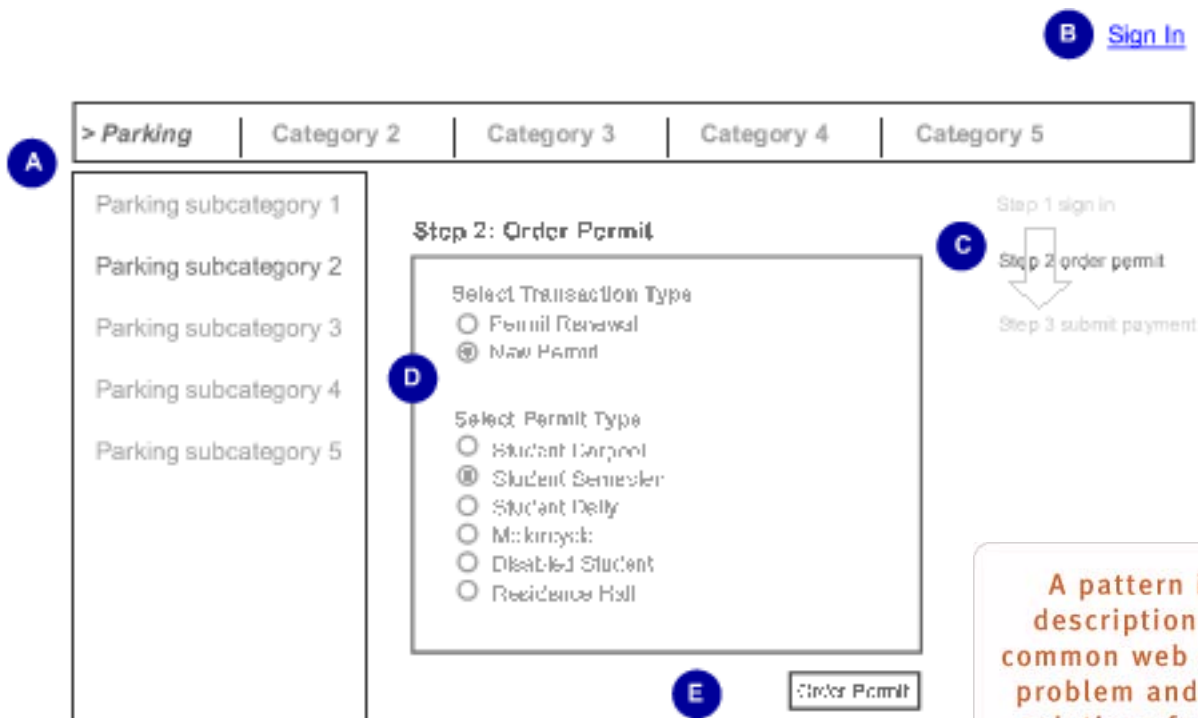
What are Web Design Patterns

Design Patterns are **best practices** and common practices in web design.

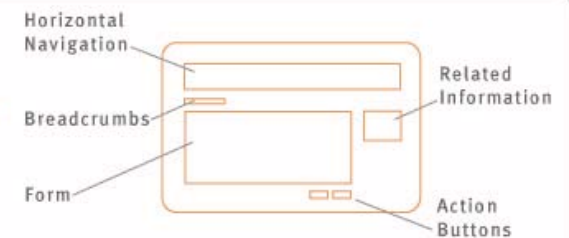
They are **not style guides**, rules or a mandate.

Flexible for different contexts and applications.

What are Web Design Patterns



A pattern is a description of a common web design problem and good solutions for that problem.





What are Web Design Patterns

Models for **common problems** and appropriate solutions in highly diverse development environments.

Provide a **common language** for people to use in their work process.

A Web Design Pattern

Breadcrumbs

(Other names for this pattern: Location Indicator, Location Breadcrumbs) [\[edit\]](#)

Design Problem

The user needs to know their current location within the Web site or application.



source: www.welie.com

Use When

- The page displayed is within a hierarchy of pages and is not the topmost page.
- The user arrived at their current location from an external source such as search results, links in email, bookmarks or any other method that does not lead the user through the site hierarchy.

Solution



- The breadcrumb should always be visible in the browser at the top of the page. It should not need to scroll to see it.
- The breadcrumb is a horizontal list of pages reflecting the site hierarchy starting from the topmost page (Home) and ending with the current page.
- Where possible, labels should match the title of the corresponding page, but should be kept short for readability.
- Breadcrumbs often use some symbol like ">" between links to indicate direction. These symbols are not linked.
- Breadcrumbs should provide links to each page in the trail with the exception of one. This signifies the user's current location in the trail.

Rationale

- Breadcrumbs give clear visual cues for the user's current location and content site hierarchy.

Examples



source: www.walmart.com



source: www.yahoo.com

This pattern from other collections

- <http://www.welie.com/patterns/showPattern.php?patternID=crumbs>
- http://developer.yahoo.com/yypatterns/pattern_breadcrumbs.php

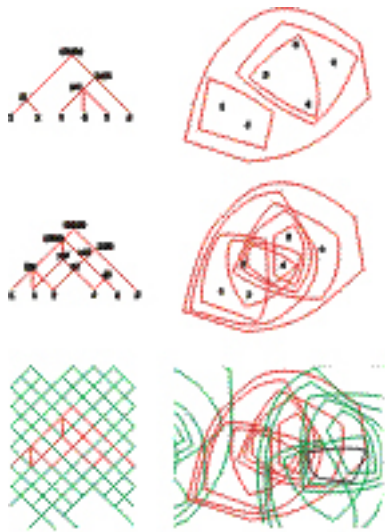
Contributors

Kelly Snow, Tim Dennis

Web Design Patterns

“Each pattern is a three-part rule, which expresses a relation between a certain context, a problem, and a solution”

– **Alexander 1979**





Design Problem

Problem


How Should Labels be Aligned?

Top

Right

Left

Top Aligned Labels



Customer Service

Enter Your Information (Already registered? [Sign In](#))

Please enter your U.S. address and email address to create your account.

First Name **Last Name**

Street Address

City

State **ZIP Code** **Country or Region** U.S. addresses only, please.

Phone Number
() - **ext.:** Needed if there are questions about your order.

A valid email address is required to communicate with you.

Email address

Re-enter Email address

Top Aligned Labels

Vertical Labels

Label

Longer Label

Even Longer Label

One More Label

- Value 1
- Value 2

Primary Action

Top Aligned Labels

Vertical Labels

Label

Longer Label

Even Longer Label

One More Label

Value 1

Value 2

Primary Action

Advantage:

Adjacent Label and corresponding Input field

Advantage:
Rapid Processing

Label

Longer Label

Even Longer Label

Disadvantage:
Increased vertical space

Right Aligned Labels

This person's name will appear with their messages, comments, and files and whenever they are responsible for a to-do or milestone.

First Name:

Last Name:

Email:

Choose a user name and password so that this person can log in (they can change this later).

User Name:

Password:

The rest is optional, but some contact info will come in handy when you want to take your communication offline.

Title:

Office #: **ext:**

Mobile #:

Fax #:

Home #:

Right Aligned Labels

Right-Justified Horizontal Labels

Label

Longer Label

Even Longer Label

One More Label Value 1
 Value 2

Primary Action

Advantage:

Adjacent Label and corresponding Input field

Disadvantage:
Reduced readability

Label

Longer Label

Even Longer Label

One More Label Value 1
 Value 2

Primary Action

Advantage:
Reduced vertical space

Left Aligned Labels

Edit Estimate Book [X]

WEVV Book Type: DMA

Book Name

Project Year ▼

Month ▼

Enabled for Research Sales

Type 4 Bk. Avg. Custom Book

Share Book ▼

Put Book ▼

Index

Description

Update default book formula

If PAV exists, use PAV to build SHR book

Delete number for Not Selected DP

Left Aligned Labels

Left-Justified Horizontal Labels

Label:

Longer Label:

Even Longer Label:

One More Label: Value 1
 Value 2

Primary Action

Disadvantage:
Adjacency of Label and corresponding Input field

Advantage:
Easy to scan labels

Label:

Longer Label:

Even Longer Label:

One More Label: Value 1
 Value 2

Advantage:
Reduced vertical space

Primary Action



Problems

Drag and Drop. Drag and Drop Modules. In Page Editing. In Page Custom Editing. Direct State Editing. Grid Cell Editing. Inline Custom. Editing. Inline Tag Editing. Popup Custom Editing. Slide-out Custom. Editing. Inline Text Editing. Persistent Portals. Inline Reordering Indication. Busy Indication. Cursor Busy. In Context Busy. In Context. Progress. Inline Status. Auto Complete. Balloon Error Tip. Deferred. Content Loading. Dynamic Goal. Narrowing Choices. Refining Search. Live Search. Dynamic Filter. Invitation. Cursor Invitation. Drop Invitation. Tool Tip Invitation. Hover Invitation. Detail Zoom. Opacity Focus. Configurable Module - Faceplate. Configurable Module - Flip It. Configurable Module - Inline Configure. Configurable Module - Slide Out Drawer. Slide Out. Flip. Opacity Fade. Endless Scrolling. Expandable Paging Boundary. Fresh Content. Hover Detail. In Place Drill Down. Inline Assistant. Inline Validation. Validate Then Suggest. On Demand Refresh. Periodic Refresh. Resizable Modules. Scrolling Modules. Auto Save. In Context Tools. Remembered Collection. Remembered Preferences. Auto Form Fill. Rating an Object. Transition. Brighten Transition. Cross Fade Transition. Dim Transition. Expand Transition. Fade In Transition. Fade Out Transition. Flip Transition. Move Transition. Self-Healing Transition. Collapse Transition. Slide Transition. Rich Internet Object. Available. Selected.



Problems

Can you think of a common design problem?



What's In A Pattern

Pattern

- Title
- Problem (situation)
- Use When (constraints)
- Solution
- Why (rationale)
- How (to apply)
- Examples
- Related Patterns
- Accessibility
- Code Samples

Solution

Pattern Name

Quick Access

Pattern Description

Context

User: Novice and expert

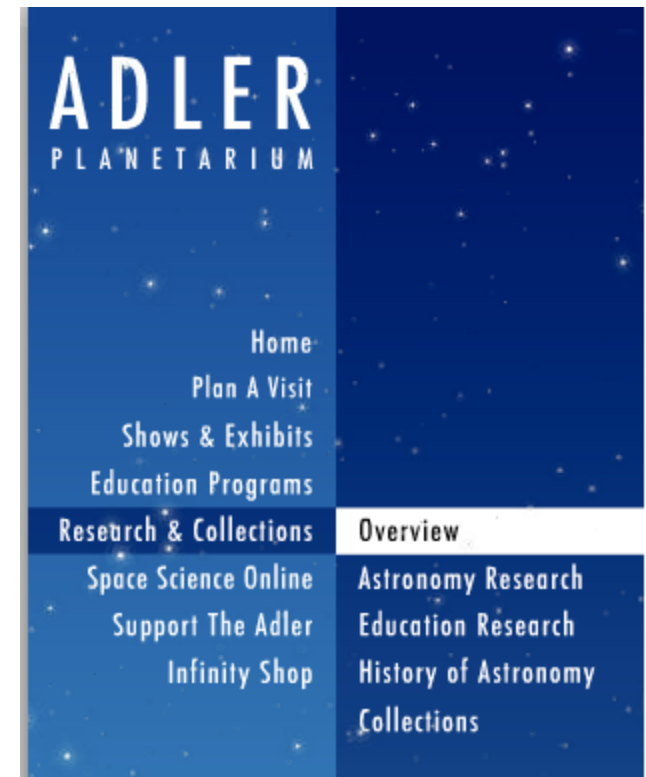
Workplace: Website

Problem

Help the user find useful pages that need to be accessed from any location on the site, regardless of the current state of the artefact

Solution

Group the most convenient action links, such as home, site map, and help; place it consistently throughout the whole Web site



Design Ideas: Your turn

Drag and Drop. Drag and Drop Modules. In Page Editing. In Page. Custom Editing. Direct State Editing. Grid Cell Editing. Inline Custom. Editing. Inline Tag Editing. Popup Custom Editing. Slide-out Custom. Editing. Inline Text Editing. Persistent Portals. Inline Reordering. Indication. Busy Indication. Cursor Busy. In Context Busy. In Context. Progress. Inline Status. Auto Complete. Balloon Error Tip. Deferred. Content Loading. Dynamic Goal. Narrowing Choices. Refining Search. Live Search. Dynamic Filter. Invitation. Cursor Invitation. Drop Invitation. Tool Tip Invitation. Hover Invitation. Detail Zoom. Opacity Focus. Configurable Module - Faceplate. Configurable Module - Flip It. Configurable Module - Inline Configure. Configurable Module - Slide Out Drawer. Slide Out. Flip. Opacity Fade. Endless Scrolling. Expandable Paging Boundary. Fresh Content. Hover Detail. In Place Drill Down. Inline Assistant. Inline Validation. Validate Then Suggest. On Demand Refresh. Periodic Refresh. Resizable Modules. Scrolling Modules. Auto Save. In Context Tools. Remembered Collection. Remembered Preferences. Auto Form Fill. Rating an Object. Transition. Brighten Transition. Cross Fade Transition. Dim Transition. Expand Transition. Fade In Transition. Fade Out Transition. Flip Transition. Move Transition. Self-Healing Transition. Collapse Transition. Slide Transition. Rich Internet Object. Available. Selected.

Questions

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Resources

Print

Brown, Dan [Communicating Design](#) New Riders 2007

Cooper, Alan [About Face 3](#) Wiley 2007

Saffer, Dan [Designing for Interaction](#) New Riders 2007

Tidwell, Jenifer [Designing Interfaces](#) O'Reilly 2006

Wroblewski, Luke [Web Form Design](#) Rosenfeld 2008

Web

Boxes and Arrows: boxesandarrows.com

Information Architecture Institute: iainstitute.org:

Jakob Nielsen: useit.com:

Design Pattern Libraries

Jenifer Tidwell
<http://designinginterfaces.com>

Open Source Design Pattern Library
<http://uidesignpatterns.org/>

UC Berkeley's web pattern library
http://groups.ischool.berkeley.edu/ui_designpatterns/webpatterns2/webpatterns/home.php

UI Patterns
<http://ui-patterns.com/>

Martijn van Welie
<http://www.welie.com>

Yahoo Design Pattern Library
<http://developer.yahoo.com/ypatterns/>