

Administrative Stuff

Assignment

Prediction – don't have to do KLM

Quantitative measure – see edited version,
explain what you would use

Presentation outline – get it to me by tonight!

Prototype purpose is to sell your idea!

Design Patterns

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CS-570 Introduction to Human-computer Interaction



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“A **pattern** is a careful description of a perennial solution to a recurring problem...”

– Christopher Alexander

Architecture Patterns

Proposed by Christopher Alexander in 1977

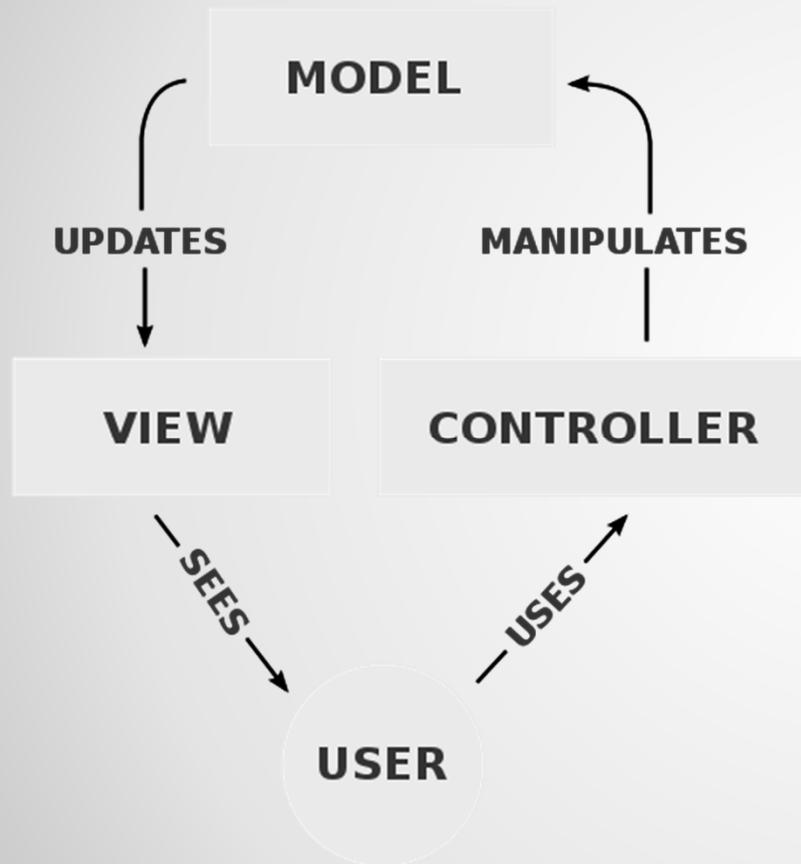
Provide a source of proven ideas for constructing environments

Problems have 2 parts:

Forces that act in them

Solutions that resolve forces

Software Architecture Patterns



Proposed in 1987 by Beck and Cunningham

Gained popularity in 1994

Design Patterns: Elements of Reusable Object-Oriented Software

Speeds up development

Uses tested paradigms to avoid later problems

Design Patterns

“Design patterns are a means of capturing useful design solutions and generalizing them to address similar problems.” (Cooper)

Responding to the dynamics of the user

Not meant to be used as is

Implementation will always differ!

Why do we need them?

Saves time in designing new solutions

Provides some guarantees as to usefulness of the solution

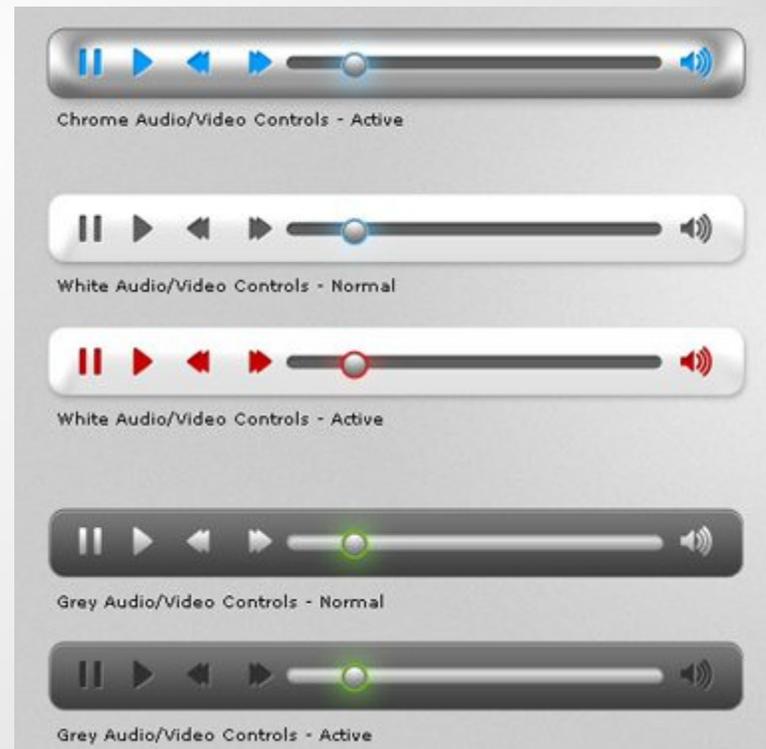
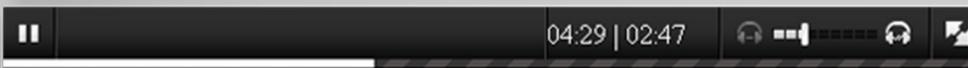
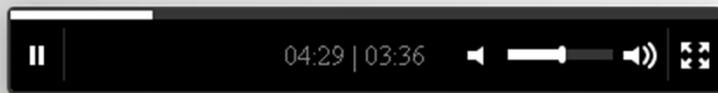
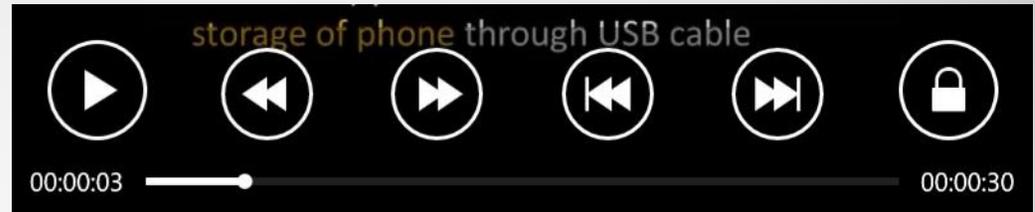
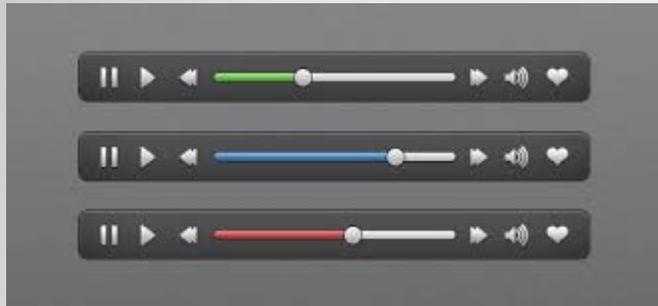
Consistency across product lines/computers/etc.

Effective reference tool

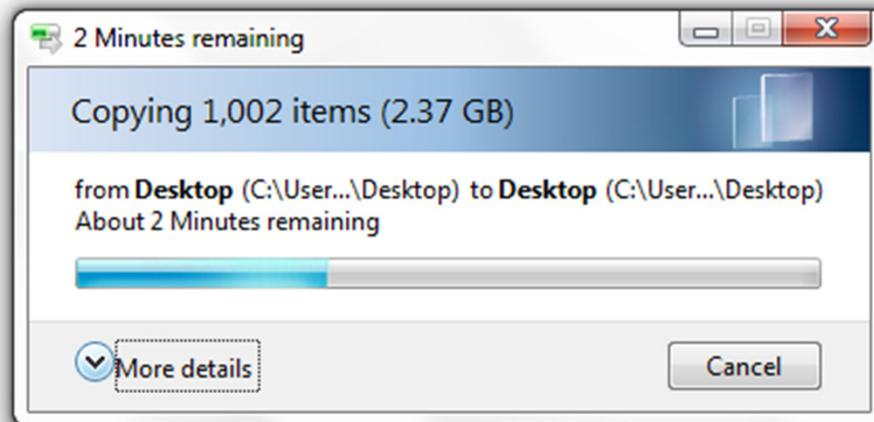
Example Need

What if you need to design an interface to play a movie?

Variations of the same pattern



Other Examples



February 28 2006

OK

February 28, 2006

A calendar widget for February 2006. The title is "February 2006". The days of the week are abbreviated as Su, Mo, Tu, We, Th, Fr, Sa. The dates are arranged in a grid. The date 28 is highlighted in a yellow box.

Su	Mo	Tu	We	Th	Fr	Sa
29	30	31	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	1	2	3	4
5	6	7	8	9	10	11

What makes a pattern?

Pattern name

Problem

Solution

Reasons solution is effective

Best practices

Related patterns

Comments

Research evidence

Change log

Example

Patterrry Sign In | Sign Up

Main Tags ▾ Search in patterns

Name → Accordion HTML

Also known as: Collapse
Tags: components, content, navigation

Problem, Solution, Reasons, Best Practices → An accordion is a grouped set of collapsible panels that the user can open and close by hovering on or clicking on the title of a specific panel. Accordion allows organizing the content into logical, titled sections in a space-saving way.

Accordions usually work best when the user can have only one section open at a time and each section is independent from each other. When the panels provide parallel context (for example search filters), allowing user to have several sections visible simultaneously might be a good idea.

Note: To make the example accordion work you need [Collapse Plugin](#) from Twitter Bootstrap

Show preview in new window

Example →

- Collapsible Group Red
- Red is the color of blood, a ruby, and strawberries. It is next to orange at the end of the visible spectrum of light, and is commonly associated with danger, sacrifice, passion, fire, beauty, blood, anger, socialism and communism, and in China and many other cultures, with happiness.
- Collapsible Group Violet
- Collapsible Group Orange

Pattern info
Created by Janne Lammi on Dec. 1, 2012
Modified by Janne Lammi on Dec. 1, 2012
Creative Commons
Template: Patterrry HTML pattern

Possibly related patterns

- One Page Wizard
- Multiple Page Wizard
- Overlay
- Horizontal Module Tabs
- Multicon-page pagination

Related Patterns →

Build a front-end resource for your team
Patterrry makes it simple to build styleguides, design pattern libraries, complete front-end resources or anything in between.
[Try it now for free!](#)

An Accordion

View / Edit Enabled Countries (163/163) ✕

Select All

Africa (28/35)

Americas (31/37)

Asia (5/45)

Australia (1/2)

Europe (44/44)

<input checked="" type="checkbox"/> Albania	<input checked="" type="checkbox"/> Finland	<input checked="" type="checkbox"/> Latvia	<input checked="" type="checkbox"/> Portugal
<input checked="" type="checkbox"/> Andorra	<input checked="" type="checkbox"/> France	<input checked="" type="checkbox"/> Liechtenstein	<input checked="" type="checkbox"/> Romania
<input checked="" type="checkbox"/> Austria	<input checked="" type="checkbox"/> Germany	<input checked="" type="checkbox"/> Lithuania	<input checked="" type="checkbox"/> Russia
<input checked="" type="checkbox"/> Belarus	<input checked="" type="checkbox"/> Gibraltar	<input checked="" type="checkbox"/> Luxembourg	<input checked="" type="checkbox"/> Serbia
<input checked="" type="checkbox"/> Belgium	<input checked="" type="checkbox"/> Greece	<input checked="" type="checkbox"/> Macedonia	<input checked="" type="checkbox"/> Slovakia
<input checked="" type="checkbox"/> Bosnia and Herzegovina	<input checked="" type="checkbox"/> Guernsey	<input checked="" type="checkbox"/> Malta	<input checked="" type="checkbox"/> Slovenia
<input checked="" type="checkbox"/> Bulgaria	<input checked="" type="checkbox"/> Hungary	<input checked="" type="checkbox"/> Moldova	<input checked="" type="checkbox"/> Spain
<input checked="" type="checkbox"/> Croatia	<input checked="" type="checkbox"/> Iceland	<input checked="" type="checkbox"/> Montenegro	<input checked="" type="checkbox"/> Sweden
<input checked="" type="checkbox"/> Czech Republic	<input checked="" type="checkbox"/> Ireland	<input checked="" type="checkbox"/> Netherlands	<input checked="" type="checkbox"/> Switzerland
<input checked="" type="checkbox"/> Denmark	<input checked="" type="checkbox"/> Isle of Man	<input checked="" type="checkbox"/> Norway	<input checked="" type="checkbox"/> Ukraine
<input checked="" type="checkbox"/> Estonia	<input checked="" type="checkbox"/> Italy	<input checked="" type="checkbox"/> Poland	<input checked="" type="checkbox"/> United Kingdom

Cancel Save

Accordion: Problem

Problem: Large, disorganized body of information

Solution: An accordion is a grouped set of collapsible panels that the user can open and close by hovering on or clicking on the title of a specific panel

Reasons: An accordion allows organizing the content into logical, titled sections in a space-saving way.

Best Practices: Accordions usually work best when the user can have only one section open at a time and each section is independent from each other. When the panels provide parallel context (for example search filters), allowing users to have several sections visible simultaneously might be a good idea.

Types of Patterns

Postural

Applied to determine the overall product stance in relation to the user

Structural

Related to the arrangement of information and elements

Behavioral

Related to specific interactions with information or elements

Postural Patterns

Applied to determine the overall product stance in relation to the user

Think genre or type

Decides which structure is used, elements, and experience offered

Examples:

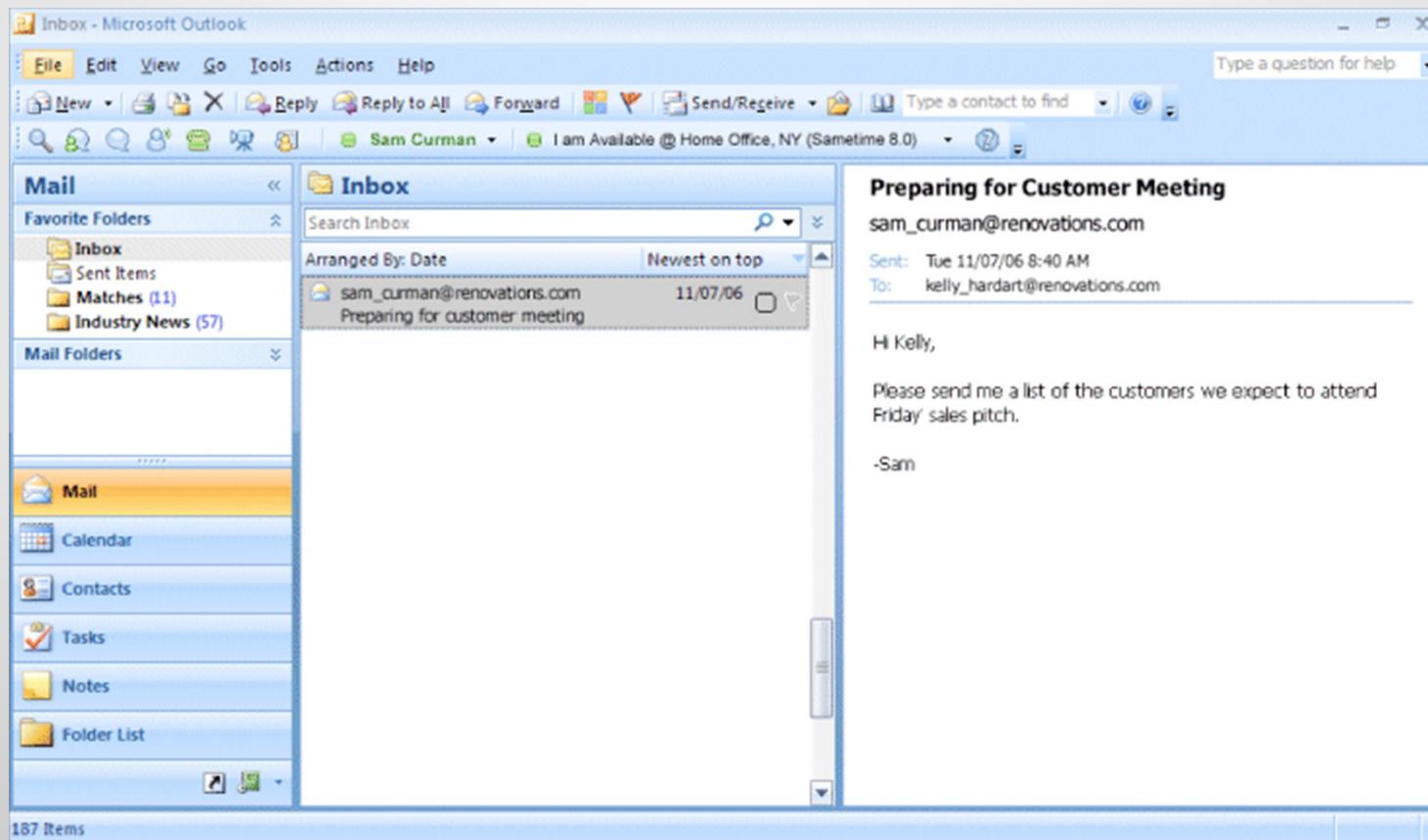
Designing a sports car vs. a family car

Designing a corporate website vs. a personal website

Microsoft Word vs. Notepad

Structural

Related to the arrangement of information and elements



Behavioral Patterns

Related to specific interactions with information or elements

People behave predictably!

14 human patterns

**Behavioral
Pattern****Key Points****User Perspective**

Safe exploration

Users feel safe trying
unknown functionality.
No dire consequences or
annoyances.

Let me explore
without getting lost
or getting into
trouble.

Instant
gratification

The more the user succeeds,
the more likely they are to
continue using the product.
Introductory functionality
should not be hidden.

I want to
accomplish
something now, not
later.

**Behavioral
Pattern****Key Points****User Perspective**

Satisficing

Satisfying + sufficing

People willing to accept “good enough” if learning is costly.

Users pick what they see first to satisfy their goal.

This is good enough. I don't want to spend more time learning to do it better.

Changes in
midstream

Users may change what they're doing part way through, allow to modify.

I changed my mind about what I was doing.

Behavioral Pattern

Key Points

User Perspective

Incremental construction

Users prefer to repeatedly make changes or updates.

Let me change this. That doesn't look right; let me change it again. That's better.

Habituation

Support habitual conventions.

That gesture works everywhere else, why not here?

Microbreaks

Make activities fast and easy to reach.

Particularly important in mobile devices!

I am waiting for the train, let me do something useful for 2 minutes.

**Behavioral
Pattern****Key Points****User Perspective**

Spatial memory

People remember documents by location, not name.

I swear that button was there a minute ago. Where did it go?

Prospective memory

Users use interfaces in unique ways to remind themselves.
Allow interfaces to be flexible in how they're used.

I'm putting this here to remind myself to deal with it later.

**Behavioral
Pattern****Key Points****User Perspective**

Streamlined
repetition

Users may need to perform
the same operation over and
over.

I have to repeat this
how many times?

Keyboard only

Some users (for a variety of
reasons) prefer the keyboard.
Implement keyboard
redundancy for mouse
functions.

Please don't make
me use the mouse.

Behavioral Pattern

Key Points

User Perspective

Other people's advice

Users are influenced by their peers.
Support a social component.

What did everyone else say about this?

Personal recommendations

Support person-to-person sharing of content.
Three key questions:
1. What are they sharing?
2. Who do they share it with?
3. What are the design implications of this?

My friend told me to read this, so it must be good.

How to use patterns

Not to be used as is!

Design considerations:

- Goals/needs of the user

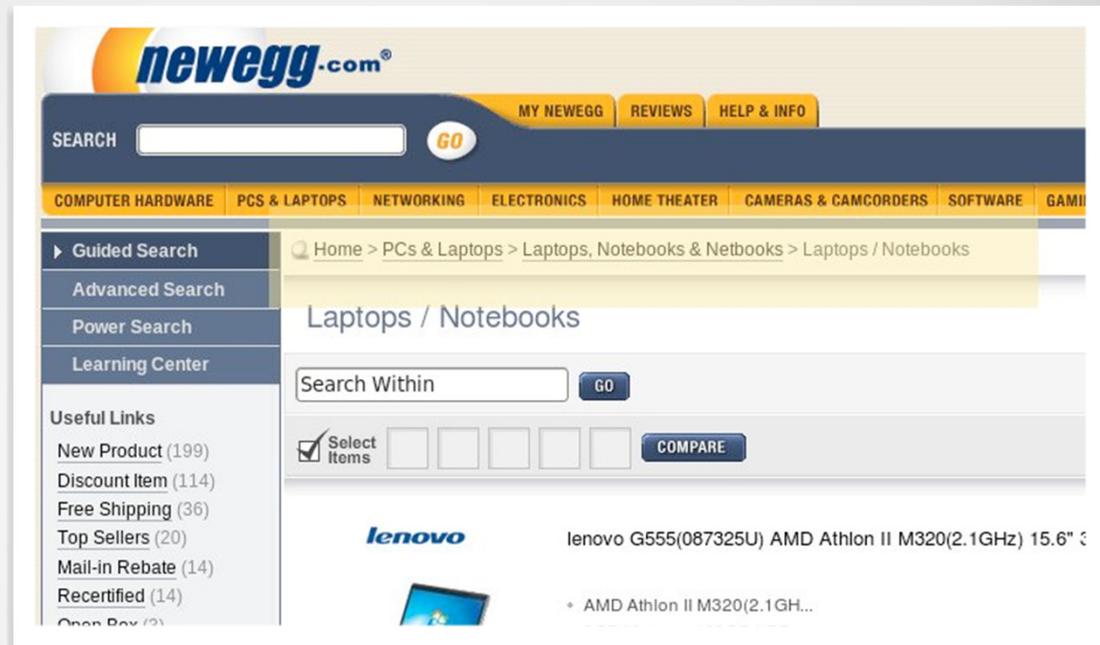
- Consistency across application/product lines

- Visual consistency

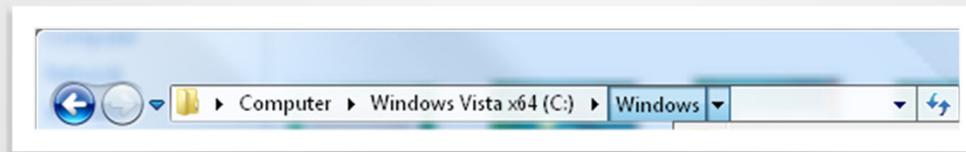
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The screenshot shows the Newegg.com website interface. At the top, the Newegg logo is visible. Below it is a search bar with a 'GO' button. A navigation menu includes categories like 'COMPUTER HARDWARE', 'PCS & LAPTOPS', 'NETWORKING', 'ELECTRONICS', 'HOME THEATER', 'CAMERAS & CAMCORDERS', 'SOFTWARE', and 'GAMING'. A breadcrumb trail is highlighted in yellow: 'Home > PCs & Laptops > Laptops, Notebooks & Netbooks > Laptops / Notebooks'. Below the breadcrumb is a search bar labeled 'Search Within' with a 'GO' button. There are also checkboxes for 'Select Items' and a 'COMPARE' button. A product listing for a Lenovo laptop is partially visible, showing the brand name 'lenovo' and the model 'lenovo G555(087325U) AMD Athlon II M320(2.1GHz) 15.6" &'. Below the product listing, there is a small image of the laptop and a link to 'AMD Athlon II M320(2.1GH...'. The breadcrumb trail is a key feature of the website's navigation system.



The screenshot shows the Windows Vista taskbar. The breadcrumb trail is displayed as a series of folders: 'Computer' > 'Windows Vista x64 (C:)' > 'Windows'. The 'Windows' folder is currently selected, and its contents are visible in the taskbar's navigation pane. This illustrates how breadcrumb navigation is implemented in the Windows operating system's file explorer.

Breadcrumbs Analysis

Problem

Solution

Reasons the solution is effective

Best practices

Navigation Tabs

Popular Random Recent Tags

Sign in with Twitter and Facebook Buttons

Dragon Labs + Anand Sharma

Vote for Komodo Media!

Jackson Titus King

Adeptiv UI Iconset

Safari's text-shadow anti-aliasing CSS hack Revision

Squared Eye

Best Wordpress Design Award

Show more...

Purchase Mortgage Refinance Home Equity

	Mortgage	Points	Rates	APR	Details
Fixed	15 year	0 pts	X.XX%	X.XX%	Rates Info
Fixed	30 year	0 pts	X.XX%	X.XX%	Rates Info
Adjustable	3 year	0 pts	X.XX%	X.XX%	Rates Info
Adjustable	5 year	0 pts	X.XX%	X.XX%	Rates Info
Adjustable	7 year	0 pts	X.XX%	X.XX%	Rates Info
Adjustable	10 year	0 pts	X.XX%	X.XX%	Rates Info

Wednesday April 28, 2010

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Navigation Analysis

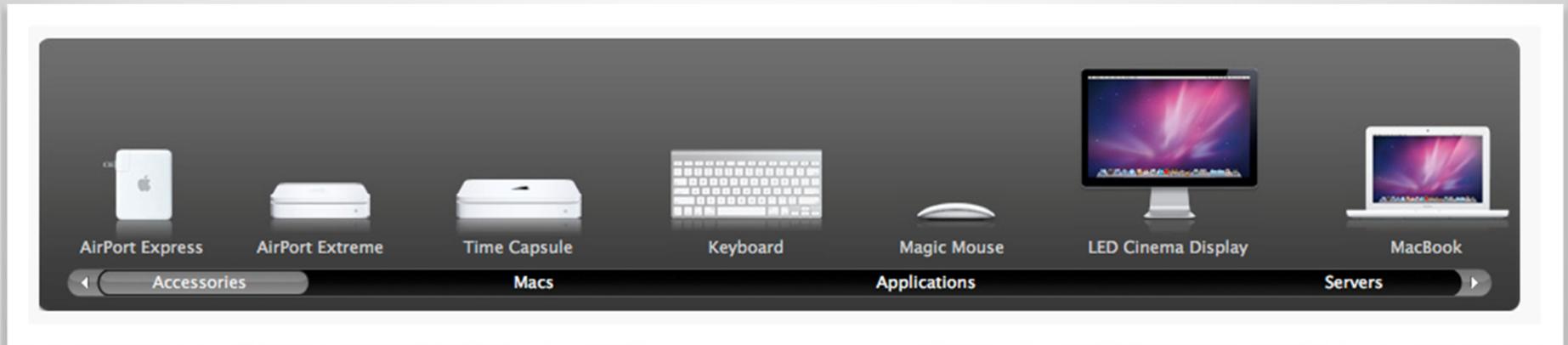
Problem

Solution

Reasons the solution is effective

Best practices

Carousels



Carousel Analysis

Problem

Solution

Reasons the solution is effective

Best practices

Resources

http://www.smileycat.com/design_elements/

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

<http://patterntap.com/>

<http://patternry.com/patterns/>

<http://developer.yahoo.com/ypatterns/>

<http://designinginterfaces.com/firstedition/>

Questions?

TopHat Question