CS 160: Lecture 14

Professor John Canny
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Outline

- Motivation
- Design patterns in architecture & SE
- Web design patterns
- Home page patterns
Artifacts of Design Practice

- Designers create representations of sites at *multiple levels of detail*
- Web sites are iteratively refined at all levels of detail

Site Maps  Storyboards  Schematics  Mock-ups
Site Maps

High-level, coarse-grained view of entire site
Storyboards

Interaction sequence, minimal page level detail
Schematics

Page structure with respect to information & navigation
Mock-ups

High-fidelity, precise representation of page
How can we Codify Design Knowledge?

- Design Patterns!
- Patterns reflect
  - what designers create
  - what users do on the web across sites
- Web design patterns emerge from how we interact with the world around us
Motivation for Design Patterns

Most examples from UI literature are critiques
* Norman, Nielsen, etc.

Design is about finding solutions

Unfortunately, designers often reinvent
* hard to know how things were done before
* hard to reuse specific solutions

Design patterns are a solution
* reuse existing knowledge of what works well
Design Patterns

- First used in architecture [Alexander]
- Communicate design problems & solutions
  - how big doors should be & where...
  - how to create a beer garden where people socialize...
  - how to use handles (remember Norman)...
- Not too general & not too specific
  - use solution “a million times over, without ever doing it the same way twice”
Example from Alexander: Night Life

Knit together shops, amusements, and services which are open at night, along with hotels, bars, and all-night diners to form centers of night life: well-lit, safe, and lively places that increase the intensity of pedestrian activity at night by drawing all the people who are out at night to the same few spots in the town. Encourage these evening centers to distribute themselves evenly across the town.
Example from Alexander:  
*Beer Hall*

Somewhere in the community at least one big place where a few hundred people can gather, with beer and wine, music, and perhaps a half-dozen activities, so that people are continuously criss-crossing from one to another.
Example from Alexander:  

Alcoves

Make small places at the edge of any common room, usually no more than 6 feet wide and 3 to 6 feet deep and possibly much smaller. These alcoves should be large enough for two people to sit, chat, or play and sometimes large enough to contain a desk or a table.
Design Patterns

Next used in software engineering [Gamma, et. al.]

* communicate design problems & solutions
  + Proxy
    ~ surrogate for another object to control access to it
  + Observer
    ~ when one object changes state, its dependents are notified
Design Patterns

- We can do the same for Web Design
  * communicate design problems & solutions
    + how can on-line shoppers keep track of purchases?
      ~ use the idea of shopping in physical stores with carts
    + how do we communicate new links to customers?
      ~ blue underlined links are the standard -> use them

- Leverage people's usage habits on/off-line
  * if Yahoo does things a way that works well, use it
Web Design Patterns Book

The Design of Sites, by Doug van Duyne, James Landay, & Jason Hong

Patterns broken into groups

- site genres
- navigational framework
- homepages
- writing & managing content
- basic e-commerce
- advanced e-commerce

* trust & credibility
* completing tasks
* page layouts
* site search
* navigation
* fast sites
Pattern Format

1. Pattern Title
2. Background Information
3. Problem Statement
   ✤ forces
4. Solution
5. Solution Sketch
6. Other Patterns to Consider
Home Page Design Rules
Home Page Design Rules

- **Strong 1st impressions**
  * compelling titles & logos
  * simple navigation

- **Create a site that will be easy to update**
Home Page Design Rules

- Breadth on left
- Highlights articles of general interest in center & right
- Links distinguished
- Subsections further down show more detail in particular areas

Pakistan army delays release of post-coup plans

Pakistan was in political limbo Wednesday, a day after a military coup toppled the democratically elected government of Prime Minister Nawaz Sharif.

The army delayed release of a statement outlining its plans for the country's future.
Problem

* without a compelling home page (H/P), no one will ever go on to the rest of your site
* surveys show millions of visitors leave after H/P
  + most will never come back \(-\) lost sales, etc.
Six Ways to Make a Good Home Page

Make a positive first impression by

* testing
  + appropriate LINK NAMES & FAMILIAR LANGUAGE?
* looking at GUEST PROFILES (another pattern)
  + appropriate colors & graphics?
    ~ neon green & screaming graphics on a skateboarding site, but
      not on a business-to-business or health site
Six Ways to Make a Good Home Page

Focus on a single item of interest
* create a good “first read”
  + draw the eye to a single graphical item
* make it clean & larger than rest on the page
* cut down remaining elements to chosen few
Six Ways to Make a Good Home Page

1. Build your site brand
   * present the message of what your company does
   * include the value proposition (promise to visitors)
   + links to CONFIDENTIALITY INFORMATION & SITE ABUSE POLICIES to show you are trustworthy
Six Ways to Make a Good Home Page

1. Make navigation easy to use
   * novices & experts must instantly “get it”
   * use MULTIPLE WAYS TO NAVIGATE
     + basic features of site as EMBEDDED LINKS
     + NAVIGATIONS BARS (there are several types)
     + HTML table COLORED BACKGROUNDS to delineate sections
     + REUSABLE ACCENT GRAPHICS to highlight new things
Six Ways to Make a Good Home Page

1. Lure visitors to return
   * with fresh content
   + keep it updated so there is a reason to come back
   * by seducing with text
   + you have only seconds
      ~ lively, sparkling, precise
Six Ways to Make a Good Home Page

Make it download quickly (2-3 seconds)
   if not, they’ll go elsewhere

Strategies
   * use HTML text as much as possible
     + first thing to download
     + images take 10 server-browser comms
   * get a web-savvy graphic artist (font colors, styles, & b/g color)
   * use small graphics
   * use min. number of columns & sections in a grid layout
     + easy to scan
Six Ways to Make a Good Home Page

1. Make it download quickly (2-3 seconds)
   * if not, they'll go elsewhere. Which have left due to slowness?
Summary

- Design patterns allow us to reuse?
  * design knowledge

- Previously used in?
  * architecture & S/E

- Web design patterns are new & evolving
  * example: Home Page
    + problem
      ~ if it isn’t compelling, they won’t return
    + solutions
      ~ make a positive first impression
      ~ focus on a single item
      ~ build your site brand
      ~ make navigation easy
      ~ lure visitors to return
      ~ make it download fast
Pattern Examples

Personalizing your home page
Pattern Elements

- Pattern type:
- Design phases:
- Keywords:
- Tools:
- Effort required:
- Pros:
- Cons:
- Team:
- Related Pattern:
- See Also:
Personalizing Your Home Page

**Problem**
* web sites would like to have visitors return often
  + to buy, see ads, use services, etc.
* if your content isn’t changing & personal, users less likely to return or stay

**Solution**
* personalization
  + a home page that is customized for each visitor
for new users

for returning users
How to Personalize Your Page

- Gather information from GUEST PROFILES & use it to build a site that
  * holds their interest
  * looks customized just for them
- Visitors will need to trust you
  * to give this information directory/indirectly
  * must use for their benefit only
- Four ways to collect information?
  * edit, interview, deduce, collaborative filtering
How to Personalize Your Page
How to Personalize Your Page

Welcome Douglas! - Yahoo! - Update - Account Info - Help - Sign Out

Yahoo! Mail - Get your free @yahoo.com email address - click here

Search Advanced

Front Page
Calendar
Yahoo! Tools

[Add Page - Options]

Front Page Headlines - Nov 1 2:57pm

Top Stories from Reuters

- Football Hall Of Famer Walter Payton Dies
- No Survivors From EgyptAir Crash-Coast Guard
- Clinton Seeks Path To Mideast Peace In Oslo
- Jogging Bush Has Near-Miss With Texas Dump Truck
- Defense Rests In Wyoming Gay Bashing Trial

Current Events - Yahoo! Full Coverage

- EgyptAir Crash Investigation
- Russia Shuts Chechen Border, Thousands Trapped
- Cleveland School Set To Reopen After Violence Threat
- Wyo. Judge Bars 'Gay Panic' Defense

Editing Personalization Info

- Visitors click on buttons to make selections from lists
  - weather cities
  - news sources
  - stocks to follow
  - sports to follow
  - ...

- Include content modules based directly on selections

- Drawbacks to this approach?
  - can get tedious if you have to do it repeatedly
  - users won’t spend time entering info if little benefit

my.yahoo.com is a good example of editing for personalization
Interviewing for Personalization Info

- Visitors answer multiple choice questions
- Update GUEST PROFILE
- Include CONTENT MODULES based on one or more scoring methods
- Allow the option of continuing the personalization process over time
Deduction for Personalization

Info

- Watch visitors behavior
  * Amazon tracks the books visitors order & later offers similar books

- Update GUEST PROFILE

- Select content modules based on scoring method
Collaborative Filtering for Personalization Info

- First provide popular content based on all visitors
- Provide customized content modules based on similar guest profiles
  - use correlation of profiles to determine areas of interest

Apocalypse Now (1979)
Martin Sheen plays the CIA killer who has to take out a crazy Marlon Brando in a bizarre, Vietnam-themed version of Conrad’s Heart of Darkness

If you liked Apocalypse Now, you might enjoy:
- Platoon (1986)
  Tom Berenger’s evil tries to trump Willem Dafoe’s good in Oliver Stone’s look at the dark side of the Vietnam War.
- The Deer Hunter (1978)
  A “big” movie about Vietnam and being a man and a buddy and about how you’re supposed to kill deer and live and die and several other themes as well.
- Heart of Darkness (1994)
  Joseph Conrad’s story has a company representative going upriver in colonial Africa to bring to heel a trader who’s gone more native than the natives.
Scoring Methods to Match Content to Audience

- **Rank**
  * show ordered list of content

- **Top rank**
  * content of only the top few scores shown

- **Threshold score**
  * show all content over a particular score

- **Required attributes**
  * show all content that is on “NCAA Sports”

- **Combination**
  * e.g., job site might use top rank & required attributes to show best jobs a person is qualified for