IT350 Web and Internet Programming

SlideSet #6: Human Computer
Interaction

HCI Defined

- "Human Computer Interaction is a discipline concerned with the **design**, **evaluation** and **implementation** of interactive computing systems for human use and with the study of the major phenomena surrounding them."

  - As defined by the Special Interest Group on Human-Computer Interaction (SIGCHI) of the Association for Computing Machinery (ACM)

Design for ____?

- Design needs to align with people's:
  - Cognitive abilities
  - Context
  - Memory

Why do we care?

- Because when people try to understand something, they use a combination of

Senses

- Senses (sight, hearing, smell, taste, touch) provide data about what is happening around us
- We are visual beings ("See what I mean?")
- Designing good Web materials requires knowledge about how people perceive

Senses and Context

- **Live Experiment**: Yale's Art school

- Give me your first impression of their page.
  – art.yale.edu

Context

- Context plays a major role in what people see on a webpage.

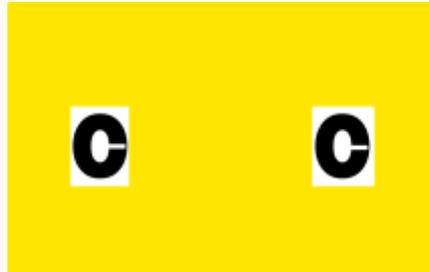- Context has a profound effect on the usability of a web site.

Context: What do you see?

Another example of context:
are these letters the same?

Yes, but now in context:

top ace

Senses and Details

- **Live Experiment**: www.amazon.com
- Find the Amazon Prime link.

Memory: A golden rule?

- Humans have limited memory.

- **Miller, 1956**: The Magical Number ….

- Lesson: If you don't exceed this number…
  - Content more likely to be remembered
  - Faster recall

- Corollary: Don't expect users to remember many shortcuts etc.

Exception #1

- How many do you know?
  - Phone numbers?
  - Names?
  - Passwords?
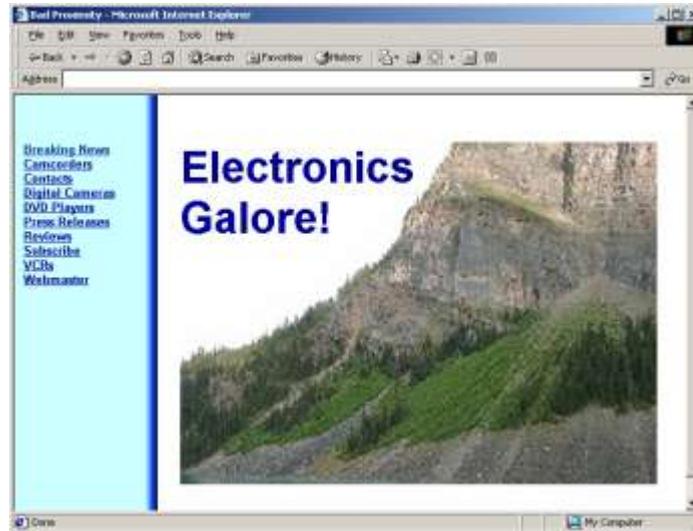
- What's the key difference?

Exception #2

- Do I have to remember everything?
  - People can scan lists of bullets, tabs, menu items till they see the one they want
  - They don't have to recall them from memory having only briefly heard or seen them

- Lesson:
  - Make pages easy to scan
  - Group similar things together visually
  - Make wise use of screen real estate

Senses and Organization

Use proximity to group

Grouping Information

- How do we group and organize links/images?
  - Match the UI to an expected paradigm

Live Experiment

- www.hboemtb.com

- Open the "Urban Design" page
- Click on an urban project
- Show us some pictures

Affordances

- Affordance: "The functions or services that an interface provides"
  - Go back to www.hboemtb.com

Perceived affordance

- We want affordance to be visible and obvious to the user
  - A door affords entry to a room
  - A radio button affords a 1-of-many choice
  - On a door, a handle affords pulling; a crash bar affords pushing
  - On a car, turning the steering wheel to the left makes the car go left

Web Affordances

- Text that looks like a link: *it better be a link!*
- Graphical arrow: *affords backward navigation*

Feedback

- Newton's Third Law of Motion
  - "For every action there is an equal and opposite reaction"
- What is most frustrating about trying to perform some action?

- Lesson:
- Obvious principle – but doesn't always happen

Providing Feedback

- Design in feedback from the beginning

- Change color / shape / size
- Popup Dialog boxes
- Add sound
- Plan for user mistakes…warn them
- Allow users to see results, confirm action was taken

Other things users need

- Consistency
- Navigation

- How to provide without HTML duplication?
  - Frames
  - SSI