Course to date

- User-centered design: A process for achieving your usability goals
- Definition of usability (effectiveness, efficiency, and satisfaction): Emphasizes the multiple aspects of usability
- Stages of usability: Emphasizes the different needs and abilities of users as they gain experience with the product

Properties of usable designs

- But how do we get a usable product?
- Consistency
  - The application is consistent with itself
- Compatibility
  - The application is consistent with other products and cultural conventions

Properties of usable designs—Consideration of user resources

<table>
<thead>
<tr>
<th>Feedback</th>
<th>Error prevention and recovery</th>
<th>User control</th>
<th>Visual clarity</th>
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<td><a href="http://www.olympic.com">www.olympic.com</a> is cluttered</td>
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Properties of usable designs—Prioritization of functionality and information

Making possible actions explicit: Affordances

- An affordance is a possible action
- The user may or may not know the action is possible
  - (Disk cover example)
- Affordances are not of much use in WIMP interfaces
Making possible actions explicit:
Constraints

• Physical (you can only leave a room through a doorway)
  – Also not much use in WIMP interfaces
• Logical—deducible from other visible properties
  – The text appears to continue off the bottom of the page
  => you need to scroll down to see more

Logical Constraints

• Problems with logical constraints:
  – Are users logical?
  – Are users observant?
  – Do users interpret the graphics the same way the designer does?
• Conclusion: Be very careful about presuming that users will infer logical constraints

Cultural conventions (= cultural constraints)

• Shared assumptions amongst a group
• Not arbitrary, but not unique either
• Example: Red=stop, Green=go
• Example: What color should fire exit signs be?
• Example: direction of text
  – Left to right (Indo-European, others)
  – Right to left (Arabic, Hebrew, others)

WIMP cultural conventions

• “…” in a menu signifies a dialog box

Tabbed dialog boxes

• Unmovable, movable, floating

Window headers
**Overall organizing techniques—Sequential task structure**

- Examples:
  - Buying tickets at an automated subway machine
  - www.easyjet.com
- Strict sequence of actions
  - Low user control (but what users want in this case)
- Based on cultural constraints

**Overall organizing techniques—Conceptual model**

- Many possible actions at any time
- No strict sequence
  - High user control (what users want in this case)
- Requires user to infer logical constraints

**Conceptual model example:**

- Adobe Illustrator
- Adobe Photoshop