Interaction Design

Chapter 9 (June 17, 2015, 9am-12pm):
Simplicity and Graphical User Interface Design
Recap Day 7:
Overview

Tell a story
Make it tangible

Prototype
Fidelity v. Resolution

- **Low resolution, low fidelity**
- **High resolution, low fidelity**
- **High resolution, high fidelity**
High Fidelity

Low Fidelity

Open Discussion
Prompting Required
Quick and Dirty
Early Validation

Sharp Opinions
Self Explanatory
Deliberate and Refined
Concrete Ideas

source: [5]
Low Resolution

Focus on core interactions
Quick and Dirty
Early Validation

High Resolution

Focus on the whole
Deliberate and Refined
Concrete Ideas

source: [5]
80/20 rule
A principle for setting priorities: users will use 20% of the features of your product 80% of the time. Focus the majority of your design and development effort (80%) on the most important 20% of the product.

source: [7]
Interaction Design

Chapter 9 (June 17, 2015, 9am-12pm):
Simplicity and Graphical User Interface Design
Part One
"Great design is as much about prospecting in the past as it is about inventing the future."

Bill Buxton

source: [6]
Design and Simplicity

- Bauhaus: History and Directors
- Bauhaus: Structure and Products
- From Bauhaus to Braun
Key Dates:

founded 1919 in Weimar
closed down 1933 in Berlin

Key People - 3 Directors:

[3] Ludwig Mies van der Rohe (1930-1933)
Art and technology - a new entity.

Walter Gropius

The investigation of human needs should be based on science - not formalism.

Hannes Meyer

God is in the details.

Ludwig Mies van der Rohe
Design and Simplicity

- Bauhaus: History and Directors
- Bauhaus: Structure and Products
- From Bauhaus to Braun
Prototyping Design
Basic Shapes

source: [8]
Color Sphere

source: [7]
Chair B3 “Wassily”

source: [8]
Design and Simplicity

- Bauhaus: History and Directors
- Bauhaus: Structure and Products
- From Bauhaus to Braun
Requirements:

Type (variations of the original design)
Basic shape - few simple parts (industrial manufacturing)
Functionality (design for human needs)

source: [7]
Charles and Ray Eames
Ray & Charles Eames
Braun SK6
Braun Radio

iPod

iPhone Calculator

Braun Calculator

Braun Speaker

iMac

Braun Radio

Powermac G5

Part Two
Graphical User Interface Design

• **Principles**
  • Layout, Typography, Color & Contrast
  • Controls and Widgets
  • Simplicity
INTERACTION DESIGN

KNOW?

FEEL?

...DO?
User-experience design

Industrial design

Human factors

Usability engineering

Human-computer interaction

Communication design

Information architecture

User interface engineering

Interaction design

source: [4]
Like all forms of design, visual design is about problem solving, not about personal preference or unsupported opinion.

Bob Baxley
Interface design is only the experienced *representation* of the interaction, not the interaction design itself.
User Interface

Visible

Behind the Scenes

Capturing

Transferring

Connecting

Coordinating

Combining

Storing

Contextualizing

source: [4]

Tools
UI Elements

digg  del.icio.us  reddit  ma.gnolia  google bookmarks

newsvine  live bookmarks  furl  facebook  spurl

source: [4]
Graphical User Interface Design

• Principles

• Layout, Typography, Color & Contrast

• Controls and Widgets

• Simplicity
Grids
Visual Clutter
Clutter creates visual noise and makes an application hard to use

source: [4]
source: [4]
Proximity & Grouping
By grouping similar elements together, the designer helps the user deal with a complex information display by reducing it to a manageable number of units.

source: [2]
Primary Action / Secondary Action

source: [2]
All form actions are not equal, and therefore the visual presentation of actions should match their importance to make it easier to complete a form. Visual distinction helps users make “good” choices.
Example: “Web Design, Filling the Blanks”

Yammer
Constraint
Constraints are closely related to real affordances: For example, it is not possible to move the cursor outside the screen: this is a physical constraint.

Locking the mouse button when clicking is not desired would be a physical constraint. Restricting the cursor to exist only in screen locations where its position is meaningful is a physical constraint.
Flip Horizontally
Flip Vertically

Lock
Unlock

Group
Ungroup

Visual Constraint

source: [2]
Scalability of Interfaces / Flexibility
80/20 rule

source: [1]
A principle for setting priorities: users will use 20% of the features of your product 80% of the time. Focus the majority of your design and development effort (80%) on the most important 20% of the product.
Overcrowded Widget

Users are overwhelmed by options, limitless flexibility

Only show me what I need to see

Implement one easy to discover and easy to learn core pattern for common actions across the platform.
Adjust to users’ preferences.
Make less common actions harder to reach.

source: [5]
Aesthetic-Usability Effect

source: [1]
Aesthetic-Usability Effect
Aesthetic designs are perceived as easier to use than less-aesthetic designs. Aesthetic designs look easier to use and have a higher probability of being used, whether or not they actually are easier to use.

source: [1]
The flexibility-usability tradeoff is exemplified in the well known maxim “jack of all trades, master of none”.

Flexible designs can perform more functions than specialised designs, but they perform the functions less efficiently.

source: [1]
Fonts
-two general groups: serif & sans serif
-sans serif can be scanned quickly
-avoid very heavy or light typefaces for UIs
-avoid combining too similar typefaces
-stick with standards first

source: [4]
Roboto

SUNGLASSES
Self-driving robot ice cream truck
Fudgesicles only 25¢

ICE CREAM
Marshmallows & almonds
#9876543210

Music around the block
Summer heat rising up from the sidewalk

source: [5]
Color
HSV Color Space
-three main properties: hue, saturation (or intensity) and value (or brightness)
-hue refers to the color itself (the particular color within the optical (visible) spectrum of light), saturation refers to the brightness, value refers to the amount of black in a color

-color can provide cues for use
-color can establish a relationship
-color can indicate importance
-consider human factors such as color blindness and cultural differences
Colors
Contrast

Region: Custom

Dates

Saturday, 5 January 2008

5 January 2008

5 Jan 2008

source: [2]
Effective design creates no more contrast than necessary.

This allows the viewer to easily identify the elements in question as a strongly defined subset of the available information.
Effective design creates more contrast than necessary. This allows the viewer to easily identify the elements in question as a strongly defined subset of the available information.

**Region:** Custom

**Dates**
- Saturday, 5 January 2008
- 5 January 2008
- 5 Jan 2008

source: [2]
Symmetry

source: [2]
Symmetry ensures balance and clear organisation, if sometimes at the expense of visual interest. While this may be a drawback for a poster or retail packaging, it is perfectly appropriate for a user interface.
UI Kits
Graphical User Interface Design

• Principles

• Layout, Typography, Color & Contrast

• Controls and Widgets

• Simplicity
Checkbox  
Radio Button  
Twist  
Scroll Bar
Drop-down menu

Multiple Selection List

Text Box

Spin Box
Controls
Controls

source: [4]
Mapping of Representation and Control
Graphical User Interface Design

• Principles

• Layout, Typography, Color & Contrast

• Controls and Widgets

• Simplicity
Simplicity
Approachability
Simple designs can be rapidly apprehended and understood well enough to support immediate use or invite further exploration.


source: [2]
Recognisability
Simple designs can be recognised more easily than their more elaborate counterparts. Because they present less visual information to the viewer, they are more easily assimilated, understood and remembered.


source: [2]
Immediacy
Simple designs have a greater impact than complex designs, precisely because they can be immediately recognised and understood with a minimum of conscious effort.

source: [2]
**Usability**
Improving the approachability and memorability of a product necessarily enhances usability as well. Simple designs that eliminate unnecessary variation or detail make the variation that remains more prominent and informative.

source: [2]
Reduction through successive refinement is the only path to simplicity
References (Books):