Interaction Design

Chapter 7 (June 05, 2013, 9am-12pm):
Prototypes
Bill Verplank / worked at Xerox 78-1986
Prototypes

- Benefits of Prototypes
  - Low vs. High Fidelity / Resolution
  - Interacting with Paper
  - Video Envisionment and the Wonderful Wizard of Oz
  - Sketching in Hardware
  - Different Prototypes in the Design Process
INTERACTION DESIGN

know?

feel?

...do?
INTERACTION DESIGN

Mental model (tutorial, signs)

Transducers (input: analog/digital)

FEEL?

Transducers (output: hi/lo resolution)

KNOW?

...DO?
Why Prototype ?
What we know → What it means → So what? → How does it work?

Key Data Collection → User Research → Data Analysis → Design Concepts → Experience Prototypes

Evaluation Cycle
Prototyping as a proof of concept
Prototyping as a design process
Prototyping as a communication tool
For the Designer: Exploration
Visualization Feasibly Inspiration Collaboration

For the End User: Usefulness A change of viewpoint Usability Desirability

For the Producer: Conviction Specification Benchmarking
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Fidelity v. Resolution

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

Low Fidelity

Open Discussion
Prompting
Quick and Dirty
Early Validation

Sharp Opinions
Self Explanatory
Deliberate and Refined
Concrete Ideas
Low Resolution

Less Details
Focus on core interactions
Quick and Dirty
Early Validation

High Resolution

More Details
Focus on the whole
Deliberate and Refined
Concrete Ideas
looking back......

User test of a low-fidelity paper prototype of a website

vs.

User test of a high-fidelity paper prototype of a homepage.
3 Main Prototyping Pillars and Directions

Paper Prototyping  Video Prototyping  Hardware Prototyping
Prototypes

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Paper-prototyping
What is it?

-widely used **method** in the user-centered design process
-helps developers to create **screen based** applications that meets the user's expectations and needs.

**throwaway prototyping** and involves creating rough, even hand sketched, drawings of an interface to use as prototypes, or models, of a design.
History of Paper Prototyping

- started in the mid 1980s
- became popular in the mid 1990s when companies such as IBM, Honeywell, Microsoft, and others started using the technique in developing their products.
Typical form-filling screen

Tabs-based design

User test of a paper prototype

Typical set-up of a usability test
Device-based interaction

High-fidelity prototype of a homepage.

Mockup of a kiosk.
You can mockup real size products and environments which capture a degree of realism and while keeping it open for interpretation or further development.
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Video-prototyping

Image Source: CIID
EXAMPLE: Video Prototypes
low resolution
low fidelity
(a whole new world)
A whole new world
high resolution
low fidelity
(rotterdam hospital)
low resolution
high fidelity
(crossing on demand)
Zebra Zone
The Smoke & Mirror Approach
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• Sketching in Hardware
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Sketching with Hardware
Atmel AT Mega 328

Atmel AT Mega 328
Thermistor  
Bend Sensor  
PIR Sensor
Force Sensor

Potentiometer

Magnet Switch

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Distance IR Sensor  Touch QT Sensor  Ultrasound Sensor
Quick video overview
Prototypes

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Some Examples from a school called Copenhagen Institute of Interaction Design (CIID)
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KEY VALUE

- Make old people reconnect with their past and their family.
He noticed that his neighbour Helga often gets visits from her grandchildren. Apparently they look at old photos, but the album looks a bit strange.

One day he asks Helga what kind of photos are in it, and why the book is so unbound as if.

"Do you have personal photos in it? I don't think I ever see a photo from Norway in here."

"Yes, that is my country for sure, but you see, there are times like here."

The photo is showing Helga's husband on a vacation in Norway '68. The photo covers the whole screen, so no other buttons can be pressed. She touches the photo again, and it shrinks to its original size.
On the right side of the screen is something that looks like a big wheel. Helga puts her hand on the screen, where the wheel is, and moves it up. The wheel starts rolling and numbers representing years start moving. When the year 1964 is centered, she removes her hand.
Viseaften
Journalistforeningen
1968, Music
References (Books):