

IN4MATX 148: Ubiquitous Computing Prototyping and Projects

Week 2: The Design Crit, Sketching, and
Group Project “Madness”



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Preface: Course Logistics

- Make sure you've introduced yourself on the class wiki
- Wiki/website access password: "*anteater*"
- *Tentative* final exam date/time: Monday, 11 June, 7–9pm, this room
- Questions? Comments? Concerns?

On Deck for Tonight

- Part I: The Design Critique
- Part II: Intro to Sketching
 - *Hands-on Activities*
- Part III: Intro to Wearable Computing
 - *Your Exercise for the Week*
- Part IV: Group Project “Madness”

Part I: The Design Critique

An overview by Miya Sylvester

What to Expect for Our Design Crits

- One at the *beginning* of every class meeting
- Groups of ~5 students
- Present your work for 4–5 minutes
- *Constructively* critique your peers' work for ~3 minutes
- ~2 minutes for changovers between presenters
- Turn in your assignments when the crit is finished

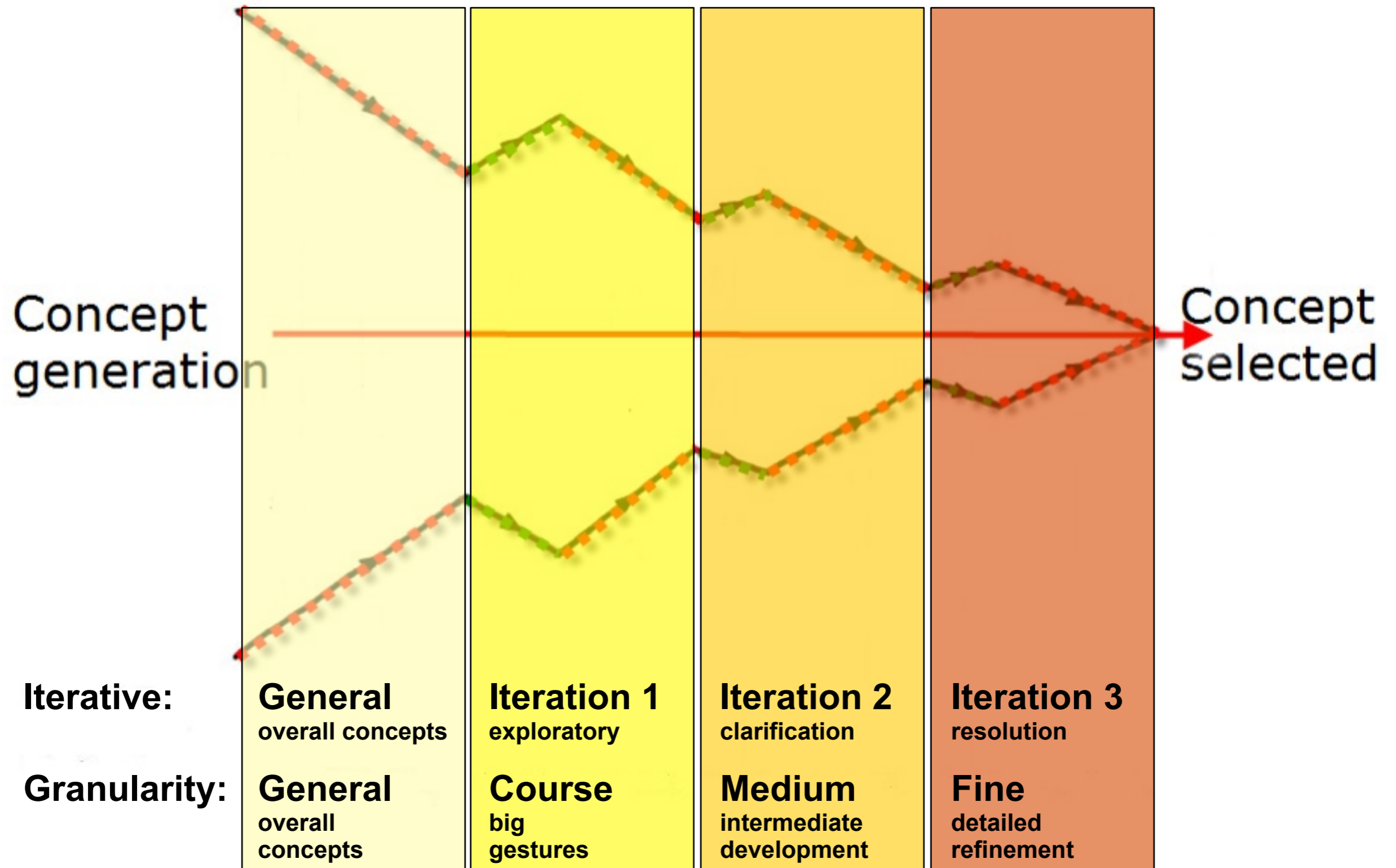
Crits: Planning Ahead

- Be prepared to present your work
- Be prepared to present your work!
- Think about what you want to talk about
- Think about what kind of feedback you would like to receive and how to ask for it
- Jot notes about people's responses
(or ask someone to do it for you)

Part II: Intro to Sketching

based on Saul Greenberg's CPSC581 lecture materials

Remember the Design Funnel



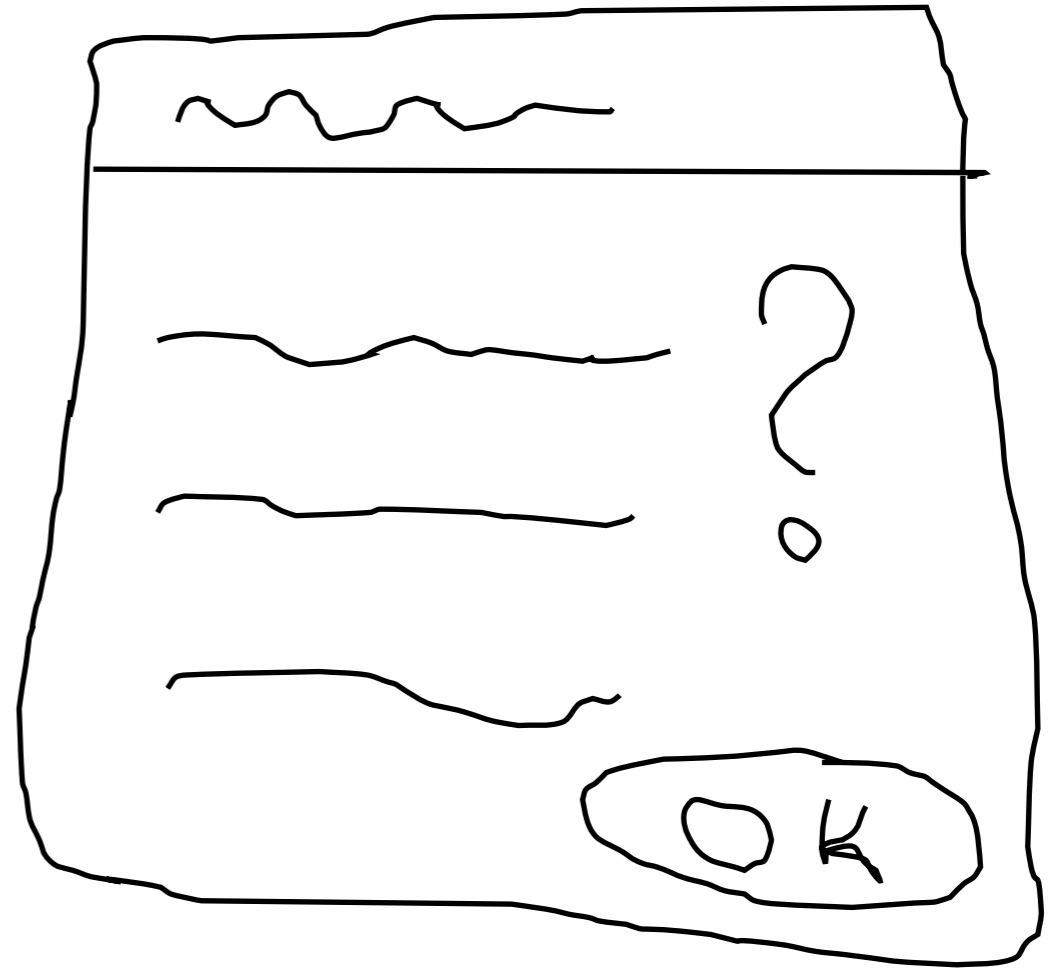
A photograph of a desk with various design sketches, a mobile phone, pens, and a document titled 'Stakeholder Interviews'. The sketches include a perspective view of a device with a screen and buttons, a top-down view of a rectangular device, and a side view of a device with a keyboard. A mobile phone is placed on top of the sketches. A document titled 'Stakeholder Interviews' is visible in the upper right corner, with the text 'NG 3100' and '10.21.02'. A red pen and a green pen are also visible on the desk.

Sketching is about Design

From Bill Buxton slide deck. Need to attribute the photograph.

The Attributes of Sketches

- **Quick**
 - to make



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- **Timely**
 - provided when needed



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- **Disposable**
 - investment in the concept, not the execution



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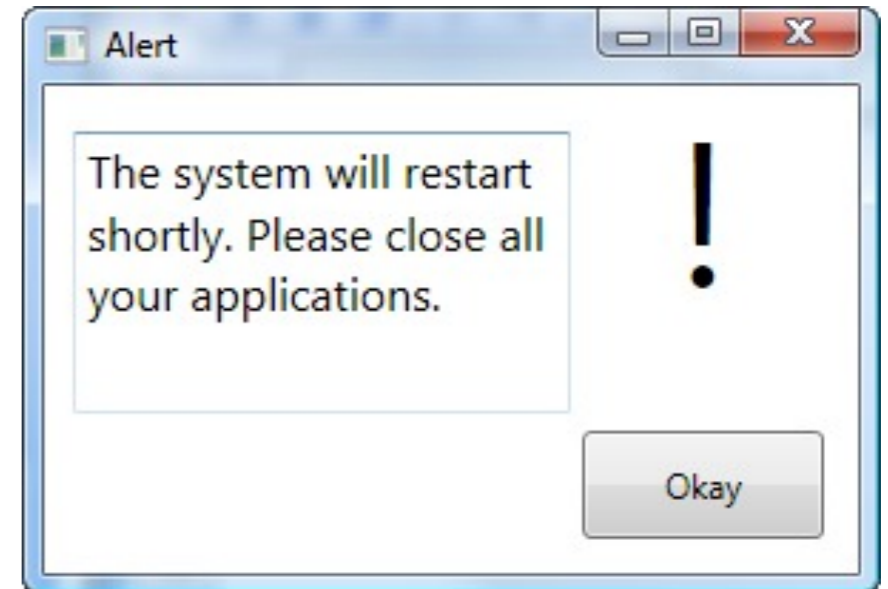
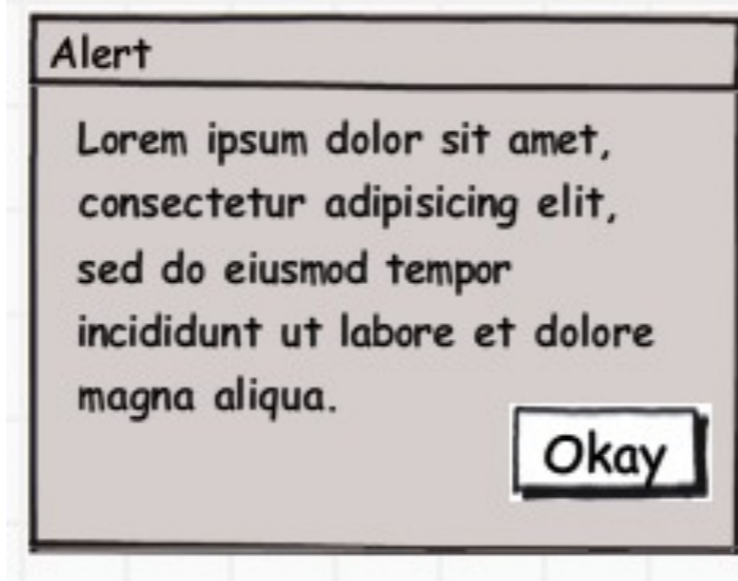
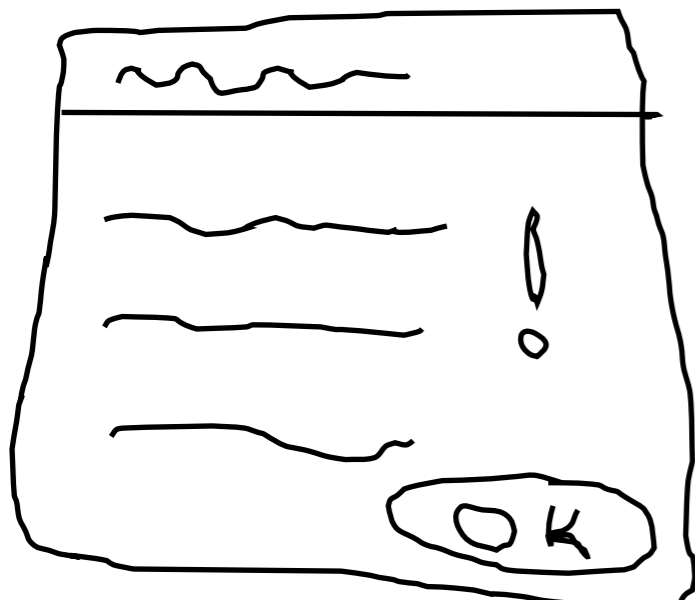


Form studies for a digital alarm clock

Image source:
-Baskinger, M. (2008) Pencils before Pixels. *ACM Interactions*, March+April, page 32.

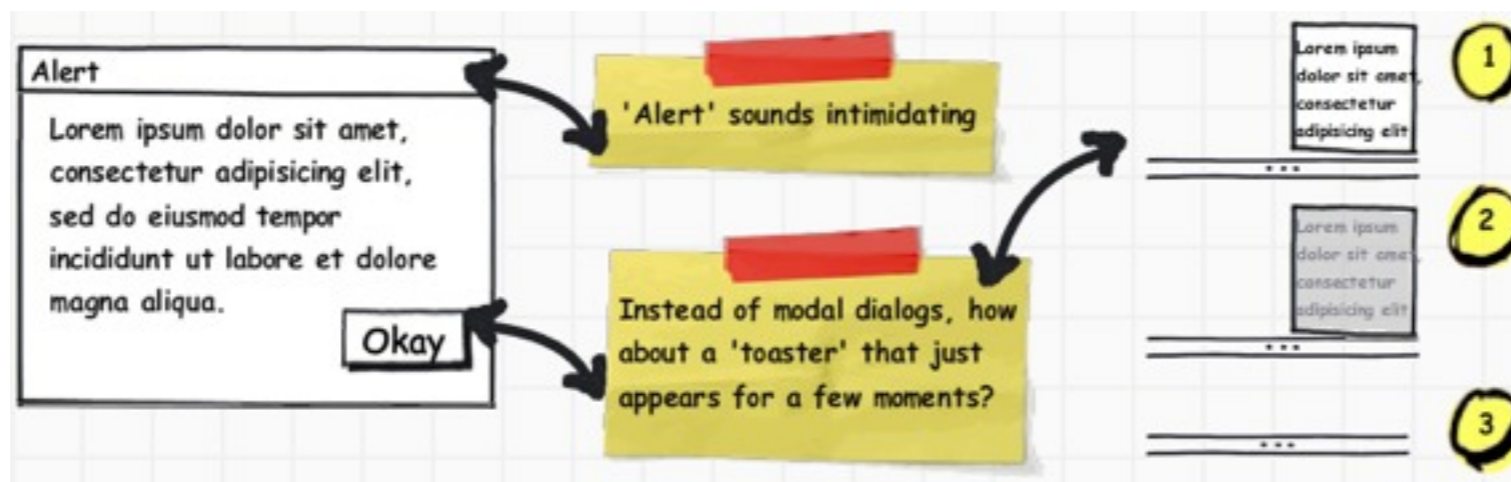
The Attributes of Sketches

- **Quick**
- **Timely**
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- **Plentiful**
- **Clear vocabulary**
 - rendering & style indicates it's a sketch, not an implementation
- **Constrained resolution**
 - no higher than required to capture its concept
- **Consistency with state**
 - refinement of rendering matches the state of concept development



The Attributes of Sketches

- **Quick**
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- **Suggest & explore rather than confirm**
 - suggests/provokes what could be
- **A catalyst**
 - evokes conversations & discussion



The Attributes of Sketches

- **Quick**
 - to make
- **Timely**
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- **Disposable**
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- **Clear vocabulary**
 - rendering & style indicates it's a sketch, not an implementation
- **Constrained resolution**
 - no higher than required to capture its concept
- **Consistency with state**
 - refinement of rendering matches the actual state of development of the concept
- **Suggest & explore rather than confirm**
 - suggests/provokes what could be i.e., they are the catalyst to conversation and interaction
- **A catalyst**
 - evokes conversations & discussion

A Sketch is Not a Prototype

Difference is

- a contrast of purpose (always)
- a contrast in form (usually, but not always)

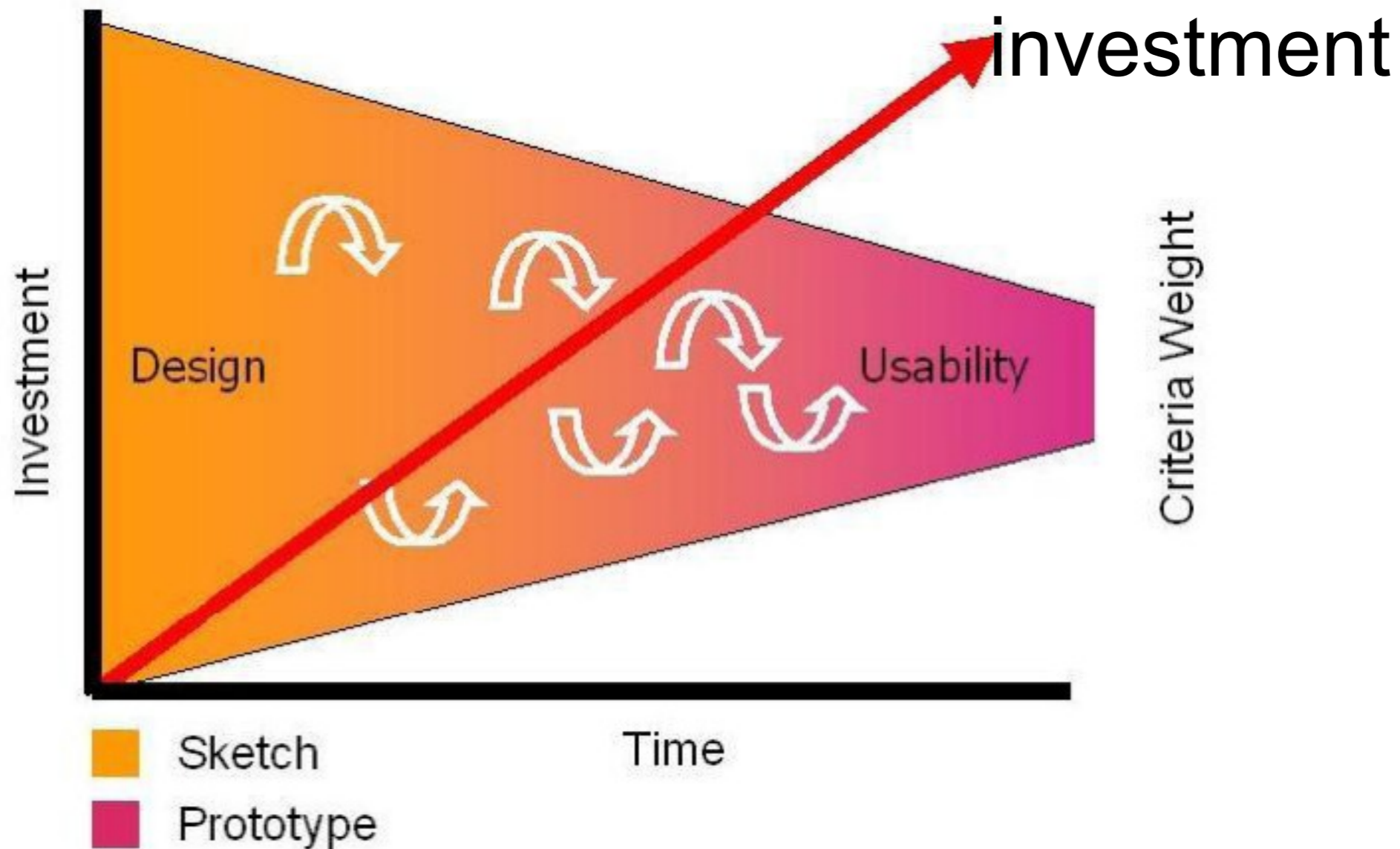
But

- it's a continuum



From Sketches to Prototypes

- Sketches: early ideation stages of design
- Prototypes: capturing/detailing the actual design



From Sketches to Prototypes

Early design

Brainstorm different ideas and representations

Choose a representation

Rough out interface style

Task centered walkthrough and redesign

Fine tune interface, screen design

Heuristic evaluation and redesign

Usability testing and redesign

Limited field testing

Alpha/Beta tests

Multitude of sketches

Sketch variations and details

Sketch or low fidelity prototypes

Low to medium fidelity prototypes

High fidelity prototypes

Working systems

Late design

SKETCH

PROTOTYPE

EVOCATIVE → DIDACTIC

SUGGEST → DESCRIBE

EXPLORE → REFINE

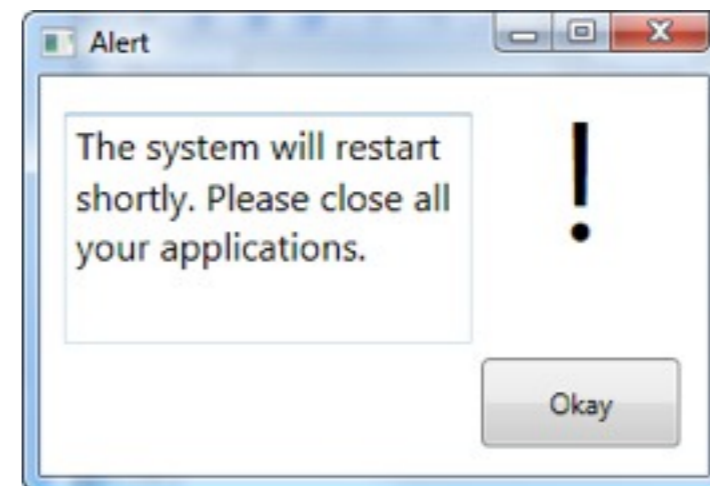
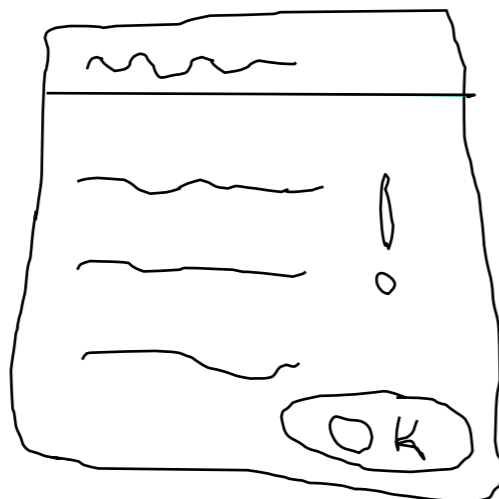
QUESTION → ANSWER

PROPOSE → TEST

PROVOKE → RESOLVE

TENTATIVE → SPECIFIC

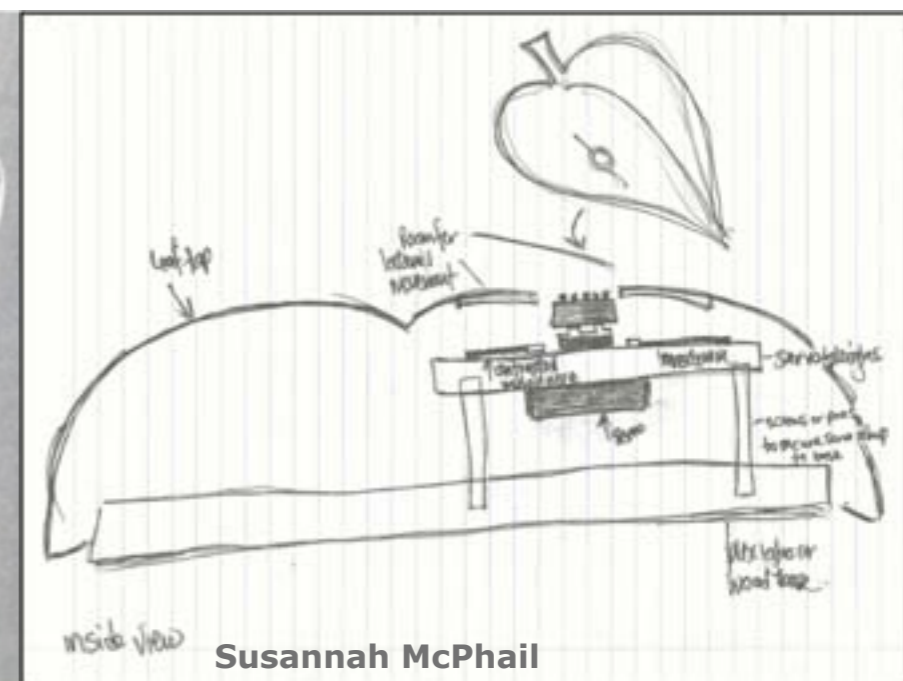
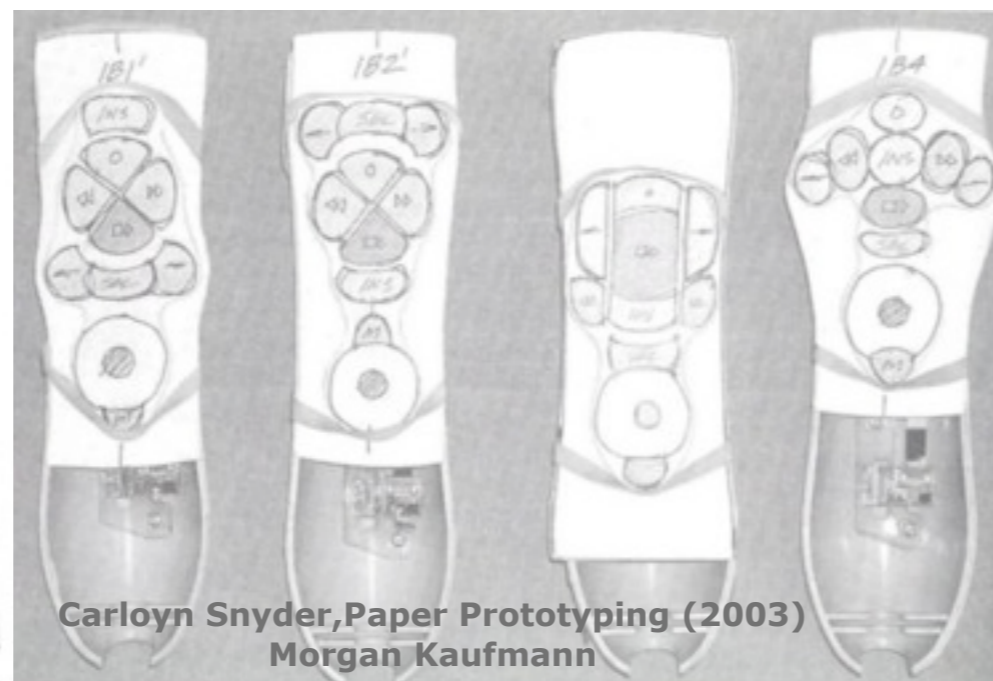
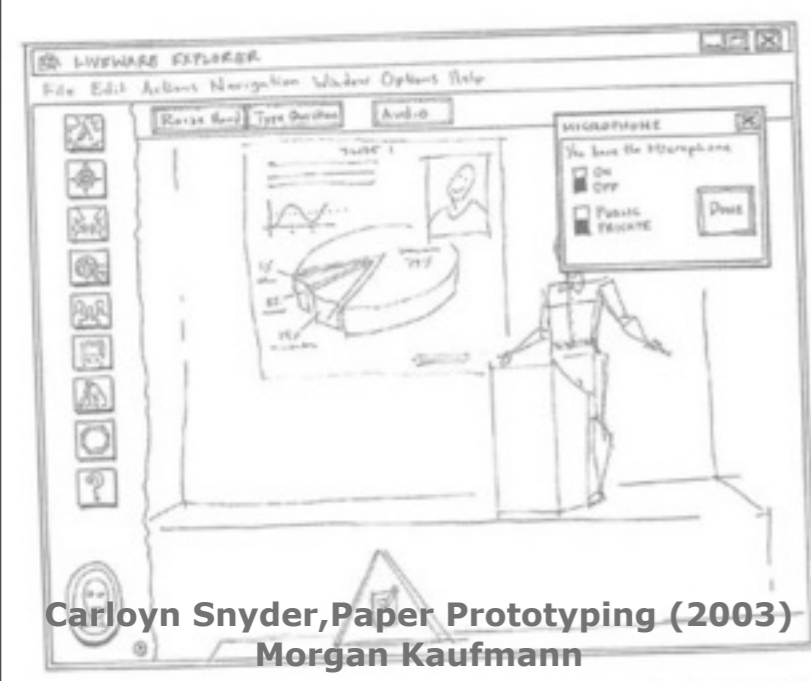
NONCOMMITTAL → DEPICTION



¹From Bill Buxton's Book Sketching User Experiences (2007) Morgan Kaufmann

The Vanilla Sketch

- Captures:
 - an essence of an idea
 - a moment in time
 - the look of an interface
- multiple variations of the concept



Technique: Just Draw Something

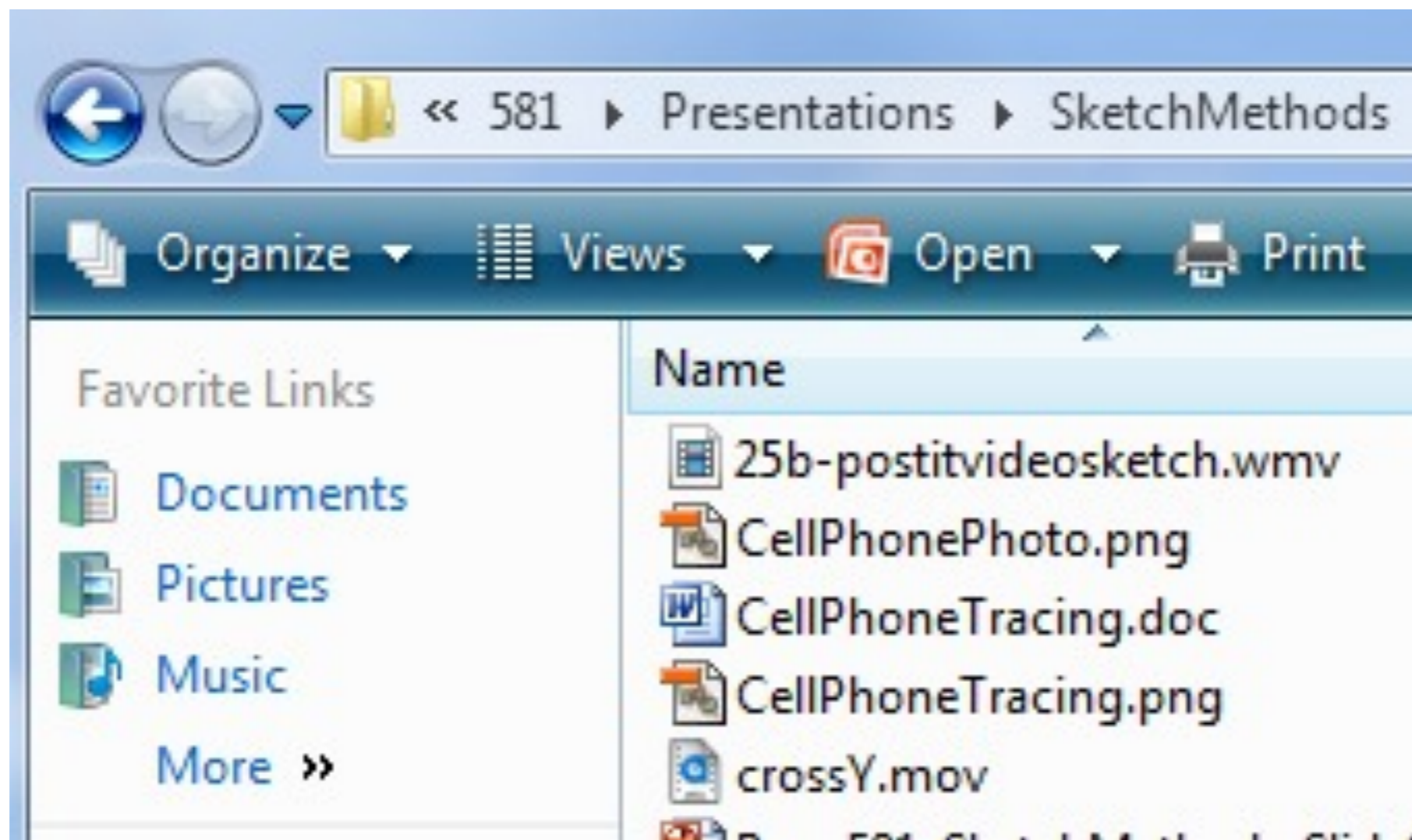
- Don't worry about aesthetics
 - the sketch is for your eyes and
 - the sketch is a social thing: a conversational prop that engages others in talk about your ideas

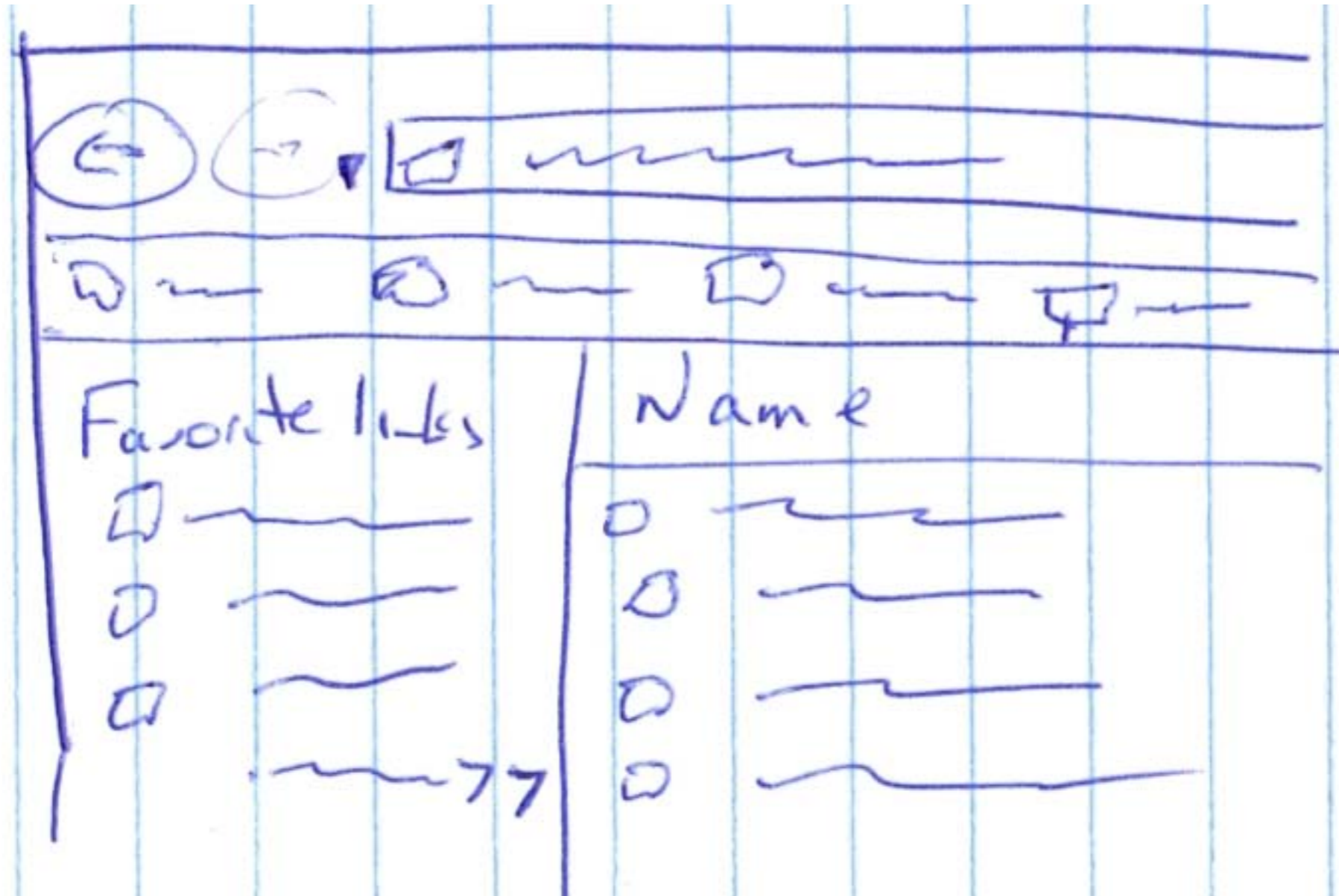
- But if you want to learn how to draw
 - sketching courses
 - arts, industrial design, community courses...
 - books
 - Drawing on the Right Side of your Brain by Betty Edwards

Technique: Just Draw Something

- Scribble drawing
 - sketch anywhere, anytime,
 - sketch in the dark (while watching a movie)
 - speed sketching (1 minute or less)

- Trick
 - draw only essentials
 - scribbles suggest details





Time to draw: 30 seconds

Now You Try...

- Sketch 10 examples of:
 - Office supplies on a desk
 - A cell phone
 - A person walking a dog
 - The face of someone who just discovered a parking ticket
 - Ways to share information between cell phones

Part III: Introduction to Wearable Computing

A whirlwind tour

Tutorial presented at ISWC '03 by Thad Starner & Brad Rhodes

<http://www.iswc.net/iswc03/iswc2003-intro-tutorial.pdf>

A Very Different Take: Day-for-Night

A modular, extensible,
reconfigurable dress comprised
of 448 white circuit boards



YOUR EXERCISE FOR THIS WEEK



A wearable technology to help
you find your way should you
become lost.

50 Sketches

Part IV: Group Project “Madness”

Review: What the Group Project is About

- Gain experience working with researchers (faculty, postdocs, grad students) in Informatics and other Ubicomp-related fields
- Work with mentor to develop a suite of prototypes that could be used to
 - explore alternative designs under consideration
 - field test ideas with potential users
 - run a Wizard-of-Oz-style experiment
- Poster session (week 5): early-stage work *for feedback*
- Final presentation/portfolio (finals week): *at least 3 different kinds of prototypes represented*

Group Project Sign-Ups

- Linked off of the class schedule (course website)
- Fill out Google Docs form. Provide:
 - Name
 - Preferences (1st through 5th choices)
 - Anything you want to tell me that will help me create good project groups
- **Due Wednesday by 5pm.**
- Also: make sure your wiki introduction is complete!

Next Week

- Sketching+Wearables Assignment **Due** (50 Sketches)
- Initial Design Crits
- Intro to hybrid and physical sketching
- Intro to Ubicomp in the Home
- Bring: sketchbook, drawing materials, other miscellaneous office supplies, *digital cameras, laptops*
- Due this week:
 - Group project sign-ups (**by Wed. 5pm**)
 - Organize project teams, meet with mentors