

CSE 440: Introduction to HCI

User Interface Design, Prototyping, and Evaluation

Lecture 08:
Storyboarding and
Video Prototyping

James Fogarty
Alex Fiannaca
Lauren Milne
Saba Kawas
Kelsey Munsell

Tuesday/Thursday
12:00 to 1:20



Today

Milestones

Design Review (“1x2”) Due Friday

Getting the Right Design Due Tuesday

Presentations Start Thursday

Class

Storyboarding and Video Prototyping

Design Check-In (“3x4”) Peer Critique



Tasks in Design

Tasks guide your exploration of a design

Creating scenarios for each task illustrates

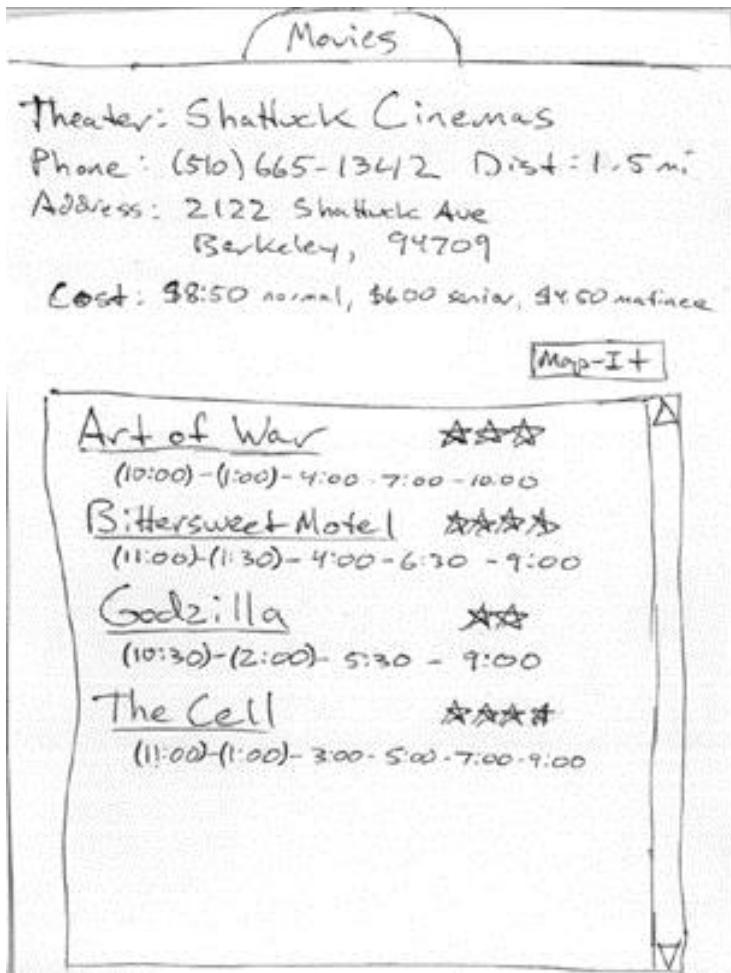
what a person does

what they see

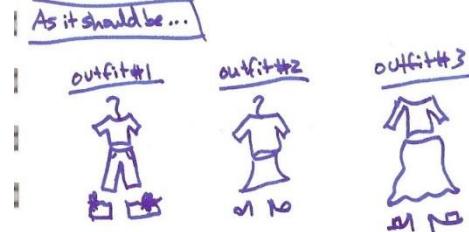
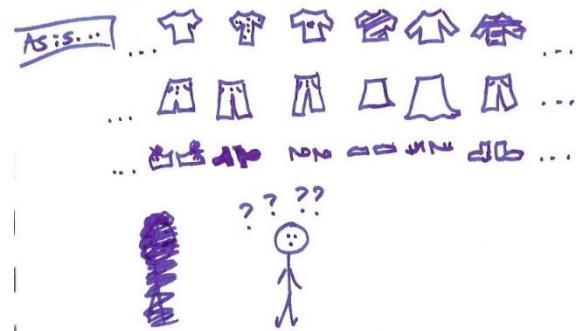
step-by-step performance of task



Sketching



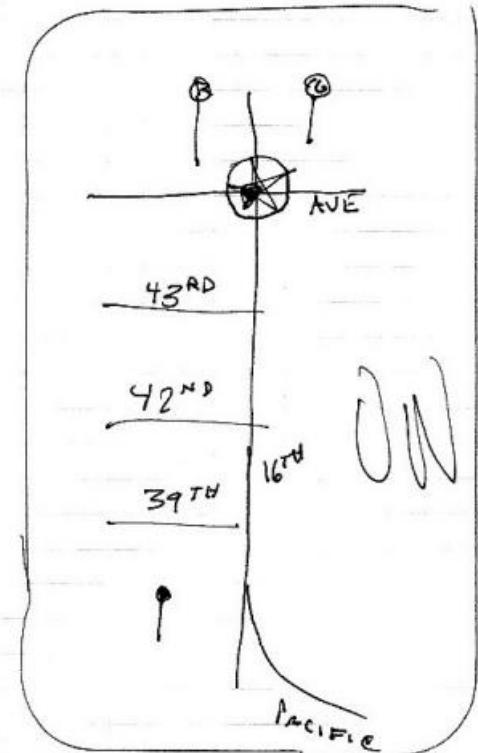
STORE FOR THE STYLE-CHALLENGED



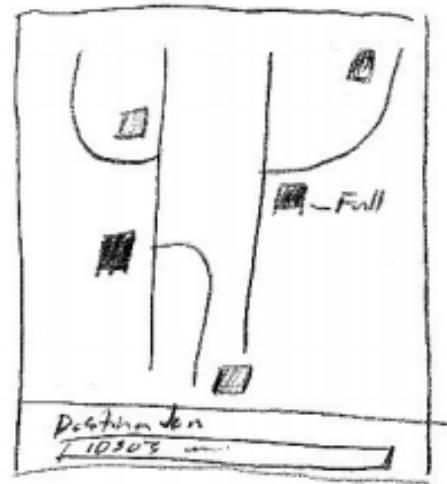
(pre-selected to match so you don't
have to choose.)



Sketching



MAP SHOWING PARKING
AVAILABILITY BASED ON INPUTTED
DATA, INPUTTED ON MAP



- different colors
- highlights availability
-



Sketching and Storyboards

The sketch illustrates a user interface for a student attendance system. At the top, there's a header with "Attendance List" and sorting options "Sort By Last Name" and "Show Enrollment". Below this is a table with columns for "Last Name", "First Name", "SID #", "Enrollment", "Section", "Major", and "Level". The table contains several rows of student data, with the last row being "Vernette, Joshua". A red arrow points from the "Vernette" entry to a callout box labeled "Go to Attendance View". At the bottom of the interface, there are several buttons and status messages:

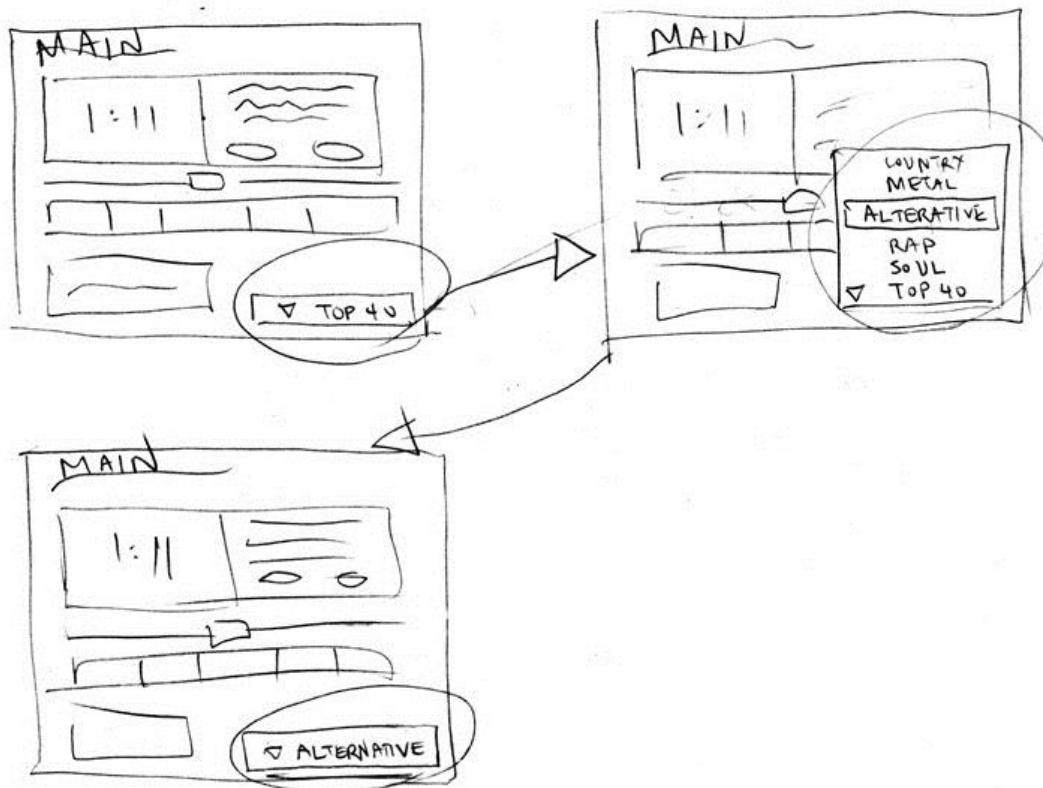
- "Back to main menu" and "refresh w/ new info"
- "38 Present, 2 Absent" (with a red arrow pointing to it)
- A button labeled "Take Attendance" with the sub-instruction "from students' PDA"
- A button labeled "Done" and "Look Up: Sc" (with a red arrow pointing to "Sc" and the note "highlights student")



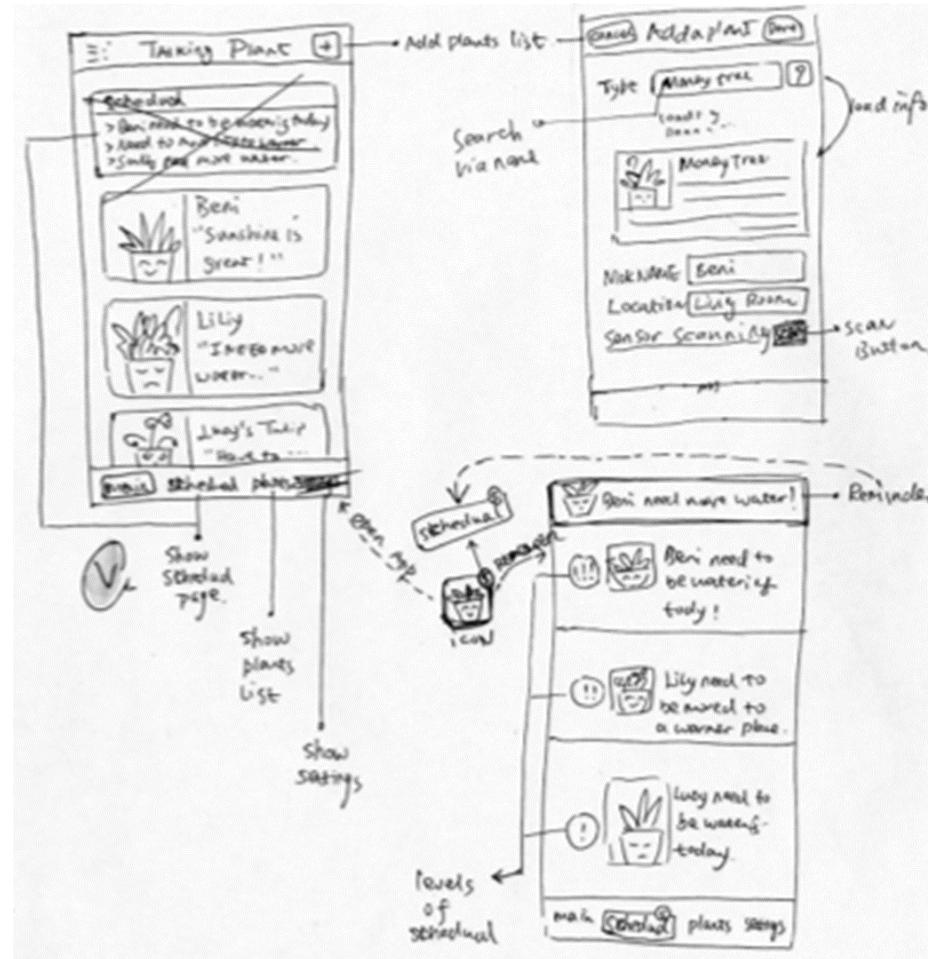
Sketching and Storyboards

SCENARIO 1

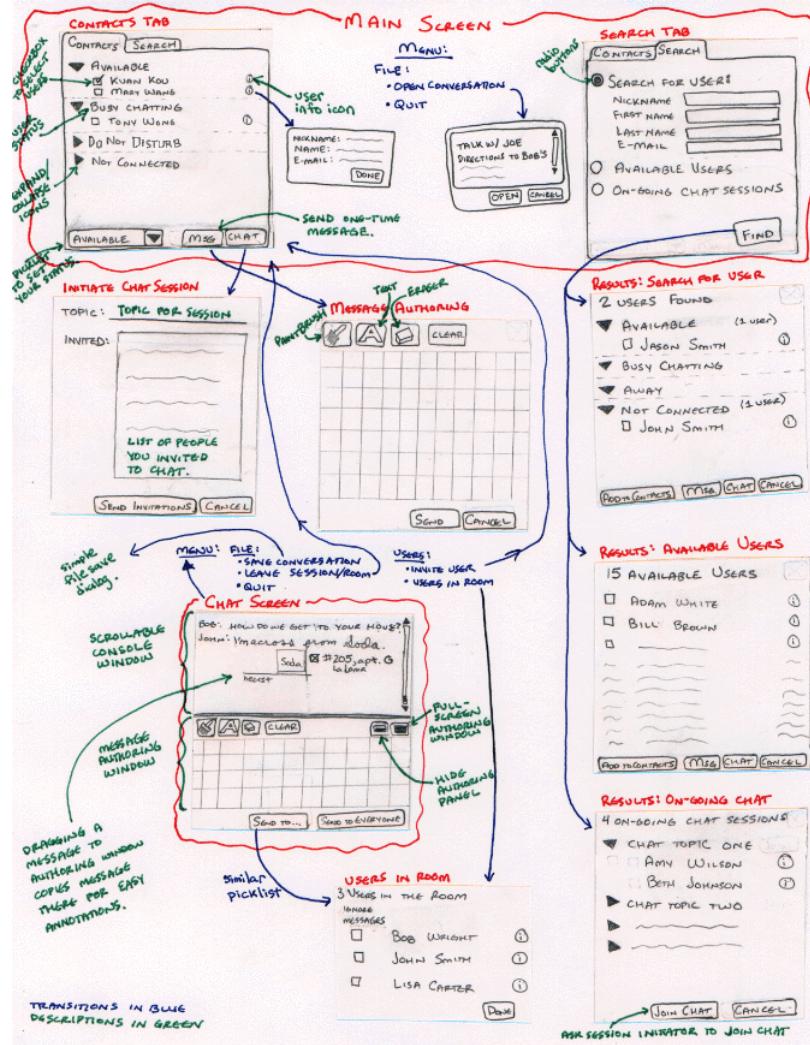
"I want to listen to alternative music"



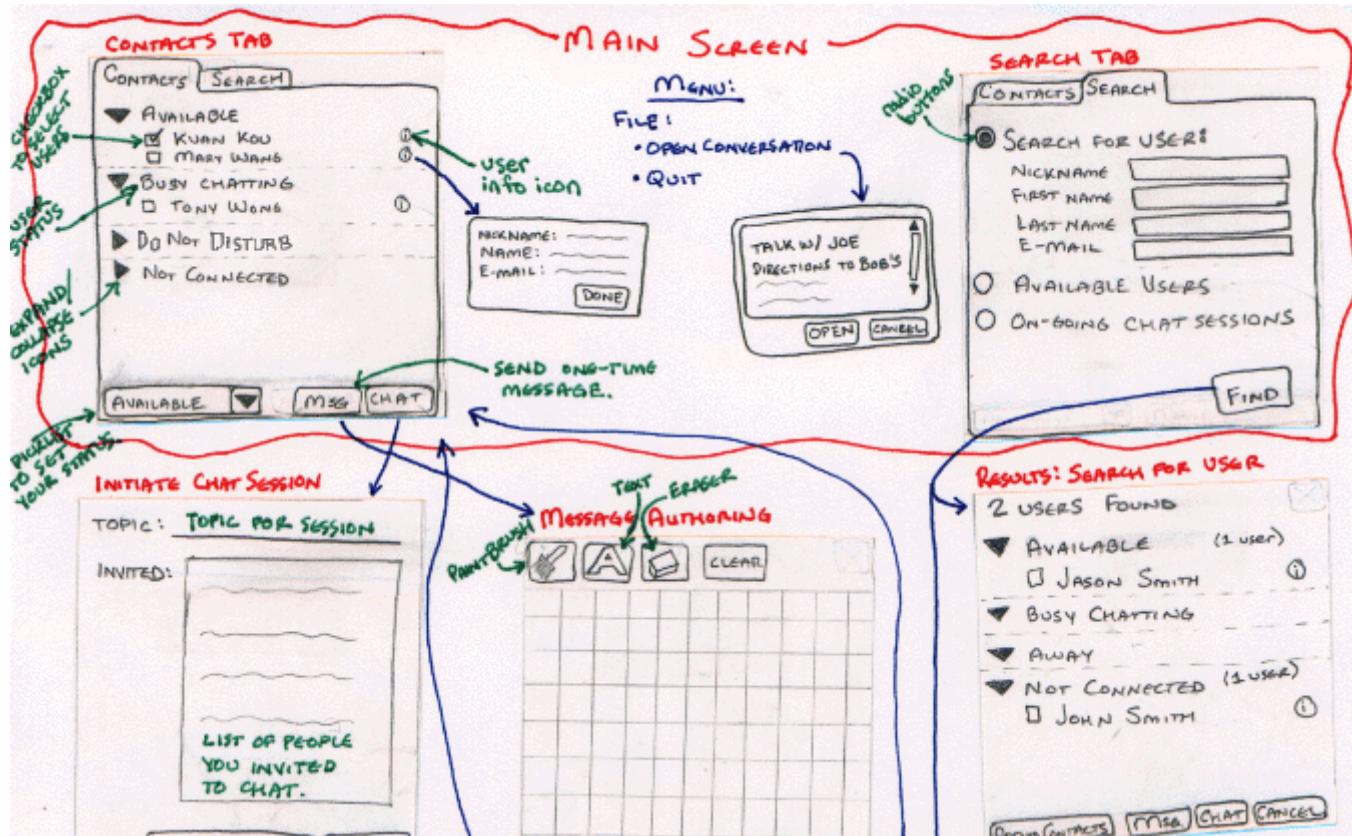
Sketching and Storyboards



Sketching and Storyboards



Sketching and Storyboards



Illustrating Time

Storyboards come from film and animation

Give a “script” of important events

leave out the details

concentrate on the important interactions



Storyboards

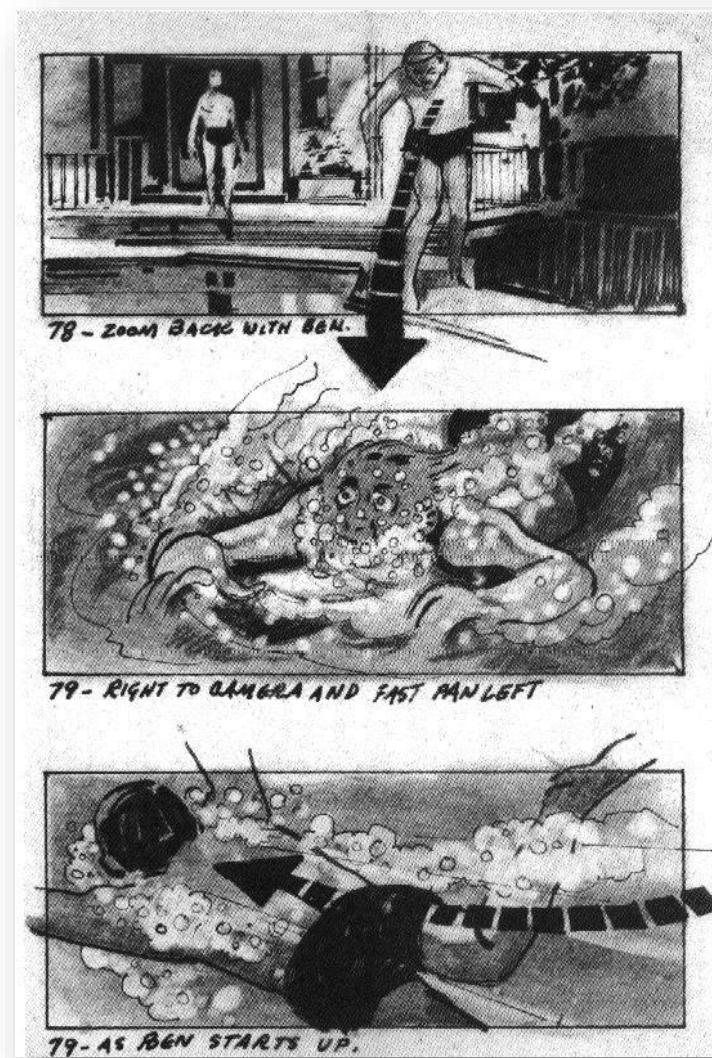
Can be used to explore

Much faster and less expensive to produce

Can therefore explore more potential approaches

Notes help fill in missing pieces of the proposal

Relative to film, these function as sketches



Storyboards

Can be used to convey

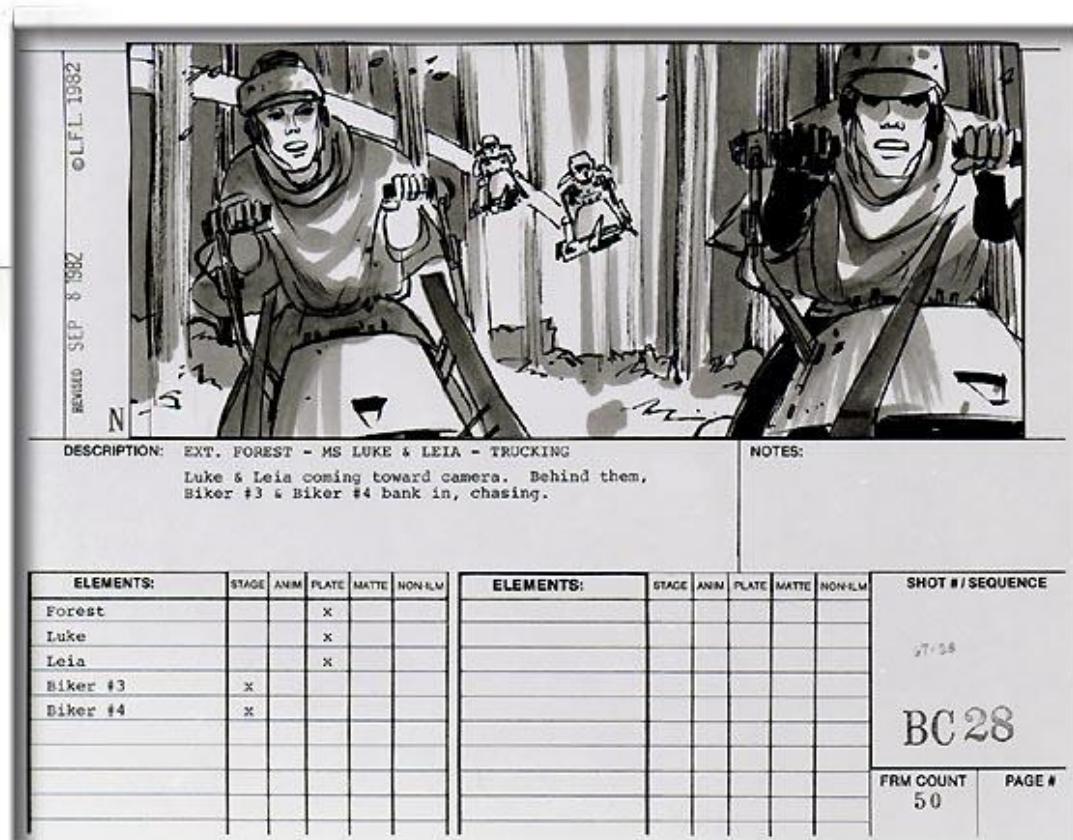
Effective storyboards can quickly convey information that would be difficult to understand in text

Imagine explaining this in text, for various audiences

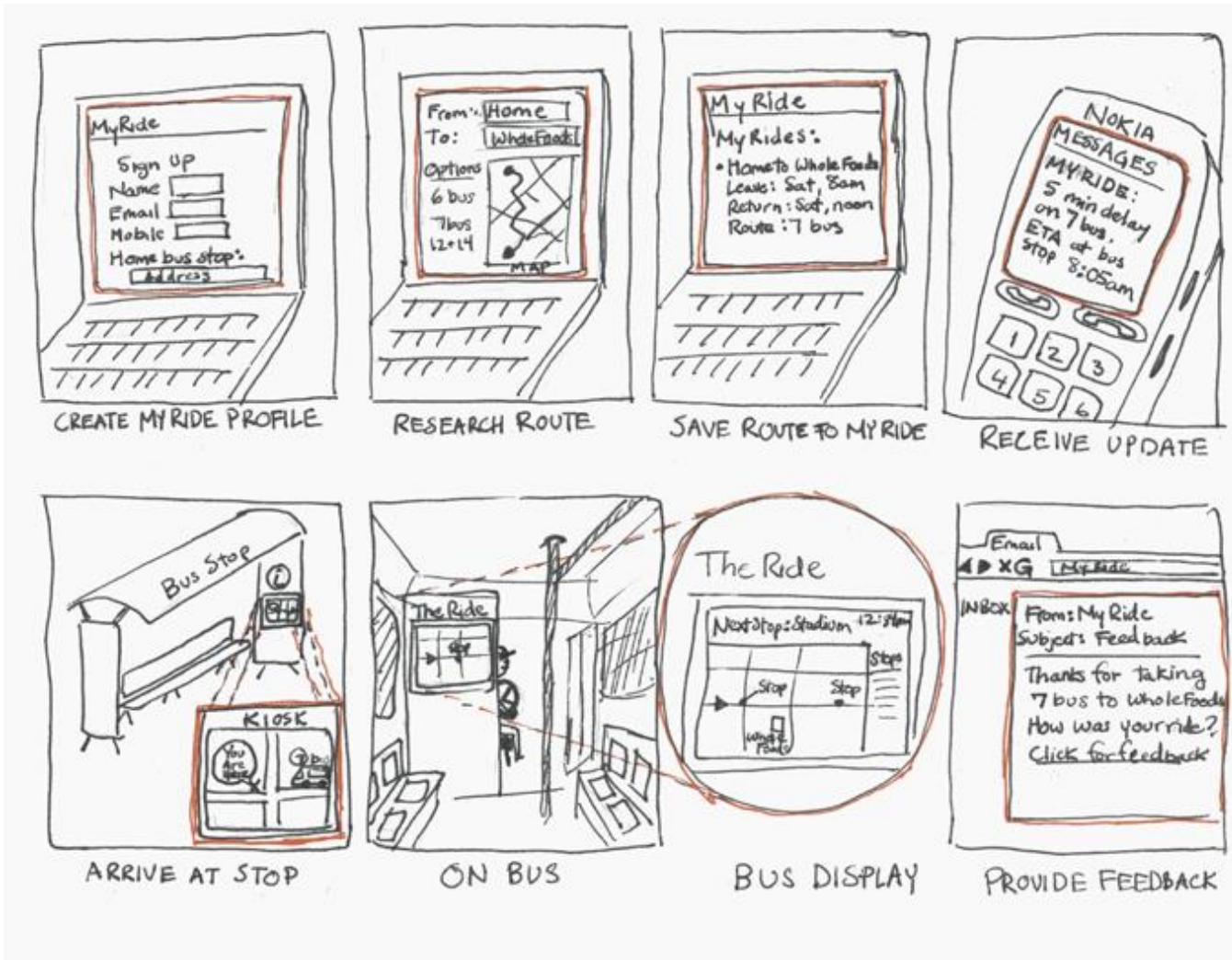


Storyboards

Can illustrate key requirements and leave open less important details of design



Basic Storyboard



Storytelling

Stories have an audience

Other designers, clients, stakeholders,
managers, funding agencies, potential end-users

Stories have a purpose

Gather and share information about people, tasks, goals

Put a human face on analytic data

Spark new design concepts and encourage innovation

Share ideas and create a sense of history and purpose

Giving insight into people who are not like us

Persuade others of the value of contribution

Stories Provide Context

Characters

Who is involved

Setting

Environment

Sequence

What task is illustrated

What leads a person to use a design

What steps are involved

Satisfaction

What is the motivation

What is the end result

What need is satisfied

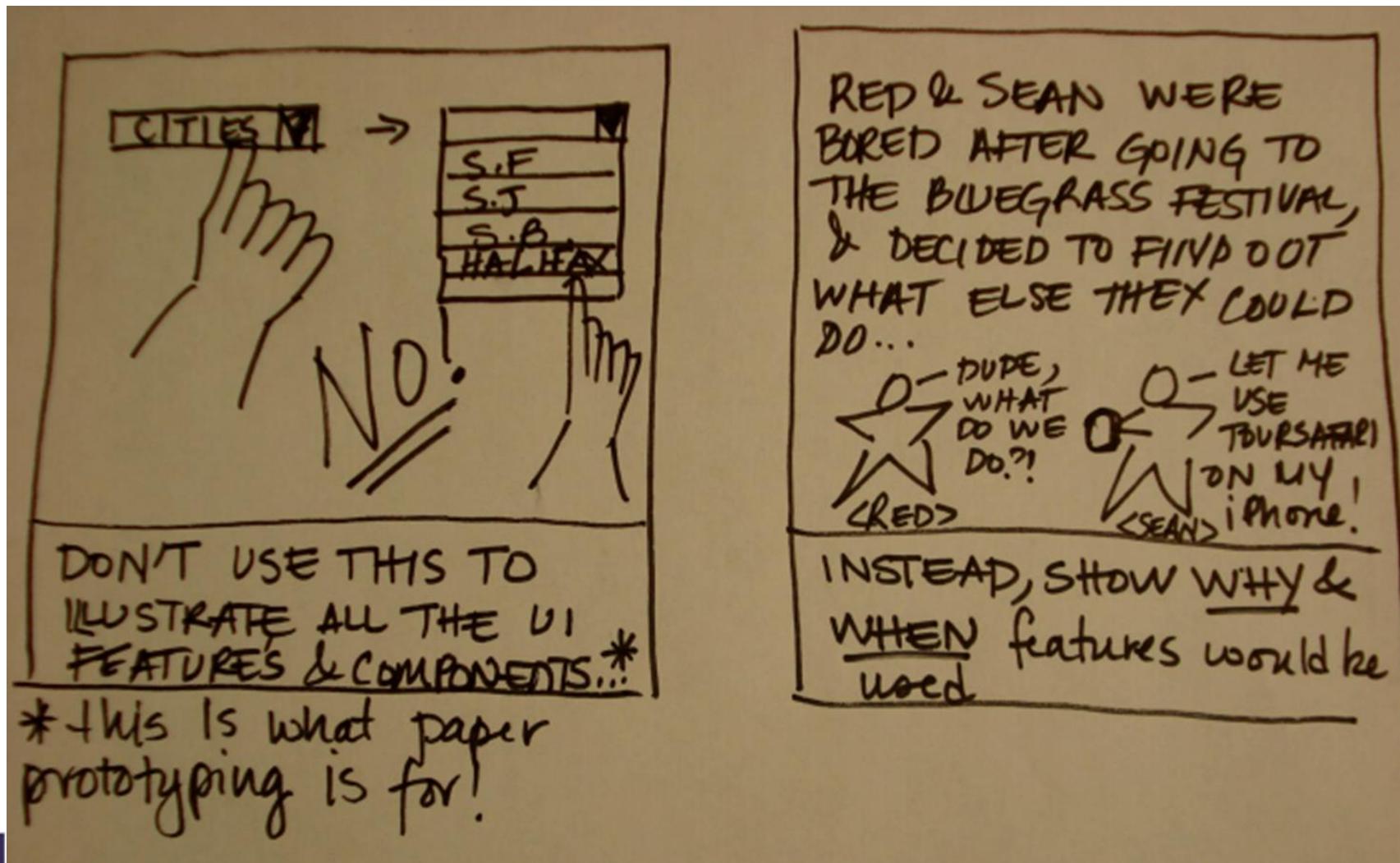
Details of interface features and components are not necessarily surfaced, they can often be developed and conveyed more effectively with other methods

Can help surface details that might otherwise be ignored

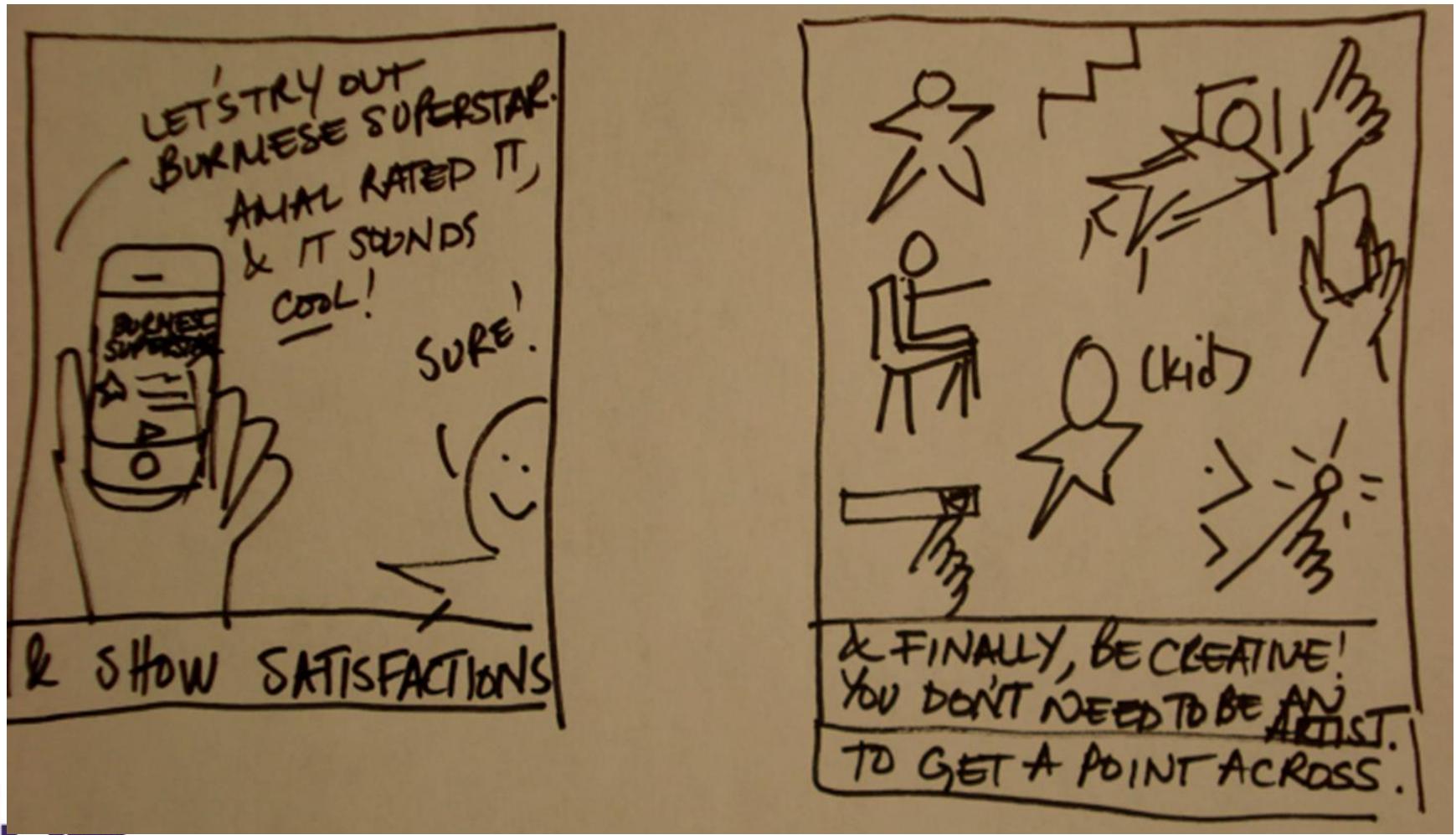
Grocery store application:

- use with one hand while pushing a shopping cart
- privacy of speech input
- split attention

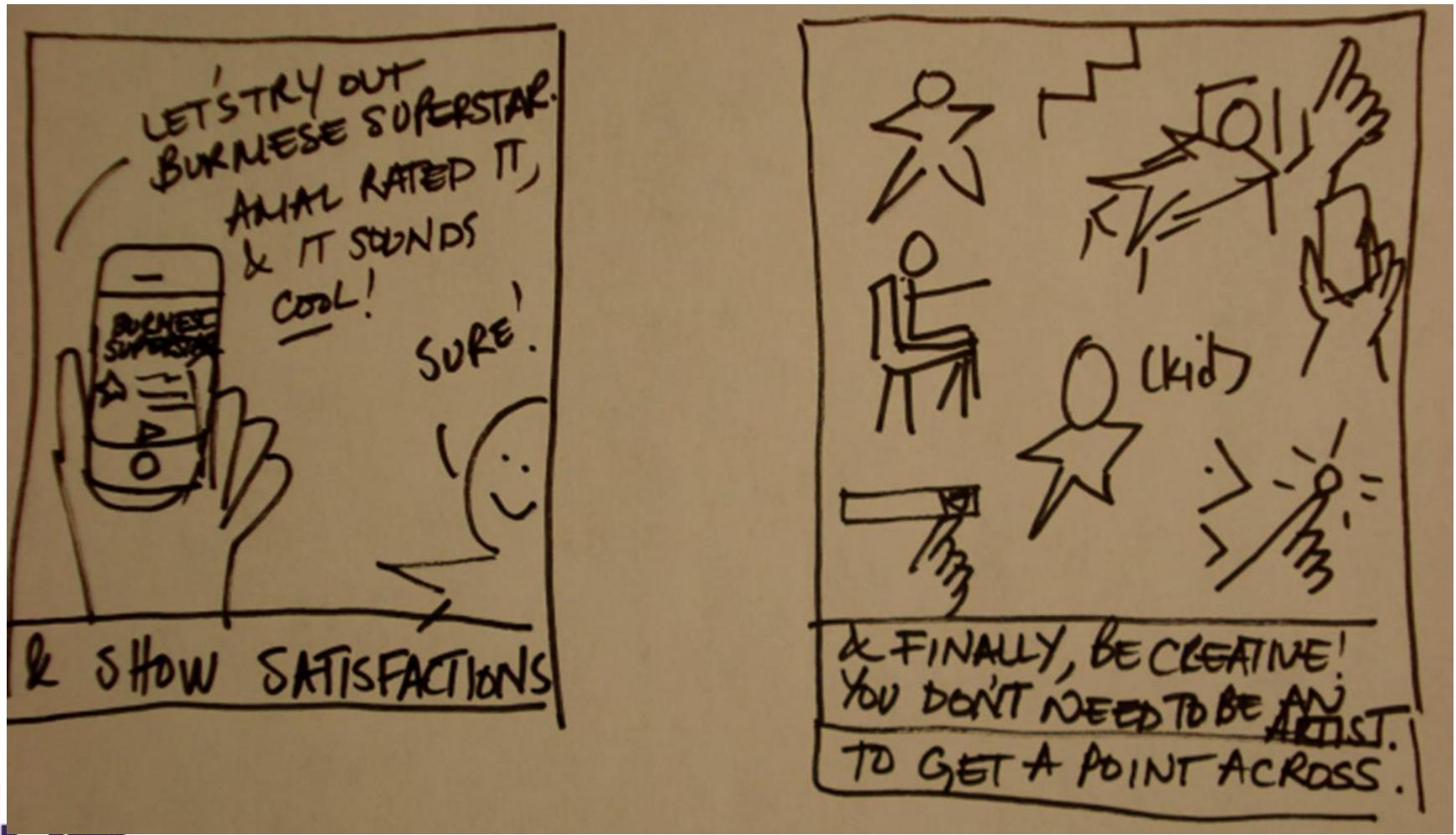
Amal's Guide to Storyboarding



Amal's Guide to Storyboarding



Amal's Guide to Storyboarding



Storytelling

Good stories

- Understand audience
- Provide context of use
- Are well-motivated
- Memorable
- Evokes a reaction
- Evokes empathy
- Illustrate experience
- Convey emotions
- Short and to-the-point

Bad stories

- Do not account for audience
- Boring or un-engaging
- Fantastical or unrealistic
- Wrong story for purpose
- Too long to hold attention

tl;dr



Elements of a Storyboard

Visual storytelling

5 visual elements

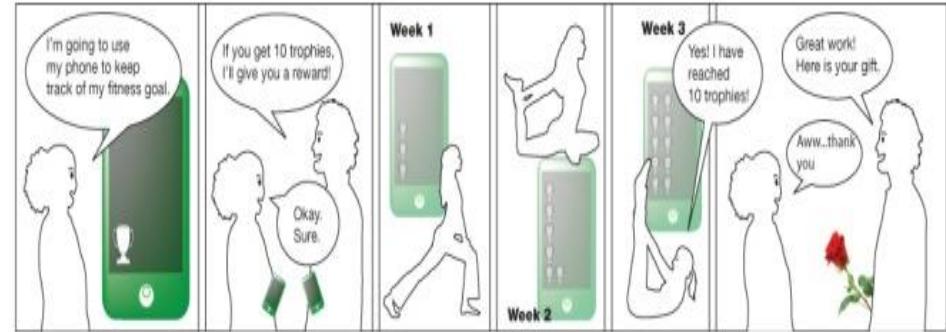
Level of detail

Inclusion of text

Inclusion of people
and emotions

Number of frames

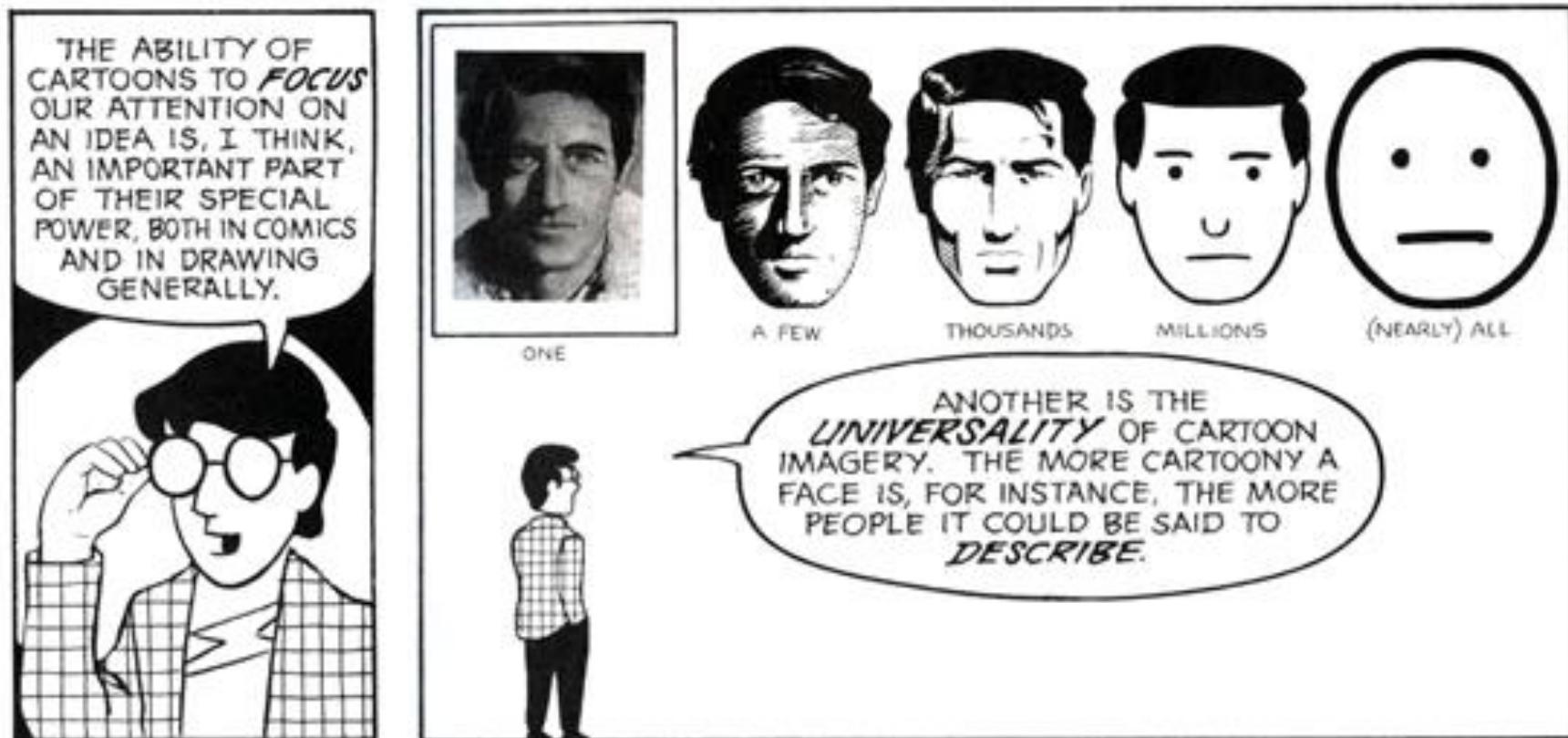
Portrayal of time



To better characterize design intuitions:
gather and analyze artifacts
semi-structured interviews
survey focused on identified elements

1. How Much Detail?

Guideline: too much detail can lose universality



Scott McCloud



1. How Much Detail?

Sketching People

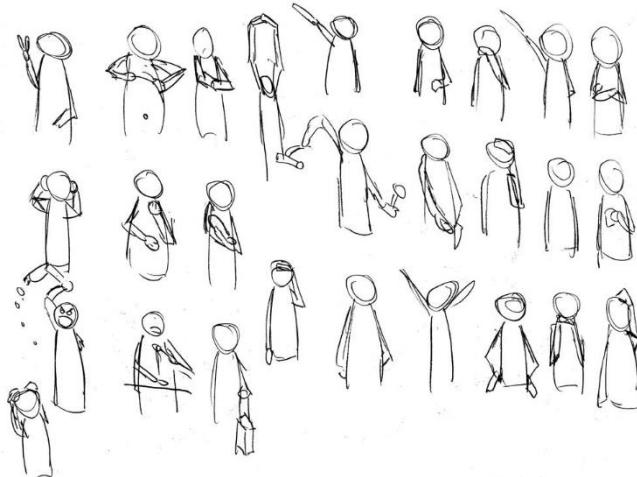


Star people
by Bill Verplank

PERSON



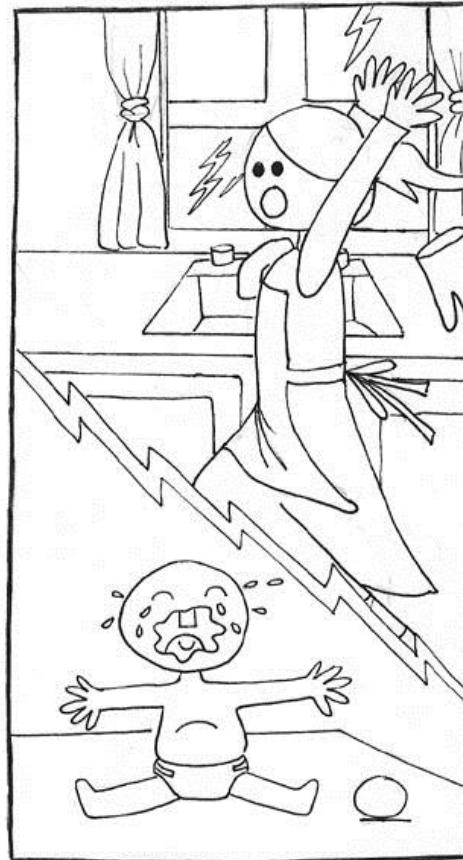
(c) 2009 SACHA CHUA



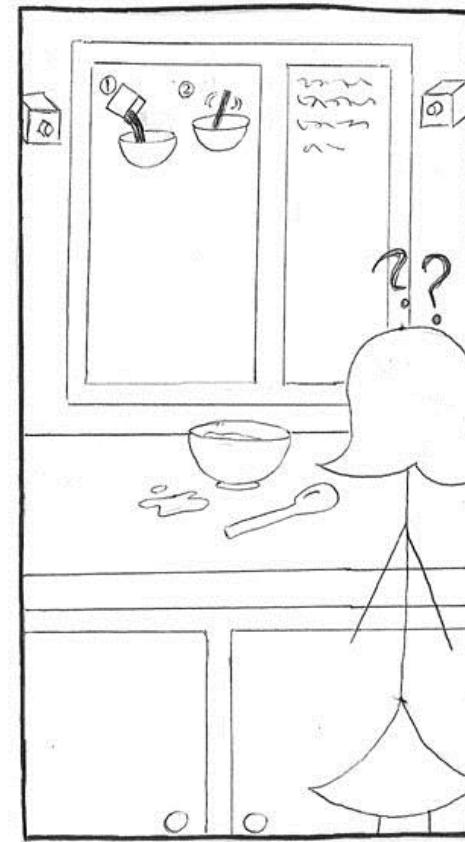
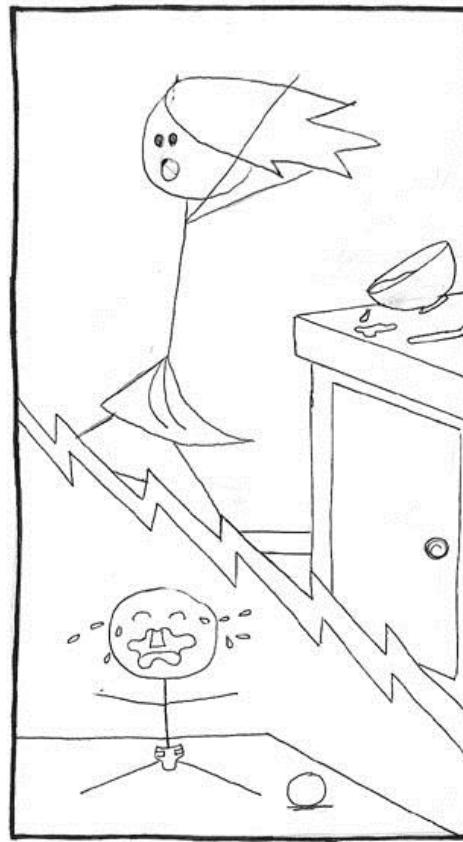
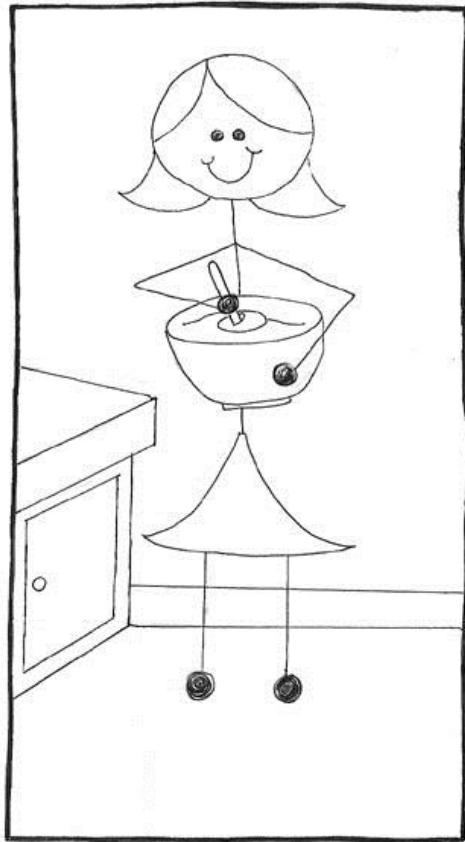
Keith Haring



1. How Much Detail?



1. How Much Detail?

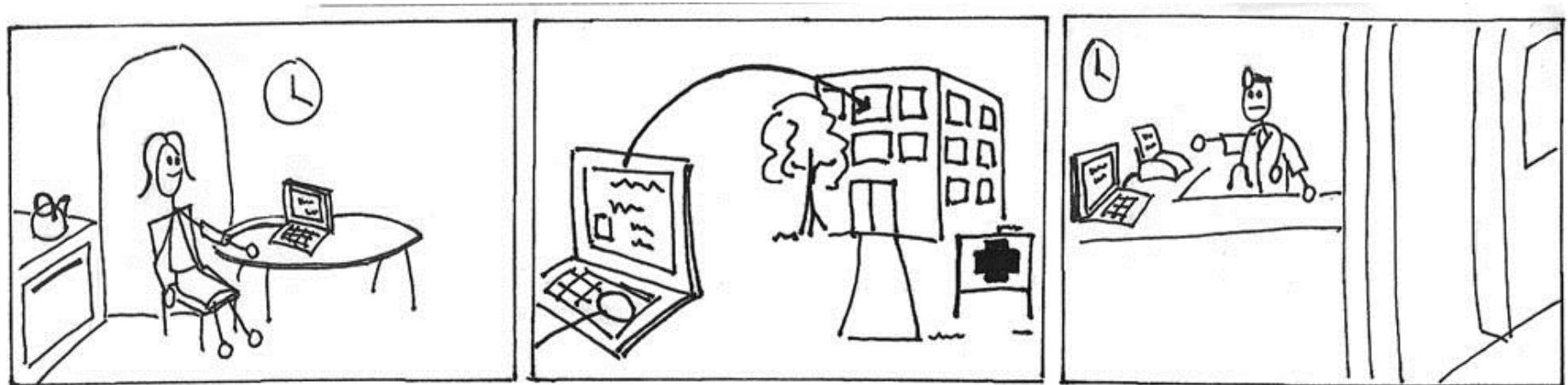


Unnecessary details distract from the story



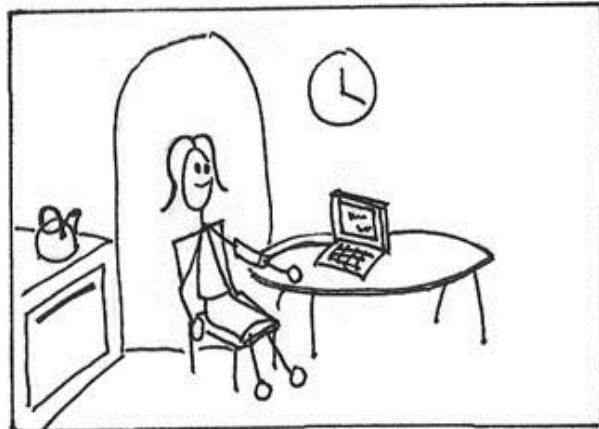
2. Use of Text

Guideline: It is often necessary, but keep it short

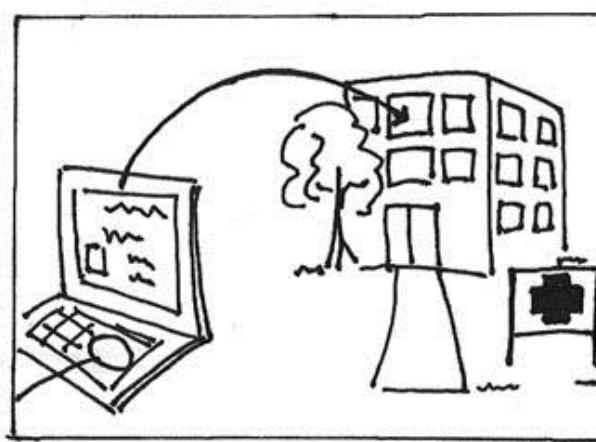


2. Use of Text

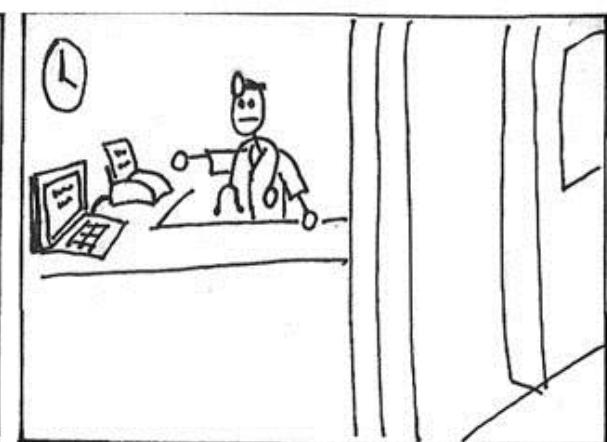
Guideline: It is often necessary, but keep it short
short text is more effective



1. At home, Mary checks her blood pressure.



2. After a few simple key presses, her blood pressure readings get sent to a clinic.

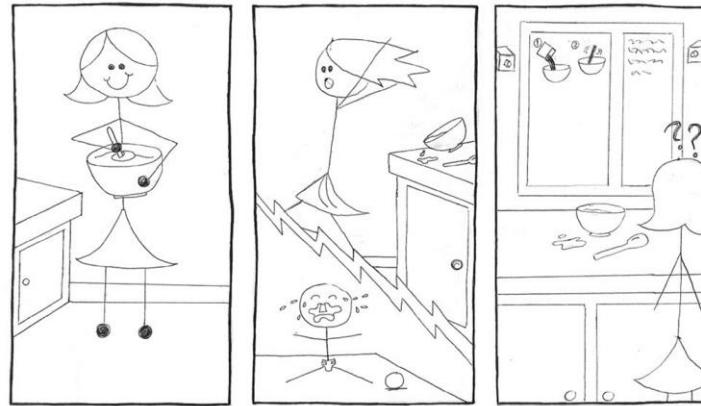


3. The information is made available to her doctor.



3. Include People and Emotions

Guideline: Include people experiencing the design and their reactions to it (good or bad)



Remember, the point of storyboards is to convey the experience of using the system



4. How Many Frames?

Guideline: 4-6 frames is ideal for end-users

- Less work to illustrate

- Must be able to succinctly tell story

- Potentially longer for design clients

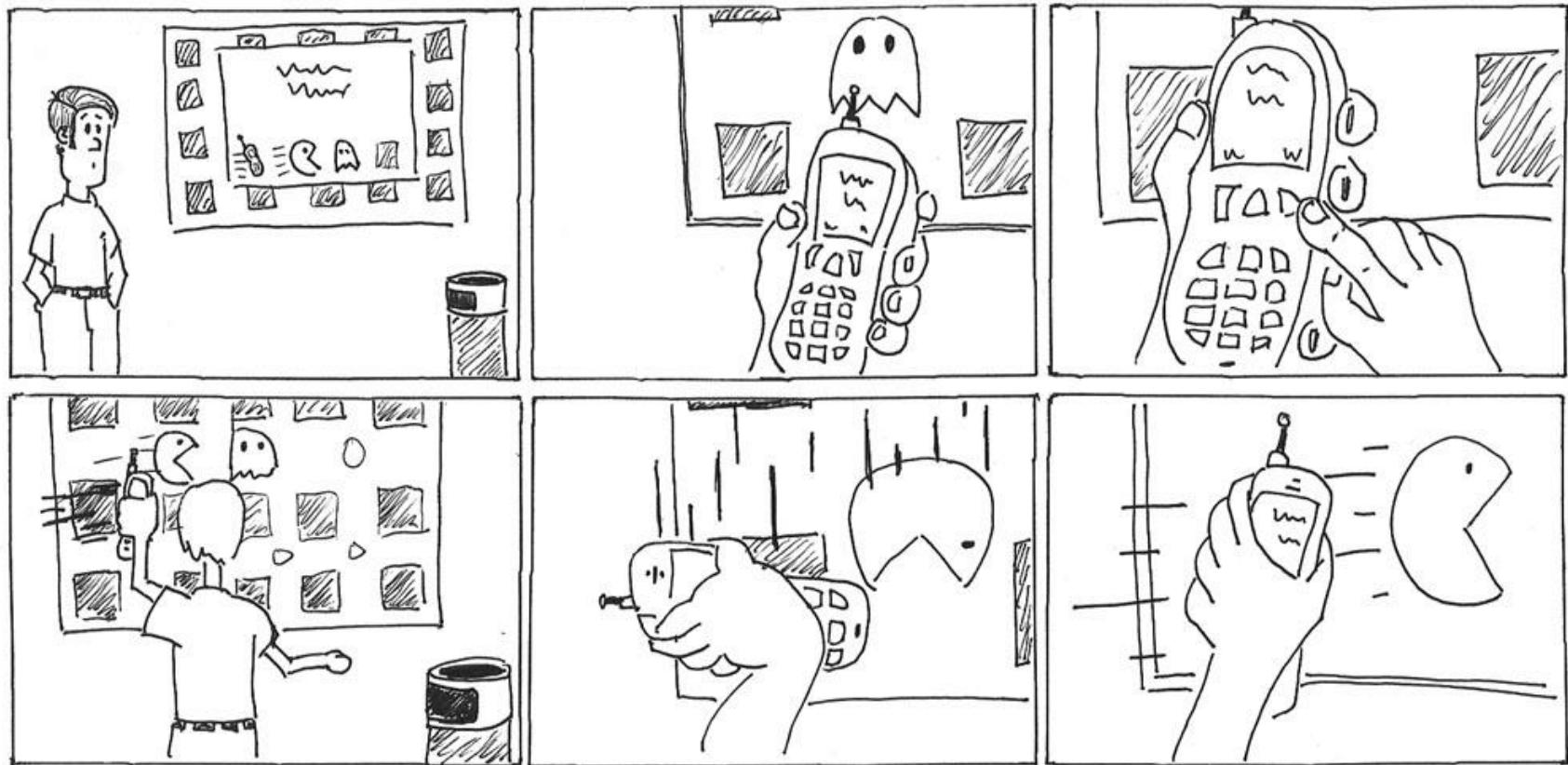
More is not always better

- May lose focus of story

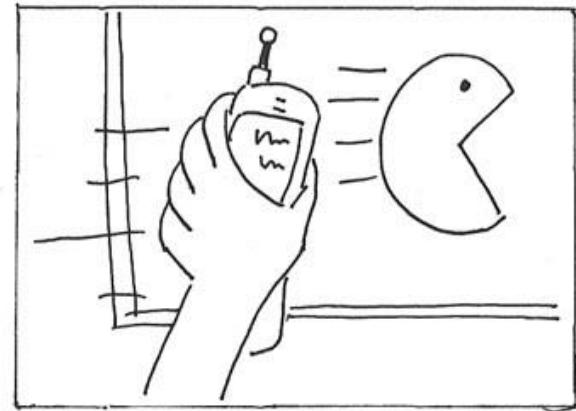
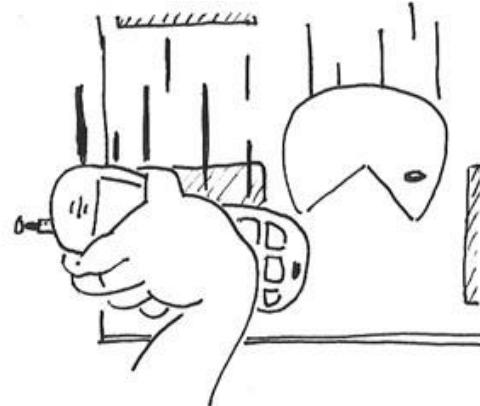
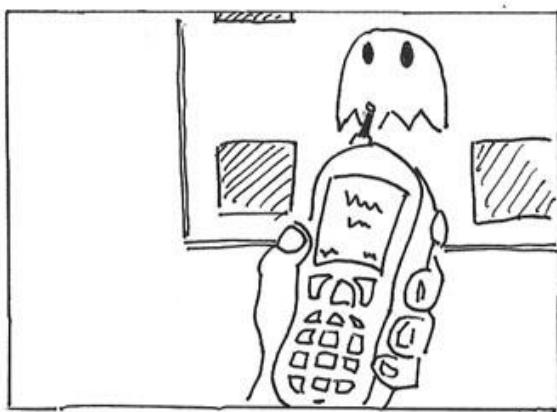
- May lose attention



4. How many frames?



4. How many frames?

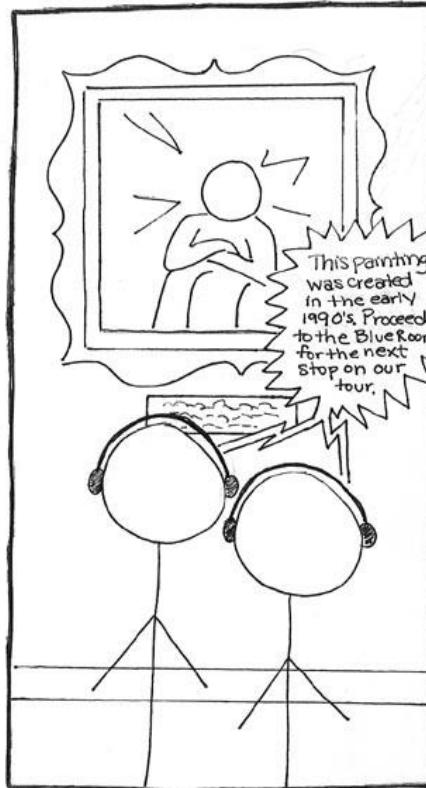
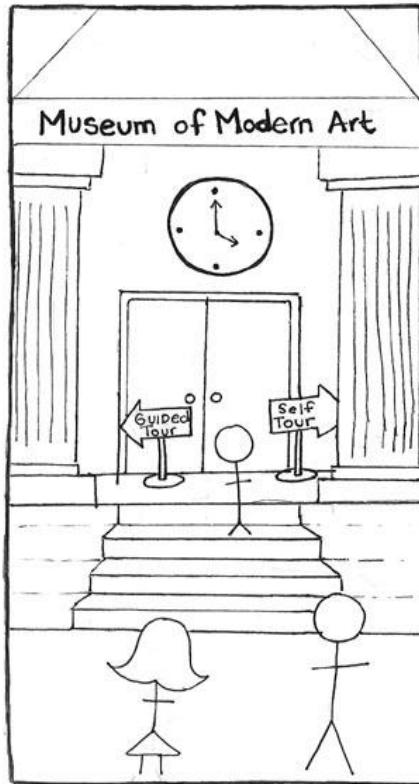


People found the extra panels were not needed



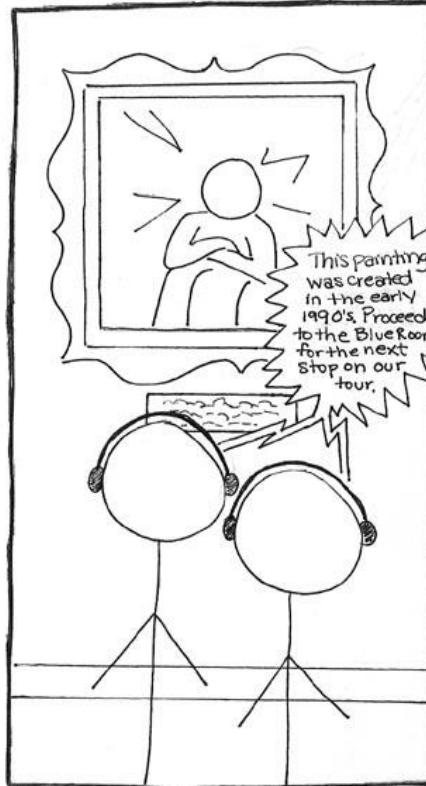
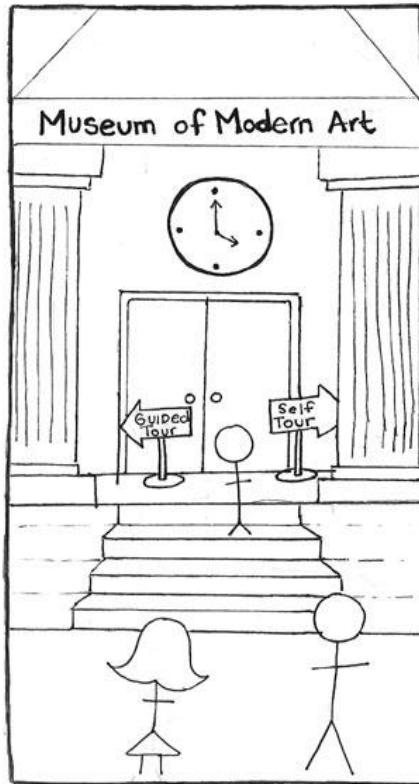
5. Passage of Time

Guideline: Only use if necessary to understand



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Guideline: Only use if necessary to understand

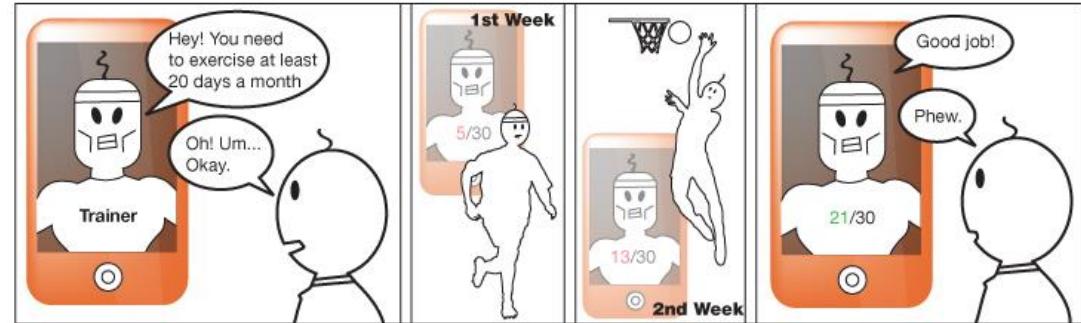


Inclusion of the clock distracts



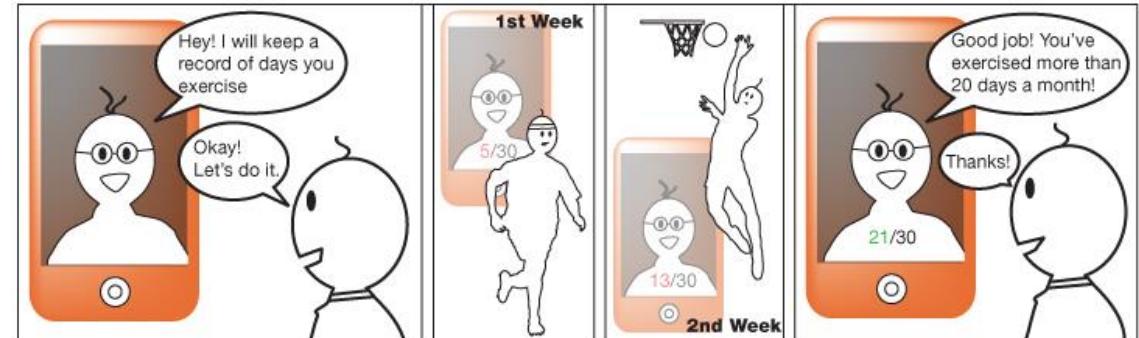
Storyboards for Comparing Ideas

Authoritative



Cell phone is used to keep track of one's fitness goal.

Supportive

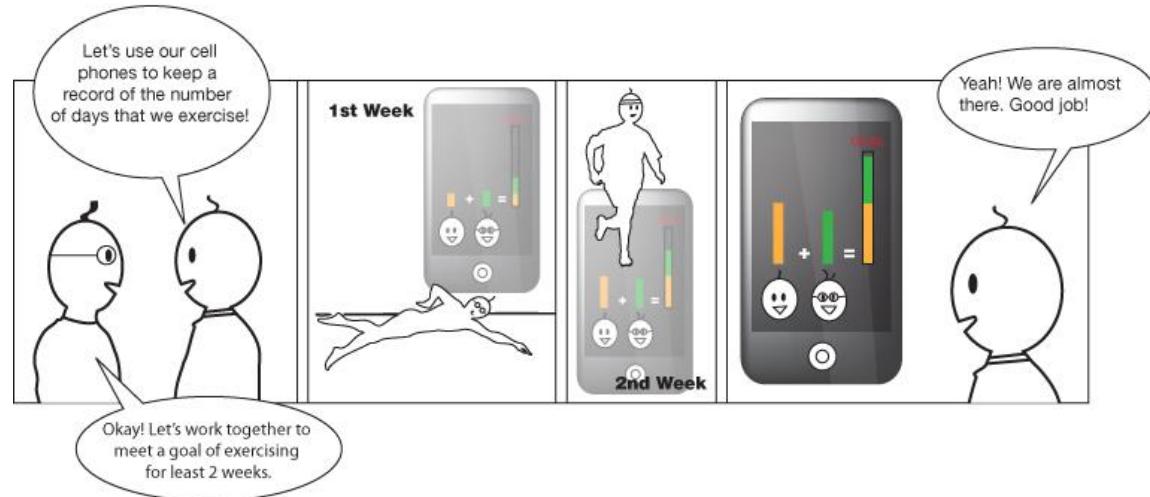


Cell phone is used to keep track of one's fitness goal.

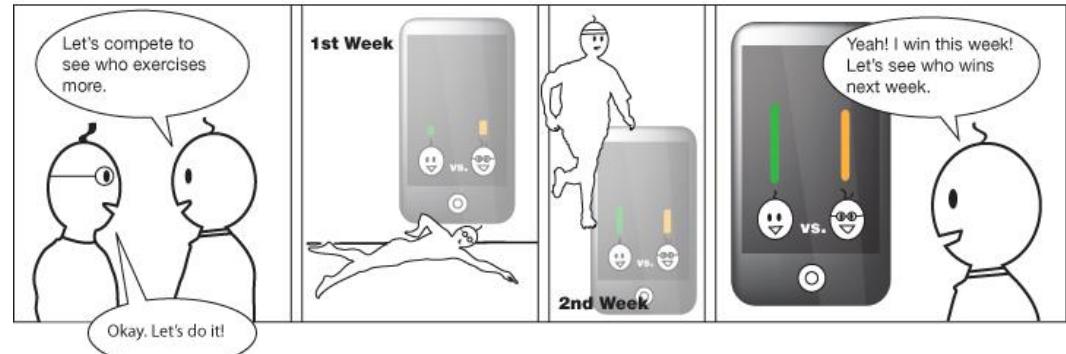


Storyboards for Comparing Ideas

Cooperative

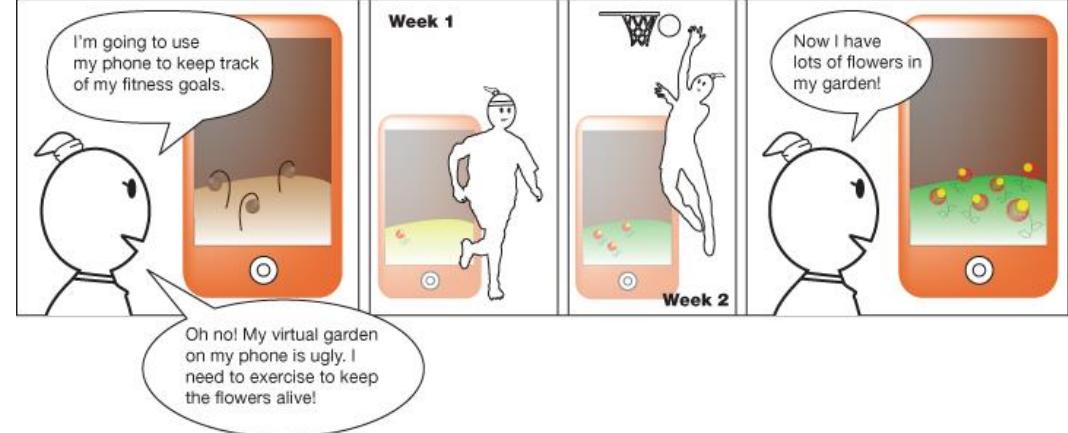


Competitive

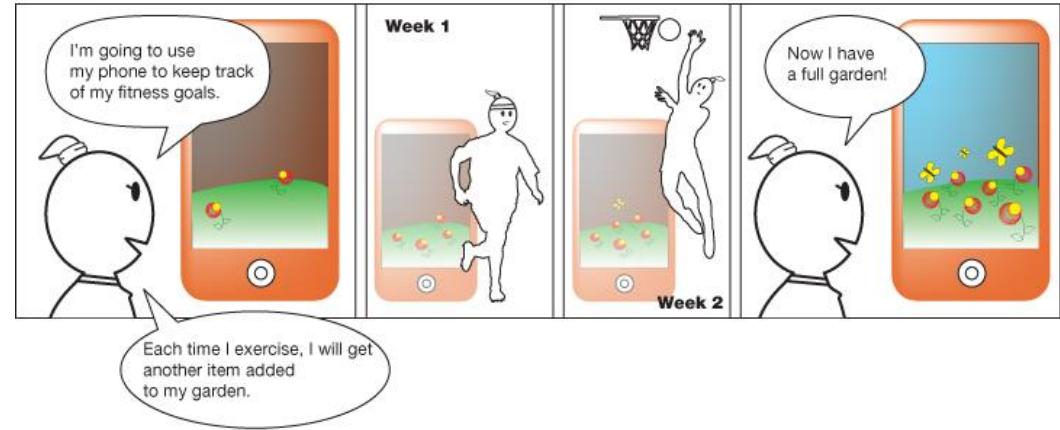


Storyboards for Comparing Ideas

Negative Reinforcement



Positive Reinforcement



Examples and Tricks in Storyboarding



Drawing is Hard



IT IS SO DARK JANE CAN
HARDLY READ HER BOOK



SHE GESTURES IN FRONT OF HER
SPECIAL PENDANT TO TURN ON
THE LIGHTS



THE LIGHTS TURN ON!

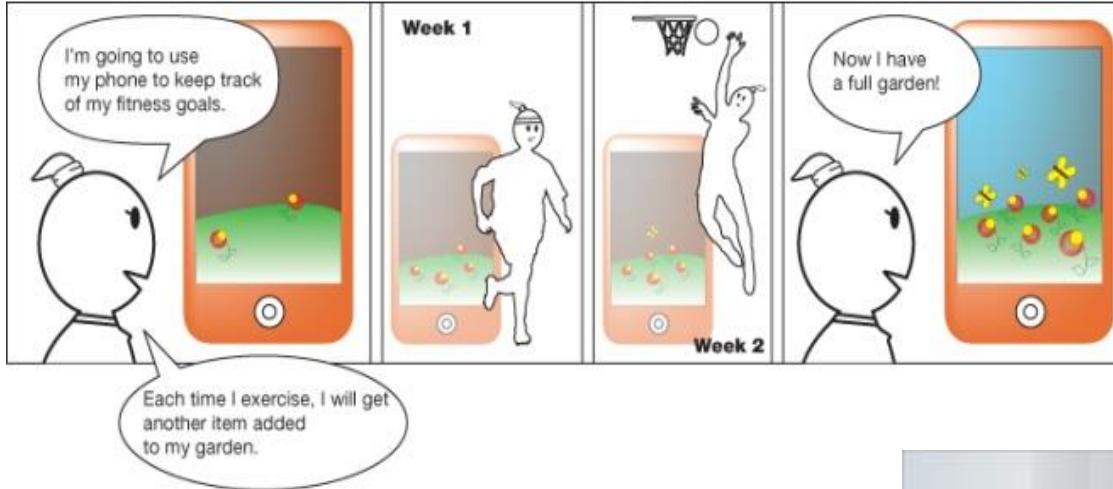


FINALLY, SHE CAN
READ HAPPILY.

Will a picture work instead?



Existing Images from Other Sources



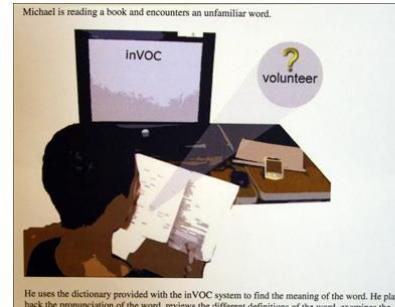
<http://designcomics.org/>

<http://www.pdclipart.org/>

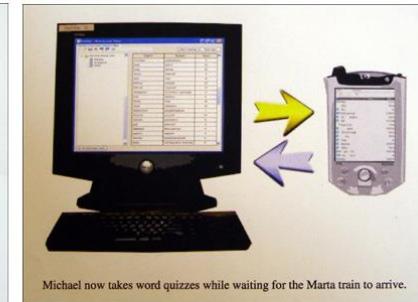


Blur Out Unnecessary Detail

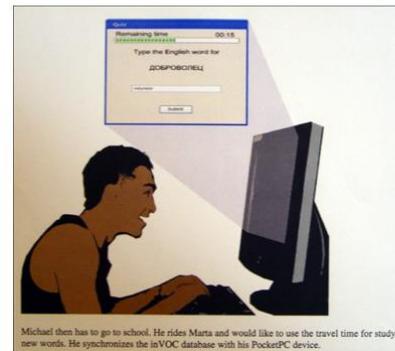
Using image editing software to simplify photos into sketches



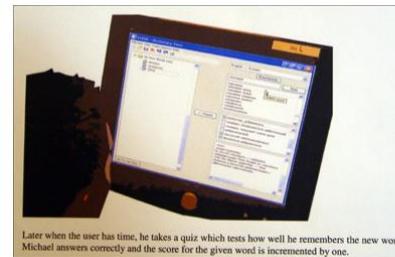
Michael is reading a book and encounters an unfamiliar word.



Michael now takes word quizzes while waiting for the Marta train to arrive.



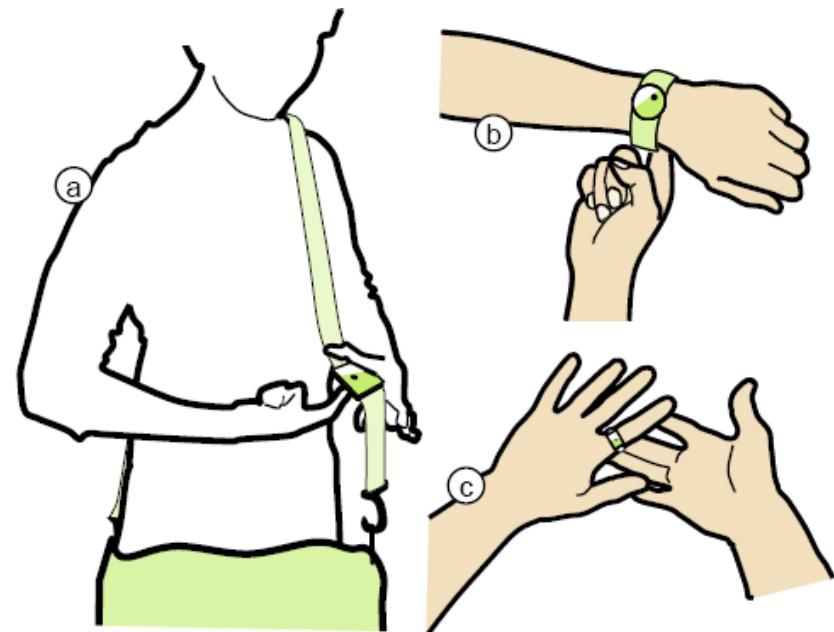
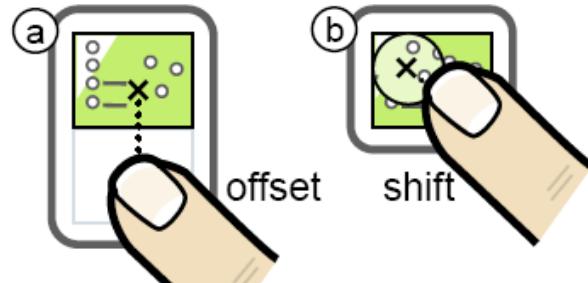
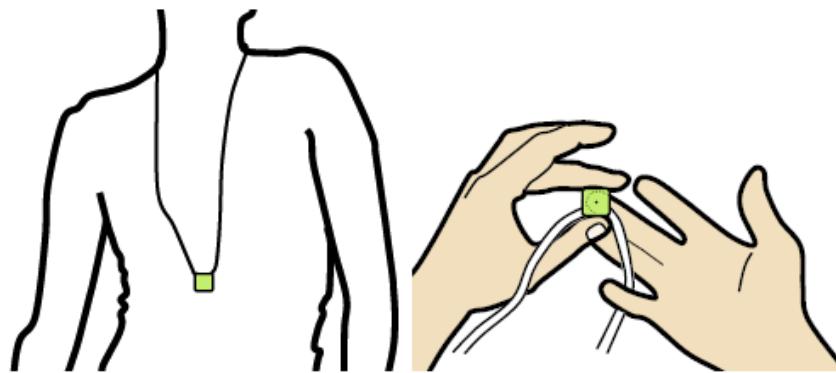
Michael then has to go to school. He rides Marta and would like to use the travel time for studying new words. He synchronizes the inVOC database with his PocketPC device.



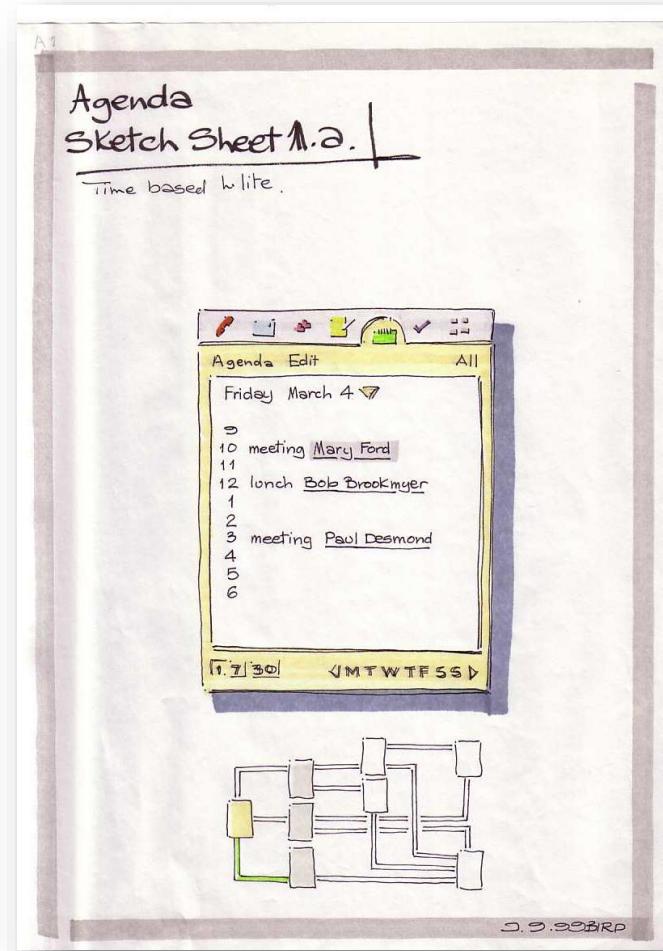
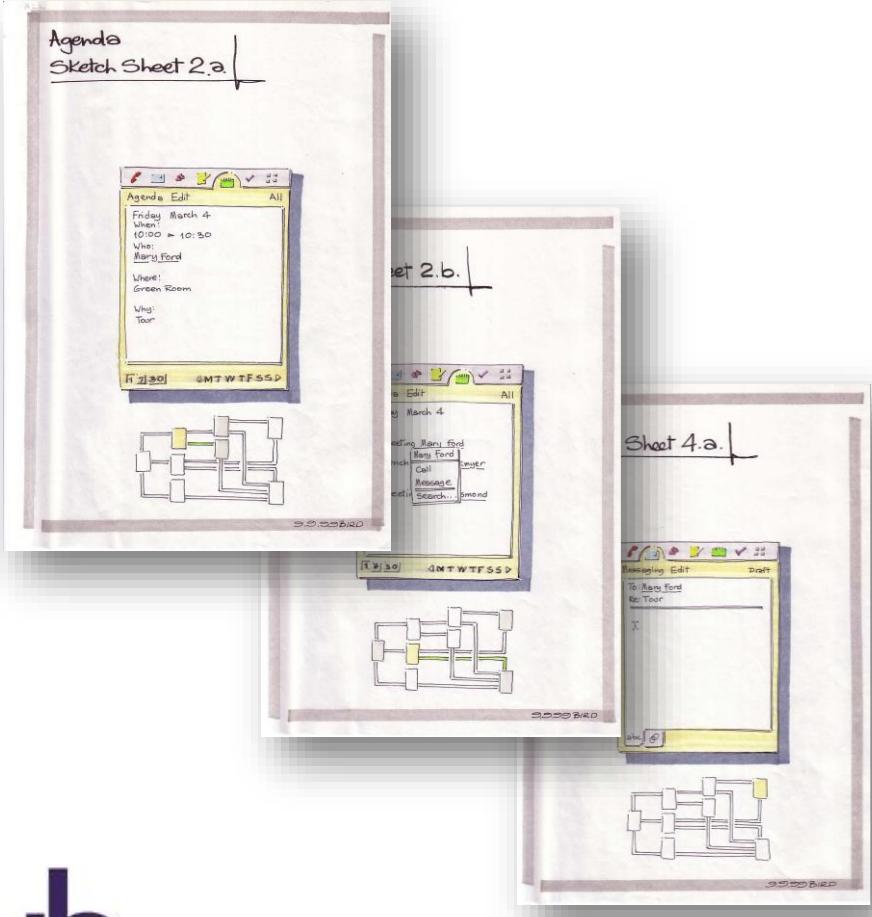
Later when the user has time, he takes a quiz which tests how well he remembers the new word. Michael answers correctly and the score for the given word is incremented by one.



Tracing Photos

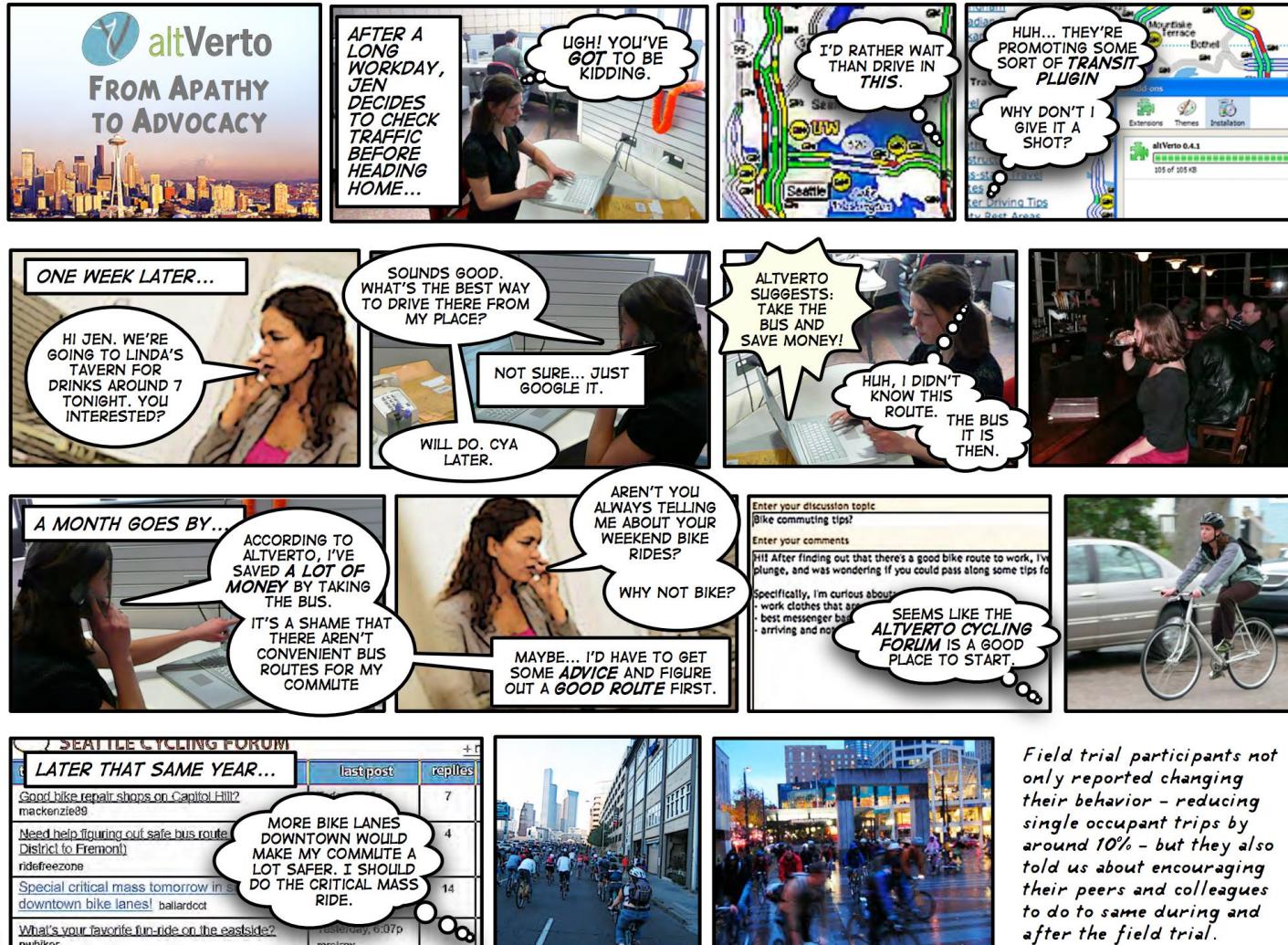


Mapping the Space of Interaction

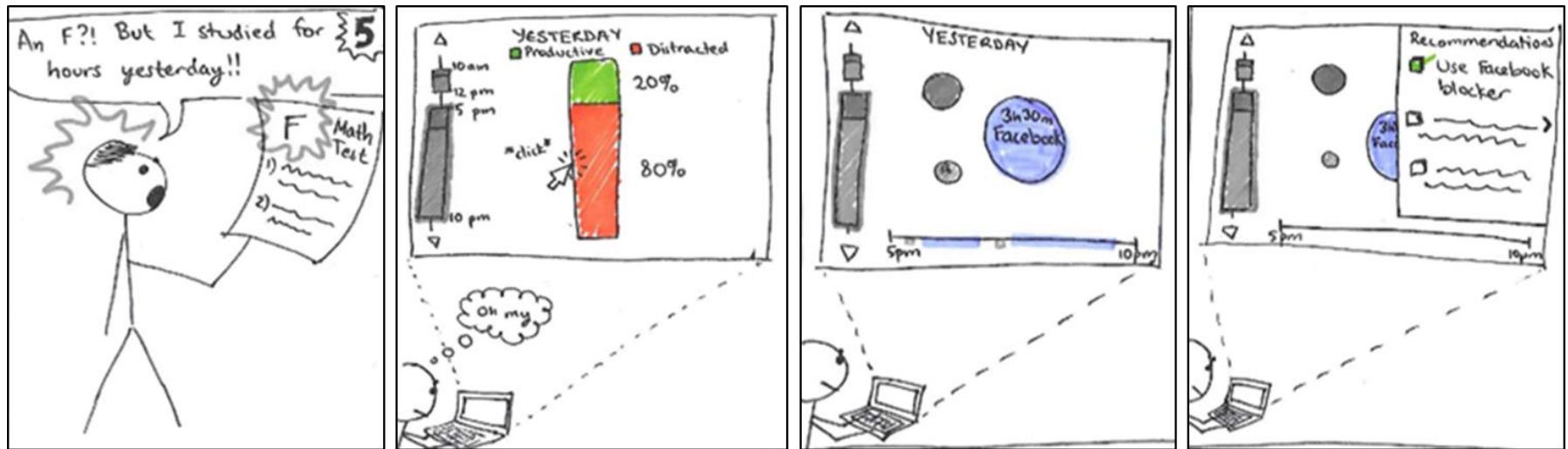


Comic Presentation

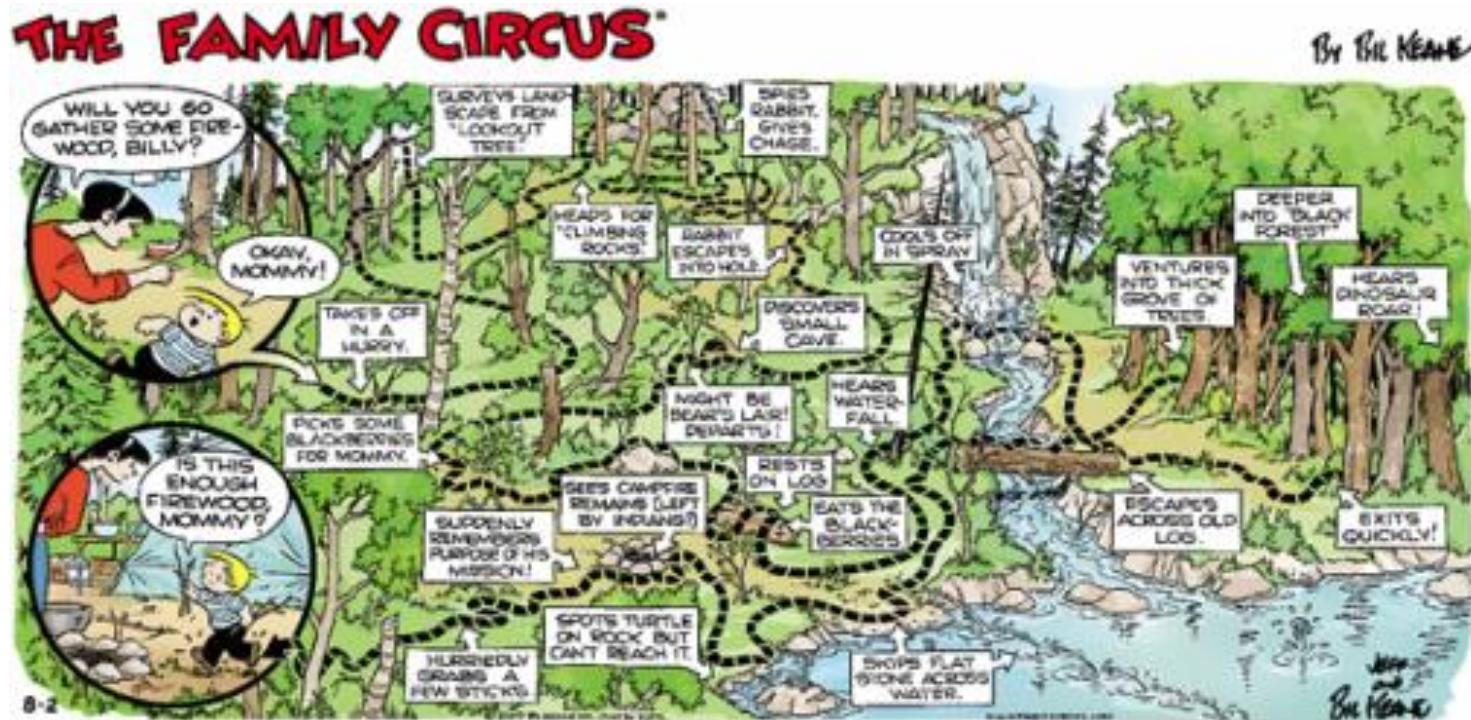
Thought bubbles argue for the design



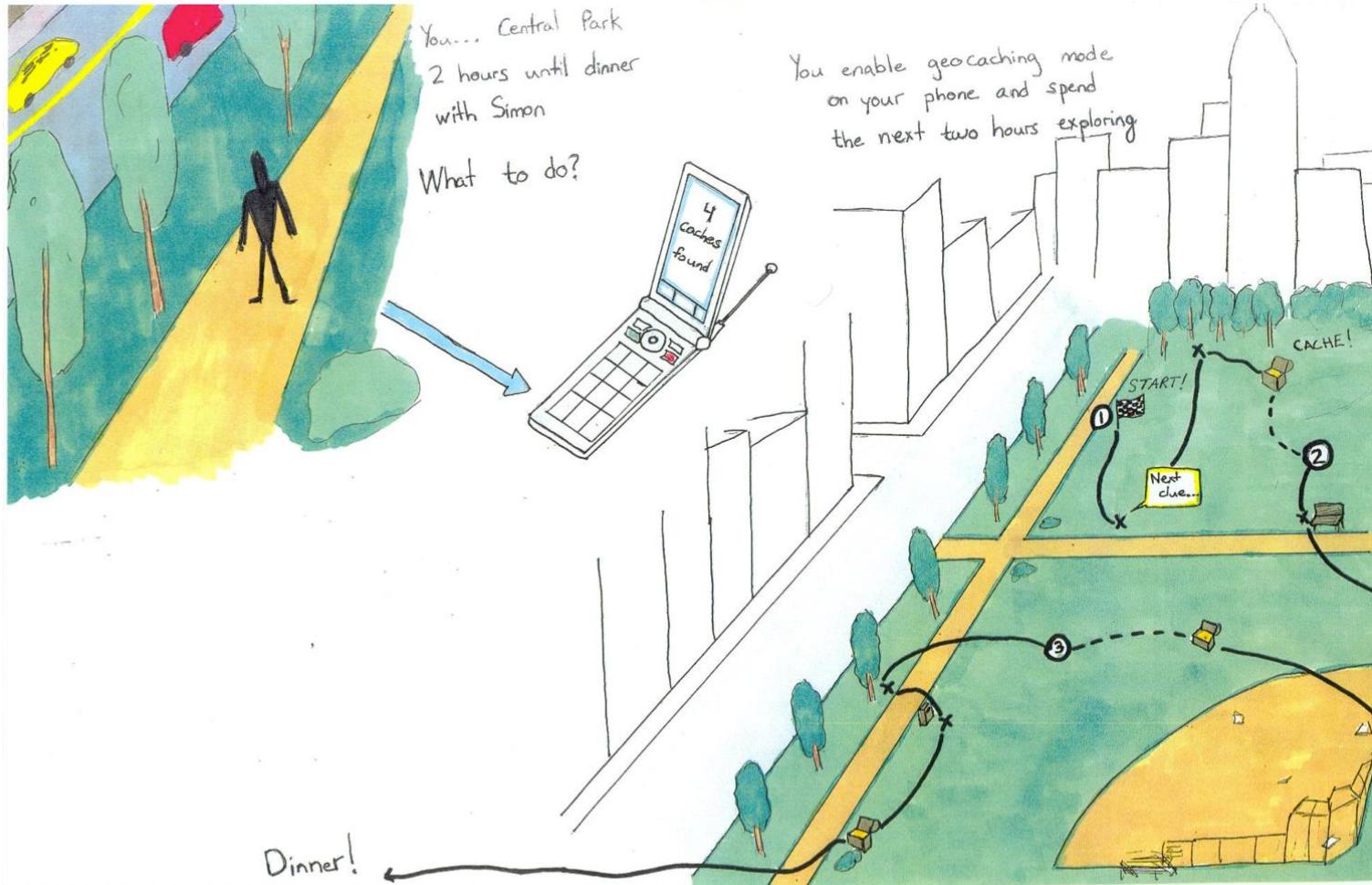
Selective Use of Color



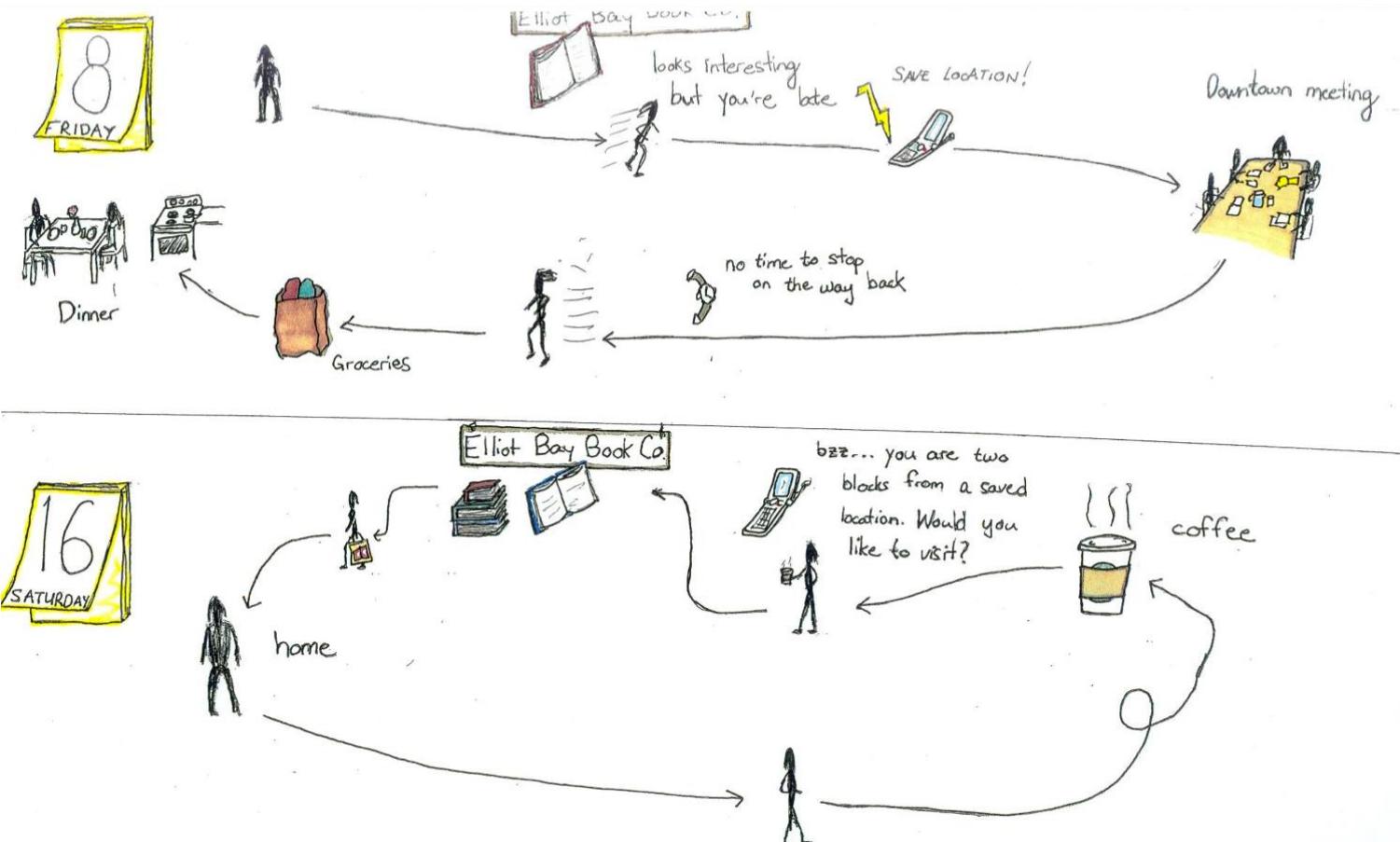
Route Maps



Route Maps



Route Maps



Route Maps



the movie is over and
you are hungry, but you
don't know the area---



you check your phone for
a list of places people often
go from here ...



... eventually settling on
a diner and getting directions
through your phone.



and discuss the
food options with
your friends ...

SM
10/11/20



Value of Animation or Video

Can illustrate critical timing

Can be more engaging than written or storyboard

Can more easily convey emotion (e.g., voice, music)

Can show interactive elements more clearly

Can be self-explanatory

If done well, can be an effective pitch

But you need to keep it quick and effective



Most Important Trick: Stop Motion



<http://courses.cs.washington.edu/courses/cse440/videos/videoprototyping/Mackay-StopAction.mp4>

Most Important Trick: Stop Motion



<http://courses.cs.washington.edu/courses/cse440/videos/videoprototyping/Mackay-StopActionResult.mp4>

Video Prototypes

May build upon paper prototypes,
existing software, and images of real settings

Narration optional

Narrator explains, actors move or illustrate interaction

Actors perform movements and viewer
expected to understand without voice-over



Steps to Create a Video Prototype

Review field data

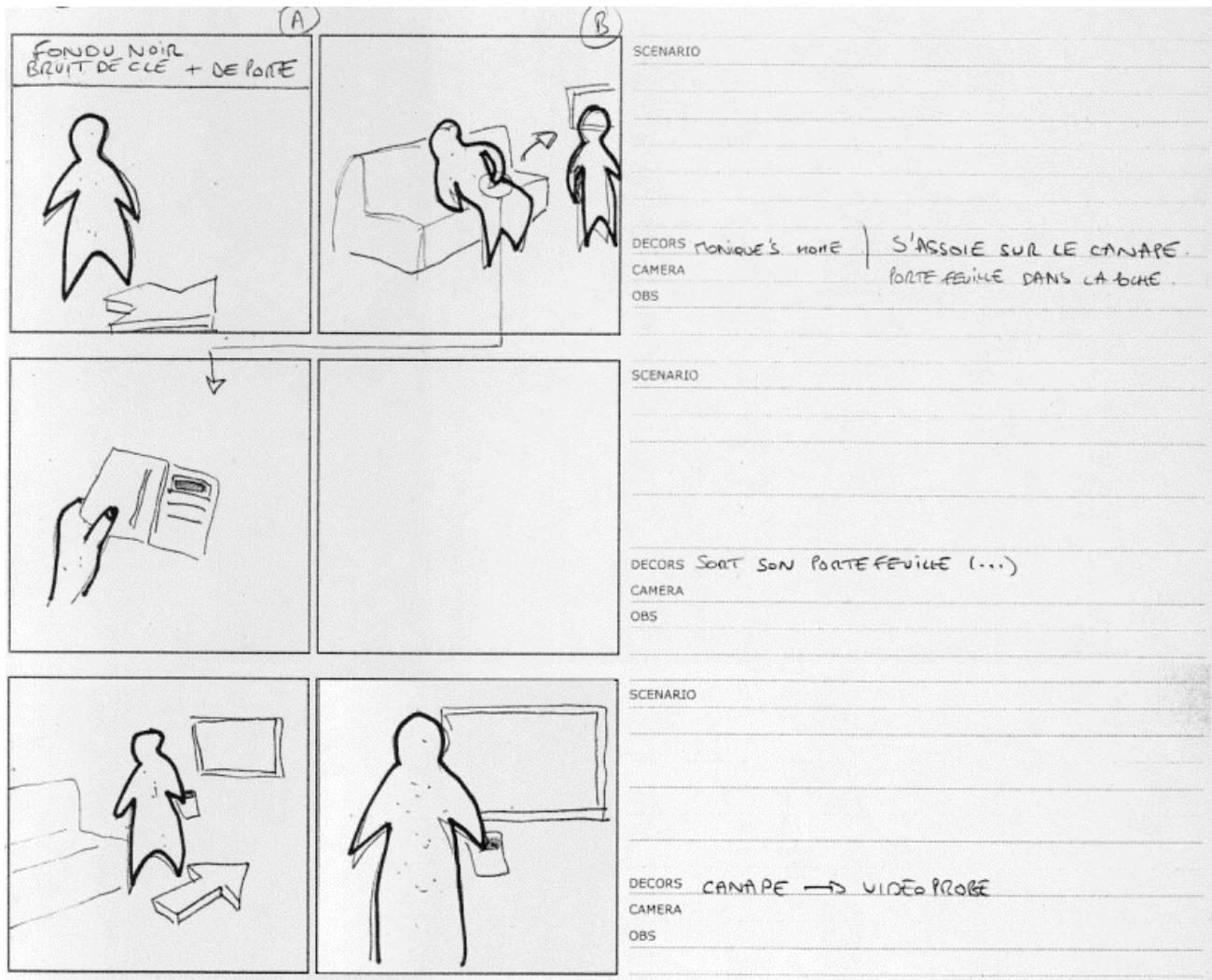
Review ideas from brainstorm

Create text for usage scenarios

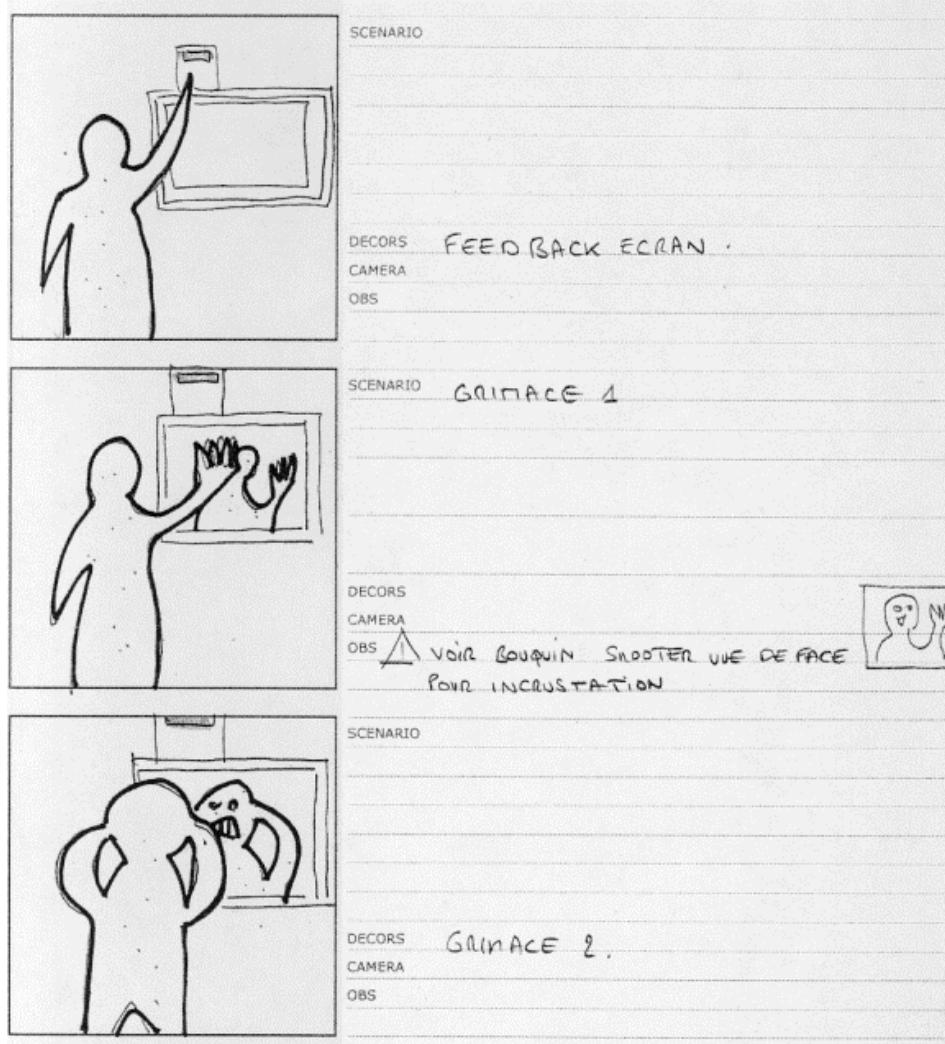
Develop storyboard, with each scene on a card,
illustrating each action/event with annotations
explaining what is happening



Steps to Create a Video Prototype



Steps to Create a Video Prototype



Steps to Create a Video Prototype

Shoot a video clip for each storyboard card

Avoid editing in the camera, just shoot your scenes

Use titles to separate clips

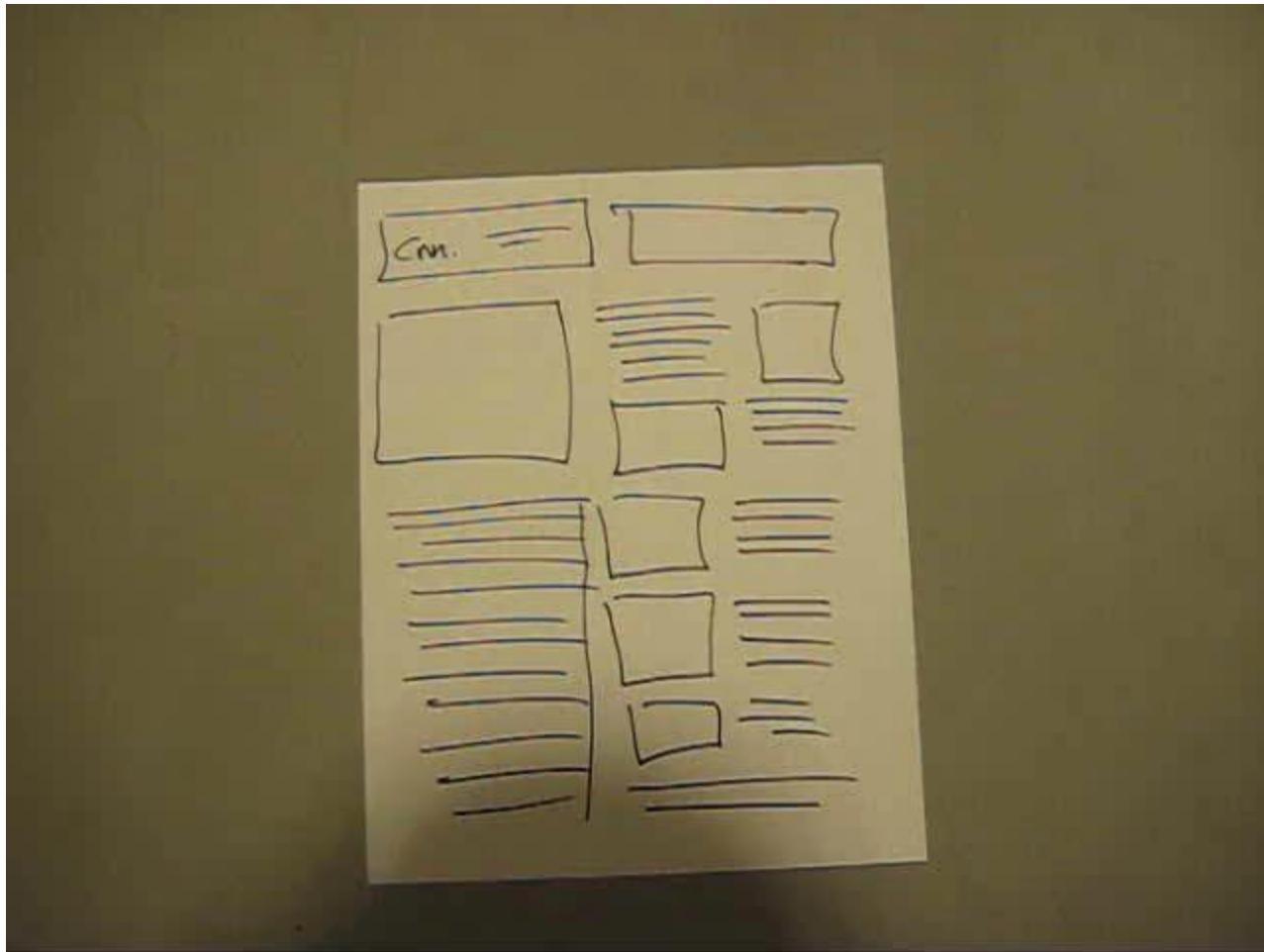
Like a silent movie

Digital changes these tradeoffs a little, but respect the spirit of doing this quickly to get point across

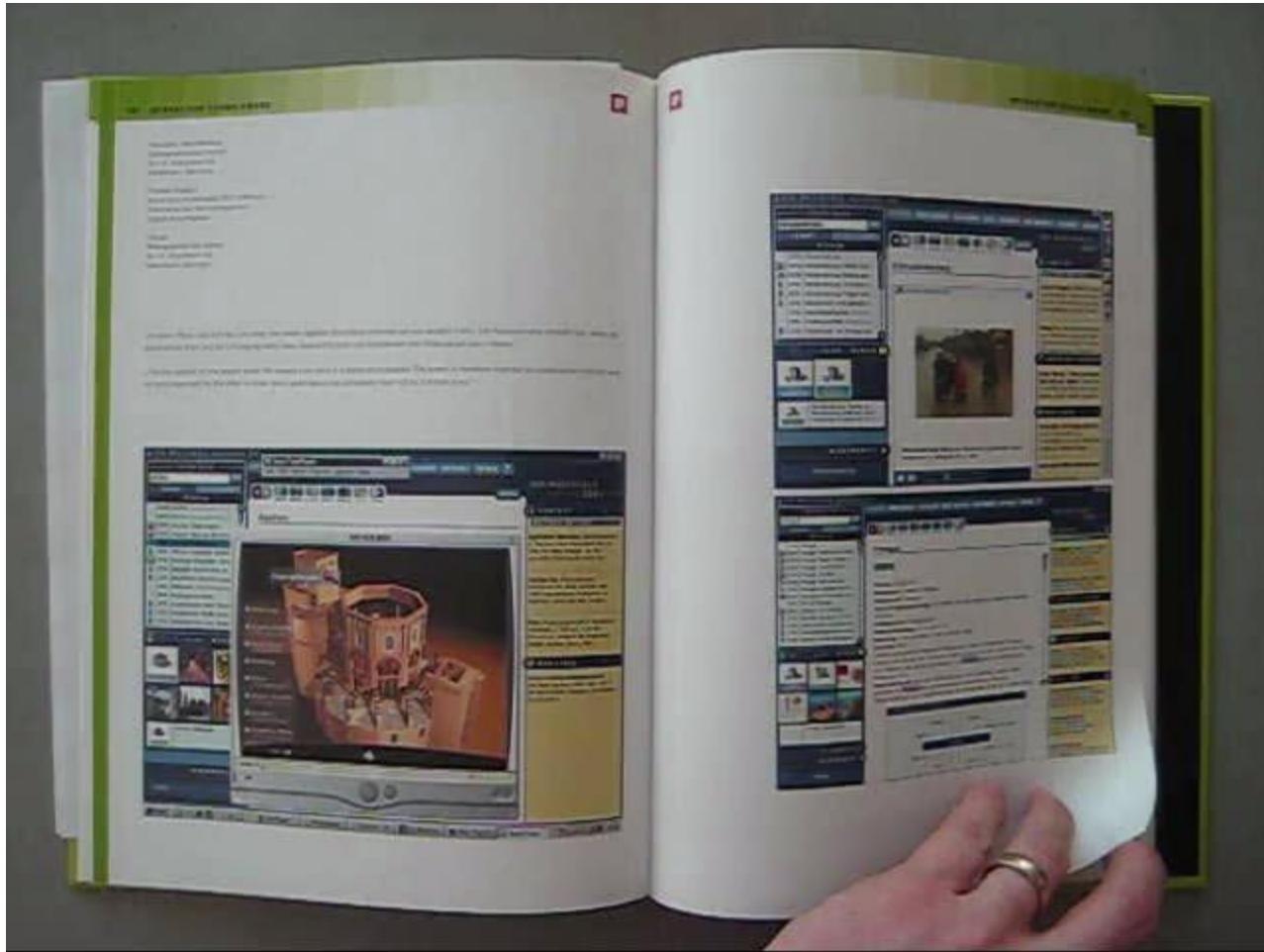
If you make an error, just reshoot it



Prototyping Microsoft Surface



Prototyping Microsoft Surface



<http://courses.cs.washington.edu/courses/cse440/videos/videoprototyping/Surface-Context-Lens.mp4>



Lessons from Prior Video Prototypes

Narration, Pace, and Flair

Three versions of “Don’t Forget”

Using Projectors and Simple Props

“Buddy Map”

Watch for Pace and Scene Relevance

“Consumester”

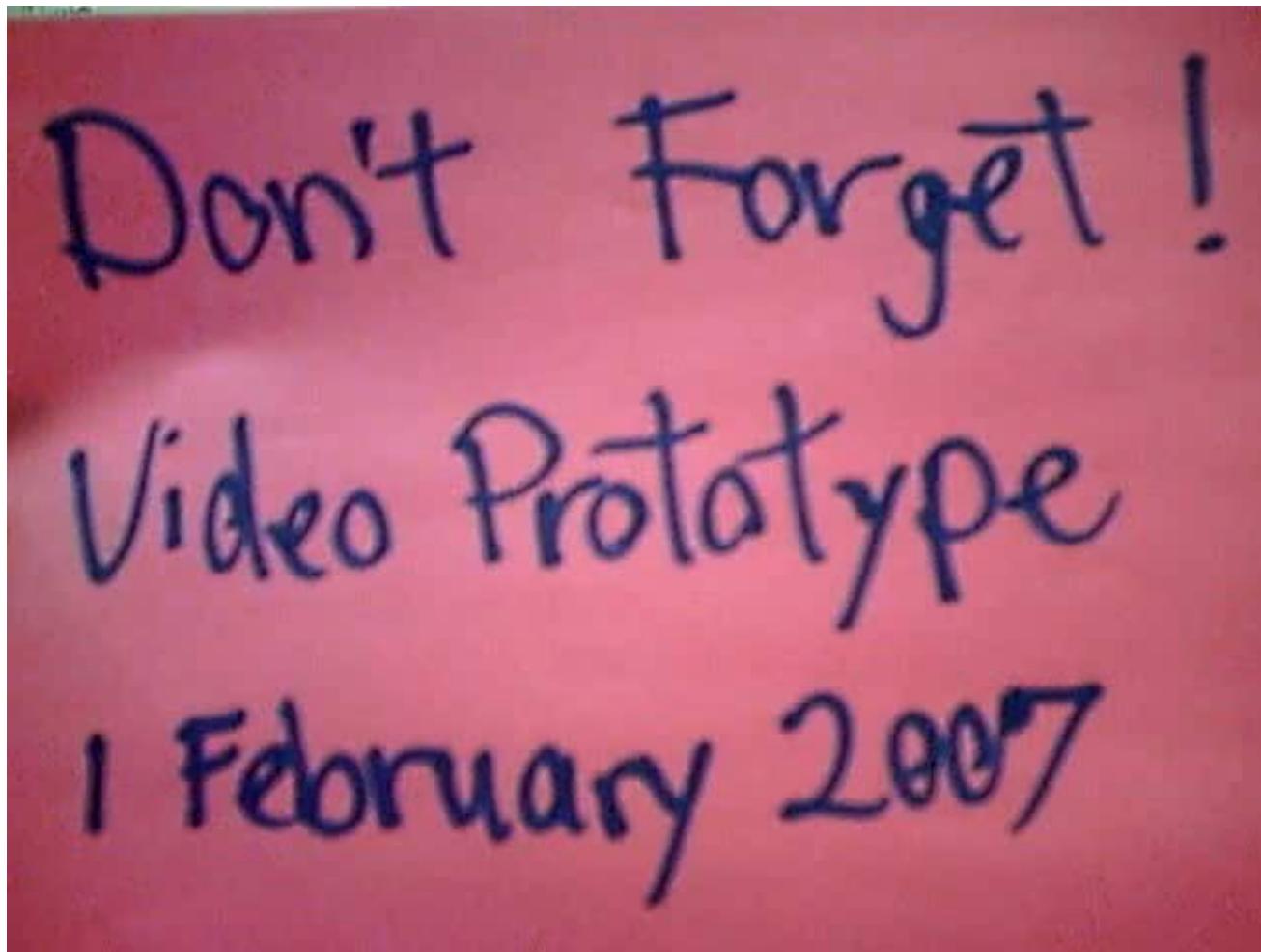


Narration, Pace, and Flair

Don't Forget
by Carolyn Holmes and Fred Potter

<http://courses.cs.washington.edu/courses/cse440/videos/videoprototyping/Don't-Forget-1.mp4>

Narration, Pace, and Flair



<http://courses.cs.washington.edu/courses/cse440/videos/videoprototyping/Don't-Forget-2.mp4>

Narration, Pace, and Flair

**"Don't Forget" Video Prototype
Chris Govella - Peter Woodman**

<http://courses.cs.washington.edu/courses/cse440/videos/videoprototyping/Don't-Forget-3.mp4>

Using Projectors and Simple Props

Team Buddy Map

Backcountry Savior

Craig Panthen : Philip Kuo : Heidi Tanamulia : Christopher White
CSE 440F : Professor Landay

Watch for Pace and Scene Relevance

Consumester
Video Prototype

Lessons from Prior Video Prototypes

Split Presentation, Simple Effects

“PickUp”

Still-Frame, More Effects

“Graffiti Karma”

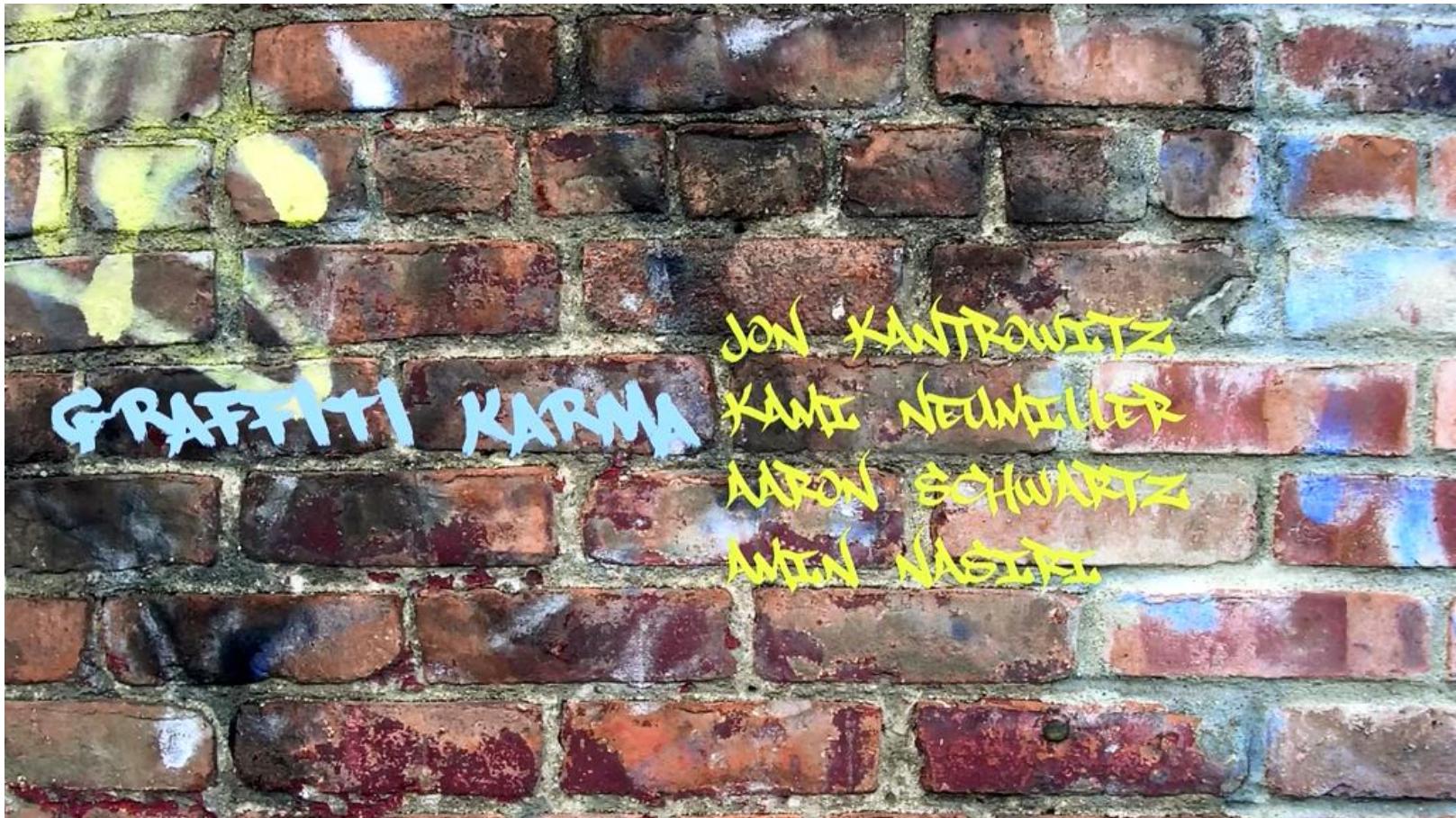


Split Presentation, Simple Effects



<http://courses.cs.washington.edu/courses/cse440/videos/videoprototyping/Pickup.mp4>

Still-Frame, More Effects



Lessons from Prior Video Prototypes

Scenario with a Contrast

“ParkSmart” (note that screens are static images)

Playful while Keeping Pace

“Plantr”



Scenario with a Contrast



Playful while Keeping Pace



Range of Purposes

Illustrating Low-Level Techniques

Microsoft Surface examples convey timing

Illustrate Designs

Focus in this course

High-Level Visions

StarFire, Knowledge Navigator, A Day Made of Glass



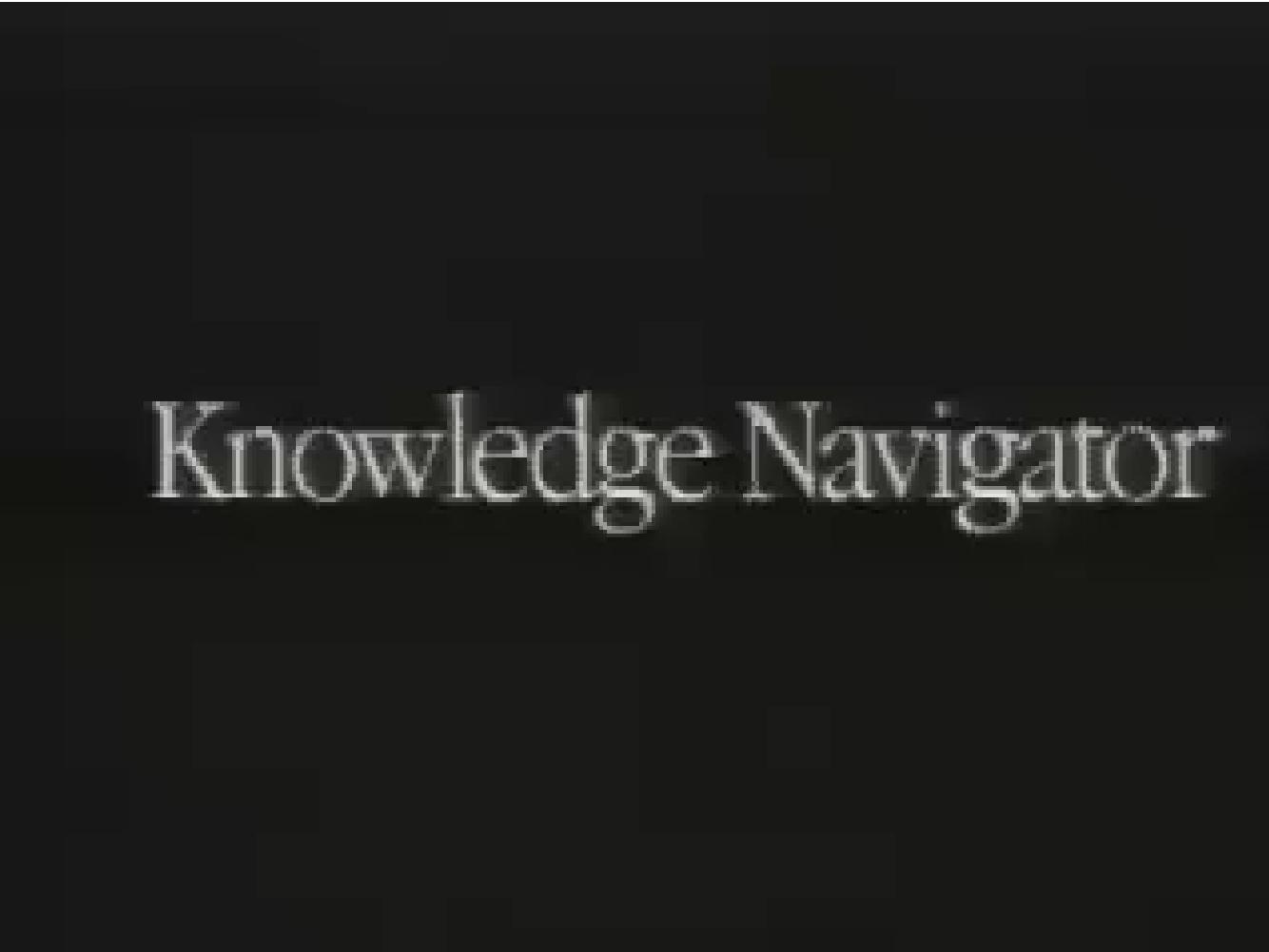
Sun's "Starfire" (1994)



<http://courses.cs.washington.edu/courses/cse440/videos/videoprototyping/Vision-Sun-Starfire.mp4>



Apple's “Knowledge Navigator” (1987)



Knowledge Navigator

<http://courses.cs.washington.edu/courses/cse440/videos/videoprototyping/Vision-Apple-Knowledge-Navigator.mp4>



Corning's “A Day Made of Glass” (2011)



LuciaMug Sketch: A Contrast



The Mug Metaphor
Interface

Lucia Terrenghi



The Mug Metaphor
Interface

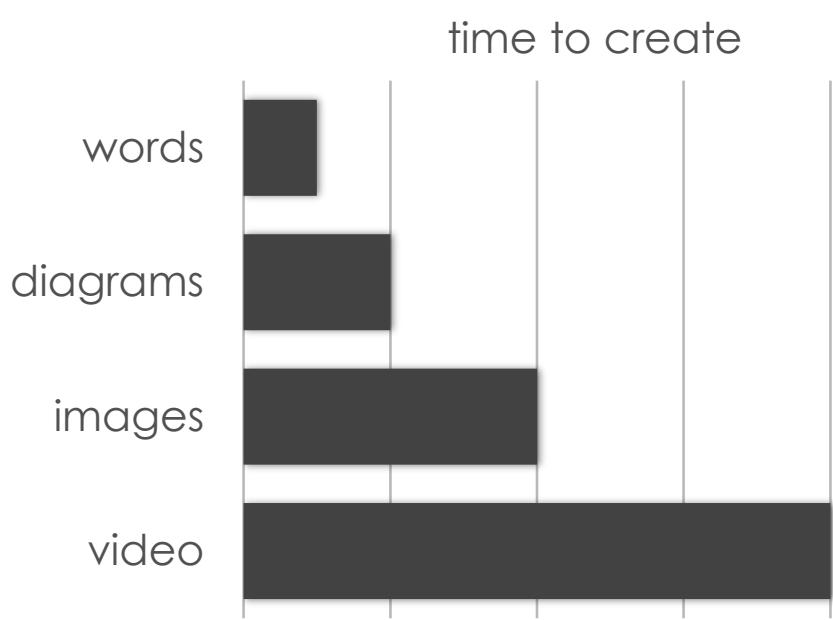
Lucia Terrenghi

FLUIDUM

FLUIDUM



Fidelity Takes Times: Stay Low Fidelity



If you need a video, do
you really need footage?

If you need an animation,
do you really need Flash?

If you need a photo, do
you really need to shoot?



Summary

Think about your audience

Think about your time constraints

Think about how much you want to tell

Think about options for presenting your story



CSE 440: Introduction to HCI

User Interface Design, Prototyping, and Evaluation

Lecture 08:
Storyboarding and
Video Prototyping

James Fogarty
Alex Fiannaca
Lauren Milne
Saba Kawas
Kelsey Munsell

Tuesday/Thursday
12:00 to 1:20

