

CSE 440: Introduction to HCI

User Interface Design, Prototyping, and Evaluation

Lecture 08:
Storyboarding

James Fogarty
Daniel Epstein
Brad Jacobson
King Xia

Tuesday/Thursday
10:30 to 11:50
MOR 234



Today

Milestones

Design Review (“1x2”) Due Friday

Getting the Right Design Due Tuesday

Presentations Start Thursday

Class

Storyboarding

Design Check-In (“3x4”) 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

Movies


Theater: Shattuck Cinemas
Phone: (510) 665-1342 Dist: 1.5 mi.
Address: 2122 Shattuck Ave
Berkeley, 94709
Cost: \$8.50 normal, \$6.00 senior, \$4.50 matinee

Map-IT


<u>Art of War</u>	☆☆☆
(10:00)-(1:00)-4:00-7:00-10:00	
<u>Bittersweet Motel</u>	☆☆☆☆
(11:00)-(1:30)-4:00-6:30-9:00	
<u>Godzilla</u>	☆☆
(10:30)-(2:00)-5:30-9:00	
<u>The Cell</u>	☆☆☆☆
(11:00)-(1:00)-3:00-5:00-7:00-9:00	

STORE FOR THE STYLE-CHALLENGED

As is...




?? ??



As it should be...

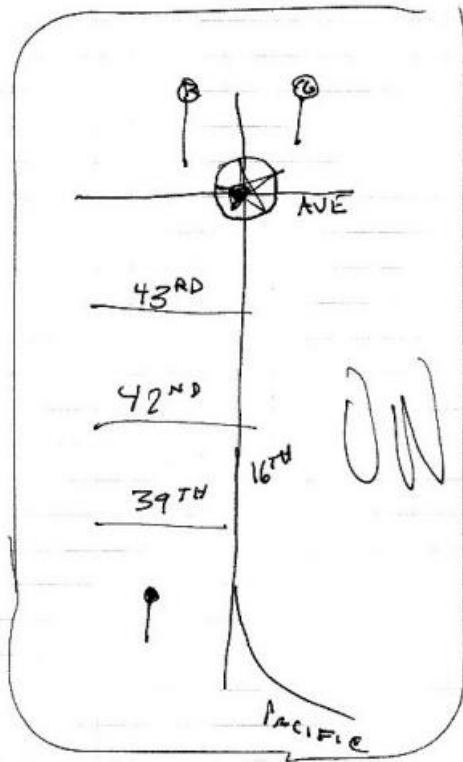
outfit #1 outfit #2 outfit #3



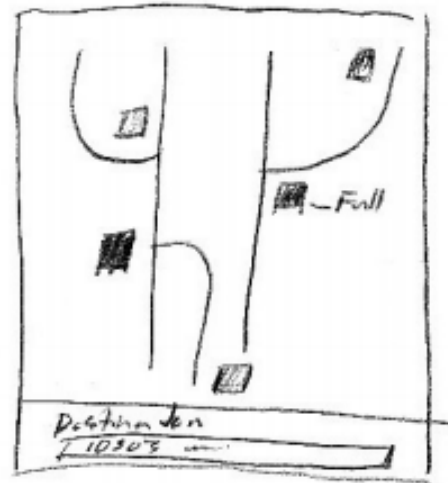
(pre-selected to match so you don't have to choose.)



Sketching



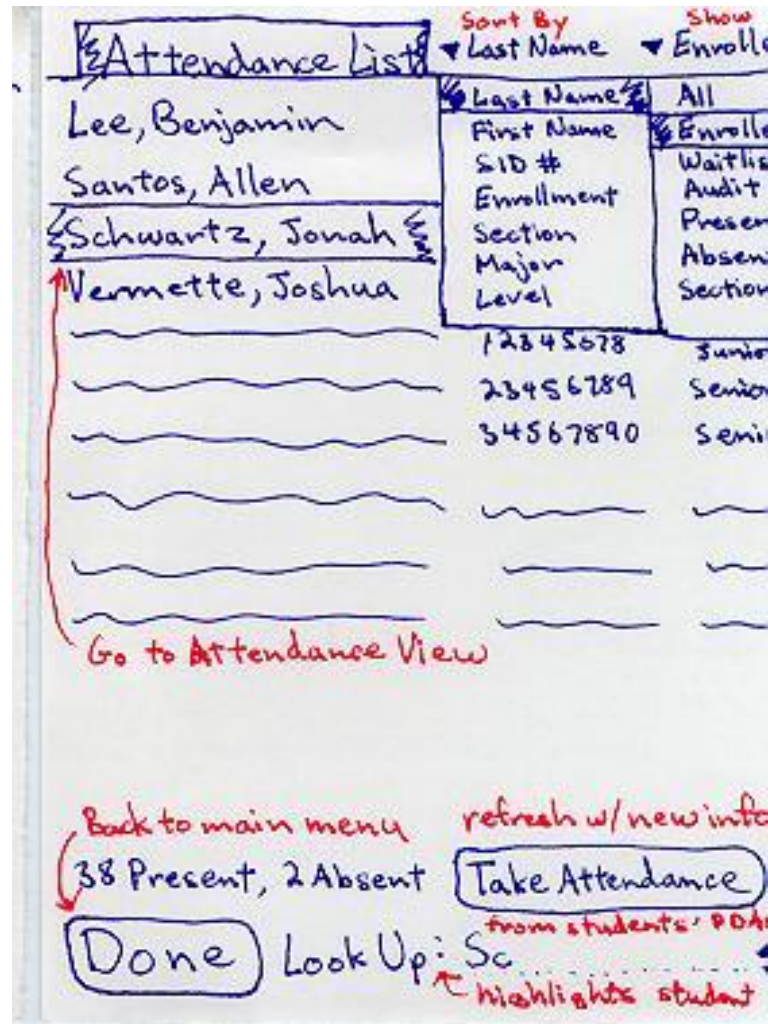
MAP SHOWING PARKING AVAILABILITY BASED ON INPUTTED DATA, INPUTTED ON MAP



- Different colors
- highlights availability
-



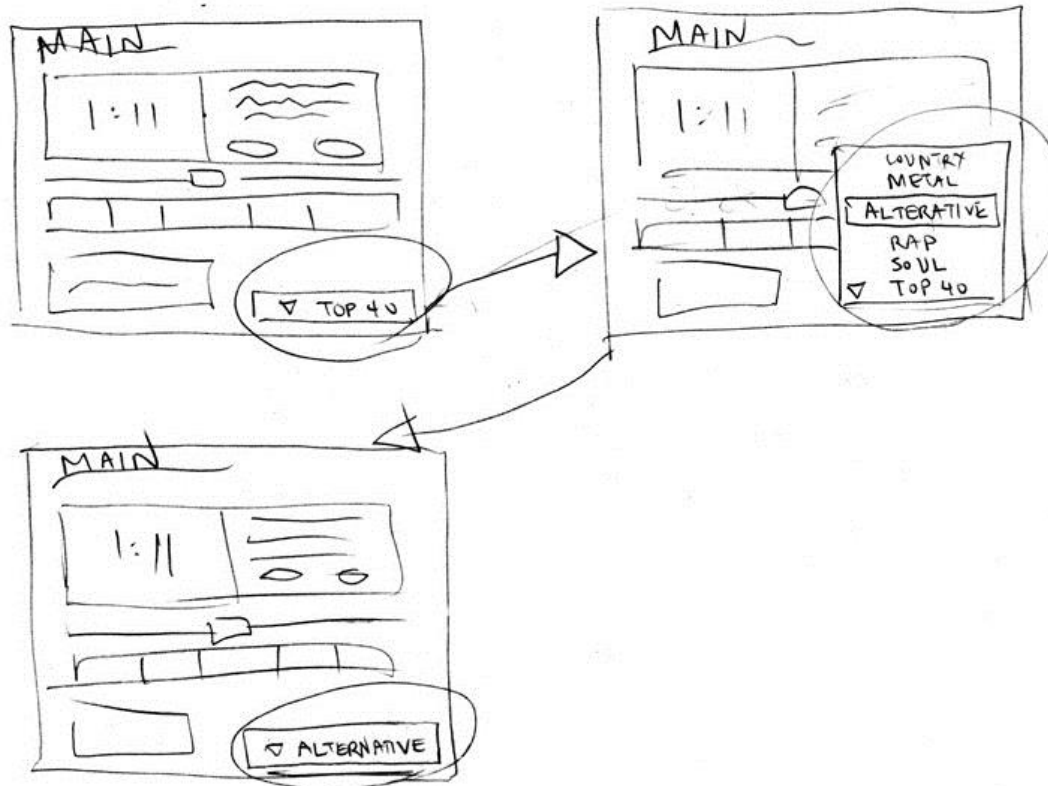
Sketching and Storyboards



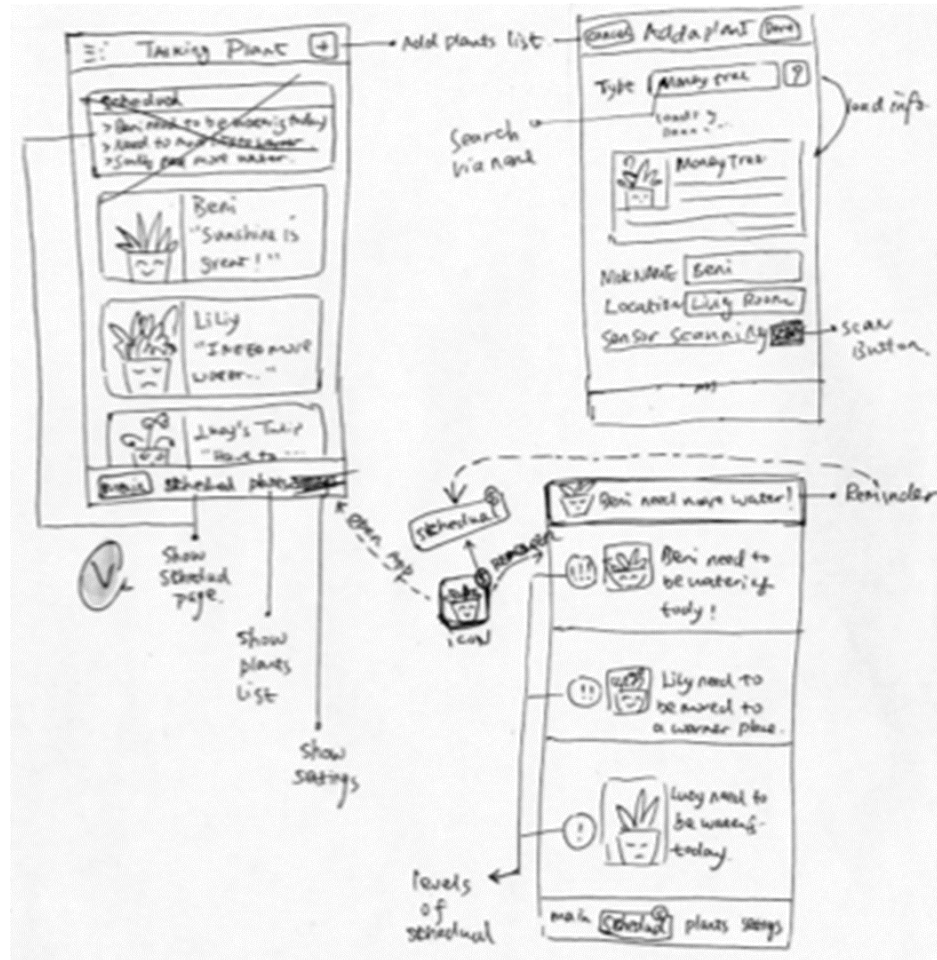
Sketching and Storyboards

SCENARIO 1

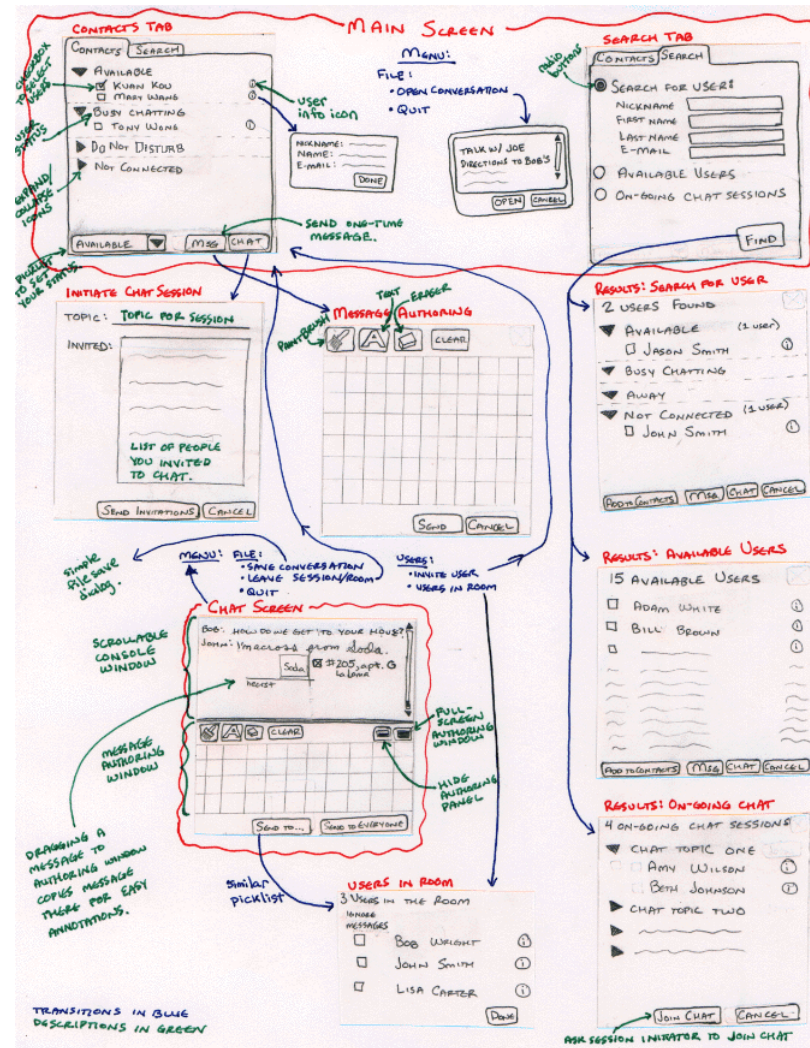
"I want to listen to alternative music"



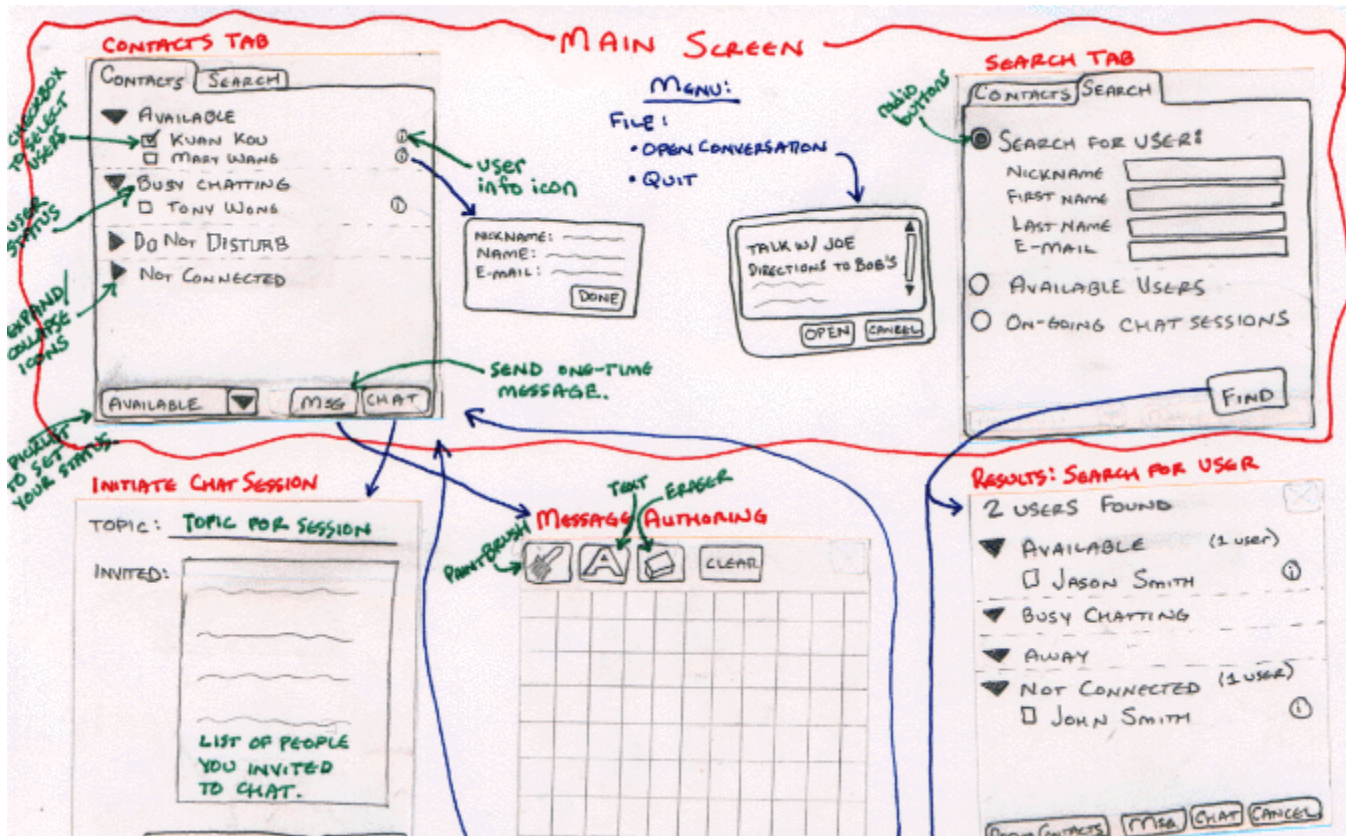
Sketching and Storyboards



Sketching and Storyboards



Sketching and Storyboards



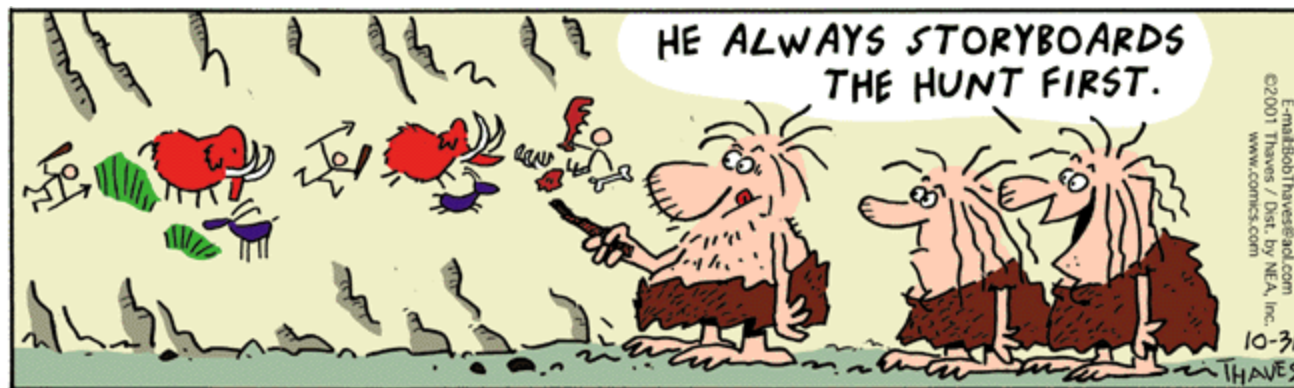
Illustrating Time

Storyboards come from film and animation

Give a “script” of important events

leave out the details

concentrate on the important interactions



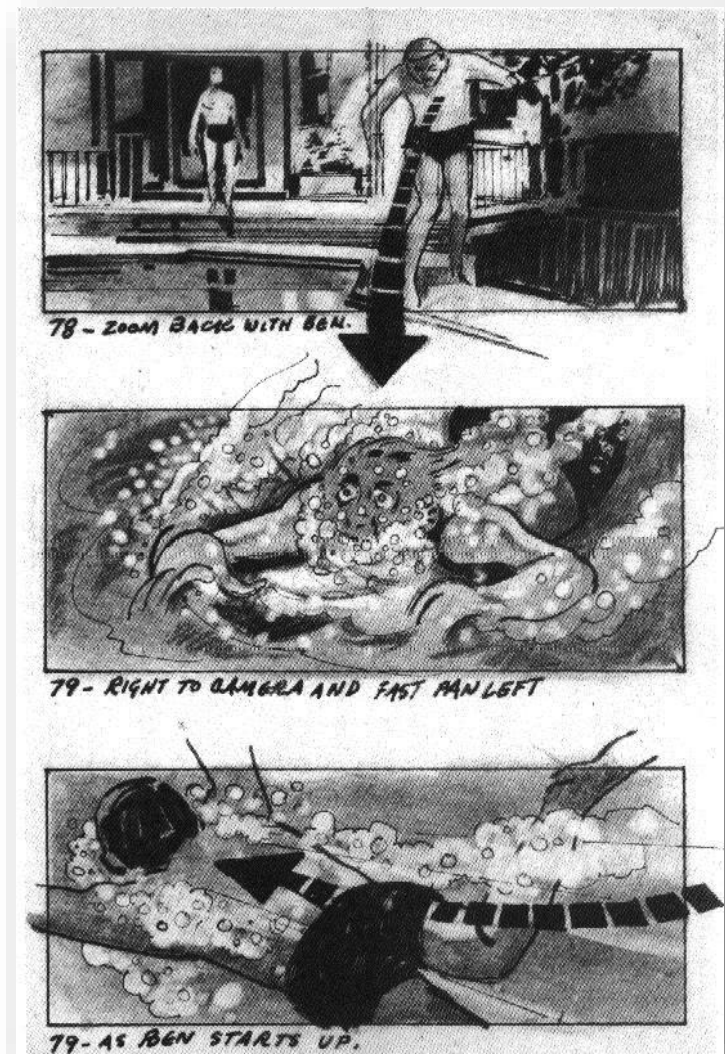
Storyboards

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



Storyboards

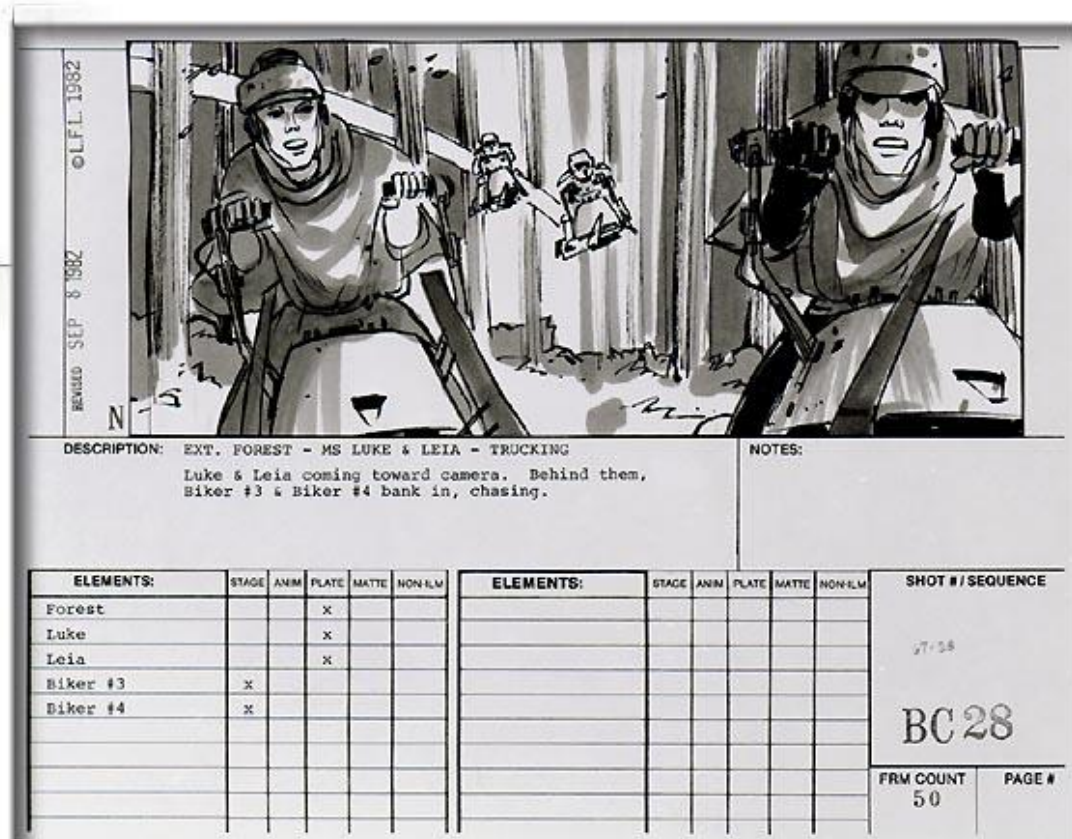
Can be used to convey

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

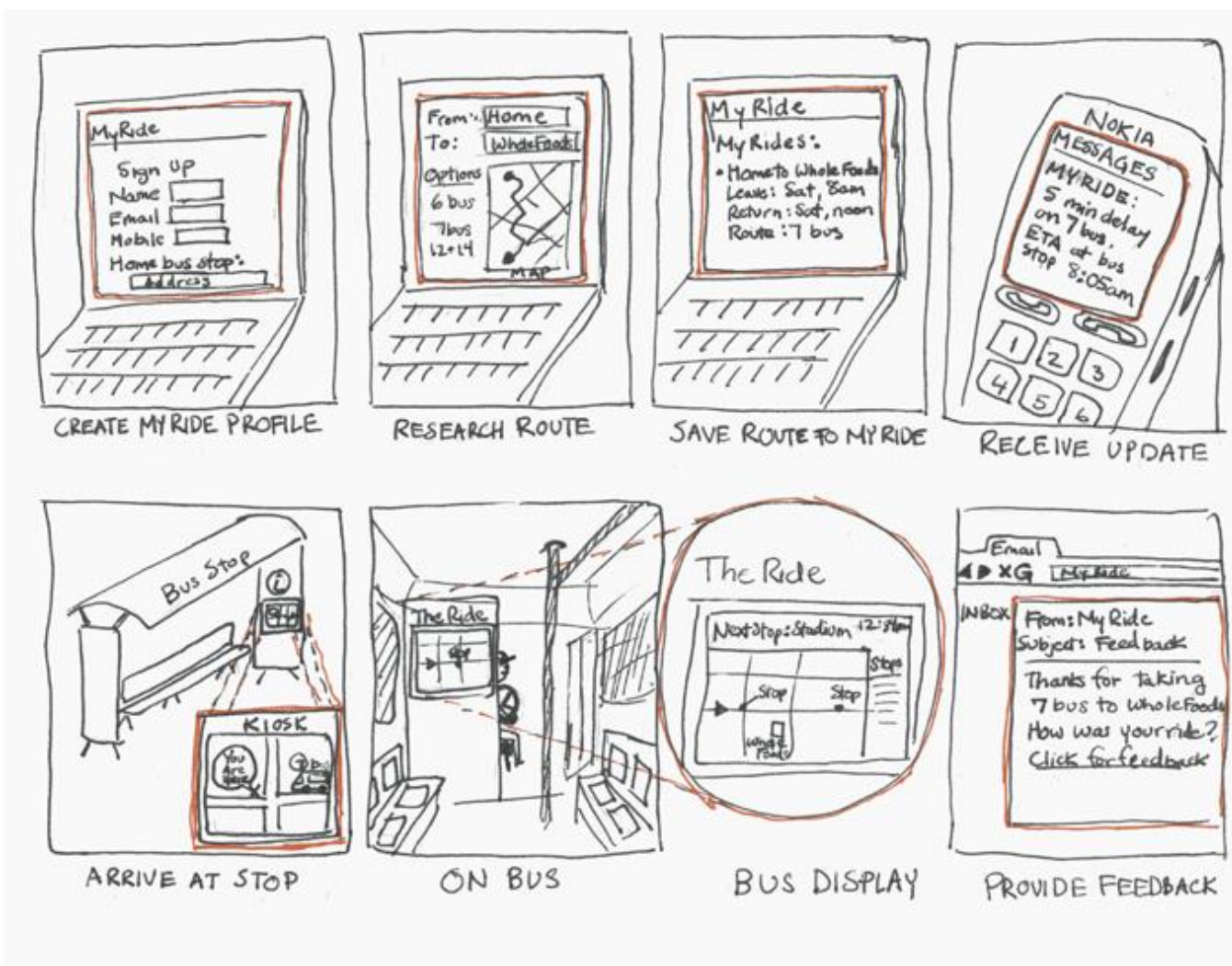


Storyboards

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

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

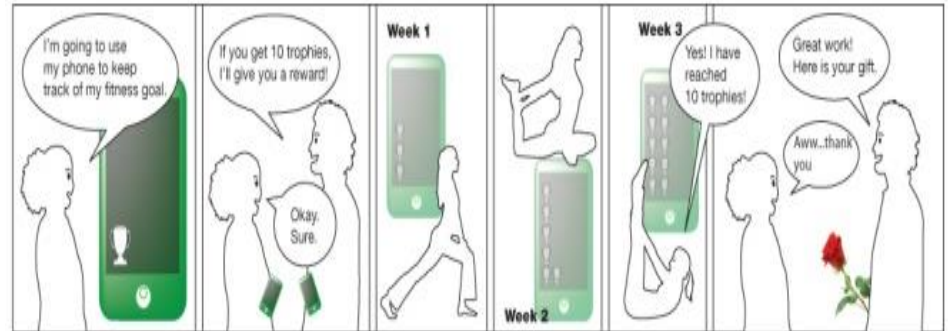
Level of detail

Inclusion of text

Inclusion of people and emotions

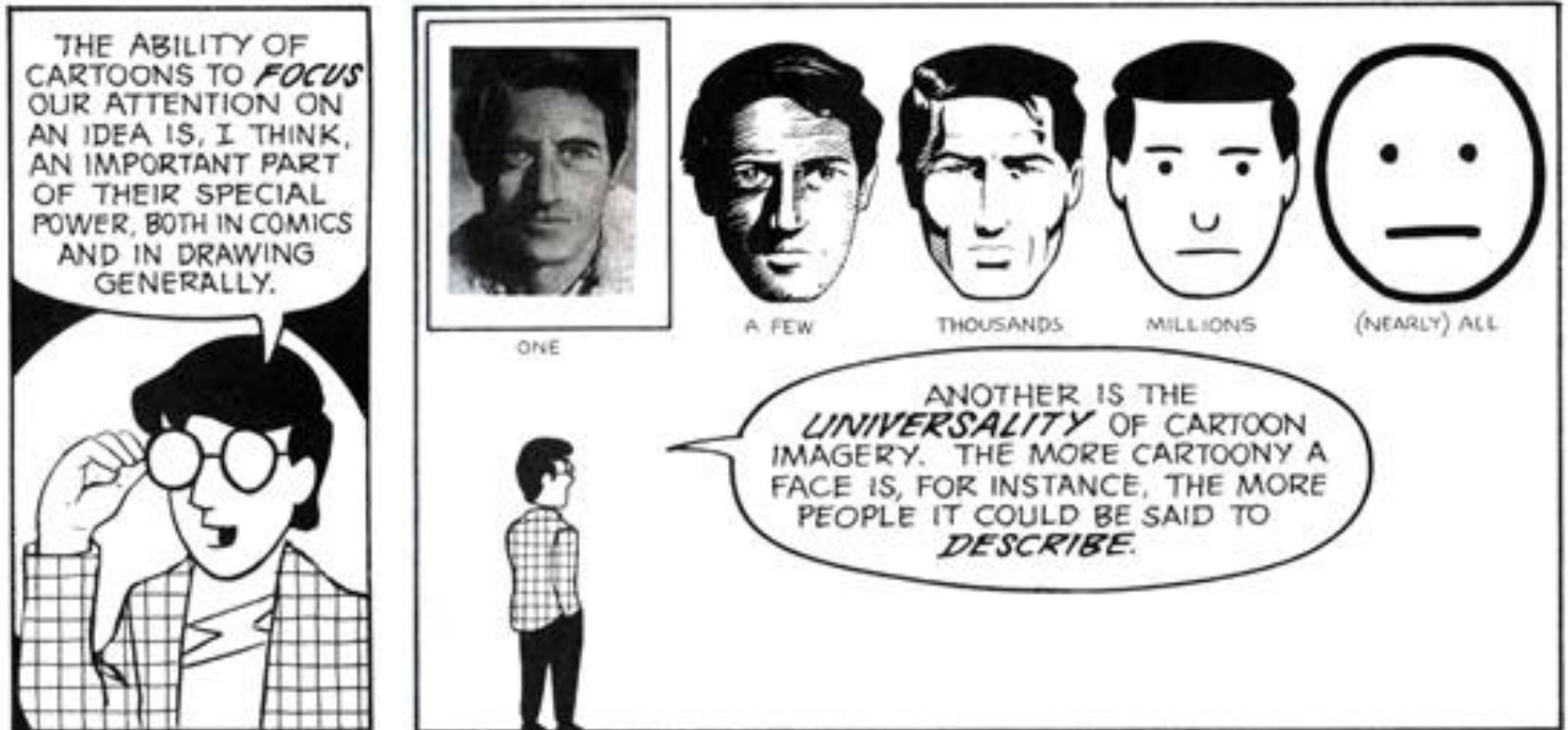
Number of frames

Portrayal of time



1. How Much Detail?

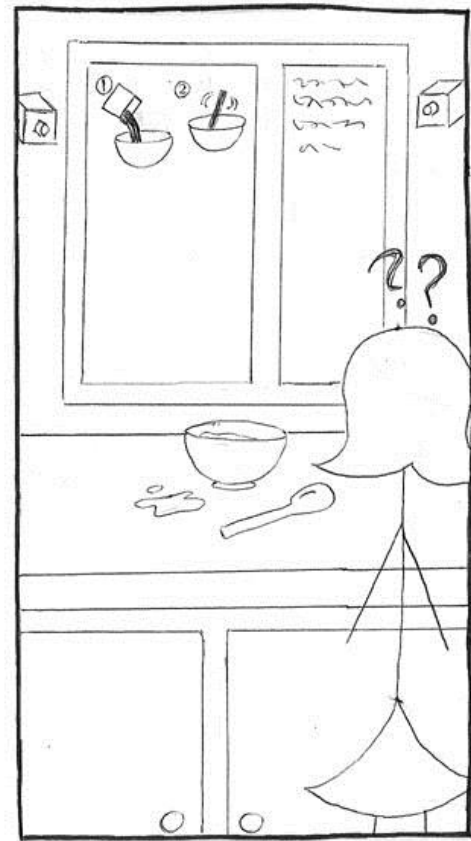
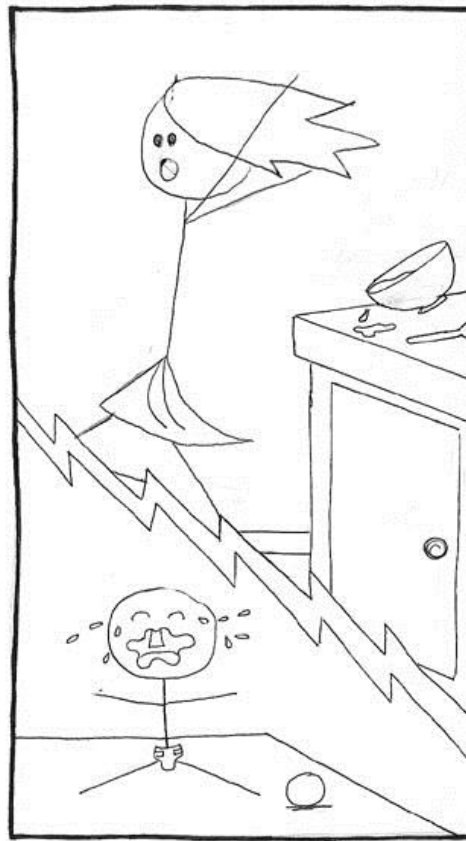
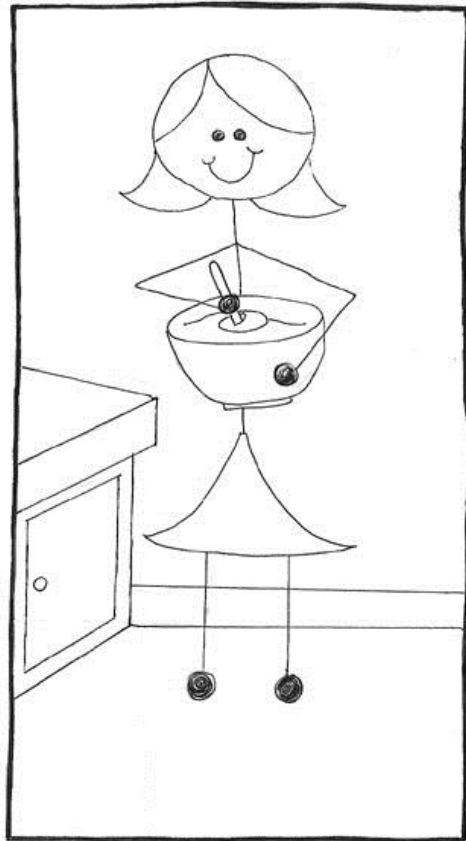
Guideline: too much detail can lose universality



Scott McCloud

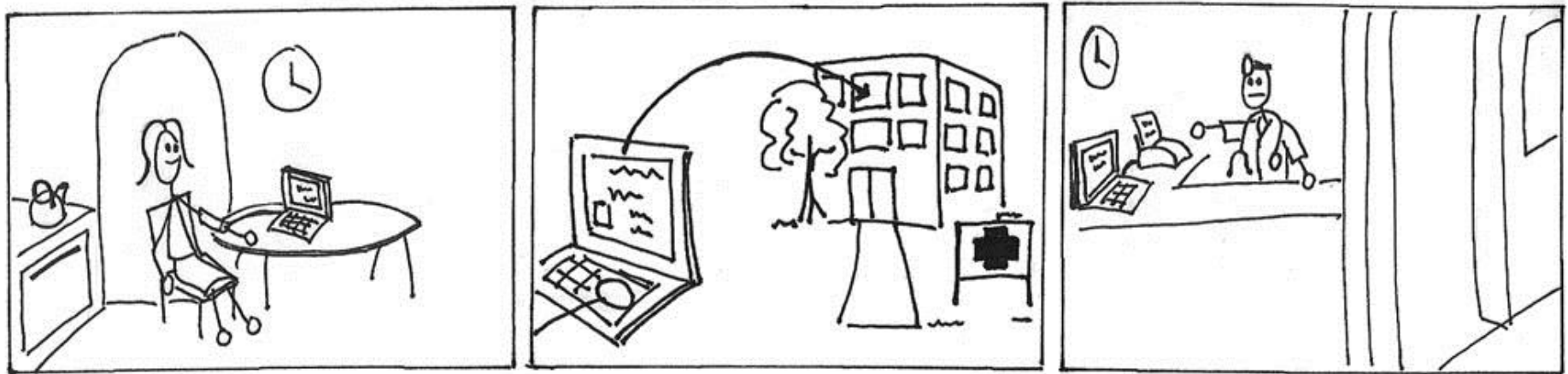


1. How Much Detail?



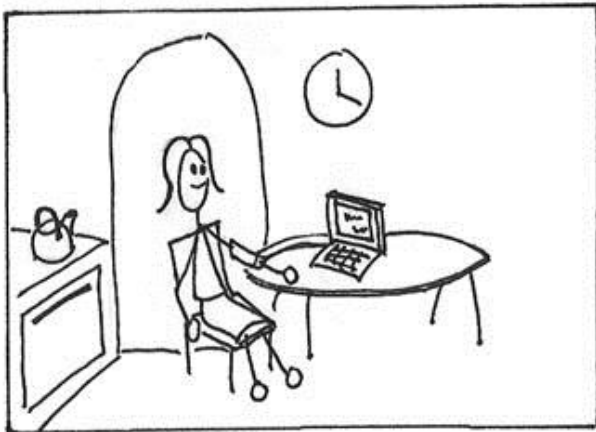
2. Use of Text

Guideline: It is often necessary, but keep it short

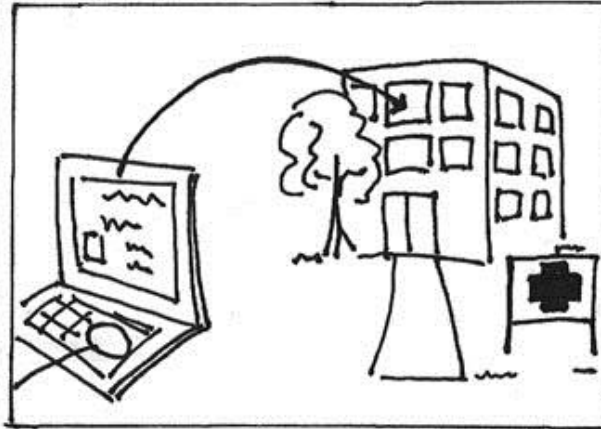


2. Use of Text

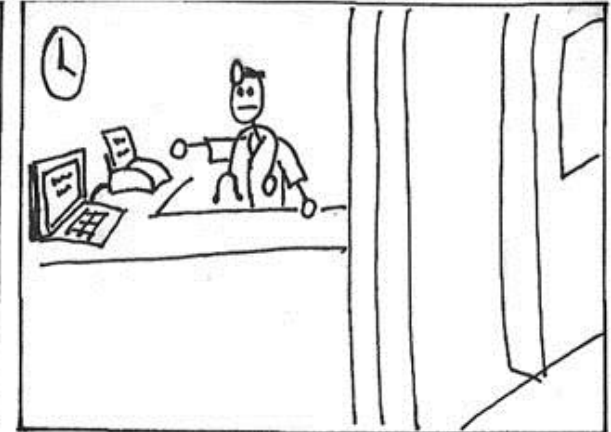
Guideline: It is often necessary, but keep it short



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

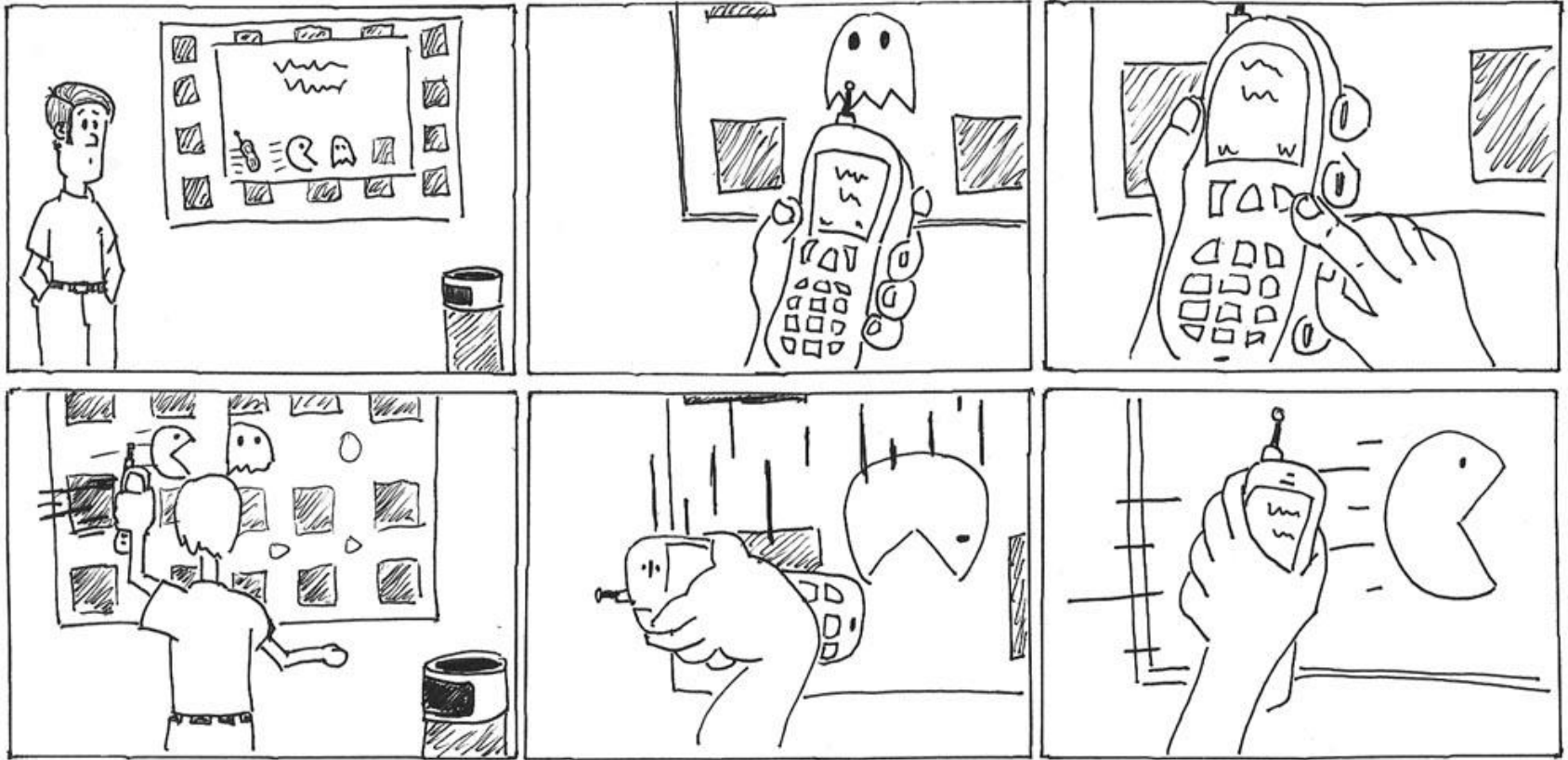
More is not always better

May lose focus of story

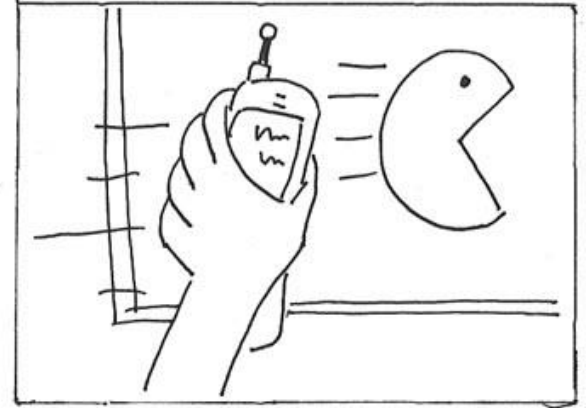
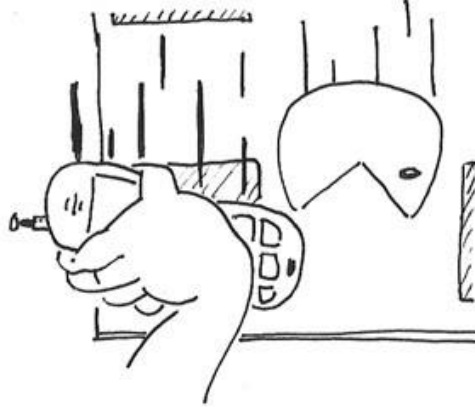
May lose attention



4. How many frames?

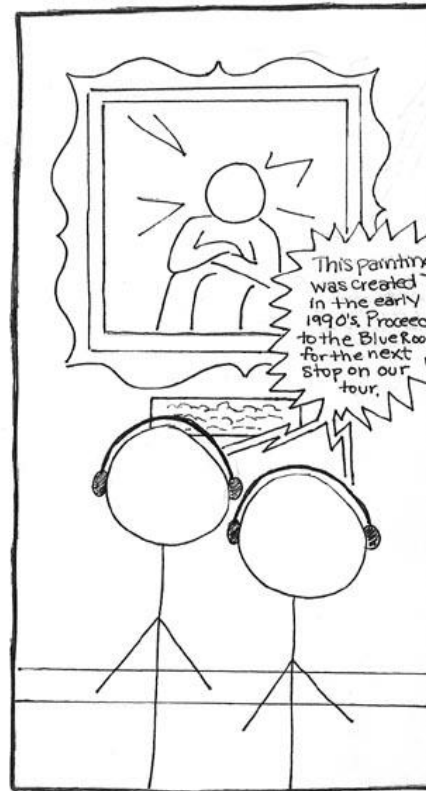
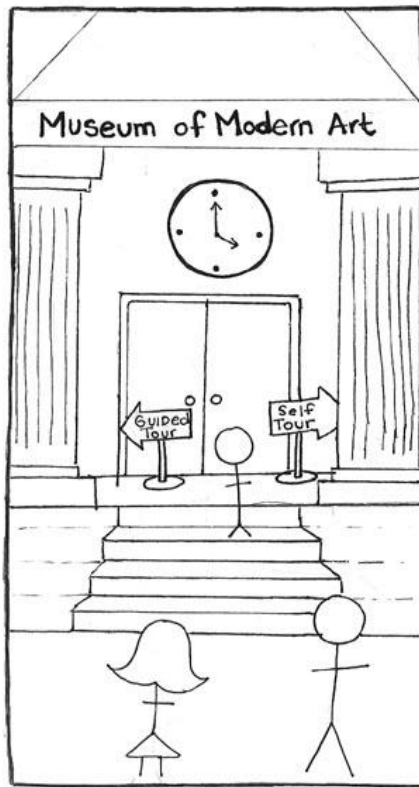


4. How many frames?



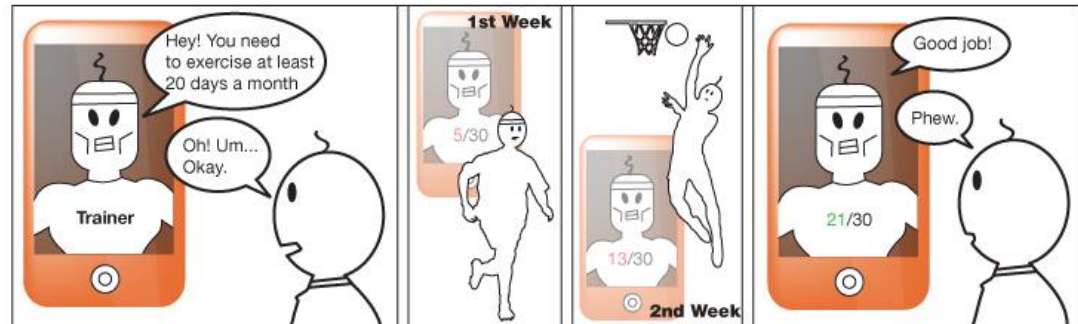
5. Passage of Time

Guideline: Only use if necessary to understand



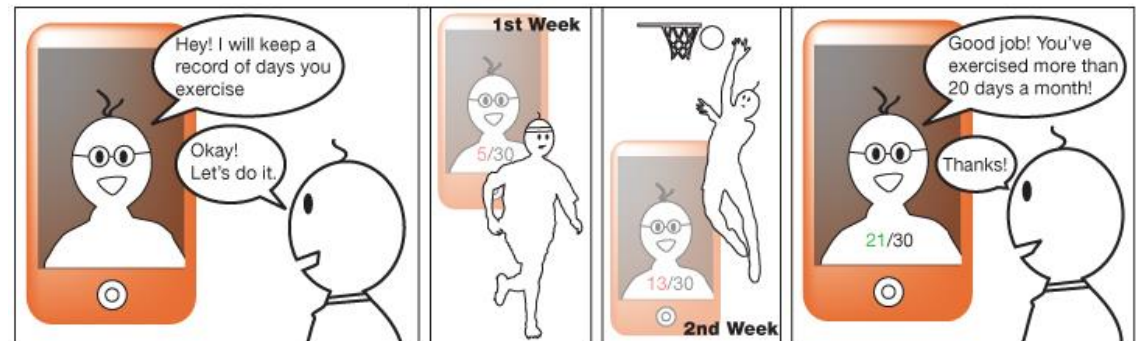
Storyboards for Comparing Ideas

Authoritative



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

Supportive

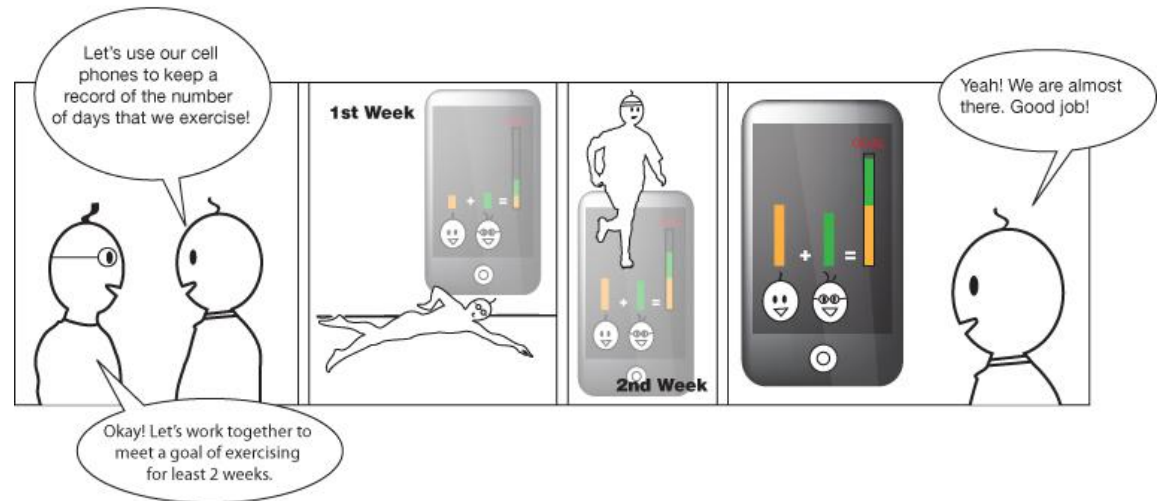


Cell phone is used to keep track of one's fitness goal.

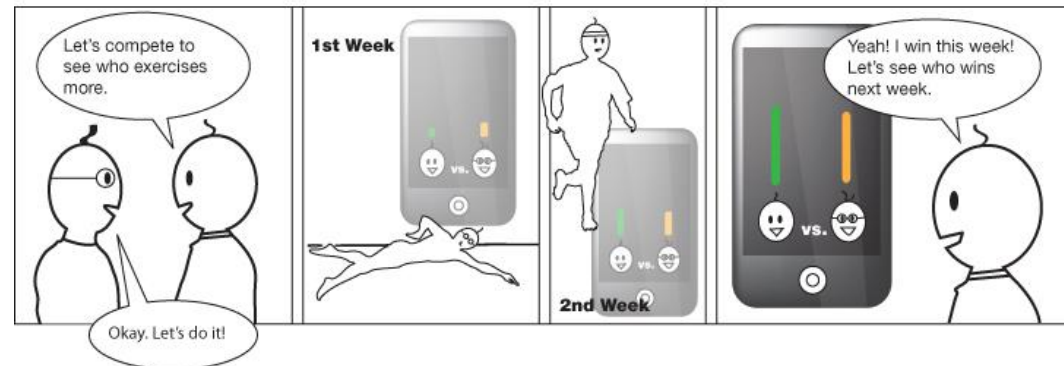


Storyboards for Comparing Ideas

Cooperative

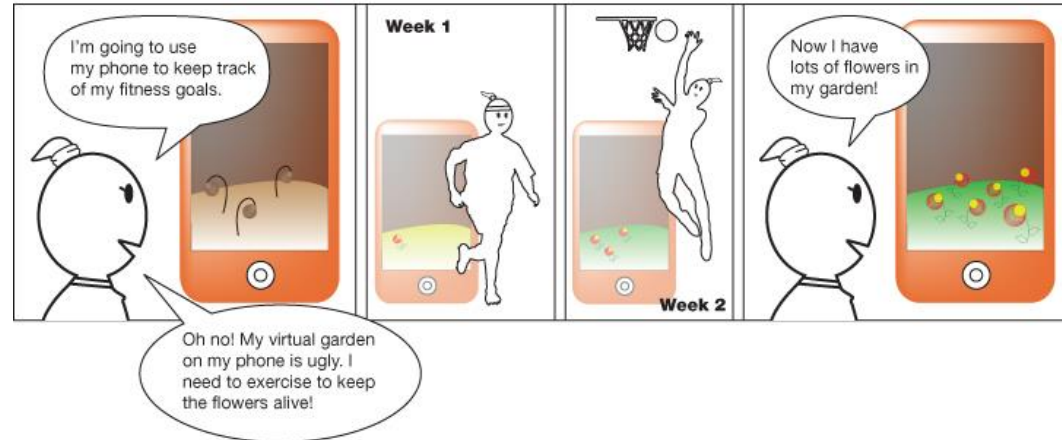


Competitive

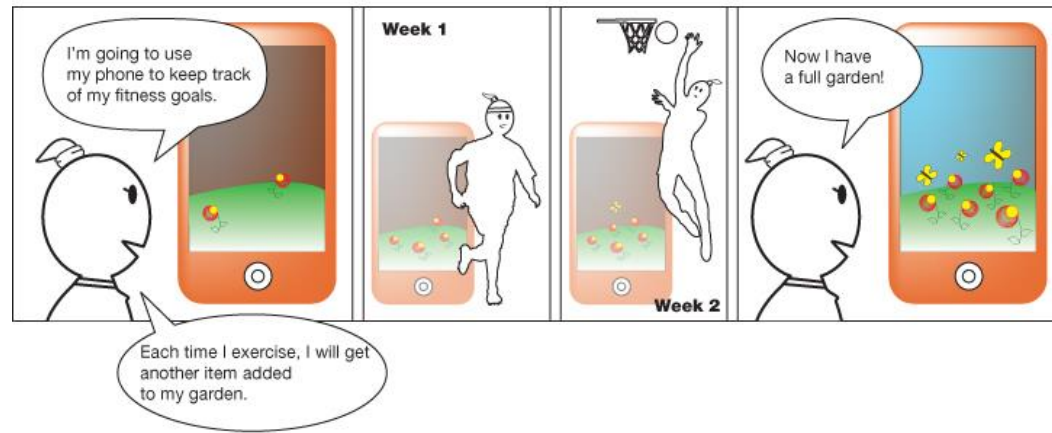


Storyboards for Comparing Ideas

Negative Reinforcement



Positive Reinforcement



Examples and Tricks in Storyboarding



Drawing is Hard



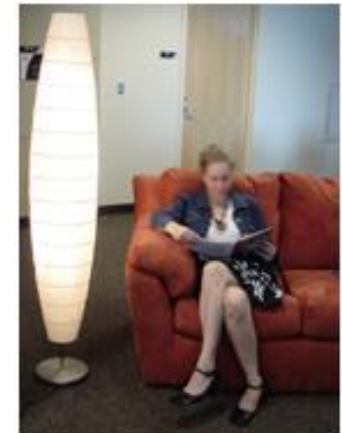
IT IS SO DARK JANE CAN
HARDLY READ HER BOOK



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



THE LIGHTS TURN ON!

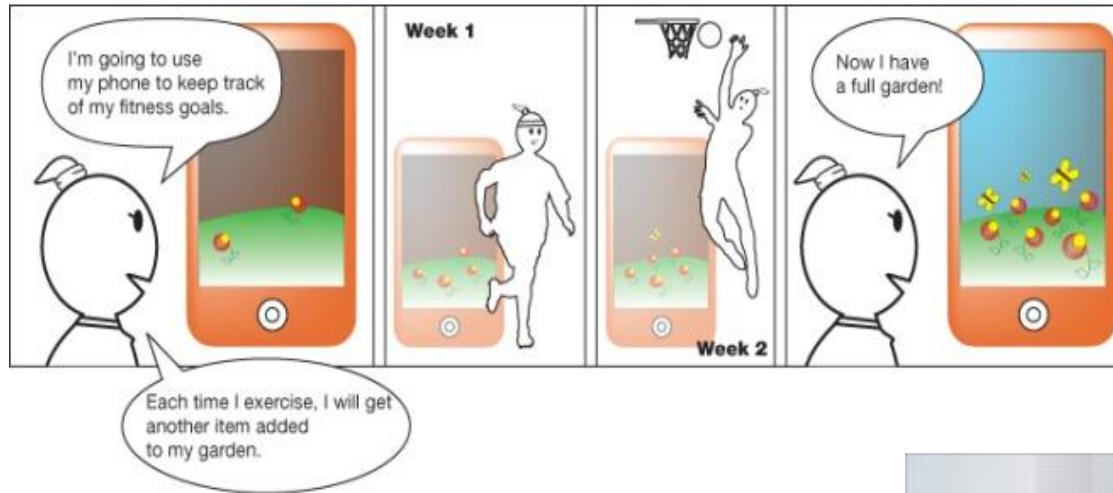


FINALLY, SHE CAN
READ HAPPILY.

Will a picture work instead?



Existing Images from Other Sources



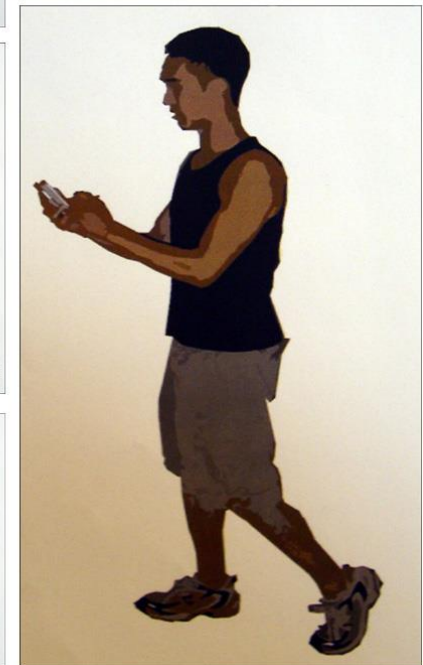
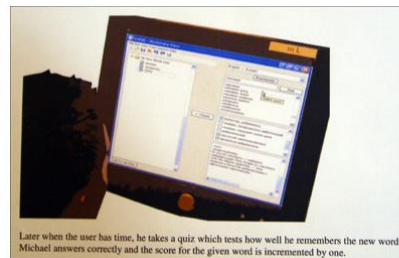
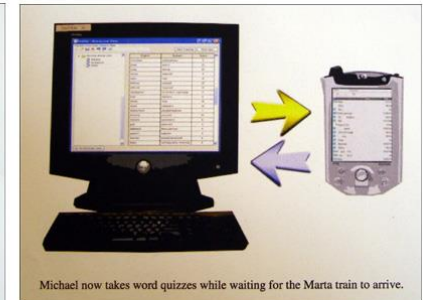
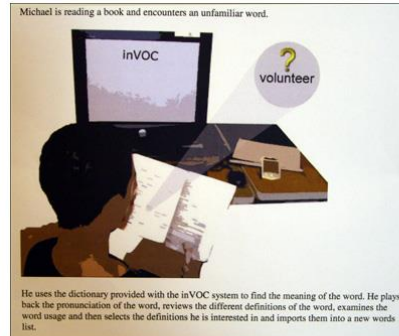
<http://designcomics.org/>

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

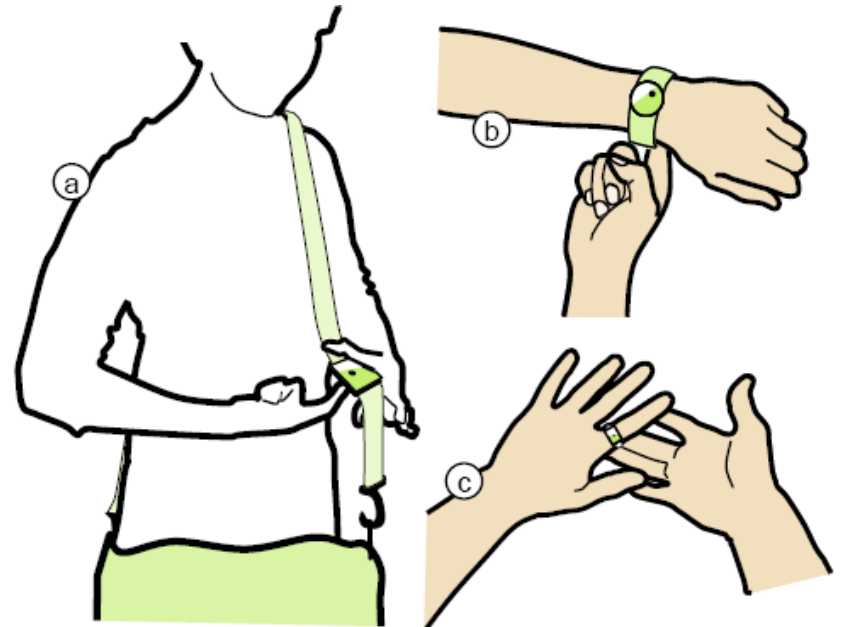
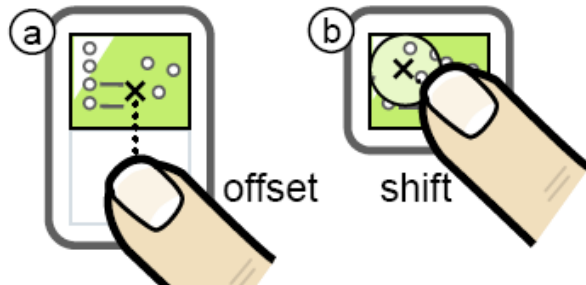
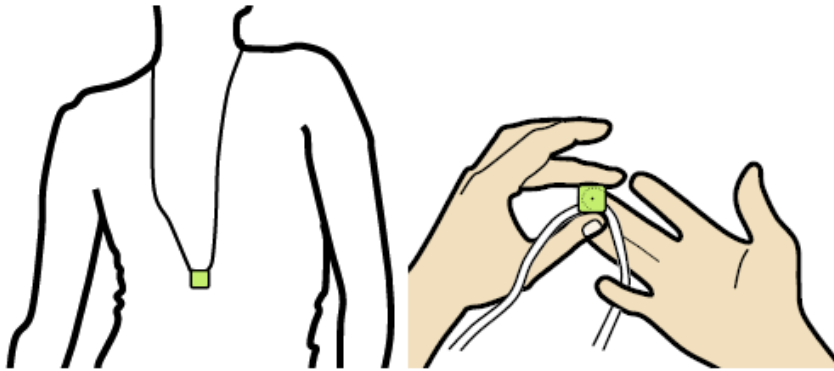


Blur Out Unnecessary Detail

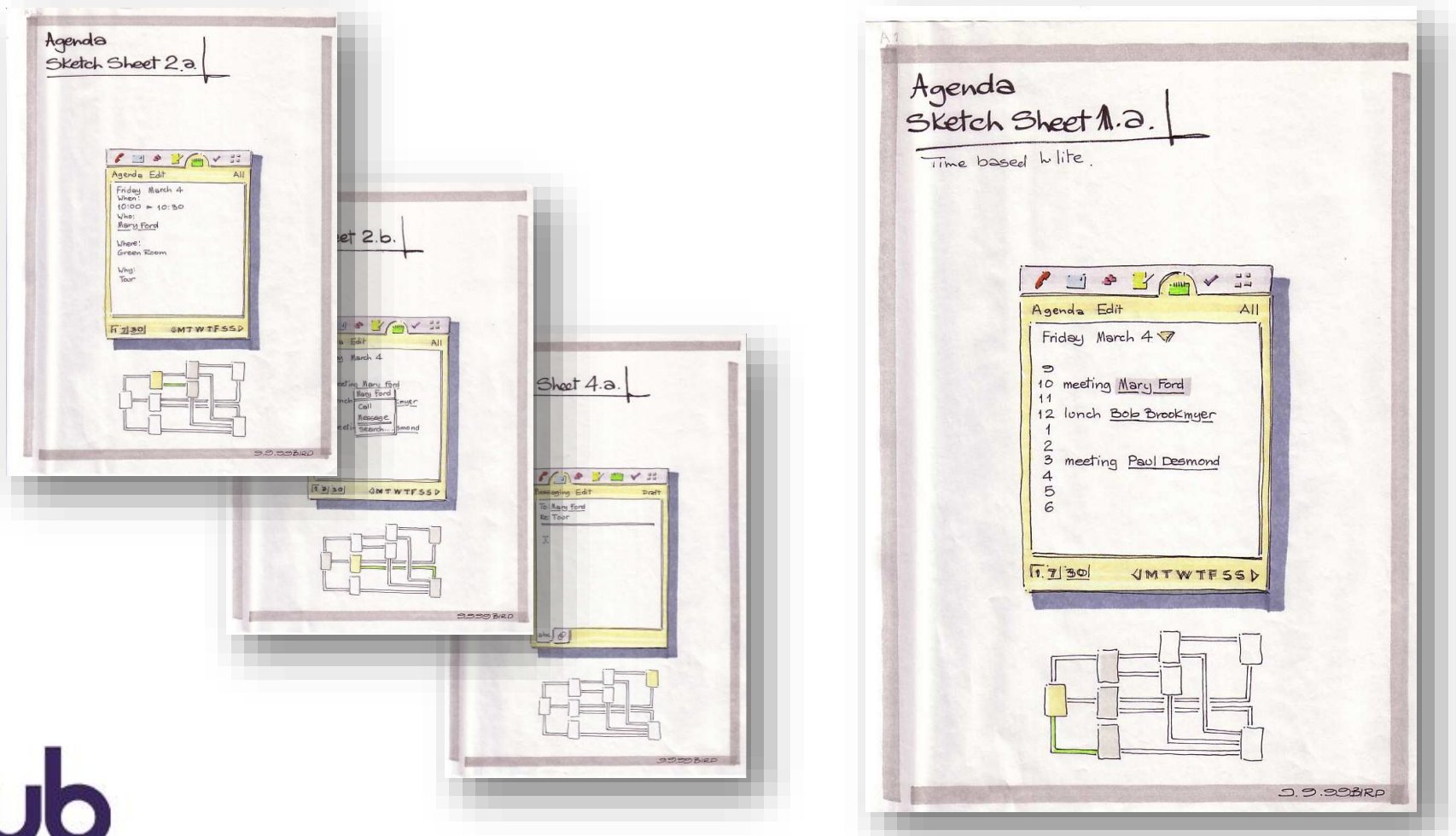
Using image editing software to simplify photos into sketches



Tracing Photos



Mapping the Space of Interaction



Comic Presentation

Thought bubbles argue for the design



Field trial participants not only reported changing their behavior - reducing single occupant trips by around 10% - but they also told us about encouraging their peers and colleagues to do to same during and after the field trial.

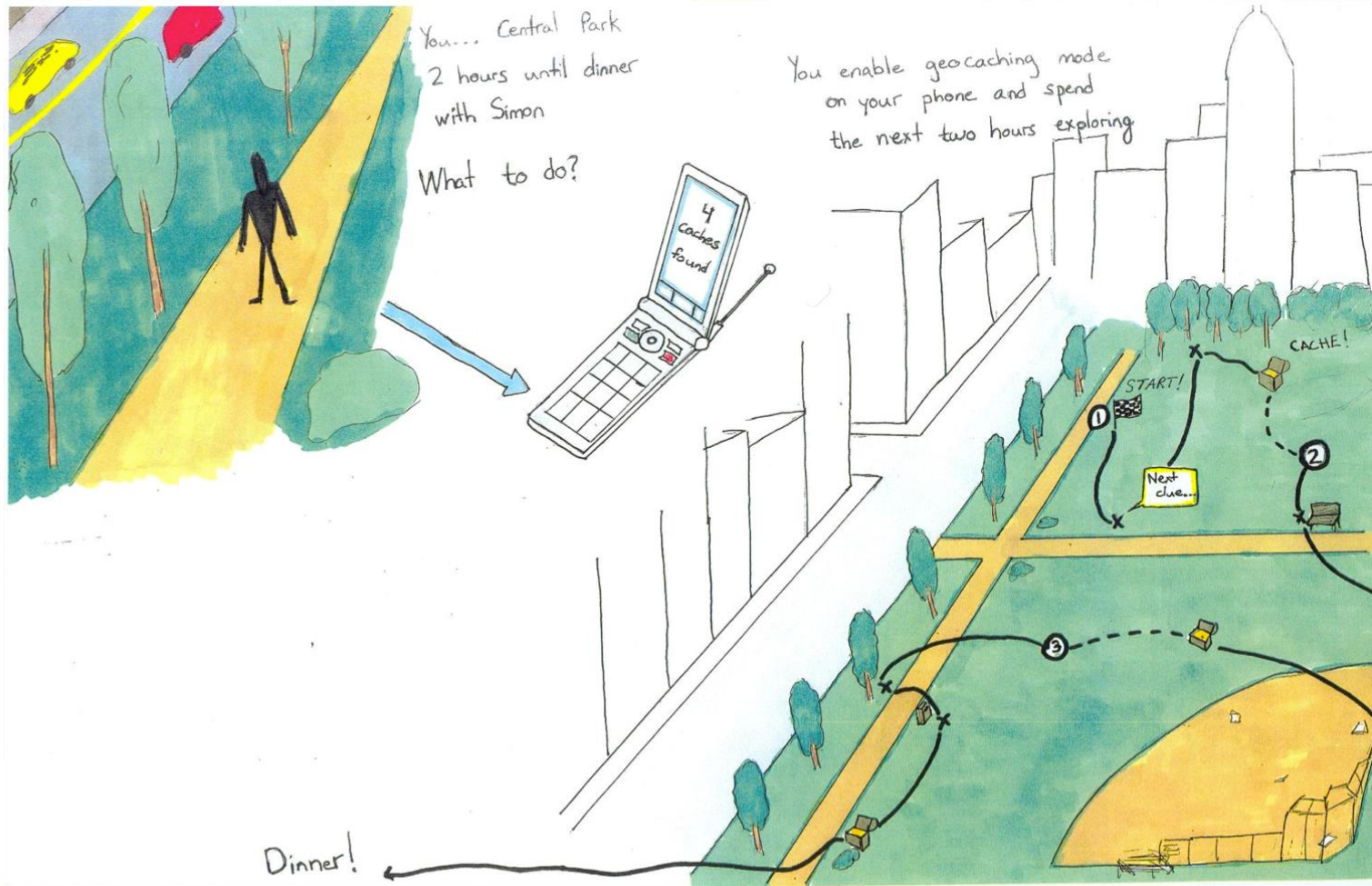
Route Maps

THE FAMILY CIRCUS®

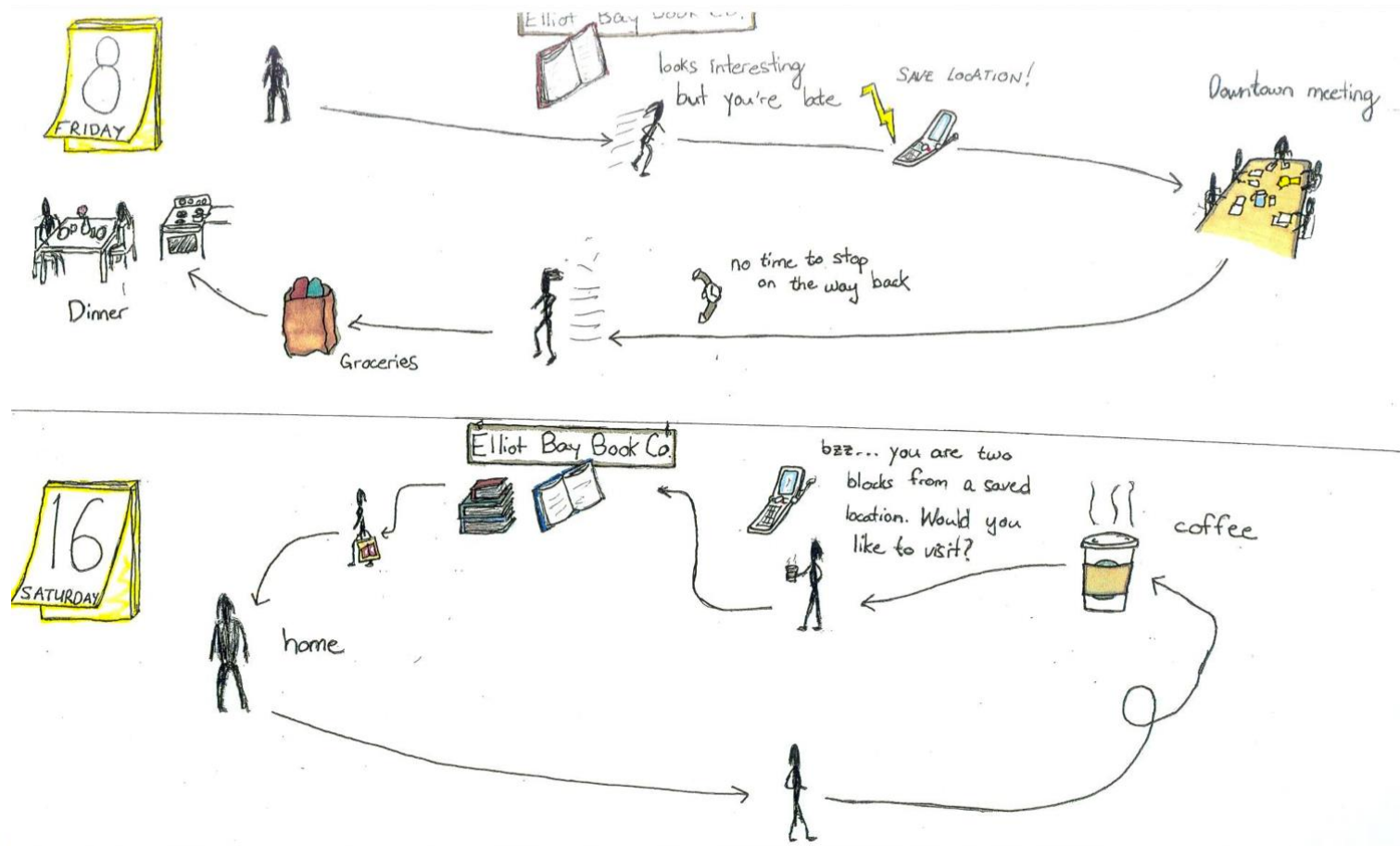
By Bill KEANE



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...



and discuss the
food options with
your friends...



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



SM
10/11/200



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



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

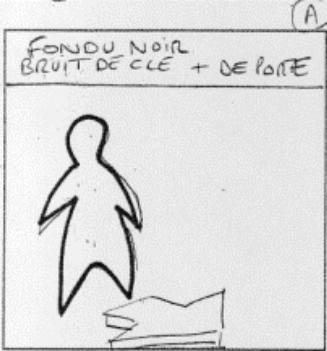
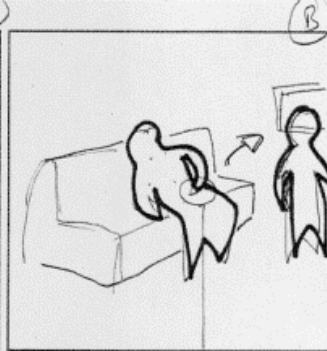
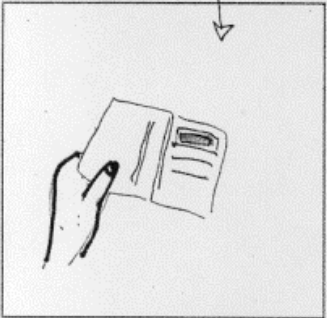
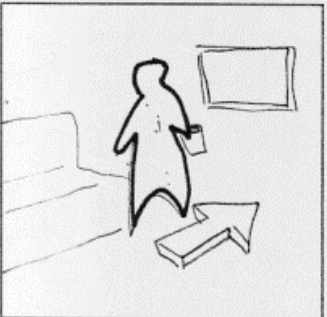
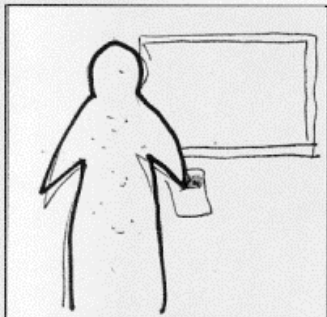
Review ideas from brainstorm

Create text for usage scenarios

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

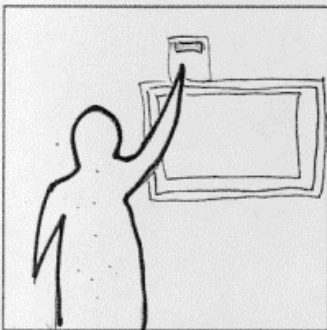
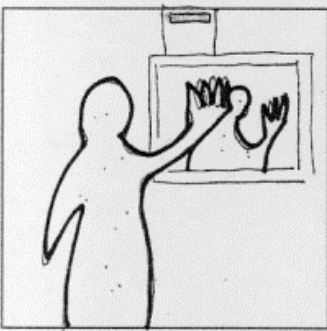

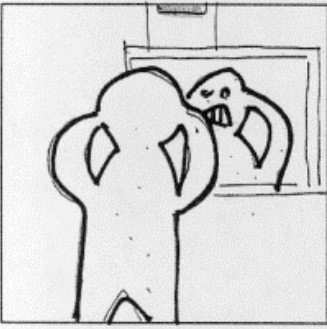


Steps to Create a Video Prototype

<p>(A)</p> <p>FONDU NOIR BRUIT DE CLE + DE PORTE</p> 	<p>(B)</p> 	<p>SCENARIO</p> <p>DECORS MONIQUE'S HOME S'ASSOIE SUR LE CANAPE. CAMERA PORTE FEUILLE DANS LA BUCHE. OBS</p>
		<p>SCENARIO</p> <p>DECORS SORT SON PORTE FEUILLE (...) CAMERA OBS</p>
		<p>SCENARIO</p> <p>DECORS CANAPE → VIDEO PROBE CAMERA OBS</p>



Steps to Create a Video Prototype

	<p>SCENARIO</p> <p>DECORS FEED BACK ECRAN</p> <p>CAMERA</p> <p>OBS</p>
	<p>SCENARIO GRIMACE 1</p> <p>DECORS</p> <p>CAMERA</p> <p>OBS  VOIR BOUQUIN SHOOTER VUE DE FACE POUR INCRUSTATION</p>
	<p>SCENARIO</p> <p>DECORS GRIMACE 2.</p> <p>CAMERA</p> <p>OBS</p>



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

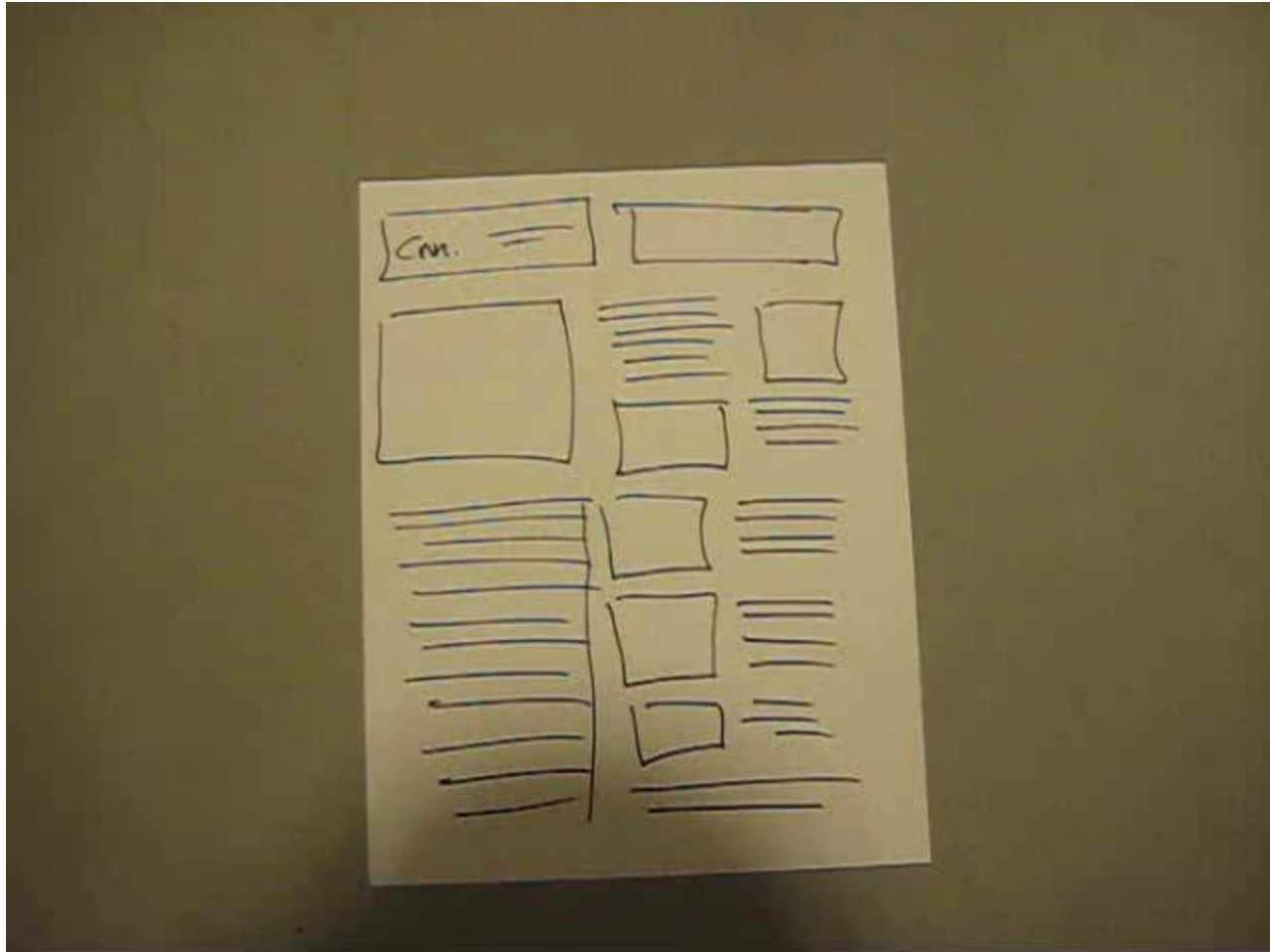
Like a silent movie

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

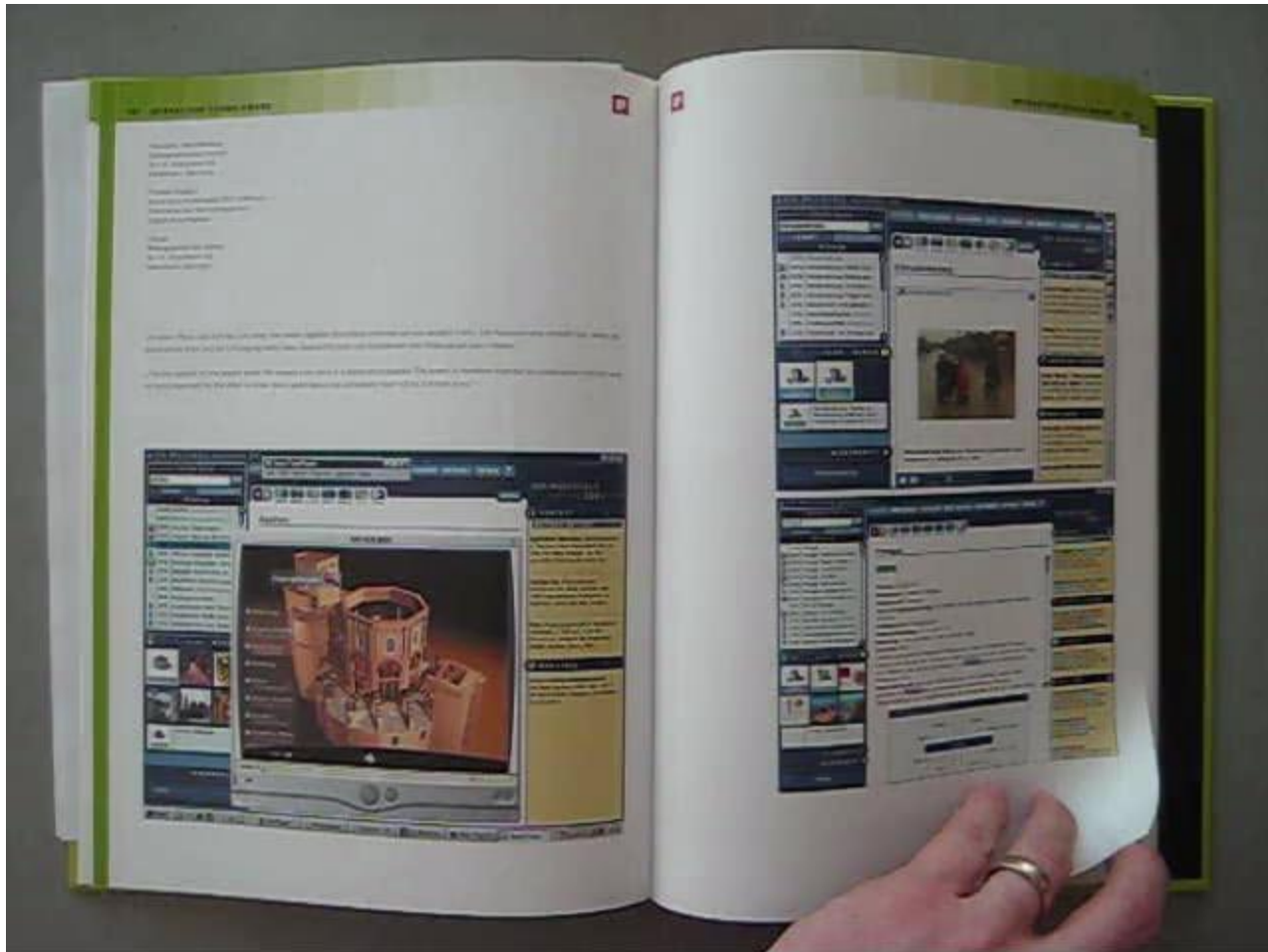
If you make an error, just reshoot it



Prototyping Microsoft Surface



Prototyping Microsoft Surface



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”

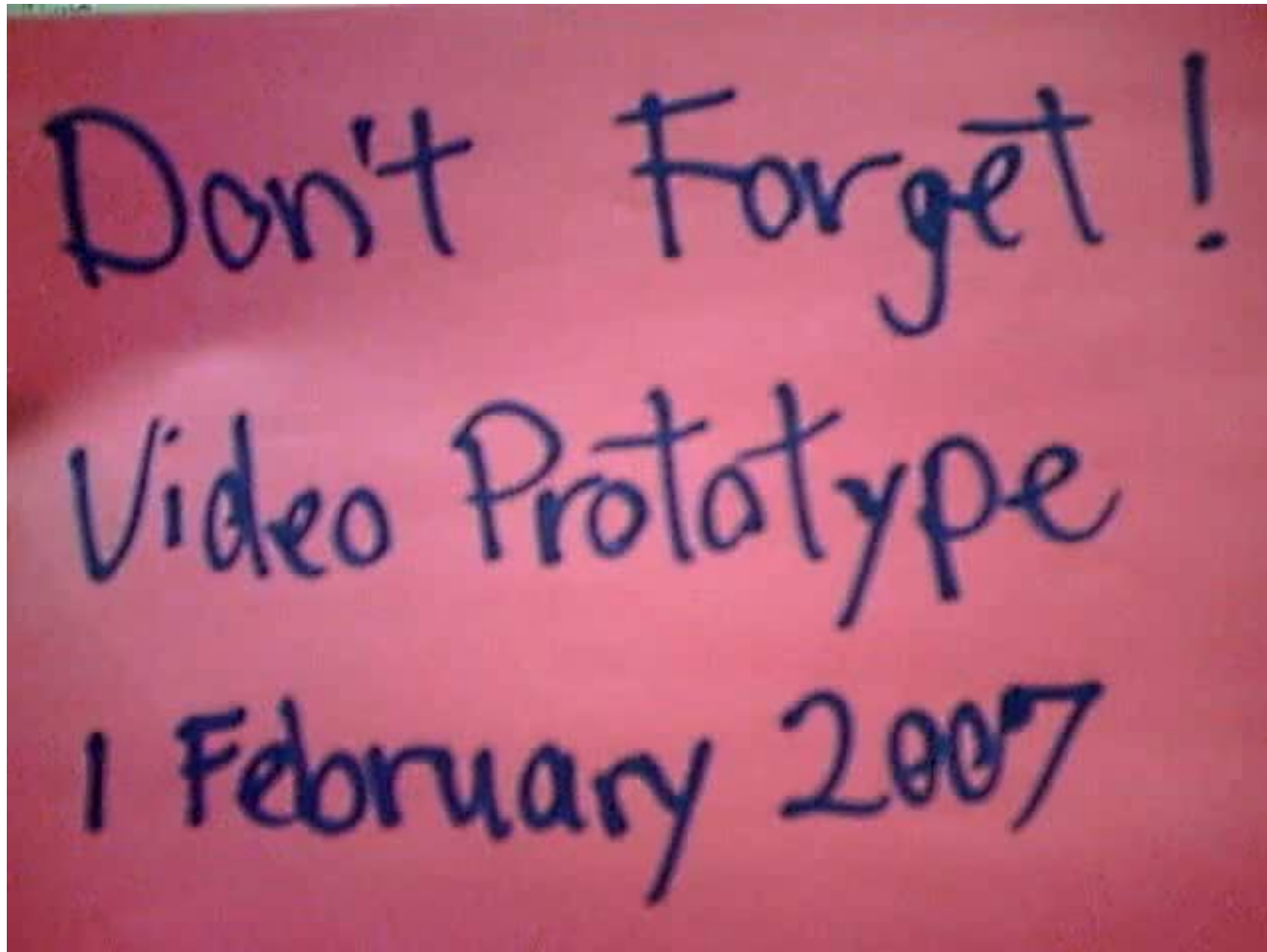


Narration, Pace, and Flair

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



Narration, Pace, and Flair

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

<http://courses.cs.washington.edu/courses/cse440/videos/ideoprototyping/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

Daniel Swisher
Ian Crofoot

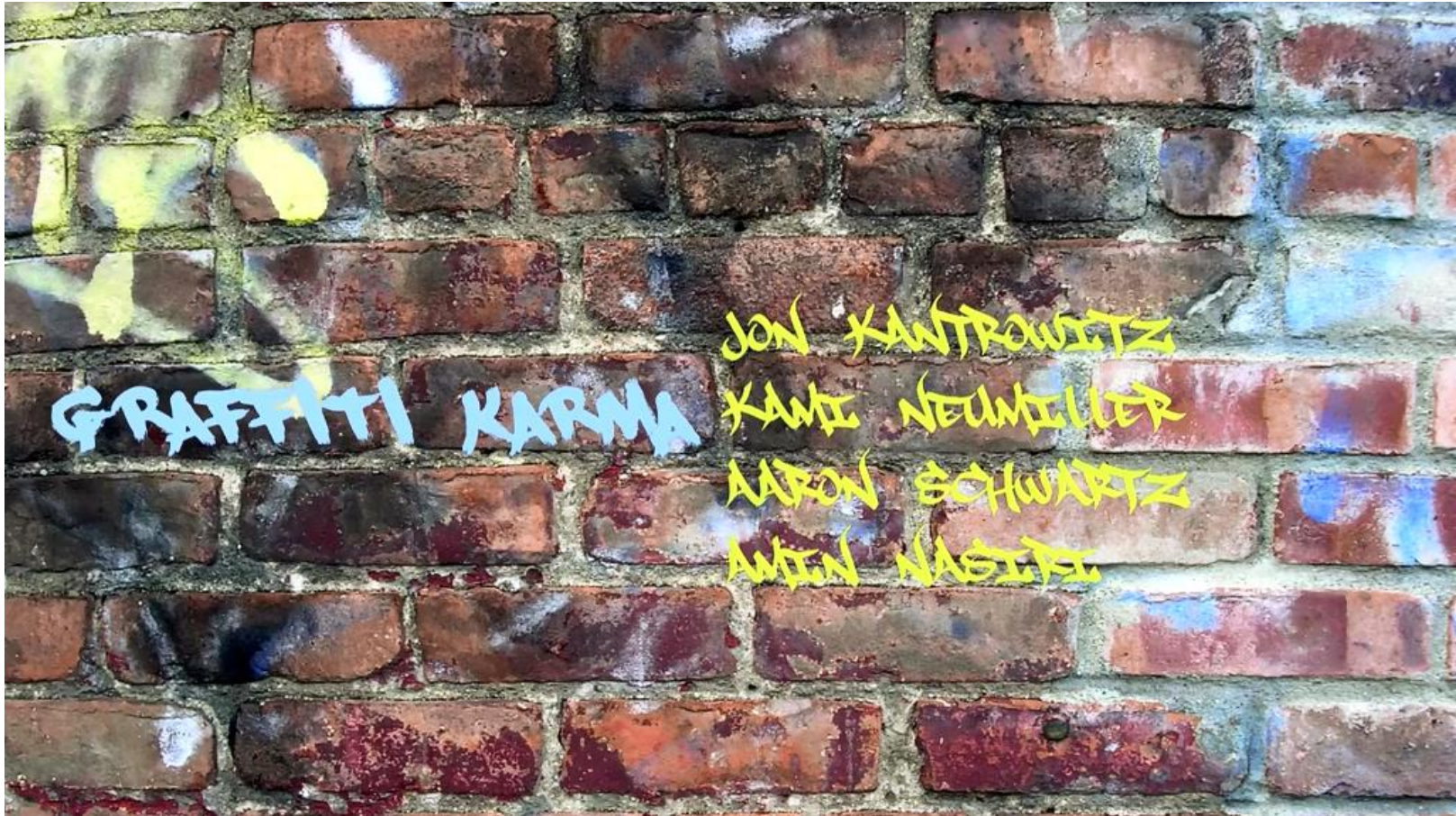
Mitchell Ishimitsu
Sunil Garg

PickUp

It's more than a game it's a community

CSE 440 Video Prototype

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



PS ParkSmart
VIDEO PROTOTYPE

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)



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



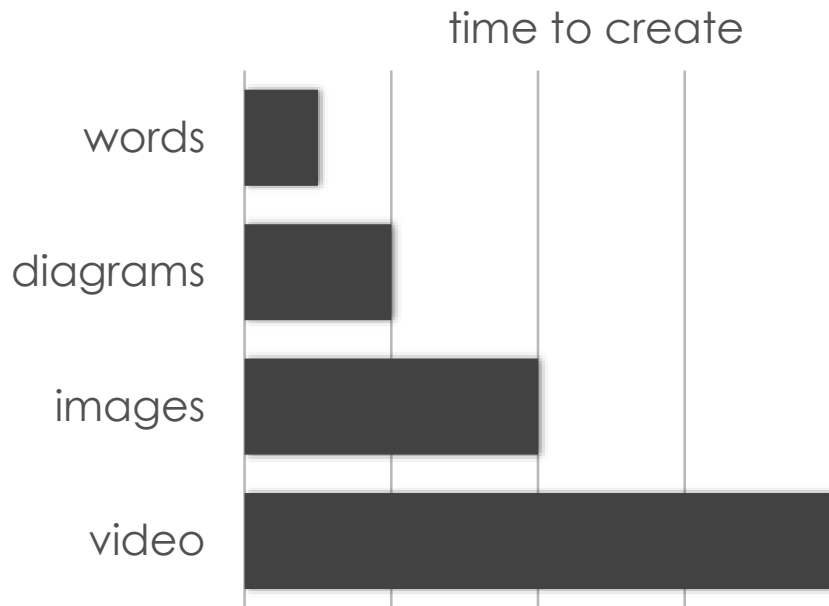
FLUIDUM



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

James Fogarty
Daniel Epstein
Brad Jacobson
King Xia

Tuesday/Thursday
10:30 to 11:50
MOR 234

