

# CS 321: Introduction to HCI

Methods for Design, Prototyping and Evaluating User Interaction

**Lecture 13:**  
Storyboarding

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The logo for Southern Illinois University Edwardsville (SIUE), featuring the letters "SIUE" in white on a red rectangular background.

SIUE

# Tasks in Your Projects

Say what is accomplished, not how

Real tasks that people currently encounter,  
or new tasks your design will enable

Reasonable coverage of the interesting aspects  
of your problem and your design space

Range of difficulty and complexity

Park at the zoo on a weekday

Park Friday night in the business district

Park at the airport

# Using Tasks in Design

Write up a description of tasks

formally or informally

run by people and rest of the design team

get more information where needed

Manny is in the city at a restaurant and would like to call his friend Sherry to see when she will be arriving. She called from a friend's house while he was in the bus tunnel, so he missed her call. He would like to check his missed calls and find the number to call her back.

# Using Tasks in Design

Rough out an interface design

discard features that do not support your tasks

or add a real task that exercises that feature

major elements and functions, not too detailed

hand sketched

Produce scenarios for each task

what person does and what they see

step-by-step performance of task

illustrate using storyboards

# Why do we need stories in design?

## Communicate with your audience

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

## Explore people's purpose

Gather and **share information** about people, tasks, goals

Put a **human face** on user data

Spark new **design concepts** and encourage innovation

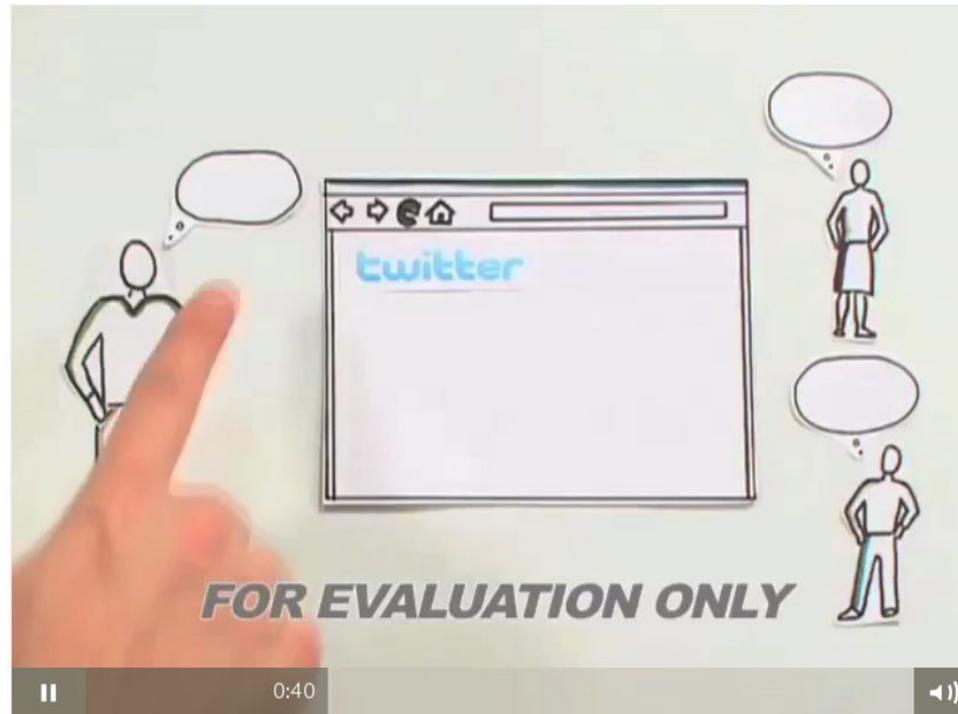
Share ideas and create a sense of **history and purpose**

Giving insight into people who are not like us (**empathy**)

"Maybe stories are data with a soul!" - Brene Brown

# Why do we need stories in design?

How would you explain your favorite social media tool to someone living in 1995? E.g., yelp, twitter, snapchat,...

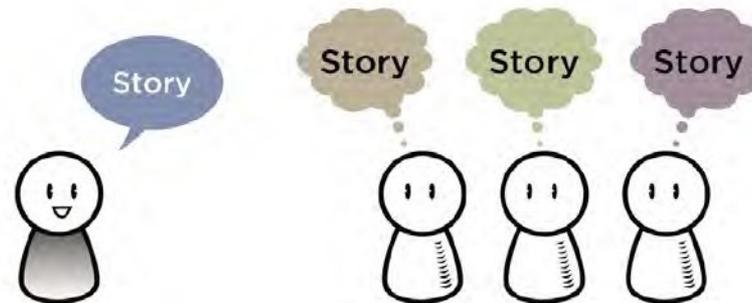


<https://www.commoncraft.com/video/twitter>

# Storytelling

Stories have an audience

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



Stories need to match **audience** and **purpose**

# Potential Purpose of a Story



Purpose allows choosing effective details

Stories have a purpose

- Share information about people, tasks, goals
- Giving insight into people who are not like us, convey details that might be lost in generalities
- Put a human face on analytic data
- Spark design concepts and encourage innovation
- Share ideas and persuade on potential value

# 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 highlight details that might otherwise be ignored

Grocery store application:

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

# Three Ways of Telling Stories

## Scenarios

A short story about a specific user with a specific goal

Written accounts and narratives of the experience

Analogy: Books

## Storyboards

A series of sketches showing how a user might progress through a task in a system

Visual storytelling with rough sketches/cartoons

Analogy: Comics, Picture books

## Video Storyboards

Richer visual storytelling

Analogy: Movies/TV

# Scenario

Persona + Task + Action = ...

Scenarios are stories created to **communicate and explore the context** on WHO does WHAT, WHEN, WHERE and WHY.

# Scenario Example (Persona)

Peter Jones is a 23 years-old design professional.

He is a hard-worker, and things big career-wise. He is kind of an introvert, now single, and most of his social life happens on the weekends with roommates and a couple of good friends.

He likes to recharge by reading at home and sometimes playing video-games or watching movies.

User-story:

- Wants to make his weekend hours last as much as possible because those are the only leisure time he gets.



# Scenario Example (Task Analysis)

## Have a brunch with roomies

- Organize
  - Chose place
  - Poll for date
  - Share calendar invite
- Get everybody to place
  - Wake-up everybody
  - Drive to place
    - Get direction
    - Drive
    - **Park**
- Have a fun eating time
  - Order food
  - Take photos
  - Eat

# Scenario Example: Parking

Peter is going to brunch on a Sunday with his roommates. He is trying a new place he found on Yelp. He has the address for the place and he is using a smartphone GPS for directions. He leaves the apartment with his roommates at around 8:30am and he wants to beat the crowd so they won't have to wait in line. He is driving a Toyota Corolla that he has owned for five years. It is a rainy day and he doesn't have an umbrella.

# Scenario Example: Parking

unknown neighborhood/restaurant

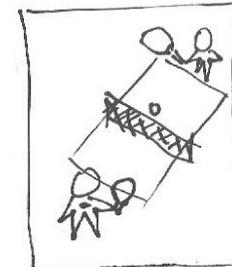
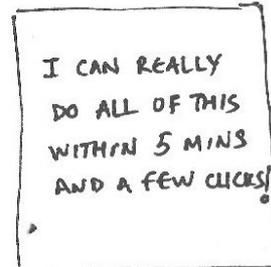
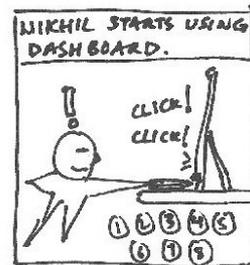
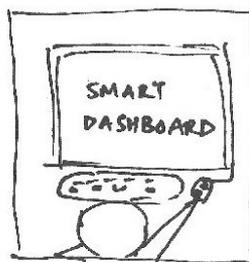
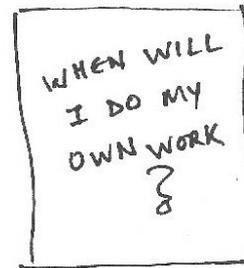
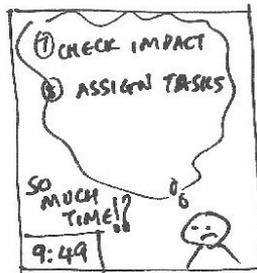
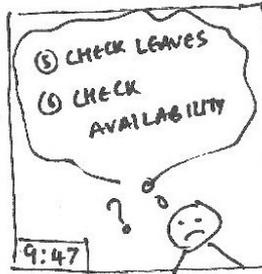
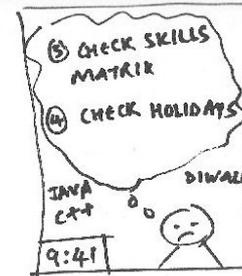
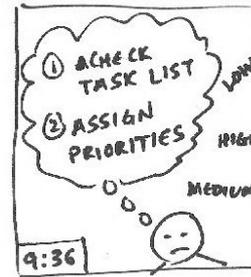
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# Scenario Example: Parking

needs to find a parking spot close by?

Peter is going to brunch on a Sunday with his roommates. He is trying a new place he found on Yelp. He has the address for the place and he is using a smartphone GPS for directions. He leaves the apartment with his roommates at around 8:30am and he wants to beat the crowd so they won't have to wait in line. He is driving a Toyota Corolla that he has owned for five years. **It is a rainy day and he doesn't have an umbrella.**

# Storyboard



# Another one

**WHAT IS A SERVICE?**  
**THE ARGOS EXPERIENCE...**

**thinkpublic**  
www.thinkpublic.com

HI, MY NAME IS PALL AND I'M GOING TO USE THE ARGOS SHOPPING SERVICE TODAY. MY GIRLFRIEND WANTS AN EXERCISE BALL WHICH SHE SAW AT HOME IN THE CATALOGUE...

THE SHOP WAS EASY TO FIND WITH THE BIG SIGN OUTSIDE!

THIS SIGN IS USEFUL, I KNOW HOW LONG THIS IS GOING TO TAKE

**STEP 1: SELECT PRODUCT**

HERE'S ALL THE SPORTS STUFF, IT SHOULD BE IN THIS SECTION...

HERE WE GO... THIS IS WHAT SHE WANTED

THIS IS REALLY USEFUL, I CAN SEE IF THERE ARE ANY IN STOCK BEFORE QUEUING UP. IT LOOKS LIKE I'M IN LUCK, THERE ARE 5 IN STOCK!

I'LL MAKE A NOTE OF THE NUMBER USING THE SLIP AND PEN PROVIDED...

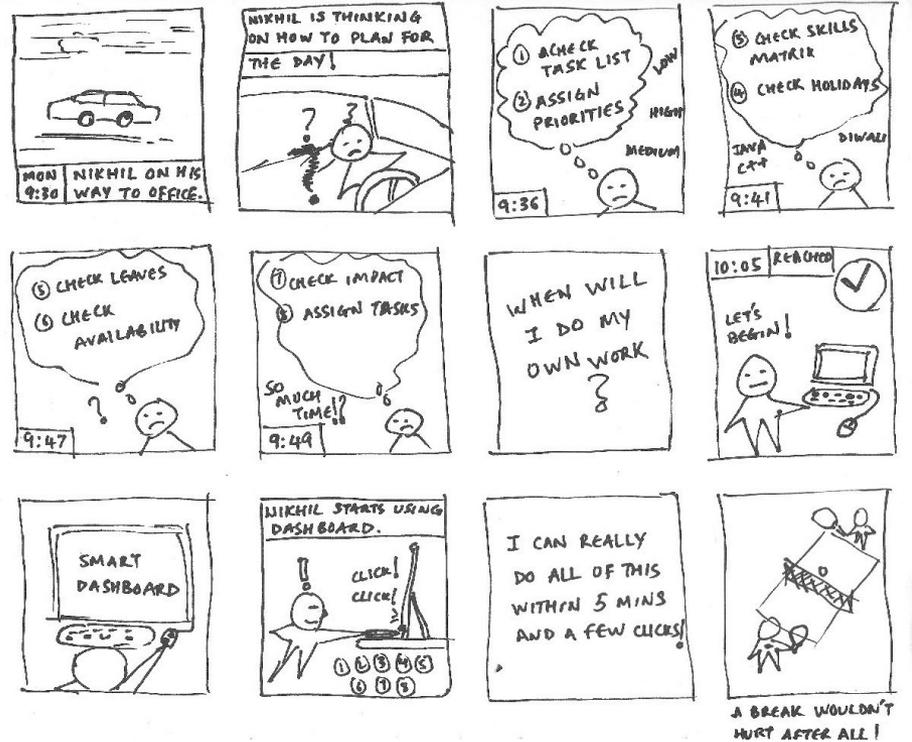
AND HERE'S THE CATALOGUE NUMBER AND PRICE

**HOW DO ARGOS PROVIDE A SERVICE FOR THEIR CUSTOMERS?**  
**ONE INTREPID REPORTER FINDS OUT...**

# Another one

1  Slide 1	2  Sugar Plum Dreams	3  No problem, typing	4  Here's the Page	5  There it is
6  Peak and off peak?	7  I'll Try	8  Dates OK No Price?	9  OK Shows Price	10  Type Type Type
11  Blank Price	12  Back Back Back	13  Still \$0	14  Arrgh	15  Send Form
16  Annoying	17  I don't get it	18  Slide 18	19  Hello Radio City	20  Slide 20

# Storyboarding



# Why Storyboards?

## (If you have Scenarios)

As a visual representation, storyboards help thinking deeply about...

- Specific environments where the system is used

- Physical constraints (size of system, space where it's used...)

- Relationships among multiple people

# 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

# Illustrating Time

Storyboards come from film and animation

Give a “script” of important events

leave out the details

concentrate on the important interactions



# Storyboards

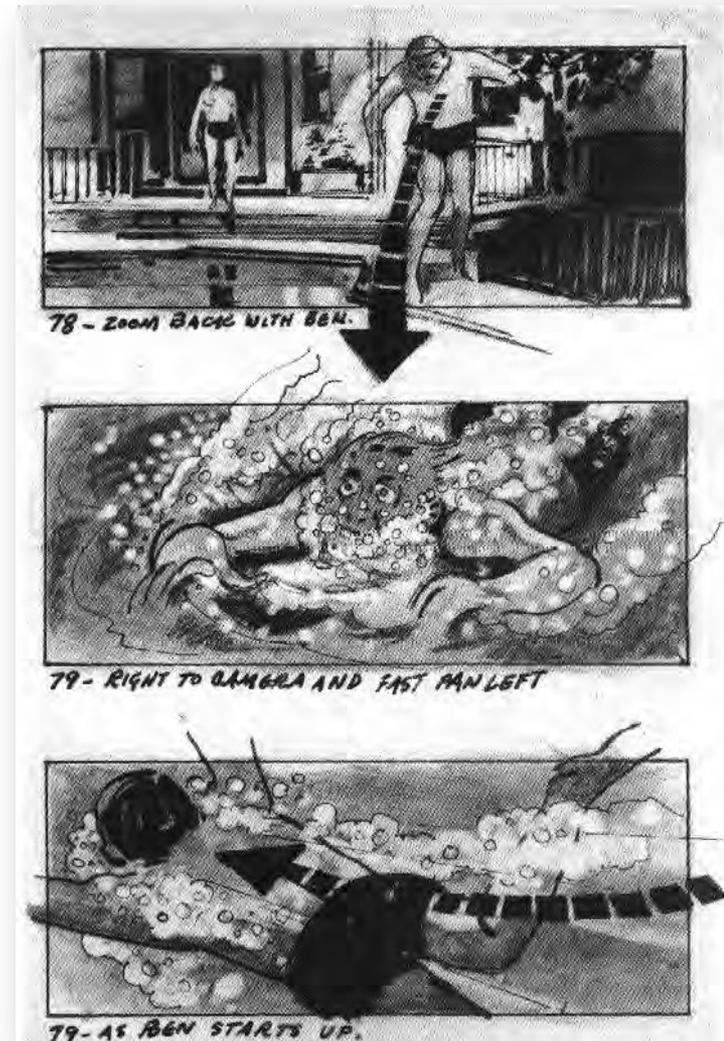
Can be used to explore

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





# 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?

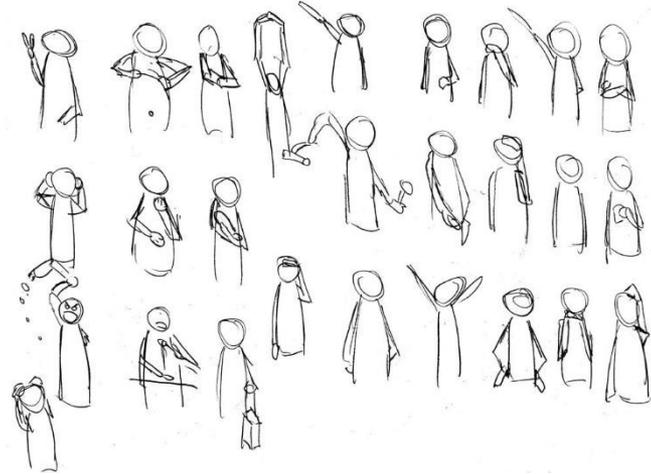
## Sketching People



PERSON



Star people  
by Bill Verplank

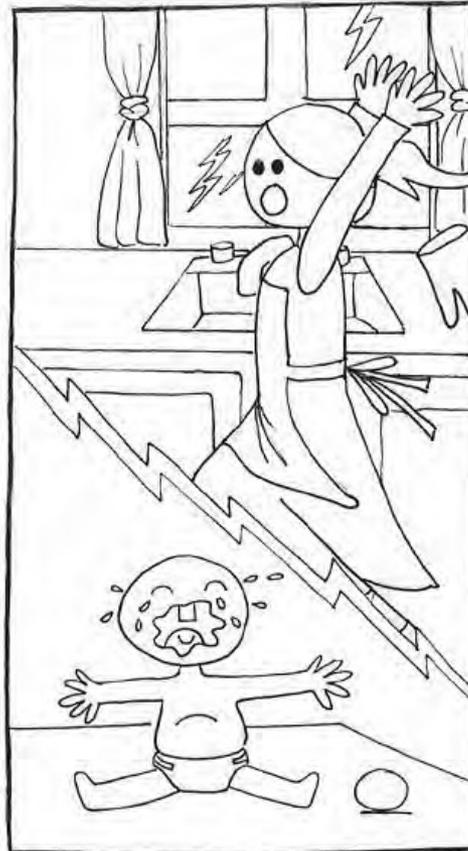


(c) 2009 SACHA CHUA

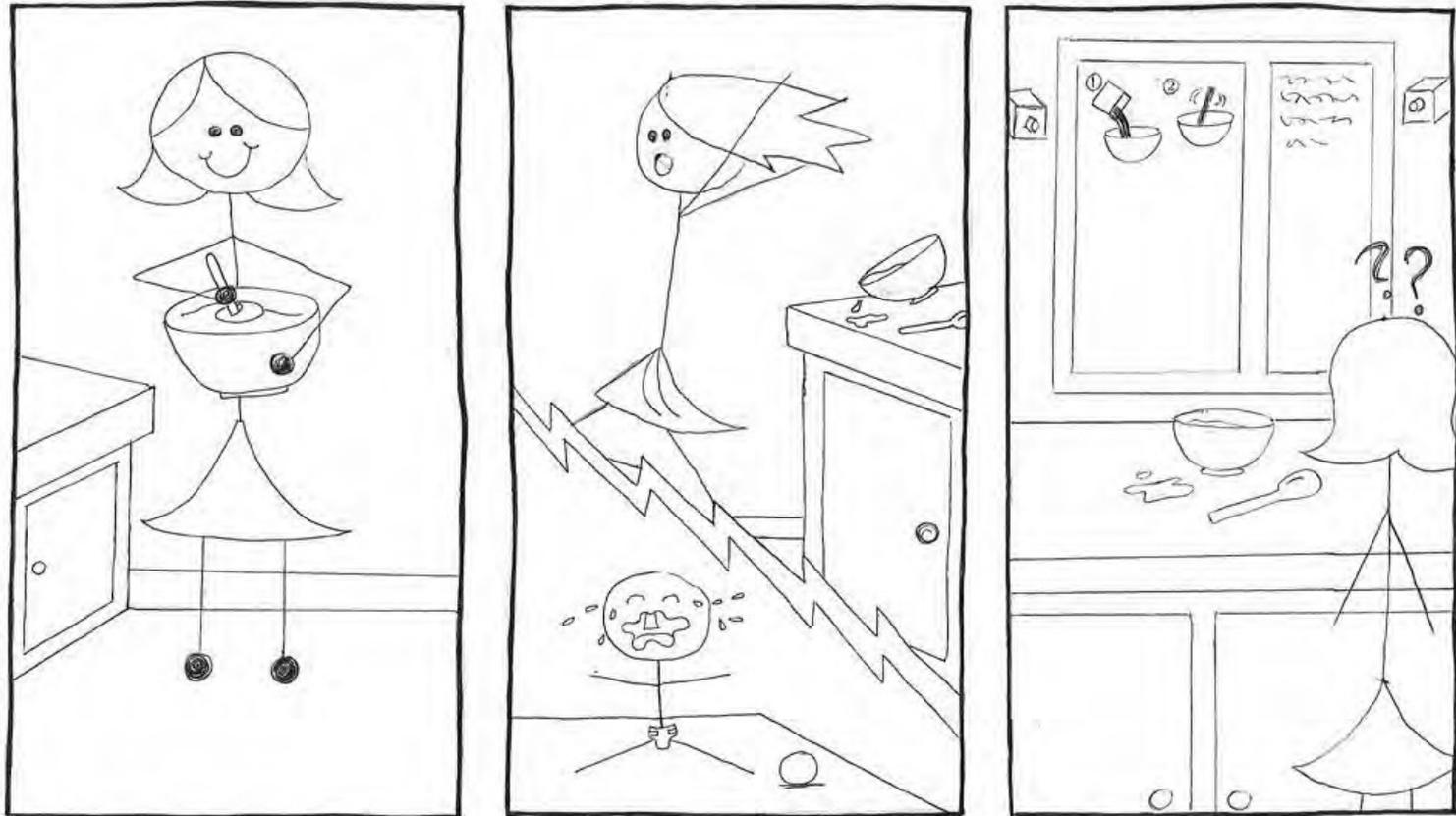


Keith Haring

# 1. How Much Detail?



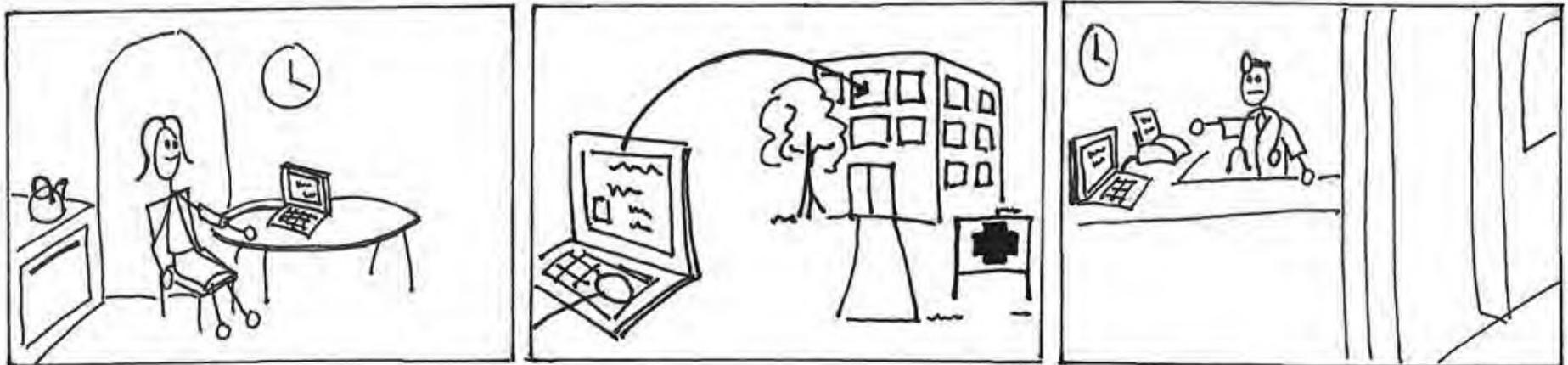
# 1. How Much Detail?



Unnecessary details distract from the story

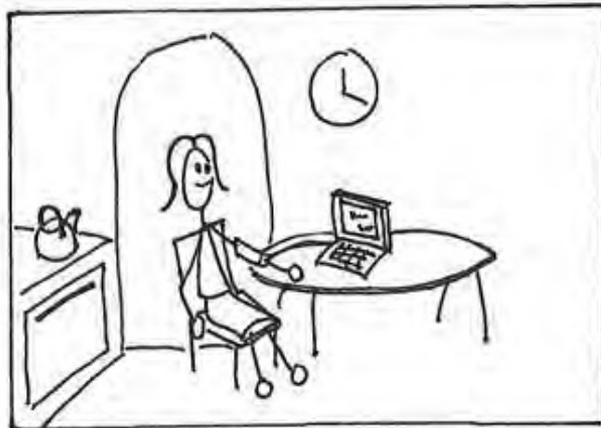
## 2. Use of Text

Guideline: It is often necessary, but keep it short

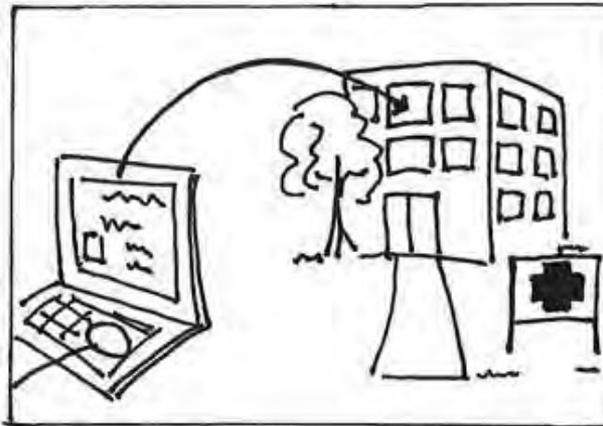


## 2. Use of Text

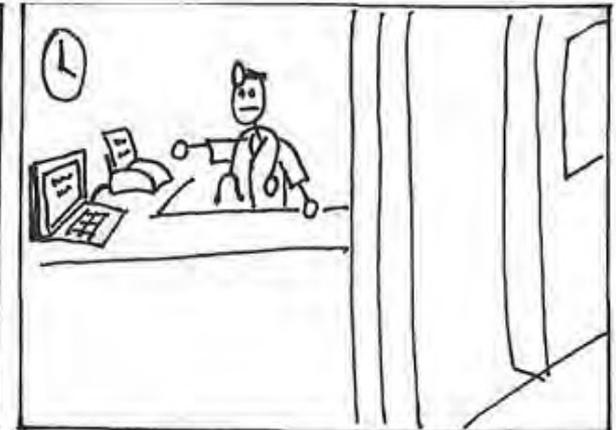
Guideline: It is often necessary, but keep it short



1. At home, Mary checks her blood pressure.



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



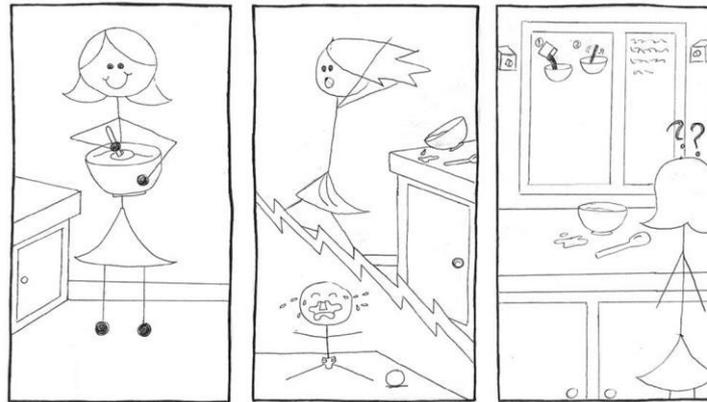
3. The information is made available to her doctor.

Short text is more effective, less likely to over-explain

Watch for cases where text induces weird biases

# 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

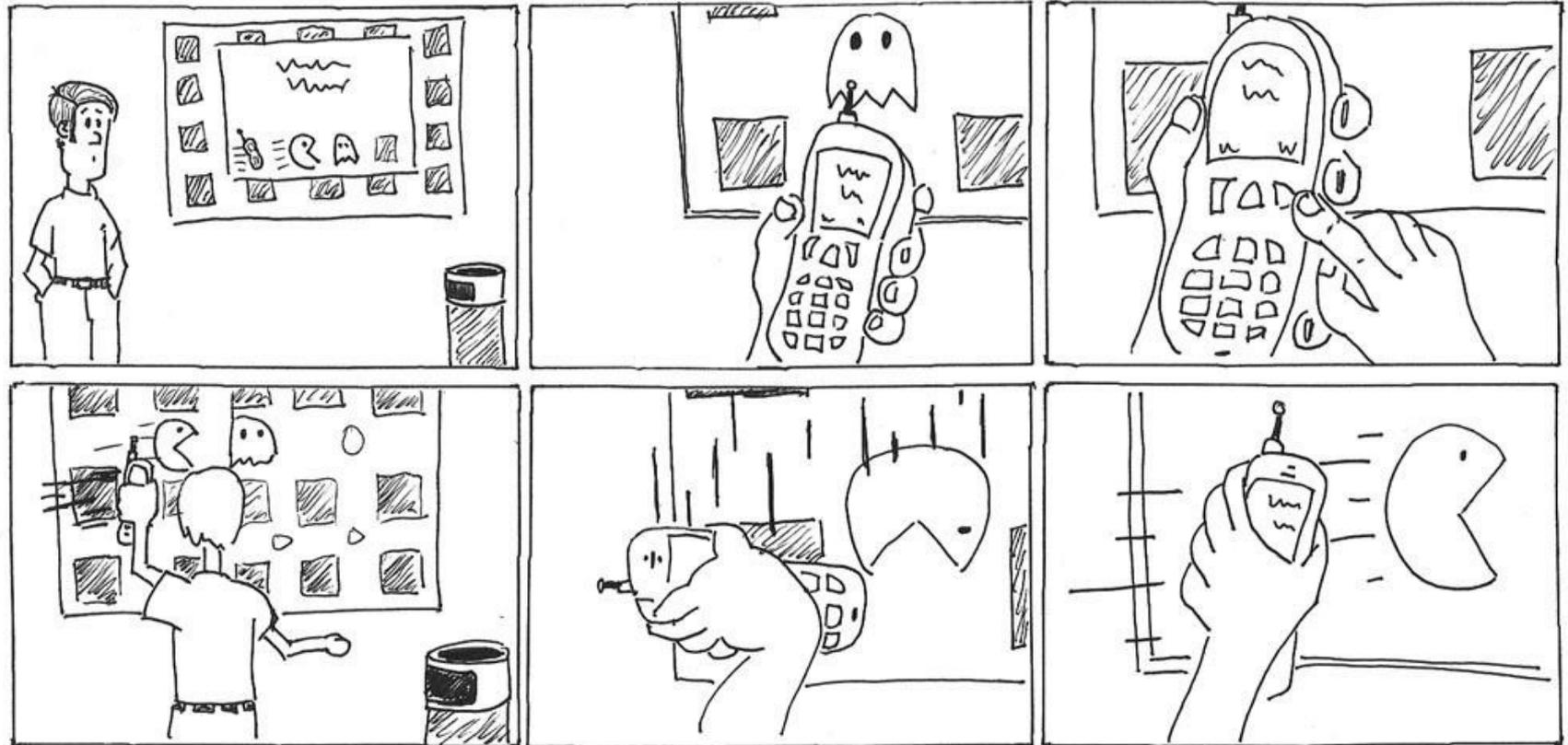
Potentially longer for design clients

More is not always better

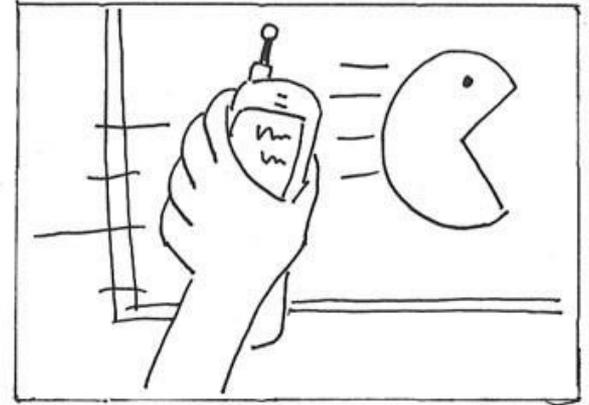
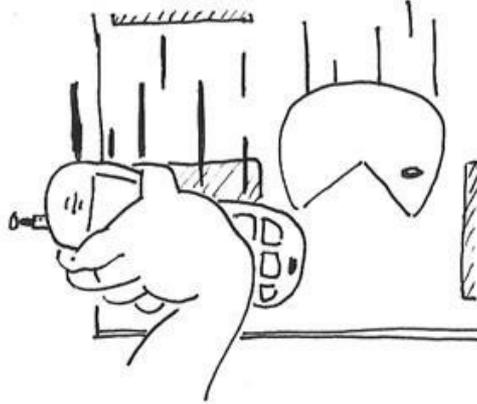
May lose focus of story

May lose attention

# 4. How many frames?



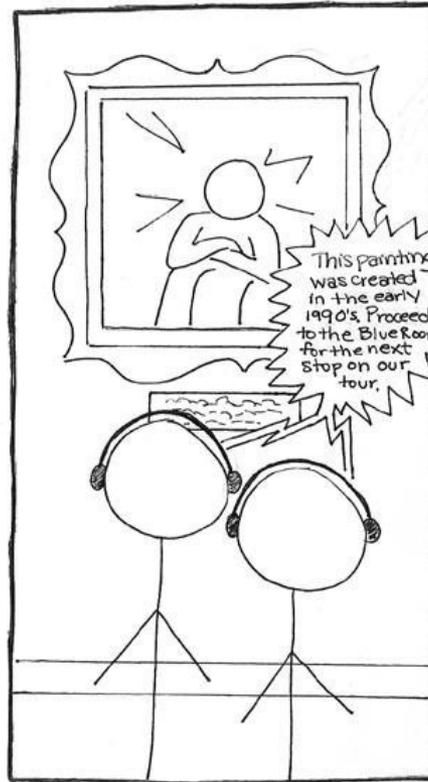
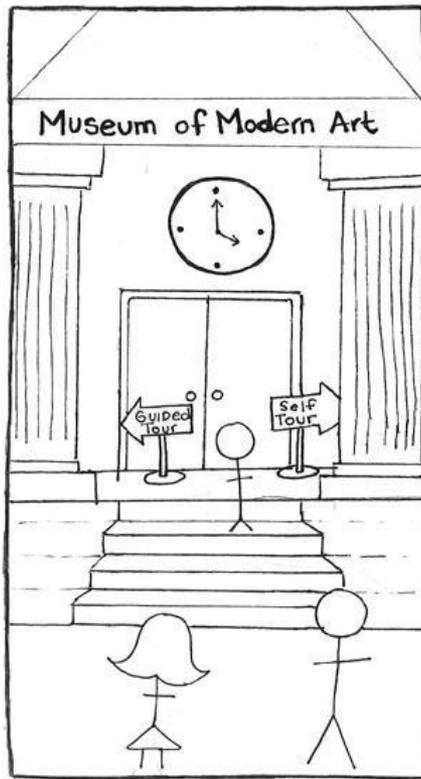
# 4. How many frames?



People found the extra panels were not needed

# 5. Passage of Time

Guideline: Only use if necessary to understand



# 5. Passage of Time

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.

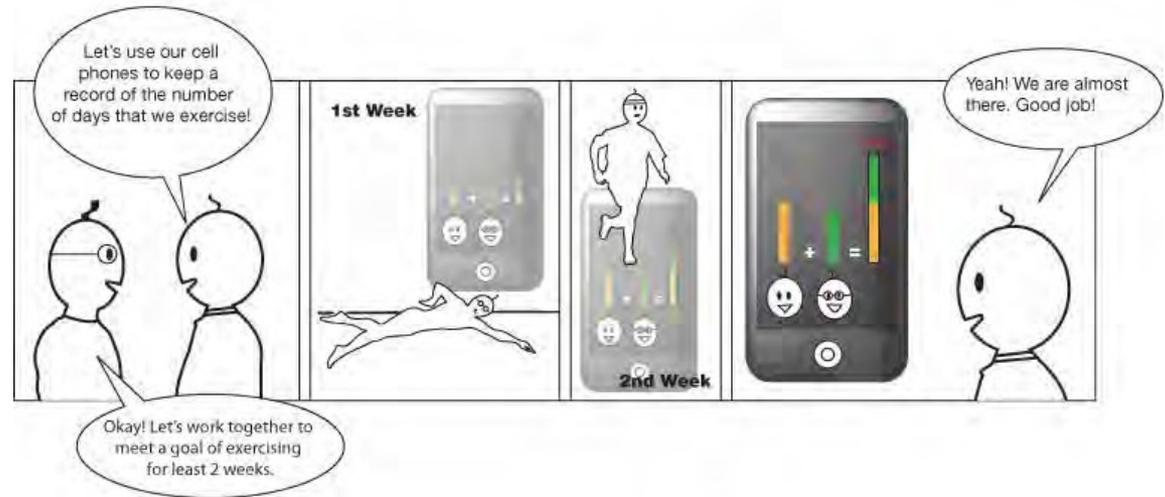
## Supportive



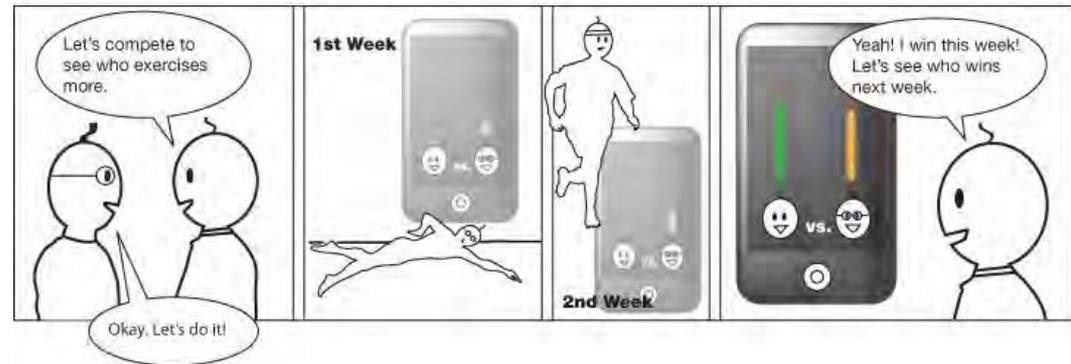
Cell phone is used to keep track of one's fitness goal.

# Storyboards for Comparing Ideas

## Cooperative



## Competitive

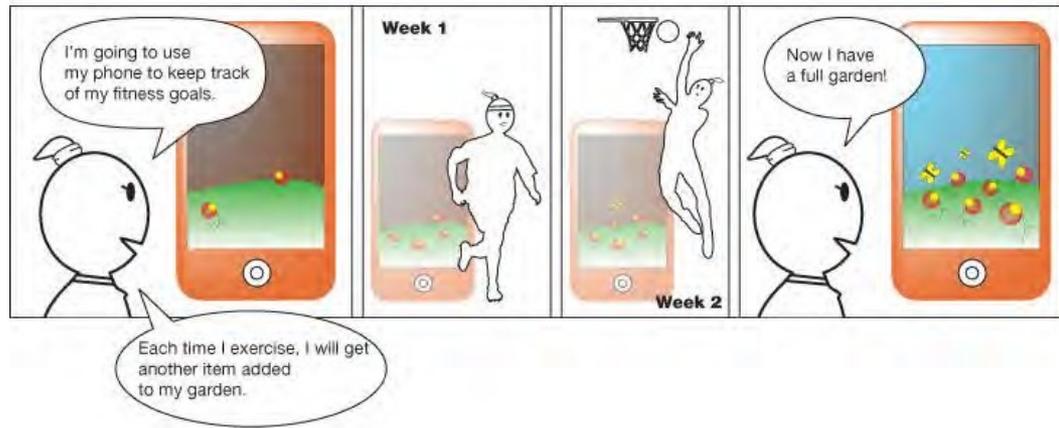


# Storyboards for Comparing Ideas

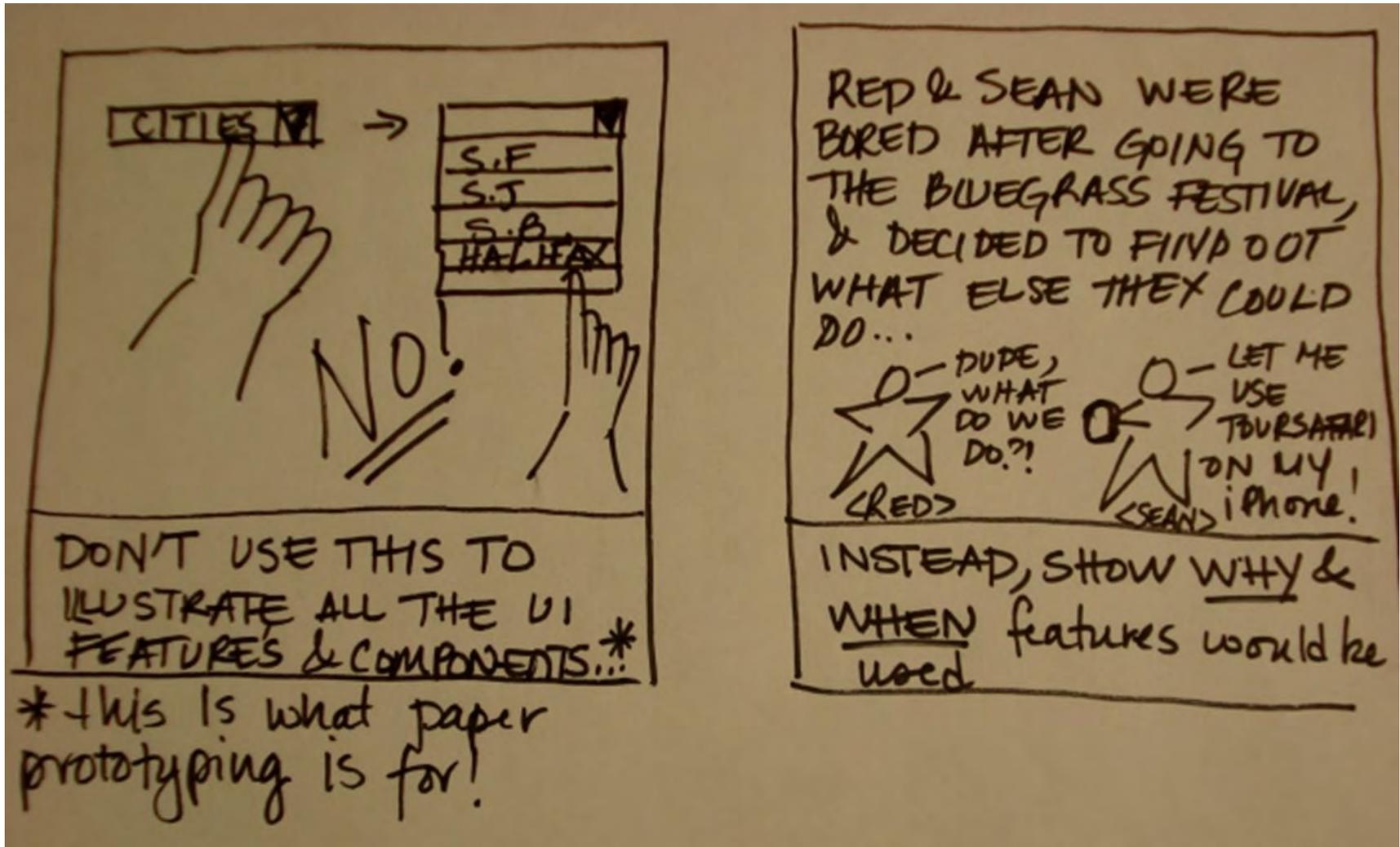
## Negative Reinforcement



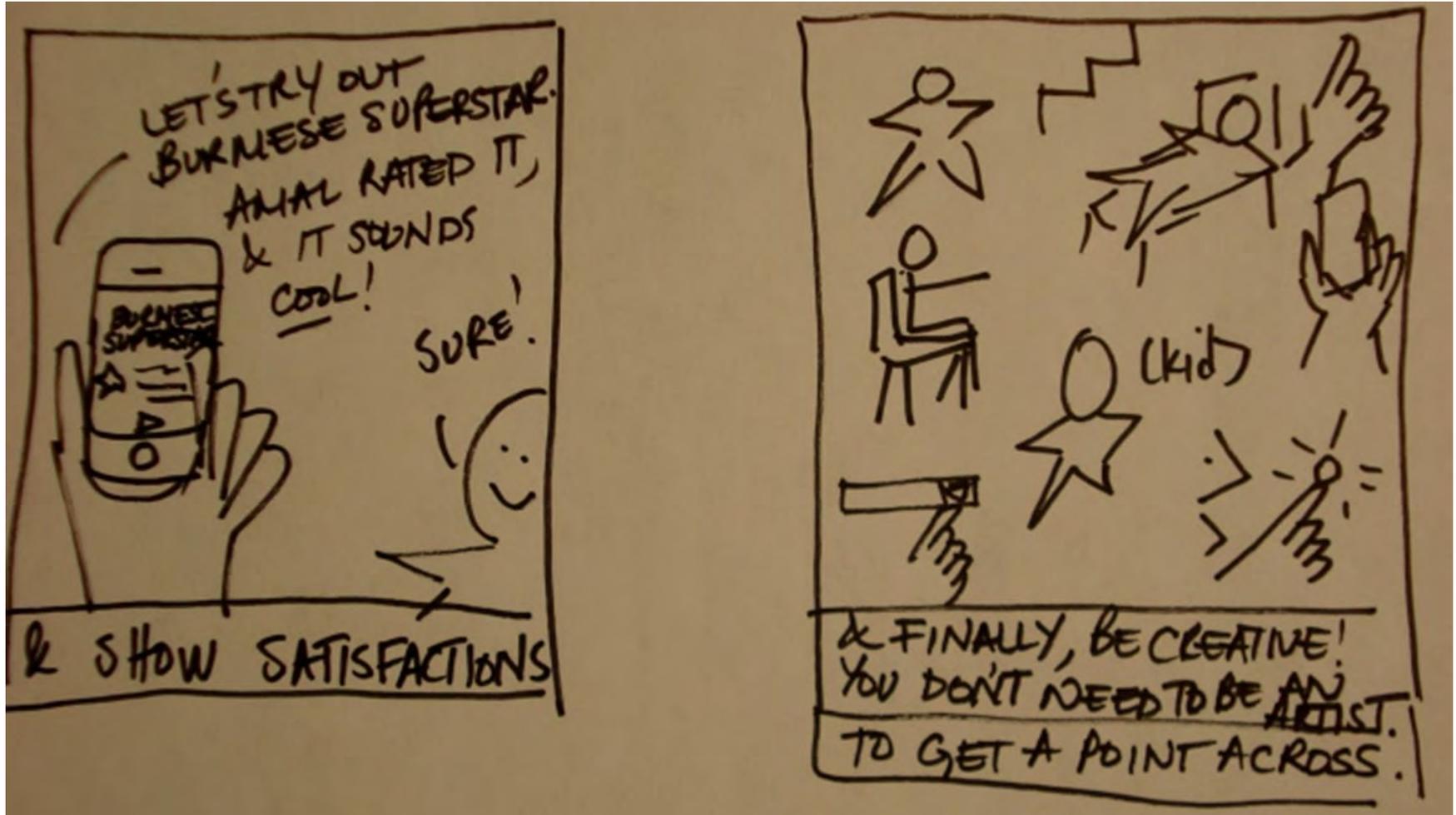
## Positive Reinforcement



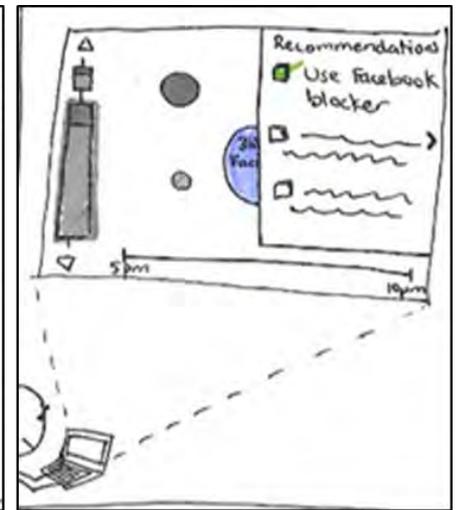
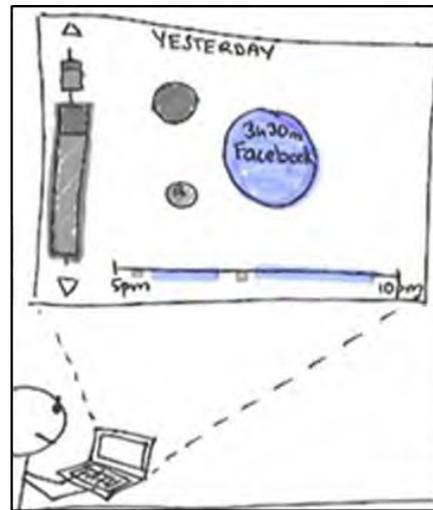
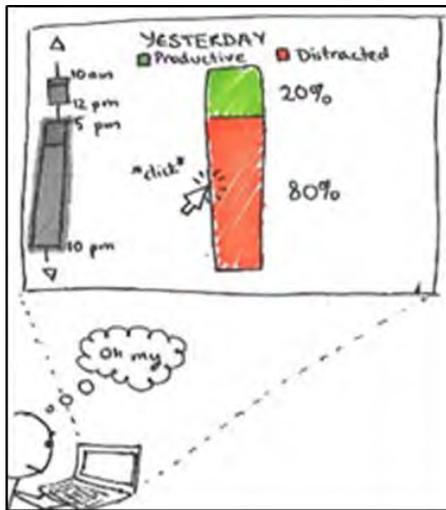
# Amal's Guide to Storyboarding



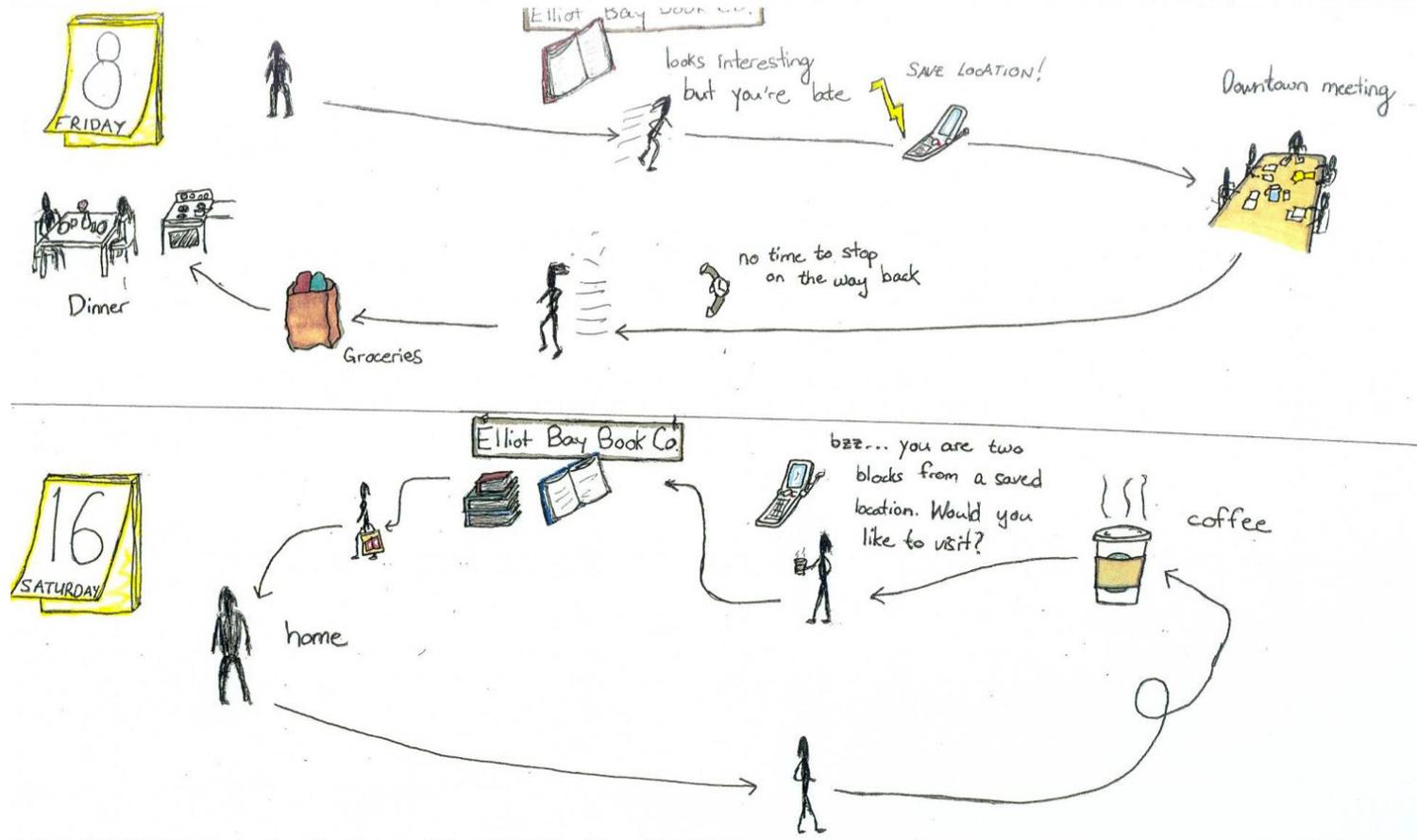
# Amal's Guide to Storyboarding



# Selective Use of Color



# Selective Use of Color



# Team activity

Again, using your project as a basis:

Create one storyboard that presents

- one of your **personas**,
- and one of the **tasks** you plan to support,
- IMPORTANT: I still don't want details on the **solution**.

# Value of Animation or Video

Can illustrate critical timing

Can be more engaging than written or storyboard

Can help 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

# 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

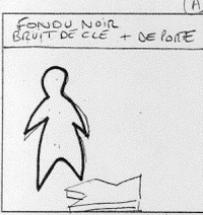
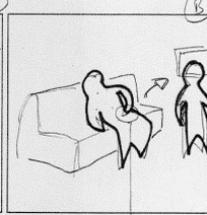
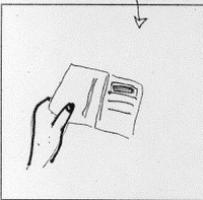
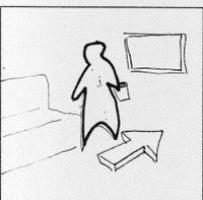
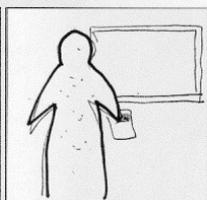
Review field data

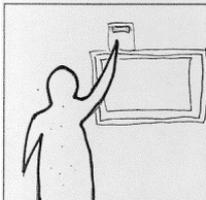
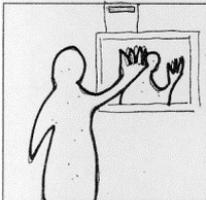
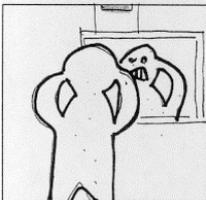
Review ideas from brainstorm

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>FONDU NOIR BRUIT DE CLE + DE PORTE</p> 	<p>(A)</p> 	<p>SCENARIO</p> <p>DECORS MONIQUES MONT   S'ASSOIE SUR LE CANAPE CAMERA PORTE FERME DANS LA BUHE OBS</p>
		<p>SCENARIO</p> <p>DECORS SORT SON PORTEFEUILLE (...) CAMERA OBS</p>
		<p>SCENARIO</p> <p>DECORS CANAPE → VIDEO PROBE CAMERA OBS</p>

	<p>SCENARIO</p> <p>DECORS FEEDBACK ECRAN CAMERA OBS</p>
	<p>SCENARIO GAINACE 1</p> <p>DECORS</p> <p>CAMERA</p> <p>OBS  VOIR BOUQUIN SPOOTER VUE DE FACE POUR INCrustATION</p>
	<p>SCENARIO</p> <p>DECORS GAINACE 2 CAMERA OBS</p>

# Steps to Create a Video Prototype

Shoot a video clip for each storyboard card

Avoid editing in the camera, just shoot scenes

Use titles to separate clips

Like a silent movie

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

If you make an error, just reshoot it