

Informatics 134

Project in User Interaction Software

Agenda

Thinking about Design
Ideation and Brainstorming
Storyboarding
Prototyping

Thinking About Design

Thinking About Design

“Design is a plan for arranging elements in such a way as best to accomplish a particular purpose.” - Charles Eames

In HCI,

Plan: processes and methods

Arranging elements: a naturally creative endeavor

Accomplish: through tools or other things

Particular purpose: human use and other people-centered concerns

Thinking About Design

In HCI we talk a lot about “Users” and “Experience”

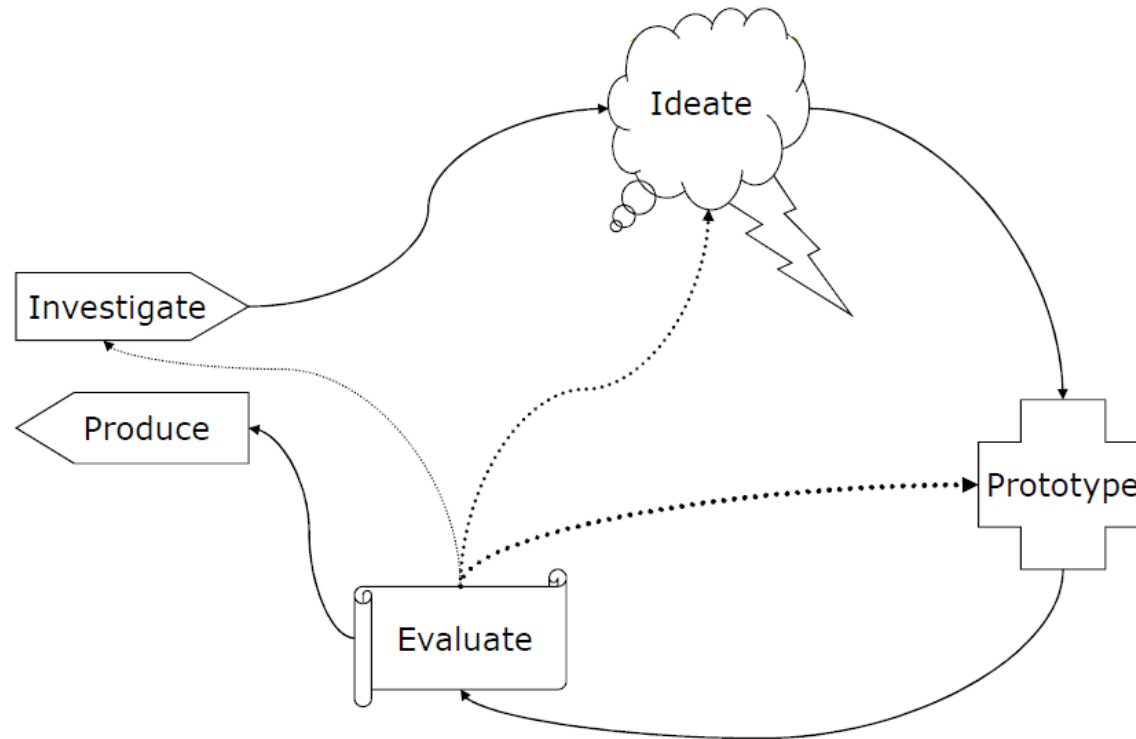
User Centered Design?

User Experience Design?

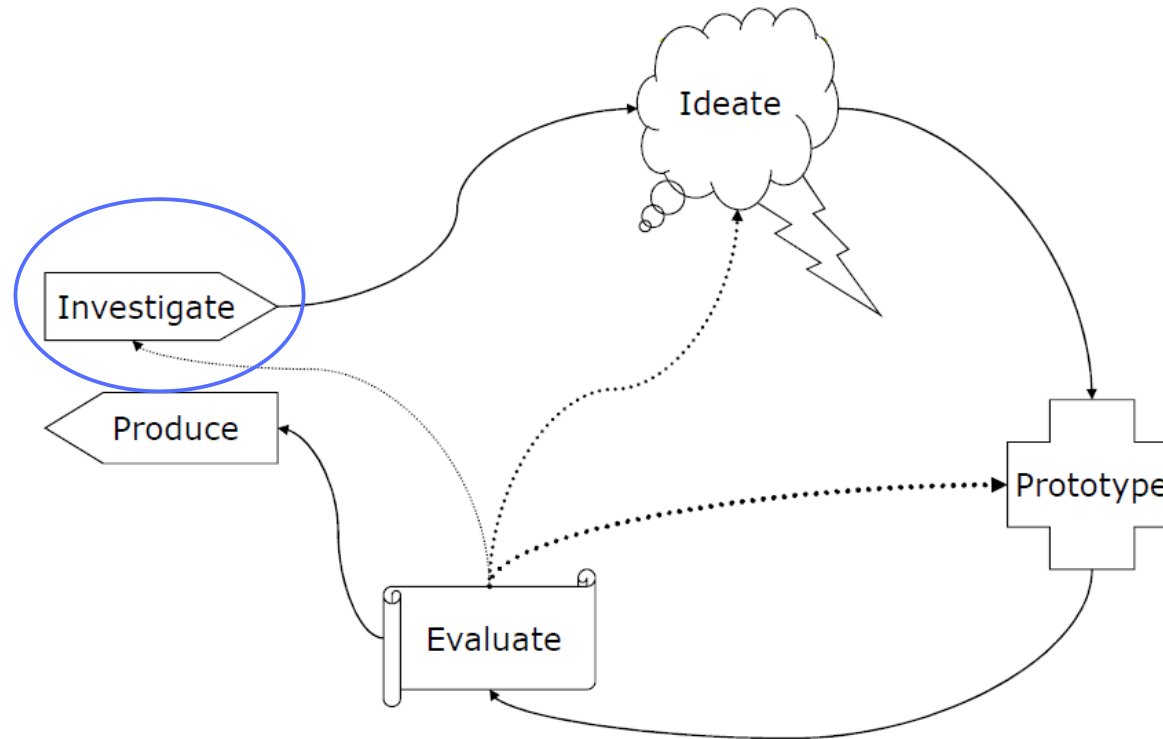
What do you think they have in common?

Iteration and Cycles!

Thinking About Design



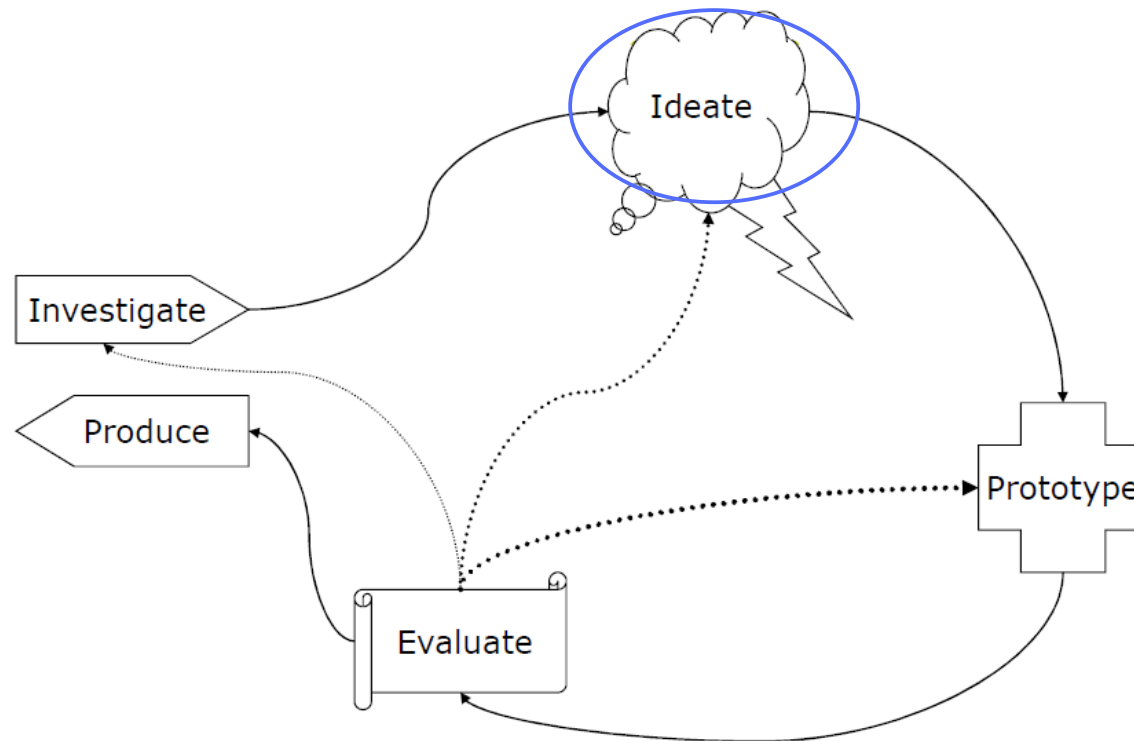
Thinking About Design



Investigate

- Learn about stakeholders
- Discover goals and needs
- How is it done now?
- What is wanted?
- What else has been tried?

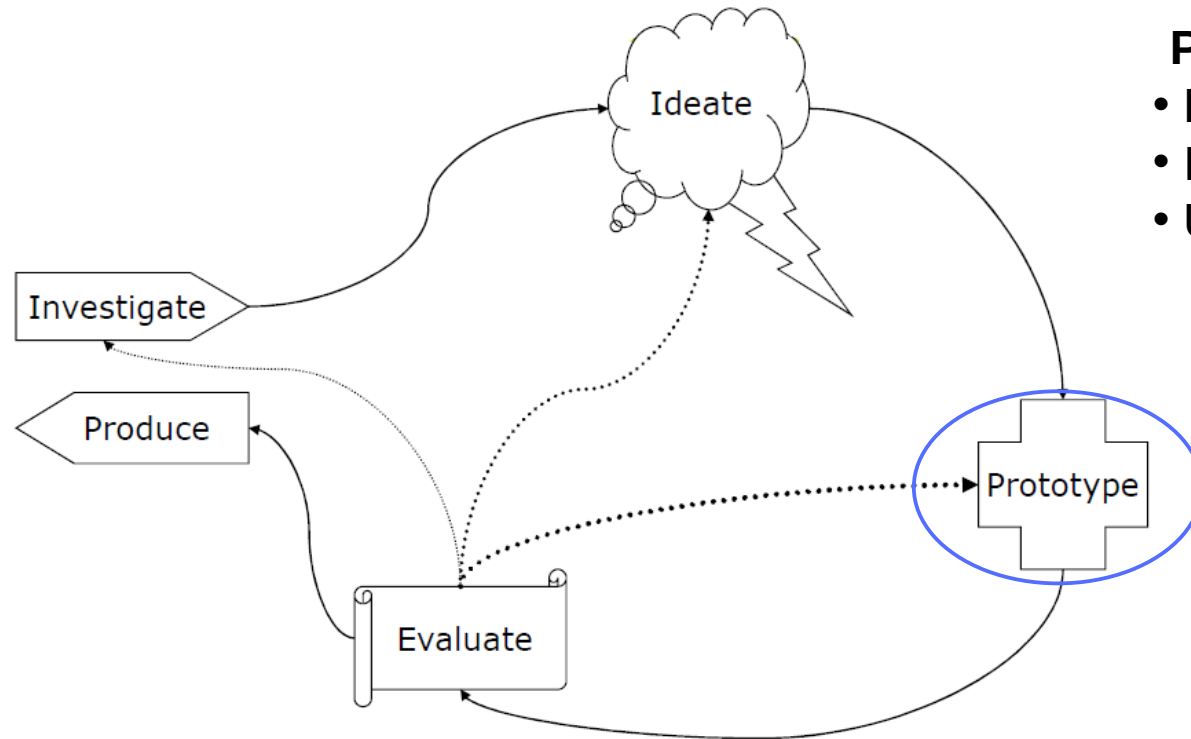
Thinking About Design



Ideate

- Generate lots of ideas
- Grasp issues and potential solutions

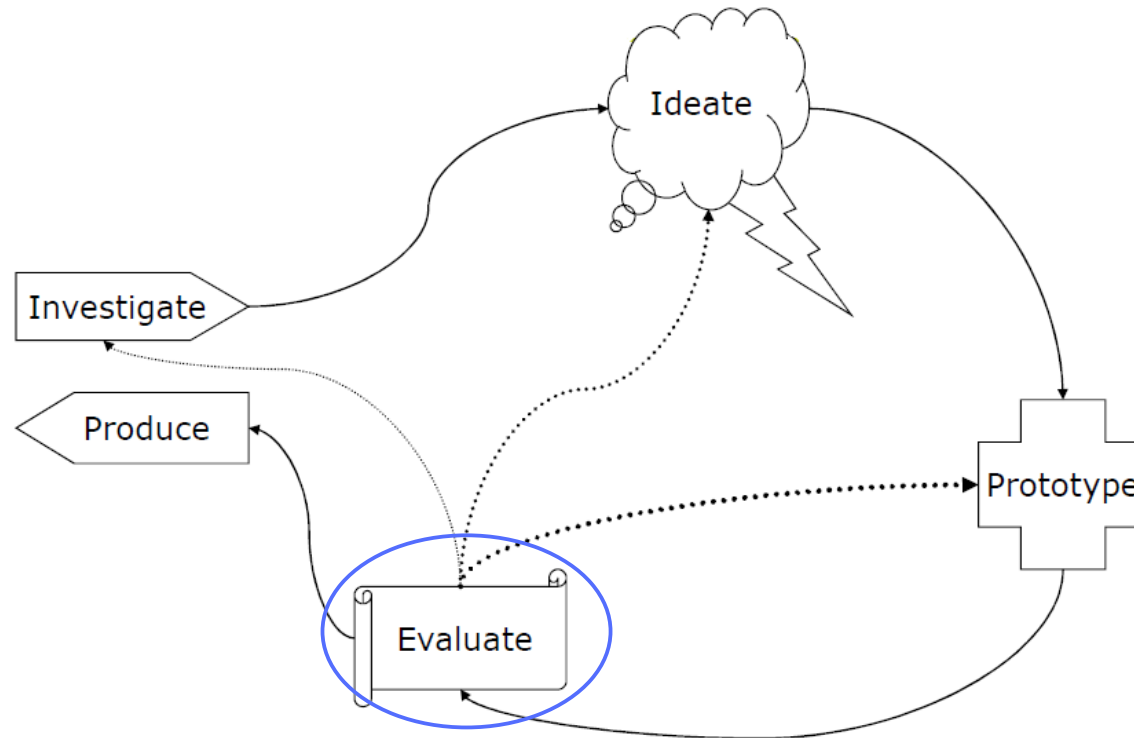
Thinking About Design



Prototype

- Produce something tangible
- Identify challenges
- Uncover subtleties

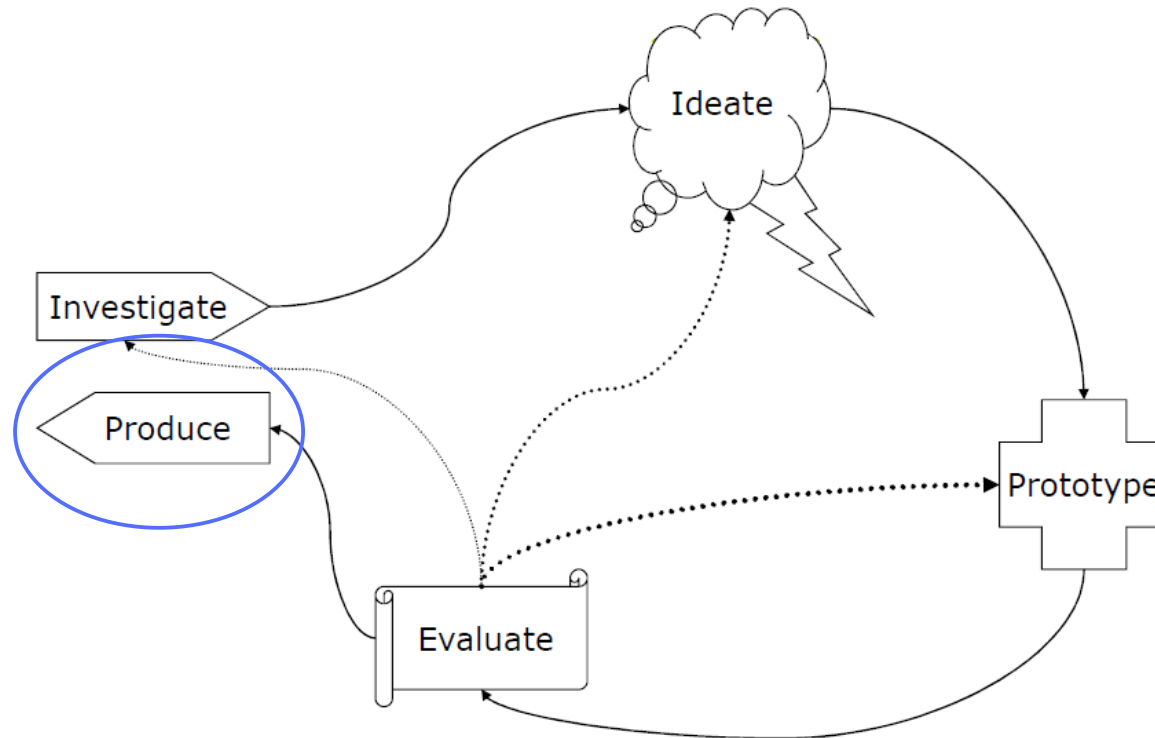
Thinking About Design



Evaluate

- Discover problems
- Assess progress
- Determine next steps

Thinking About Design

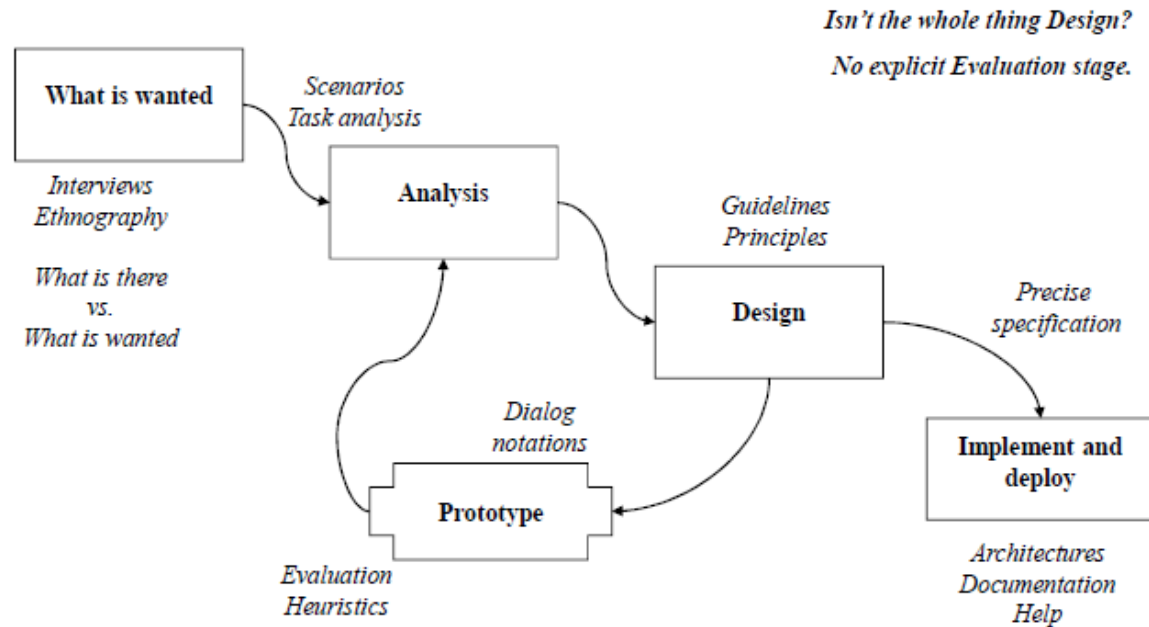


Produce

- Build final product
- Ramp up marketing, support, and
- maintenance

Thinking About Design

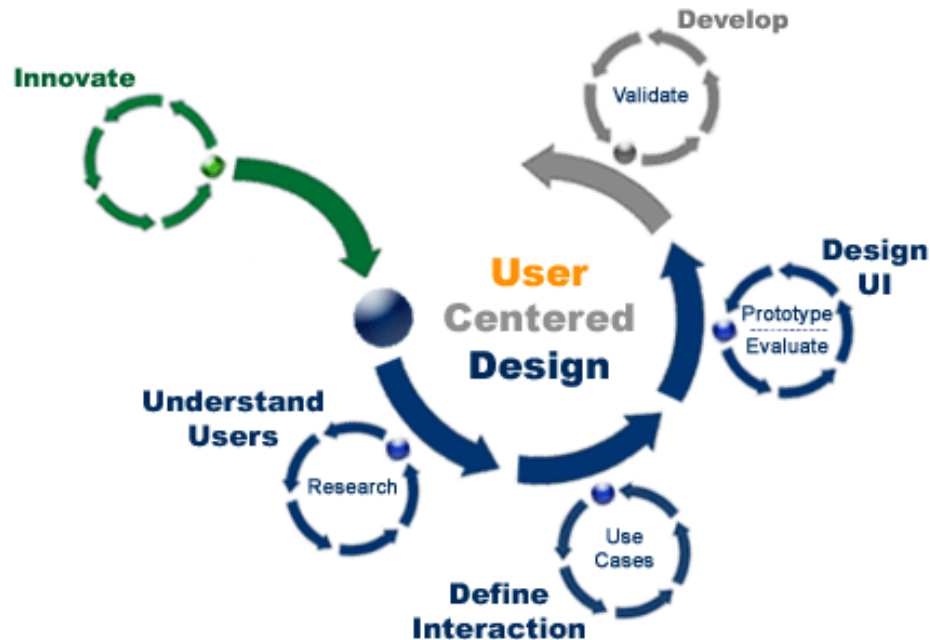
There are many design processes...



DFAB

Thinking About Design

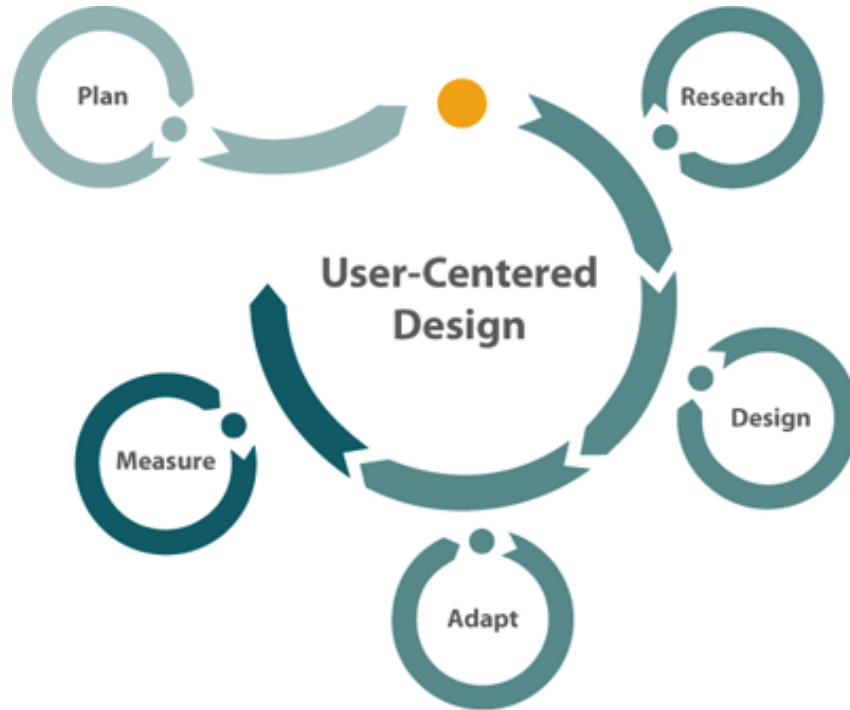
There are many design processes...



SAP

Thinking About Design

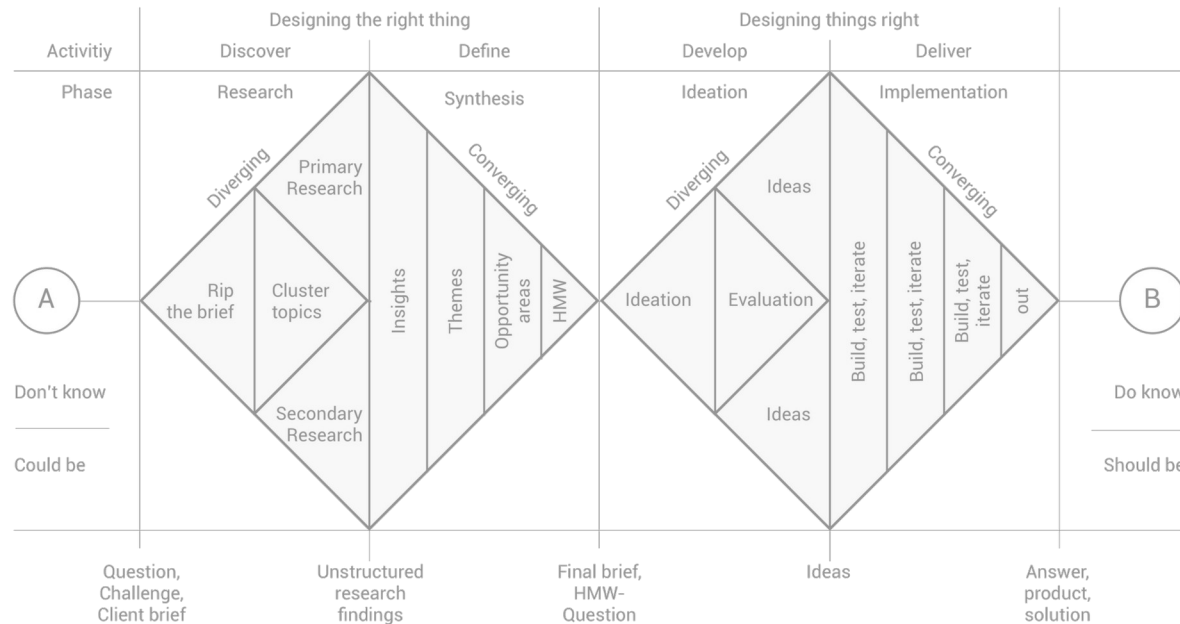
There are many design processes...



Also SAP

Thinking About Design

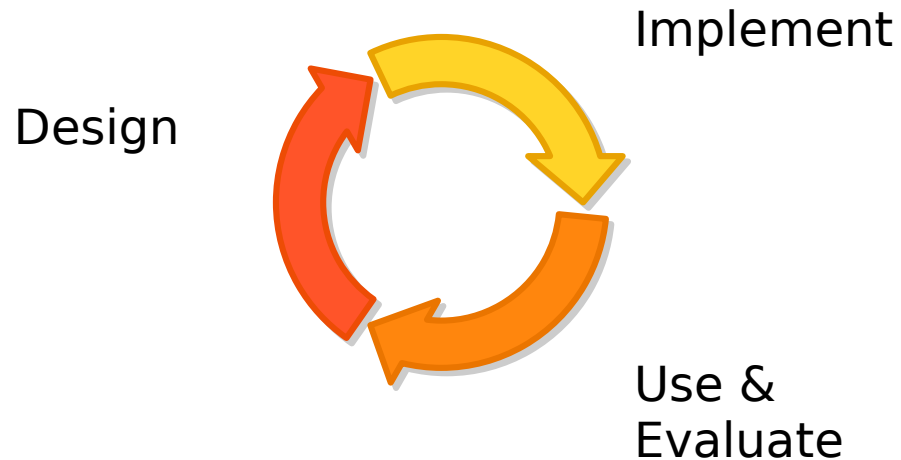
There are many design processes...



**Double
Diamond**

Thinking About Design

There are many design processes...



**Simple
Version**

Thinking About Design

There is not one process that is best. But you should have a process!

Some Examples:

IDEO's Deep Dive Video (an oldie but goodie)

Part 1 - <http://www.youtube.com/watch?v=ooN05Q030Qo>

Part 2 - http://www.youtube.com/watch?v=7_sZy-kusw

Part 3 - <http://www.youtube.com/watch?v=FxO8t9Sonk8>

AirBnB's The Way we Build

<https://airbnb.design/the-way-we-build/>

Google Design Sprint:

<https://www.interaction-design.org/literature/article/make-your-ux-design-process-agile-using-google-s-methodology>

Thinking About Design

Investigate - This Week

Ideate - This Week

Prototype - Next Week

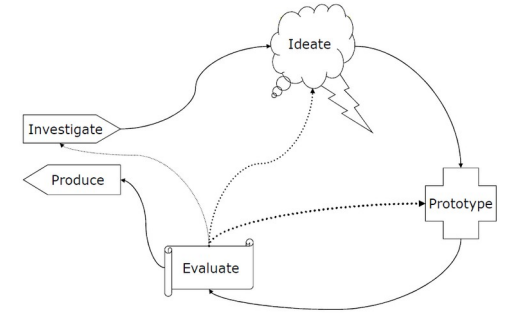
Evaluate - Coming Soon!

Produce - Week 5 - 10

Thinking About Design

Why Investigate?

To understand the world in which your users and design will live.



Thinking About Design

Why Investigate?

Some questions to consider...

Who is your audience (users, stakeholders)?

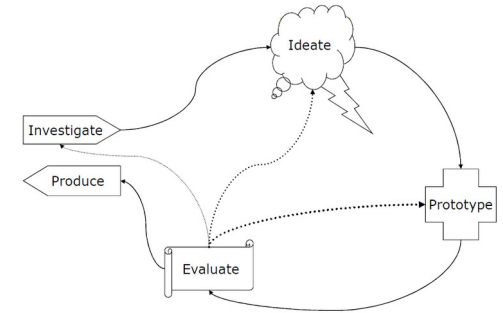
What are the requirements?

How does your audience do it now?

How long does it take?

What does your audience want? Need?

Do other solutions exist?



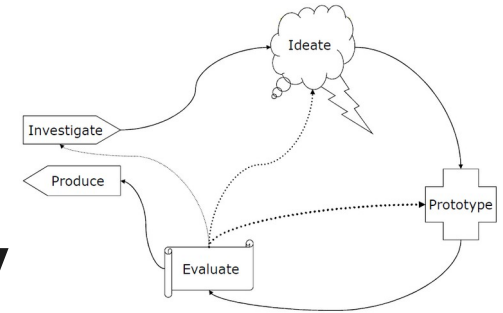
Thinking About Design

Why Ideate?

Idea generation...the more the better.

Increase chances for success by systematically evaluating a large volume of ideas.

Avoid picking your first idea, keep ideating!



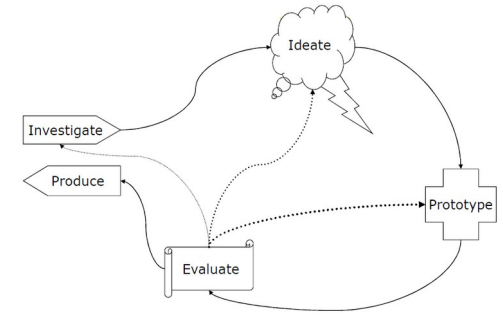
Thinking About Design

Why Prototype?

It's hard to evaluate a thing that does not exist

Helps your audience understand abstract concepts

Helps YOU identify future constraints and bring potential obstacles into view



Ideation and Brainstorming

Ideation and Brainstorming

Ideation...

How to come up with lots of ideas?

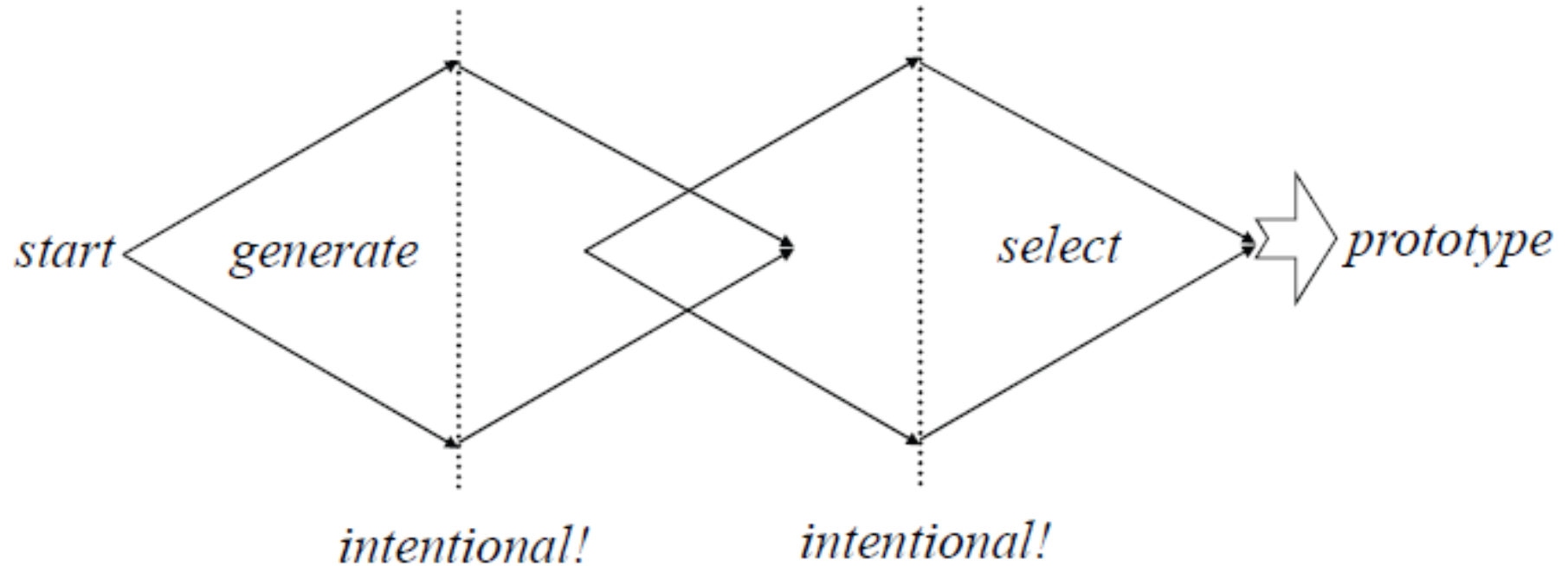
How to come up with the big ideas?

How to refine those ideas?

How to organize those ideas?

Ideation and Brainstorming

Idea Oscillation



Ideation and Brainstorming

Idea Oscillation

Why?

Creativity does not just pop up in bursts of brilliance...it requires:

Work, constraints, intelligence, and critical thinking...

Ideation and Brainstorming

How do we inspire creativity?

Immerse yourself in the world for which you are designing

Generate ideas...constantly (ahem...design notebook)!

Sketch your ideas to help think through them more clearly

Talk to people...anyone and everyone.

List to people...anyone and everyone.

Ideation and Brainstorming

Some approaches to inspiring ideas...

- **Take things from one domain and try them in another**
- **Leave your comfort zone**
- **Post your sketches around your workspace for inspiration**
- **Read...science fiction?**

Ideation and Brainstorming

Some approaches to inspiring ideas...

- **Modify existing design for new purpose**
- **Expand, minimize, substitute, rearrange, combine existing designs**
- **Look to current trends and extrapolate future possibilities**

Ideation and Brainstorming

Brainstorming

Working in groups is essential

Should approach with fun

Build assets (materials) and keep them visible

Ideation and Brainstorming

One approach...the Nominal Group Technique

State an open-ended question ("What are some ways we could tackle our design problem?").

Have each person spend several minutes in silence individually brainstorming all the possible ideas and jot these ideas down.

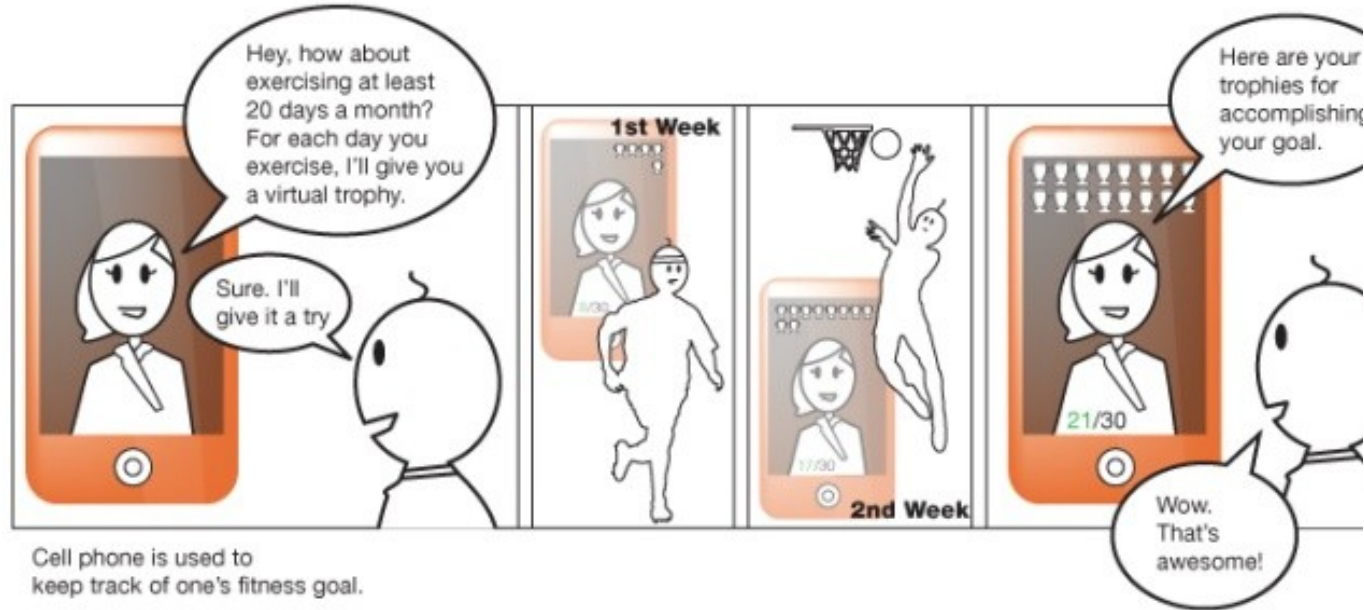
Collect the ideas by sharing them round robin fashion (one response per person each time), while all are recorded in key term, on a flip chart. No criticism is allowed, but clarification in response to questions is encouraged.

Have each person evaluate the ideas and individually and anonymously vote for the best ones

Share votes within the group and tabulate

Storyboarding

What is it?



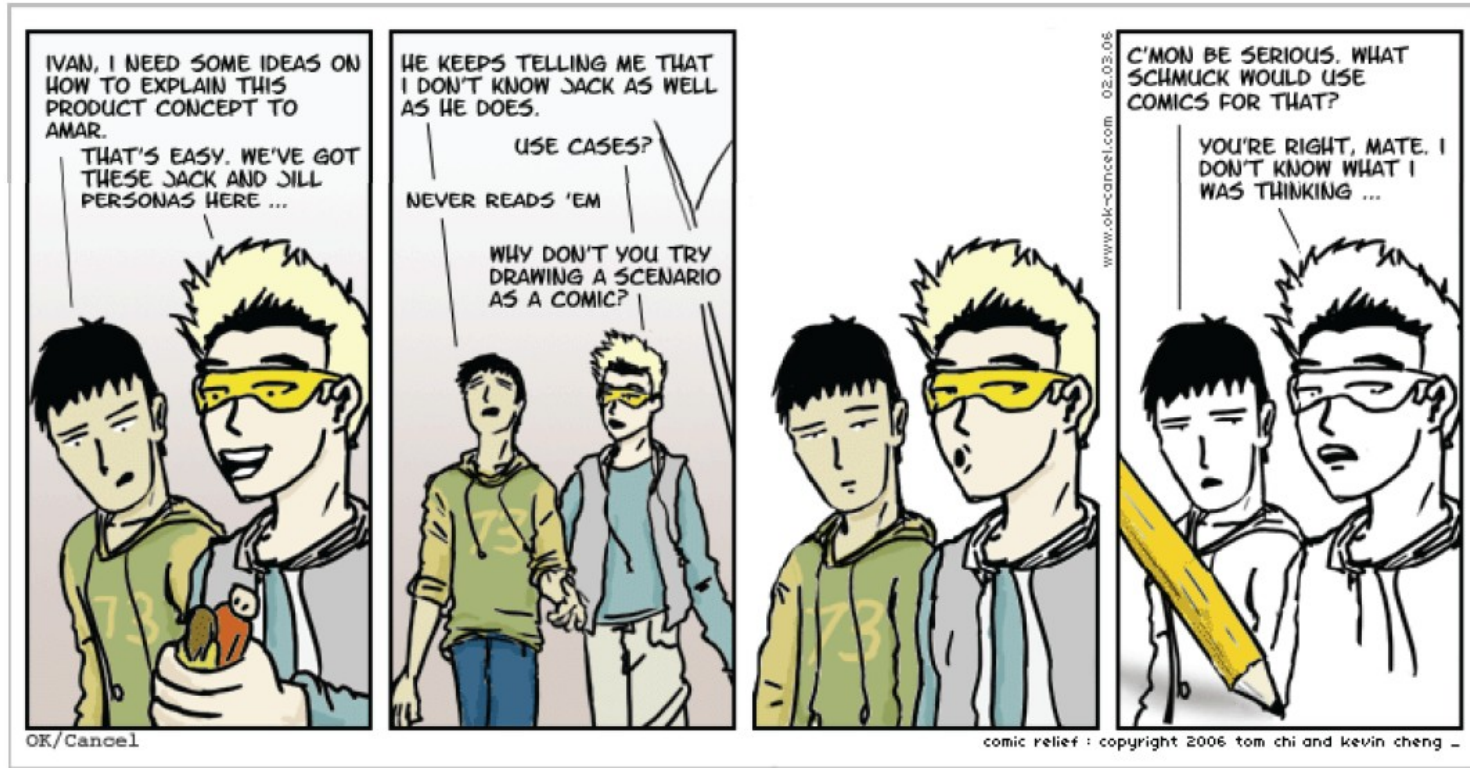
Storyboarding

Uses...

Movie and multimedia design

Product and software development

Storyboarding



Storyboarding

Process...

Determine the story (iterate)

Brainstorm!

Start with a scenario, break into logical segments

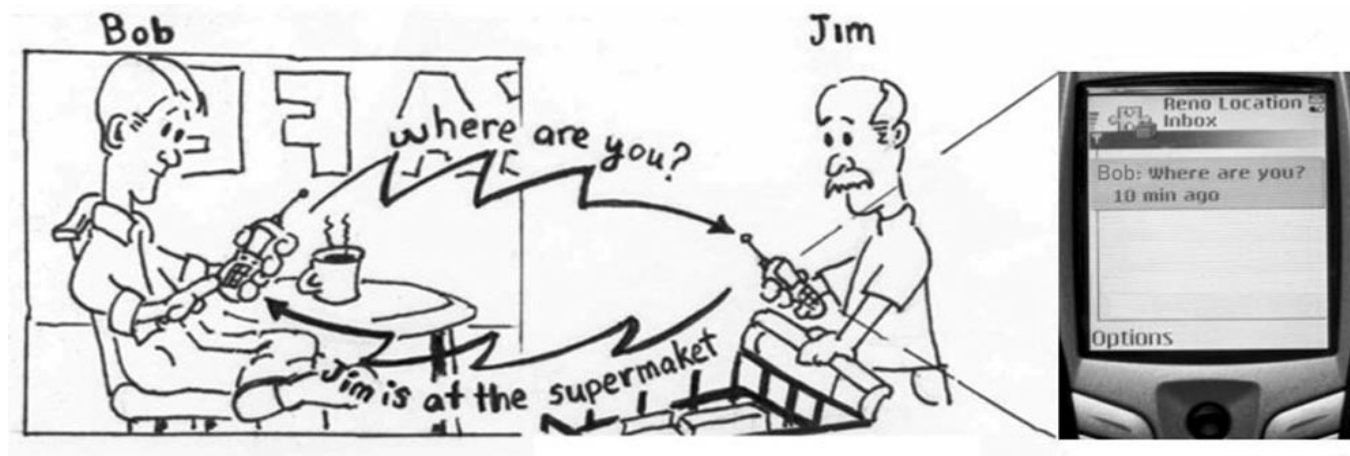
Sketch on pen/paper

Generate more polished art when ready to present

Storyboarding

Examples

If you're the user, how would you feel about this service? How do you think it would work?

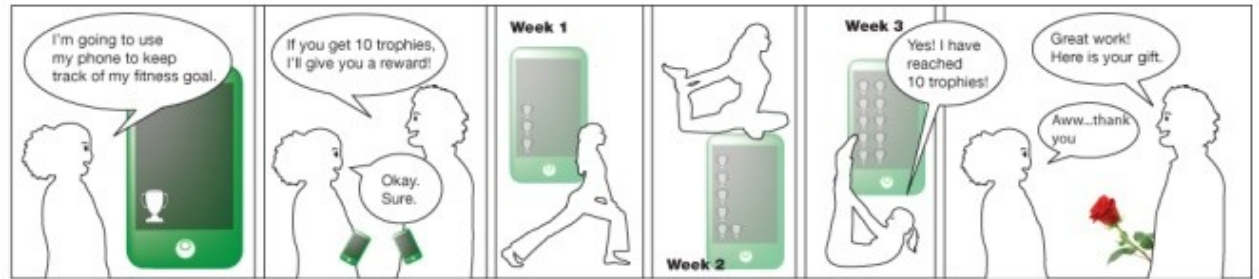


Storyboarding

Elements of a Storyboard

5 visual elements:

1. Level of detail
2. Inclusion of text
3. Inclusion of people & emotions
4. Number of frames
5. Portrayal of time

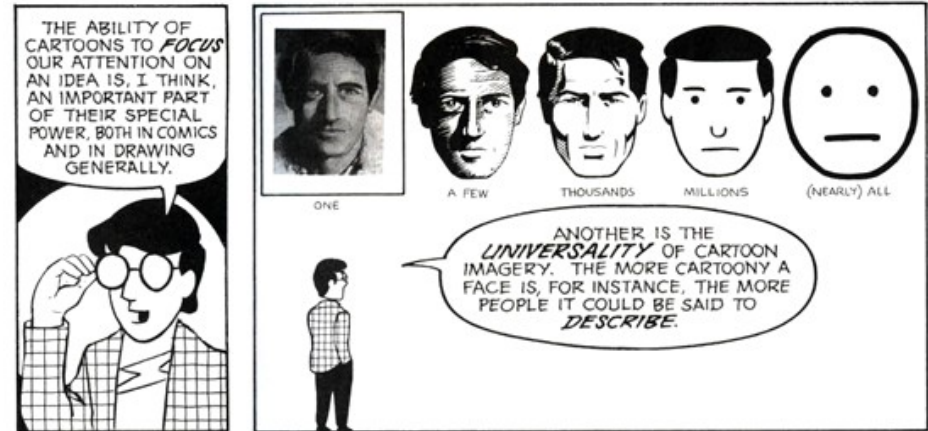


Truong et al., 2006

Storyboarding

1. Level of detail

Guideline: too much detail
can lose universality

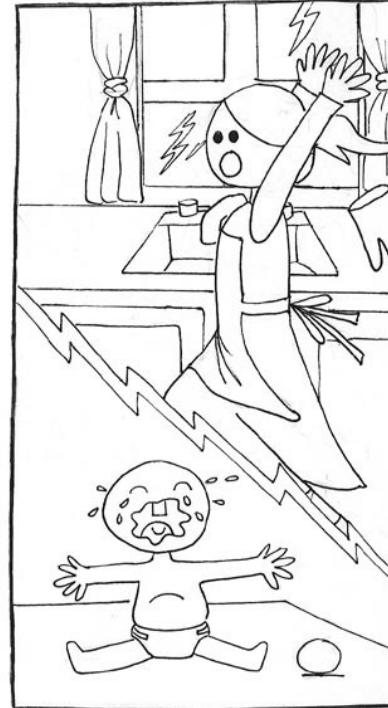


Credit: Scott McCloud

Storyboarding

1. Level of detail

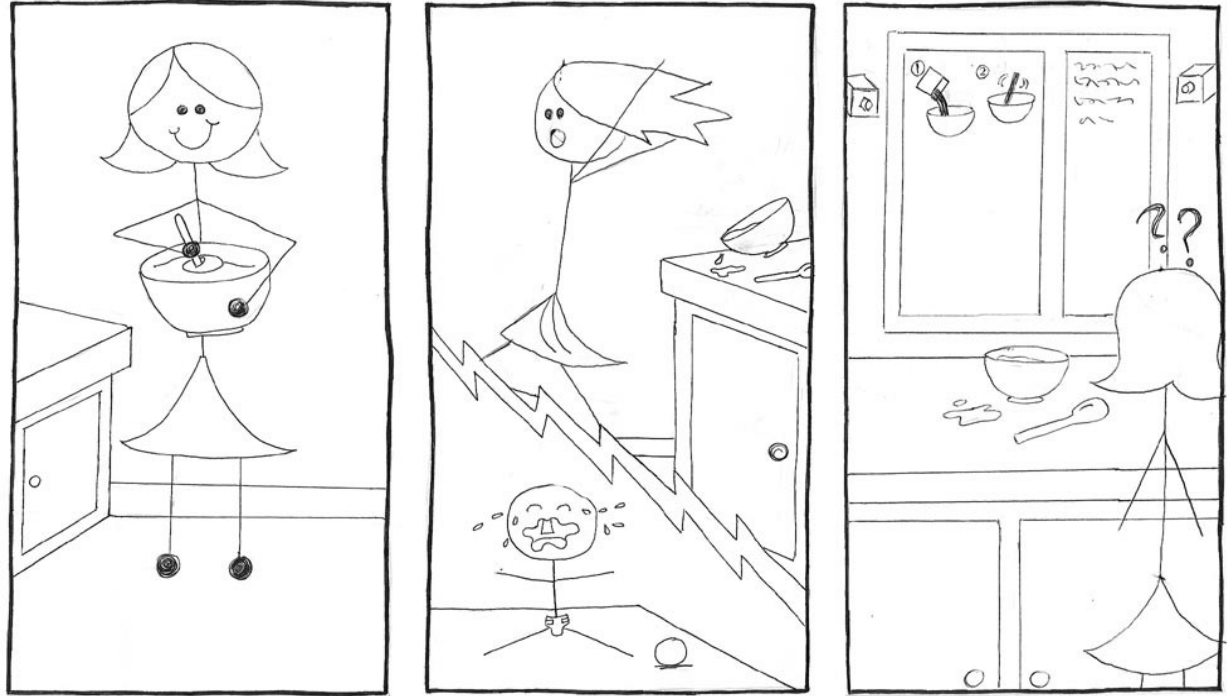
Too much?



Storyboarding

1. Level of detail

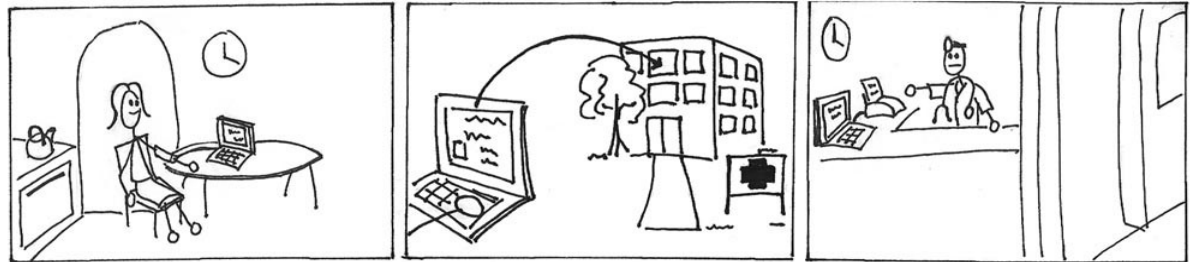
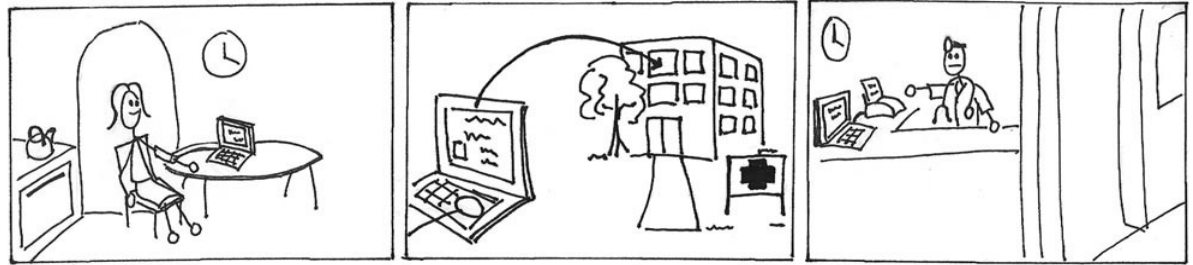
Better?



Storyboarding

2. Use of Text

Guideline: It's 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.

Storyboarding

3. Include People and Emotions

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

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

Storyboarding

4. Number of Frames

Guideline: 4-6 frames/panes is ideal

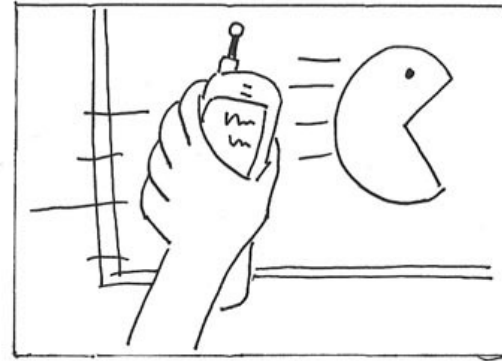
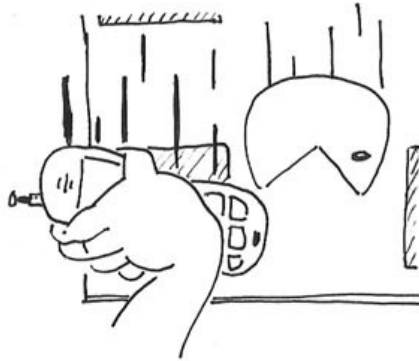
More is not always better (focus/attention)

Less work for the designer, but more effort to tell story succinctly



Storyboarding

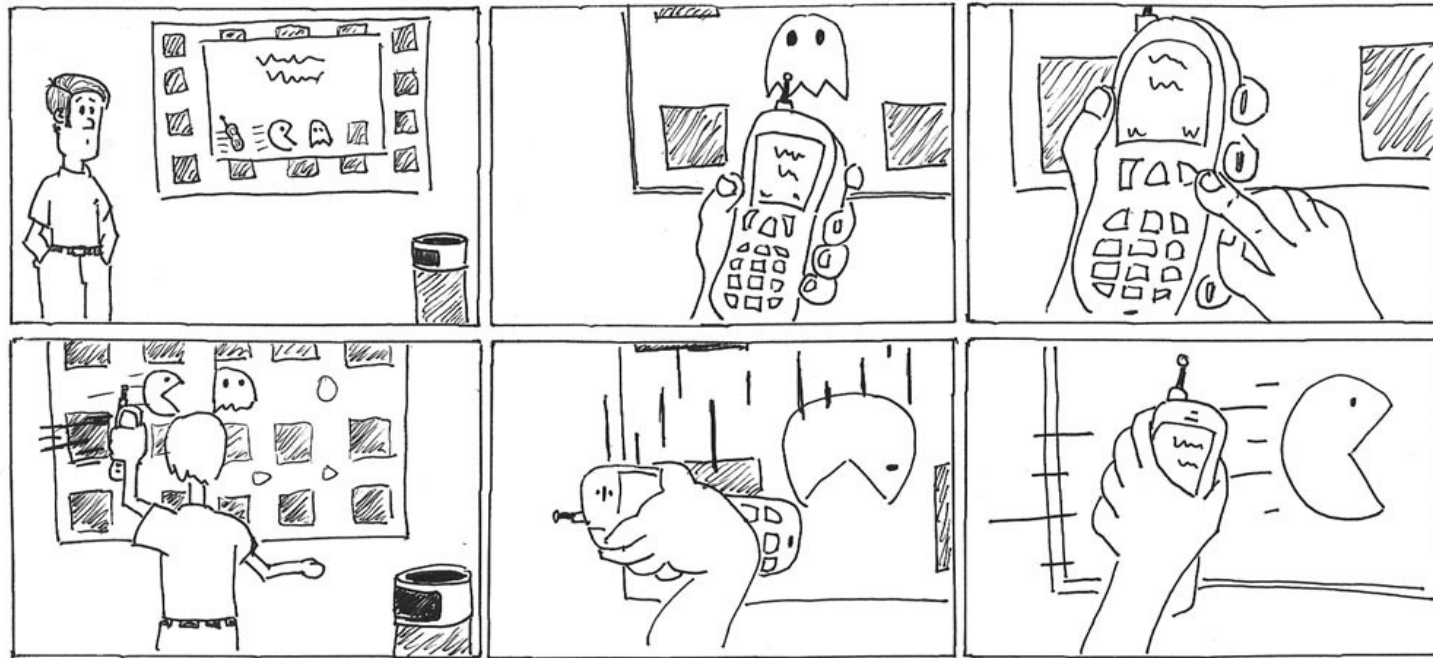
4. Number of Frames



Versus:

Storyboarding

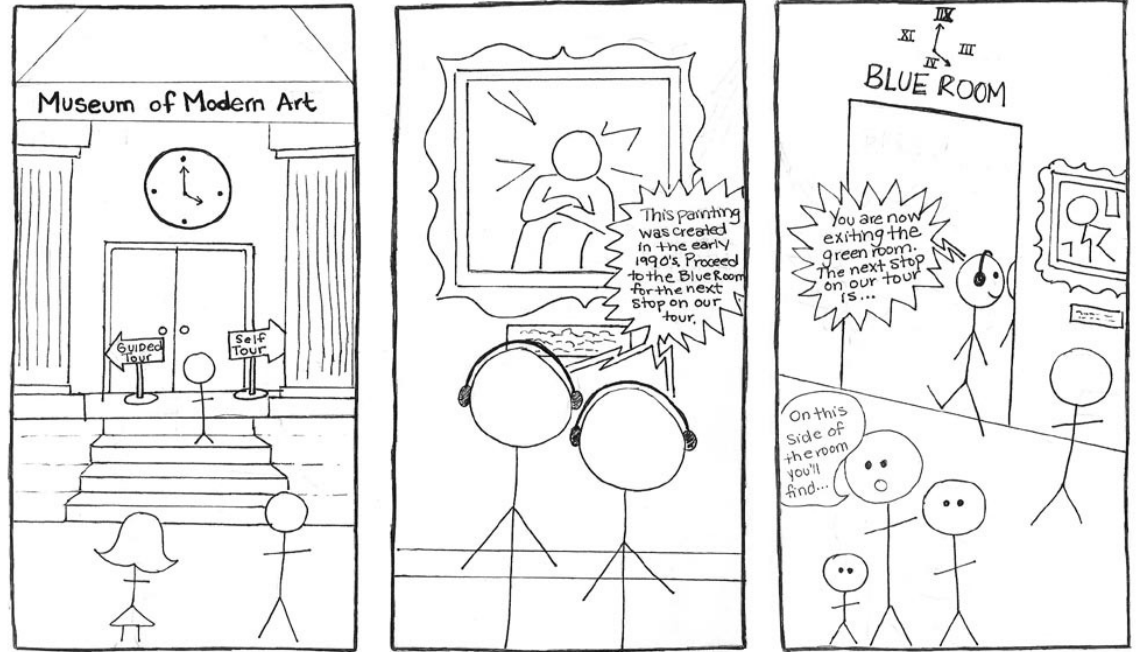
4. Number of Frames



Storyboarding

5. Passage of Time

Guideline: Only use if it's necessary to understand story



Storyboarding

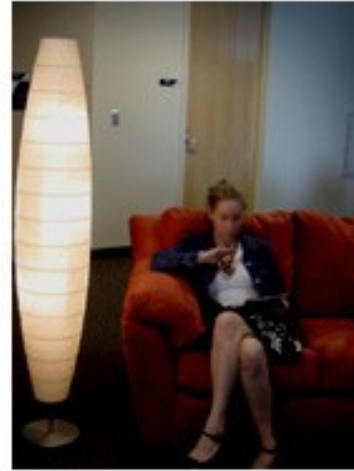
It doesn't have to be drawings..



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!



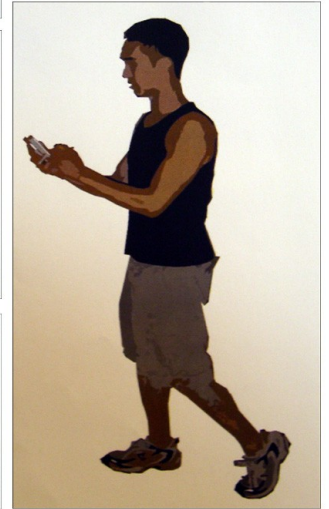
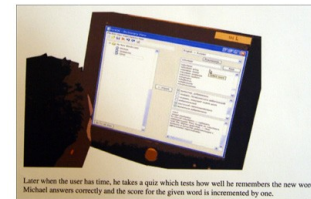
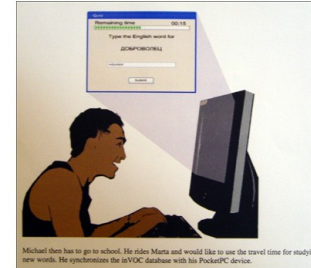
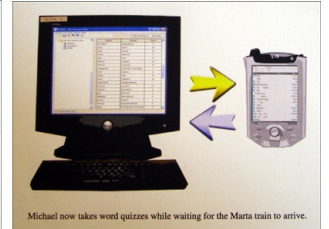
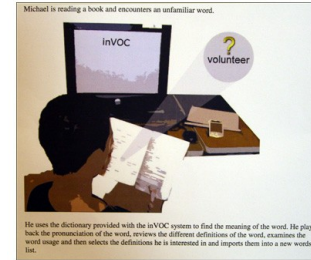
FINALLY, SHE CAN
READ HAPPILY.

Storyboarding

Blur out unnecessary detail

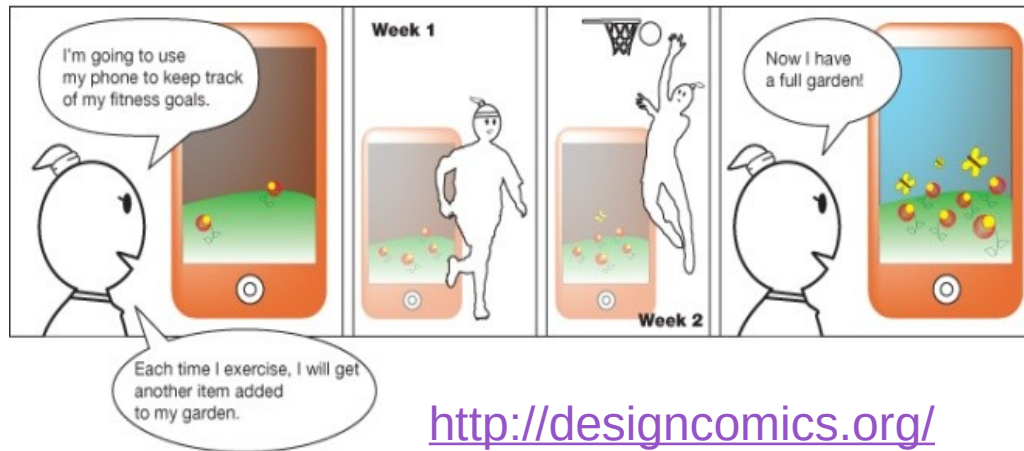
Use Photoshop filter “cut out” or similar

Also lots of apps that will do this with phone pics (e.g., Comic Life on iOS and Comic Strip It on Android)



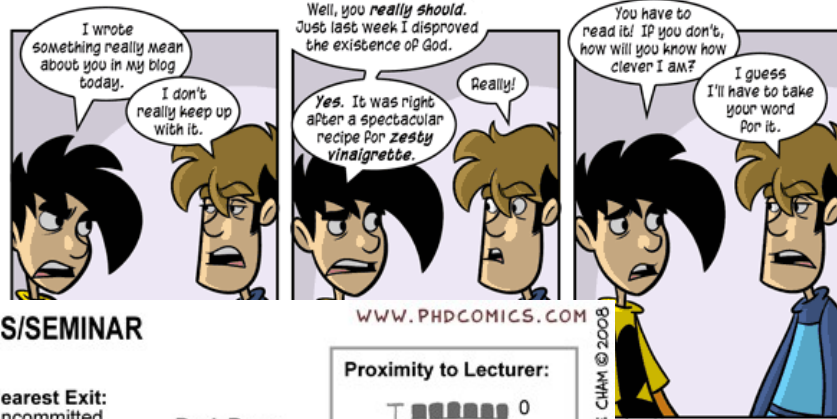
Storyboarding

Grab images from other sources



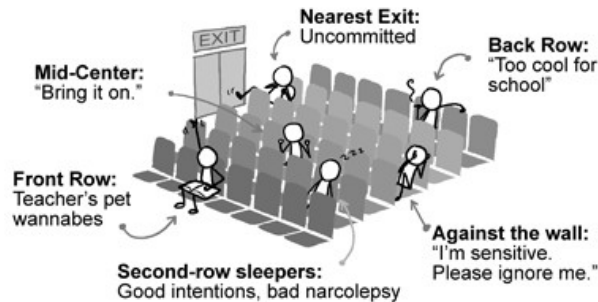
Storyboarding

Find inspiration from other sources

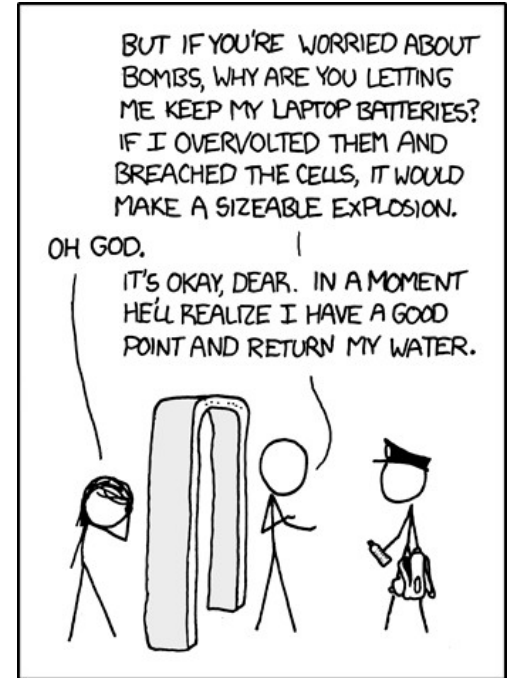
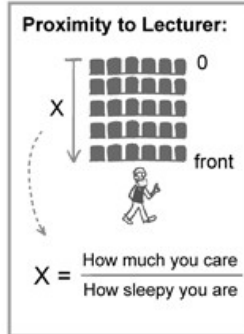


WHERE YOU SIT IN CLASS/SEMINAR

And what it says about you:



WWW.PHDCOMICS.COM



<http://www.ok-cancel.com>

Storyboarding

Summary

Think about how long you have a captive audience

Think about how much you want to tell

Think about options for presenting sequences of drawing



More Storyboard Examples

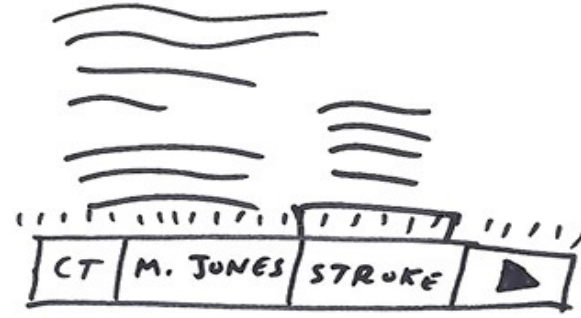
Tea Kettle Notification



Dr. Franklin is assigned to ultrasounds today. He moves through the ultrasound worklist, oblivious to the other cases in the RIS.



A red line begins to glow at the bottom of Dr. Franklin's screen, indicating an urgent and unclaimed stat.



When Dr. Franklin moves his mouse to the bottom of his screen, a window appears with information about the STAT and an option to claim it.

More Storyboard Examples

Sensor Detects Radiologist's Workstation Availability



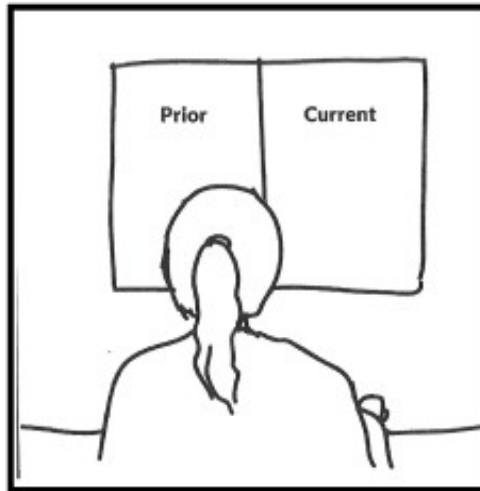
Dr. F decides to take a restroom break after sitting for 3 hours straight.

His workstation sensor detects his absence and updates his availability status.

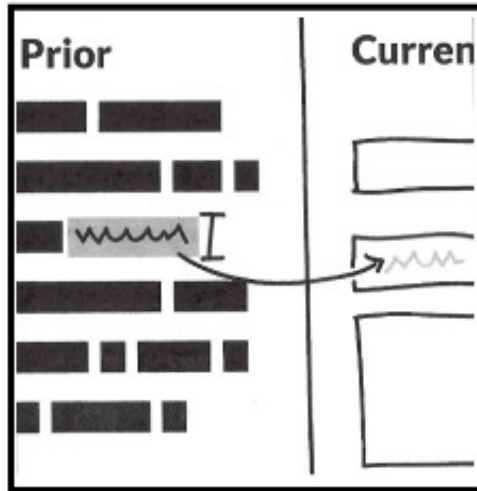
Dr. D. was about to call Dr. F., but upon seeing his status, knows to contact another doctor instead.

More Storyboard Examples

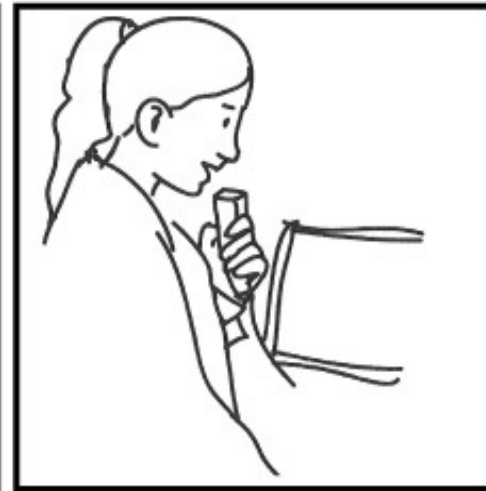
Data Transfer via Highlighting



Dr. A. is looking at priors with dosage information that is related to the current report that she is working on.



She highlights the text from the previous report, and it is automatically copied into the current report.

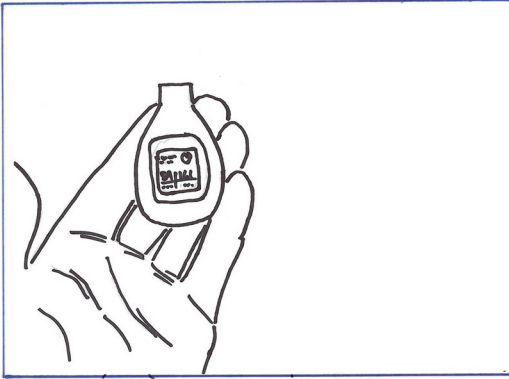


She no longer need to manually type in the info, thus speeding up her workflow.

More Storyboard Examples (a bit too wordy)



Jack has an intense job that keeps him extremely busy. He's frustrated that he needs to spend up to 2 hours waiting and seeing a doctor.



He buys the doctor fastpass from his insurance company. The pass is a card that has all his insurance and health information. It also constantly monitors his health over time and stores it on the card.



Jack goes to the doctor's office and scans his card. His name is called and he sees his doctor immediately without having to fill out any forms or have a nurse run any tests.