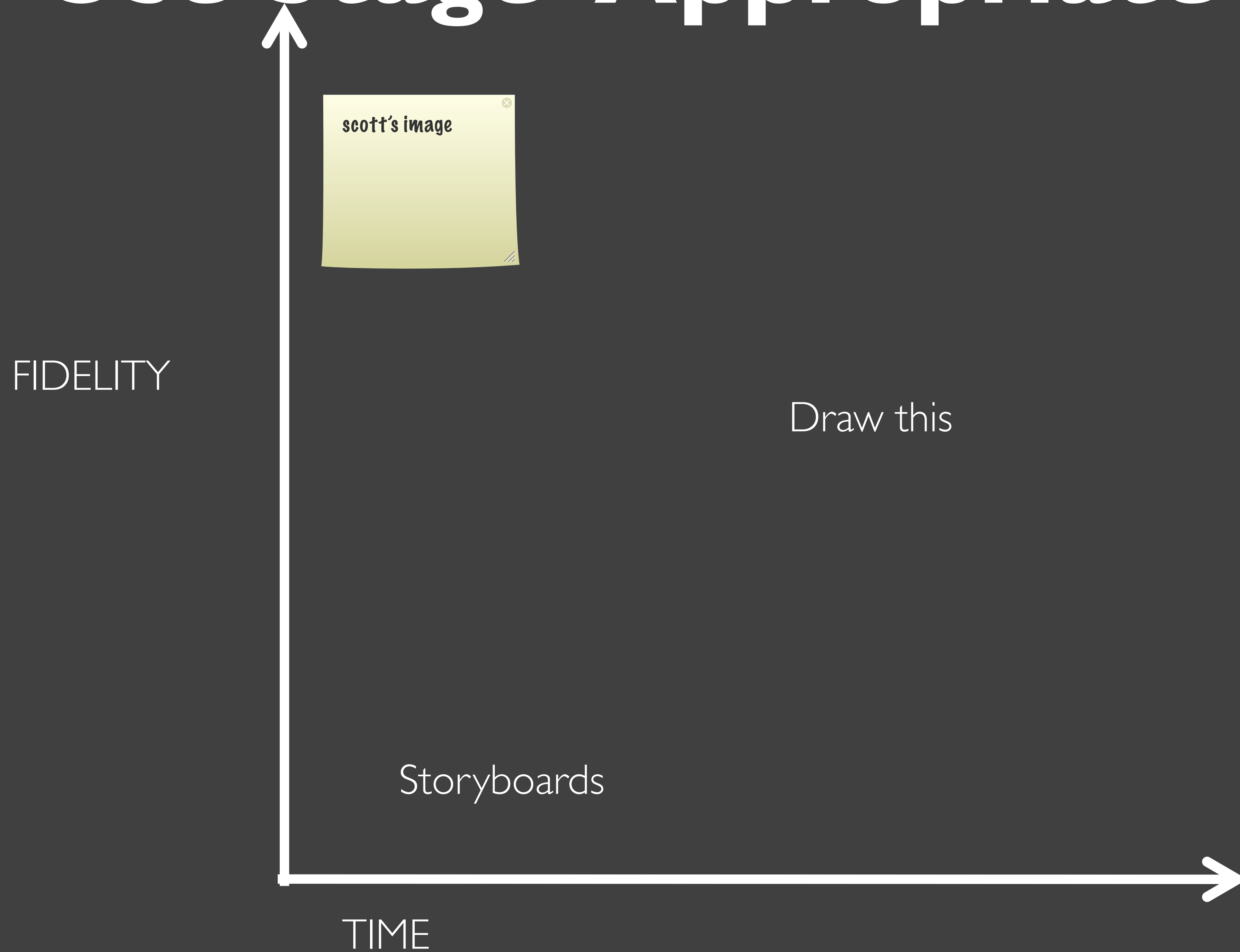


# STORYBOARDS, PAPER PROTOTYPES, and MOCK-UPS

**Scott Klemmer**

[www.hci-class.org](http://www.hci-class.org)

# Use Stage-Appropriate Tools

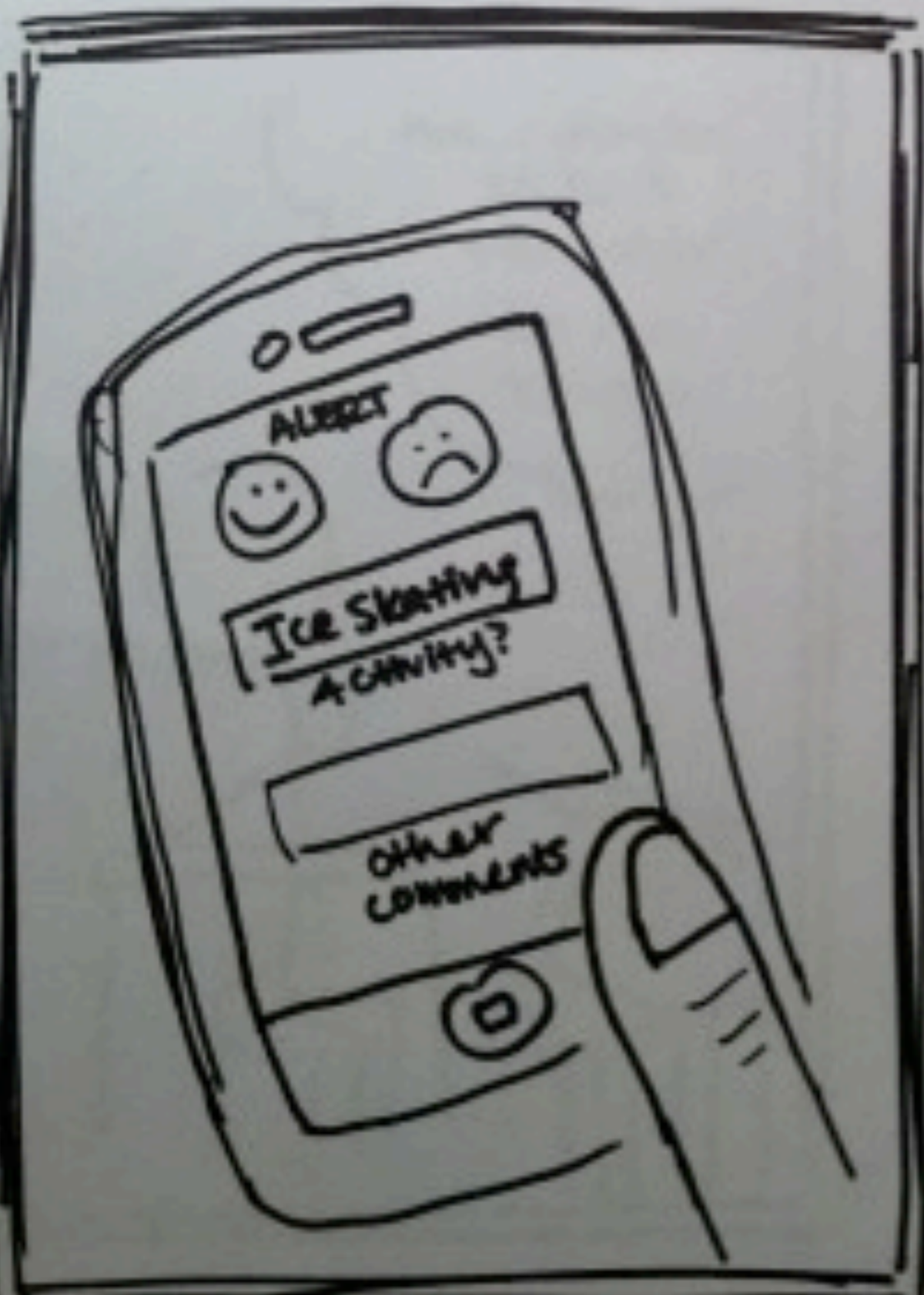
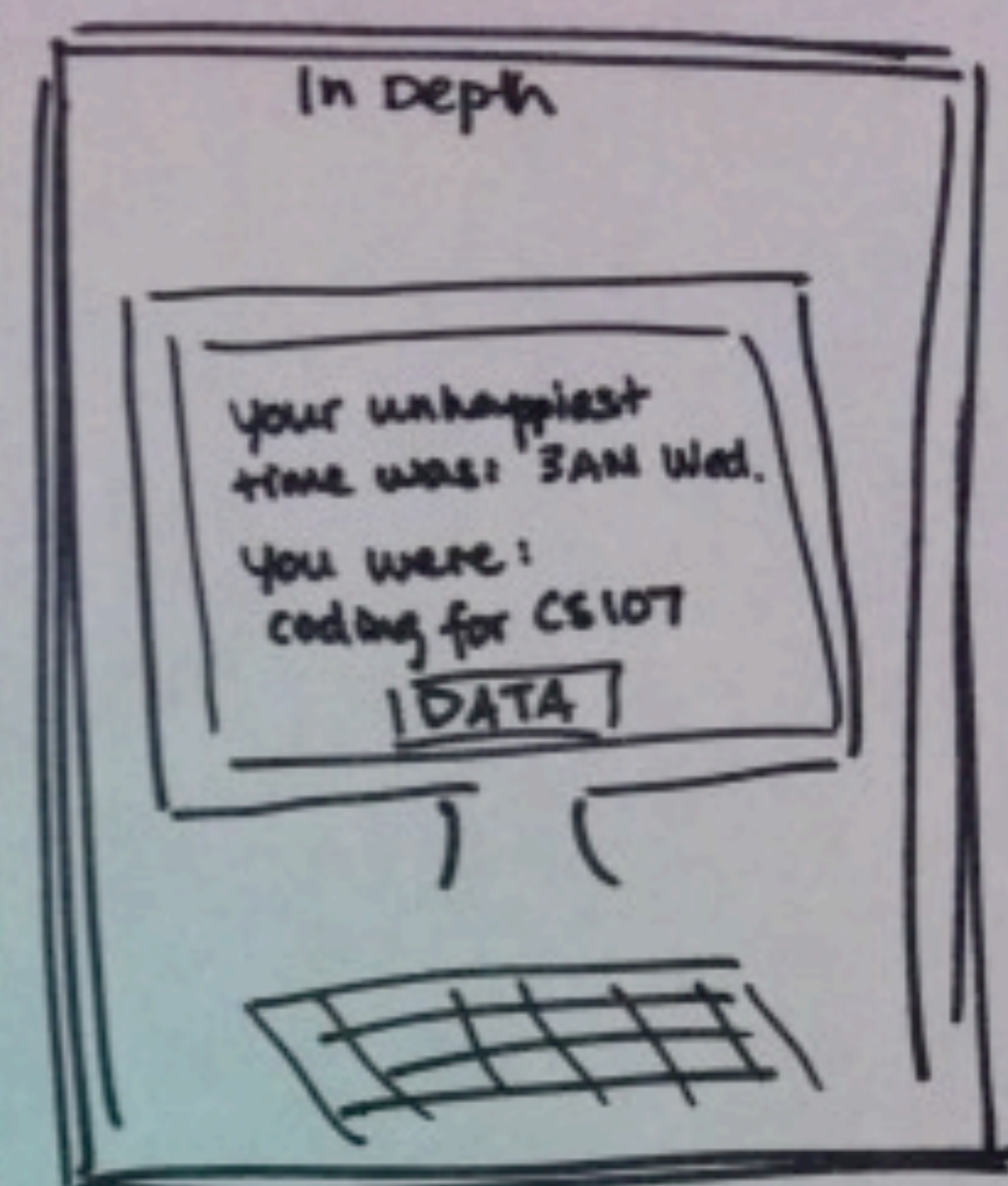




# Outline

- Storyboarding
- Creating Paper Prototypes
- Testing Paper Prototypes
- Digital Mock-ups



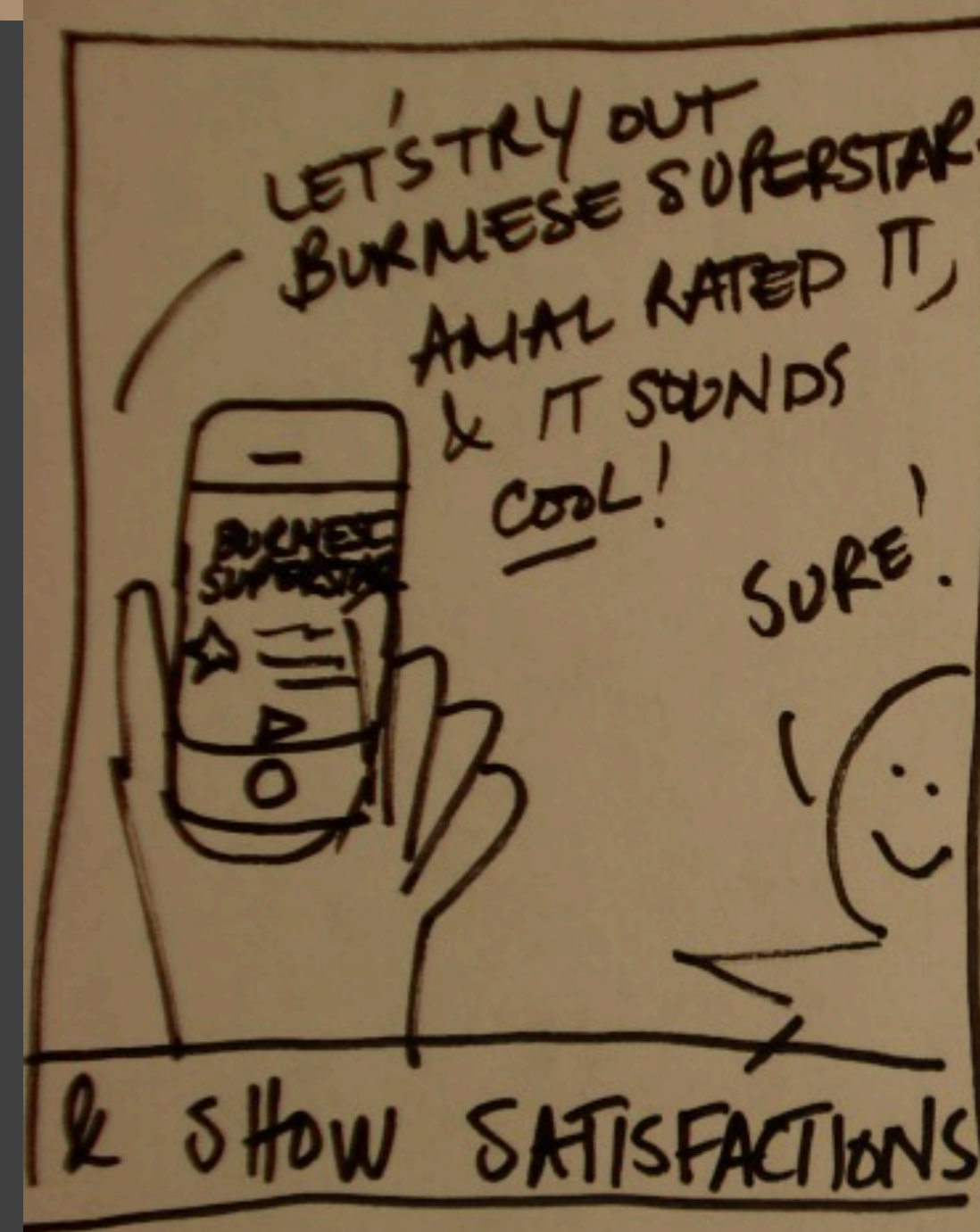
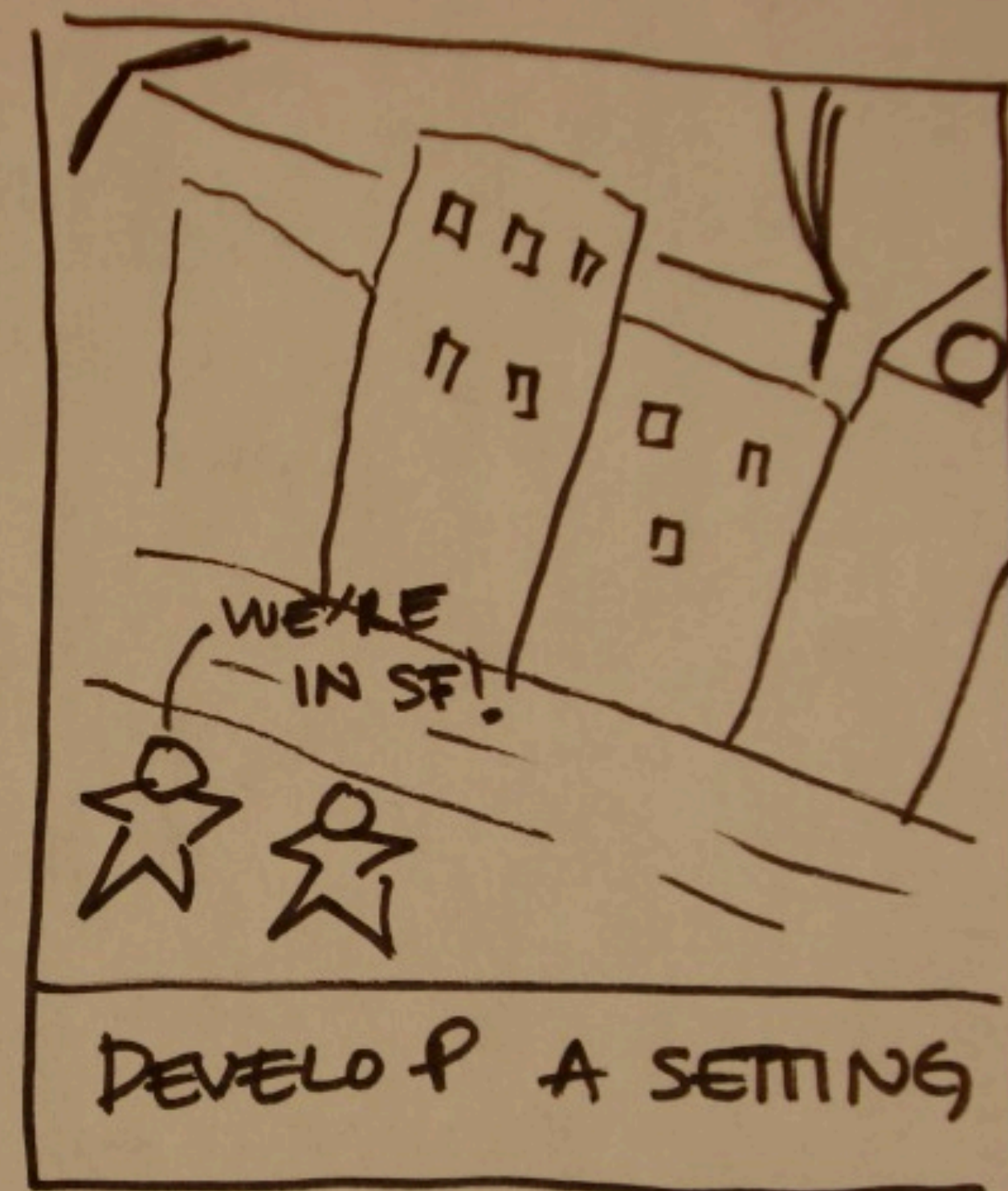
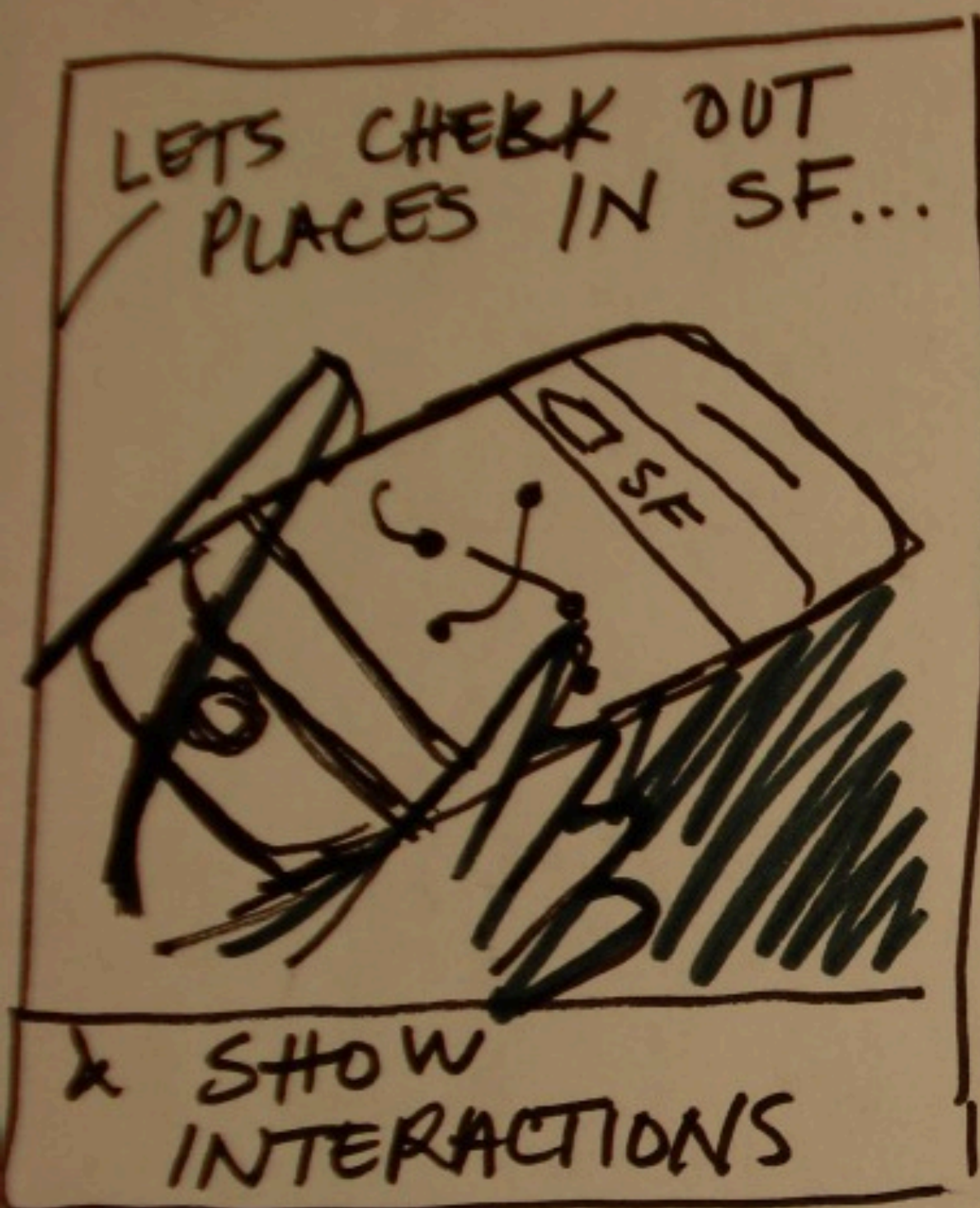




Storyboarding isn't about “pretty pictures”  
**it's about communicating ideas**

# Star People (*Bill Verplank*)







# Storyboards Should Convey

- Setting
  - People involved
  - Environment
  - Task being accomplished
- Sequence
  - What steps are involved?
  - What leads someone to use the app?
  - What task is being illustrated?
- Satisfaction
  - What's motivates people to use this system?
  - What does it enable people to accomplish?
  - What need does the system fill?



# Benefits of Storyboarding

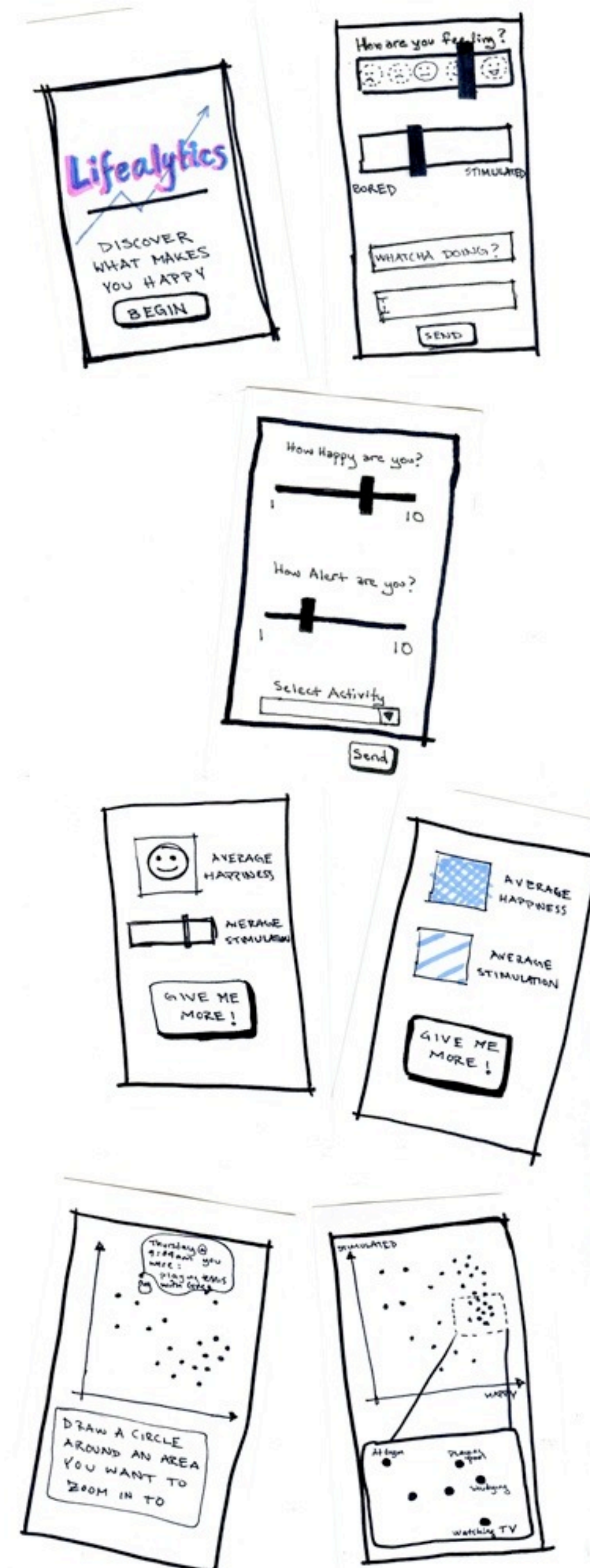
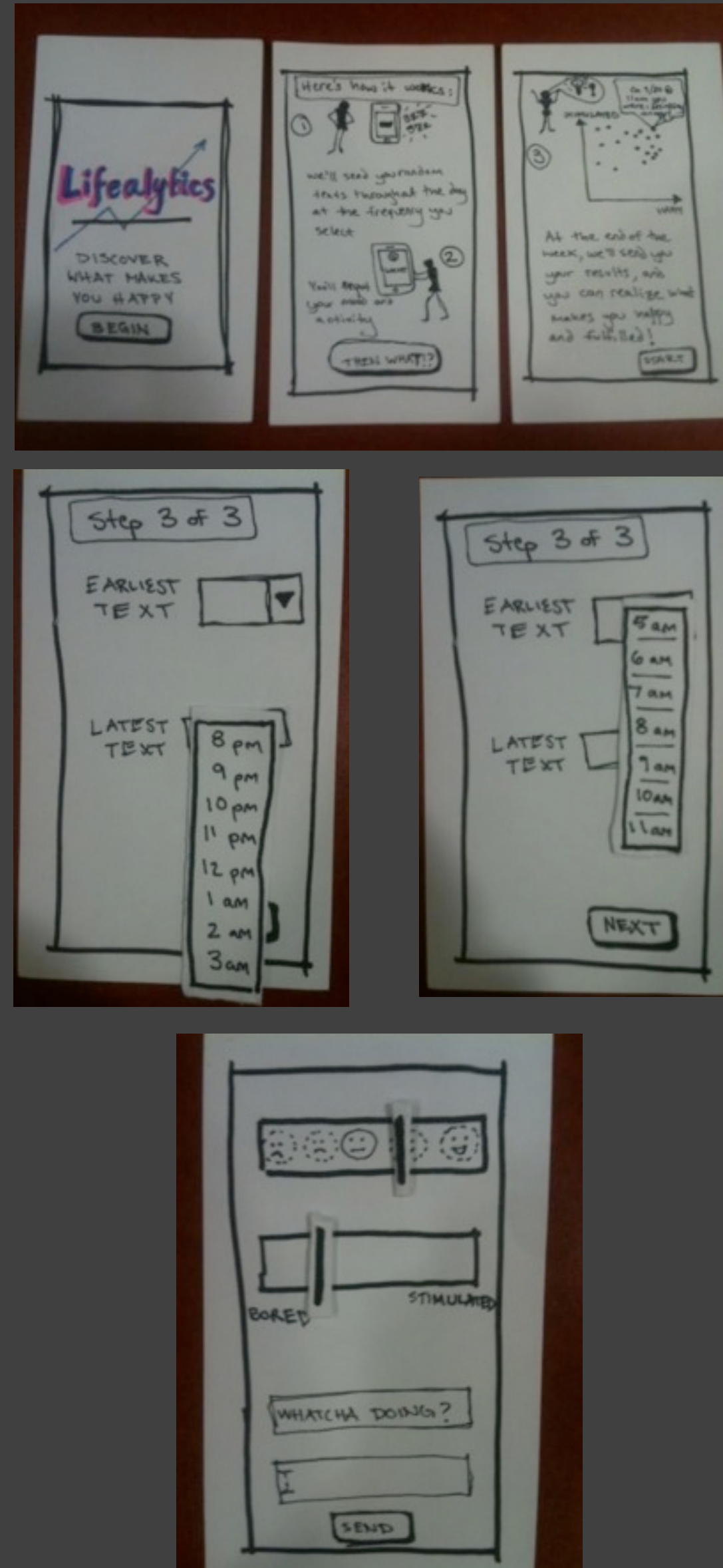
- Holistic focus: Helps emphasize how an interface accomplishes a task
- Avoids commitment to a particular user interface (no buttons yet)
- Helps get all the stakeholders on the same page in terms of the goal



# Time Limits Help



# Paper prototyping





# 6 Paper Prototyping Tips & Tricks

- Keep all your materials in one place! Small interface widgets tend to get lost or damaged easily
- Work quickly and make reusable components (buttons, etc)
- If something is difficult to simulate (progress indicators, right mouse menus, hyperlinks), have the user ask if it is available and then verbally describe the interaction
- Backgrounds (11"x14" poster board) can be useful to contain the prototype and provide context for the user
- Don't be afraid to mix and match hardware and software! for instance, if size constraints are important, you might want to make a blinder using a photograph of the device that would be used and manipulate the prototype within the frame
- When appropriate, add context by including familiar operating system elements

show examples  
for each of these  
during lecture (ie,  
hold up props)



# Get Creative with Materials

- Widgets: Paper, Cardboard, Transparencies
- Connectors: Tape, Glue, Rubber Cement
- Drawing: Pens, Pencils, Markers
- ...and more

# more materials...

- Poster board, unlined index cards and foam core are all useful depending on the size of your prototype
- Removable tape or restickable glue is useful for changing components quickly
- Transparency pens allow the user to input content - use a sheet of transparency paper for the input field
- Use wide-tipped pens and markers (think Sharpie) - smaller line widths can be difficult to see
- Use stacks of index cards to simulate tabbed dialog boxes



# Lifalyze Video

<http://www.youtube.com/watch?v=J-bVzUahNIg>

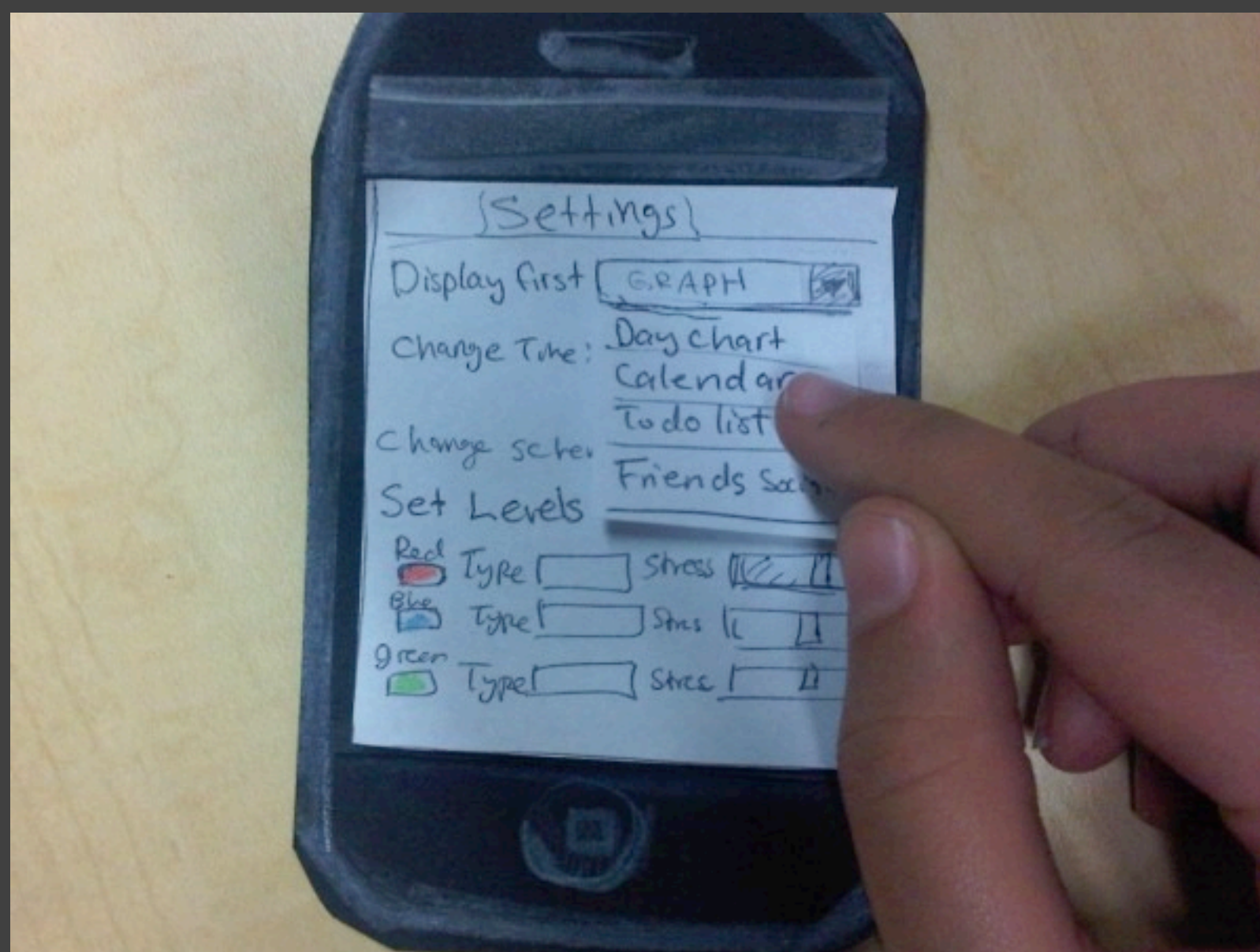
# Try Prototypes with People

- Need a picture
- Test multiple
- Emphasis on conversation





# Test multiple prototypes simultaneously to get most value





Get users (and other stakeholders)  
to help design. Scaffold their efforts



# Digital Mock-ups

CRISIS

Timeline

10:18 AM

Help requested: Anesth.

ETA: 3 minutes

00:00:10 since last dose

WAIT to re-dose, OK in 3:59:50

Now

Epi 1mg IV q 3-5 min

EVENT RECORD

10:17 Begin CPR

10:16 HR↓ 54 bpm

10:15 BP↓ 130/60

10:14 50 mg benadryl

10:13 100 mg neo

10:12 BP↓ 120/80

Treatable Causes: Asystole

Hypovolemia

Hypoxia

Hydrogen ions - acidosis

Hyper/Hypokalemia

Hypo/Hyperthermia

Hypoglycemia/calcemia

Toxins (overdose)

Tamponade - cardiac

Tension pneumothorax

Thrombosis coronary

Thrombosis pulmonary

Hypoxia:

- 100% FiO2.
- Confirm oxygen connections.
- Check for bilateral breath sounds.
- Suction ET tube and reconfirm ET tube placement. Consider chest x-ray.

Cognitive Aids: Asystole

Resources

Team: WHO'S PRESENT

Larry Anesthesiologist

Kyle Surgeon

Chelsea Nurse

Patient: C. JONES, 47, 76 kg

Procedure: Knee surgery

Allergies: Latex

History: Hypotension

Past surgeries: Hip replacement

HR: 1 min ago

BP: 3 min ago 120/80 ↓

HR: 138 ↑

VTACH

Request Backup

Call for Services

Cognitive Aids

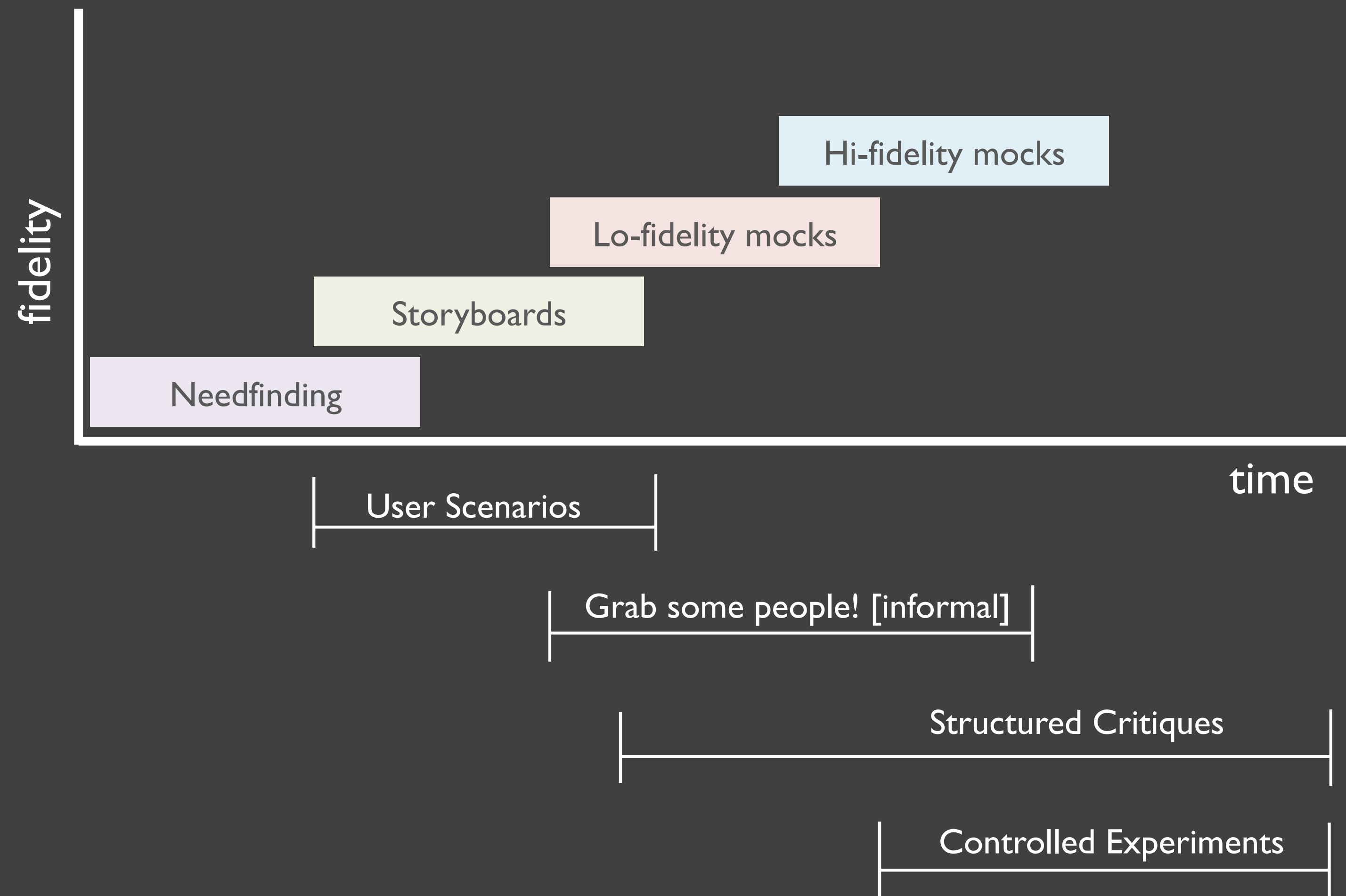
Detailed Patient Info

Drug Inventory

# Beware Inappropriate Fidelity



# Form and Feedback Co-evolve



# Further Reading

- Bill Buxton, *Sketching User Experiences*
- Bill Moggridge, *Designing Interactions*
- Carolyn Snyder, *Paper Prototyping*
- Michael Schrage, *Serious Play*
- Houde and Hill, *What do Prototypes Prototype?*
- Todd Zaki Warfel, *Prototyping*