Prototyping
[Develop]

“Create me an out of the world image like we have in the past. Where lots of little animals are showcasing their design work to each other. Use the theme to pacific northwest. Keep all the animal sizes consistent.” ChatGPT

Today

- Reflections from Ideation

- Today: From Ideation to Prototypes
  - Storyboard -> design sketches -> lo-fi (paper) prototype
- Wed: Design gallery
  - Design Sketches

Why Prototype

"Prototypes let you fail faster and cheaper." – IDEO

What: Flesh out a concept with enough detail

Why:

- Spot issues before investing time and code
- To communicate (boss, team, clients…)
- Get feedback from teammates and users
- Explore multiple directions quickly

Prototype Characteristics

- Fidelity: How closely it matches the look-and-feel of the final system

- Fidelity can be in the areas of:
  - Visuals
  - Interactivity
  - Content and Commands

Types of prototypes: based on visual/content

Lo-fi prototype:

- When: Cheap, early stages
- yet force enough attention to detail
- (can be sketches, but more often paper prototypes)
- Why: get more substantive feedback from users

Hi-fi prototype:

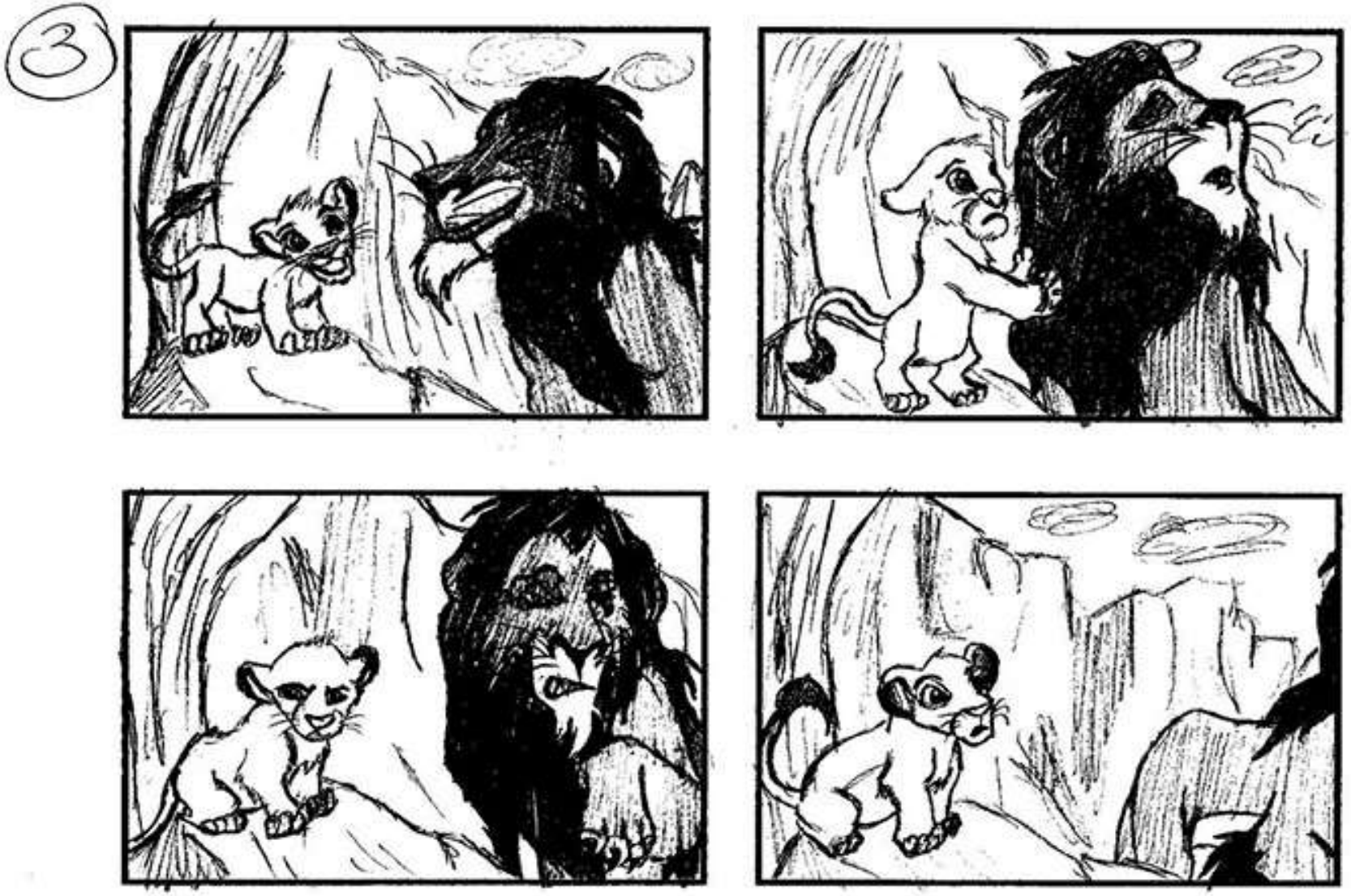
- When: AFTER get through lower-fi ones first.
- Why: Get at details of design (layout, icons, color etc)
- Front end finished with widgets polished up, but computer behavior/data is hard-coded (no back end).
- For boss, clients, at trade shows, etc.

Types of Lo-fi Prototypes

- Storyboards: frame-by-frame flows
- Sketches: quick drawings, ideas
- Paper Prototypes: simulate UI interactions

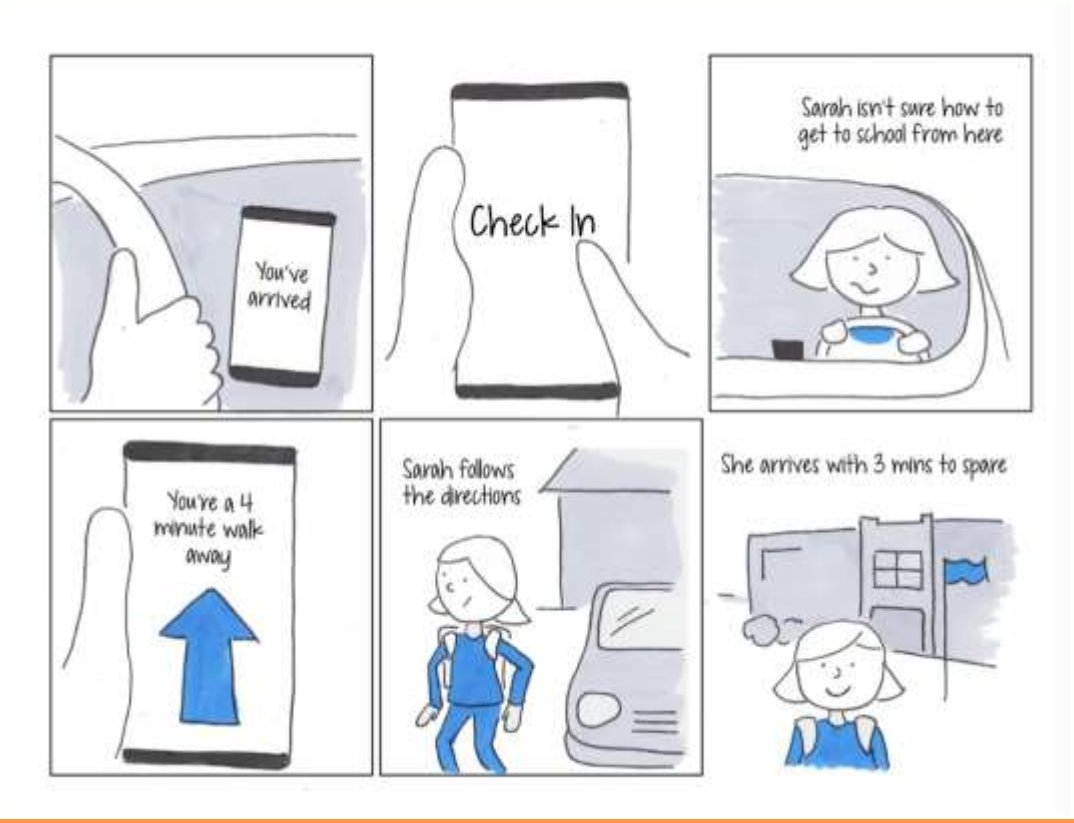
Storyboarding

Movie Storyboards

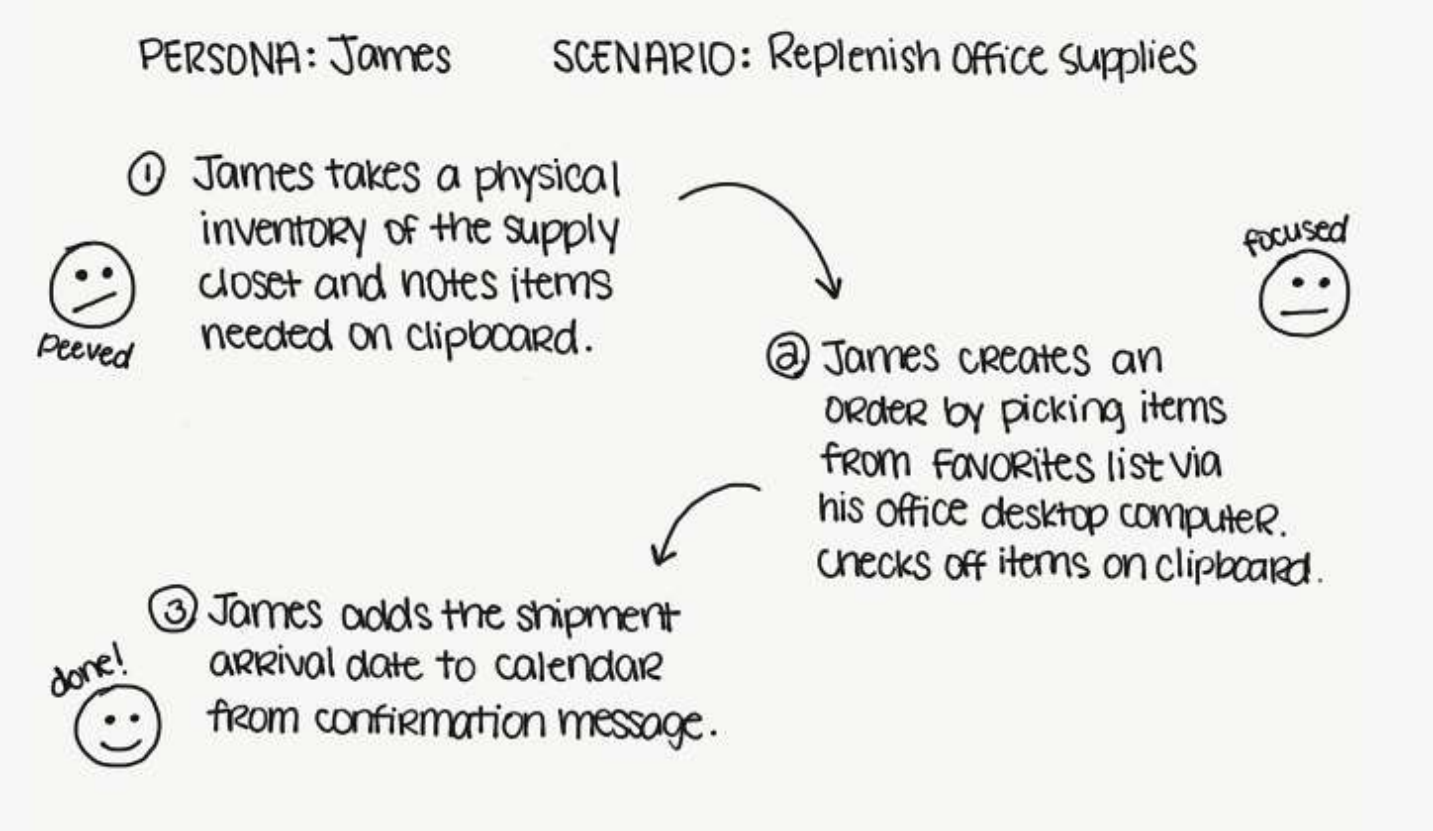


UX storyboards

- Sequences of sketches, showing
  - actors / screens
  - progress through a task
- Optimal number: 5-8 frames
- Used early in design



But, if its intimidating…you can start with outlining the steps and the users' emotion



https://www.nngroup.com/articles/storyboards-visualize-ideas/

Storyboarding – 4 Visual Elements

1. Level of detail

Number of objects and actors in a frame

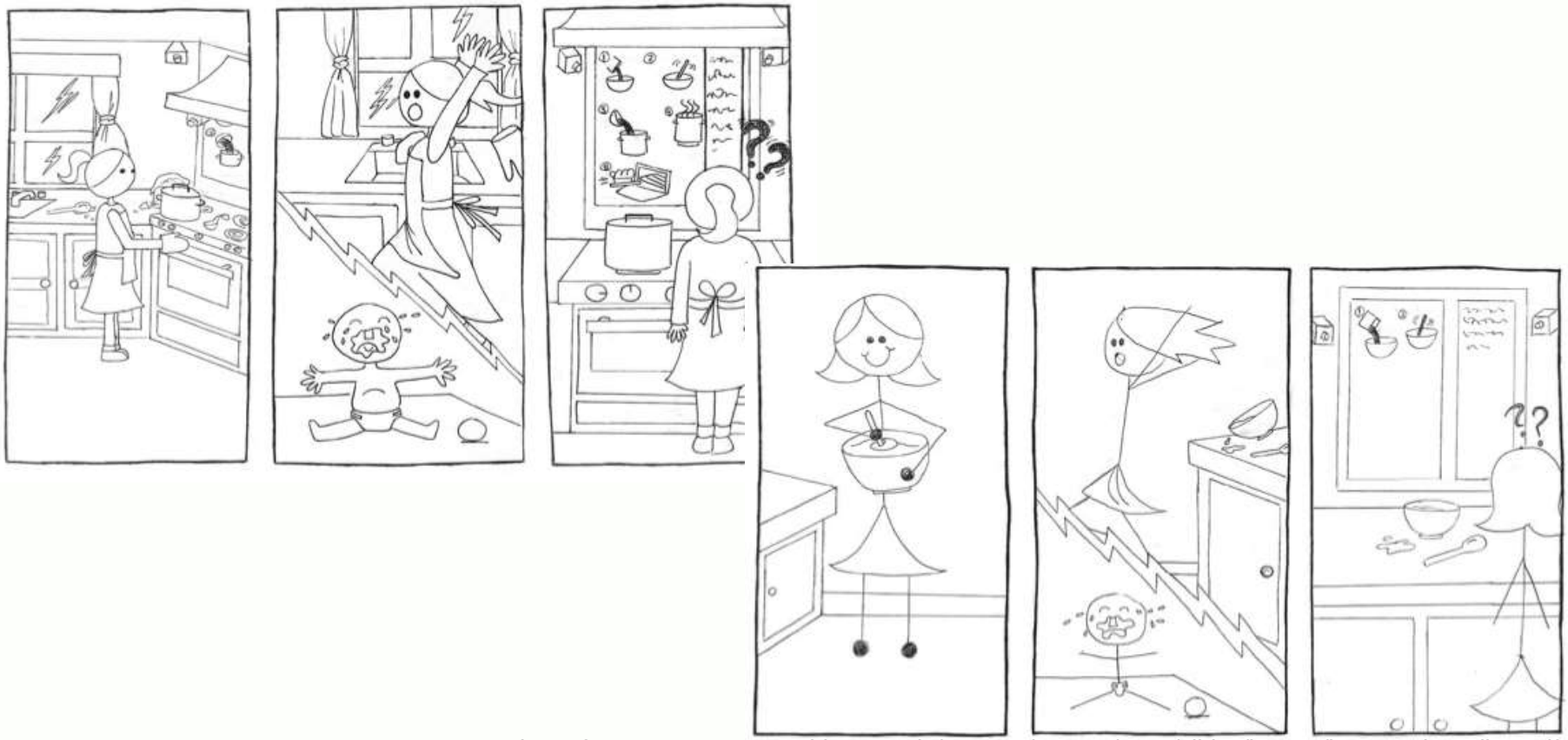


Figure from: courses.cs.washington.edu/courses/cse440/14au/slides/lecture/l08-storyboarding.pdf

Elements of Storyboarding

2. Inclusion of text

Tagline narration or

Inside the pane (speech, thought bubbles, or labels and signs)

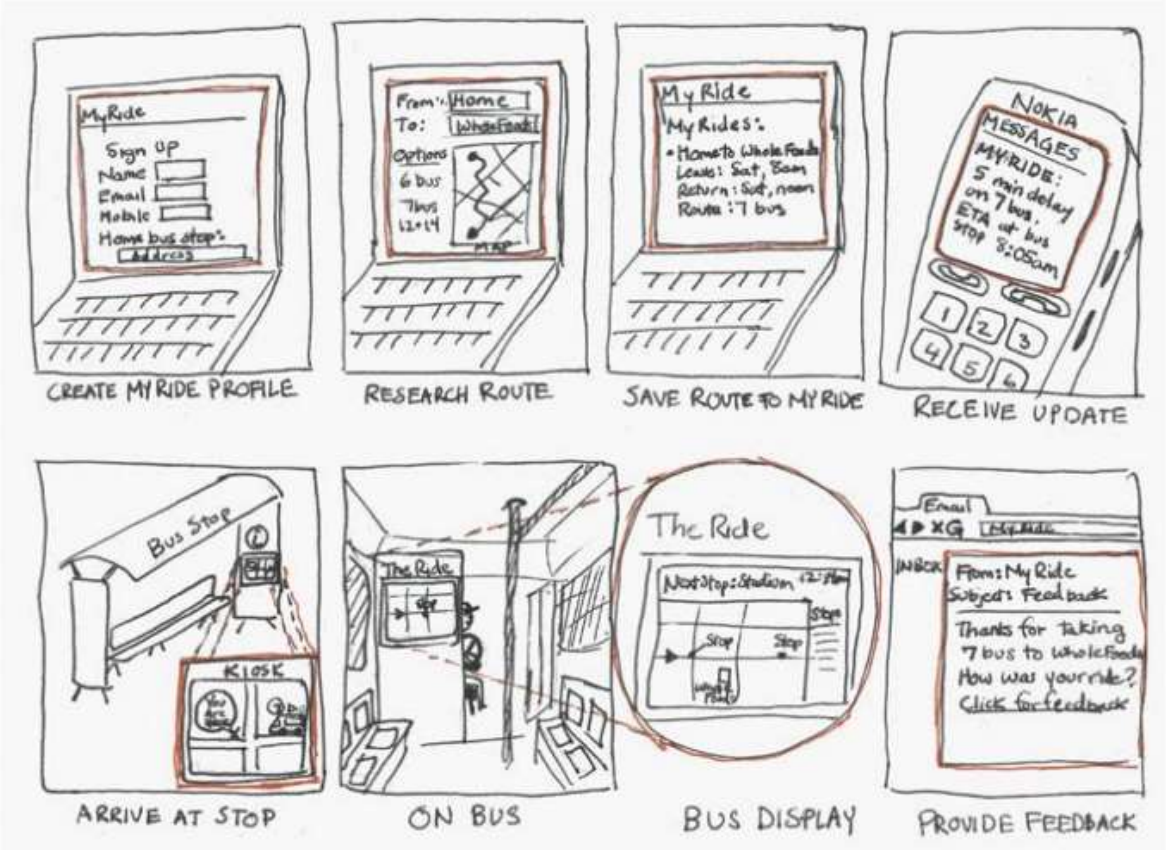


Figure from: courses.cs.washington.edu/courses/cse440/14au/slides/lecture/l08-storyboarding.pdf

Elements of Storyboarding

3. Inclusion of people and emotions
   - Display emotions, motivation
   - Interaction through reader as the actor

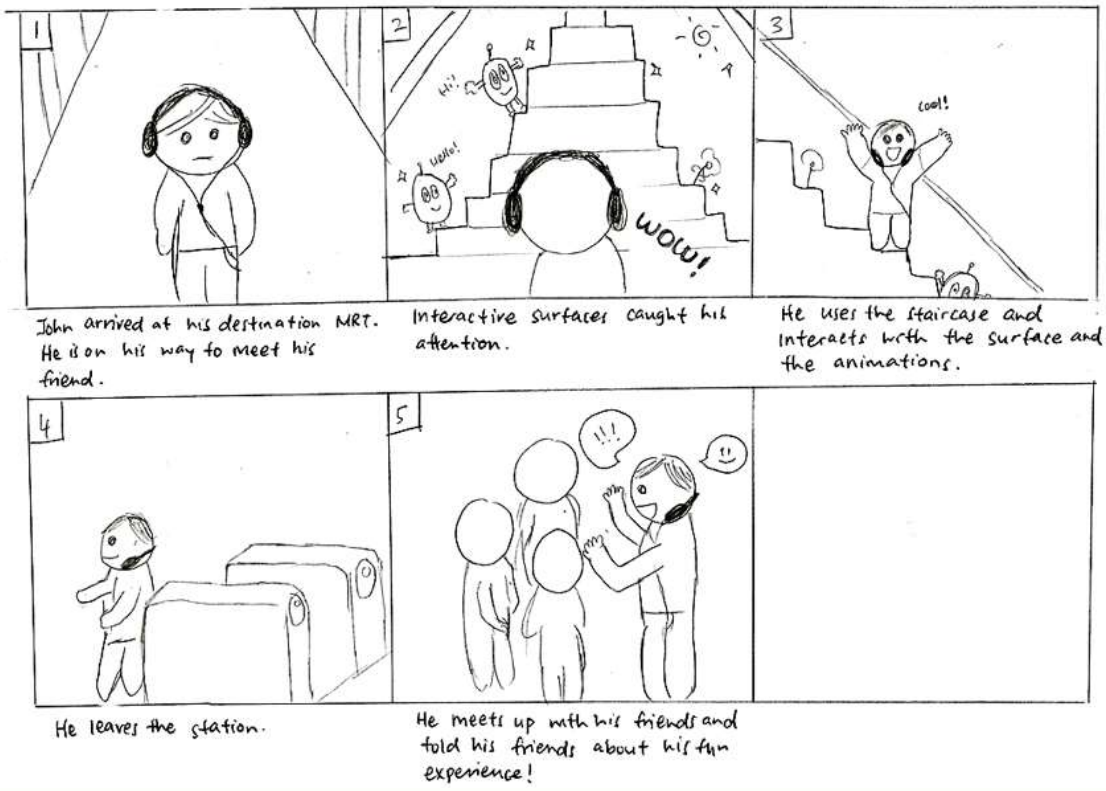


Figure from: courses.cs.washington.edu/courses/cse440/14au/slides/lecture/l08-storyboarding.pdf

Elements of Storyboarding

4. Portrayal of time

Explicit timeline

Transitions that convey changes over time

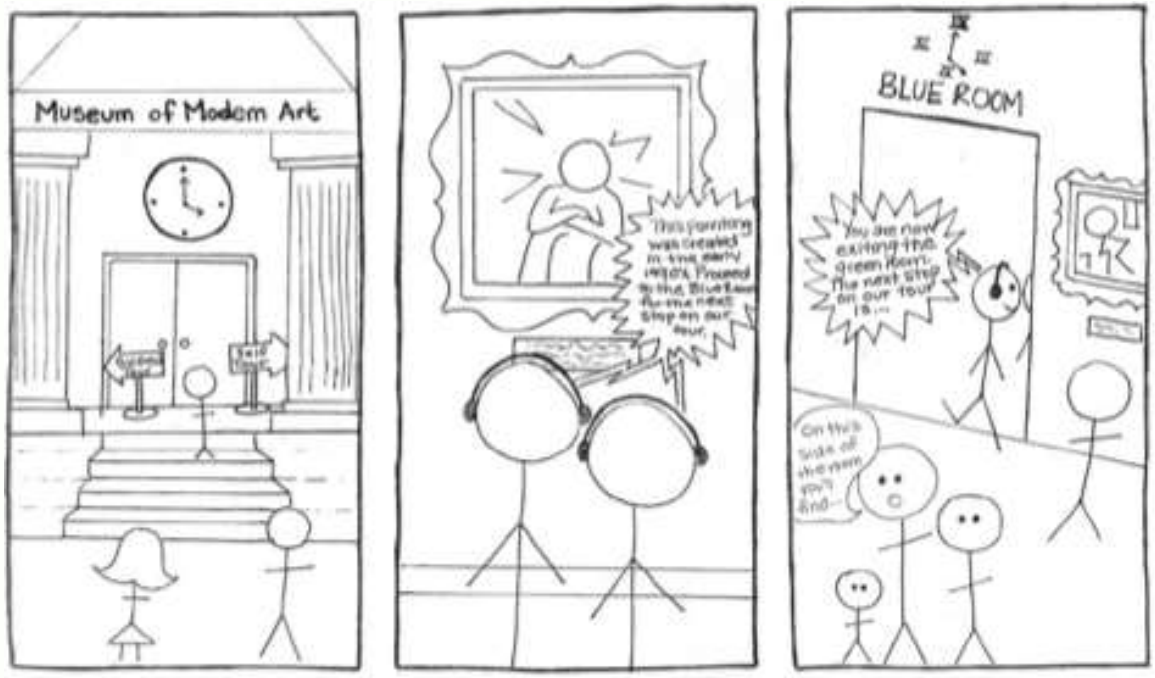


Figure from: courses.cs.washington.edu/courses/cse440/14au/slides/lecture/l08-storyboarding.pdf

Your turn (3 min)

Draw a storyboard for Margaret who uses the fitness app to track her exercise for the day, while she takes her walk.

5-8 frames; rough, stick figures are fine.

Attempt #3

GPT: Draw me a visual of 6 frame storyboard of a older adult user (Maggie) who interacts with the app to: (1) set work out mode to be fast walk, (2) when walking meets friend and stands and talk, (3) finishes walk and checks the stats, (4) realizes that the app automatically paused when she was chatting with friend and didn't record the rest of the walk, (5) tries to update the walk log but is unsuccessful and feels sad and frustrated, (6) calls daughter for help. ask clarifying questions. make very rough sketch. Use stick figure-like images to show the actors.

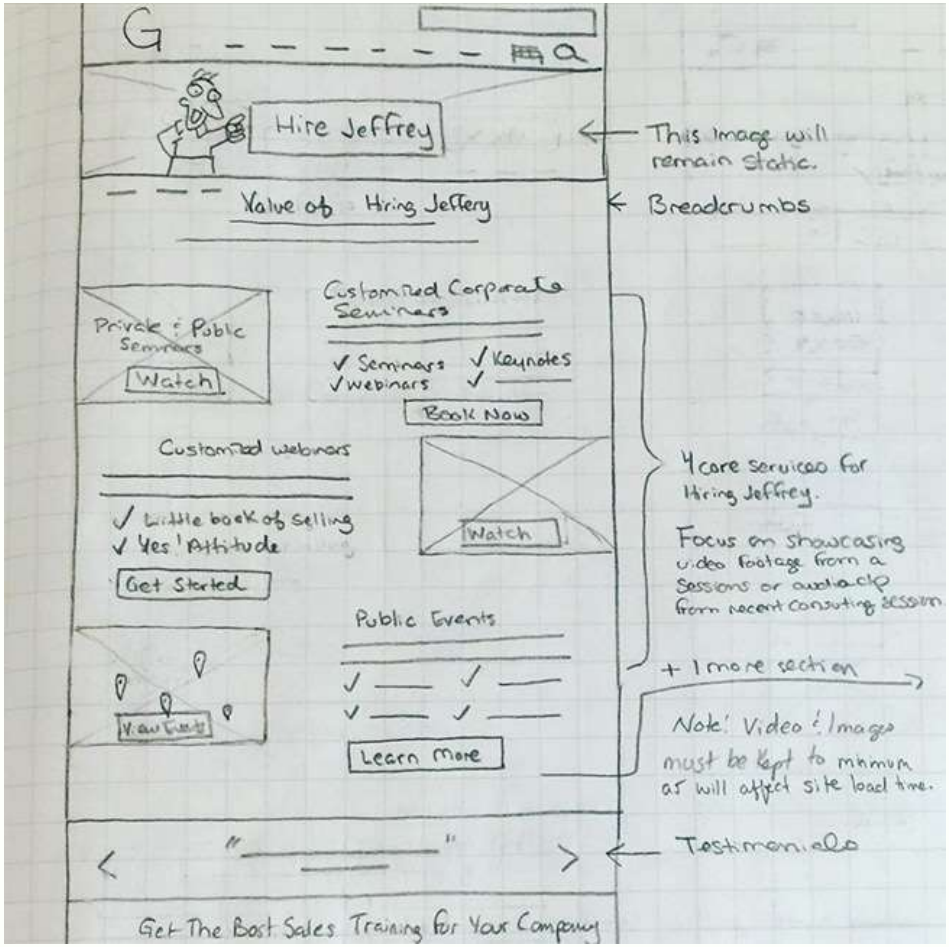

SET WORKOUT MODE TO FAST WALK
MEET FRIEND AND TALK
FINISH WALK AND CHECK STATS
Workout 00:00 Time Distance Pace
REALIZE WALK AUTO-PAUSED
Workout Paused Unable to update
TRY TO UPDATE WALK LOG
CALL DAUGHTER FOR HELP

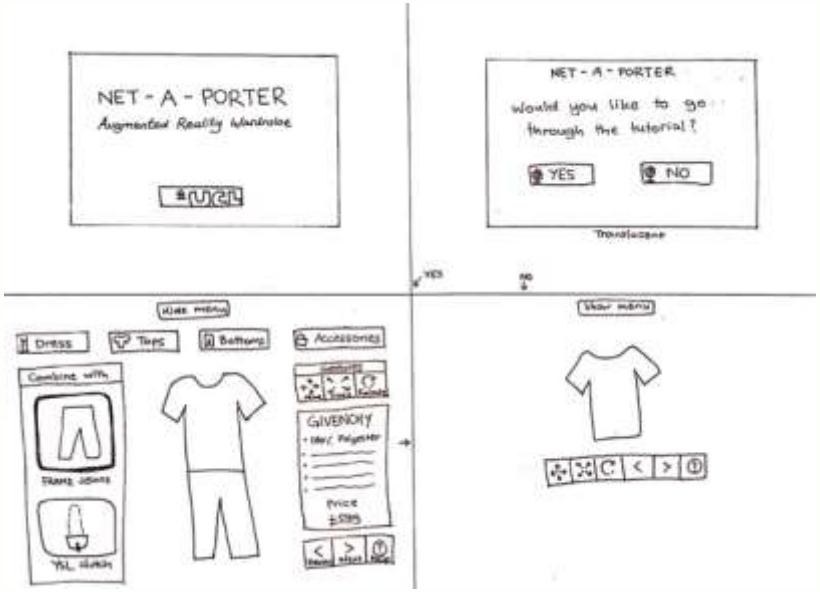

Pace Walk
SET WORKOUT MODE TO FAST WALK
MEET FRIEND AND TALK
Workout 1.02 Time 30:25 Pace
FINISH WALK AND CHECK STATS
Workout 00.00 Time 29:45mi Pace Distance
REALIZE WALK AUTO-PAUSED
Paused Unable to update
TRY TO UPDATE WALK LOG
CALL DAUGHTER FOR HELP

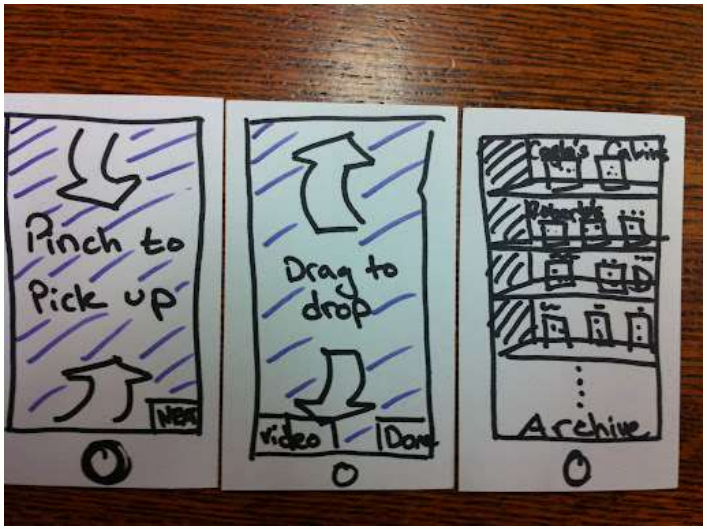

Pace Walk
SET WORKOUT MODE TO FAST WALK
Workout 1.02 Time 30:25 Pace
FINISH WALK AND CHECK STATS
Workout 00.00 Time 29:45mi Pace Distance
REALIZE WALK AUTO-PAUSED
Paused Unable to update
TRY TO UPDATE WALK LOG
CALL DAUGHTER FOR HELP

Sketching/Prototyping
(the UI & interactions)

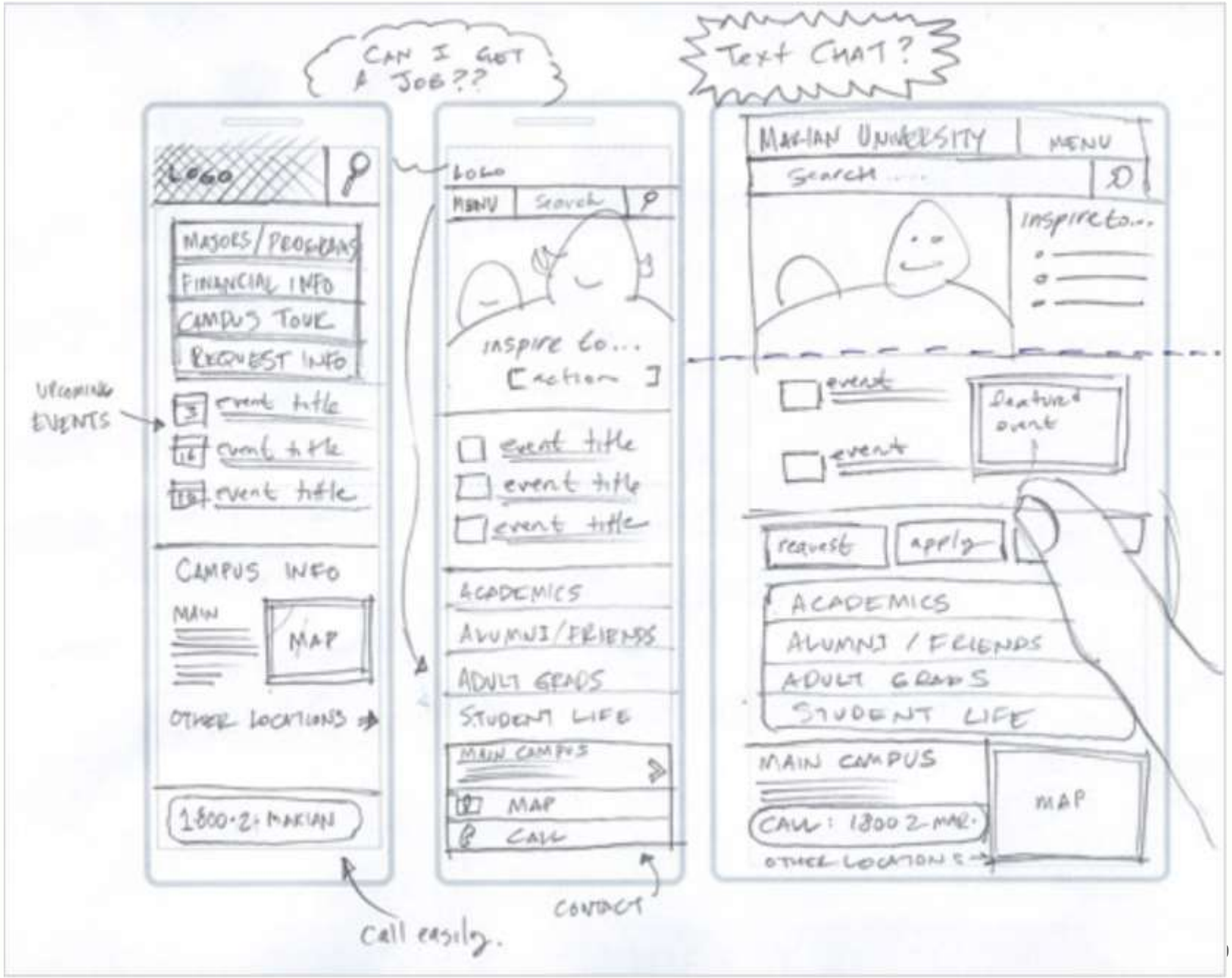
Sketches







Don't have to be a good artist.
Everyone should sketch


CAN I GET A JOB??
Text CHAT?
LOGO
MAJORS / PROGRAMS
FINANCIAL INFO
CAMPUS TOUR
REQUEST INFO
UPCOMING EVENTS
event title
event title
event title
CAMPUS INFO
MAIN
MAP
OTHER LOCATIONS
1800-2-MARIAN
LOGO
MENU
Search
inspire to...
[action]
event title
event title
event title
ACADEMICS
ALUMNI/FRIENDS
ADULT GRADS
STUDENT LIFE
MAIN CAMPUS
MAP
CALL
MARIAN UNIVERSITY
MENU
Search
inspire to...
event
event
featured event
request
apply
ACADEMICS
ALUMNI / FRIENDS
ADULT GRADS
STUDENT LIFE
MAIN CAMPUS
CALL: 1800 2 MAR
MAP
OTHER LOCATIONS
Call easily.
CONTACT

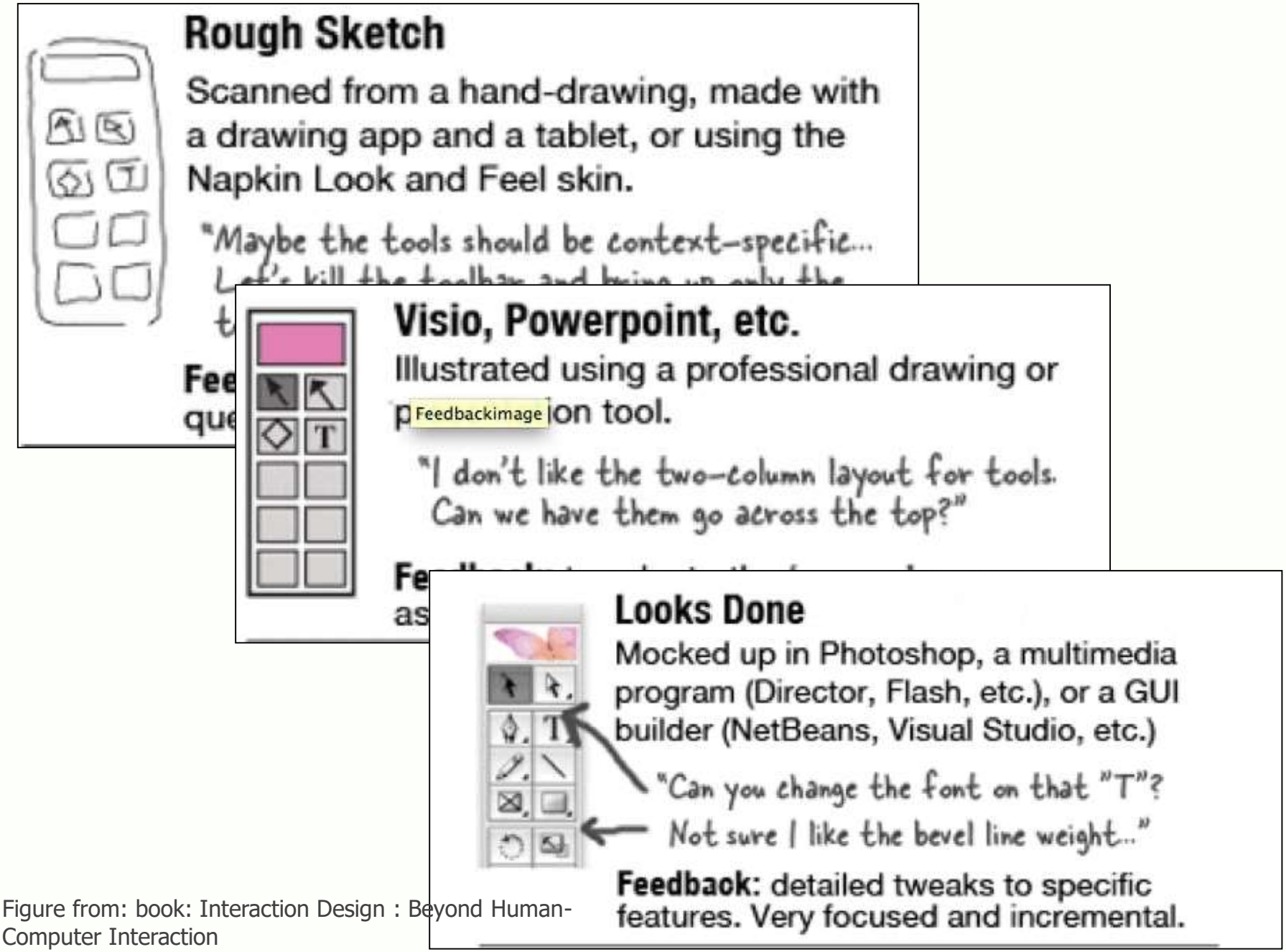


Figure from: book: Interaction Design : Beyond Human-Computer Interaction

Pitfalls with sketching

- Making it look polished
  - Using icons/pictures for widgets etc.
  - You get shallow feedback
  - Instead – **hand sketch**
- Putting multiple tasks into one storyboard
  - Things get confusing, make separate boards for each task
- Picking shallow tasks
  - Hard to understand the UI interactions
  - Plan to have at least 5-6 screen sketches per task

Your turn (5 + 5 min)

1. Draw the last app you used in 3 frames:

- Frame 1: What task were you trying to do?
- Frame 2: What did the screen look like?
- Frame 3: What happened next?

(No art skills needed – use stick figures and boxes!)

2. Once done simply exchange the sketches with the person next to you. Do not explain the idea, see if your neighbor understands the app.

Reflection

Was there any part of the app you didn’t know how to sketch?

Could your neighbor tell what each frame was showing?

For Design Gallery

- Focus on your best idea/s from your quick sketches.
- Spend time crafting sketches that are neat and include as much detail as possible.
- Evaluation using Design Principles/trap cards

- If done by hand, use a ruler and even drafting paper.

Interactivity in Prototypes

Types of prototype: Interactivity/commands

Static

- For *communicating among team members*
- Usually done as a sketched storyboard or sketched “state machine”
- Design gallery-1

Dynamic

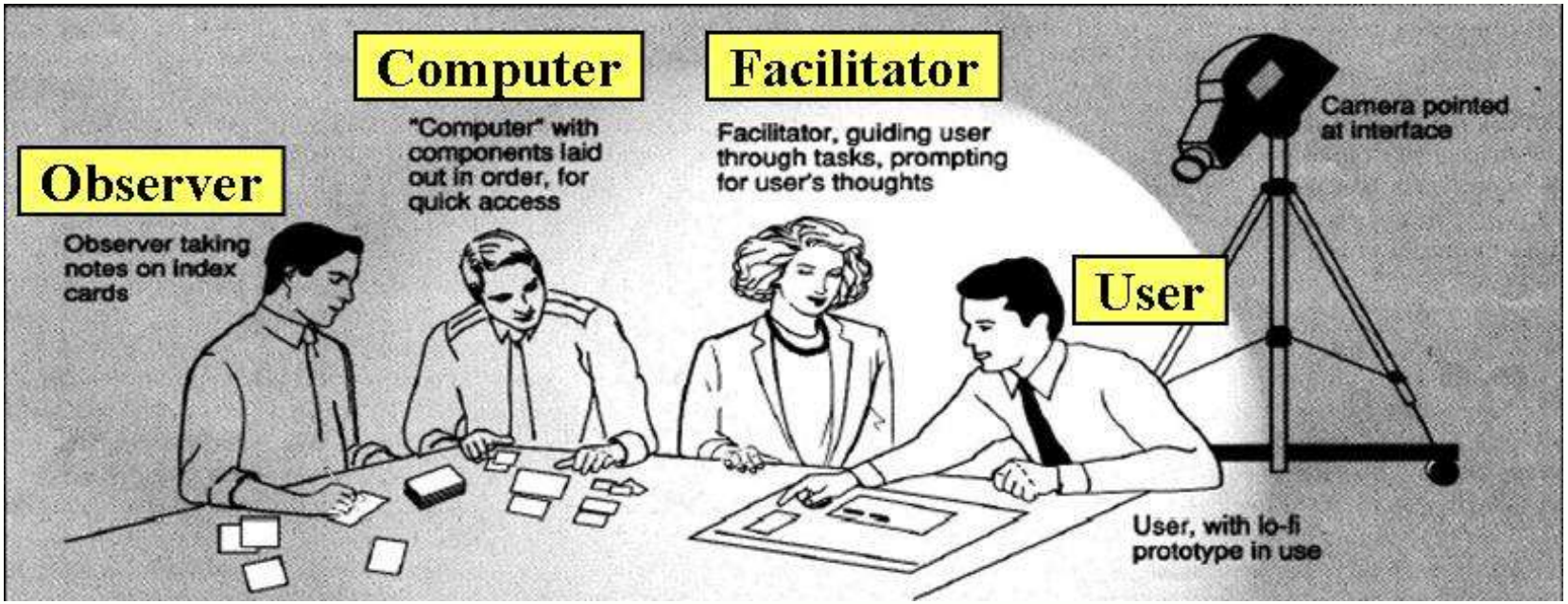
- For *getting feedback from users*

Dynamic prototypes

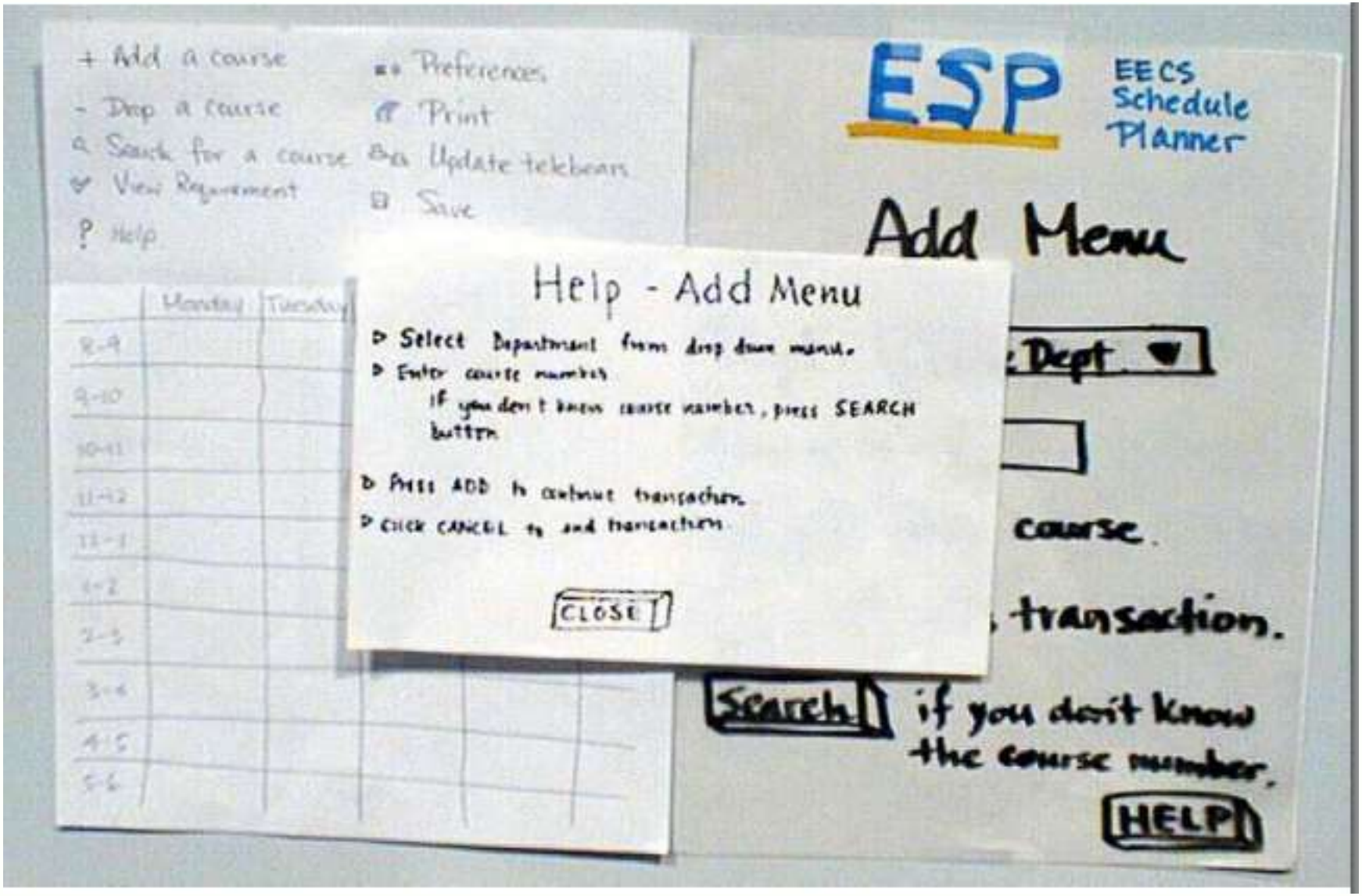
Dynamic (interactive) paper prototype

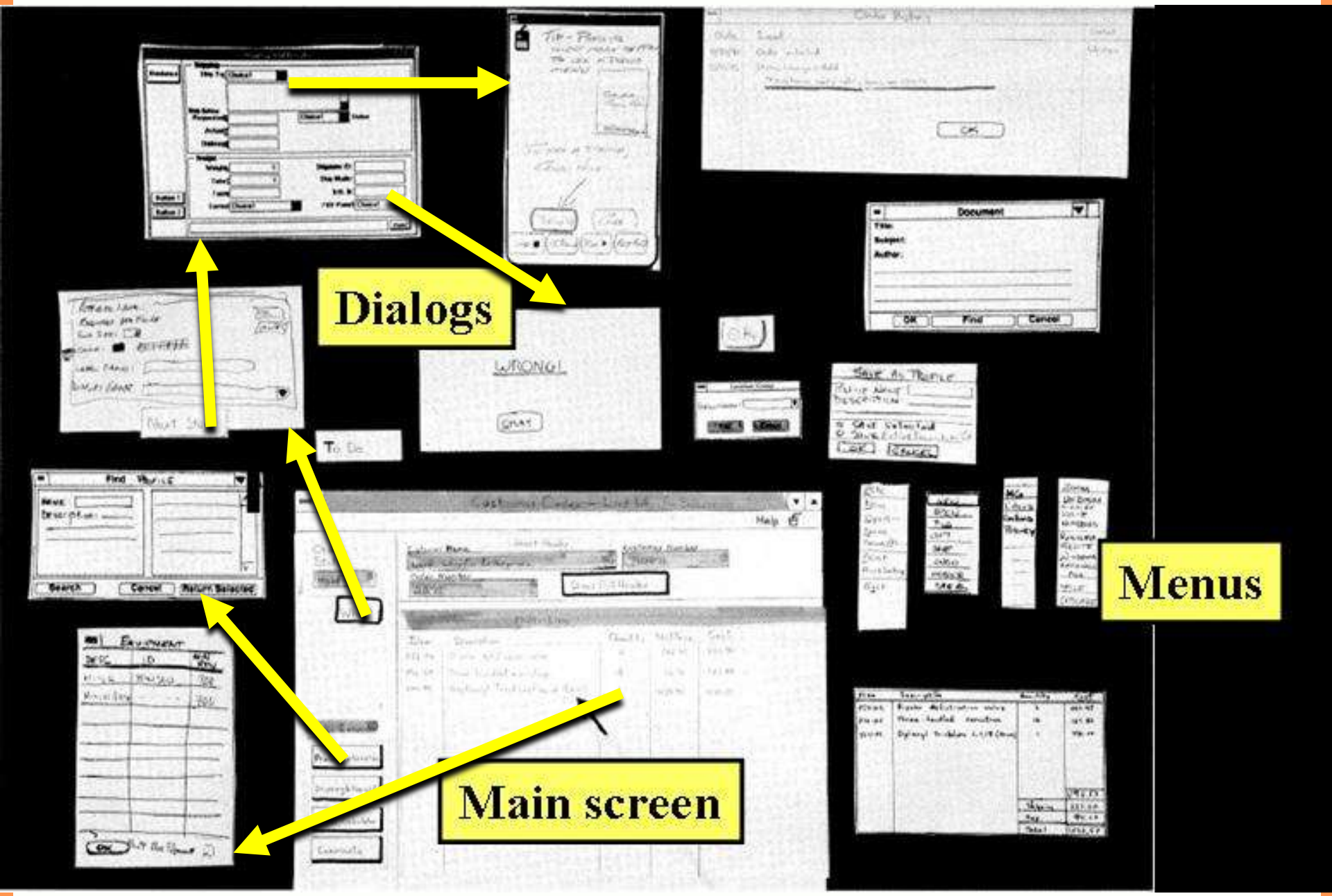
For evaluating with user at a very low-cost.

Wizard of oz: human fakes in the computer logic (can be on paper or on screen).



Paper prototype: Interface Elements


+ Add a course
- Drop a course
Search for a course
View Requirement
? Help
Preferences
Print
Update tekbears
Save
ESP
EECS Schedule Planner
Add Menu
Help - Add Menu
Select Department from drop down menu.
Enter course number
if you don't know course number, press SEARCH button
Press ADD to submit transaction.
Click CANCEL to end transaction.
CLOSE
Dept.
course.
transaction.
Search
if you don't know the course number.
HELP


Dialogs
Menus
Main screen

Provide users with *interactive* paper mockup

Entering text in a lo-fi paper mockup

Provide users with *interactive* paper mockup

Clicking a link in a hi-fi paper mockup

HanMail video (snippet)

https://www.youtube.com/watch?v=GrV2SZuRPv0

Prototyping in this class

- Begin with static paper (sketched screen transition diagrams) (Project #2)
- Create & evaluate lo-fi prototypes (Project #3)
- Iterate from that using Figma to create Hi-Fi prototype & evaluate it (Project #4)
- Wizard of oz, when needed

Next week

- Midterms