

# *Paper Prototyping*

- What is a paper prototype?
  - A “lo-fi” prototype of an interface design
- What is it used for?
  - Early design phase
  - Get a sense of the user's needs and goals
  - Quickly prune the tree of possible designs
  - Remove “locked-in” choices
- Creating a paper prototype
  - Paper
  - Scissors
  - Glue/Tape
  - Sharpee
  - Really.



# *Paper Prototyping*

- What does “locked-in” choices mean?
  - Designs that already exist in an engineered form
  - Users being tested will not want to “upset” the designer by having them redo “work”
- Paper prototypes are as much about:
  - seeing how the user uses the design
  - as it is about seeing what ideas come up DURING the design
- Iteration is key



# *Prototyping, schmototyping!*

- Designers almost never use paper prototyping in design projects
  - Why?
    - Doesn't impress?
    - Too simple and cheap to do anything valuable?
    - Probably a little of both
  - Bang-for-buck
- Paper prototyping is probably one of the most valuable early design processes that exists
- How to do it?
  - Three stages:
    - Brainstorm, Concept
    - Design
    - Test
  - Iterate, okay 4 stages



# *Paper Prototyping: How To*

- Brainstorm:
  - Come up with all the tasks and goals you think the user will need in the interface
  - Come up with all the individual functions that will be performed in the interface
- Generate a concept of how each goal will be accomplished
  - Remember GOMS analysis? Like that, only less formal



# *Paper Prototyping: How To*

- Design
    - Create paper mockups of a series of screens representing each feature
      - One screen for each step in each task
    - Generate a diagram of “state transitions” from one mockup to another
  - Test
    - Pick users and have them step through common tasks
    - As they move through the steps, describe what happens after each action, and show them the next screen
    - Write down mistakes, misunderstandings, problems, things that worked
- 
-

# *Paper Prototyping: How To*

- Iterate
  - Using what you learned, redesign the paper prototype to improve the design
  - Retest and redesign until all common problems are removed



# *Paper Prototyping: Perfect?*

- So, is this a perfect design method?
  - No, of course not.
  - This works for early design studies
  - What doesn't it do?



# *Paper Prototyping: Drawbacks*

- Can't emulate complex interactions
- Can't find complex issues with learning curve
- Can't simulate “real” interaction with a live system
- But...it isn't designed for those purposes
  - It is designed to solve problems before any money or time is invested in a solution

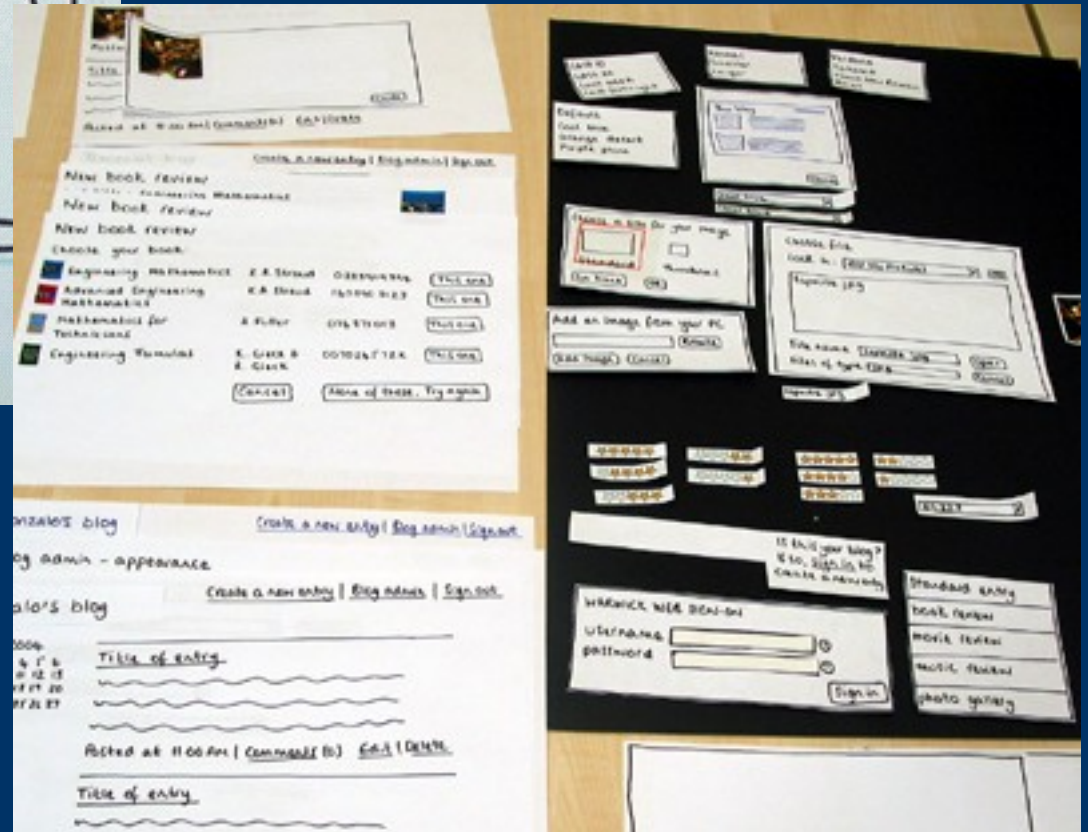
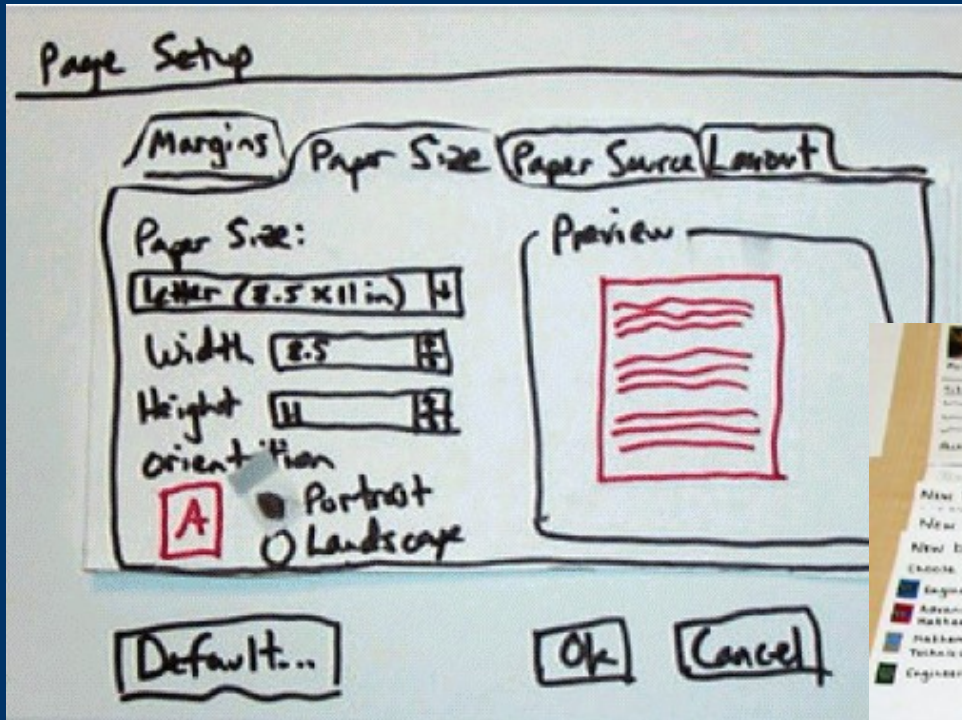


# *Paper Prototyping: Resources*

- Supplies for creating prototypes:
  - <http://www.snyderconsulting.net/supplies.htm>
- Tips on paper-prototype designs:
  - <http://web.archive.org/web/20030415144207/world.std.com/~uieweb/paperproto.htm>



# What's it look like?



# Future “Paperless” Prototyping

- Electronic sketching is an OLD idea
  - Sutherland Sketchpad
- Even the concept of “recognizing” what is drawn is old
  - RAND Pen-demo with recogniser
  - Newton Ink
- RAND Pen-demo video:  
<http://www.lisarein.com/videos/oreilly/etech2003/alankay/penbased-rand-1968-mres.mov>



# *SILK and other programs*

- Hey, here's an idea:
  - How about a way to generate a paper-prototype and then go straight to a real interface?
- <http://www.cs.berkeley.edu/~landay/research/publications/silk-ieee-published.pdf>
- Other versions of the same idea:
  - DENIM
    - <http://guir.cs.berkeley.edu/projects/denim/research/>
  - SketchiXML
    - [http://www.usixml.org/index.php?view=page&idpage=29&screen\\_size=](http://www.usixml.org/index.php?view=page&idpage=29&screen_size=)