

COMS W4170

Lo-Fi Prototypes 2

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October 2, 2018

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Paper Prototype Ingredients

- Paper

- Construction paper
- Index cards
- Post-it notes

- Scissors

- Glue

- Permanent
- Temporary (e.g., 3M Scotch® Restickable Adhesive Glue Stick)



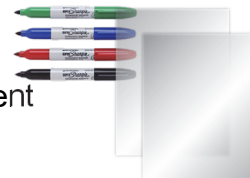
- Tape

- Permanent
- Single-sided temporary tape (e.g., 3M Scotch® 811 Removable Magic™ Tape)
- Double-sided temporary tape (e.g., 3M Scotch® 667 Removable Double-Coated Tape)



- Markers

- Transparent overlays



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Paper Prototype Participants

- Team
 - Designs/builds paper prototype
- User
 - Team member (during early design) or external participant (when prototype is ready) interacts with prototype
- Greeter/Facilitator
 - Team member(s) greets/guides user
- Computer [human]
 - Team member manipulates prototype in response to user interaction, follows “program logic”
- Observer(s)
 - Team members take notes

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Paper Prototype Approach

1. Design prototype
 - Work *fast* because it's easy to change
 - Sketch ideas
 - Design for interactivity
 - Use a separate piece of paper for *everything* that moves/changes
 - Use removable tape/Post-It notes/transparencies for user input
 - Place moving components on transparencies to keep hands out of the way

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Paper Prototype Approach

1. Design prototype (cont.)
 - Photocopy/modify or scan/edit/print to speed up changes to existing components
2. Prepare scenario
 - Choose tasks and prepare output data
3. Assign team members roles
4. Practice
5. Recruit participants (users)

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Paper Prototype Approach

6. Run experiment
 - Greeter greets participant
 - Facilitator gives instructions for tasks and elicits “thinking aloud” comments from participant
 - Computer responds to participant’s interaction
 - Observers take notes *silently* on cards
 - Team members debrief participant after experiment

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Paper Prototype Approach

7. Analyze results

- Sort and prioritize observation cards
- Group observation cards according to
 - Issues noted
 - Lay out by problem
 - Lay out by heuristicand/or
- UI components affected
 - Lay out near relevant components of UI

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Paper Prototype Approach

8. Design changes

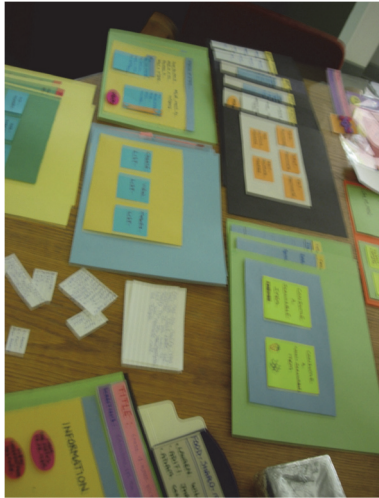
- Discuss and agree on changes
- Flag affected components
 - Use annotations on Post-it notes
 - Evaluate changes for consistency

9. Implement changes

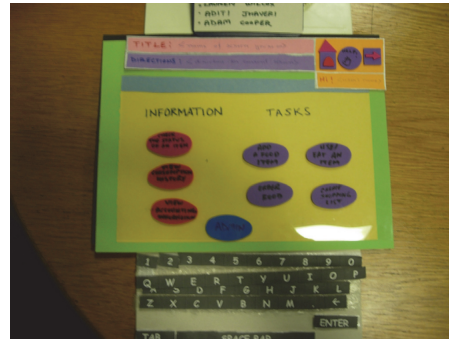
10. Test the revised prototype

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Paper Prototype Example



- Material from a 4170 prototyping session



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Lo-Fi Advantages

- No “programming” needed!
- Fast turnaround
 - Costs less
 - Allows more iterations
- Human computer
 - Can be (re)programmed quickly
 - Cannot crash
- Changes can be made on the fly
 - Developers feel less affection for status quo because changes are easy
- Developers can work together around a common workspace
 - Large, 3D display (i.e., table)
 - Simultaneous multi-user, multi-hand input
- Rough “sketchy” appearance
 - Emphasizes content instead of appearance
 - Avoids low-level critiques of visual detail
 - Users are more willing to criticize high-level problems and less willing to blame themselves if something doesn’t work

Group bonding/fun!

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Lo-Fi Disadvantages

- Rough appearance
 - Cannot be used to find problems with low-level appearance/layout
 - Might be misinterpreted by outside experimental participants as reflecting poorly on future product or company
- Does not reflect real interaction/response times
- Human computer may improvise logic that is hard to replicate in code
- Does not find other problems experienced only with real computer-based components
- Limited scenarios may miss many problems that occur outside those scenarios

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Lo-Fi Prototype Variations: Revising an Existing UI

- Print out screen grabs of existing UI
- Use Post-it notes/overlays/... to make incremental changes
- Test as paper prototype

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Lo-Fi Prototype Variations: Video Prototype

- Use camera/phone to record sample interactions
- Create noninteractive “concept video”
- Use simple editing effects
 - Cuts
 - Allow interactions to be shown at correct speed
 - Temporally edit out human computer’s manual interventions
 - Close ups
 - Concentrate on one portion of display
 - Spatially edit out human computer’s manual interventions
- Act out your personas/scenarios to show the human context in which the interactions fit

A video about making video prototypes: *Using Video to Support Interaction Design*
http://www.youtube.com/watch?v=LKjTco_B9tY

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Lo-Fi Prototype Variations: Video Prototype Case Study

- The Interaction Museum
 W. Mackay & M. Beaudouin-Lafon
 - Online “exhibit” of interaction techniques and systems for HCI community
 - Users
 - Browse
 - Contribute
 - Review



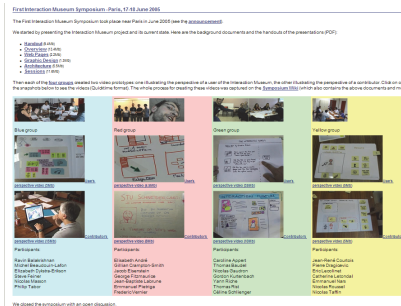
<http://insitu.lri.fr/imuseum/>

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W. Mackay & M. Beaudouin-Lafon
 - Design exercise: Four groups created video prototypes of potential user interfaces for
 - Users
 - Contributors

See videos at
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