Data analysis

- Don’t let data get stale
- Do this iteratively, too
- Decide which tools, how much formalism
  - Scenarios (narrative)
  - Use cases (describe interaction with system, alternative paths)
  - Essential use cases (more abstract: user intention, system responsibility, …)
  - Hierarchical task analysis

Generating alternatives

- No automatic way to come up with ideas
- What kind of interaction (instructing, conversing, manipulating, exploring)?
- Look at similar systems, at very different systems
- Build up your repertoire, your toolbox; expose yourself to a lot of things.
- Techniques: brainstorming, attribute listing and variation, …

Prototyping

- Present ideas for evaluation without getting in too deep (in time, money, commitment)
- Use sketches, storyboards, slide shows, video simulations, physical objects, mock-ups, skeleton software
- Build model of work flow, task design, screen layout, information display, difficult or critical aspects

High-fidelity prototyping

- Same materials as final product
- Realistic-looking results
- Tools include MacroMedia Director, Dreamweaver, VB, …
- Users' expectations and focus?

Low-fidelity prototyping

- Unlike the final form
- Quick, cheap, easily changeable
- Examples
  - Sketches
  - Index cards
  - Storyboards
  - Sticky notes
- Paper prototyping • • •

Prototyping considerations

- Models necessarily omit detail
- Horizontal vs. vertical approach
- Other tools
  - Denim system (sketches with hyperlinks)
  - Scripting languages (e.g., Tcl/Tk)

User-centered design

- Early focus on users (cognitive, behavioral, attitudinal characteristics) and tasks
- Actual measurement: observe, record, analyze users' reactions and performance
- Iterative design: find problems, fix them, test again
- Users' involvement in process

User-centered design

- Affects product acceptance and success
- Makes users active stakeholders
- Manages expectations
- Gets head start on training
- Communicates without sales hype
- Provides vital information about needs, requirements, usability

Time to try it

- Design a web-based system for reserving movie or theater tickets
- Don’t be constrained by existing systems
- Pair up: you will both be users and both be designers
- Determine your context, requirements, tasks
- Design two alternatives with (low-fidelity) prototypes