By definition, interaction techniques are not yet standard practice.

Design ideas may not be feasible (or may not be helpful).

Usability engineering methods help us define proper techniques.
What Is Usability?

- Human performance, time and errors
- Human cognition, mental models of plans and actions
- Collaboration, group dynamics and workplace context

Why Usability Engineering?

- Waterfall models of development do not work
  - Too many unknowns (Brooks: No Silver Bullet)
- Need an iterative discovery-oriented process
  - But at the same time need to manage it
- Demands well-defined process with metrics
  - Specifying usability goals as objectives
  - Assessing and redesigning to meet these objectives
  - Manage usability as a quality characteristic, much like modularity or nonfunctional requirements
**Why Scenarios?**

1.3: Make decisions but keep options open.
- Scenarios are concrete descriptions but are also very flexible.

1.4: Analyze use but let it evolve.
- Scenarios describe use in detail, but as a tentative, working representation.

1.5: Be innovative but only if adding value.
- Scenarios focus on the usability consequences of specific design proposals.

1.6: Be precise but include everyone on the team.
- Scenarios describe the problem situation using natural language understood by all stakeholders.

1.7: Balance action with reflection.
- Scenarios offer a vivid description of use that provokes questions and “what if” discussions.

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**Applying Scenarios**

**ANALYZE**

- Analysis of stakeholders, field studies

  **Problem scenarios**

  - Claims about current practice

**DESIGN**

- Metaphors, information technology, HCI theory, guidelines

  **Activity scenarios**

    **Information scenarios**

      **Interaction scenarios**

      **Iterative analysis of usability claims and re-design**
Tradeoffs and SBD

- Design by definition is invention, creativity
  - Never just one approach, never one correct answer
  - BUT some answers are demonstrably better
- Interactive system design tremendously complex
  - Many interdependencies, eg schedule, cost, competitive advantage, local expertise, ...
  - Users and their needs are one large set of dependencies
- Tradeoffs are useful in analyzing these relations
  - Here, we focus on tradeoffs affecting users’ experiences
  - Guides design thinking, also serves as design rationale

But what about the new design challenges? (ubiquitous computing, CSCW, VE, etc)
Preparing for the Midterm

- Focus on notes and Rosson & Carroll textbook (Chapters 1-5)
  - Augment with About Face and UCS library for alternate views and examples
- Know processes and what tools and techniques are associated with them
  - Requirements analysis: HTA, ethnography, ...
  - Activity design: participatory design, conceptual models, ...
  - Information design: Gestalt principles, squint test, ...
  - Interaction design: direct manipulation, mistakes and slips
- Know techniques and how/when to apply them
  - HTA: transform complex activities (download class roll) into successive choices (click button, type name)
  - Mistakes: errors in creation of a goal (wrong concept → represent available activities) vs Slips: error in execution (wrong mode → minimize and clearly indicate modes)

Midterm Sample Questions

- What is a metaphor?
- Name one metaphor at work in the pictured interface.
- Argue whether this metaphor would be effective for an experienced computer user.

Look for similar questions about affordances, claims, Gestalt principles, etc.