

Task Analysis

Chapter 20

What is Task Analysis?

- Encompasses broad range of techniques
- Purpose of techniques
 - elicit descriptions of what people do
 - represent these descriptions
 - predict difficulties
 - evaluate usability

Goals, Tasks and Actions

- Goal -- State of a system human wishes to achieve
 - Achieved through use of a device
- Task -- Activities required to achieve goal
- Action -- Subtask
 - decomposed to level involving no problem solving or control structure

Types of Task Analysis

- Those that concentrate on steps required to complete task
 - Hierarchical task analysis
- Those that focus on user knowledge
 - Cognitive task analysis
 - Modeling “how-to-do-it” knowledge
 - Representing task knowledge

Hierarchical Task Analysis

- One of the most well known forms of task analysis
- Focuses on logic or practice of task
 - identifying tasks
 - categorizing tasks
 - breaking down into subtasks (decomposition)
 - check accuracy of decomposition
- Uses Data Flow diagram

Hierarchical Task Analysis cont..

- Three Stages
 - Starting
 - Progressing
 - Finalizing

Cognitive Task Analysis

- Informs the design process through application of cognitive theories
- Models mental rather than physical actions
- Models based on cognitive psychology
- Examples
 - Human Processor model
 - GOMS (goals, operations, methods and selection rules)

Modeling “how-to-do-it” Knowledge

- Procedural Knowledge
- Use GOMS
 - description of methods needed to accomplish goals
 - methods made up of series of actions the user performs
 - When there is more than one method, use the selection rules

Representing Task Knowledge

- Ease of learning a new system depends on previous knowledge of similar systems
- Need to attend to previous knowledge that the user has of both specific and generic tasks
- Use KAT to identify knowledge relevant to task.

KAT

- Knowledge Analysis of Tasks
 - understand the purpose of task analysis
 - identify user goals, subgoals, and subtasks
 - consider the order in which to be carried out
 - identify different task strategies
 - identify procedures
 - identify task objects and actions
 - identify representative, central and generic tasks