Cognitive Walkthrough

SWEN-444

Selected material from *The UX Book*, Hartson & Pyla
Cognitive Walkthrough

- Early design evaluation using low fidelity prototypes
- One or more evaluators inspect the user interface
  - Perform a set of tasks
  - Evaluate understandability and learnability
- Simulate user’s problem solving process at each task step in the interaction
- Quantitative data is not collected.
Based on Theory of Exploratory Learning

- The user sets a task goal to be accomplished with the system (for example, "check spelling of this document").
- The user searches the interface for currently available actions (menu items, buttons, command-line inputs, etc.).
- The user selects the action that seems likely to make progress toward the goal.
- The user performs the selected action and evaluates the system's feedback for evidence that progress is being made toward the current goal.
CW: How-to

• Select the participants
  • Who will be involved?
  • What are their characteristics?
  • Input: user profiles (knowledge of task domain, UI)

• Select the tasks to be examined
• Select the interfaces (screens) to be evaluated
CW: How-to

• **During the walkthrough:**
  • Present the task
  • Ask user to perform task.
  • Record observations
  • Accept input from all participants: do not interrupt demo

• **After the walkthrough:**
  • Analyze observations
  • Make interface changes
  • Plan the next evaluation
CW: How-to

• For each task’s walkthrough, evaluate the gulfs of execution and evaluation:
  • Will the correct action be evident to the user?
  • Will they know what to do?
  • Will the user notice that the correct action is available?
  • Can they find the interface object for the next action?
  • Will the user interpret the response from the action correctly?
  • Does feedback tell users they have made a correct/incorrect action?
  • Will the user know what to do next in response to the previous action?
Thinking Aloud Technique

• Encourage users to continuously “think out loud” as they are using the system
  • I.e., verbalize their thoughts as they use the system
• Easy to learn and perform, feedback direct from the user
  • Applies to all forms of usability testing
• Unnatural, not quantitative
• Want ad hoc feedback, not reasoned responses
Walkthrough Activity

• Conduct a walkthrough for the five tasks for your project;
• From the project team, roles are:
  • Expert - states what each task is
  • Scribe – takes notes
  • Evaluator – acts as the primary user
  • Observer – watches the evaluator interact with the system
• Volunteers from another team will be the evaluators
• Afterwards, the team discusses possible fixes to identified problems

One person may have more than one role
Walkthrough Activity (cont.)

• Volunteer evaluators – attempt the tasks, “thinking out loud”
  • What execution action decisions and why?
  • What evaluation interpretations?
  • What uncertainties in actions and interpretation?
  • Are items on the screen affecting your decisions positively or negatively?
  • If you are stuck on a step, ask the evaluators for help

• Team observers/scribes use the walkthrough checklist in myCourses

• Each team - submit volunteer checklists and team reflection notes to “Class Room Activity/Cognitive Walkthrough” Dropbox