# 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.
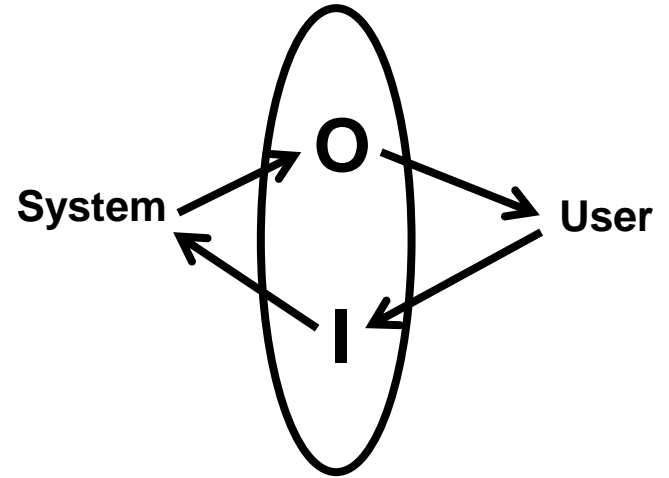
CW How-to (1/3): Before the walkthrough:

- Select the **tasks** to be examined
- Select the **interfaces** (screens) to be evaluated
- Evaluators are developers and designers
  - Act as the primary user
  - **Who will be the users of the system?** What are their characteristics? Input: user profiles (knowledge of task domain, UI)

CW How-to (2/3): During the walkthrough:

- Present the task
- Ask evaluator to perform task. For each task's walkthrough, evaluator should think:
  - 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?
- Record observations
- Accept input from all evaluators: do not interrupt demo

CW How-to (2/3): During the walkthrough:

- 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

CW How-to (3/3): After the walkthrough:

- After the walkthrough:
  - Analyze observations
  - Make interface changes
  - Plan the next evaluation

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 – writes down evaluators' answers
  - Observer – watches the evaluator interact with the system and takes notes
- 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 expert for help
- Team observers/scribes use the walkthrough worksheet (@course site)
- Each team - submit volunteer checklists and team reflection notes to "Project/Cognitive Walkthrough" Assignment Folder