

Solutions to CS160 Practice Midterm

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Part I: General HCI Questions

1. Mouse: Douglas Engelbart, NLS. Hypertext: Vannevar Bush, NLS. (The hypertext part is ambiguous.) Pen-based interfaces: Ivan Sutherland, Sketchpad. (Make sure that you are aware of the major developments in the history of Human-Computer Interaction, and the pioneers who were responsible for these advances.)
2. In contextual inquiry, the designer and user behave in a master-apprentice fashion, such that the designer learns about the user's tasks in order to understand them. The user explains how he carries out his work as he performs them, in front of the designer, at the user's workplace. On the other hand, an interview becomes a question-and-answer process such that the user ceases to perform and explain his ongoing work. (Make sure that you understand the four principles of contextual inquiry, how the master-apprentice model differs from the interviewer-interviewee, expert-novice, and host-guest models, the importance of task analysis, as well as how contextual inquiry relates to task analysis and iterative design.)
3. Task analysis, usability testing using prototypes, and tracking use. (This question is vague. Each designer has a different conceptualization of the exact stages in the task-centered design process, and the boundaries between stages are somewhat blur.)
4. Skip. Not covered in Spring 2003 CS160.
5. Trashcan and desktop. (Make sure that you also understand the usefulness of metaphors, together with their strengths and weaknesses.)
6. Other existing systems, and social-cultural norms. (Make sure that you also understand how conceptual models are an improvement over metaphors, and the significance of composite metaphors.)
7. A structural model explains what the system does independent of use (it's a system-centered model), whereas a functional model explains what the system does to assist a user's task (it's a user-centered model).
8. Skip. Not yet covered in Spring 2003 CS160.
9. Operation (b), moving the pointer into a 30mm target from 90mm away. (Make sure that you understand the usefulness of the Model Human Processor, the parameters involved in the MHP, are able to draw the diagram for the MHP and stage theory, understand the various terms in the stage theory diagram, and the significance of memory in "recognition over recall." You should also understand the 6 principles of operation given in the lecture slides very well.)

10. Less time spent in coding, and the ability to uncover usability problems in a design in the early stages. (There are several other advantages of rapid prototyping, and you should be aware of them. You should also understand the relative strengths and weaknesses between lo-fi and hi-fi prototyping.)
11. The design team faking the test participant's interaction with a system.

Part II: Heuristic Evaluation

Can't provide solution, since the online form was not given.

Be sure that you understand each heuristic. The lecture slides provide excellent examples. You should also understand why heuristic evaluation is a discount usability method, how heuristic evaluation differs from other discount methods, why 3-5 evaluators are the optimal number in many cases, how heuristic evaluation is performed in the case of evaluators who are HCI specialists but not domain experts, why there should be separate listings for each violation, and why heuristic evaluation should complement user testing

Part III: UI Scenario and Sketch

Please refer to contextual inquiry assignment and grading comments. I can demonstrate the storyboarding during office hours if needed.

Make sure that you understand the usefulness of personas, the difference between goals and tasks, the difference between tasks and scenarios, how a storyboard is a graphical illustration of a scenario, and how to produce complete and concrete descriptions of tasks and scenarios.