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CS160 Sample Midterm Exam 2

This is a closed book, individual test. You are not allowed to use your notes, texts, or laptop computers. **You have eighty minutes for this exam; there are eighty points total.** Use your time accordingly.

If you find a question ambiguous, document the ambiguity. Indicate the way you interpreted the question in a set of separate sentences next to the question. The questions on the exam are not intended to be ambiguous, but sometimes another meaning is interpreted by the examinee that we did not take into consideration.

Part I: General HCI Questions *(35 points)*

1) Explain briefly why personas are useful for design. [5 points]

2) Why is user-interface design based on iterative refinement, rather than detailed specification? [3 points]

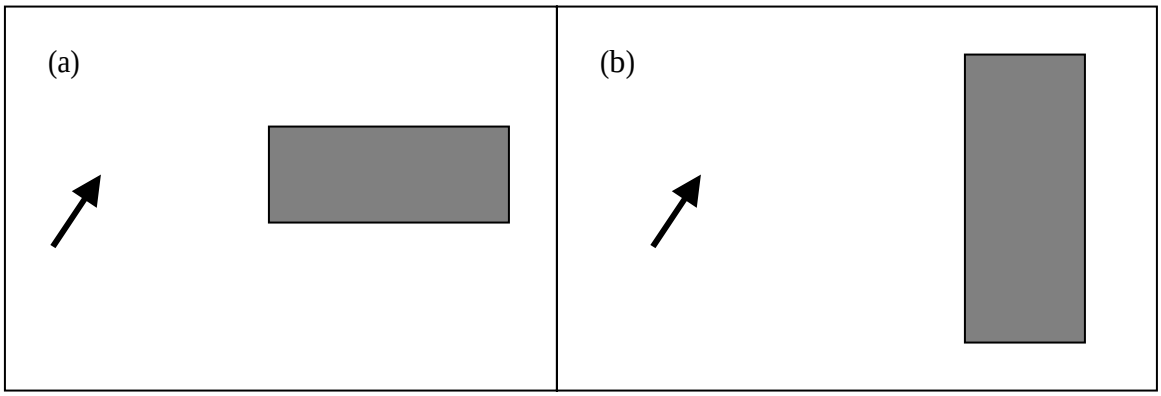
3) List some "budget" (inexpensive) usability methods. [3 points]

4) How should budget usability methods be combined with user studies? [3 points]

5) Contrast structural and functional models. [4 points]

6) Why is recognition preferred over recall? [3 points]

7) The pictures below show initial pointer positions and target regions. By using Fitt's law, which task would normally be faster?: [4 points]



8) Which of the following statements best describes contextual inquiry? Circle all that apply. [3 points]
   a) A way of mastering how to perform the users' tasks
   b) A way of uncovering usability problems in a prototype
   c) A way of understanding the users' needs and work practices

9) The Power Law of Practice applies to: (Circle all that apply). [3 points]
   a) knowledge acquisition
   b) sensori-motor skilled behavior
   c) quality

10) Give some advantages of the master-apprentice model for contextual inquiry over other kinds of user questioning. [4 points]

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Part II: Heuristic Evaluation *(20 points)*

Describe ten usability problems in the online sample UI in the "handouts page". Label each violation with a number on the figure and make a list of violations. For each problem, you must discuss which guideline is violated and why. You should also suggest a solution for each of these problems. Use Nielsen's second set of heuristics below to label each violation. Remember to list each violation separately. Remember: If the same violation occurs in multiple places, it is still one violation, but the same interface element may cause several violations.

HEURISTIC POINT BREAKDOWN:

1 points for "labeling each violation with a number on the figure"

20 points for the ten violations

Reference: Nielson's Revised Set of Ten Usability Heuristics

H2-1: Visibility of system status
H2-2: Match between system and the real world
H2-3: User control and freedom
H2-4: Consistency and standards
H2-5: Error prevention
H2-6: Recognition rather than recall
H2-7: Flexibility and efficiency of use
H2-8: Aesthetic and minimalist design
H2-9: Help users recognize, diagnose, and recover from errors
H2-10: Help and documentation

Part III: UI Scenario and sketch *(25 points)*

You have conducted a contextual inquiry and task analysis of user behavior in a large National Park. Two representative tasks are:

(a) (Easy) Following directions from the rangers' station to a specified campsite.
(b) (Moderate) Entering information of interest to other park users such as: condition of roads, quality of campsite, presence of predators (Bears, wildcats), interesting sights such as flower groves, nesting birds etc.

You decide to use GPS-assisted PDAs with wireless LAN to support these tasks, but wireless access is only possible near the rangers' station. So your applications should only assume connectivity there. GPS location is available everywhere.

1. Sketch a main page for the Park application which includes support for the tasks above (you don't have to include all the features the app would have). Include labels as needed on icons [10 points]
2. Sketch Scenario (a) using storyboarding. [5 points]
3. Sketch scenario (b) using storyboarding [10 points]