CS160 Fall 2008 Midterm

NAME_____ SID_____

This is a closed-book exam with 3 parts. Please write all your answers in this booklet. There is a total of 70 points, and you should be able to finish the exam in 70 minutes. The time spent on each questions should be equal to its point value.

Part I: Short-Answer Questions *(40 points)*

Give short answers to the following questions:

1. What kinds of skills would you want in the members of a UI design team? [2 points]

2. What is a *medium*-fidelity prototype, and what techniques are used? [2 points]

3. What characteristics of team members contribute to team creativity? [2 points]

4. What are "resources" in a game, and what are they used for? [2 points]

5. Define “puzzles” in game play and their limitation: [2 points]

6. List some attributes of BART ticket users that would derive from task analysis [3 points]

7. What roles do the interview and interviewer enact during contextual inquiry? [2 points]

8. Give an example of a tangible interface [2 points]

9. What affordances does a scroll bar have? [2 points]

10. Give an example of a control with a simple conceptual model. [2 points]

11. Give two advantages of low-fidelity prototyping over high-fidelity prototypes [2 points]

12. What should you report as critical incidents during a Wizard of Oz study? [3 points]

13. Explain with a figure the “Zone of Proximal Development”. How is it relevant to game design? [4 points]

14. Sketch a graph of task performance time vs. number of repetitions that demonstrates the “power law of practice”. [2 points]

15. What kinds of memory are there in the MHP (Model Human Processor)? [2 points]

16. Give two persuasive principles (psychology principles, not rhetorical) [2 points]

17. How do interface events propagate through the tree of visible windows? [2 points]

18. Give one advantage and one disadvantage of between-subjects experiments vs. within-subjects. [2 points]

Part II (10 points)

Find five usability problems in the UI shown on the next page. Label each violation with a number from 1 to 10 on the figure. Then make a list in the space below which is indexed by those numbers. Each entry should include the Heuristic from the list below that has been violated. You must also explain the violation in words. Finally you should 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

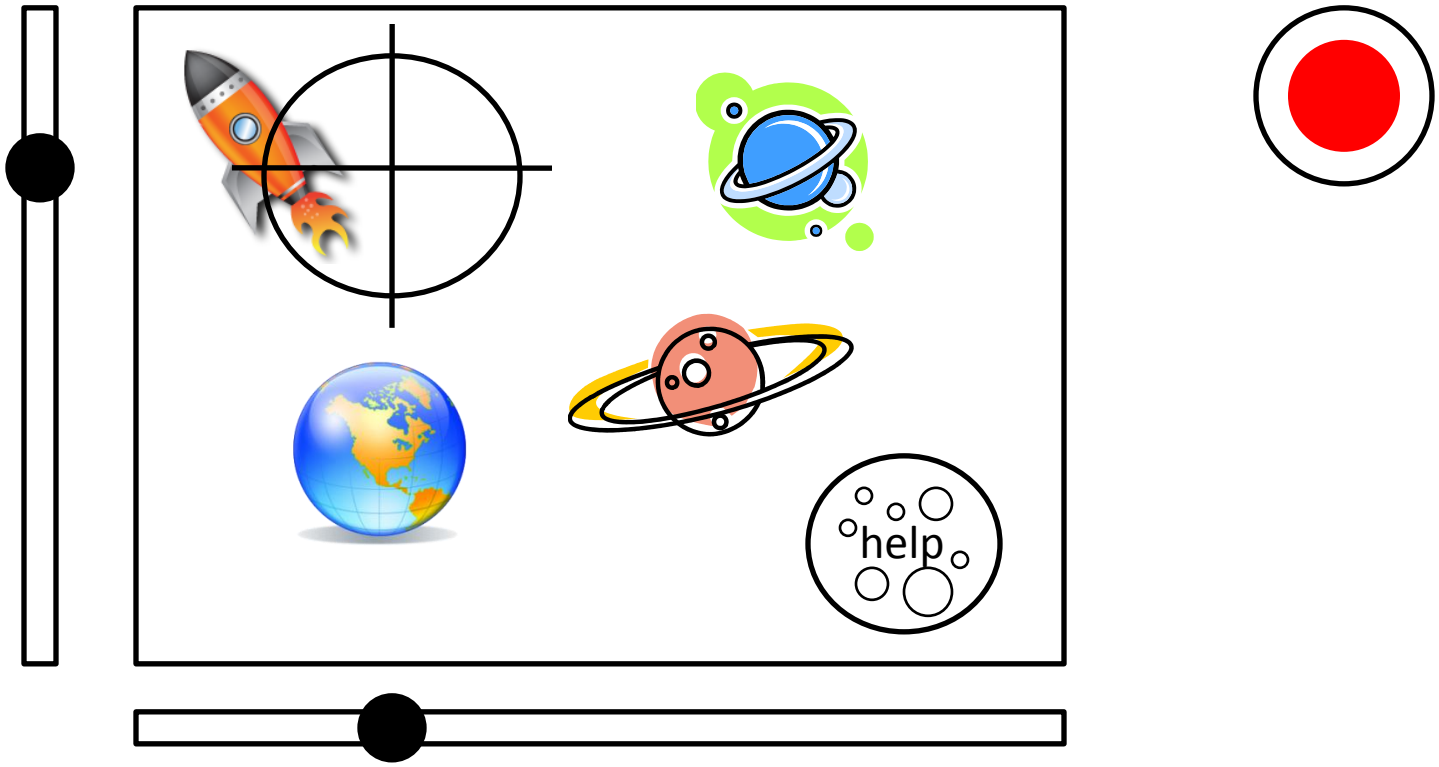
Reference: Nielson's Revised Set of Ten Usability Heuristics

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

Write your heuristic evaluation problems here:

Math Master

Goal: Use the mouse to move the vertical and horizontal sliders to aim toward a target. Click on the fire button to attack. This will bring up a math puzzle. Solve the puzzle to destroy the target. Only one target is valid at a time. If you choose the wrong target, or your solution is incorrect, you will be annihilated.



Type your answers here:

Part III: UI Scenario and Sketch *(20 points)*

You task is to design a game to help users reduce their electrical energy consumption. Assume your game runs in a monitored house and is aware of the change in energy use caused by each user action (turning devices on or off) while the game is running. Your game should support the following tasks:

(a) Notifying the user that they have received credits for low energy use, and allowing them to redeem them in an online store (to buy energy efficient light bulbs etc.)

(b) Providing the user with a display of other players current energy use and allowing the user to visualize other players energy use over time – the display should help the user plan their own energy use strategy.

Create scenarios for each task, and show the sequences of screens for each task with sketches. [10 points each]