CS 315 Exam 2 Review Questions
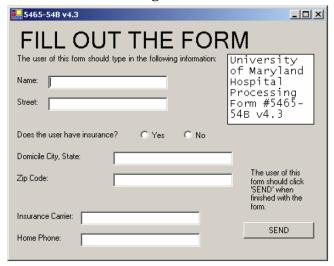
Chapters 5, 6, 7.4, 8, papers presented on March 20, April 5, April 17, and talk by Crystal Beasley.

1. Describe the three principles of direct manipulation
2. Examine the following interface:

   a. Describe three form fill-in design guidelines that have been violated by this interface.
3. Explain the difference between direct-control and indirect-control pointing devices.
4. A telephone-based menu system is being designed for a magazine subscribe/unsubscribe service system. There are 7 magazines available: National Geographic, Travel and Leisure, Entrepreneur, Time, Golf, US News and World Report, and Fortune.
   a. Describe three reasonable orderings of the voice menus and justify each.
   b. Some designers suggest that speech recognition be used in the system, so users can interact with the system by speaking instead of pressing buttons on the dial pad. Give two arguments for and three arguments against the proposal.
5. Explain or define:
   a. Direct manipulation
   b. WIMP interface
   c. Affordance
   d. Haptic interfaces
   e. WYSIWYG
   f. Augmented reality

      g. Card sorting

      h. QA

      i. Unit testing

      j. Regression Testing

      k. Gestural interactive systems

      l. Multi-touch systems

      m. Augmented reality systems

      n. Crowdsourcing

6. Input Devices

    a. Name two pointing devices, other than mice and joysticks.

    b. Name two methods that can be used to input text, other than keyboards.

    c. Name one input device for drawing.

7. Give 2 examples where direct manipulation would not be the most appropriate interface style. Be as specific as possible.

8. Describe two goals a designer should keep in mind when designing forms.

9. Guest Speaker Crystal Beasley described 13 signs that your UX needs an exorcism. One was "I've got this really great idea for a feature". Discuss why this statement could be problematic.

10. What is the difference between quantitative and qualitative data?

11. Consider a telephone operator whose job is to handle calls from magazine subscribers needing to change their address. The operator must interact with the customer and enter the new address somehow so that it can be updated in the backend database. There are many ways to build an interface to support such an operator. For each of the 5 main interaction styles, give one comment on why it would or would not be suitable for this task.

12. What is the wizard of Oz technique and when and why is it used?

13. List TWO strategies for fostering team work.

14. Imagine that you need to remotely control a robotic car driving across the desert. You have a display showing the current location and direction of the car superimposed on a map of the terrain, updated continually by GPS information transmitted from the car. To control the car which would you prefer: a joystick or a mouse? Why?

15. "One of the key mistakes made by educational games designers lies in focusing too heavily on educational content to the detriment of gameplay." Discuss.

16. From the point of view of user interface design, state whether you agree or disagree with the statement: "Touchscreens should be positioned flat or almost flat, not vertically". Describe why you agree or disagree.

17. The Xbox controller has two joysticks and a number of buttons. You could

easily write code to allow people to use this to control a browser. How would this compare to browsing using a keyboard and a mouse? Give at least two advantages of the controller and two advantage of the keyboard/mouse combination.

18. Imagine that the President is considering a National Project to improve Human Computer Interaction, in the form of a program of $100 million per year over 5 years to support research directed towards "making interfaces more natural and human-like, so that interaction with computers is as easy as interacting with humans." Further imagine that the Congress has asked you to testify regarding this idea. Give three good arguments for or against this proposed project.

19. Rank the following interaction styles in terms of suitability for frequent users (1=best, 4=worst):
    a. Direct Manipulation,
    b. Command Language,
    c. Menu Selection,
    d. Form Fill-in

20. Produce a thoughtful argument about what role natural-language interaction (NLI) should have in user interfaces. Be sure to list at least three benefits and three limitations of NLI.

21. Describe one promising possibility for NLI and discuss how you would conduct a usability test and observation to collect some evidence about its strengths and weaknesses.