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Appendix 2: Further, General, Large Exercises

This document notes several, large exercises for in class or final semester projects. These exercises can be adjusted and modified to suit classes.

Exercise 1 - ATM machines

Consider a bank automatic telling machine (either a specific one or a composite one) and consider the human factors of using it.

(a) What are the common errors that people make? What difficulties might people encounter in using the machine? What difficulties might people have in understanding it?

(b) Write short notes (about one side of a page, total) on some of these problems, classifying them as anthropometric/ biomechanical, behavioral, cognitive, social, or other problem types.

(c) Turn this into a short writing exercise, and write out these notes in full.

Exercise 2 - Alarm creation

Try to forget your experiences of alarm systems and imagine designing the alarm system for an aircraft, a helicopter, intensive care unit, or a nuclear power plant. Prepare notes for group discussion your position in class for the following two points:

(a) What do you think would be the important aspects of users to consider? What qualities do you think would be important in the alarms you designed?

(b) What sources of information would you turn to for advice?

Exercise 3 - Learning interfaces

Consider some computer system that you have recently been trying to learn and master. Prepare notes for group discussion in class. You may wish to reference material in this book, and material on cognitive walkthroughs may be helpful in preparing this (Polson, Lewis, Rieman, & Wharton, 1992).

(a) List examples of the sorts of difficulties you have had. How did you solve these difficulties?

(b) Consider a complete novice learning the same system how might their experience compare with yours?

(c) Could the designer have anticipated these problems, and if so, how could they have avoided these problems?

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Exercise 4 - Simple task analysis of email

(a) Prepare a description of the activities involved in sending an email message to someone. Try to include as much information as possible, and choose any representation that seems appropriate.

(b) Imagine the description being presented to a novice who does not know about email and the Internet. What sense do you think they would be able to make of it?

(c) What problems might arise if this novice tried to use your description as instructions and how might they be solvable?

(d) Prepare notes for class discussion on these points. Consider what alternative representations for your description you might have used. Please use one other reference than another textbook or any of Norman's book and be prepared to discuss in class.

Exercise 5 - Library systems

Why should human factors have been included in the design and implementation of the library system in your university's library as seen by the patrons? Write an essay of 2,000 words noting concrete ways the library system could be improved based on material covered by this book. Support your reasoning with examples from the existing system with respect to material included there or available online.

Exercise 6 – Encoding exercise and levels of processing

This is an exercise suggested by Simon Robbie.

There are arbitrary ways to organize information including information in textbooks. Instead of the ABCS, come up with two different ways to organize the information in the book. (a) One way would be to organize it as distance from the brain, starting with memory and processing, which are in the brain. Diagram the knowledge in the chapters or sections (e.g., 12.1, 4.3). (b) Come up with your own way to organize the information. Create a diagram or outline.

(c) Based on the chapter on memory, what does this do for your understanding?

References

Polson, P. G., Lewis, C., Rieman, J., & Wharton, C. (1992). Cognitive walkthroughs: A method for theory-based evaluation of user interfaces. *International Journal of Man-Machine Studies, 36*, 741-773.

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