

Quiz 11, on Chapter 15 and the lectures

Tuesday, July 10th, 2012

Name and student ID:

Answer each of the following questions concisely, within the number of words/sentences specified in parentheses after the question. No sentence should be longer than 2 lines (unless you have unusually big handwriting). Any text that goes beyond these limits will be ignored!

Show that you have learned something from the textbook and the lectures; avoid generating answers on the basis of common sense or prior knowledge.

- 1 In the lecture last Tuesday, we discussed the guideline “Don’t make me think”. Suppose you wanted to formulate an 11th heuristic for heuristic evaluation on the basis of this guideline, to supplement the 10 heuristics of Jacob Nielsen. How might you formulate it in the following form: a. Brief title of the heuristic (one partial sentence) b. Statement of some condition that a user interface should fulfill. (One or two sentences)

Slides 4-14 from July 3rd; 15.2 in the book, especially “Turning Design Guidelines into Heuristics”

The answer can take various forms, but it should show that the student understands the basic idea of the “Don’t make me think” guideline and has some notion of what the 10 heuristics of Nielsen are like.

Example of a possible answer: “Minimization of thinking: The user interface should not require the user to think more than necessary about things like what a given label means or how the current web page is structured.”

- 2 Give two of the possible reasons why an expert evaluator performing a heuristic evaluation may fail to identify a given usability problem. (Two sentences)

Slide 19 of July 3rd, and the corresponding discussion in the lecture; 15.2.1 in the book

Possible answers:

The evaluator may not look at all parts of the system or try out all possible tasks.

The evaluator may look out for particular types of problem and therefore overlook other types.

The evaluator may be biased.

The evaluator may have insufficient experience to recognize the problem in question.

The problem may be a trivial one that the evaluator does not consider worth mentioning.

There may be so many problems that the evaluator does not have time to find and list them all.

(Other plausible answers are OK if they reflect an understanding of what heuristic evaluation is, even if they are based on common sense and are not mentioned in the above places.)

- 3 At the beginning of a lecture, sometimes the lecturer spends more than the expected amount of time turning on the projector using the remote control device. Give one example of a usability problem with such devices that could be caught by a good cognitive walkthrough. (It doesn’t matter whether your example really applies to the projectors used in our lecture rooms, as long as it is relevant and plausible.) Say (a) what the usability problem is and (b) how a cognitive walkthrough could help to identify it. (Two or three sentences)

Slides 22-25 from June 23rd and the discussion in the lecture; 15.2.2 in the book

Possible answer 1:

(a) The projector does not provide clear and immediate feedback as to whether it has been turned on or not. (b) One of the steps in a cognitive walkthrough is to consider whether, once the user has performed a given action, the system provides feedback as to whether the action has produced the desired result.

Possible answer 2:

(a) The interface of the remote control does not make it clear what actions need to be taken to turn on the projector. (b) One of the steps in a cognitive walkthrough is to consider whether it is clear what action needs to be performed to take the next step in the task.

Other answers are OK if (a) the usability problem is more or less plausible and (b) there is a reference to the part of a cognitive walkthrough in which that problem could be caught. It is not necessary to remember the exact steps of a cognitive walkthrough or to use the same terms as in the book or in the lecture.

- 4 Suppose someone has proposed a design for a novel alarm clock to replace the built-in alarm clock on the iPhone. And suppose they have prepared accurate GOMS analyses for both the built-in alarm clock and the new alarm clock. How could you use these two GOMS analyses to predict how long it will take a user who is already familiar with the built-in alarm clock to learn how to use the new alarm clock? (Two sentences.)

15.4.1 in the book describes GOMS, but the relevance to learning was discussed only in the lecture: Slides 2-12 cover GOMS, and Slide 10 mentions learning (“transfer”). (This issue was more prominent in the lecture discussion than it is on the slides.)

Typical answer: Consider the total size (e.g., in lines) of the parts of the GOMS analysis for the new clock which differ from the analysis for the old clock. The larger this size, the more learning time will be required.

(Note: As was pointed out in the lecture, it is not in general possible to make a precise prediction of learning time in this way.)

- 5 In your practical work for this course, every time you demonstrated a task using your COGTOOL mockup for Parallel Faceted Browsing, COGTOOL has computed the predicted execution time for the task. Do you think that these predictions would prove to be accurate if you tested them with real users? Why or why not? (“Yes”, “No”, or “Maybe” + one or two sentences.)

This question was explicitly discussed in the lecture of July 4th. It could also be answered on the basis of familiarity with CogTool’s traces and/or the discussions of the keystroke-level model in the book (15.4.2) or Slides 14-16 of July 4th.

Reasonable answers:

a. No. When using a Parallel Faceted Browsing interface, a user will spend a considerable proportion of the time thinking about the implications of the information presented (e.g., whether the prices of the flights from Saarbrücken are acceptable), and this thinking time cannot be predicted accurately by CogTool.

b. Maybe: If the users have performed similar tasks with the same interface in the past and do not need to think much about the information presented, the predictions may be accurate.

(Other answers can be OK if they take into account the fact that CogTool cannot predict all types of thinking accurately; or if they otherwise make sense and reflect some understanding of how CogTool predicts execution times.)

- 6 Suppose you have developed a website for an online bookseller. Give one example of an evaluation question that you might be able to answer on the basis of a web analytics report such as those provided by Google Analytics. (One sentence, maybe two.)

Slides 20-23 of July 4th and the discussion in the lecture; 15.3 in the book.

Examples of good answers:

“Does the new version of our site that we introduced last week attract more visitors / lead to more sales?”

“With the new version ... do more people read the book reviews / consult the recommendations?”

(These answers are good in that they formulate a question that really concerns the *evaluation* of some aspect of the site.

Answers like the following refer only to some type of information that you can obtain from an analytics report, so they are less relevant; but they are acceptable in the current context:.)

“What parts of the country give us the largest numbers of visitors?”

“Which pages of the site are most frequently viewed?”

“What is the average duration of a visit to the site?”

- 7 Suppose you have designed a novel keyboard for smartphones, which users will use by tapping with one finger at a time. You want to predict how many words per minute an expert user will be able to type on this keyboard after practicing for a long time. Explain (without going into detail) how you would proceed to make this prediction and in particular why you would need to use Fitts’ Law. (Two or three sentences.)

Slides 29-24 of July 4th and the discussion in the lecture; 15.4.4 of the book.

Typical good answer:

Find a fair amount of English text that people might type into a smartphone. Compute a prediction of how long it will take to enter this text using the new keyboard, assuming that the user types as fast as is possible according to Fitts Law, which takes into account the sizes of the keys and the distances to be covered.

(An answer that simply explains Fitts’ Law outside the context of the whole question is not acceptable.)