

Assignment 3

Grading: Score out of 100 (Question 1: 70 points, 2: 25 points, 3: 5 points)

Due date: Wednesday, October 19 at 11:59 pm on Brightspace

Lectures covered: 8-10

Format: Please use Times New Roman size 12 font and normal margins

Submission: Submit a PDF with your name in the following format: “Lastname_Firstname_A3”

Plagiarism warning: this assignment is to be done individually (although you may recruit other students in class to answer the survey)

Preface

For this assignment, you can use the same interface and task that you had used for Assignment 2. However, if you would like to choose a different interface or different task that is fine as well. It is completely up to you. However, please note that it would be helpful to stick to the same interface moving forward to Assignment 4, where you will need to suggest improved designs for your interface. You will still be allowed to change if you wish, but it might make things slightly more difficult for you. So consider your choice carefully for this assignment.

Software needed

Survey: You can use Google forms, a basic (free) version of Survey Monkey, or any similar platform of your choice. You can also create a document and then use it as a survey, but that might make the deployment and analysis slightly more involved.

Task analysis: You can work with any software you like to carry out your task analysis. You can use Google Drawings, trial versions of Visio, Lucidchart, XMind, or any similar applications, or do it in Word, Powerpoint, etc. Pick whatever option you like to ensure that your task analysis is clear and readable. Consider using landscape orientation if needed.

Question 1

70 points / 5 points unless indicated / Lectures 8, 9

- a) Indicate what **interface** and **task** you have selected, provide a picture/screenshot, and indicate whether they are the same as the ones you picked in Assignment 2. If one or both are not the same, explain why you made that change.
- b) Carry out a **cognitive task analysis** (CTA) for your selected task (carry out additional observations or interviews if you need to, especially if your interface/task is new, but there is no need to report on those)
 - i. Present your CTA as a tree, making sure to indicate your starting assumptions and level of detail (10 points)
 - ii. Which of the cognitive functions present do you think is the most time consuming, and why? Explain using design or cognition concepts.
 - iii. What key information or insight can you get from your CTA? It could be a problem that you detect, a possible design change, a potential error, etc.
- c) Create a **survey** with 7-10 questions in total that you will administer electronically or in writing to two people you know. All questions must be closed-ended (you can include an “other” option if needed), but the type of question/scale is up to you. The survey must be tailored to your particular interface (i.e., you cannot use a well-known survey).
 - i. Indicate the goal(s) of your survey, whether the two people participated in Assignment 2 in any capacity, and whether you did any additional observations before you asked them to fill the survey.
 - ii. Create a well-designed survey to target your goals and provide the link or your questions (*make sure the link works* if you provide that; 10 points)
 - iii. Summarize all the results from the survey using clear graphs or tables (it will not be meaningful for two people, but it is ok!). These can be generated from your platform or ones you create, as long as each figure or table is properly labeled (e.g., Figure/Table 1: Respective question(s)). Any axes should also be labeled.
 - iv. What insight did you get from your survey? Discuss while referring to figures/tables, as appropriate, and tie everything back to your goal(s).
 - v. Informally ask the two people who filled out your survey for feedback. For example, did they find any questions confusing? Discuss any feedback you obtained and explain how/if you would update your survey.
- d) Create one primary **persona** for your interface that is based on everything you have done so far (again, carry out additional data gathering if needed, but no need to report on that).
 - i. Your persona should take up around half a page up to one page at most, and needs to be clear, thorough, and well organized (put a placeholder for an image but no need to put an actual image; 10 points)
 - ii. Explain how the main elements of your persona were derived (e.g., from which data gathering approach, from your experience, your goals, etc.) and how it might help you moving forward to the design phase.

Question 2

25 points / 5 points unless indicated / Lecture 10

- a) Go through the Nielsen, Shneiderman, and Wickens **design principles** systematically and evaluate whether those are met in your interface. You can focus just on your one selected task or look at the whole interface, whatever is most meaningful in your context. Whether the principle is met or not, you have to briefly explain why or why not with a specific example. If the principle is not applicable to your design, explain why. If you feel any principle is redundant, mention that and say “refer to [other principle]” (15 points).
- b) For any *two* of the design principles that are violated, explain how you could **improve that design**. Be specific and make sure to use concepts we have learned. If you do not have two that are violated, provide any alternative designs that work in your context.
- c) Imagine that it is 50 years in the future and you are trying to create the next generation of your interface/item (if it still exists!). Think of a radically different design and provide any type of **conceptual model** for that design. Indicate what type of model you went for, explain what your new design is like, and highlight how it overcomes some design flaws.

Question 3

5 points; Lectures 8-10

Reflect on what you have done in this assignment. To help you think, consider the questions provided below. Your answer should be one or two insightful paragraphs and you need to elaborate on at least *two* of these questions.

- This was essentially a pilot study; what would you have done differently if you were doing a full study in real life and had more time and options?
- Looking back at Assignments 2 and 3, how would you have set up your data gathering approach in real life? Consider the techniques used and the sequence of their use.
- How useful were the techniques used here, including surveys, task analysis, personas, design principles, and conceptual models?
- Would you have done a hierarchical task analysis (HTA), rather than a CTA? Do you think the CTA added value?
- How would you have designed your survey differently if not for the constraints given here (closed-ended questions and 7-10 questions)? Would you have used a well-established survey (e.g., SUS, NASA-TLX, etc.)?
- What additional analysis could you have done with your survey if you had collected a more meaningful number of participants?
- How would you have tested the validity or reliability of your survey? Indicate what questions you would have used to that end.
- If you used the same interface for both Assignments 2 and 3 and now wanted to triangulate your results, do you see a clear conclusion emerging or do you have conflicting results?
- What did you learn from this assignment that you had not realized from class?