CST315 Software Enterprise: Design Process Practices (Fall 2015 revision)

Objectives

- Provide information and context to specific design process activities.
- Understand the similarities and differences of the Engineering Design and User-Centered Design Processes.

Prerequisites:

1. This practice session will require referencing your prior readings and notes on various design processes from the UCD module.
2. For task 2, review the Engineering Design Process PDF (see attached in BlackBoard).

Background

Thus far we have discussed general ideas of process. Now with this practice assignment, we'll start getting into specific techniques you can use in design projects. In fact, we'll use this lab as a way to bridge into that new section of the course.

This practice lab has two tasks. Task 1 asks you (in groups, use divide-and-conquer) to collaboratively construct a knowledge base of design process activities that you can use at different steps of the design process. The second task asks you to directly compare the Engineering Design Process (EDP) and the User-Centered Design Process (UCD).

Task 1: Design Process Activities

In the UCD readings/slides there have been smatterings of suggested design practices, with only an *ad hoc* description of them provided during lecture. These are sprinkled throughout your readings, textbook, and notes in various places. Task 1 asks you, in groups, to go explore, finding references to these techniques in your materials, providing an expanded description of them, and identifying where in the UCD process they are most useful. We provide a list of them below. You will split up into groups, and research a group of techniques. You will also be asked to identify one technique on your own, from outside your notes or the slides to add to your research.

1. *Personas*
2. *Scenarios*
3. *Prototyping*
4. *Storyboarding*

/----------Groups: A and M

5. Root cause analysis
6. Interviews
7. Decomposition

/----------Groups: B and N

8. Questionnaires/Surveys
9. Architectural design
10. Observation/Ethnography

/----------Groups: C and O

11. JAD
12. Use Cases
13. Mind Maps

/----------Groups: D and P

14. Usability inspection (heuristic evaluation)
15. Cognitive Walkthrough
16. Interface design

/----------Groups: E and Q

17. Focus Groups
18. Concept combination table
19. Research standards and best practices

/----------Groups: F and R

20. Expert opinion
21. Brainstorming
22. Voting

/----------Groups: G and S

23. Risk analysis
24. Component design
25. Reverse Engineering

/----------Groups: H and T

26. Metaphors and Analogies
27. Workshops
28. Click-tracing

/----------Groups: I and U

29. External Inspiration
30. Field validation
31. Task hierarchies

/----------Groups: J and V

32. Database design
33. Feasibility study
34. Interviews

/----------Groups: K and W

35. Affinity (K-J) process
36. Surveys/Questionnaires
37. Working in Parallel

/----------Groups: L and X

38. Documentation
39. Change control
40. Groupthink

Practices 1-4 we will do explicitly in class, so these will not be assigned to a group. The remaining 12 groups, separated by dashes (---) will be assigned in class. Again, your group also has to come up with one on its own – do this first. Once you identify it, talk to us and convince us it is worth doing. Do not duplicate a practice another group is doing.

For each technique, do the following:

1. Find out if/where it is referenced in your readings or notes (not all of them are in there!)
2. Provide a short description of the technique (3-4 sentences). Indicate what references you used (for example, websites you visited).
3. Indicate what process steps it is ***most useful*** in the UCD process. If it does not seem to fit UCD, explain why. If it is useful, say why and indicate how useful (like, "really useful you have do it always", or, "it can sometimes be useful, particularly if you tried XXX and that didn't work". Finally, many of the techniques are useful in several process steps (like prototyping), but try to find the top 1-2 you think it is best for.

4. Provide one or two simple examples. You can create one yourself or you can obtain one from an external resource (but remember to cite your source). Explain why it is a good example.

You may want to take a look at the UCD slides on Storyboarding/Prototyping; first slides describes the techniques and the second slide talks about Pros and Cons of each technique.

Our intention is to coalesce your contributions into a single "handbook" for all the project teams to share. We simply do not have time to cover each and every technique in detail; your project teams will have discretion as to which techniques make the most sense, though keep in mind we expect we will be able to explain the rationale for your choices.

Task 2: Compare and Contrast the EDP and UCD process models

The EDP is described in the attached reading, and the UCD process is described in the slides/notes. Compare and contrast the process models using the following guidelines:

1. Identify process steps that appear to be in common (highly similar) and those that are distinct. Briefly explain the similarity/difference (~2 sentences per step).
2. Compare and contrast the nature of iteration in the two process models.
3. Opinion (no wrong answers): which model does your group like better? What are the pros and cons of each process model? Provide your answer in a side-by-side table format.

We may compile the best answers into a section of the handbook.

SUBMISSION

Submission will be via Blackboard. Review Blackboard for the submission date. Please save your content in MS-Word format, and name the file CST315DesignProcessHandbook#.docx, where '#' is your team LETTER.

If some member assigned to your group did not participate in this lab, please inform the TA via email.