Assignment 02

EECS 3461, Fall 2017 v.1, Prepared by: M. Baljko

Submission
To submit your solutions to this assignment, you will use the submission facility on the course website on learn.lassonde.
This assignment is to be completed by teams of 2 students.
This assignment is worth 20% of your final grade.
Due Dates:
Component 1&2 Tuesday, Nov 14, 2017, 11:55pm
Component 3 Monday, Nov 20, 2017, 11:55pm
Component 4 Monday, Nov 27, 2017, 11:55pm
Component 5 Monday, Dec 04, 2017, 11:55pm

Overview

This assignment consists of five components that together will take you through the complete development lifecycle for an interactive product. The components are each based on the assignments at the end of Chapters 10, 11, 12, 14, with further modifications that have been made to adapt the assignments to this course.
The overall assignment is for you to design and evaluate an ***interactive system*** for an ***application domain of your choosing***.

1. Component #1: Choice of Application Domain

1.1. *Specification*

First, you will need to choose your application domain. The textbook uses the application domain of ***on-line ticket booking (e.g., for events like concerts, the theater, and the cinema). The book motivates the application domain by conceding that many online booking facilities exist already, but they are flawed (awkward, frustrating, etc).*** You can use the on-line ticket booking domain if you like, or you may choose something else. Other choices include: paid parking domain (users pay at kiosk for parking and receive validated ticket to leave parking facility); automatic food ordering (users order and pay for food, then pickup at counter, such as bubble tea or fast food). Your choice must satisfy the following criteria:

a. the interactive system must run on a computing platform (e.g., desktop or mobile platform, within a web browser, or an embedded system, such as a kiosk or handheld device)

1.2. *Success Criteria*

A. **Clarity/Presentation:** can the reader understand the description of the application domain? Is it clear how the interactive product fits within the application domain? Is the presentation high-calibre (free of spelling and grammatical errors, well-formatted, etc)
B. **Appropriateness:** the extent to which the choice satisfies the criteria above.

1.3. *Submission Requirements*

Prepare a short written document that describes the application domain.

2. Component #2: Establishing Requirements

In the description below, ***application domain*** and ***interactive system*** refers to those which was selected in Component #0 above.

2.1. *Specification*

In order to complete this component, you will first need to read Chapter 10.

For this component, you will:

a. Identify users' needs for this ***interactive system***. You could do this in a number of ways. For example, you could:
   - observe people using a version of the interactive system that exists already
   - look at websites that provide services in your application domain
   - observe people performing tasks in the application domain via human interaction (e.g., working with an agent or representative)
   - think about your own experience of operating in this application domain
   - interview friends and family about their experiences, and so on.

   Record your data carefully.
b. Based on your user requirements, develop two different user profiles. Further develop one of these into a persona. Develop a main scenario for each of the two profiles, capturing how the user is expected to interact with the product.
c. Identify the main task associated with your application domain. Perform a task analysis.
d. Based on this analysis, produce a use case for the main task.
e. Using the data gathered in part (a) and your subsequent analysis, identify different kinds of requirements for the product, according to the headings introduced in Section 10.3 of the textbook. Write up the requirements in the style of the Volere shell.

2.2. *Success Criteria*

A. **Clarity/Presentation**
B. **Quality:** degree to which each of the components has been completed

2.3. *Submission Requirements*

Prepare a written report that contains:

- Section 1: the data that was recorded under 2.1.a) above.
- Section 2: description of: the two user profiles, the persona, and the two scenarios
- Section 3: task analysis; identification of the ***main task***
- Section 4: use case of the main task
- Section 5: Volere shell

3. Component #3: DESIGN, PROTOTYPING, AND CONSTRUCTION

3.1. *Specification*

This component builds upon preceding components. Read and review Chapter 11.

a. Based on the information gleaned from Component #2, consider three different conceptual models for this system. You should consider each of the aspects of a conceptual model discussed in this chapter: interface metaphor, interaction type, interface type, activities it will support, functions, relationships between functions, and information requirements. Of these conceptual models, decide which one seems most appropriate and articulate the reasons why.
b. Produce the following prototypes for your chosen conceptual model:
   i. Using the scenarios generated for the ***interactive system***, produce a storyboard for the ***main task*** for one of your conceptual models. Show it to two or three potential users and get some informal feedback.
   ii. Now develop a card-based prototype from the use case for the ***main task***, also incorporating feedback from part (ii). Show this new prototype to a different set of potential users and get some more informal feedback.
c. Consider your product's concrete design. Sketch out the application's initial view (be clear about platform). Consider the layout, use of colors, navigation, audio, animation, etc. While doing this, use the three main questions introduced in Chapter 6 as guidance: Where am I? What's here? Where can I go? Write one or two sentences explaining your choices, and articulate whether the choice is a usability consideration or a user experience consideration.

d. Sketch out an **experience map** for your product. Use the scenarios and personas you have already generated to explore the user's experience. In particular, identify any new interaction issues that you had not considered before, and suggest what you could do to address them.
e. How does your product differ from applications that typically might emerge from the Maker Movement? Do software development kits have a role? If so, what is that role? If not, why do you think not?

3.2. *Evaluation Criteria:*

A. **Clarity/Presentation**
B. **Quality:** degree to which each of the components has been completed

3.3. *Submission Requirements*

Prepare a written report that contains:

- Section 1: Choice of conceptual model and rationale
- Section 2: storyboards (photos of, if hand drawn), card-based prototype; documentation of feedback for each
- Section 3: Sketch of concrete design of initial view; rationale and discussion of design choices
- Section 4: Experience map and observations
- Section 5: Maker Movement; comparison & contrast

4. Component #4: INTERACTION DESIGN IN PRACTICE

4.1. *Specification*

a. Assume that you will produce your ***interactive system*** using an agile approach. Read Chapter 12.
    i. Suggest the kind of user research you would like to conduct for your product before iteration cycles begin.
    ii. Prioritize the requirements for your product according to business value, i.e. which requirements are likely to provide the greatest business benefit, and sketch out the UX design work you would expect to undertake during the first four iteration cycles, i.e. Cycle 0, and Cycles 1 to 3.
b. Using one of the mockup tools introduced in Chapter 12, generate a mockup of your product's initial view, as developed in Component #3.
c. Develop a software-based prototype. Using one of the patterns websites listed in Chapter 12 and earlier, identify suitable interaction patterns for elements of your product, and develop a software-based prototype that incorporates all the feedback and the results of the user experience mapping achieved at the end of Component #3.

4.2. *Evaluation Criteria:*

A. **Clarity/Presentation**
B. **Quality:** degree to which each of the components has been completed

4.3. *Submission Requirements*

Prepare a written report that contains:

- Section 1: Description of user research; sketch of UX design cycles
- Section 2: Mockup of initial view
- Section 3: Description of interaction patterns

Software prototype (should be self-contained archive).

5. Component #5: Evaluation I

5.1. *Specification*

Using the prototype that you have developed in Component #3 to represent the basic structure of your product, follow the instructions below to evaluate your prototype:

a. Based on your knowledge of the requirements for this system, develop a standard task.
b. Consider the relationship between yourself and your participants. Do you need to use an informed consent form? If so, prepare a suitable informed consent form. Justify your decision.
c. Select three typical users, who can be friends or colleagues, and ask them to do the task using your prototype. Note the problems that each user encounters. If you can, time their performance. (If you happen to have a camera or a smartphone with a camera, you could film each participant.)
d. Since the system is not fully implemented, you cannot study it in typical settings of use. However, imagine that you are planning a controlled usability study or a field study. How would you do it? What kinds of things would you need to take into account? What sort of data would you collect and how would you analyze it?
e. What are the main benefits and problems with doing a controlled study versus studying the product in a natural setting?

5.2. *Evaluation Criteria:*

C. **Clarity/Presentation**
D. **Quality:** degree to which each of the components has been completed

5.3. *Submission Requirements*

Prepare a written report that contains:

- Section 1: Description of standard task
- Section 2: Draft of informed consent form
- Section 3: Data from initial testing session with three users.
- Section 4: Description of planned study (usability study or field study)
- Section 5: Discussion of pros and cons of different study types