

## HCI 440: Introduction to User-Centered Design

### Assignment 4: Models and Requirements

#### Description

In this assignment, work as a team to develop several design-informing models and establish a baseline set of requirements for your integrated activity.

- Using your contextual inquiry results, create personas for the two distinct classes of users of your team's activity. Create additional personas, if your team deems them useful.
- Create a user journey map for the persona that faces the most challenging journey in the activity. This persona is the one that is likely to have the most emotional swings, decisions, and interactions with the activity ecosystem of all your personas. For example, for a parent/child persona pair, the parent persona would likely be the better choice for the journey map. For a novice/expert persona pair, the novice persona would likely be the better choice.
- Using your project description and contextual inquiry results from Assignment 3, perform a concept analysis to define a preliminary set of activity-related concepts, their attributes, and the operations that the user can perform on these.
- Create a conceptual model diagram that visually represents the activity-related concepts you have defined and the essential relationships among them.
- Use the observations, insights, and insight clusters your team uncovered during contextual inquiry to define a first-iteration set of requirements for your team's activity. Iterate over your requirements to eliminate requirements conflicts among your personas.

The results of this assignment is a set of artifacts which present different views or perspectives on your activity and its context. These all will help inform your design efforts in future assignments.

#### Assignment Content

Use the *Models and Requirements* Microsoft Word template associated with this assignment, or create your own document. The provided template is a minimal but functional version; feel free to create your own richer version. However, if you create your own template, you must include *exactly* the same information (including heading names) in *exactly* the same order as the provided template.

- *Personas*. Create personas for the two distinct classes of users of your team's activity. These should abstract the essential aspects of the subjects your team observed during contextual inquiry, and reflect the requirements you have uncovered. You may need to revise your requirements to ensure that there are no requirements conflicts among your various personas (slide 4-11).

Include additional personas if the team deems them useful. For the *Cardiac Patient Rehab Support Example* (sample project in the A3 template and elsewhere), I might create at least two different 'patient' personas, a physically-active patient who is receptive to new technology, and a sedentary patient who is technology-adverse. For completeness, I might also create 'doctor' and 'rehabilitation nurse' personas to round out my persona set.

- *User Journey Map*. Create a user journey map for the persona that faces the most challenging journey in the activity. (See entry under *Description*, above, for details.) Because of the nature of an integrated experience application, the map should use a linear format, as in slides 4-17 and 4-22. The map needs to be functional, it does not need to be a presentation-grade infographic as in the Module 4 examples. However, it must include the essential journey map elements: timeline, some indication of the persona's emotions (emoticons are one option), touchpoints, and channels.

The map may be created using any drawing or diagramming tool. Note that PDF, PNG, and TIFF are much better file formats for diagrams of this sort than JPEG, so export to one of these formats, if possible. Tools for creating the diagram include:

- Visio for Windows (available for free to CDM students);
- OmniGraffle for OS X (available with an educational discount);
- Axure (free to students with a 3.0 GPA in the HCI program; 30-day trial available)
- Diagrams Online ([www.draw.io](http://www.draw.io)), a first-class, free, Web-based drawing application; and
- Adobe Photoshop or a similar graphics editor.

Because its landscape format would be unwieldy in the portrait format template file, the journey map should be submitted as a separate file in the D2L dropbox. Please **do not** place documents together in a Zip file—please submit them separately to the D2L dropbox.

- *Concept Analysis.* Identify the activity-related concepts that users encounter, create, and manipulate in order to accomplish their goals in the integrated activity. Identify the operations that the user would perform on these concepts. For those for which it is appropriate, identify attributes of the concept. Create a representative set of concepts—you need not be exhaustive. A set of 10-15 concepts is sufficient; for a set of 10-15 concepts, grading will be based on the quality of the analysis, not on the number.
- *Conceptual Model Diagram.* Create a conceptual model diagram from your concept analysis that visually represents the activity-related concepts and the relationships among the concepts. Do not include attributes and operations in the diagram—this requires additional specialized notation. Having more concepts is fine, but be sure the diagram remains readable. See the *User Journey Map* content item, preceding, for guidance on drawing and diagramming tools.

Unlike the journey map, please embed the conceptual model diagram directly in the space provided in the main Assignment 4 document. If needed, it is OK to rotate the diagram counter-clockwise 90 degrees in order to keep the text readable.

- *Requirements.* Perform the requirements work *after* you have completed work on the personas, user journey map, and activity-related concept analysis—this will make the task substantially easier and produce requirements of higher quality. Use the observations, insights, and insight clusters your team uncovered during contextual inquiry, as well as the results of your other modeling efforts in this assignment, to define a first-iteration set of requirements for the integrated experience activity. The requirements may include any of the requirements types: functional, non-functional (quality attributes), data, environmental, or user characteristics; however, focus on functional requirements as your primary objective. Use the *user story/POV format* (Module 4, slides 42-46) to express the requirements. Be sure to review your user stories and disaggregate any epics. Each requirement should be a single sentence, as in the examples. A minimum of 10 high-quality requirements is required for a 'Satisfactory' (2) grade on this item. A set of 25 high-quality requirements likely would earn a 'Very Good' (4 or 4.5) grade. Representative requirements should span the entire integrated experience curve (see Assignment 1). Group requirements by integrated activity phase, type of user, or other grouping scheme of your choice.
- *Process Retrospective.* Create this section *after* your team has completed all the other work for the assignment. Identify what went right and wrong in the modeling and requirements processes, and what changes your team would make if you were to do the process again, say, in the next (hypothetical) iteration.

- *Team Member Contributions.* In the table, provide the name and email address for each team member, along with the *specific* contributions made by that team member toward the final, submitted form of the assignment.

**Important:** Include an entry for a team member even if he or she did *not* contribute to the assignment. (Obviously, I hope this does NOT happen!) Simply leave the contributions area for that team member blank.

### Submission Requirements

- Submitted documents must follow the order and content guidelines as outlined in *Assignment Content*, above.
- Include your team number in the submission file filename; e.g., HCI 440 A4 (Models-Requirements—Team 13).doc.
- Submit your assignment to the D2L dropbox by the indicated time and date.
  - *Reminder:* Assignments may be submitted up to 48 hours late with a 20% grade deduction. Assignments submitted more than 48 hours late receive no credit but will be graded as time permits.
- Documents must be in MS Word (.doc or .docx) or Adobe PDF only. The user journey map should be submitted in a **separate** PDF, PNG, or TIFF file. Submission in any other format results in an automatic 20% grade reduction for the assignment.
- If you make a submission error, you can resubmit your assignment to D2L; the latest submission will be the one that is graded.

## General Grading Criteria

For course assignments, I expect high-quality, professional documents, including proper spelling and grammar. I will use the following specific rubric to evaluate Assignment 4.

### Assignment 4 Grading Rubric

*Personas.* Represent two distinct classes of users—more if necessary; include all required characteristics.

1 Unsatisfactory    2 Satisfactory    3 Good    4 Very Good    5 Excellent

*Journey Map.* For the persona with the most challenging activity journey; includes all essential journey map elements; submitted separately in appropriate format.

1 Unsatisfactory    2 Satisfactory    3 Good    4 Very Good    5 Excellent

*Concept Analysis.* Includes 10-15 (or more) activity-related concepts; includes a representative set of operations and appropriate attributes.

1 Unsatisfactory    2 Satisfactory    3 Good    4 Very Good    5 Excellent

*Conceptual Model Diagram.* Includes concepts and realistic relationships identified in Concept Analysis; clear and readable; embedded in document.

1 Unsatisfactory    2 Satisfactory    3 Good    4 Very Good    5 Excellent

*Requirements.* Minimum of 10 requirements; realistic and plausible; employ user story/POV format; span the entire integrated experience curve.

1 Unsatisfactory    2 Satisfactory    3 Good    4 Very Good    5 Excellent

*Process Retrospective.* Presents a realistic and constructive analysis of requirements and model creation process.

1 Unsatisfactory    2 Satisfactory    3 Good    4 Very Good    5 Excellent

All other elements of the template not specifically identified above are correct and complete; document meets relevant **Submission Requirements**, is well edited, neatly formatted, and easy to understand and interpret.

1 Unsatisfactory    2 Satisfactory    3 Good    4 Very Good    5 Excellent

#### *Individual Criterion Descriptions:*

- Excellent (5): *Greatly exceeds minimum assignment quantity or quality requirements.*
- Very good (4): *Significantly exceeds minimum assignment quantity or quality requirements.*
- Good (3): *Exceeds minimum assignment quantity or quality requirement.*
- Satisfactory (2): *Meets minimum quantity or quality assignment requirements. A **Satisfactory** rating is given when a criterion meets, but does not exceed, the **minimum** assignment requirements described in the Assignment Content section of this document and/or in the assignment template.*
- Unsatisfactory (1): *Does not meet minimum assignment quantity or quality requirements.*

#### *Overall Assignment Score (a point score of 35 is the maximum):*

- Excellent: 35 (normalized score: 100)
- Very good: 28 (normalized score: 90)
- Good: 21 (normalized score: 80).
- Satisfactory: 14 (normalized score: 70)

- Unsatisfactory: 13 or below
- Note: Intermediate scores, e.g, a value of 22, are possible. The formula for converting the points score to a normalized (0-100 scale) score:  $((10/7) * \text{points}) + 50$

## Appendix: Notes from Previous Assignment 4 Workshops

- For the user journey map, you can focus on the timeline, emotions, touchpoints, and channels. There's no need to include the extra information that appeared in the Module 4 examples. Those were premium maps—you just need to create a basic model with the essential features.
- Beware of epics. Be sure to review your user stories to ensure that you are focusing on a clear, realizable feature. 'As a visitor, I want to be notified of activities near my location' is quite general and close to being an epic: there are lots of different types of activities that could be candidates. A developer would need to ask for clarification on this. 'As a visitor, I want to be notified of museums near my current location' is more specific and would require little, if any, clarification.
- If you have overlapping requirements for two or more of your users types, you can create a 'supertype' user. For example, if you have 'parent' and 'teacher' users, along with a 'child,' you can create a 'chaperone' that encompasses 'parent' and 'teacher'. Only use the supertype user for common requirements. Keep distinct 'parent' and 'teacher' requirements with their own separate user. Please include a note explaining the supertype at the start of the *Requirements* section so that the grader and I understand what they represent.