

DEPARTMENT OF COMPUTER SCIENCE
UNIVERSITY OF TORONTO

CSC 318S
THE DESIGN OF INTERACTIVE COMPUTATIONAL MEDIA
Fall Term, 2002-3

Assignment 3
REQUIREMENTS ANALYSIS

HANDED OUT: Wednesday, September 25, 4 p.m.
DUE BACK IN: Thursday, October 17, 4 p.m.
WORTH IN MARKING SCHEME: 12 points

THE PURPOSE AND TASK OF THIS ASSIGNMENT

The purpose of this assignment is to give you experience in understanding a set of users and their needs, and documenting this understanding in a thorough and thoughtful report (circa 20-30 pages, double-spaced), a report which will be useful for the following stages of your design.

Your report should address the following issues (this list may suggest an outline for your report):

1. What Rosson and Carroll call the “root concept”, which we will abbreviate to the “concept”.
2. Field studies to understand your users (surveys, interviews, and/or observations)
3. Analysis and summaries of insights from these user contacts
4. A scenario encapsulating what you have learned about these users and their tasks
5. A brief statement and analysis of claims about this scenario
6. A very brief statement of implications for design

It should also include relevant material as Appendices, for example, interview protocols (guides to asking questions) or survey forms.

1. The concept sets the context for a requirements analysis, and would typically include items such as:
 - a vision statement of the basic idea for your term project
 - the rationale supporting the vision statement
 - a listing of the stakeholders who will be involved
 - an enumeration of any assumptions you are making.

The vision statement and rationale should state the problem you intend to solve (i.e., the need that a set of target users have) and the goals for a solution. The stakeholders should include but are not limited to the “target users”. Describe your target users in more detail in the Stakeholder Descriptions in #3a that follows.

2. Carry out one or more field studies in order to understand your prospective users. Chapter 2 of the text, and Readings #3 (Preece, et al.), #4 (Baecker, et al.), and #5 (Lewis and Rieman) will be helpful. Your paper must document what you have done in this area and the ideas and insights gained from these activities.

FIELD STUDY METHODS FOR UNDERSTANDING USERS

- 2a. Try to pretend that you are the user, for example, imagining that you are a senior citizen, and trying to do what seniors do, that is, carrying out the activities and tasks that seniors do by yourself.

(Beware of generalizing too far, but first-hand experience is always useful.) This technique is not part of the field study, but a useful warmup exercise.

2b. Talk with the intended users, asking them about the relevant aspects of their lives, their problems, difficulties, wishes, and needs. You can carry out these conversations using *questionnaires* or *interviews*. See Reading #3 (Preece, et al.). You must use *at least one* of either a questionnaire or interview technique, whichever is more convenient and more appropriate. The interview technique is probably a better one for you to use at this stage, but the decision is yours. Administer the questionnaire or carry out the interviews with at least 3 or 4 informants.

2c. Visit the homes, living spaces, and workspaces of users, observing the kinds of environment and organizations in which your users now live, play, and work.

2d. Observe the users in their environment, observing what they do and how they do it. In some cases, it may be appropriate to have them *think aloud* as they are actually carrying out tasks and activities.

In practice, some of the above activities would be carried out by video taping interviews with and behaviours of your intended users. We cannot in this course make available the equipment to do this, but hopefully some of you will have access to videotape equipment yourselves. You may also find it helpful to tape record your sessions with users, possibly to transcribe them, and definitely to review and analyze them.

3. Your next task is the abstract from the field studies relevant information in a form that is useful for design. You should produce *stakeholder descriptions* and *workplace themes*, and at least one of the following: either a *task analysis* or a set of *artifact analyses*.

3a. Stakeholder descriptions are used to describe in some detail your target users as well as other classes of people who play important roles in the lives of your users. For example, senior citizens could be characterized in terms such as:

- age (e.g., elderly, very elderly)
- educational level (e.g., high school, university, advanced degrees, etc.)
- health (e.g., healthy, having specific illnesses, infirmities, or handicaps, etc.)
- familiarity or expertise with computers and technology (e.g., novice, intermediate, highly skilled)
- feeling about technology (e.g., comfortable, nervous, hostile, etc.)
- relevant activities (e.g., learning, communicating, playing cards, taking medications, etc.)
- geographical setting (e.g., in an apartment, on a tennis court, at a doctor's office, etc.).

See the examples in the text to see examples of the kinds of descriptions that are appropriate.

Other stakeholders may include groups such as spouses of seniors, caregivers, family members.

3b. Carry out a task analysis of some relevant task (see Chapter 2 of the text, and also Reading #5, Lewis and Reiman). Task analysis is the process of identifying, understanding, systematizing, and documenting the significant activities and processes whereby a user carries out a task.

3c. Carry out at least two artifact analysis of objects, documents, or other features of the relevant environment of your users. Artifact analyses describe objects that are essential to your users' lives and to the carrying out of their tasks and activities. If you have access to a camera, you may wish to include some photographs in your report. You may also include photocopies of documents.

3d. Name and write a very brief description of at least two *workplace themes*. In the case of senior citizens, you should interpret the term "workplace" broadly to include where they live and spend their time. A workplace theme is a category or issue central to the lives of your users. The theme description summarizes what you have observed about the users that will be central to your design. See Chapter 2 of the text.

4. Prepare at least two scenarios describing the life of your target users and other stakeholders that is relevant to the concept. The scenarios should make use of what you have learned in your stakeholder descriptions, task analysis, artifact analysis, and theme descriptions. Your scenarios can be expressed in text as illustrated in Chapter 2 of the text. If you have the appropriate skills, they could also be augmented with visual sketches, as in a *storyboard*, for example. (A storyboard is a sequence of visual images that represent successive stages in a scenario, animation, or video.) They could even be created as a video, but that is certainly not required.

5. Prepare at least two situation features arising in the scenarios and claims, both "pro" and "con", about these features. The features encapsulate what has occurred in the scenarios involving your users and the other stakeholders that is most important for suggesting appropriate directions for your design. Each feature is analyzed by a small set of claims that assert what is good (+) or bad (-) about the feature.

6. Conclude by adding any additional statements you may want to make that reflect what you have learned that is relevant to your design project. This section is optional.

7. Add Appendices of material that is not germane to the central arguments of your paper but would be helpful to your TA (or, for that matter, to you in later stages of the project). These could include:

- survey forms
- interview protocols (guides to asking questions)
- raw data transcribed from interviews or observations
- copies or photographs of artifacts too numerous to include in the body of the paper

KEEPING THIS ASSIGNMENT WITHIN BOUNDS

If you spend more than 15-21 hours per person on this assignment, you are spending too much time. To achieve this goal, it is very important that all members of your group participate actively and collaborate in the work.

Although every report will be different, it seems likely that you can do a reasonable job of dealing with each issue as follows:

- Issue 1: 1-2 pages
- Issue 2: 6-12 pages (likely augmented with some appendices)
- Issue 3: 4-10 pages

Issue 4: 2-4 pages
Issue 5: 1 page
Issue 6: 1 page
Appendices: as appropriate

WHAT YOU SHOULD HAND IN

You need to hand in your report, one report per group.

The report must be typed and submitted on 8.5"X11" paper. Structure and organization, spelling, grammar, word usage, and document appearance will count for roughly 15-20% of your grade. Sketches, diagrams, and tables should be used where appropriate to assist in conveying the concepts. **Papers submitted that are not written in minimally acceptable English will be returned for rework and resubmission.**

Each submission must include a title page with a meaningful title, your names, your student ID#, your tutor's name, the course name and number, and the date. The second page should contain a very short one-paragraph executive summary of the document, a table of contents, and a statement of who did what on this assignment.