CS774 HCI
Week 10, April 12 – Documenting user studies

Objectives:
• To review design and usability projects
• To create instruments and documentation suitable for carrying out the projects

Readings:
• Karel Vredenburg, et al, A Survey of User-Centered Design Practice, *CHI 2002*, Minneapolis.
• Millen, Rapid Ethnography :!time deepening strategies for HCI field research, *ACM Proceedings of the conference on Designing interactive systems: processes, practices, methods, and techniques*, New York 2000.
• Helen M. Grady, Web site design : a case study in usability testing using paper prototypes, *Proceedings of the 18th annual ACM international conference on Computer documentation: technology & teamwork*, Cambridge 2000.
• R. Stanley Dicks, Mis-Usability: On the Uses and Misuses of Usability Testing, *Proceedings of the 20th annual international conference on Computer documentation*, Toronto 2002.

Outline:
I. Carrying out user studies
　　　Design studies – who are your users and what do they do?
　　　Usability studies – do your users succeed with the prototype/final version?
　　　Need to *collect* and *analyze* data
　　　Collect data towards eventual goal – better result with focus
　　　Creating documents that assist in focusing data collection
　　　　　　Formal documents or guidelines to assist in studies
　　　　　　Forms, surveys, notebooks, videotapes, audiotapes
　　　　　　Constructing these for your work

II. User profiles
　　　Who are the users and how do they relate to your software?
　　　Basic users? Expert users? Administrators? Trainers? Buyers?
　　　What are they like?
　　　　　　Diverse or homogeneous?
　　　　　　Differences in culture, knowledge, motivation
　　　User profile document – list users and their characteristics
　　　State your hypothesis before study, be ready to revise as data is collected

III. User/task matrix
　　　User/task matrix – who does what in a general sense?
　　　User/task matrix can guide fieldwork – make sure you study all categories

IV. Workplace profile
> Where is the software used? What are the characteristics?
>> Distractions? Availability of documentation, assistance?
>> Adequate workspace?
>> Time available for tasks?
> Assemble list of questions before visiting workplace
> Consider notebook, photos, video for documentation and communication

V. Interviews
> Recruitment – who to ask?
> Demographics – who is this person?
> Interview outline/questions- what to ask?
> Focus groups – interviewing a group
> Consider notebook, audio or video recording

VI. Tasks lists or task inventory
> What are the likely tasks that the software needs to perform?
> Collated from observations, interviews.

VII. Use case analysis
> Part of UML toolbox
> Scenario of software use focused on one task or related collection
> Related issues: use case diagrams, generalization, inclusion, testing

IIX. Survey instruments
> Question design
>> Start from goals – each question related to action item
>> Pretesting questions
>> Use of scales, open-ended questions,
> Survey instrument
> Selection of sample – size, randomness
> Sending and collecting surveys
> Recording data, including coding of open-ended responses
> Web-based surveys

IX. User testing
> Task based
> How to observe: passive, interactive, talk out loud
> How is to what you are testing – performance, mental models, etc.

IX. Expert heuristic review
> Heuristic evaluation, Guidelines review, Consistency inspection, Cognitive walkthrough, Formal usability inspection
> How to conduct each? (Heuristic evaluation most frequently used, see Vredenburg 2002