Lecture 19b

Usability Engineering
Chapter 6, part 3

Usability Engineering

- Introduce explicit usability engineering goals into the design process
  - *Usability specification* consists of measuring concept, measuring method, now (current) level, worst case (lowest acceptable performance), planned level and best case
  - Various measuring methods (see table 6.2); e.g., time to complete task
    - Note that *satisfaction* (e.g., via a rating scale) is an important type of usability measure

Usability measures

- Usually one of the following (or a mix)
  - Time to perform task
  - Rate of error
  - Time to learn
  - Retention over time
  - Subjective satisfaction

- E.g., might require that at least 90% of users are able to perform Task A correctly in no more than 5 minutes' effort one week after completing a 30 minute tutorial

Why be measurable?

- The idea is to make it that HCI and usability are no more 'soft' than other system requirements like correctness or speed of computation
  - That usability is something that you can write a contract for
  - And you can document if you have, or have not, gotten it!

The link: evaluation

- Usability engineering provides a direct link between software engineering and experimental evaluation of user interfaces

  - Consider an example where the usability criteria are integrated with other 'conventional' software engineering artifacts

Winston: the Internet Medicine Cabinet

- A smart-card secured Internet repository for an individual's complete set of current medications

Problem with Usability Engineering

- Very definite and measurable which is good, but…
  - At early stage of the design it is often hard to tell what specific user actions and situations will be most important to overall success of the system
  - Might end up satisfying the usability specification but not actually getting usability (the assumption is that satisfying the specific measures is good, but it might not be sufficient)