

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

The screenshot shows a web browser window titled "Winston - your medicine cabinet - Microsoft Internet Explorer provided by University of South Australia". The page header includes the "Winston the Internet Medicine Cabinet" logo and a navigation menu with tabs for Medications, Issues !, Diagnoses, Allergies, Hospital Visits, Doctors, and Help. The main content area is titled "Medicine Cabinet for Jean-Pierre Calabretto" and features a table of "Current Medications".

Name	Dose/Frequency	Reason	StartDate	Planned Stop Date	Issue
<a href="#">Ginseng / capsules (Happy Days)</a>	one three times a day	stress	19/09/01		
<a href="#">ASCORBIC ACID / 250 mg / tab (GOLD CROSS)</a>	one in the morning	Help with flu	19/09/01		
<a href="#">PARACETAMOL / 500 mg / tab (PANAMAX)</a>	one every four hours	headache	14/09/01		
<a href="#">IBUPROFEN / 400 mg / tab (BRUFEN)</a>	one three times a day	stiff finger joints	10/09/01		!
<b>WCH</b> <a href="#">DEXAMETHASONE / 4 mg / tab ()</a>	1.5 three times a day with food		13/02/01	outpatient	

At the bottom of the page, there are two links: [View All](#) and [New Medication](#). The left sidebar contains navigation options: "View All", "New Medication", and "Close Cabinet". Logos for the University of South Australia, Women's and Children's Hospital Adelaide, Chariot internet, and ascRibe COMPUTER SOFTWARE are displayed at the bottom left.

# 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)