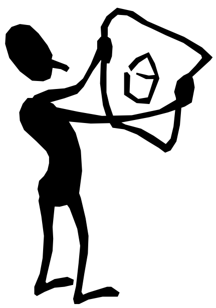
SEng 609.05

Graphical User Interfaces:
Design and Usability



Saul Greenberg
Professor
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Seng 609.05 Administrivia

Instructor

- Saul Greenberg
  - Human computer interaction,
    Computer supported cooperative work
  - Office hours (Room MS 616):
    by email any time: saul@cpsc.ucalgary.ca
    or by appointment: email or phone: 220-6087
    or drop in for urgent requests (but no guarantees!)

To do today:

- Introduce the course
- Schedule classes
- Discuss assignments
- Start topics

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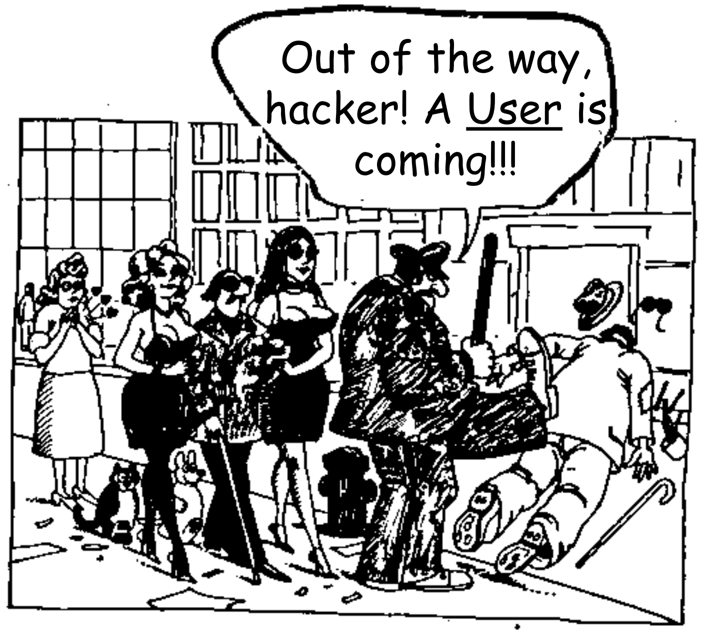

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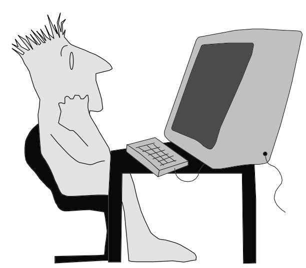
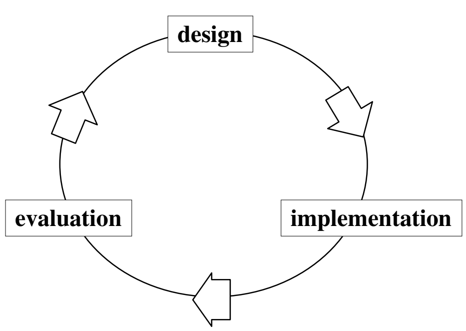
Human Computer Interaction



A discipline concerned with the

design,
implementation, and
evaluation

of interactive computing systems for human use



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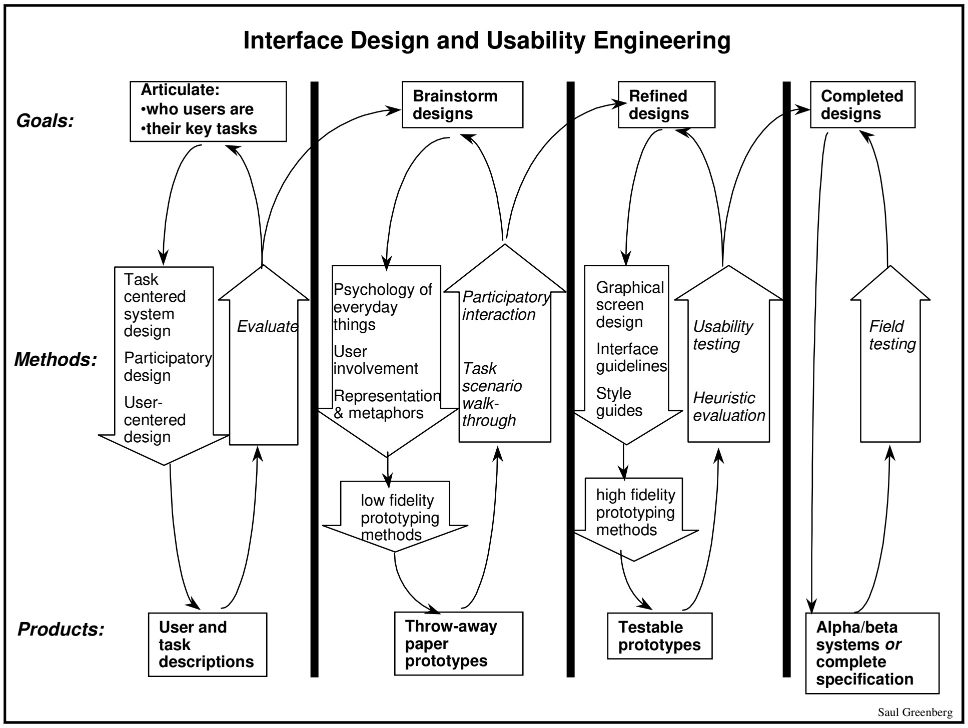

Why an interface design process?

63% of large software projects go over cost

- managers gave four usability-related reasons
  - users requested changes
  - overlooked tasks
  - users did not understand their own requirements
  - insufficient user-developer communication and understanding

Usability engineering *is* software engineering

- pay a little now, or pay a lot later!
- far too easy to jump into detailed design that is:
  - founded on incorrect requirements
  - has inappropriate dialogue flow
  - is not easily used
  - is never tested until it is too late

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Structure of this course

Overview

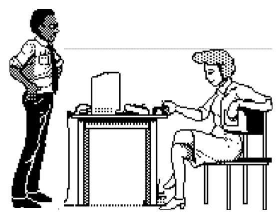
- Introduction to the course and to HCI

Understanding users and their tasks

- Task-centered system design
  - the task-centered process
  - developing task examples
  - task scenarios and walkthroughs

Designing with the user

- User centered design and prototyping
  - user centered system design
  - low fidelity prototyping methods



- Evaluating interfaces with users: Qualitative methods
  - observe people using systems via various methods
  - detect inappropriate design and correct by iterative design

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Structure of this course

Designing visual interfaces

- Psychopathology/psychology of everyday things
  - what makes visual design work?

- Beyond screen design
  - representations and metaphors
- Graphical screen design
  - the placement of interface components on a screen

Principles for design

- Design principles, guidelines, and usability heuristics
  - general design guidelines
  - using guidelines as heuristics to discover usability problems

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Objectives

At the end of this course, you will

- know what is meant by good graphical interface design
- know fundamentals of screen design and representations
- know and have applied a variety of methods for involving the user in the design process
- have experienced prototyping visual applications through various methods
- know and have applied methods to evaluate interface quality
- know guidelines and how they can be applied to interface design
- have sufficient background to
  - apply your training in industry
  - continue your education

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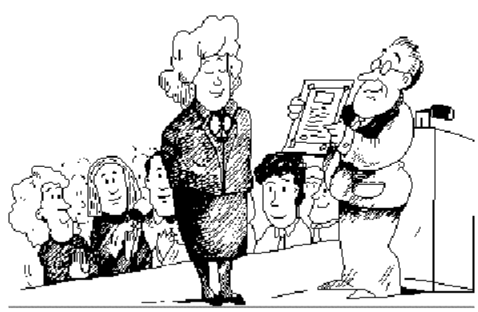
How you will be evaluated

Project: Iterative design and prototyping (85%)

- design portfolio and presentations
- incremental milestones will be graded

Participation (15%)

- regular attendance in class and thoughtful participation in discussions



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Course text and additional references

Lecture notes
- sold at cost by the department
- available on the web

Required text

Baecker, Grudin, Buxton, and Greenberg (1995)
"Readings in Human Computer Interaction: Towards the Year 2000"

Other resources
- see the web site http://www.cpsc.ucalgary.ca/~saul/609.05

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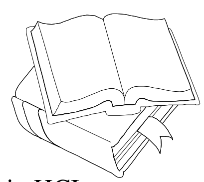
Excellent Books on Gui Design



Understanding design
- Norman (1988): The Design of Everyday Things

Texts
- Baecker, Grudin, Buxton, and Greenberg (1995): Readings in HCI
- Preece (1994): Human Computer Interaction

Usability engineering
- Nielsen (1993): Usability Engineering
- Lewis & Reiman (1993): Task Centered User Interface Design

Graphical screen design
- Mullet and Sano: Designing visual interfaces
- Tufte (1983): Visual display of quantitative information
- Cooper (1994): About face
- Norman: Things that make us smart

Keeping current
- Proceedings of ACM SIGCHI Conferences

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