COMP 203P
Software Engineering
and Human Computer Interaction

Term Structure

Term 1 will have the structure:

5th Oct - 30th Oct, first 4 weeks of your term 1 modules

2nd Nov - 6th Nov, Scenario Week 1: Configuring a tool chain and cloud services in a VM environment

9th Nov - 13th Nov, Reading Week

16th Nov - 11th Dec, second 4 weeks of your term 1 modules

14th Dec - 18th Dec, Scenario Week 2: Requirements and UML modelling

Term 2 will have the structure:

11th Jan - 15th Jan, Scenario Week 3: Information Security

18th Jan - 12th Feb, first 4 weeks of your term 2 modules

15th Feb - 19th Feb, Reading Week

22nd Feb - 26th Feb, Scenario Week 4: Maths Challenge

29th Feb - 24th Mar, second 4 weeks of your term 2 modules (note that term ends on a Thursday due to Easter)

The Scenario Weeks are self-contained and completed within the one week allocated.

Who Teaches the Module?

- Human Computer Interaction
  Dr. Emily Collins, Weeks 1-4
- Writing
  Dr. Sunny Bains, Week 3
- Research
  UCL Science Library, SSE Research Group, Week 4
- Software Engineering
  Dr. Graham Roberts, Weeks 7-11
- Term 2
  The Law
  External lecturers

Assessment

- 100% assessed by coursework, no exam
  - HCI coursework 25%
  - Writing coursework 10%
  - Research coursework 10%
  - Two SE courseworks 30%
  - Scenario Week 15%
  - Legal Coursework 10%

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COMP203P
Software Engineering and Human Computer Interaction (HCI)

Lecture 1a: Introduction to HCI

Dr Emily Collins
UCL Interaction Centre

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Slides by Dr Lorna Wall

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Aims of the HCI Lectures

By the end of the course, you should:

- Be aware of the importance of understanding users when designing interactive technologies
- Be familiar with a representative set of user-centred design and evaluation methods
- Be able to apply selected methods to develop and evaluate user- centred systems

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Course Structure

1a) Introduction to HCI
1b) Understanding Users - 1
2. Understanding Users - 2
3a) Personas and Scenarios
3b) Design Guidelines
4) Evaluation
5) Design - Sketching and Prototyping (guest lecture)

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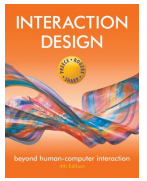
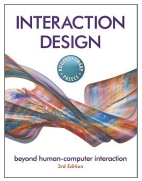
Practical matters

- Lecture notes, papers and links will be made available via Moodle:
  - Course short name: **COMP203P**
  - Core text:

  Rogers, Sharp & Preece (2011/2015) *Interaction Design: Beyond Human-Computer Interaction* (**3rd/4th Edition**) Wiley





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Who am I?

Goldsmiths
UNIVERSITY OF LONDON

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ELSEVIER samos ANALYTICS

SGI
Serious Games Institute

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Aims of this lecture

- To explain what HCI is
- To show why understanding users, their goals and the context they are acting in is crucial when designing interactive systems
- To encourage critical thinking skills – particularly regarding usability

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What is HCI?

"Human-computer interaction is a discipline concerned with the design, evaluation and implementation of interactive computing systems for human use and with the study of major phenomena surrounding them"

(Association for Computing Machinery)

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What is HCI?

- Fundamentally, it's about understanding how users think, behave and interact with technology, so you can design (or help people design) interactive technologies that people can use easily, without frustration, to achieve their goals!

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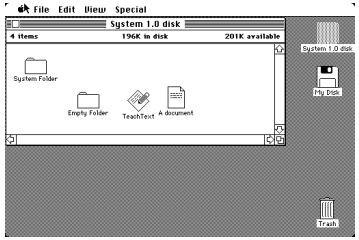
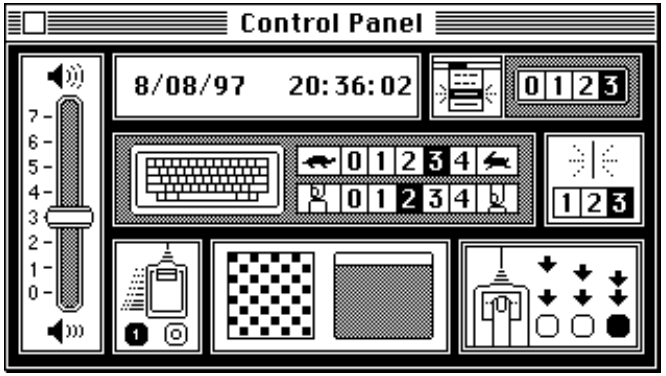
Interfaces have changed over the years, so HCI challenges have changed too



Macintosh System 1 (1984).

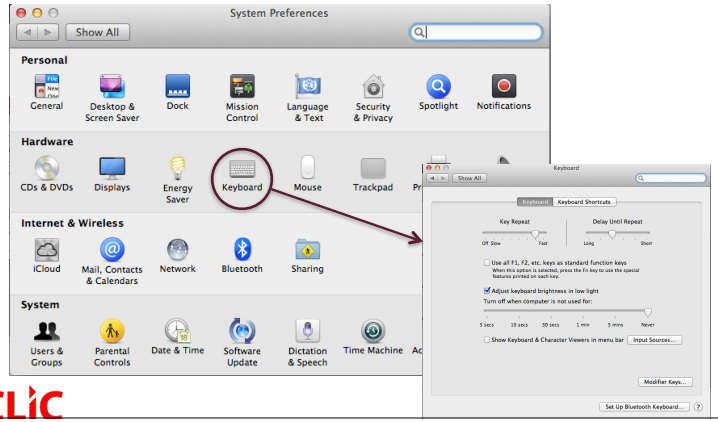
Mac OS 10.8 Mountain Lion.

Systems have typically become more complex….

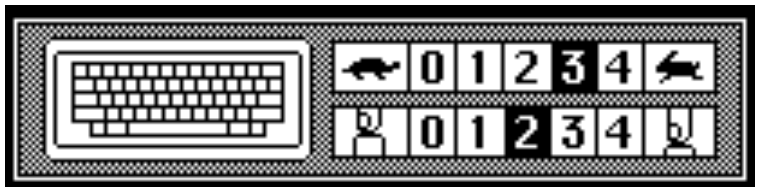


http://www3.nd.edu/~jvanderk/sysone/

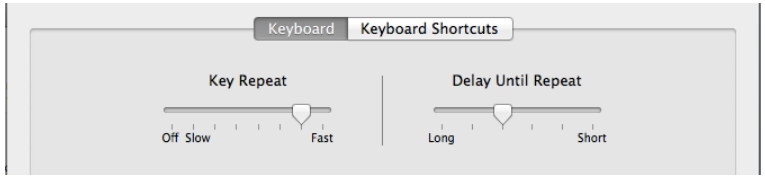
So new ways to organise large amounts of content have been developed…



Any guesses what these functions do?



Is this clearer?



It's not just about "computers"– other types of devices have changed a lot too!

http://www.e2save.com/community/mobile-phones/first-mobile-phone/

Even some completely new types of interactions….

https://www.vjsmag.com/reactable-table/

http://bpa.atech.edu/team3/Xbox%20Kinect.html

Usability

- At the core of HCI is USABILITY – making interactive systems easy to use
- The term usability is sometimes used interchangeably with HCI

Usability

- International Standard, ISO 9241-11 defines usability as:
  - "The extent to which a product can be used by specified goals with **effectiveness**, **efficiency** and **satisfaction** in a specified context of use"

Usability

- **Effectiveness** – Can users complete tasks, achieve goals, do what they want to do?
- **Efficiency** – Are they able to do this within a reasonable amount of time, or with a reasonable amount of effort?
- **Satisfaction** – Are they satisfied with the system's ease of use? Do they enjoy using it?
- **Ease of learning** - how easy is it to learn? Is the amount of "training" suitable for the type of system?

Amount of training that is appropriate is dependent on the type of system

http://en.wikipedia.org/wiki/Cockpit

And these things are affected by three factors…

- The Users – WHO
- Their Goals – WHAT
- The Context of Use – WHERE/WHEN/HOW

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WHO are the users?

- "Ordinary" users
- Expert users
- Particular user populations
- Users with particular needs

- *The end users of a system may be very different to you. Make sure you understand THEIR needs.*

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WHO are the users?

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WHAT are their goals?

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WHERE/WHEN/HOW will they be using the product? What constraints are there?

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We often make assumptions about context of use

http://loja.tray.com.br/loja/produto-204589-1293-move__playstation_move_starter_bundle_ps3

The actual context of use may be quite different!

Photo courtesy of Sony Computer Entertainment Europe User Research Team

The actual context of use may be quite different!

Photo courtesy of Sony Computer Entertainment Europe User Research Team

Good and bad design

- What is wrong with the remote on the right?
- Why is the TiVo remote so much better designed?
  - Peanut shaped to fit in hand
  - Logical layout and color-coded, distinctive buttons
  - Easy to locate buttons

www.id-book.com

Good and bad design

- **TiVo followed a user centred design process**
- The TiVo remote is:
  - More **effective** (user can locate functions)
  - More **efficient** (user can manage to perform function in a reasonable length of time)
  - More **satisfying** (users are less frustrated)

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Good and bad design

- The TiVo designers have considered:
  - The **users**: remote should be usable by novices as functions are clear)
  - Their **goals**: key functions are on the biggest buttons
  - **Context of use:** Buttons are easily identified and are bright and easy to see in dark room or without putting reading glasses on

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Exercise…

- Think of a system that you feel is **poorly designed**. What is it about it that you consider to be poor?
  - What's the issue – effectiveness/efficiency/satisfaction?
  - What do you think the designers failed to consider – users/goals/context of use?

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Exercise…

- Think of a system that you feel is **well designed**. What is it about it that makes it good?
  - Is it effective/efficient/satisfying?
  - Do you feel the designers understood their users/goals/ context of use?

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Summary

- In this lecture so far we've looked at what Human Computer Interaction is
- We've seen why understanding **users**, their **goals** and the **context** they are acting in is crucial when designing interactive systems
- And we've **critically evaluated** some designs to think about why they are good and bad
- After the break, we will look in more detail at **understanding users**

Questions?

- Recommended Reading:
  - Interaction Design, Chapter 1

--- Let's have a 10 minute break ---