Introduction « pédagogique » au cours...

Interface Homme-Machine

Séance 1
Karim Bouzoubaa
This Lecture

- Examples
- Global overview
- First Practice
- Content, Organization, Learning modality
Route de campagne à Cabo San Lucas (Mexique)
Examples

www.baddesigns.com

Notepad

You have not entered any text to be saved. Type some text, and then try again.
www.baddesigns.com
ccMail : logiciel de courrier électronique
What is HCI?
What is HCI?

- A set of processes, dialogues, and actions through which a human user employs and interacts with a machine.

- A discipline concerned with the design, evaluation and implementation of interactive computing systems for human use.
Why HCI?

- Use of computers: seemingly to the everyday work
  - A lot of UI are bad: Bad UI cost
  - Software intended for users other than yourself: End User
  - User interfaces are hard to get right: People are unpredictable

Global overview

Finance ←------------------------ Design
**Why HCI? - Financial issues**

- Development effort (UI) > 75%
  - User interface specialists are needed, Everybody needs to know the basics
- Improved UI → Financial benefits

1) Increased revenues from sales
   - The system is more attractive and customer satisfaction is higher
2) Decreased training and support costs
   - The system is more intuitive
3) Decreased maintenance cost
   - The system does what user wants
   - Much maintenance involves fixing UI problems
   - Pay a little during development, or pay a lot after application/product release!

- Staff must be trained in UI analysis and design.
- Users must participate.

*The benefits outweigh the costs*
Why HCI? - Design issues

- Designers: how to translate users’ tasks into an executable system?
  1) The study of HCI tends to come late in the designer’s training
  2) The UI is not something that can be plugged in at the last minute
- The UI design should be developed integrally with the rest of the system

Need to consider how HCI fits into the design process
5 Key ideas

1) Goal
   • A state the user wants to reach
     - to be talking with somebody on the phone
     - to have saved a file

2) Task
   • An action the user wants to do
     - to call somebody
     - to save the file

Goals beget tasks
Tasks beget goals
3) Visibility

- The UI should help the user always understand...
  - The current state of the system
  - What operations can be done

- E.g.
  - When you position the cursor over a point on the screen, it should be clear what would happen if you clicked the mouse
5 Key ideas

4) Feedback

- When anything changes it should be made visible
  - When you delete a file, the system should not just say ‘ready’
5) Affordance

- The set of operations and procedures that can be done to an object
- ‘Perceived affordance’ is what typical users think can be done to an object
  - Should a door be pulled or pushed?
  - What does this icon mean?
Hall of Shame

Click & Print Certificates is a useful little shareware program for printing a variety of certificates and awards.
Hall of Shame

- This interface is clearly graphical
- It’s mouse-driven – no memorizing or typing complicated commands
- It’s WYSIWYG – the user gets a preview of the award that will be created

So why isn’t it usable?
Hall of Shame

- Long help message on the left side. Why so much help for a simple selection task?
  - Because the interface is bizarre!
    - The scrollbar is used to select an award template

- Bad use of a scrollbar
  - the scrollbar doesn’t have any marks on it
  - How many templates are there?
  - How are they sorted?
  - How far do you have to move the scrollbar to select the next one?
• Normally, a horizontal scrollbar is designed for scrolling the content horizontally \(\rightarrow\) **Inconsistency** with prior experience

• Scrollbar is an **affordance** for continuous scrolling, not for discrete selection

• Every user has to look through all the choices, even if they already know which one they want \(\rightarrow\) This interface provides no **shortcuts** for frequent users

• “Press OKAY”? Where is that?
Hall of Shame

- Solution: Yours to develop
Topics:
- Motivation: Why care about people?
- Contexts for HCI (tools, web hypermedia, communication)
- Human-centered development and evaluation
- Human performance models: perception, movement, and cognition
- Human performance models: culture, communication, and organizations
- Accommodating human diversity
- Principles of good design and good designers; engineering tradeoffs
- Introduction to usability testing

Learning objectives:
1. Discuss the reasons for human-centered software development.
2. Summarize the basic science of psychological and social interaction.
3. Differentiate between the role of hypotheses and experimental results vs. correlations.
4. Develop a conceptual vocabulary for analyzing human interaction with software: affordance, conceptual model, feedback, and so forth.
5. Distinguish between the different interpretations that a given icon, symbol, word, or color can have in (a) two different human cultures and (b) in a culture and one of its subcultures.
6. In what ways might the design of a computer system or application succeed or fail in terms of respecting human diversity.
7. Create and conduct a simple usability test for an existing software application.
1. Introduction et historique
2. Le processeur humain de traitement de l’information
3. L’interaction
4. Conception
5. Interfaces pour le web
6. Évaluation des interfaces
7. Ergonomie – Guide - Normes
8. Etude de cas
Préambule...

Le contenu de ce cours a été élaborée avec la collaboration du Professeur Nadir Belkhiter de l’université Laval (Canada)

Je tiens donc à le remercier pour tout le matériel pédagogique qu’il a gentiment mis à ma disposition à des fins d’enseignement de cette séance de cours universitaire.

Karim Bouzoubaa
Préambule...suite

MIT Open Courseware : User Interface Design and Implementation


Eric Lecolinet : interfaces homme-machine, [www.enst.fr/~elc](http://www.enst.fr/~elc)

Indice de qualité/activité pédagogique
(par ordre d’efficacité décroissante)

1. *Petit groupe*
2. Laboratoire
3. Individuel
4. Discussion
5. Bibliothèque
6. Travail assis (monter au tableau)
7. Télévision
8. Film
9. *Exposé magistral* (c-a-d la pire de toutes !)
Activités d’apprentissage privilégiées dans ce cours

- **Discussion** en groupe (plénière)
- **Travail en petits groupes** (en classe et projet)
- **Enseignement magistral** (au minimum)
- Examen écrit
- TD notés
Web site

www.emi.ac.ma/bouzoubaa/courses/HCI

Human Computer Interface

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Description and objectives

This course introduces the principles of user interface development, focusing on three key areas:

- **Design**: How to design good user interfaces, starting with human capabilities (including the human information processor model, perception, etc.) and using those capabilities to drive design techniques: iterative design, usability guidelines, interaction styles, and web interaction guidelines.

- **Implementation**: Techniques for building user interfaces, including low-fidelity and high-fidelity prototypes, and prototyping tools such as the model-view-controller model.

- **Evaluation**: Techniques for evaluating and measuring interface usability, including heuristic evaluation, and user testing.

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Hall of Shame

- Your solution?
First Practice

Hall of Shame

Click and Print

Certificate:
- Certificate of (blank)
- Certificate of Achievement
- Create Your Own Award
- Customer Service Award
- Distinguished Service
- Employee of the Month
- Leadership Award
- Outstanding Performance
- Safety Award
- Sales Award
- Team Player Award

Preview:

CUSTOMER SERVICE AWARD
Fin de la partie magistrale sur l’introduction « pédagogique »