Programming of Interactive Systems

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BUT preferred contact:
(1) ecampus Forum
(2) email introduction.prog.is@gmail.com
(reaches both me and the TAs)

Week 1 :
a. Objectives, Introduction, Definitions

(part of this class is based on previous classes from Anastasia,
and of T. Tsandilas, S. Huot, M. Beaudouin-Lafon, N.Roussel, O.Chapuis)

objectives

Discover programming of Interactive Systems

Intro to the development of such systems:

- Definitions
- Prototyping (before coding)
- Toolkit approaches, emphasis on ~~Swing~~ JavaFX
- MVC Code organization
- Event-driven programming (dealing with user input)
- Basic canvas drawing and animations
- Other ways of thinking and describing code (e.g., State Machines)

Should you be in Advanced Programming of IS?

class details (1)

We'll be using Java + JavaFX

Marking (2 parts) based on practical exercises:

- 50%: individual work (with Anastasia)
  - smaller H/W assignments (10-20% each)
  - due usually on Mondays
  - we will review them together on Tuesdays
- 50%: group project (with the TAs)
  - made of smaller assignments (10-20% each)
  - due usually on Tuesdays
  - you will review them with your TAs on Wednesdays
  - with the TAs you'll also be doing other exercises

class details (2)

On Tue (online, link in ecampus, lab D103 available):

- we will be introducing concepts
- trying them in simple exercises

On Wed (in person, room D103)

- 50% of the sessions you will practice with the TAs (the exercises will help you with your project), 50% of the sessions you will be working on your project and giving updates to the TAs

Homework

- some weeks you will have both individual and group homework

class details (3)

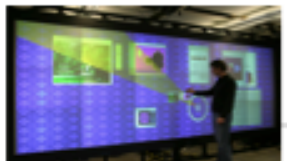
Ecampus : https://ecampus.paris-saclay.fr/course/view.php?id=45890

Web site (temporary until you get e-campus accounts)
http://www.lri.fr/~anab/teaching/Intro-ProgIS/

We prefer the ecampus forum for communications, but if you contact us by email add **[Intro-ProgIS]** in the title

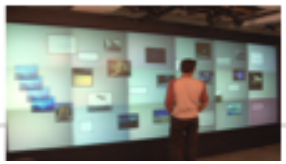
me

Interaction



remote information

layout management



change blindness

Collaboration

information access

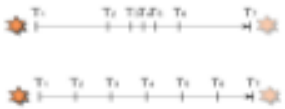
coordination

infrastructure

mobiles and walls in collaboration

Evaluation

graph reading

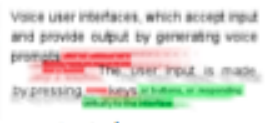


animation

sketchiness

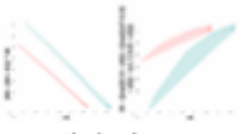
InfoVis and Visual Analysis

graph exploration



text changes

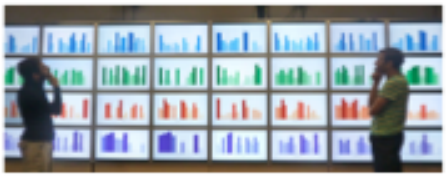
annotation use



optimization

Perception

dual-scale reading



changes in perception on walls

hybrid visualizations

and now you :)

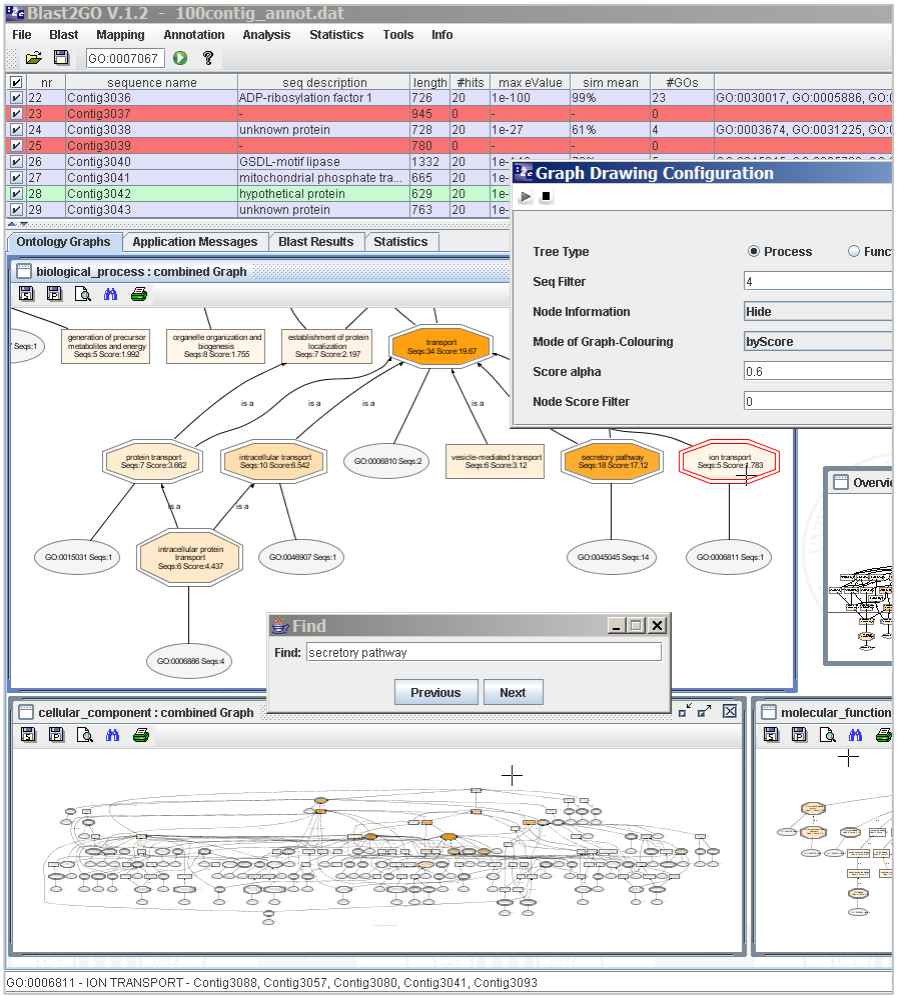
Background

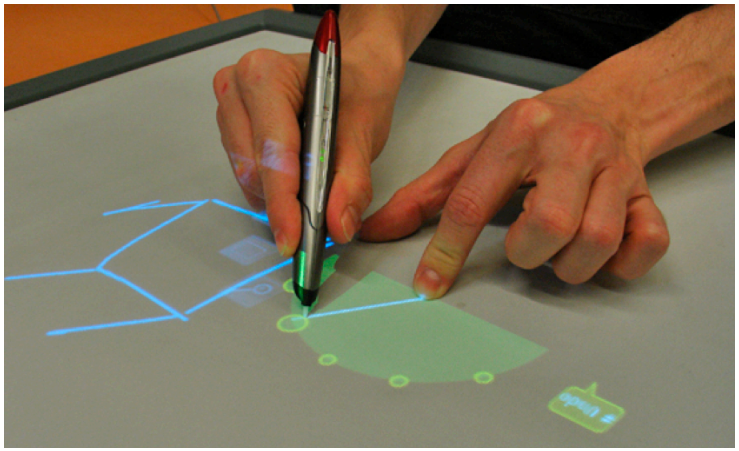
Experience in programming?
(Java resources sent by Aurélie, try to go over as much as possible this week)

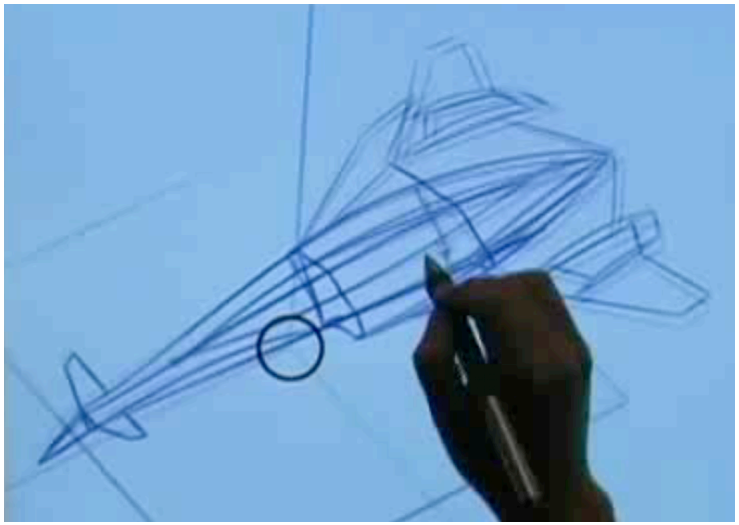
Experience in UI programming?

Do you have a laptop?

interactive systems



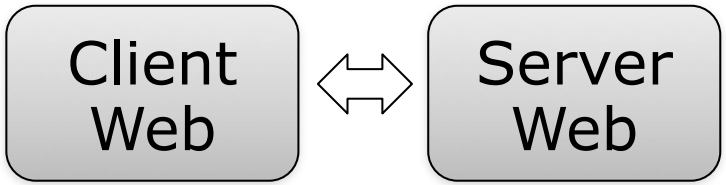




definitions

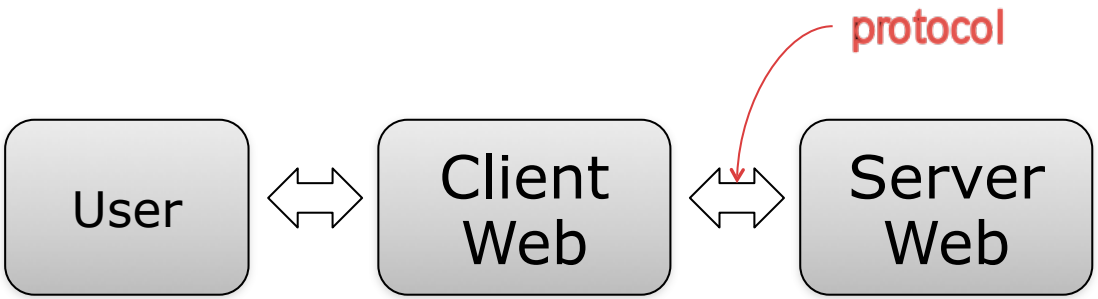
interactive system

software that interacts with its environment



human-computer interactive system

interactive system whose environment is one or more (human) users



User Interface (UI) - human computer interface

part of an interactive system that:

- represents its internal state on output peripherals
- captures & manages input from input peripherals

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all hardware and software that allows users to control, supervise and communicate with an interactive system

Interactive System = interface + functional layer

Graphical User Interface (GUI)

Interface

that uses *output* peripherals (screen, projector)

+

some *input* peripherals (mouse, pen) that provide *relative positions w.r.t.* the *output* peripherals

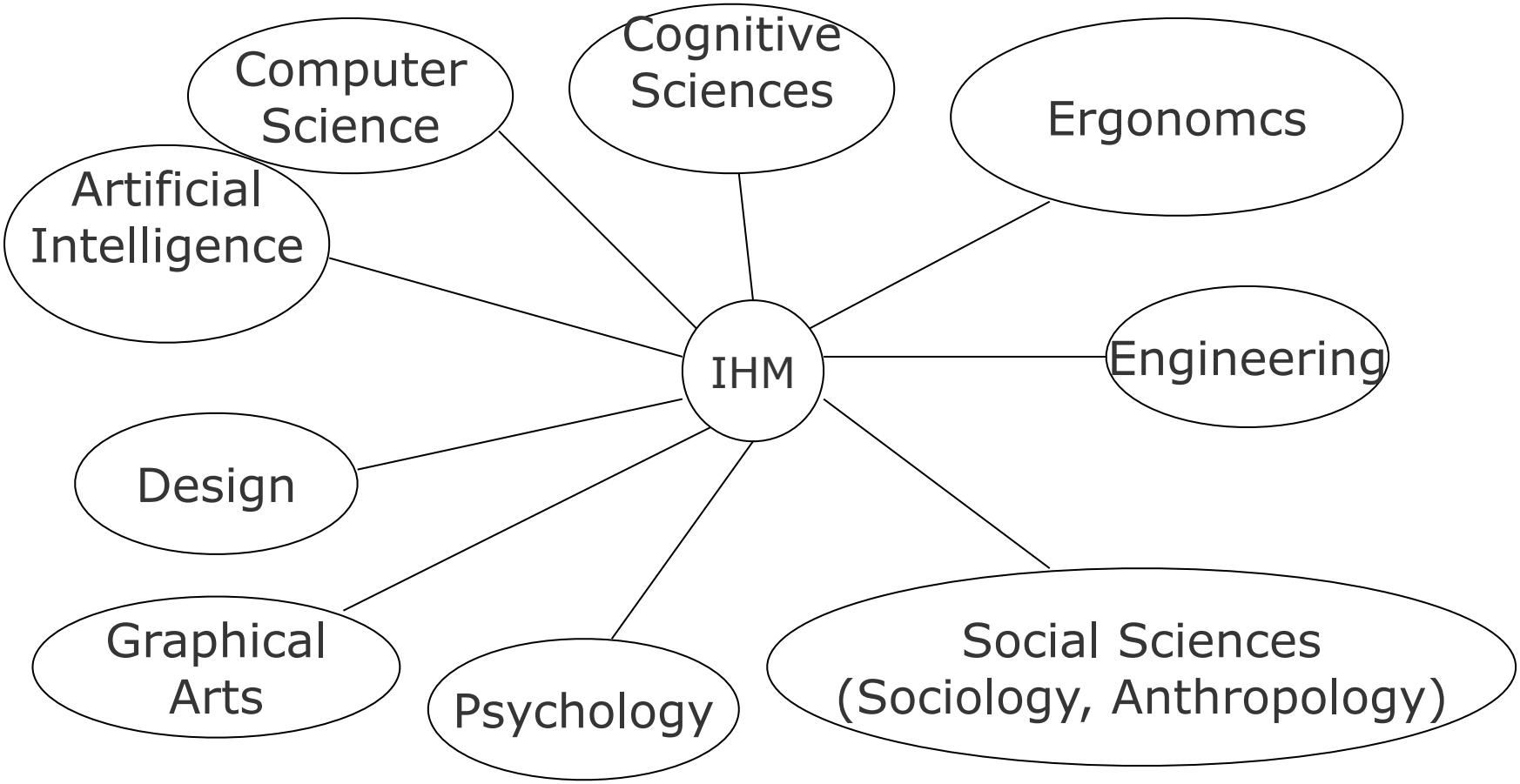
to

allow reference to aspects on the interface using pointing (thus linking input/output)

human computer interaction

"HCI 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."
(an) ACM definition

hci is multidisciplinary



interface = user interface

interactive system =
human-computer interactive system

engineers and computer scientists are *not* (by default) good interface designers: they (we) are expert computer users, and their (our) interest is the computer or the interface

what interests users is what the interface and the computer helps them do

we have to design FOR and WITH users.

importance

the quality of UI design and implementation is important as they are used in many domains, including critical systems (were lives are at risk)

importance

- Machine for paying for parking (Tullamarine airport in Melbourn)
- For a year, an airport employee was hired to help users!

Photographs courtesy of Penelope Sanderson

See any problems?
How did it come to this?

Photograph courtesy of Penelope Sanderson

programming of IS

clearly just coding is not enough …