Building User Interfaces
Advanced HCI
IAT351

Week 1 Lecture 1

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SCHOOL OF INTERACTIVE ARTS + TECHNOLOGY

Welcome to IAT 351

Today's agenda

- Introductions
  - Me
  - TA
  - You
- Class overview
  - Syllabus
  - Resources
  - Grading
  - Class Policies

Introductions

- Instructor
  - Lyn Bartram
  - SUR 2818…or …SUR 3760 (the HVI Lab)
  - Good: lyn@sfu.ca
  - OK: 778 782 7439
  - Office hours: TBD
- What I do
  - Visualization
  - HCI and sustainability
  - Embedded and ubiquitous interaction
  - Interaction and interface techniques
  - Perception and cognition

Introductions

- TA
  - Mahsid Zeinaly Bharagoush
  - Office: ?

Now, it's your turn

- Name (pronunciation if not obvious)
- Year, Main concentration
- Interests
- Why are you here?
- Programming background and experience

What are we doing here?

- Organizing principles of UI software
- UI technologies
- Practice in UI implementation ….

BUILDING THINGS!

- Part 1: Basics of traditional 2-dimensional GUIs
- Part 2: Advanced topics (ubicomp, haptics, groupware, etc).

Course info

- Prerequisites:
  - IAT 201
  - Some programming course
- Class structure
  - 50 minute lecture: Monday and Wednesday
  - 50 minute programming workshop Monday
  - Open lab Wednesday

- Programming exercises and instruction take place in the workshop
- Don't ask for help if you don't attend

Course info

- Web materials
  - Website: www.sfu.ca/siatclass/IAT351/Fall2012
    - (will be up later today)
  - General info (readings, exams, homework)
  - Schedule
    - Will be updated throughout the semester
    - Will have links to slides and demos used
  - Wiki: https://wiki.sfu.ca/fall12/iat351
  - Used as a scratchpad and collected class resource
    - Used for team work on final project
  - Electronic submission (form to be determined)

Some of the topics and tools we will explore

- How GUIs are built
  - Architecture
  - Information models
- Devices and displays
- Interaction techniques
- Cognitive models
- Ubiquitous computing
- Haptics
- CSCW
- GUI toolkits
- Graphics (and perhaps animation)
- Window systems
- Input devices
- Sensors and distributed devices
- Networking

Texts

Textbooks and readings are electronically available

1. The human-computer interaction handbook [electronic resource] : fundamentals, evolving technologies, and emerging applications / Andrew Sears, Julie A. Jacko, editors.

2. Introduction to Programming Using Java, Sixth Edition

Resources

- Recommended:
  - *Java Swing, Second Edition.* Loy, Eckstein, Wood, Elliott, Cole
    - Helpful for the Swing-based programming assignments
  - Thinking in Java. Bruce Eckel
    - www.bruceeckel.com
    - Excellent reference and earlier versions available free
- Recommended and Free!
  - Java AWT Reference. Zukowski
    - Somewhat out-of-date, but downloadable!
    - http://www.oreilly.com/catalog/javawt/book/index.html
    - AWT is the layer “underneath” Swing
  - Oracle’s java site

Some more resources

- Human Input to Computer Systems: Theories, Techniques and Technology, Bill Buxton. A manuscript-in-progress on input technologies
- Remedial/reference background texts:
  - Norman, "The Design of Everyday Things"
  - Benyon et al., "Designing Interactive Systems"
  - Preece et al., "Interaction Design"

Evaluation: Two options

- Five programming assignments
  - Each worth 15 %
  - **Randomised pairs**
  - Spaced pretty evenly throughout the term
- Research project 25%
  - Individual
  - Paper and/or prototype
  - Research and discuss identified issues and approaches in HCI
  - Agreed with instructor
  - Due at end of term

- Four programming assignments
  - Each worth 15 %
  - **Randomised pairs**
  - Mostly in first 1/2 of term
- Midterm 25%
- Research project 15%

Programming

- Homework assignments are in Java
  - Java use is required
  - Turn-in and late policy:
    - Due by the workshop on the announced due date
    - Late turn-ins will be marked down 25% for each date they are late

- Project work is more comprehensive
  - Exact details TBD, but likely:
  - Written paper, implementation task, presentation and demo

- What you turn in must compile and run!
- Please pay attention to platform issues (hard-coded filenames, e.g.)

Important

- There will be some Java training in class and practice in the workshops
- If you are not comfortable with Java programming:
  1. Be prepared to learn
  2. Come to the workshops
  3. Use the resources and look for examples!
- While examples and programming assignments are in Swing, focus of the lectures is on broader UI software concepts
  - You'll have to understand how these concepts are applied in Swing
  - We will help with a lot of this, but Swing is huge and you may encounter Swing features/bugs that I am unaware of
  - Be prepared to do independent problem solving if necessary

We are trying something new

- Tell us about your programming comfort level!
  - IAT 351 Programming Survey
- Xtreme programming techniques
- Pair programming
  - A different way of working
  - Requires two people at one computer, sharing roles

- Assignments will follow this model
- You MUST be able to explain what you did