ISI - Programming of Interactive Systems, 2014 - 2015

M1 & M1 HCID
Université Paris-Sud

General Course Information

INSTRUCTOR	Theophanis (Fanis) Tsandilas (fanis at lri.fr)
ASSISTANTS	Cédric Fleury (cedric.fleury at lri.fr) Arnaud Prouzeau (arnaud.prouzeau at lri.fr)
LECTURES & LABS	Fridays 2 - 6 pm (unless a different day is specified in the calendar) at PUIO (Bld. 640) in E210 or B107 (lectures) & E201-202 (lab)
WEB SITE	https://www.lri.fr/~fanis/teaching/ISI2014

Overview

The course is an introduction to principles, methods and techniques relevant to the design and programming of interactive systems. The lectures will examine a range of user interfaces (UI), including graphical UIs for desktop environments, mobile, multi-touch and pen-based UIs. We will investigate traditional but also novel interaction styles and techniques and discuss their strengths and trade-offs. Finally, we will learn about user-centered design and evaluation methods.

The course will give special focus on the programming of user interaction. During the lab hours, students will work on small programming exercises. In addition, a course project, divided in two assignments, will allow students to apply design and programming techniques learned throughout the course. We will mainly use Java (and some JavaScript), but if needed, students can use another programming language for their assignments.

Assessment

Course Component	**Weight**
Assignment 1	16%
Assignment 2	17%
Exam	67%
Total	100%

Course Material

No textbook will be required for this course. Course material is based on proposed readings and other material presented in the class.

Course Calendar

The following is a tentative schedule. Topics may slightly change during the term.

		Date	Description	Out	Due
1	F	Sep 26	Introduction and definitions, usability, bad UI designs. Why is UI programming difficult? Brief history of Human-Computer Interaction (No lab)		
2	F	Oct 3	4-hour lab (No lecture)		
3	F	Oct 10	Introduction to UI programming, architectures, toolkits, MVC, Java Swing, UI widgets, events	A1	
4	F	Oct 17	Modeling interaction, interaction modes, shortcuts & gestures, state machines & regular expressions, SwingStates		
	T	Oct 21			A1a
5	F	Oct 31	Input, pointing devices, CD gain & acceleration functions, touch, pen-based input, multi-touch & free-hand manipulation Navigation & selection, menus & lists, novices vs. experts, selection techniques, mobile interaction, advanced interaction techniques (No lab)		
6	T	Nov 4	4-hour lab (No lecture)		
7	F	Nov 7	2D graphics and Java 2D, modeling curves, color, layering, drawing, sketching interfaces		
8	F	Nov 14	Design methodologies, user-centered design, sketching & prototyping, scenarios & storyboards, UIs for people with special needs	A2	A1b
9	F	Nov 21	The psychology of the user interface, multimodal UIs, design principles & conceptual models		
10	F	Nov 28	Web design & programming, designing for different platforms, customization, adaptive user interfaces		
11	F	Dec 5	Evaluation with users, evaluation methods. Preparation for the final exam		
12	F	Dec 12	Project presentations		A2
	T	Jan 7	Final exam		

A1: Assignment 1 (two parts), A2: Assignment 2