

CS 349 Overview

What did you learn?

- How to build interactive applications
- How modern GUI toolkits work
- Design techniques for modern GUIs
- How to flexibly link a user interface to data model within application, including GUI design patterns, preserving interactivity and flexibility within a UI
- Other more narrow topics:
 - How to describe the behaviour of user interface widgets, to specify, and to build custom controls
 - Input device performance and characteristics
 - Etc., etc., etc.

Course Overview

- Five larger topics covered in course in the following order:
 1. Basic Interactive Applications
 2. Modern GUI architecture
 3. Designing modern GUIs
 4. I/O Devices and Performance
 5. Selected topics

Building Interactive Applications

- XWindows and its link to modern GUI toolkits
- Conceptualizing interactivity
 - Direct Manipulation/Instrumental Interaction
- Basic 2D graphics
- Visual design and widget layout in simple GUIs
- Event dispatch/event handling
- Preserving interactivity/long tasks

Modern GUI Architecture

- MVC
- Observer pattern
 - Within MVC paradigm
- Strategy pattern, Composite pattern
 - Layout
- Command pattern
 - Undo and scripting

Designing Modern GUIs

- UCD
 - Scenarios, usage patterns of functionality
 - Models of interaction
 - Mental models, affordance languages, relationship to each other and to other conceptual approaches
- Prototyping and Testing
 - Low-fi, high-fi, wozzing
 - Person down the hall, walkthroughs, think alouds
- Custom Controls
 - Basics of construction
 - MED, FSM, PPS
- Smartphone programming

I/O Devices and Performance

- Taxonomies of devices
 - Keyboard
 - Pointing/touch input
- Performance Models
 - Fitts's Law, Steering Law, KLM as history

Selected topics

- Scripting, Cut/Paste/DND more informational
- Undo, Accessibility, and History are testable topics

More Generally

- The goal of this course was to create transferrable skills
- Given any GUI toolkit, or none at all, design and build a user interface for application X.

Questions

Thanks for a great semester!