

EECS 22L: Software Engineering Project in C Language

Lecture 4

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Lecture 4: Overview

- Course Administration
 - Week 3
 - Week 4
- Graphical User Interface (GUI)
 - Introduction to GUI programming
 - Simple DirectMedia Layer (SDL)
 - Portable graphics library
 - SDL introduction
 - SDL example

Course Administration

- **Week 3**
 - No actual lectures
 - Use the lecture time slots for team meetings!
 - Discussion and lab sessions take place as usual
 - Software development and documentation
 - Implementation of alpha version
 - Testing, debugging, packaging
- **Week 4**
 - Team presentations
 - Project status and discussion
 - Software specification for users and developers
 - Data structure design, implementation, status

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Course Administration

- **Week 4: Team Presentations**
 - Organization and setup
 - 10 minutes, plus 5 minutes Q&A, discussion
 - PowerPoint, PDF, and/or online demo of alpha version
 - By one or a few selected team members
 - Contents
 - Title page (Team name, product, authors, ...)
 - Overview and features of your software product
 - Main challenges encountered
 - Main lessons learned
 - Schedule
 - 5 teams on Tuesday, 5 teams on Thursday
 - Random order (determined ad-hoc!)

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Graphical User Interface

- Introduction to Graphical User Interface (GUI) Programming
 - GUI infrastructure in operating system (OS)
 - A large variety of GUI libraries exist
 - Examples: X11, Windows, iOS, Android, ...
 - Main differences to text-based programming
 - Input through events
 - Generated by mouse, touch-screen, key-board, etc.
 - Output through 2D pixel interface
 - Rendering on screen
 - Event-based main control loop
 - Widgets, call-back handlers, ...

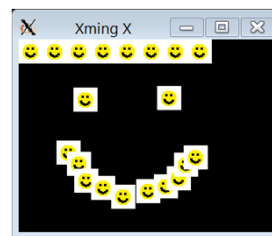
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Graphical User Interface

- GUI Example: Simple DirectMedia Layer (SDL)
 - Cross-platform portable graphics library
 - Aimed mainly at computer gaming
 - Access to graphics hardware, mouse, keyboard, audio, ...
 - Built on top of OpenGL or Direct3D
 - Freely available with good API documentation
 - <http://www.libsdl.org/>
 - *NOTE: EECS Linux servers provide SDL 1.2 (not SDL 2.0!)*
- SDL Program Example
 - Lecture demonstration
 - Opening a window
 - Displaying an image
 - Handling events
 - `~eecs22/SDL_Example.tar.gz`
 - Alternative: GTK (shown by TAs)
 - `~eecs22/GTK_Example.tar.gz`



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