

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 general 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
 - Teams 1 – 5 on Tuesday
 - Teams 6 – 10 on Thursday

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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, ...

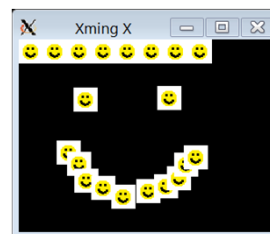
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Graphical User Interface

- 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/>
 - <http://wiki.libsdl.org/APIByCategory>
- SDL Program Example
 - Opening a window
 - Displaying an image
 - Handling events
 - Online demonstration...
 - `~eecs22/SDL_Example.tar.gz`



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