

EECS 22L: Software Engineering Project in C Language

Lecture 4

Rainer Dömer

doemer@uci.edu

The Henry Samueli School of Engineering
Electrical Engineering and Computer Science
University of California, Irvine

Lecture 4: Overview

- Course Administration
 - Week 4: Team presentations
 - Project status and discussion
 - Software specification for users and developers
 - Data structure design, implementation, status
- Graphical User Interface (GUI)
 - Introduction to GUI programming
 - Simple DirectMedia Layer (SDL)
 - Portable graphics library
 - SDL introduction
 - SDL example

Course Administration

- **Week 4: Team Presentations**
 - **Contents**
 - Title page (Team name, product, authors, ...)
 - Status of your software product, screenshot or demo
 - Main challenges encountered, lessons learned
 - **Organization and setup**
 - PowerPoint or PDF, and/or online demo of alpha version
 - By one or two selected team members
 - 8 minutes, plus 2 minutes Q&A, discussion
 - **Schedule**
 - 8 teams on Tuesday, 8 teams on Thursday
 - Volunteers first, then random order (determined ad-hoc)

EECS22L: Software Engineering Project in C, Lecture 4

(c) 2017 R. Doemer

3

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, ...

EECS22L: Software Engineering Project in C, Lecture 4

(c) 2017 R. Doemer

4

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 (self-study)
 - `~eecs22/GTK_Example.tar.gz`

