15-462 Computer Graphics Project 1 Introduction

Dhiren Bhatia

Slides partially courtesy of Raphael Mun & Lingyun Gu

Administrative Stuff

- Course webpage is available:

  http://www.cs.cmu.edu/~462
- Mailing list
- Class bboard is available at cmu.cs.class.cs462
- Please look at the bboard before you email questions to TAs
- 1st project is out
- Due on Thursday September 11th 11:59pm

Event-Driven Programming

- Wikipedia:

  "event-based programming is a programming paradigm in which the flow of the program is determined by sensor outputs or user actions (mouse clicks, key presses) or messages from other programs or threads."

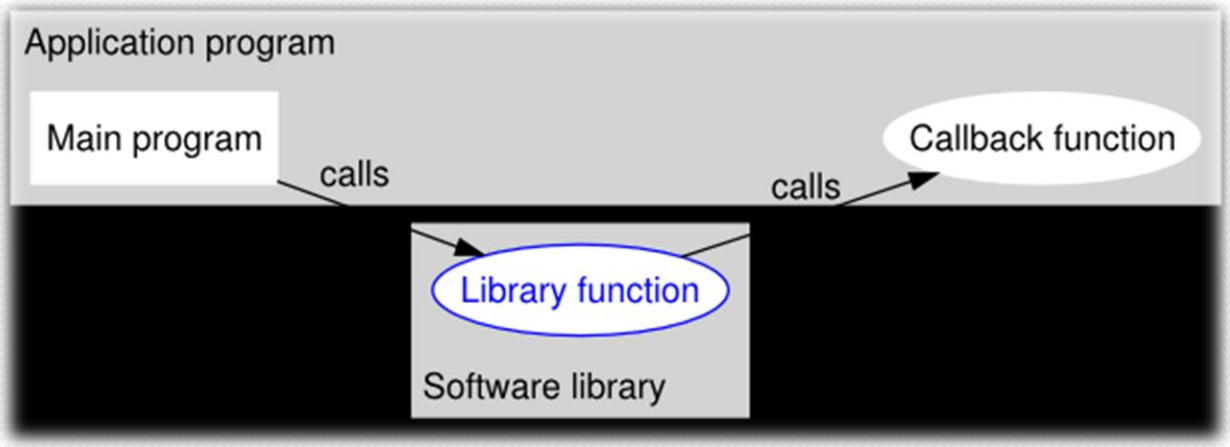
Event-Driven Programming Contd..

- Application has a main loop with 2 sections:
  - First: Event Detection.
  - Second: Event Handling.
- Event-driven programs can be written in any language
- Question: How do we tell the application what to do when an event occurs?

  Answer: Callbacks.

Callbacks

- It is an executable code or function that is passed as an argument to other code.



MVC Architecture

- Model-view-controller (MVC) is an architectural pattern commonly used in software engineering.
- Used to isolate information, visual appearance and user control from each other.
- In our assignment:
  - Model – World with models and lights
  - View – Camera
  - Control – User controlled events (mouse, keyboard)

Project Introduction

- Mesh Rendering – Perform rendering job from a given dataset BMS
- Render objects in three different modes:
  - Points
  - Wireframes
  - Solid triangles
- Add one or more light sources
- Use mouse to do: rotate, move, and resize the object.

Project Introduction Contd..

- Save images and create an animation
- Usage of starter:
  - ./starter [options] <input_file>
  - -P<some_file> : output a readable IFS summary to some_file
  - -n: No display
- Sample uses:
  - ./starter p51-mustang.ifs
  - ./starter –Pp51-mustang.txt p51-mustang.ifs
  - ./starter –n –P51-mustang.txt p51-mustang.ifs

Project Introduction Contd..

- Try at least three different objects/models:
  - P51-mustang.ifs (fast)
  - Le-paul (slow)
  - Buddha (very slow)
- This assignment is easy – do it early!

Grading (Rough)

- Camera and transformation: 35%
- Object Rendering and coloring: 40%
- Animation and Programming styles: 25%
  - Put comments in code!