CMSC 132: OBJECT-ORIENTED PROGRAMMING II

Callbacks

Department of Computer Science
University of Maryland, College Park
Callback

• Definition
  • Executable code passed as argument to other code
  • Examples:
    • Timer
    • Function that prints table and has as parameters a number of rows and a second function that defines the data to print (e.g., square roots, factorials, etc.)

• Approach
  • Higher-level code passes function as argument to lower-level code
    • In Java, pass object implementing interface
    • In C/C++, pass pointer to function
  • Lower-level code invokes callback function to perform desired task
Callback

• Motivation
  • Keeps code separate
    • Clean division between higher & lower-level code
  • Promotes code reuse
    • Lower-level code supports different callbacks
  • Supports event-driven programming
    • Lower-level code registers function as handler

• Other Examples
  • Observer pattern → Observer.update( )
  • Visitor pattern → Visitor.visit( )