CMSC 132: OBJECT-ORIENTED PROGRAMMING II

Callbacks

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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( )
  • A function that prints a formatted table for values computed with different functions