

# CMSC 132:

# OBJECT-ORIENTED PROGRAMMING II



## Callbacks

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# Callback

- **Definition**

- Executable code passed as argument to other code

- **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

- **Examples**

- Timer
- Observer pattern → `Observer.update( )`
- Visitor pattern → `Visitor.visit( )`