Lecture 09: Software Architecture (Part II)

"Good software architecture makes the rest of the project easy."
-- Steve McConnell

Outline

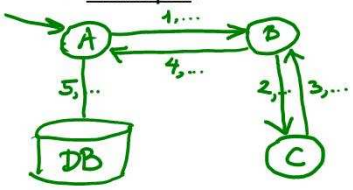
- Standard notations for expressing architectural designs
  - Dataflow / state diagram
  - Class diagram
  - Sequence diagram

Resources

- *"Code Complete"*, 2nd ed., by Steve McConnell
  - Ch. 5: http://www.cc2e.com/docs/Chapter5-Design.pdf
- *"Design Patterns Explained – A New Perspective on Object-Oriented Design"*, by Alan Shalloway and James Trott

Notations: Dataflow / State Diagram

- High-level, coarse grained
- Used to describe interactions between the components of a system
- Example:



Notations: Class Diagram

- Medium-level
- Used to describe the relationships between classes (modules) in the system
- Example:

Notations: Sequence Diagram

- Low-level, fine-grained
- Used to describe sequences of invocations between the objects that comprise the system
- Example:

Common Themes in Software Architecture

- Multiple views of the components
- Focus on interfaces and their requirements
  - *the "what" of the integration points*
- Diagrams, diagrams, diagrams!