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!