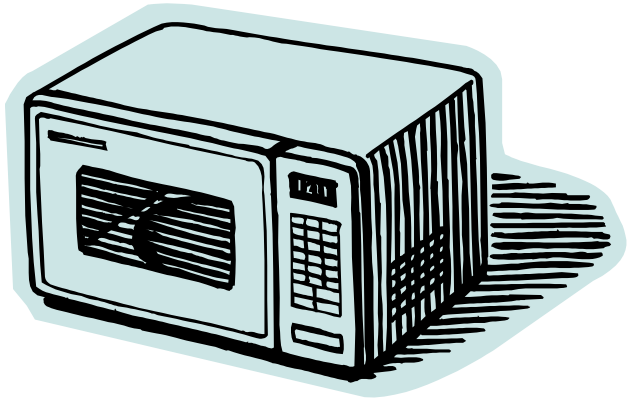
Analysis and Design Principles

- Modularity
- Abstraction
- **Encapsulation**



Implementation Hiding

- Each module has two views
  - Specification: the “what”
  - Implementation: the “how”

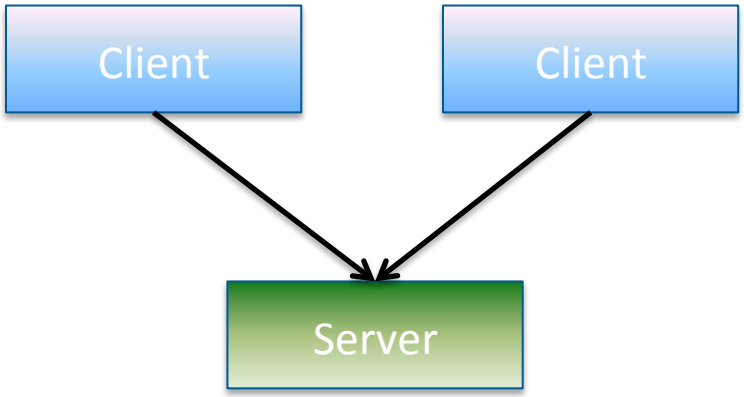
Another Quote

"Software is a lot like magic."

-- Sam Schappelle

Client-Server Paradigm

- Client knows the server
- Server doesn't know the clients
- Client doesn't know how the server works
- Server doesn't know how the clients work



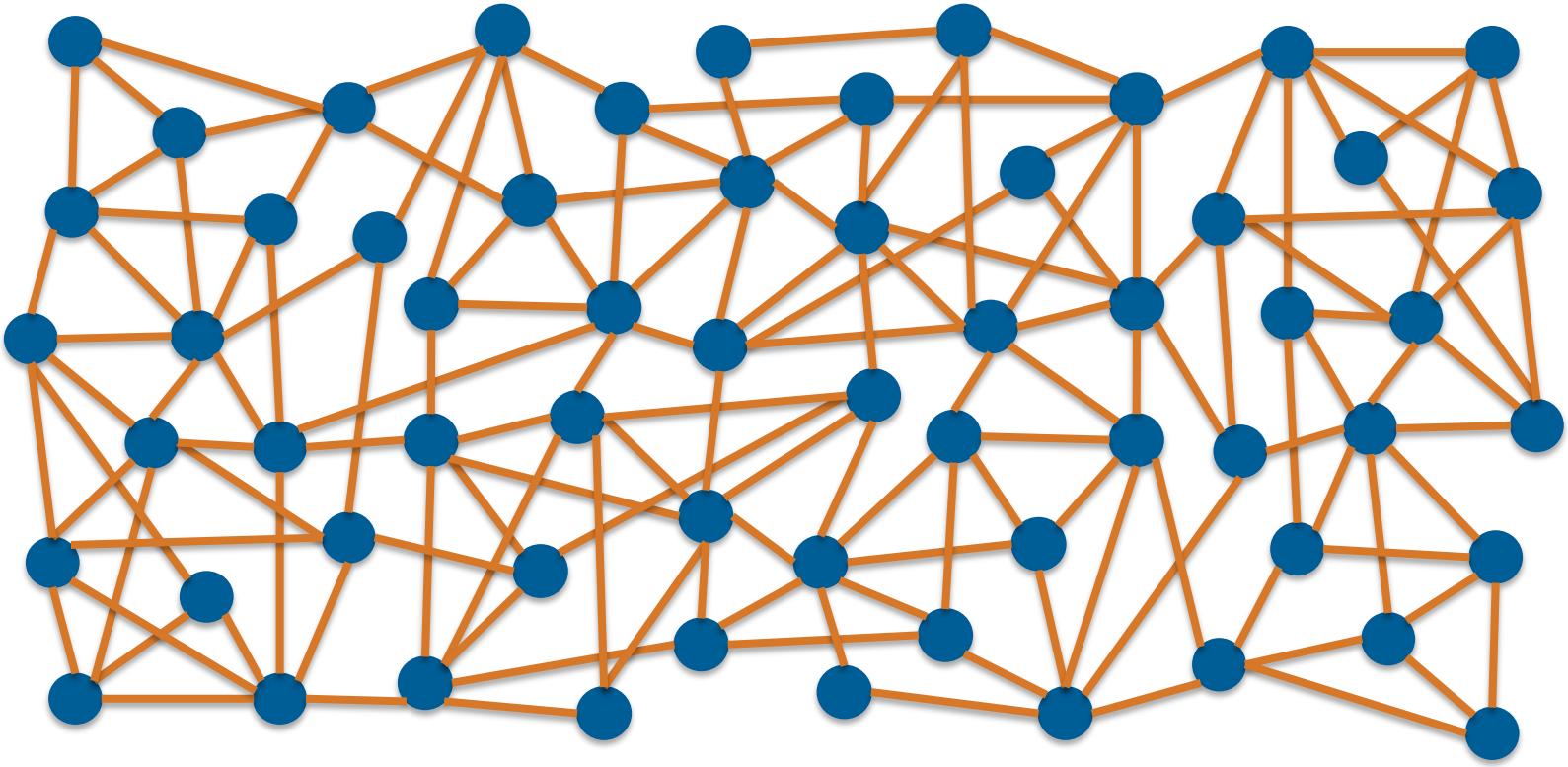
Benefits of Encapsulation

- Client doesn't need to understand the complexity of the server's implementation
- The server can protect its internal state
- The implementation of the server may be modified without affecting the clients

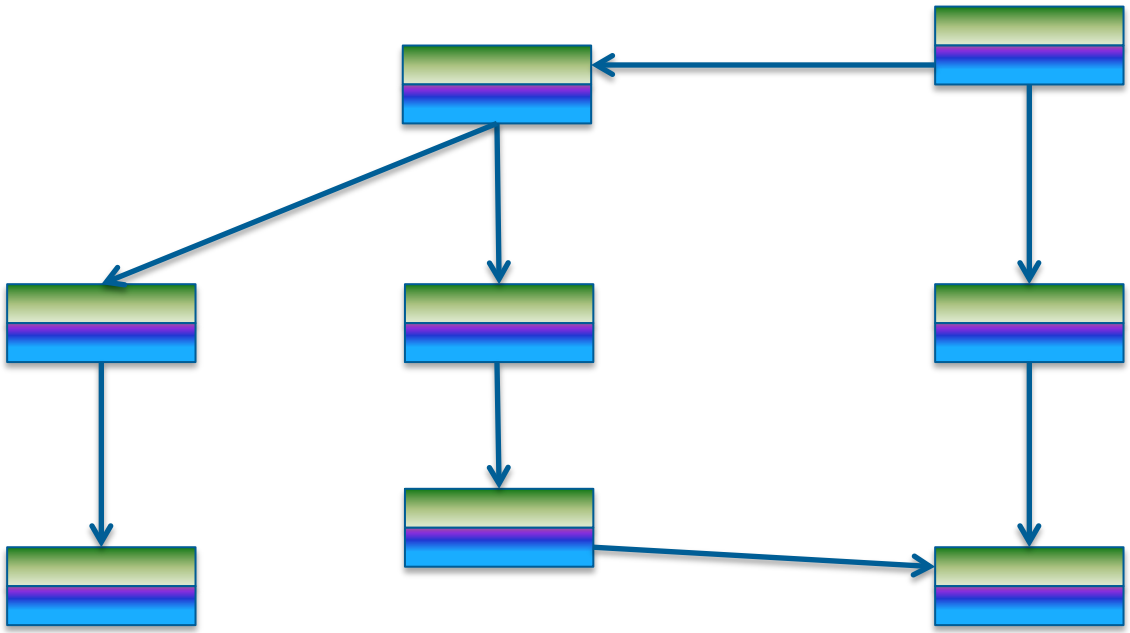
Correctness

- Does the implementation do what the specification says it will?

From This



To This



End of Module

- You should now be able to:
  - Explain the importance of each of the three bases of analysis and design: Structure, Information, and Behavior.
  - Utilize structural, informational, and behavioral models in analysis and design
  - Discuss the meaning and importance of analysis and design principles such as abstraction, modularity, and encapsulation.