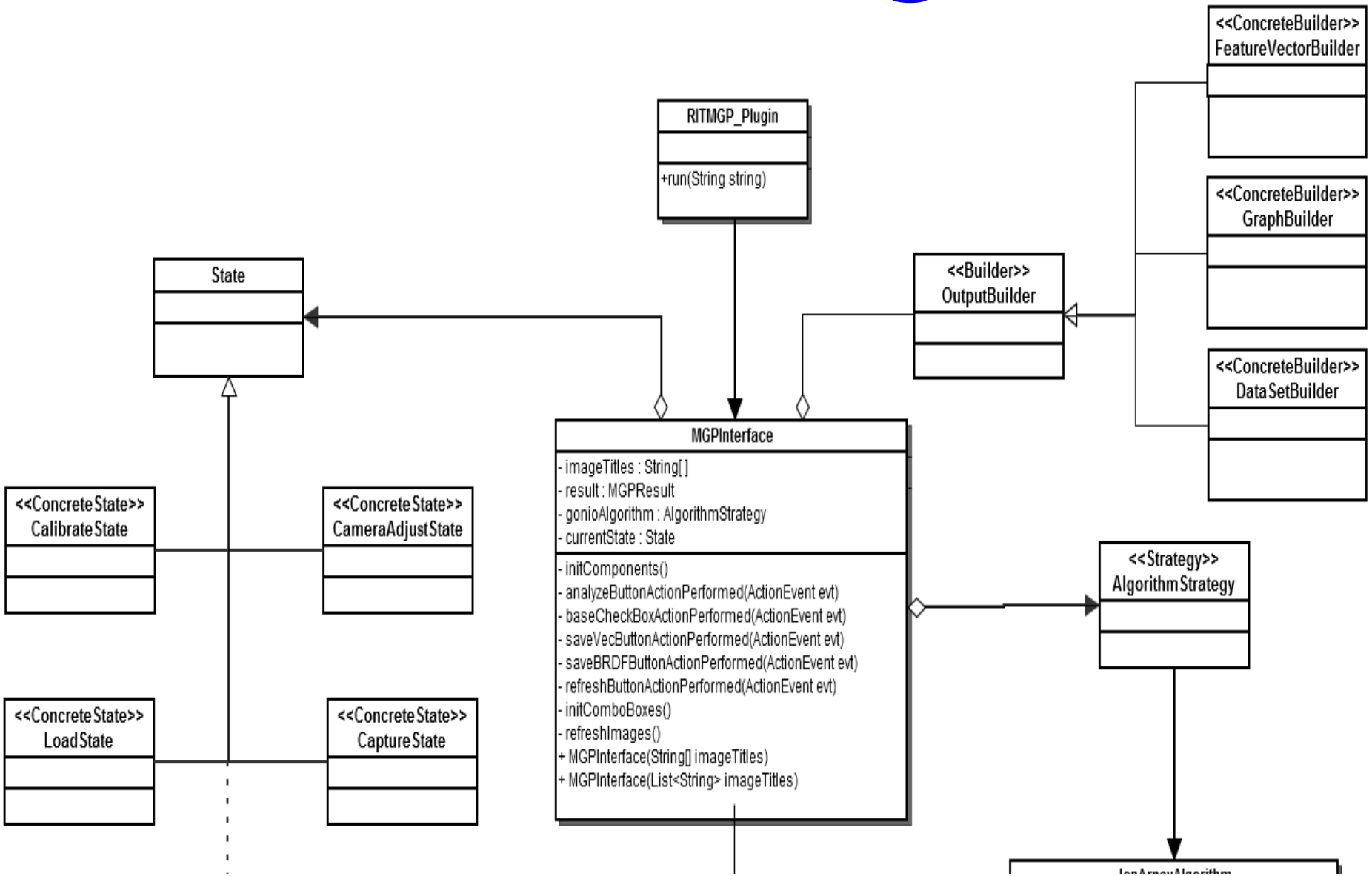
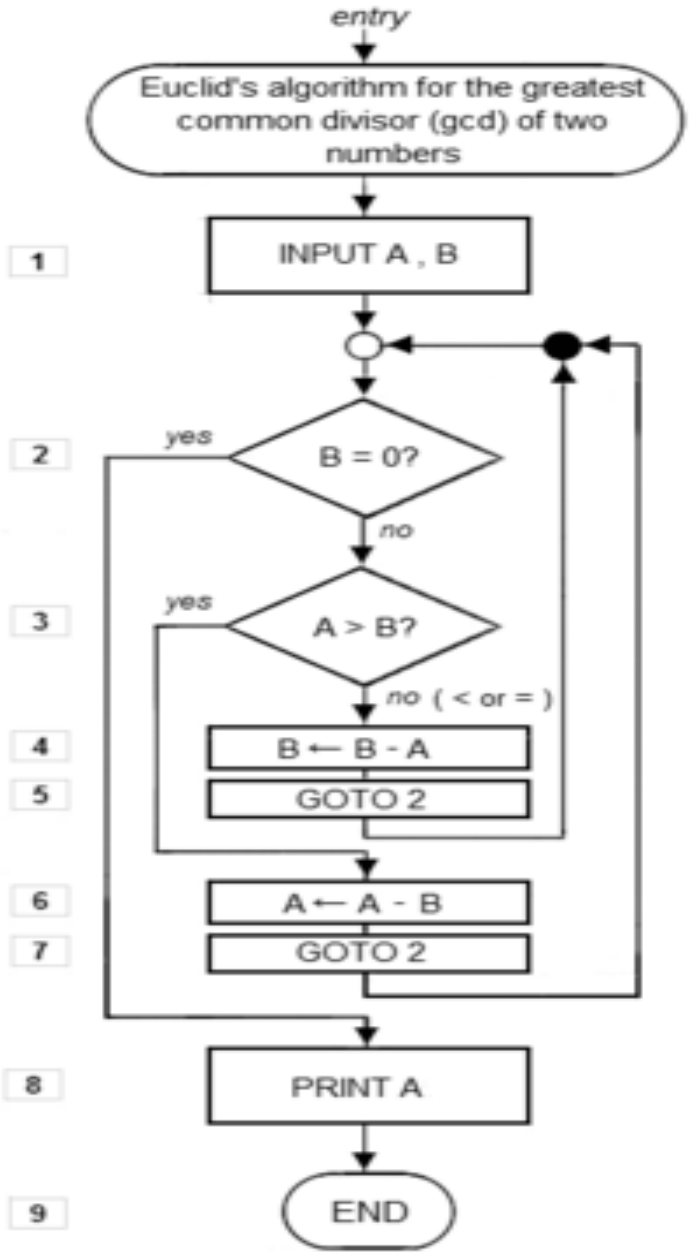
Design Overview

Detailed Design

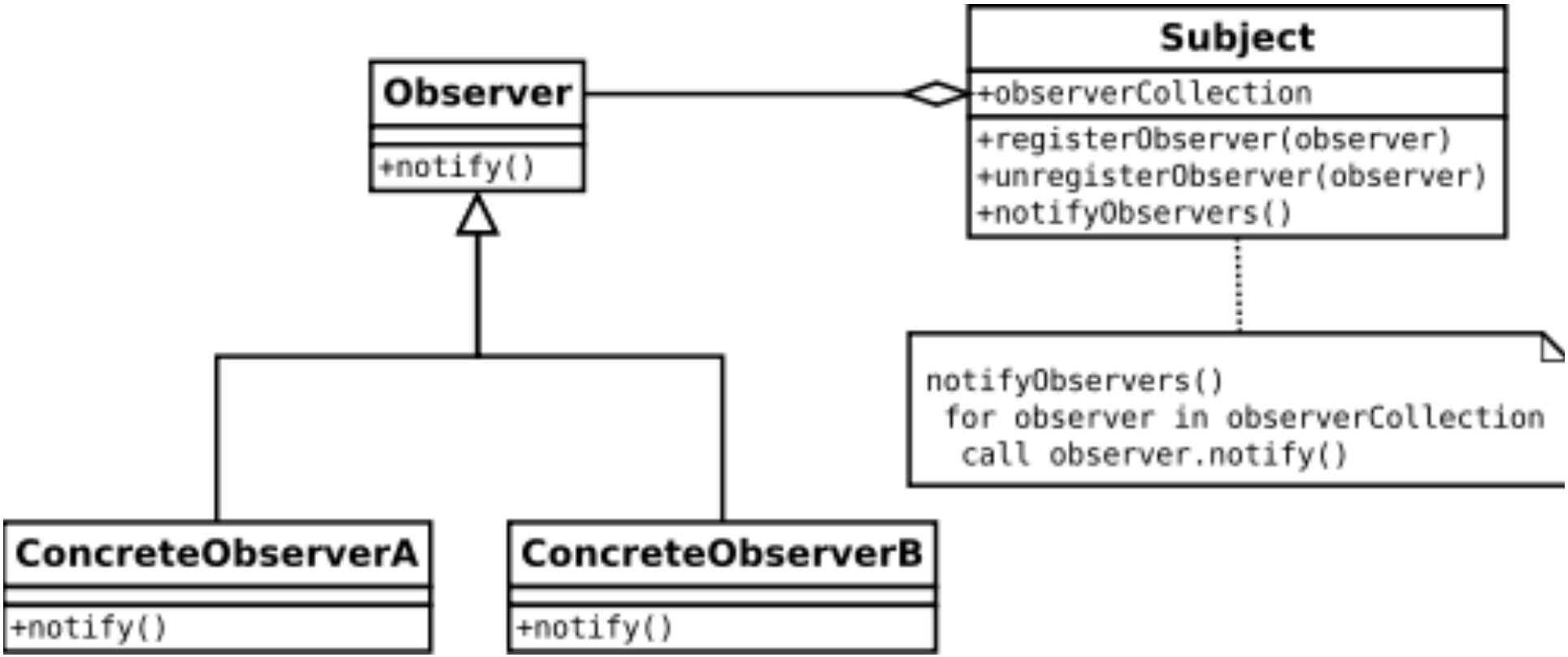
Class Design



ALGORITHMS


entry
Euclid's algorithm for the greatest common divisor (gcd) of two numbers
1
INPUT A , B
2
yes
B = 0?
no
3
yes
A > B?
no (< or =)
4
B ← B - A
5
GOTO 2
6
A ← A - B
7
GOTO 2
8
PRINT A
9
END

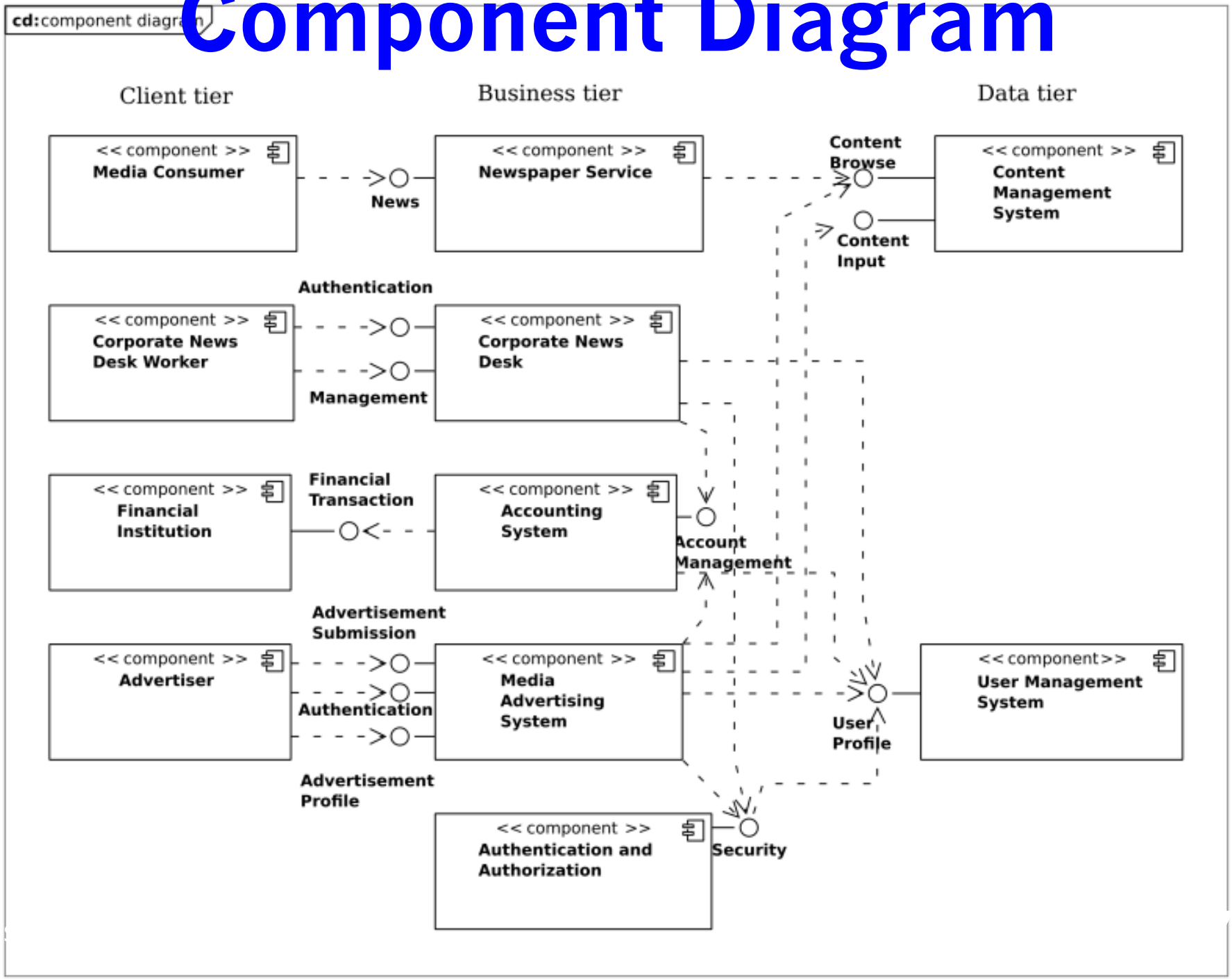
Design Patterns



Component Design

Bigger pieces that fit together...
executing programs

Component Diagram

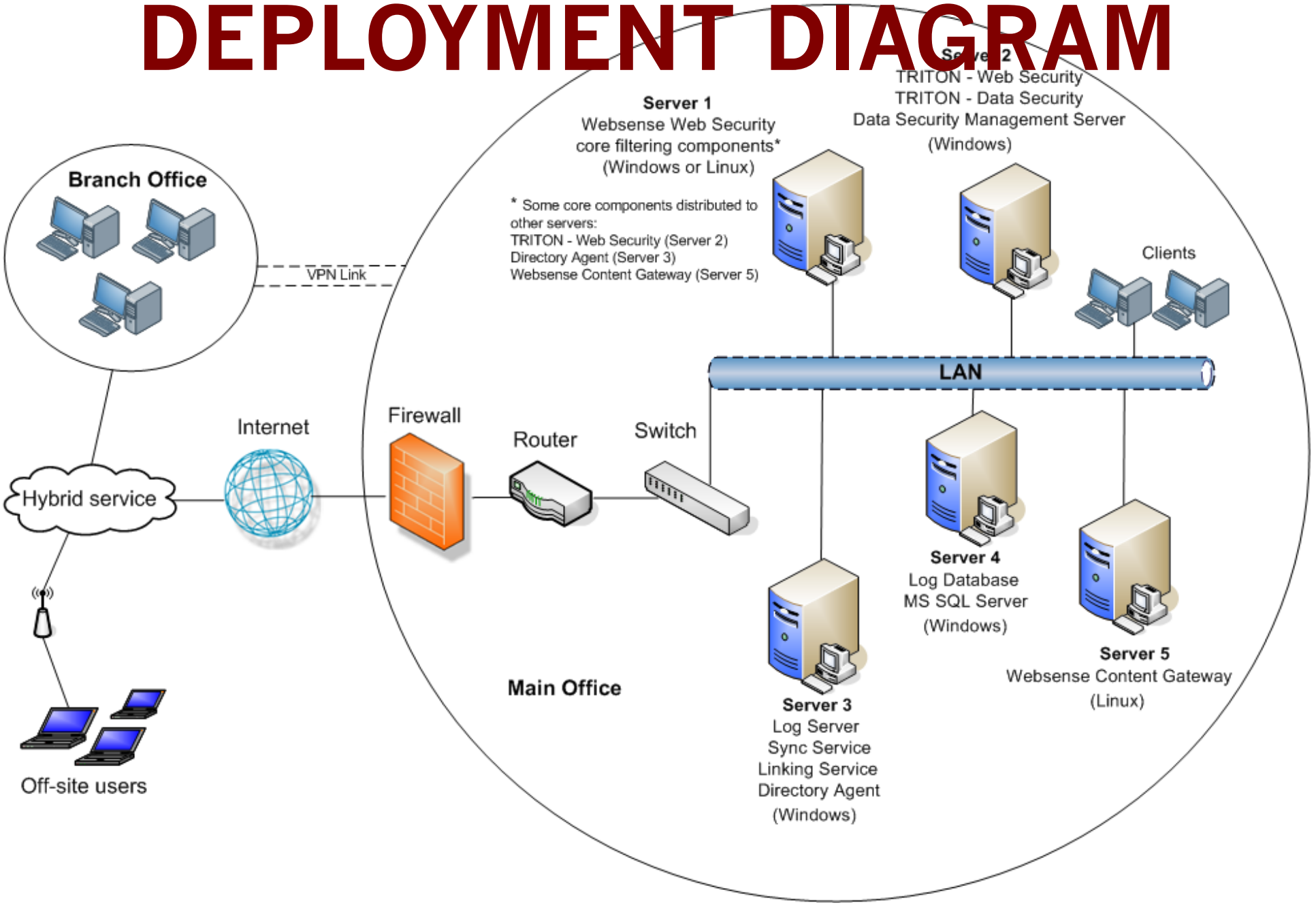


System Design

System includes devices, all the components that are connected together.

System->SubSystem->Subsubsystem->.....->Class

DEPLOYMENT DIAGRAM



Architectural Styles

- Architectural styles are

  Templates that are commonly used to structure high-level designs.

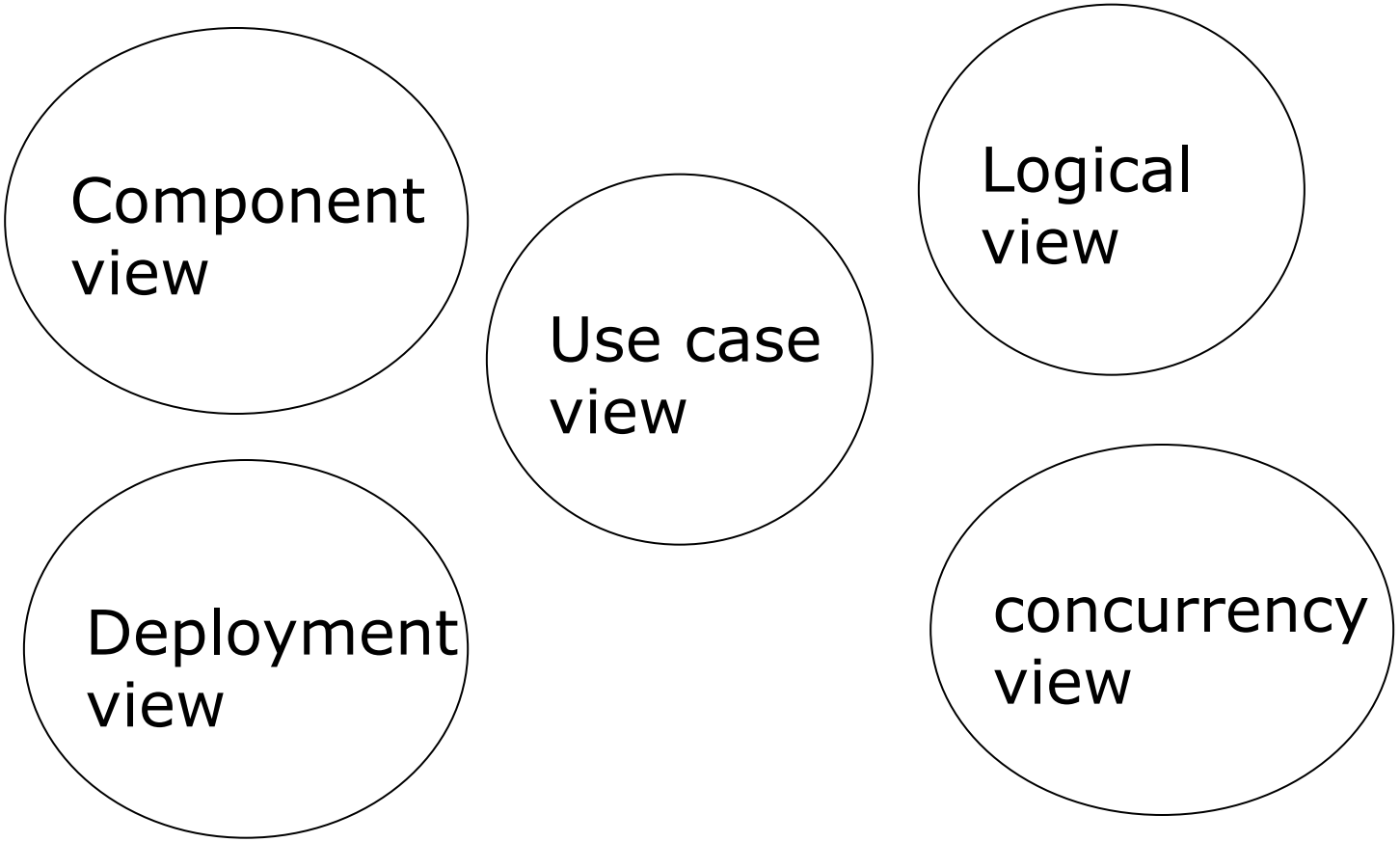
They capture the common patterns that people use to organize software systems.

Note: These are like Design Patterns (which are meant for lower level design)

Architectural Styles

- Repositories
- Client-Server
- Peer-Peer
- N-Tier
- SOA and Web Services
- Pipes and Filters
- Layered
- Virtual Machines
- Centralized control
- Event-based control
- Plug-In Architectures
- combination of styles

4+1 Views of a system

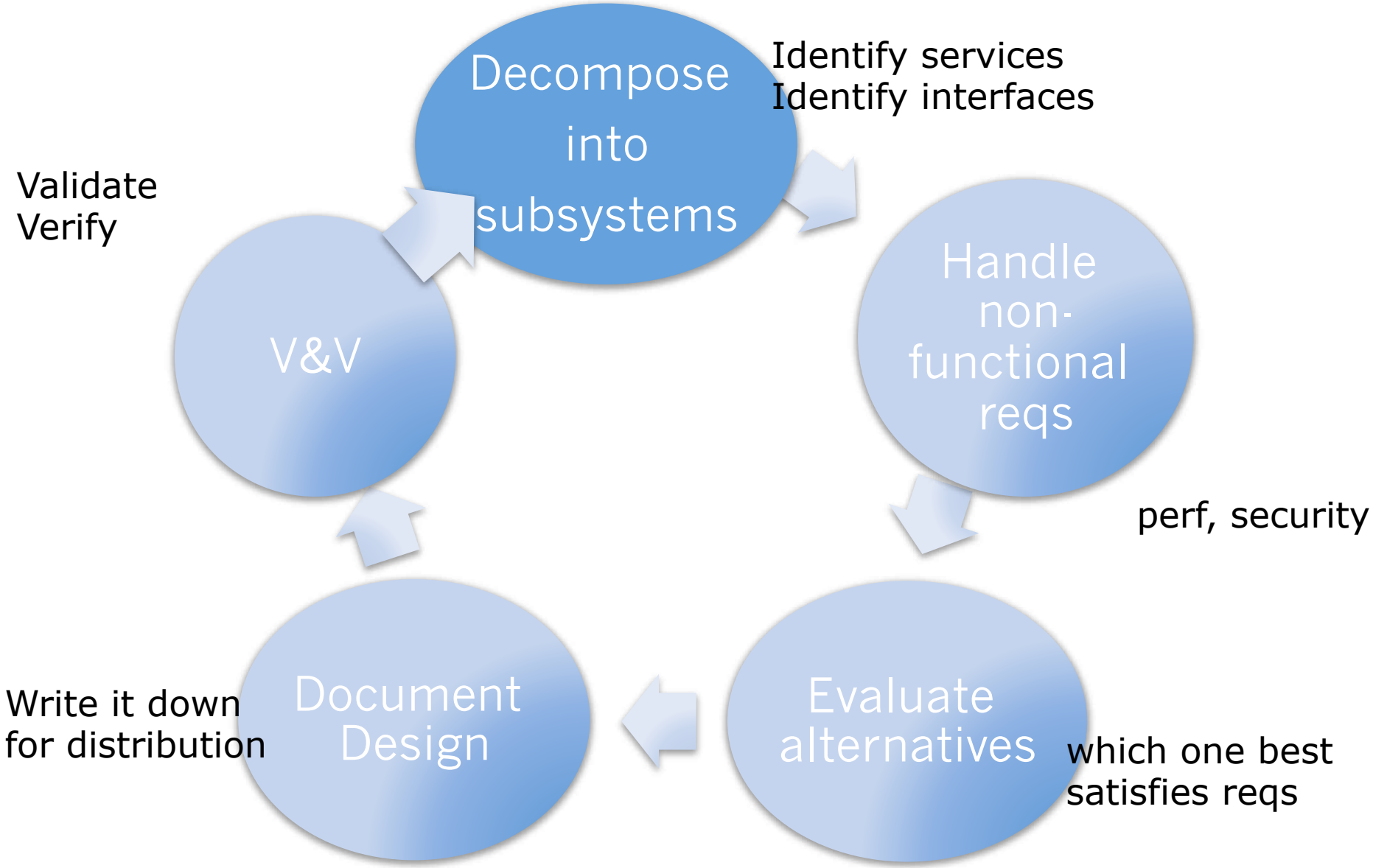


4+1Views

These are different ways to think about a project

- Use-case view: What are services provided?
- Logical view: what are relationships between classes etc.
- Concurrent view: What are processes/threads and their relationships?
- Component view: What are files, libraries, etc making up the software and their directories.
- Deployment view: At deployment what are physical connections and hardware and placement of all items?

Design Process Steps



Design Overview

- Design Process Steps
- 4+1 view of system
- Design Breakdown
  - System design
  - components design
  - detailed design