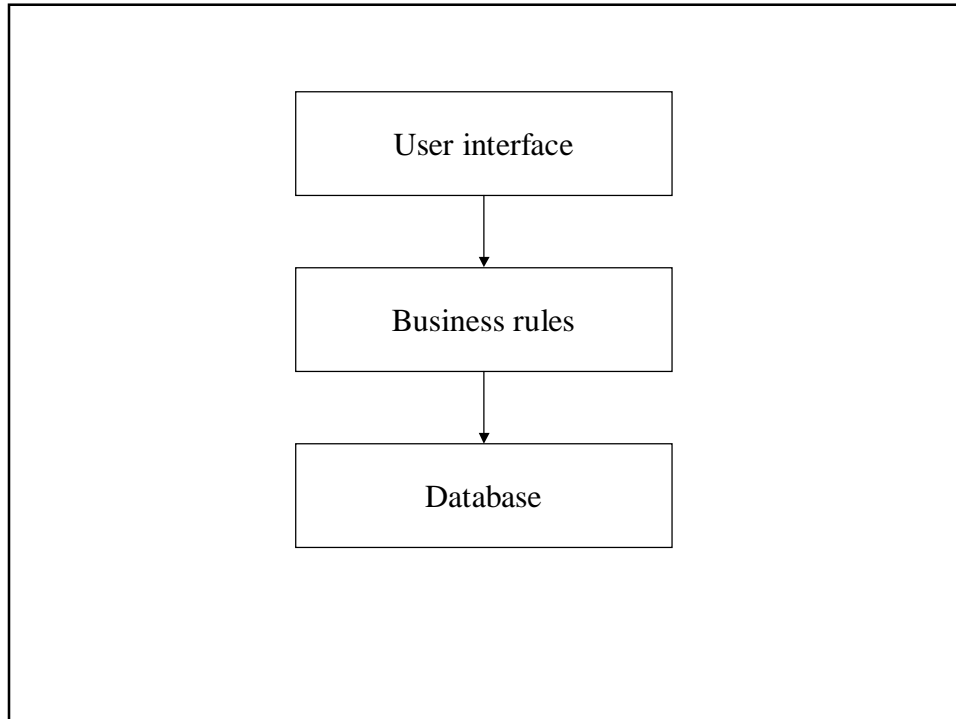


CSC444 - Software Engineering I

Week 5-1

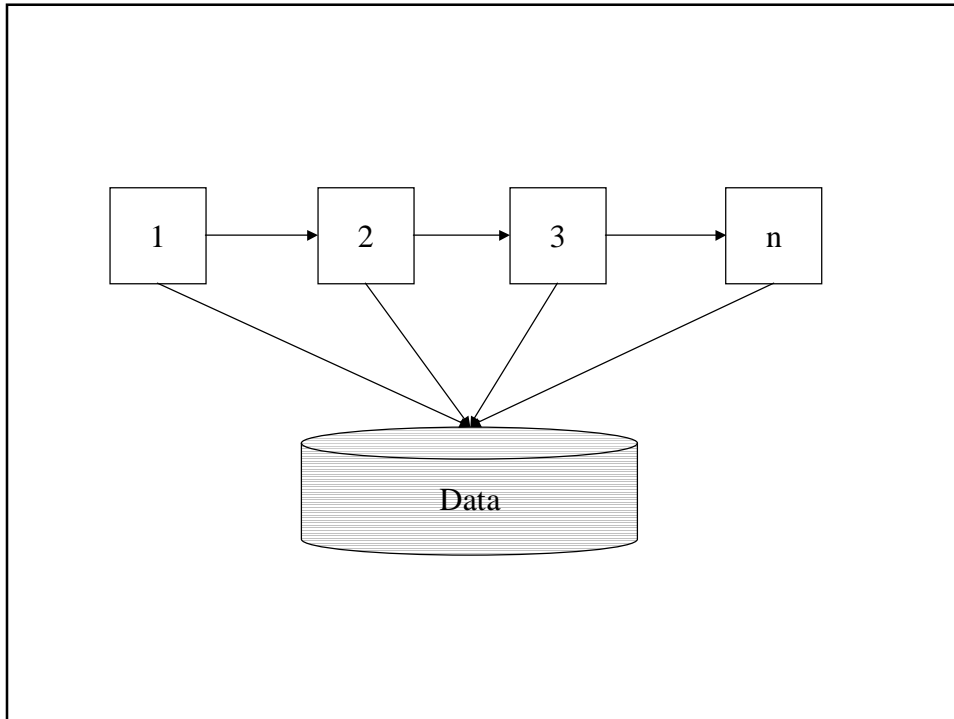
Layered

- **Problem:** distinct services arranged hierarchically
- **Context:** Each layer has a distinct service
- **Solution:**
 - System model: hierarchy of layers. Restricted visibility
 - Components: each layer is a collection of procedures
 - Connectors: procedure calls, method invocation
 - Control structure: single thread
- **Variant:** virtual machines, three-tier



Repository

- **Problem:** managing a rich body of information
- **Context:** require support for data management
- **Solution:**
 - System mode: data is centralized
 - Components: computational processes
 - Connectors: direct access or procedure call
 - Control structure: varies
- **Variants:** DBMS, compilers, AI blackboards



Design Document

- Must capture:
 - inputs
 - outputs
 - processes/functionalities
 - data access/files/databases
 - network
- IEEE 1016 standard
- Adopt a simple structure

... cont'd

- Revision history
- Overview:
 - audience, reference (SRS), overall picture, goals
- Architectural style:
 - what style and why, comparison
- System architecture:
 - the concrete picture of your system (justifications)
 - Component specification
 - links to SRS: what aspects of SRS each satisfies

... cont'd

- | | |
|------------------|---------------------------|
| • Components: | • Using UML |
| – Identification | – name |
| – Type | – class/package/interface |
| – Purpose | – functionality played |
| – Function | – specific function (SRS) |
| – Subordinates | – class diagram |
| – Dependencies | – class diagram |
| – Interfaces | – sequence/interaction |
| – Resources | – annotation |
| – Processing | – activity/statecharts |
| – Data | – class description |

... cont'd

- User interface:
 - activity/task diagram
 - screen layouts
 - error messages
 - scripts for interactions
- File layouts:
 - structure (DTD, schema), format
- **The goal is for a group to read this document and build the application!**