

## Chapter no. 2

### Architectural Styles in Distributed Systems.

#### Software Architecture

- logical organization and interaction of various software components.

#### Component

- a modular, replaceable unit with well defined interfaces.

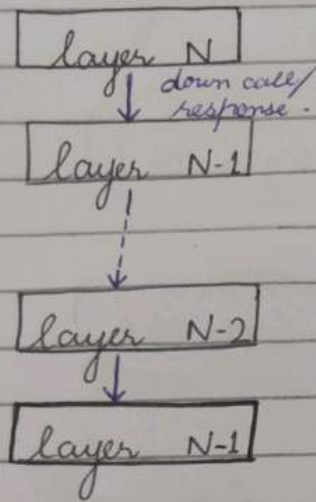
#### Connector

- mechanism that regulates communication coordination between components.

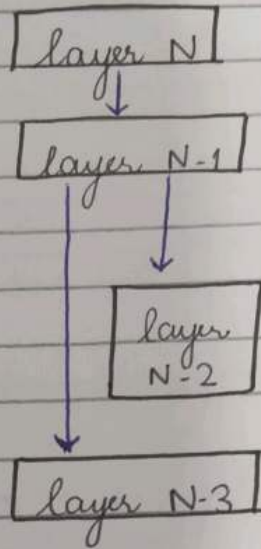
#### Types

- 1) Layered
- 2) Service-oriented
- 3) Publish-subscribe.

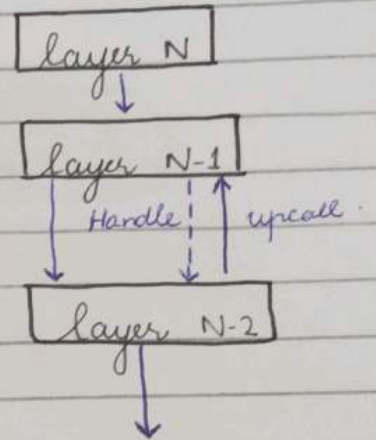
- Components are organized hierarchically
- Component in one layer calls another component in lower layer (down call) and receives a response.
- Upcalls are rare



Pure Layered Organization



Mixed Layered Organization



Layered Organization with upcalls  
(in rare cases).

Example: Communication Protocols.

- Each layer implements one or more communication service.
- Each layer offers an interface specifying the functions that can be called.
- Protocol: describes the rules that parties will follow to exchange information.

## Layered Architectures

### → Application layering

Traditional three-layered view

- Application Interface layer
- Processing layer
- Data layer.

⇒ Found in many DIS

Example : a simple search engine.

