Chapter no. 2
Architectural Styles in Distributed Systems.

Software Architecture
- Logical organization and interaction of various software components.

Component
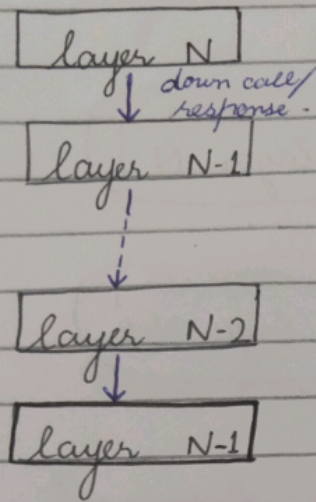- a modular, replaceable unit with well-defined interfaces.

Connector
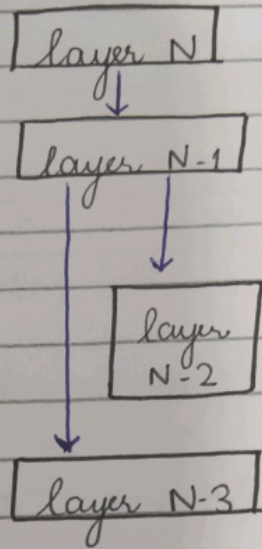- mechanism that regulates communication coordination between components.

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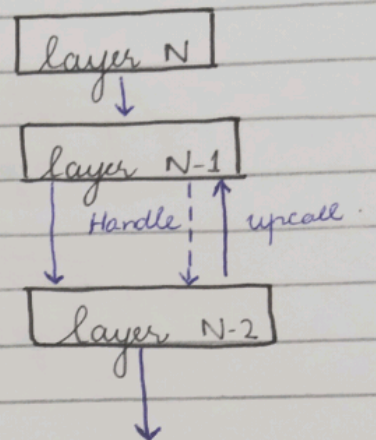1) Layered
2) Service - oriented
3) Publish - subscribe

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

layer N	layer N	layer N
↓ down call/response	↓	↓
layer N-1	layer N-1	layer N-1
↓	↓ ↓	Handle ↓ ↑ upcall
layer N-2	layer N-2	layer N-2
↓		↓
layer N-1	layer N-3	

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: discribes 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.