

① Explain a Connector

10m

What is a Connector

A connector is an element that models interaction among components

Interaction logic and protocols of communication

Transmit data, trigger behaviour

Intermediatory

API, middleware, message queues.

separate computation from interaction

Heterogeneity

* Roles

- ① Communication
- ② Coordination
- ③ Convergence
- ④ Facilitation

Communication

Pipes, message passing, data access

Coordination

Control mechanism. RPC, thread of execution
method invocation

Conversion

Change in type eg int - string

Adaptors, wrappers

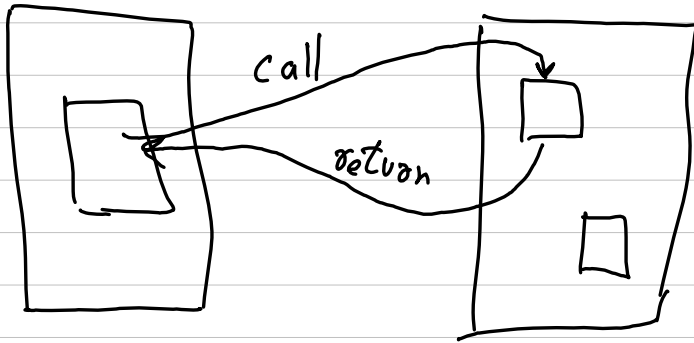
Facilitation

Load balancing, avoiding deadlocks, critical sections.

Procedure call connector

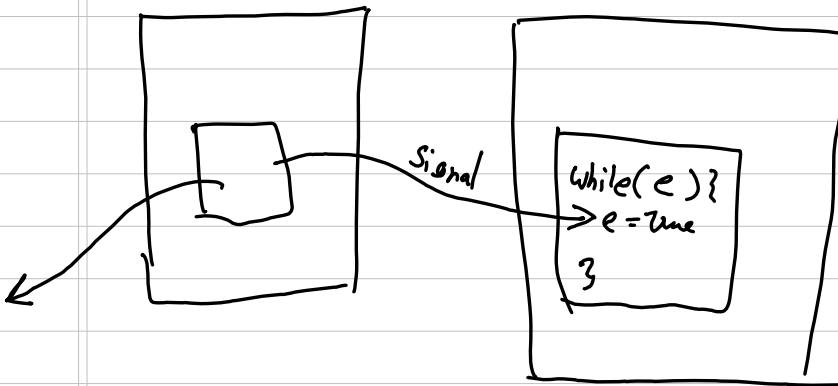
Coordination - flow of control
call various functions

Communication - Parameter & data values



Event connector

When event occurs, then the code is executed



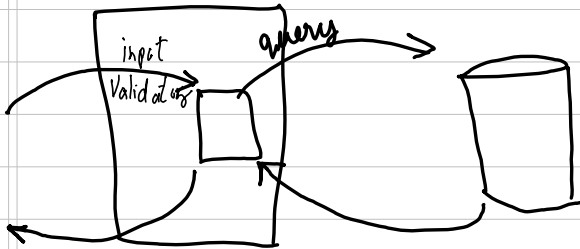
eg `onClick()`

Thread of execution is not passed

Coordination
Communication

Data Access Connectors

Access storage components.



No coordination only communication
eg SQL

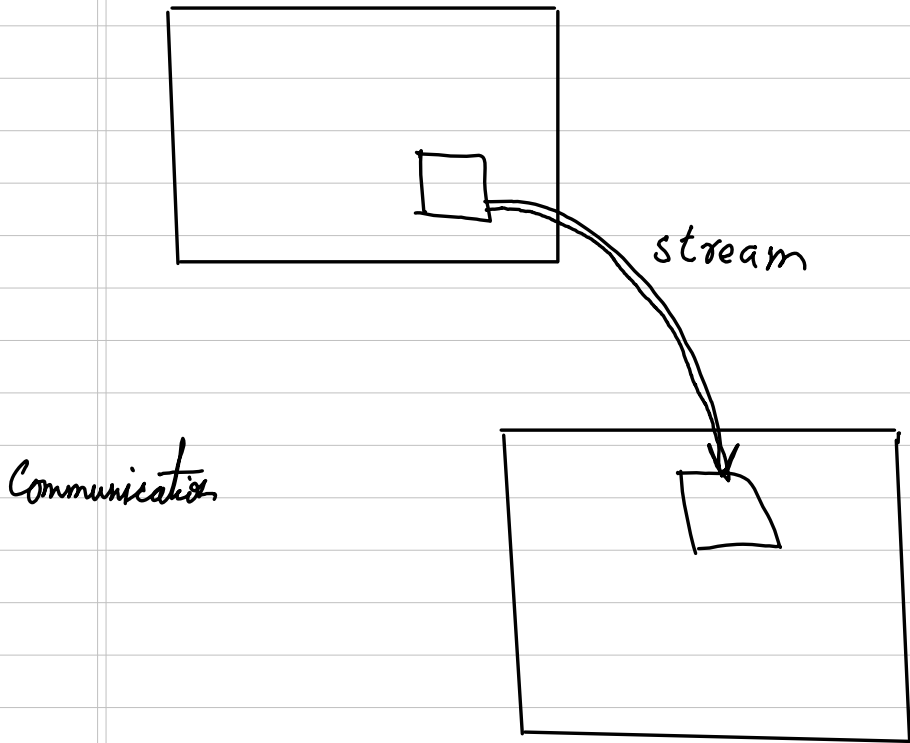
Data storage may be persistent, or transient

Stream Connectors

Client server system using data transfer protocols

Large amount of data available

Works in asynchronous mode



Linkage connector

Used to establish link & disappear
facilitation services

Establish channels, duties for communication

eg ~~#~~ include
import

May be static or dynamic linkage

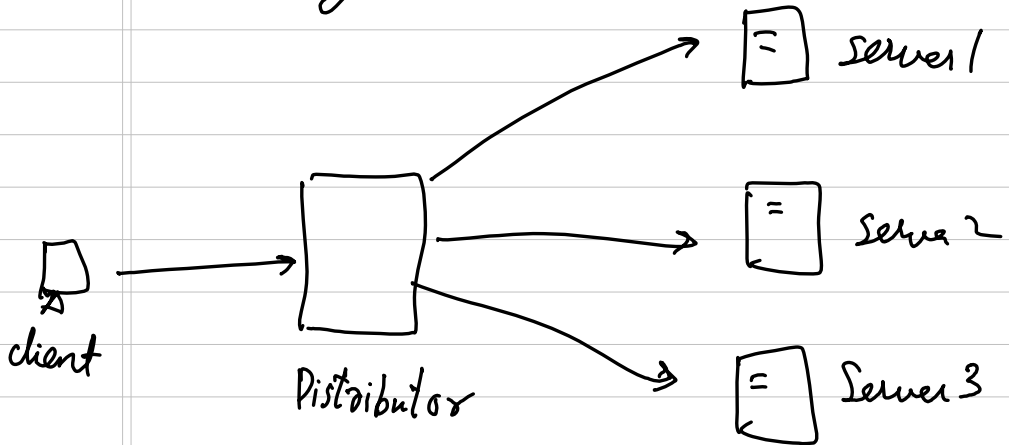
Distributor Connector

facilitation services

Responsible for distribution of some data

Messaging queues, event buses, brokers

Load Balancing



Assigns tasks to various components

Orchestration

Arbitrator connectors

Resolving conflicts coordination by redirecting flow of control.

Shared memory access through synchronizer and concurrency control.

eg O.S. \rightarrow mutex, semaphore

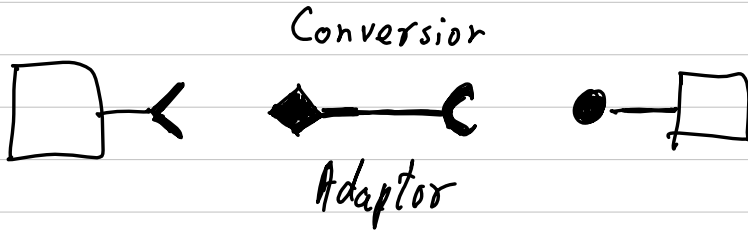
Mediate & resolve conflicts

facilitation

shared databases

eg Kubernetes scheduler.

Adaptor Connectors



Connect heterogeneous components together
Wrappers.

Conversion role