

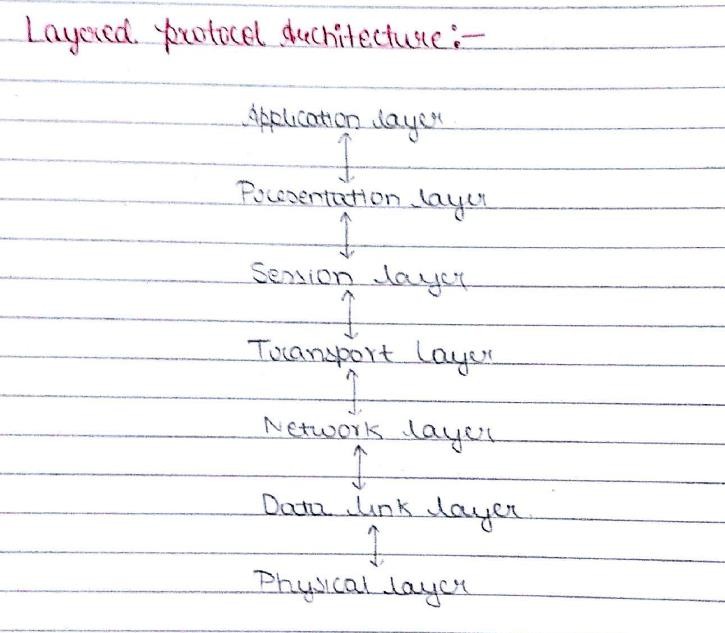
### DISTRIBUTED COMPUTING

### (

**Chapter 2: Communication**

**

### LAYERED PROTOCOL



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**TYPES OF COMMUNICATION**



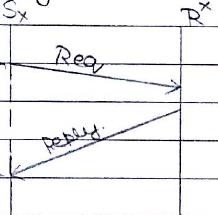
⯈ Blocking (Synchronous)

⯈ Non-Blocking (Asynchronous)

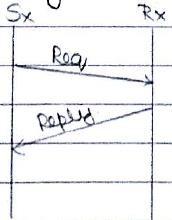
⯈ Persistent

⯈ Transient



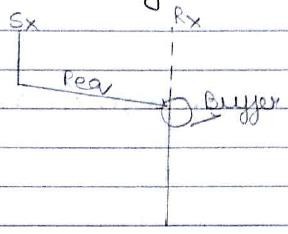


## BLOCKING AND NON BLOCKING

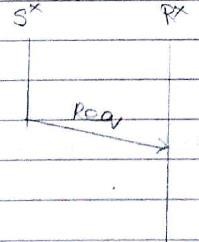


(LMR OF DISTRIBUTED COMPUTING)

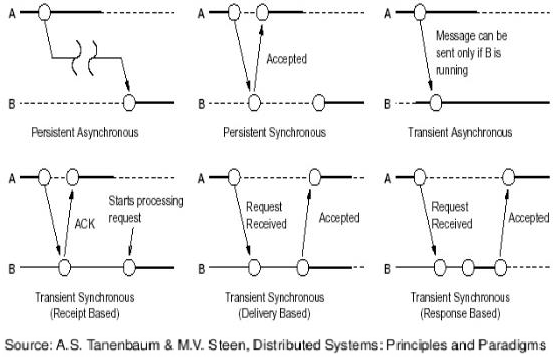




## PERSISTENT vs TRANSIENT



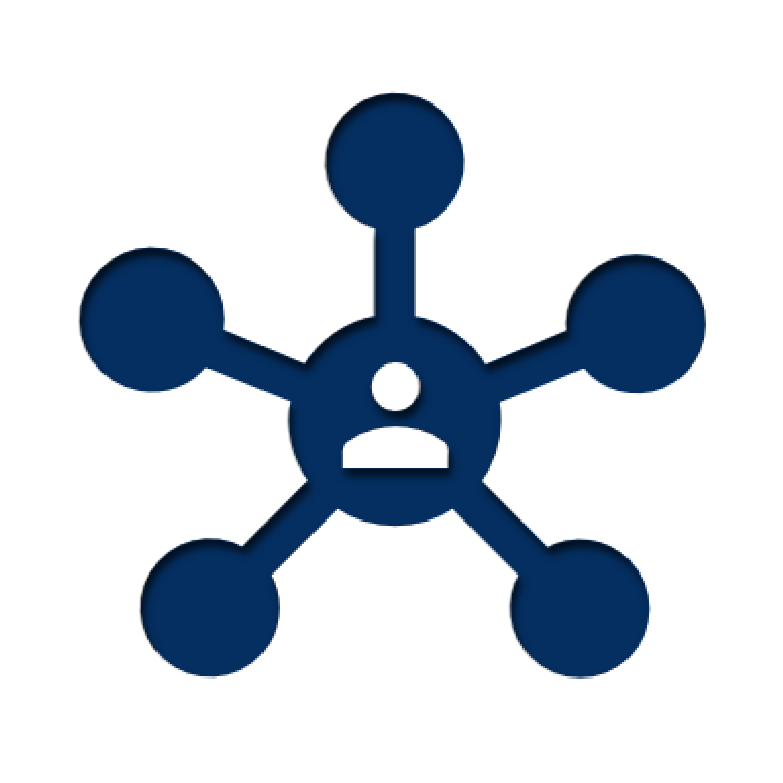




#### PERSISTENT AND TRANSIENT COMMUNICATION

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## GROUP COMMUNICATION

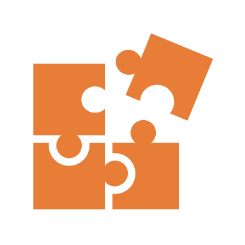
⯈ 1-M

⯈ M-M

⯈ M-1

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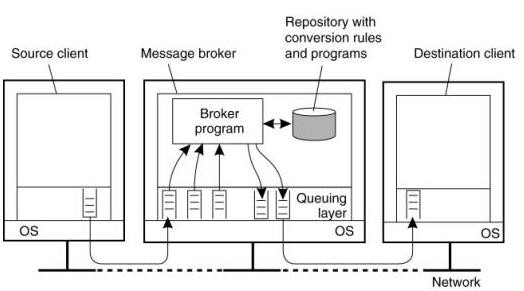
**ABSOLUTE CONSISTENT CAUSAL**

# ORDERING

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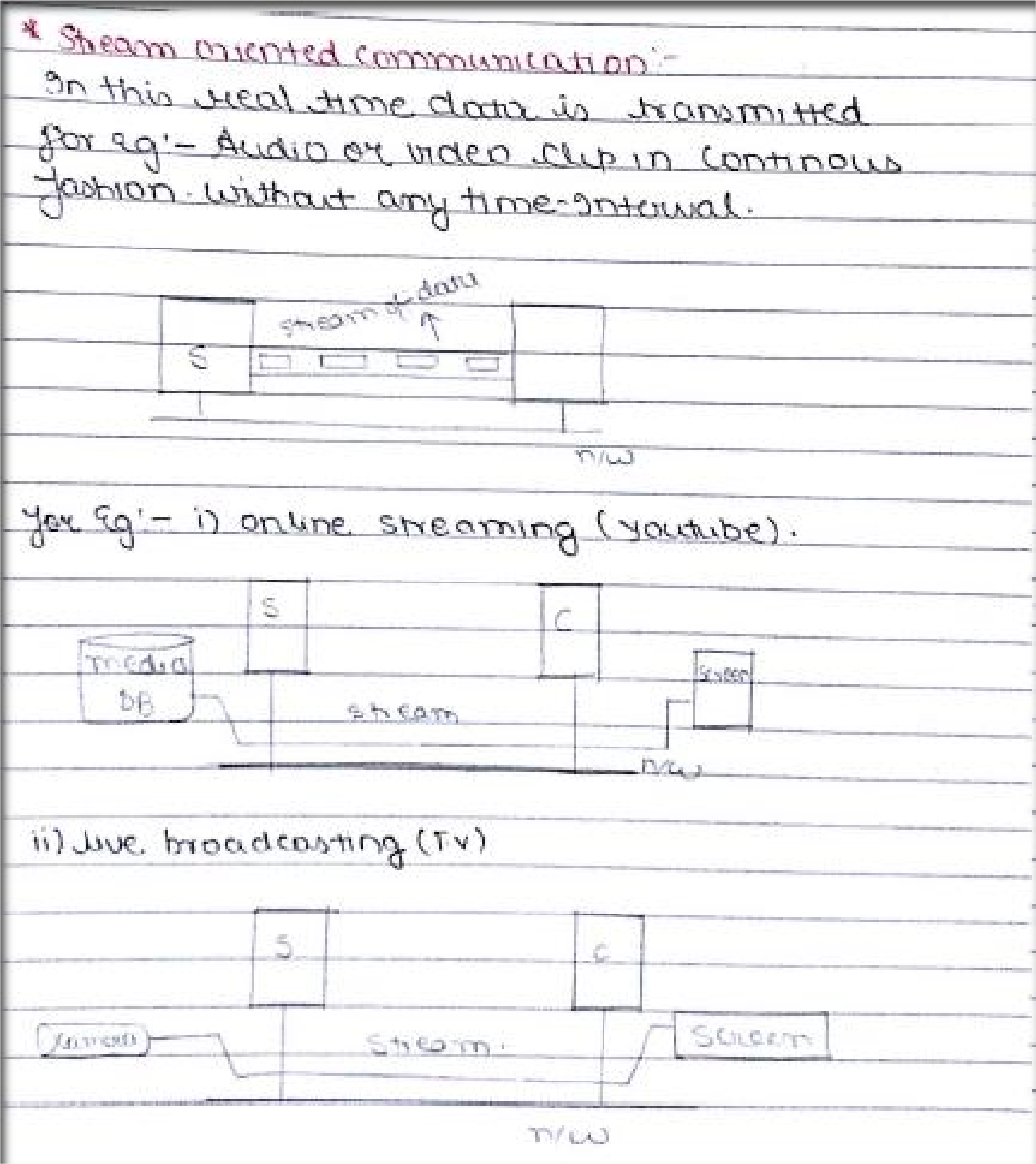
## MESSAGE BROKER ARCHITECTURE



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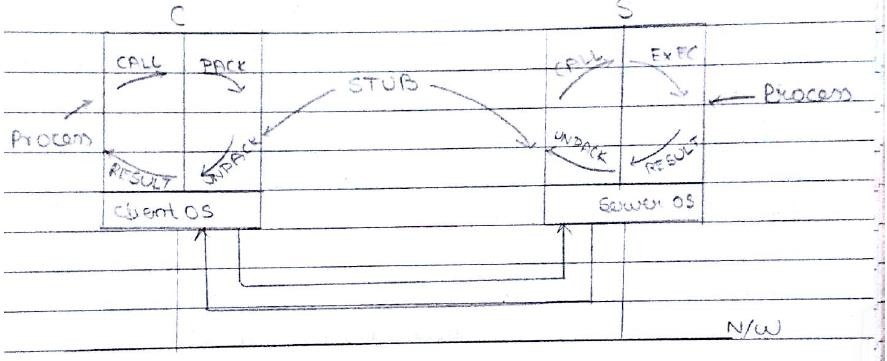
### STREAM ORIENTED COMMUNICATION



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# RPC



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**RPC**

RPC Failures Solution

⯈ Lost Request

⯈ Lost Reply

⯈ Server Crash

⯈ Client Crash (Orphans and Grand

Orphans )

⯈ Timeout and Retransmission

⯈ Timeout and Retransmission

⯈ Timeout and Retransmission

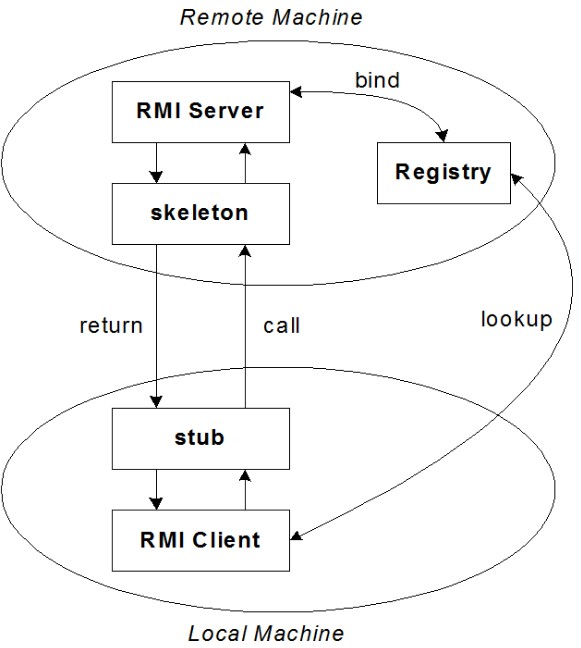
⯈ Extermination, Re-incarnation,

Gentle Re-incarnation, Expiration

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**RMI**

Image Source: https[://www.ejbtutorial.com/wp-content/uploads/2013/10/rmi-](http://www.ejbtutorial.com/wp-content/uploads/2013/10/rmi-) steps.png



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#### COMMUNICATION

⯈ **Types of Communication**

⯈ Synchronous

⯈ Asynchronous

⯈ Persistent

⯈ Transient

⯈ Group Communication

⯈ Types

⯈ 1-M

⯈ M-1

⯈ M-m

⯈ Ordering

⯈ Absolute

⯈ Consistent

⯈ Causal

⯈ Message Oriented Communication

⯈ Message Queuing

⯈ Message Broker

⯈ Stream oriented Communication

⯈ Live

⯈ Stored

|  |  |  |
| --- | --- | --- |
| ⯈ | **RPC** |  |
|  | ⯈ | **Model** |
|  | ⯈ | Failures |
| ⯈ | RMI |  |
|  | ⯈ | Model |

