

CS548 Enterprise Software Architecture & Design

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THIS COURSE

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Graduate Certificate in Enterprise and Cloud Computing

- CS522 Mobile Systems and Apps
- CS526 Enterprise and Cloud Computing
- **CS548 Enterprise Software Architecture**
- CS549 Distributed Systems and Cloud Computing
- CS594 Enterprise and Cloud Security

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ECC Program Outcomes

	CS522	CS526	CS548	CS549	CS594
Infrastructure		X Virtualization		X Availability	
Data Modeling			X		
Design			X		
Applications	X	X	X	X	X
Security & Privacy		X Secure Virt			X

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Introduction to Enterprise Software Systems

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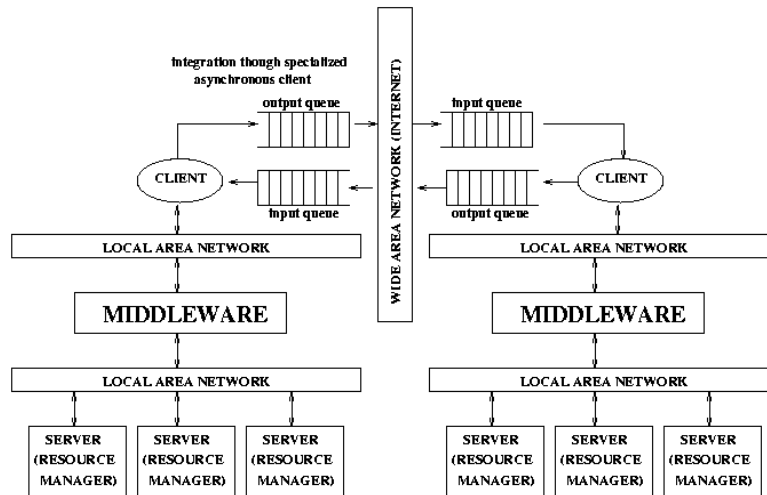
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INTRODUCTION

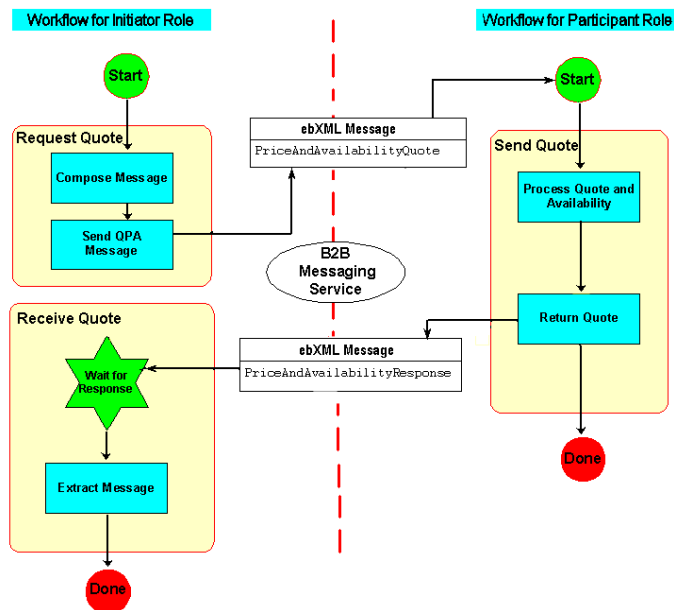
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Old fashioned e-commerce (using queues)



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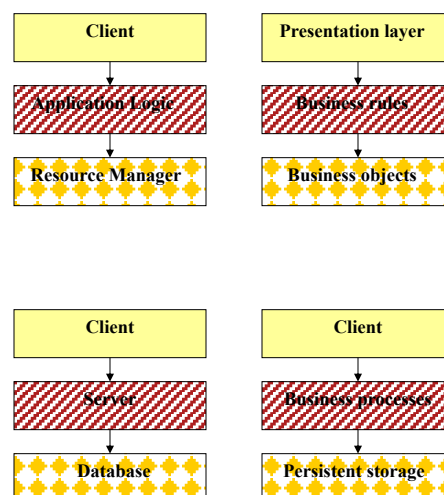
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ENTERPRISE INFORMATION SYSTEMS

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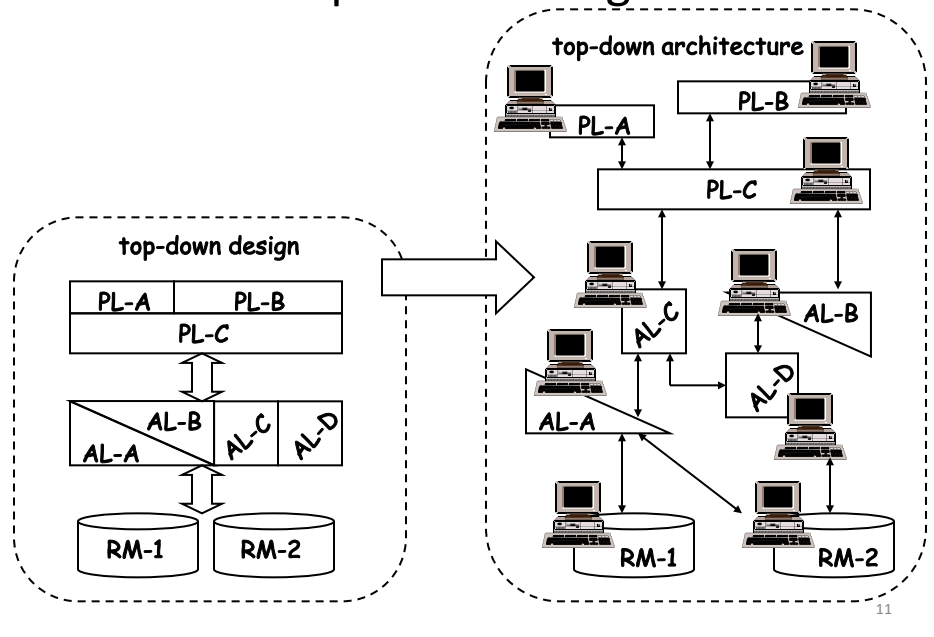
Layers and Tiers



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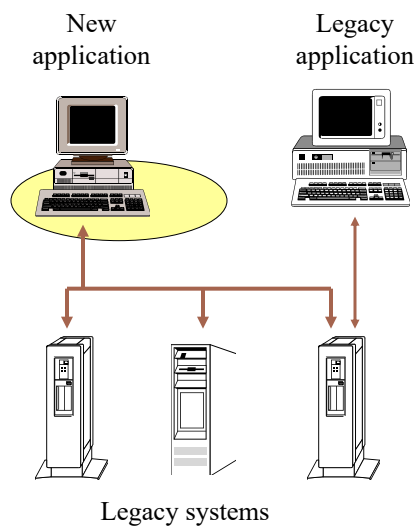
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Top-Down Design



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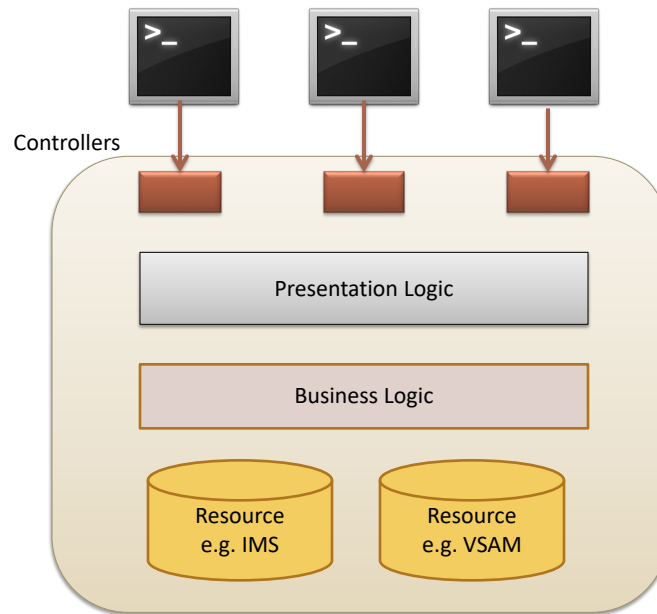
Bottom-Up Design



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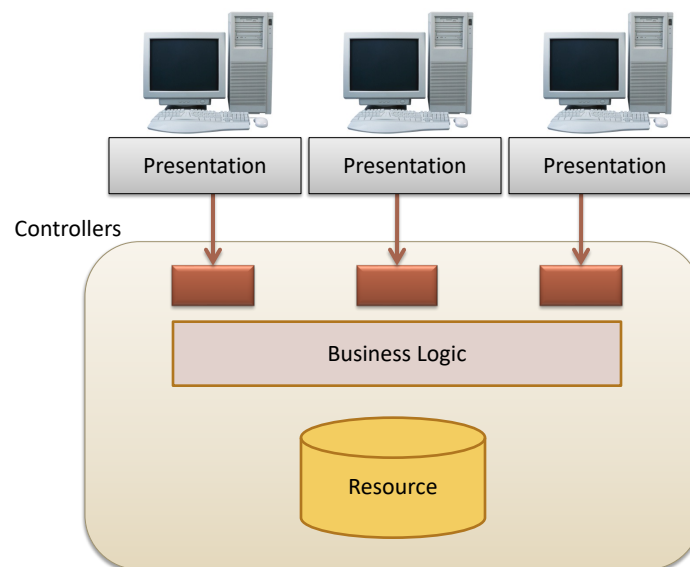
One-tier Mainframe



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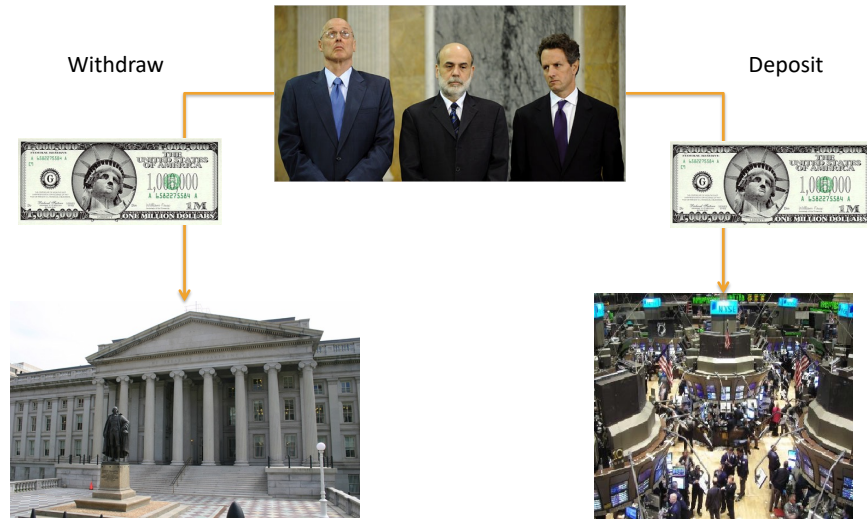
Two-tier Client-Server



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Transactions



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Transactions



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Transactions

Withdraw



Deposit



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Transactional RPC

amazon.com[®]

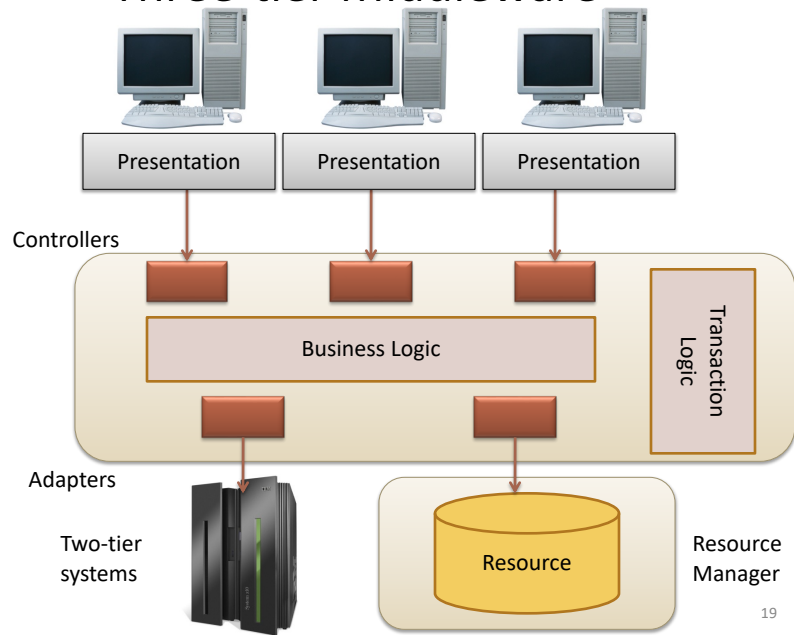
```
Begin Transaction
  AmtOwed = Amazon.Read (CustID);
  Balance = Paypal.Read (AccountID);
  if (AmtOwed ≤ Balance) {
    Paypal.Withdraw (AccountID, AmtOwed);
    Amazon.Deposit (CustID, AmtOwed);
  } else {
    Abort Transaction;
  }
End Transaction
```

PayPal[®]

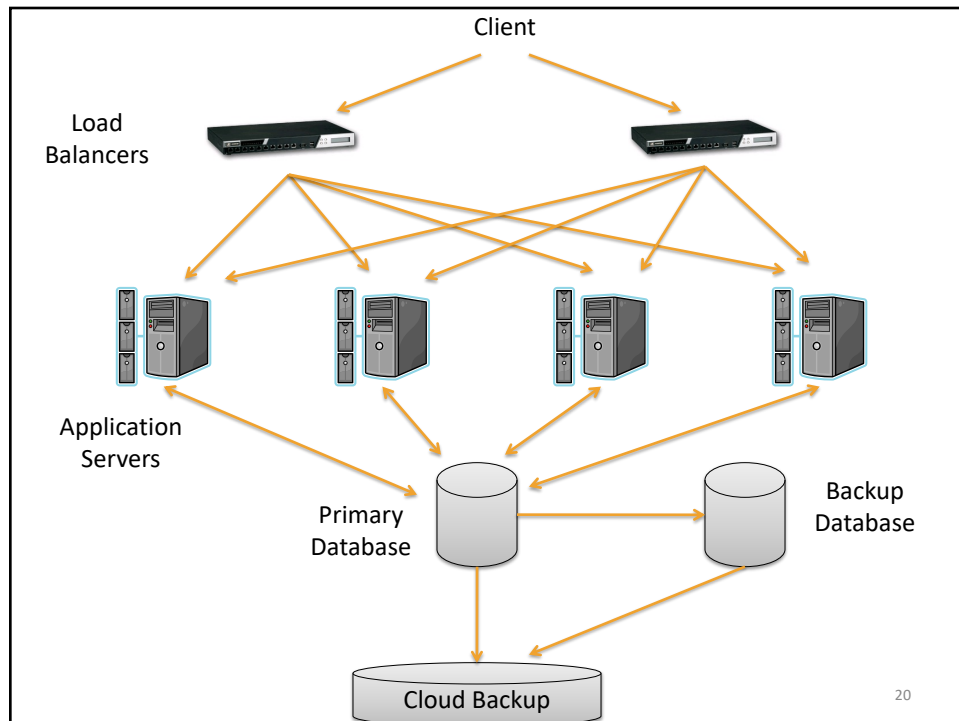
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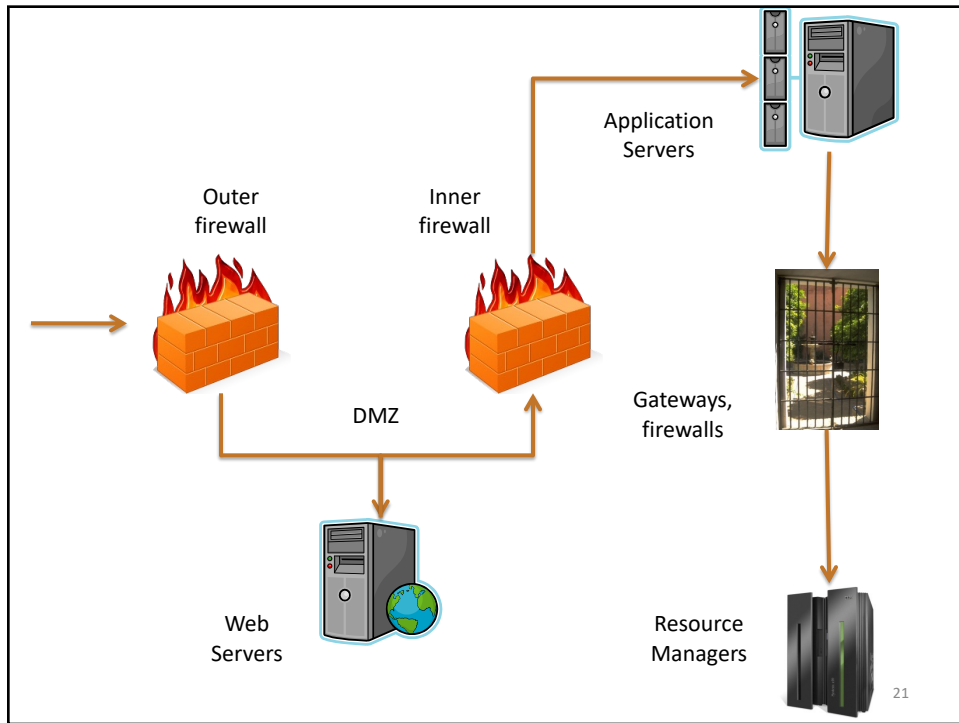
Three-tier Middleware



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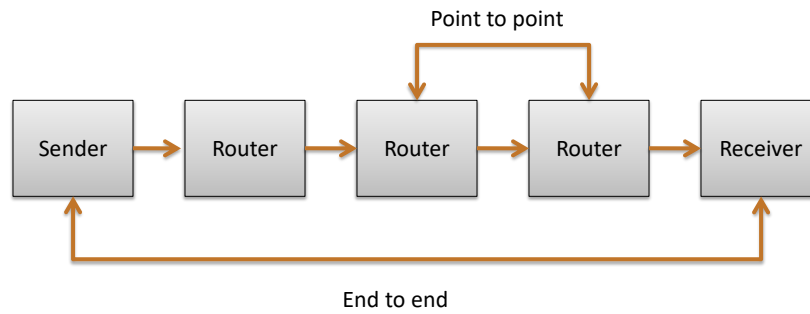
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COMMUNICATION

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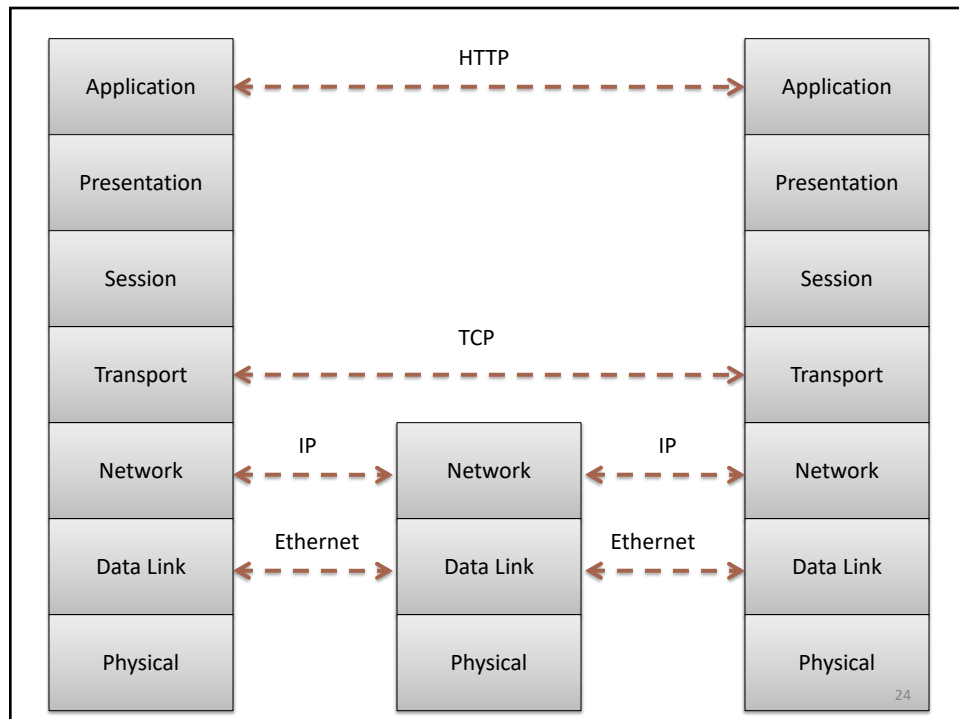
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End-to-end vs Point-to-point



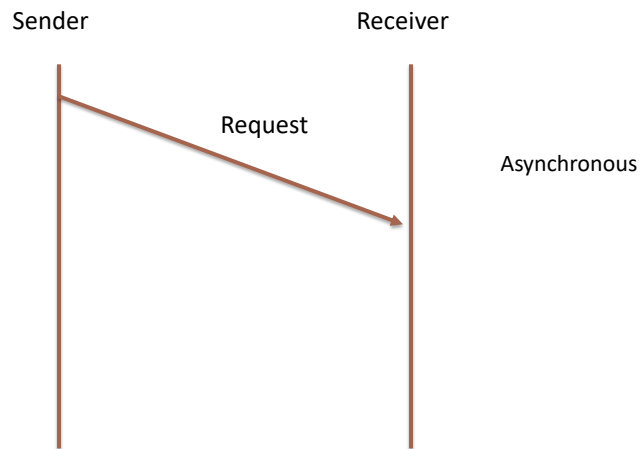
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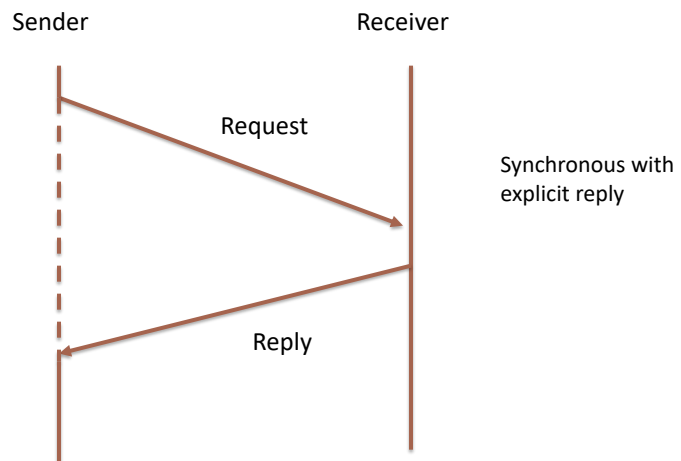
Message-passing



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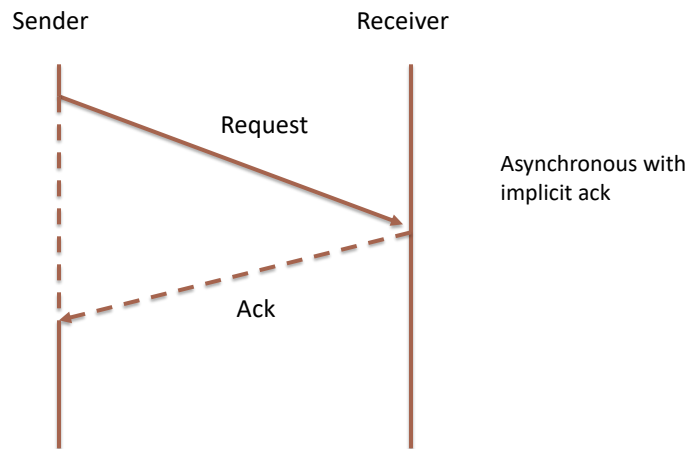
Message-passing



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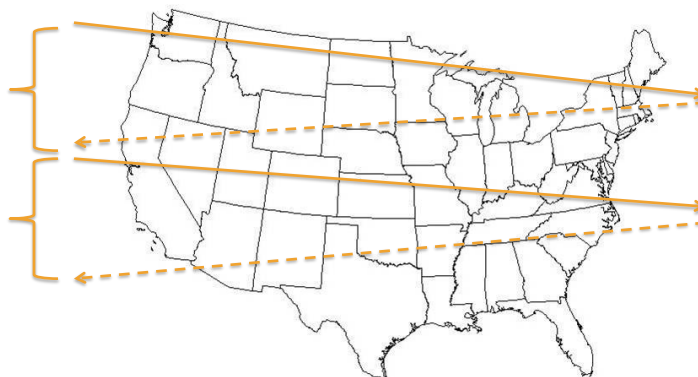
Message-passing



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Latency



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