

SER 321 C Session

SI Session

Sunday, June 30th 2024

6:00 pm - 7:00 pm MST

Agenda



Assignment 5 Progression Example

Middleware

What is it?

Why do we care?

SI Session Expectations

Thanks for coming to the **SER 321** SI session. We have a packed agenda and we are going to try to get through as many of our planned example problems as possible. This session will be recorded and shared with others.

- If after this you want to see additional examples, please visit the drop-in tutoring center.
- We will post the link in the chat now and at the end of the session.
 - tutoring.asu.edu
- Please keep in mind we are recording this session and it will be made available for you to review 24-48 hours after this session concludes.
- Finally, please be respectful to each other during the session.

Interact with us:

Zoom Features



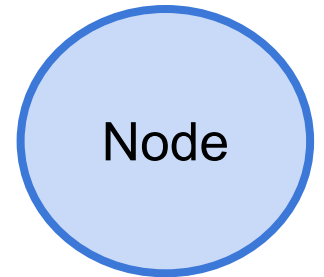
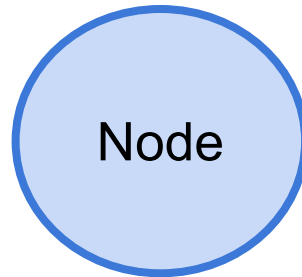
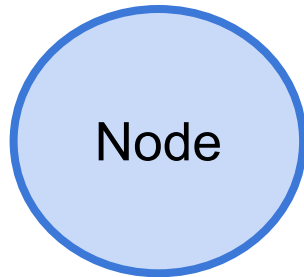
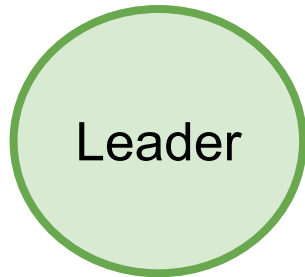
Zoom Chat

- Use the chat feature to interact with the presenter and respond to presenter's questions.
- Annotations are encouraged

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Assignment 5 Visualization

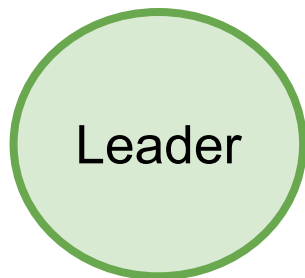
What does a 'node' represent in our structure?



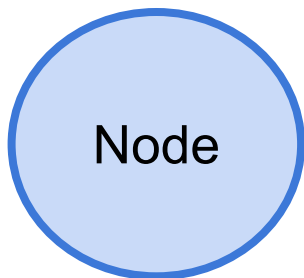
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Assignment 5 Visualization

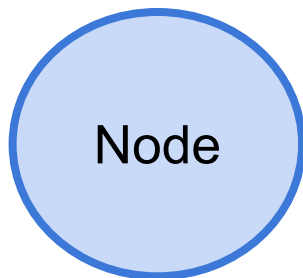
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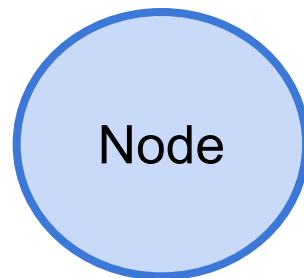
Phoenix



New York



Chicago

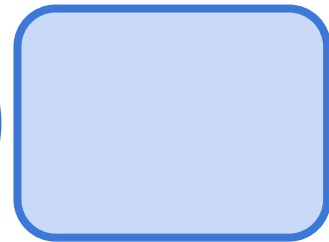
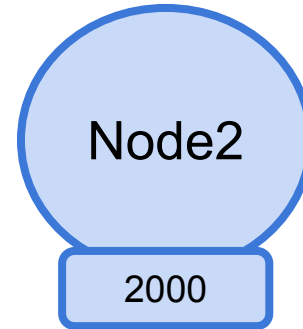
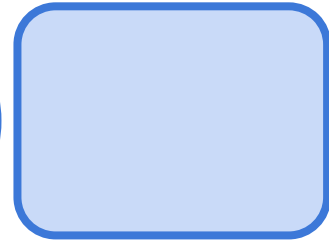
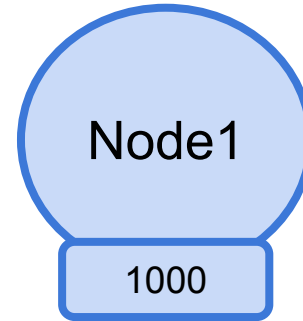
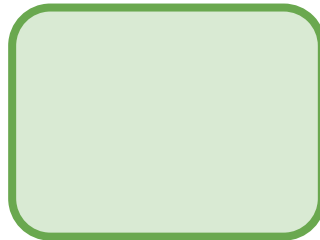
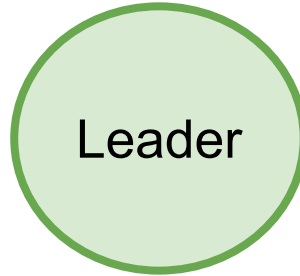
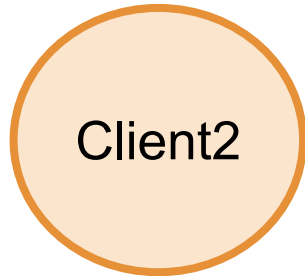
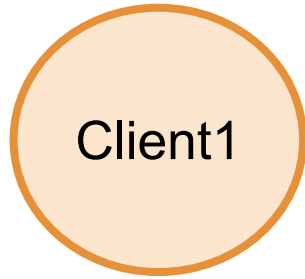


London

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Assignment 5 Visualization

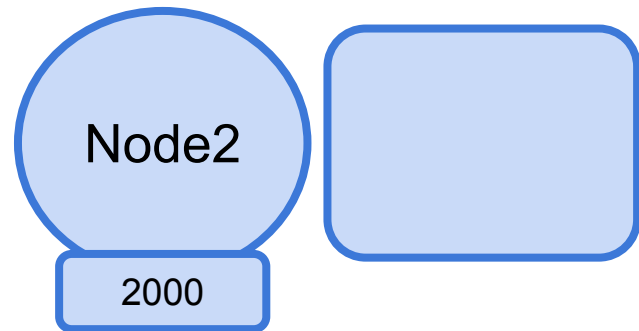
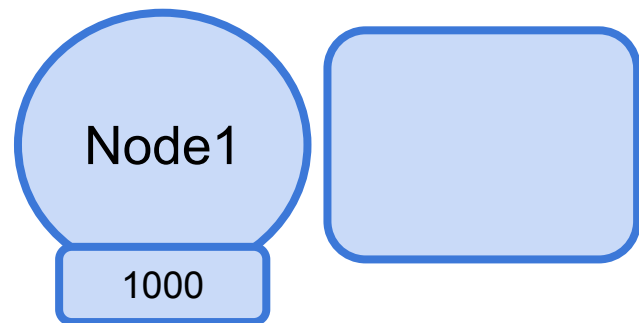
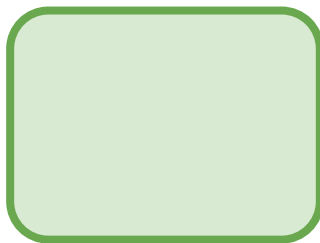
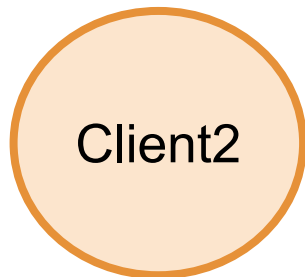
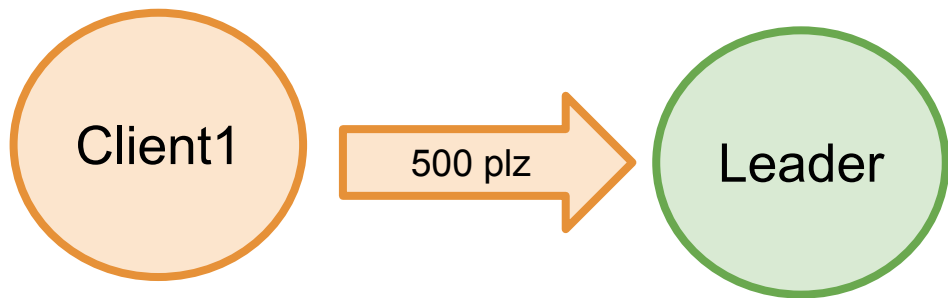
Let's depict part of the
Example...



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Assignment 5 Visualization

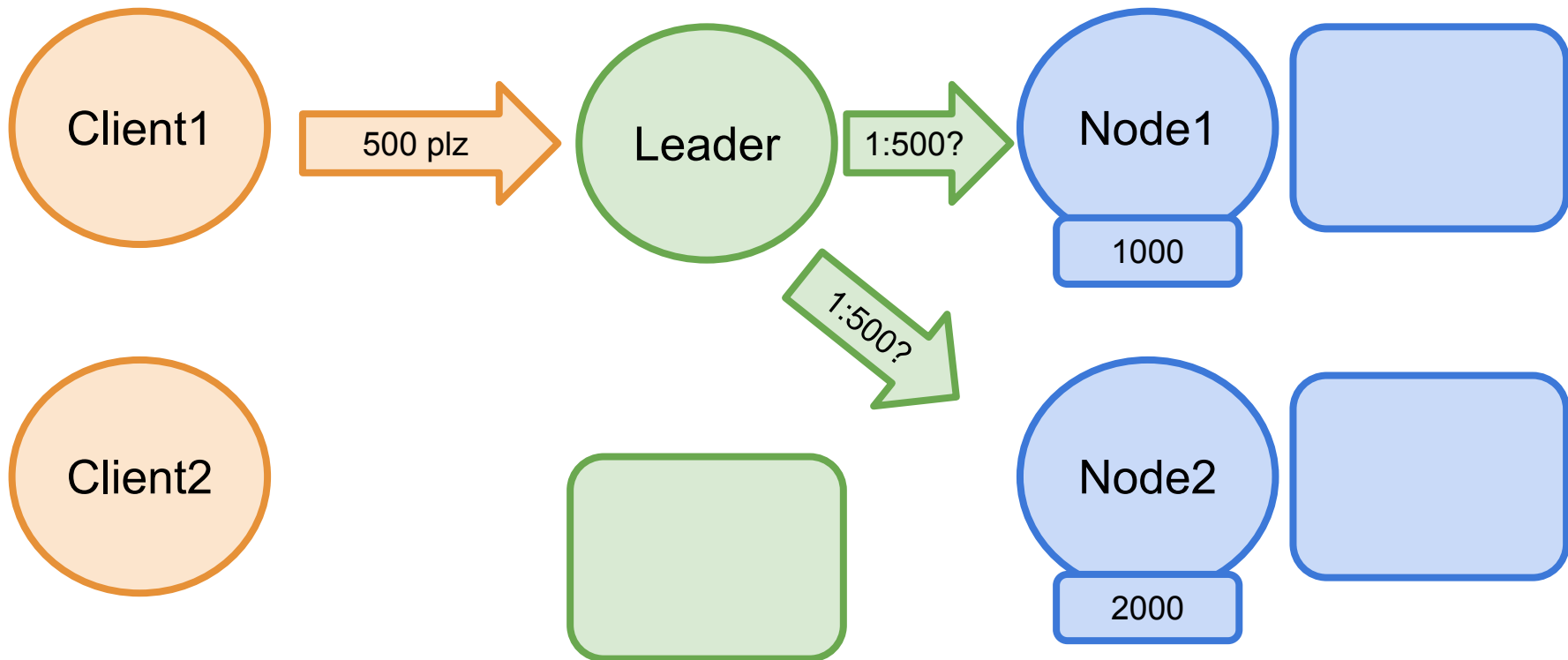
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Example...



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Assignment 5 Visualization

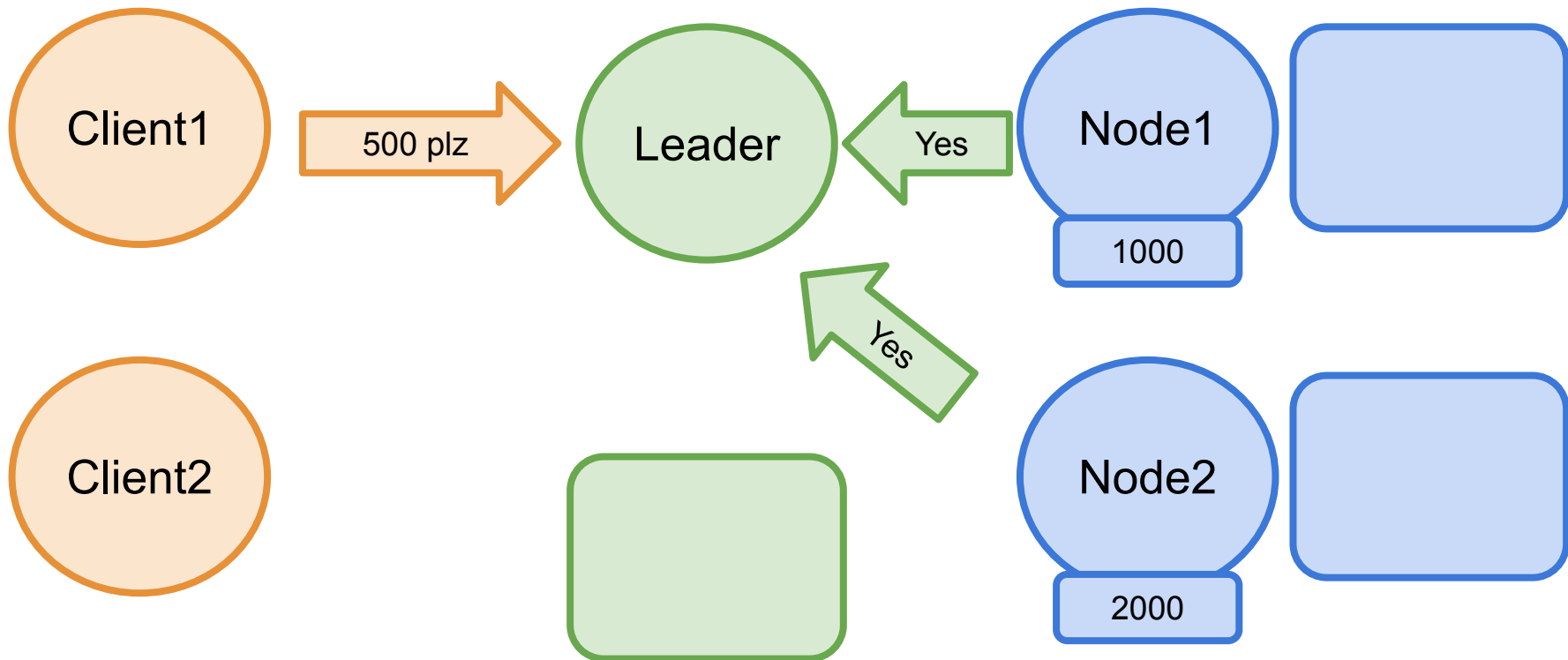
Let's depict part of the
Example...



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Assignment 5 Visualization

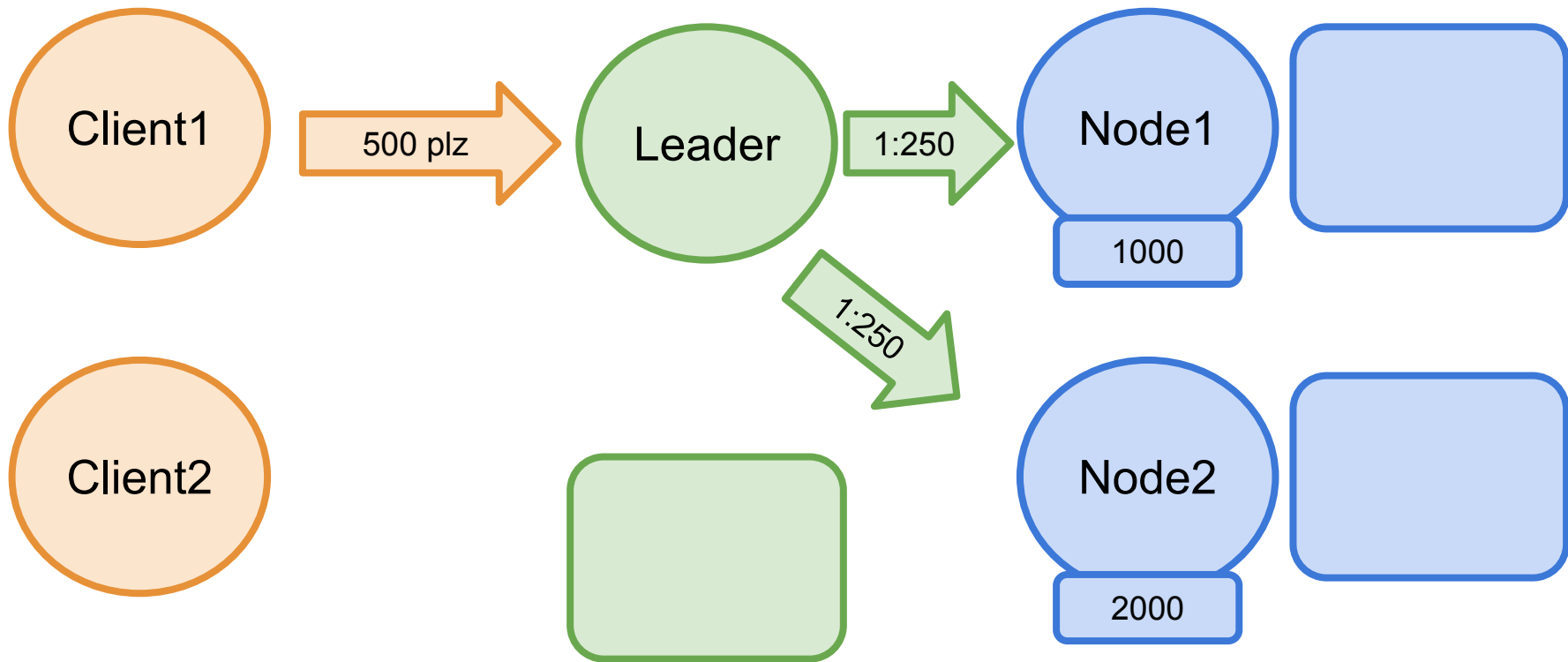
Let's depict part of the
Example...



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Assignment 5 Visualization

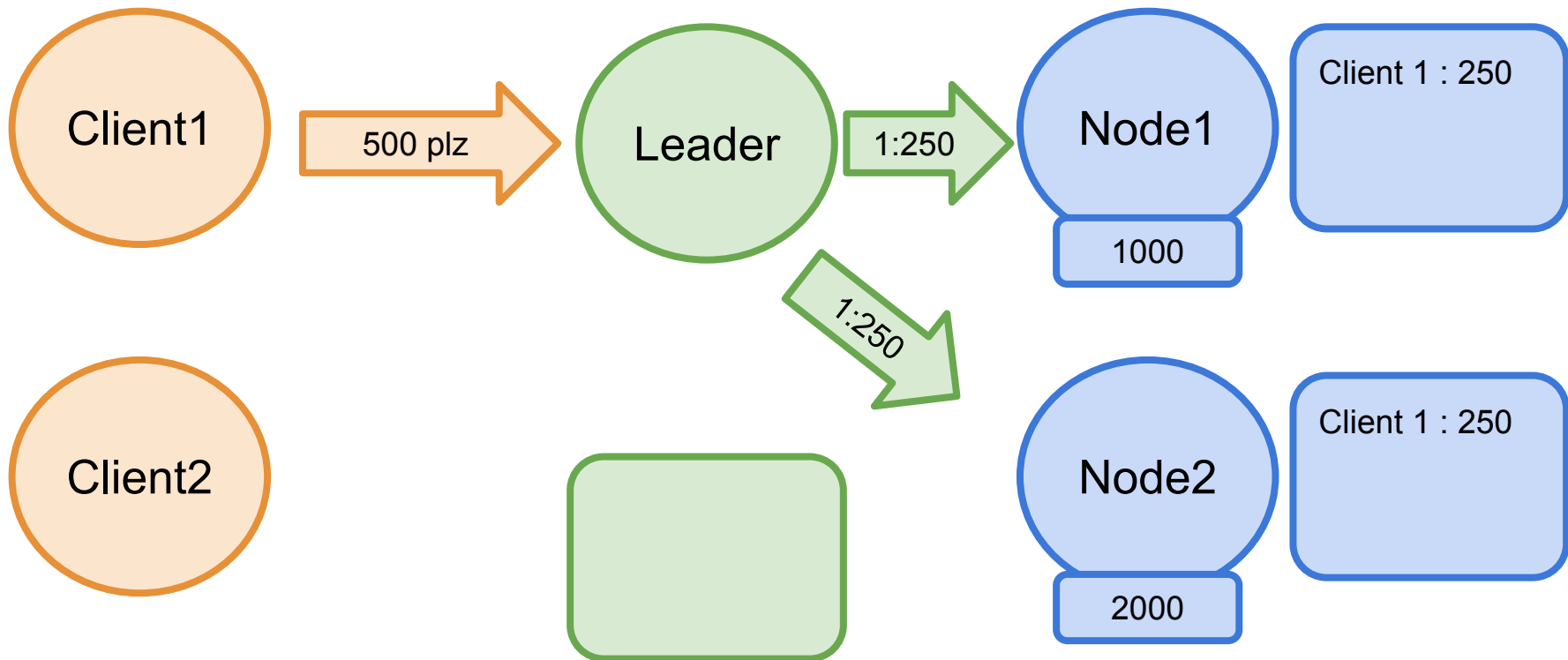
Let's depict part of the
Example...



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Assignment 5 Visualization

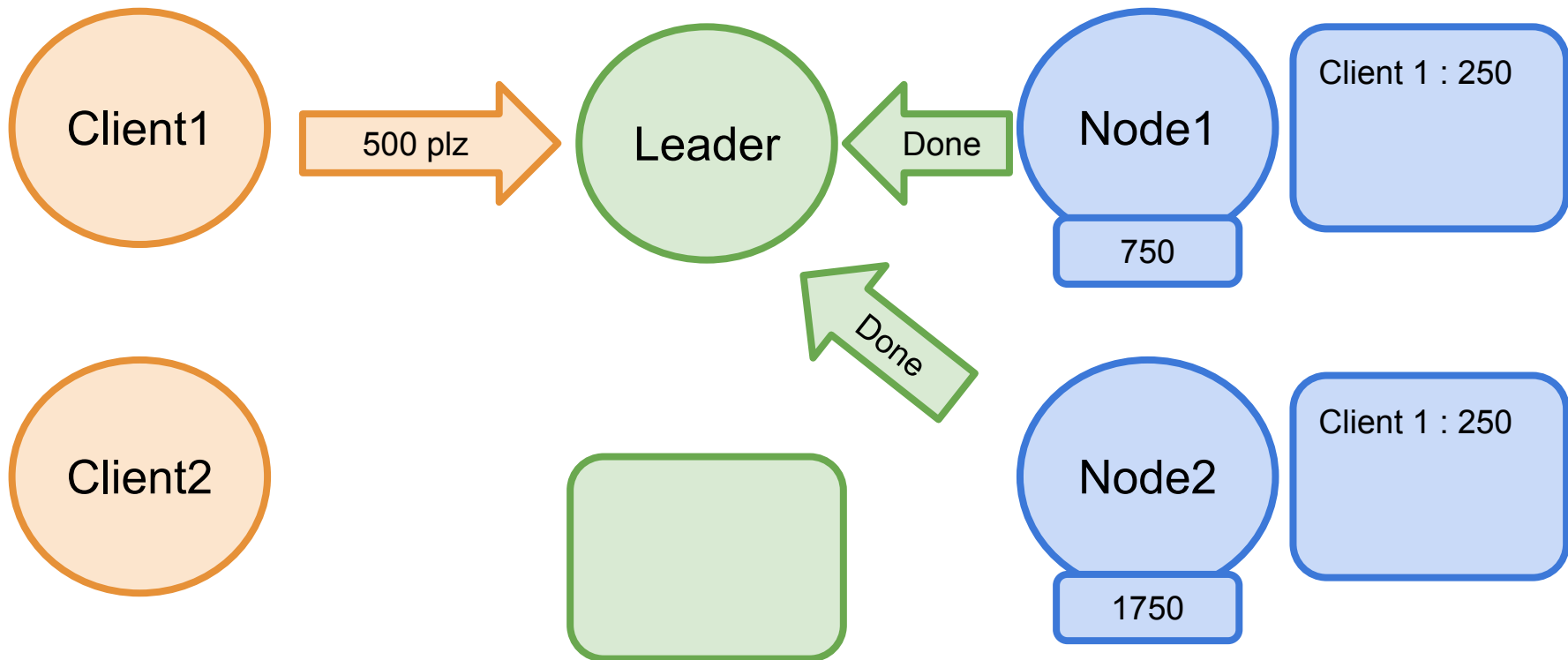
Let's depict part of the
Example...



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Assignment 5 Visualization

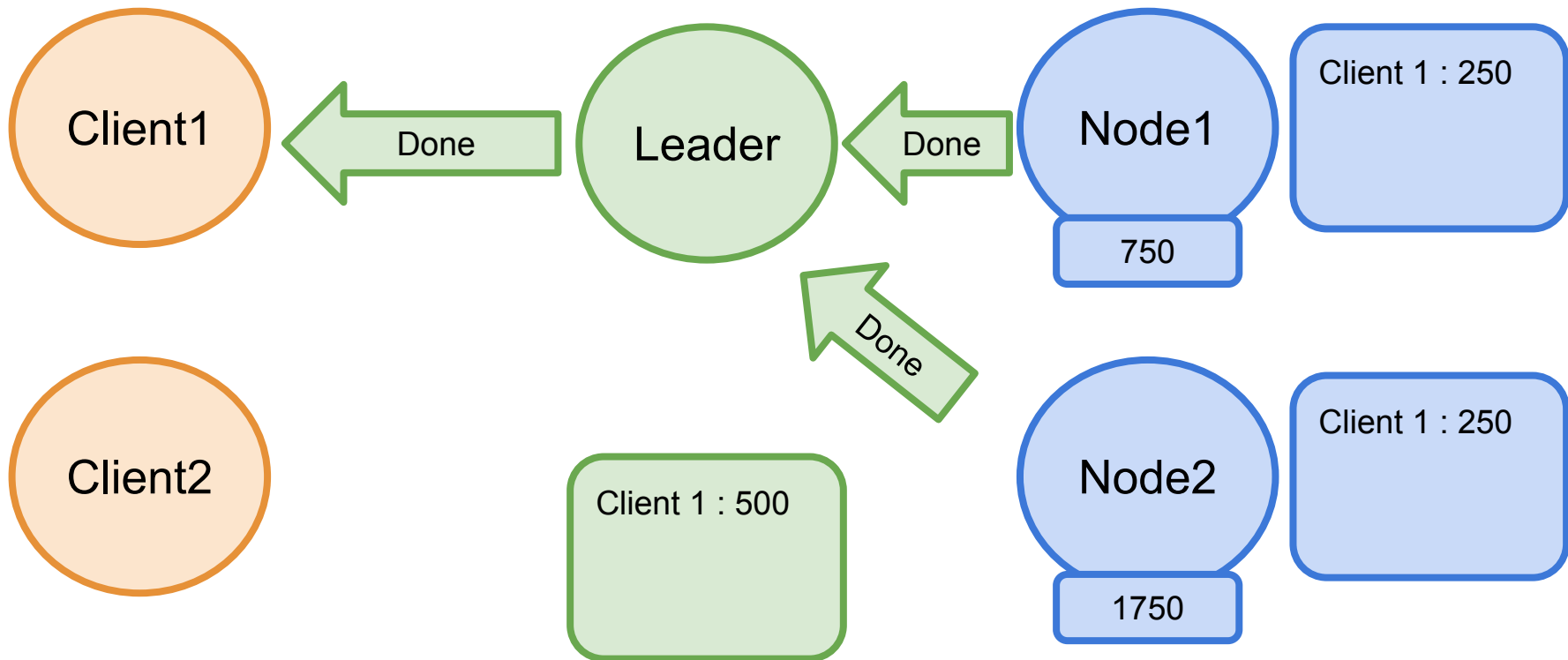
Let's depict part of the Example...



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Assignment 5 Visualization

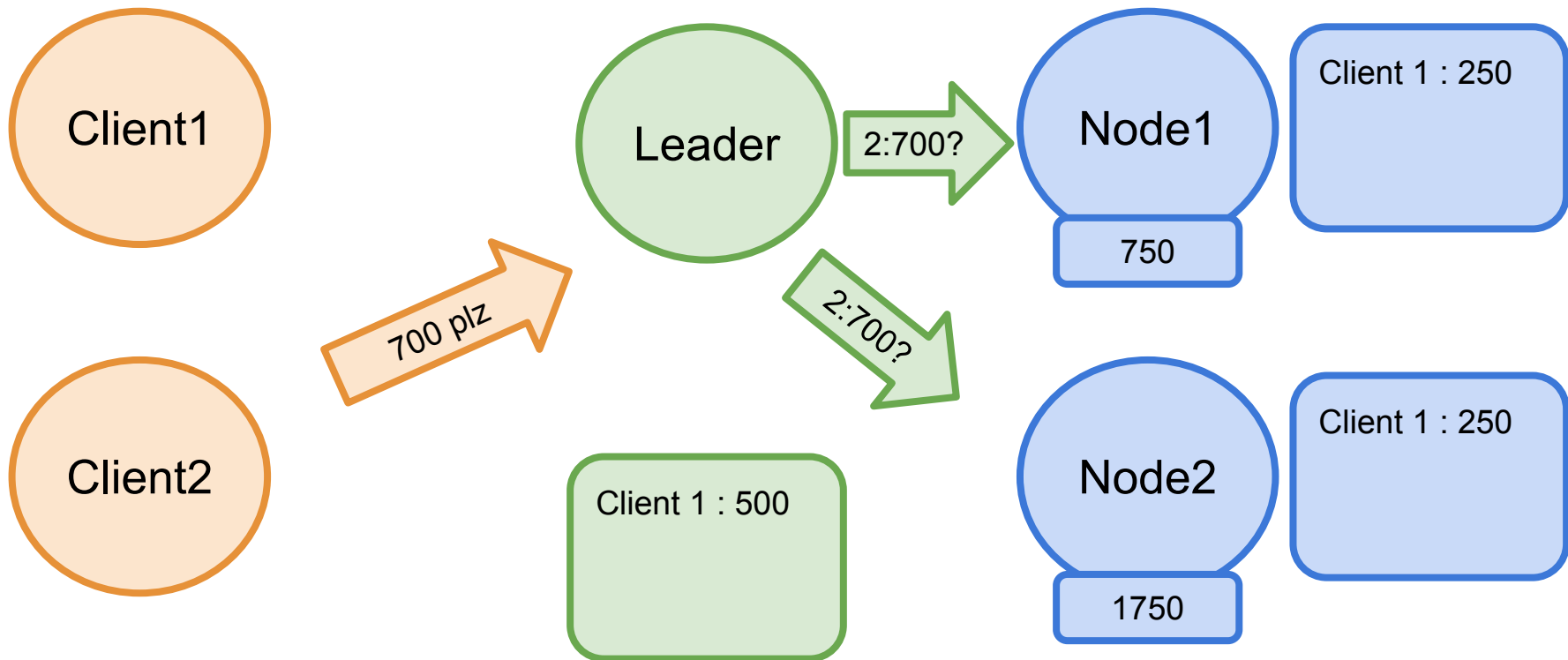
Let's depict part of the Example...



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Assignment 5 Visualization

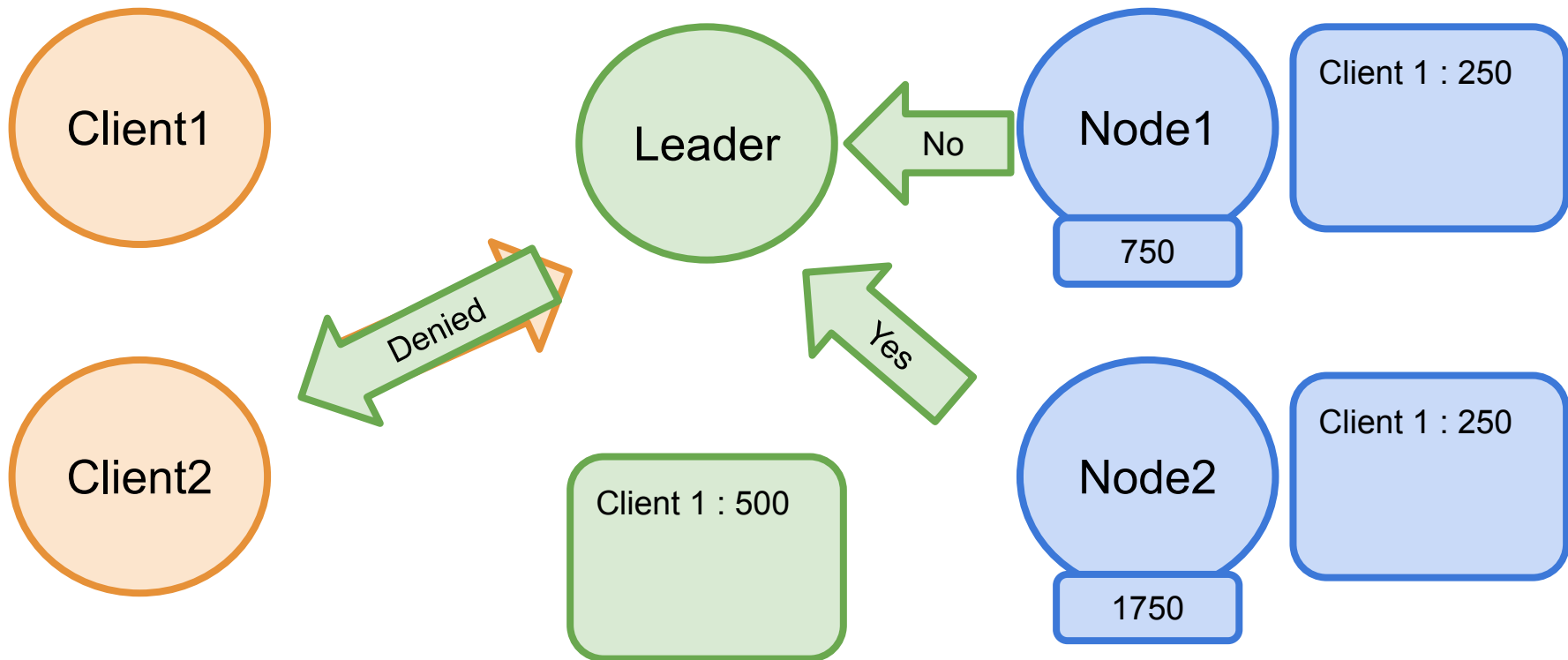
Let's depict part of the Example...



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Assignment 5 Visualization

Let's depict part of the
Example...



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Middleware

We have been:

Serializing
Messages

Sending
Messages

Parsing
Messages

Handle
Messages

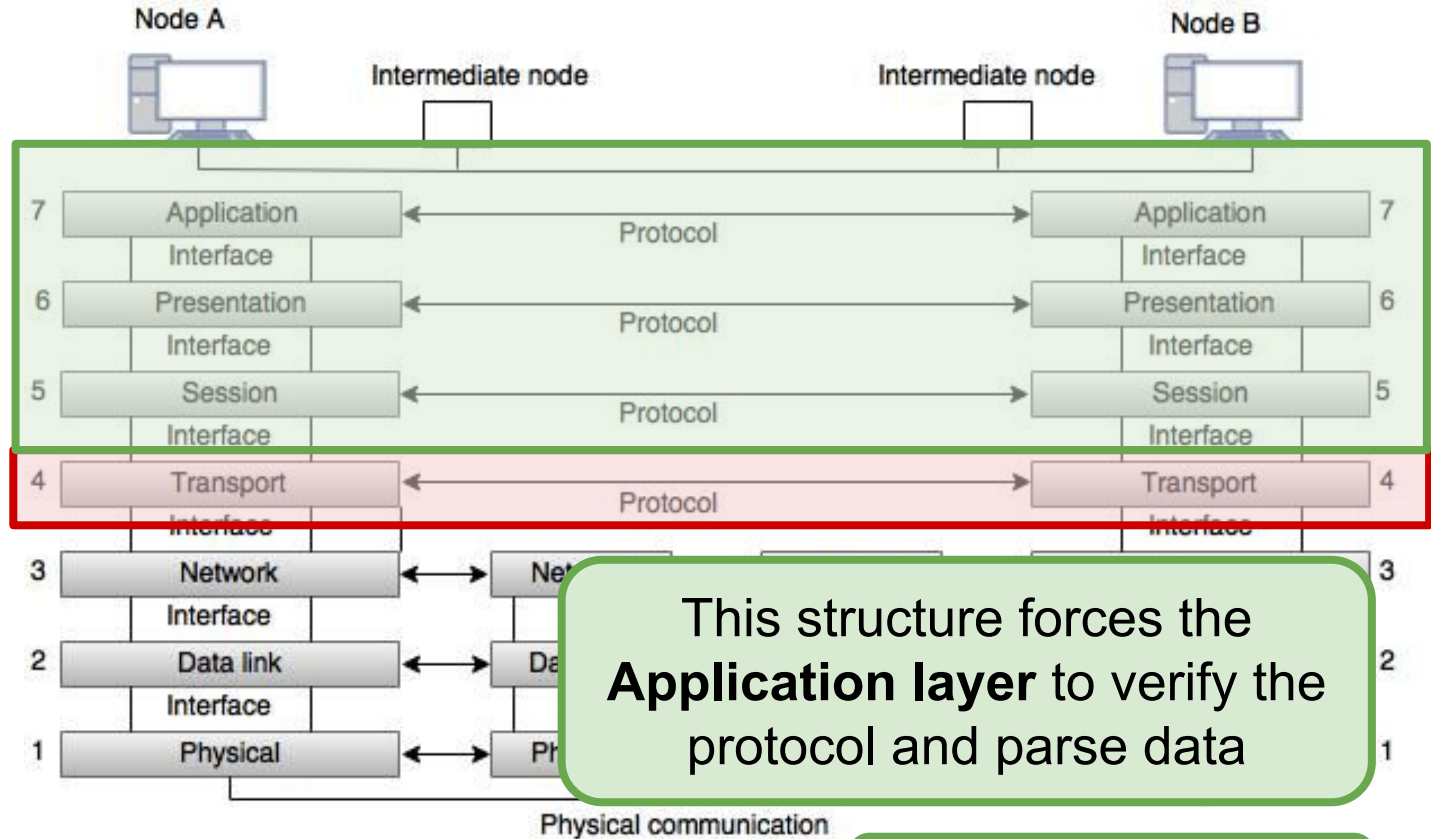


Fig: OSI Model

Not really its job...

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Middleware

With Middleware:

Serializing
Messages

Sending
Messages

Parsing
Messages

Handle
Messages

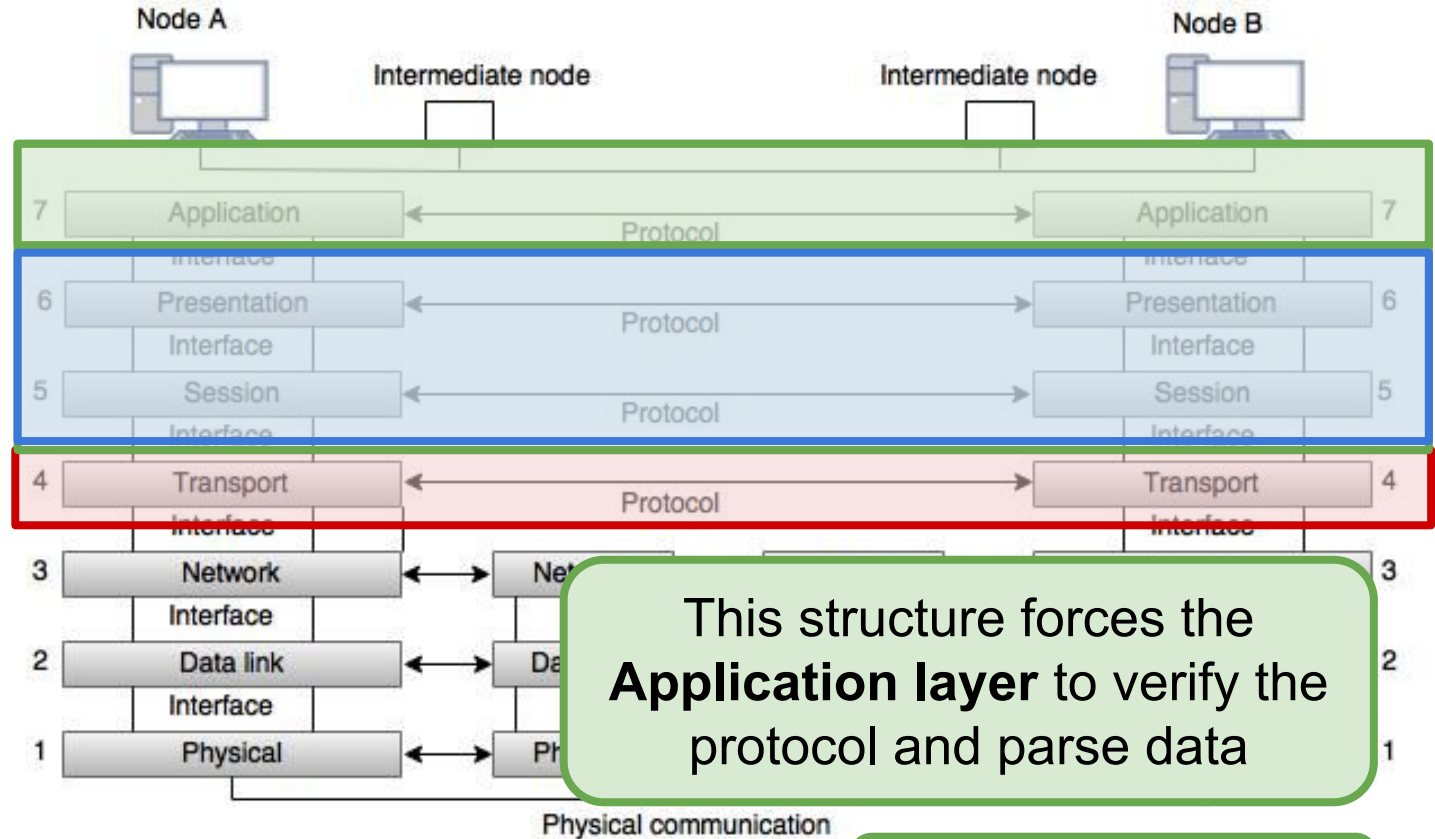


Fig: OSI Model

This structure forces the **Application layer** to verify the protocol and parse data

Not really its job...

Middleware

With Middleware:

Serializing Messages

Sending Messages

Parsing Messages

Handle Messages

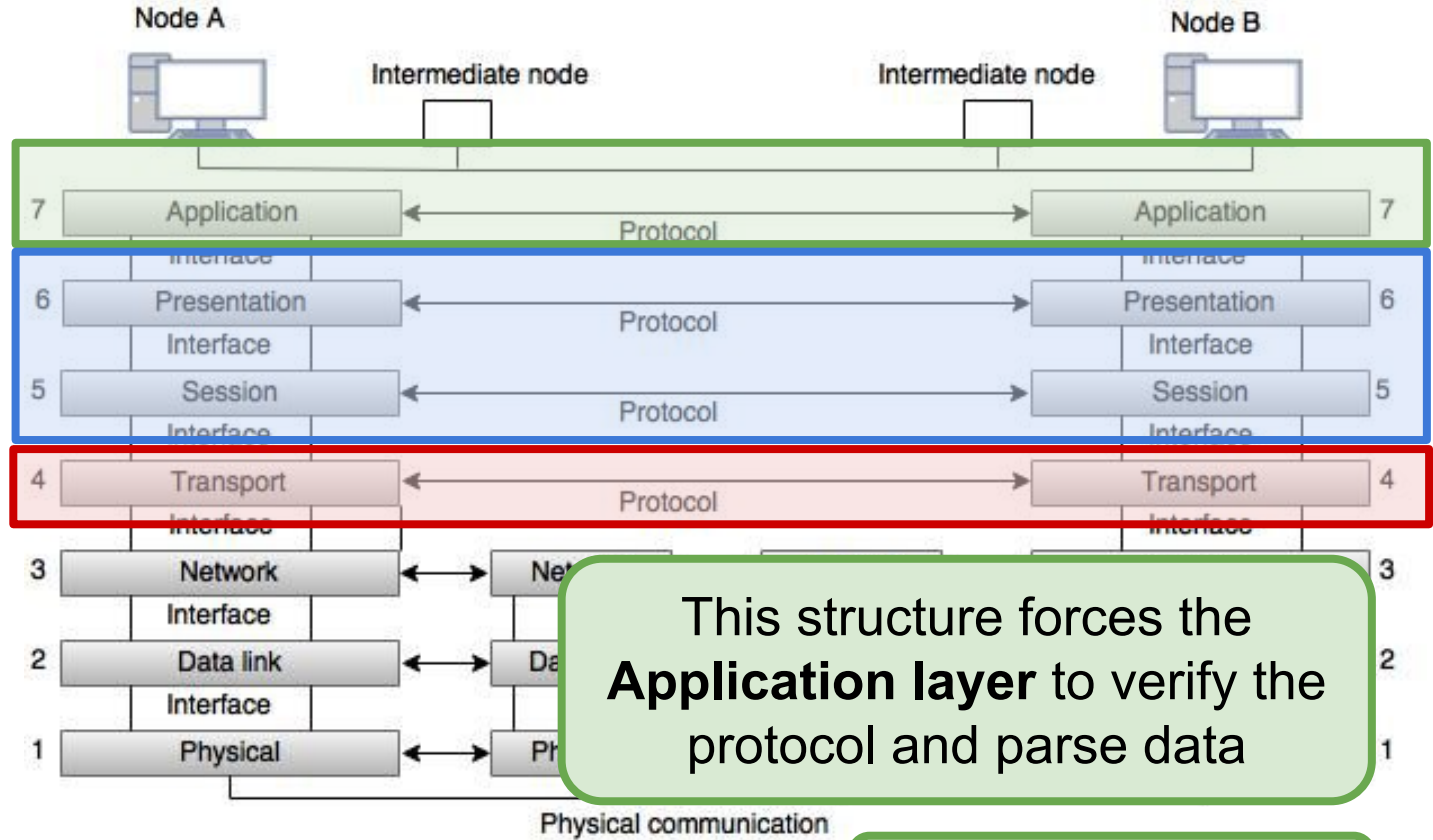


Fig: OSI Model

Not really its job...

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Middleware

Middleware:

Session Layer Responsibilities:

Authentication

Authorization

Session Management

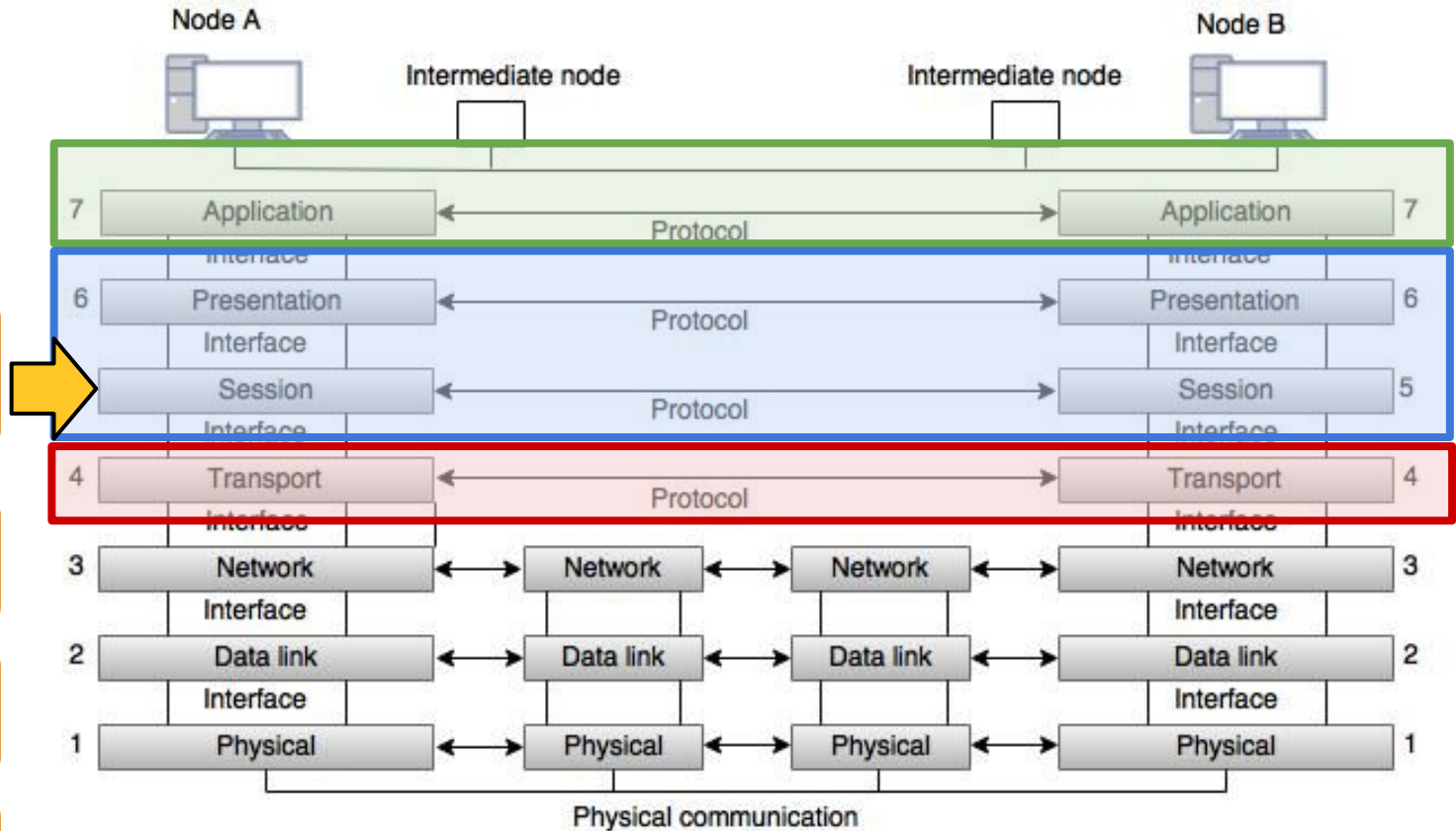


Fig: OSI Model

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Middleware

Middleware:

*Presentation
Layer
Responsibilities:*

Translation

Compression

Encryption

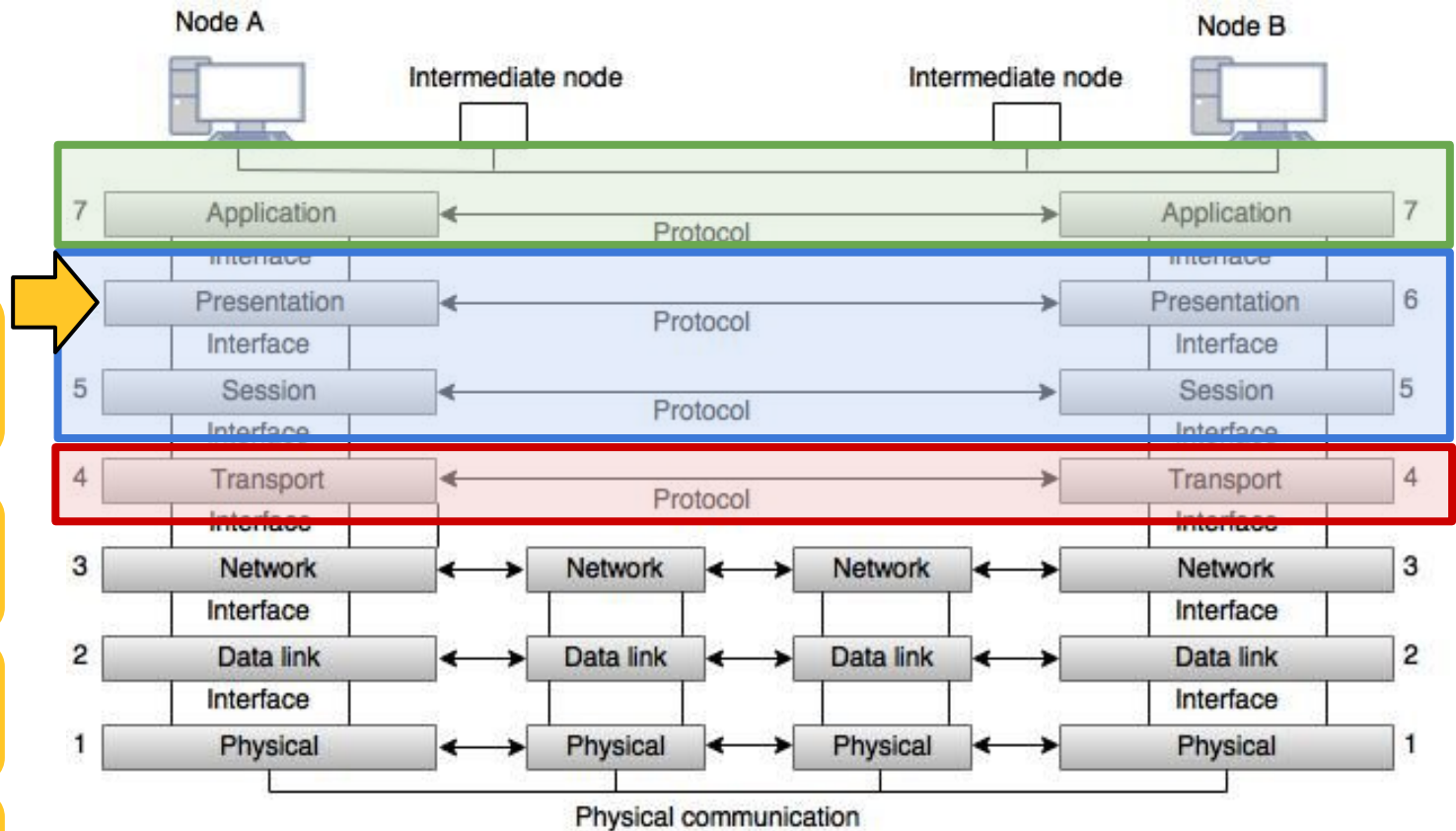
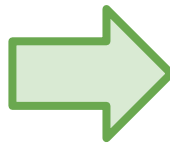
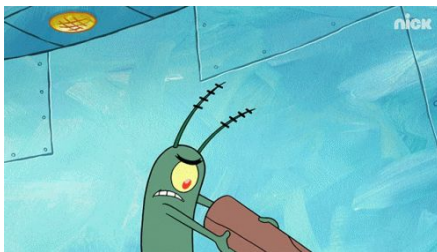


Fig: OSI Model

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Middleware



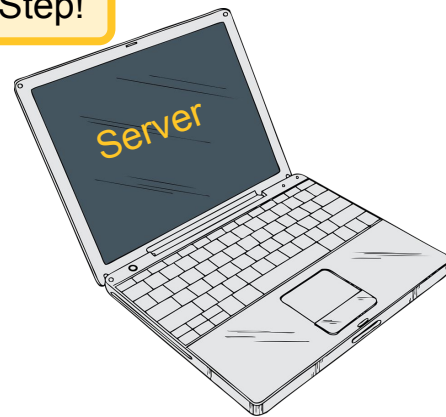
```
{  
  "type": "addUser",  
  "name": "katie",  
  "password": "password"  
}
```

Add User



- Get data from user
- Validate data
- Determine Request Format
- Construct Valid Request
- Establish Connection
- Send Request
- Wait for Response
 - Read Response from Stream
 - Parse Response
 - Display Response to User

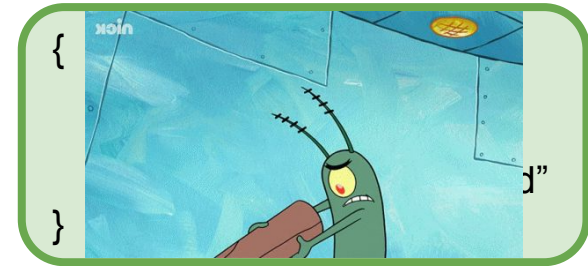
Critical Step!



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Middleware

- Get data from user
- Validate data
- Determine Request Format
- Construct Valid Request
- Establish Connection
- Send Request
- Wait for Response
 - Read Response from Stream
 - Parse Response
 - Display Response to User



How do we know?

Add User



- Read data from Stream
- Parse Data
- Validate Request Format
- Determine Request Type
- *Perform Requested Action*
- Determine Response Format
- Construct Valid Response
- [Re-establish connection]
- Send Response

Done!

Wants to Add User



Examples?

Message Oriented Middleware (MOM)

Web Frameworks

Remote Procedure Calls (RPC)



App. Programming Interface (API)

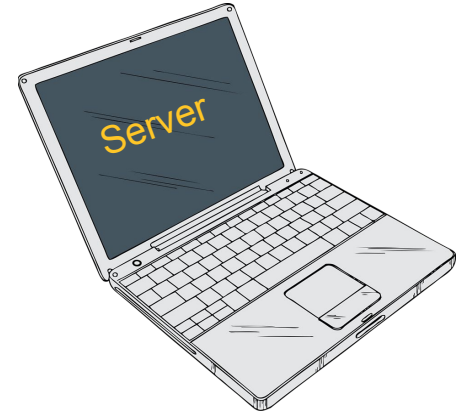
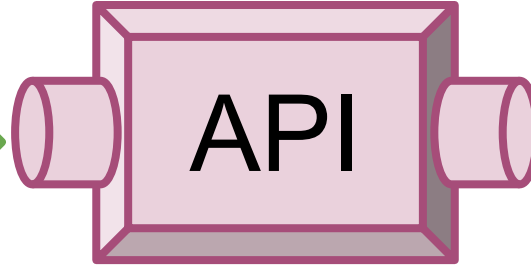


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Middleware

Add User:
Name = Katie
Password = password

With Middleware:



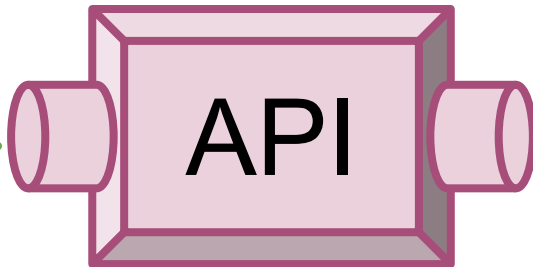
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Middleware

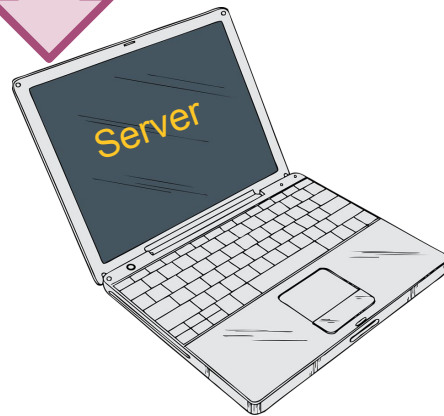
Add User:
Name = Katie
Password = password



With Middleware:



```
{  
  "type": "addUser",  
  "name": "katie",  
  "password": "password"  
}
```



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Middleware

Why do we care?

Agility

Reusability

Efficiency

Cost
Effectiveness

Portability

Why do we care?



Sort of like publishing a contract

“If you follow these rules, I will handle your request.”

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Scratch Space

Questions?



Survey:

<http://bit.ly/ASN2324>



Upcoming Events

SI Sessions:

- Monday, July 1st at 6:00 pm MST
- Wednesday, July 3rd at 6:00 pm MST - ***2hr Review Session***
- Sunday, July 7th at 6:00 pm MST - ***Final Session***

Review Sessions:

- Review Session - **Wednesday**, July 3rd at 6:00 pm MST (2 hr Session)
- Q&A Session - Sunday, July 7th at 6:00 pm MST (Final Session)

More Questions?

Check out our other resources!

tutoring.asu.edu



Academic Support

Academic Support Network (ASN) provides a variety of free services in-person and online to help currently enrolled ASU students succeed academically.

Services



Subject Area Tutoring

Need in-person or online help with math, science, business, or engineering courses? Just hop into our Zoom room or drop into a center for small group tutoring. We'll take it from there.

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Go to Zoom



Writing Tutoring

Need help with undergraduate or graduate writing assignments? Schedule an in-person or online appointment, access your appointment link, or wait in our drop-in queue.

[Access your appointment link](#)

[Access the drop-in queue](#)

Schedule Appointment



Online Study Hub

Join our online peer communities to connect with your fellow Sun Devils. Engage with our tools to search our bank of resources, videos, and previously asked questions. Or, ask our Tutorbot questions.

Now supporting courses in Math, Science, Business, Engineering, and Writing.

Online Study Hub

1-

Go to Zoom

2-

[Need help using Zoom?](#)

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1. Click on 'Go to Zoom' to log onto our Online Tutoring Center.
2. Click on 'View the tutoring schedule' to see when tutors are available for specific courses.

More Questions?

Check out our other resources!

tutoring.asu.edu/online-study-hub

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Online Study Hub

Online peer communities for students and tutors, YouTube channels, and Tutorbots.



What are online peer communities?

Individual courses have an online peer community that allows you to connect with your peers to post and answer questions and to develop study groups.



How can tutoring center videos help?

Videos can help supplement the learning you're doing in and outside of class and include step-by-step methods for how to understand concepts.



How does the Tutorbot work?

You can ask the Tutorbot questions about course concepts and the Tutorbot will recommend additional resources and examples to help address your questions.

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Business


ACC 231

Uses of Accounting Info I

 [Peer Community](#)

ACC 241

Uses of Accounting Info II

 [Peer Community](#)

CIS 105

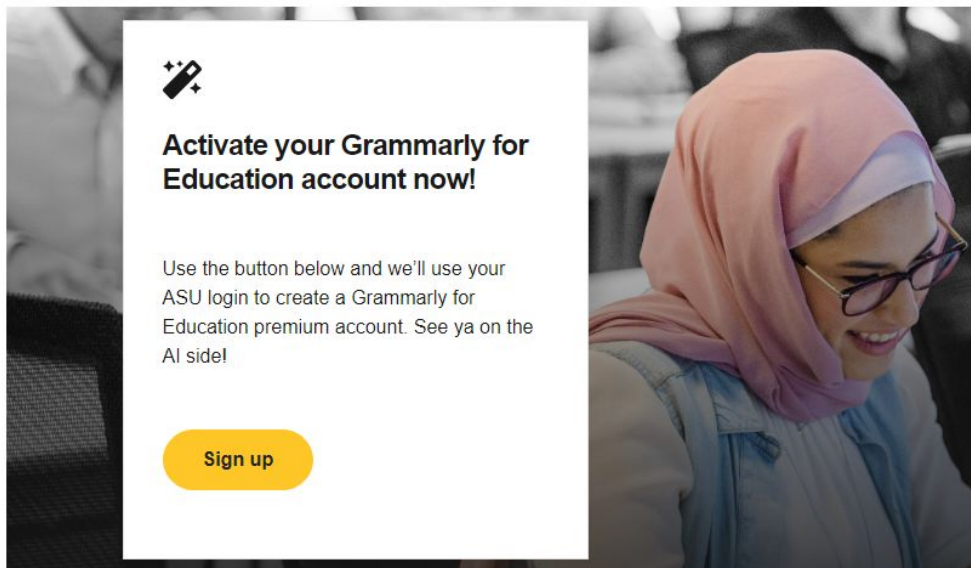
Computer Applications and Information Technology

 [Peer Community](#)

Don't forget to check out the Online Study Hub for additional resources!

Expanded Writing Support Available

Including Grammarly for Education, at no cost!



tutoring.asu.edu/expanded-writing-support

*Available slots for this pilot are limited

Additional Resources

- [Course Repo](#)
- [Gradle Documentation](#)
- [GitHub SSH Help](#)
- [Linux Man Pages](#)
- [OSI Interactive](#)
- [MDN HTTP Docs](#)
 - [Requests](#)
 - [Responses](#)
- [JSON Guide](#)
- [org.json Docs](#)
- [javax.swing package API](#)
- [Swing Tutorials](#)
- [Dining Philosophers Interactive](#)
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