

SER 321 B Session

SI Session

Tuesday, April 29th 2025

10:00 am - 11:00 am MST

Agenda



Requested Material

Continued Review!

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

SER 321

Exam Information

[Exam Info Page](#)

80 minutes

Similar to the
quizzes

Make sure to look at
the Study Guide!

Opens: Wednesday
April 30th
@ 12:30 AM

Closes: Friday
May 2nd
@ 11:59:59 PM

Front and Back!

MUST BE *Handwritten*



SER 321

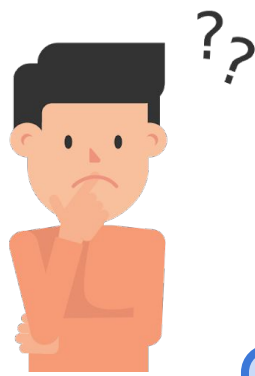
Review Requests

It's ***not*** too late to make a topic request!

Drop a concept in the chat
and we can cover it next!

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HTTP(s)



Stateful

OR

Stateless

Synchronous

OR

Asynchronous

Check out the recording for the discussion and solution!

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Serialization

Can we recall some of the formats?

Check out the recording for the discussion and solution!

JSON

Java Object
Serialization

Protocol Buffers

XML

Binary

Text

Two main
approaches for
storing the
content...

What about the data format?

Check out the recording for the discussion and solution!

JSON

Java Object
Serialization

Protocol Buffers

XML

Binary

Text

Who uses ***TEXT***?

Check out the recording for the discussion and solution!

JSON

Java Object
Serialization

Protocol Buffers

XML

Binary

Text

What does
this imply?

Who uses ***BINARY***?

Check out the recording for the discussion and solution!

JSON

Java Object
Serialization

Protocol Buffers

XML

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JSON Recognition

How many Objects?

How many Arrays?

How many Members?

***Check out
the
recording for
the
discussion
and solution!***

```
{
  "lat": 42.3434,
  "lon": -88.0412,
  "timezone": "America/Chicago",
  "timezone_offset": -21600,
  "current": {
    "dt": 1733070576,
    "sunrise": 1733058144,
    "sunset": 1733091649,
    "temp": 18.57,
    "feels_like": 5.97,
    "pressure": 1025,
    "humidity": 63,
    "dew_point": 9.21,
    "uvi": 0.79,
    "clouds": 0,
    "visibility": 10000,
    "wind_speed": 14.97,
    "wind_deg": 280,
    "wind_gust": 21.85,
    "weather": [
      {
        "id": 800,
        "main": "Clear",
        "description": "clear sky",
        "icon": "01d"
      }
    ]
  }
}
```

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Serialization

Generic
Superclass

Streams and their types

```
OutputStream out = sock.getOutputStream();
```

Buffered Stream

Bytes

Check out the recording for the discussion and solution!

Data Stream

Primitive DATA Types

Object Stream

Java Objects

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Systems

Parallel

Distributed

Check out the recording for the discussion!

A Venn diagram with two overlapping circles. The left circle is light blue with a blue outline and is labeled 'Parallel'. The right circle is light red with a red outline and is labeled 'Distributed'. The intersection of the two circles is shaded with a mix of blue and red. In the center of the intersection, the text 'Check out the recording for the discussion!' is written in bold, italicized black font.

Check out the recording for the discussion!

Parallel

- Single computer
- Work split among different *processors*
- Memory is shared **or** distributed
- Communicate through *bus*
- Latency while waiting for resources

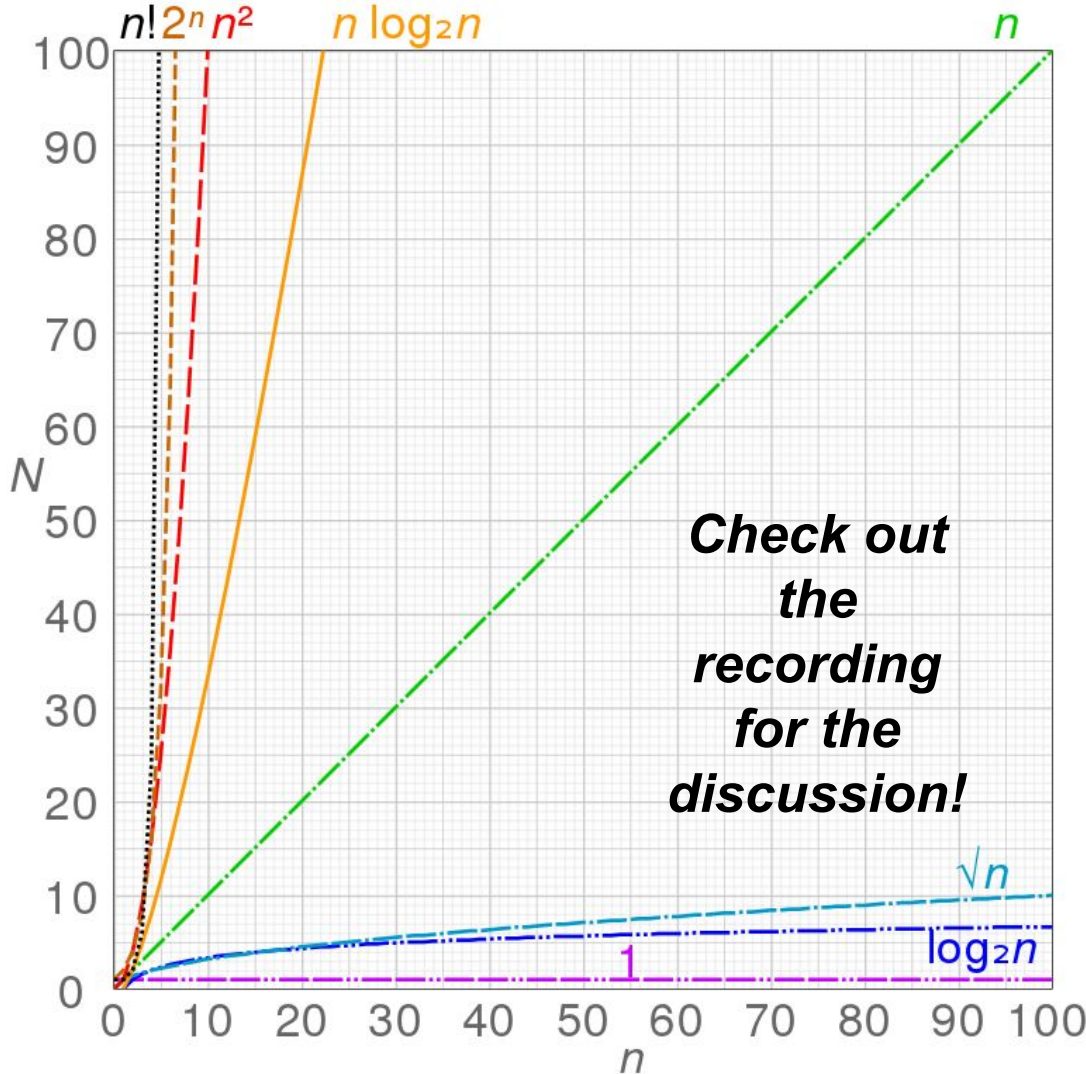
Distributed

- Work is partitioned
- Partitions processed individually
- **Can** improve performance
- **Can** improve speed
- Experience Latency
- Many computers
- Work split among different *locations*
- Memory is distributed
- Communicate through *message passing*
- Experience latency both between nodes and within nodes

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When to Distribute

When should
we *consider*
distributing?

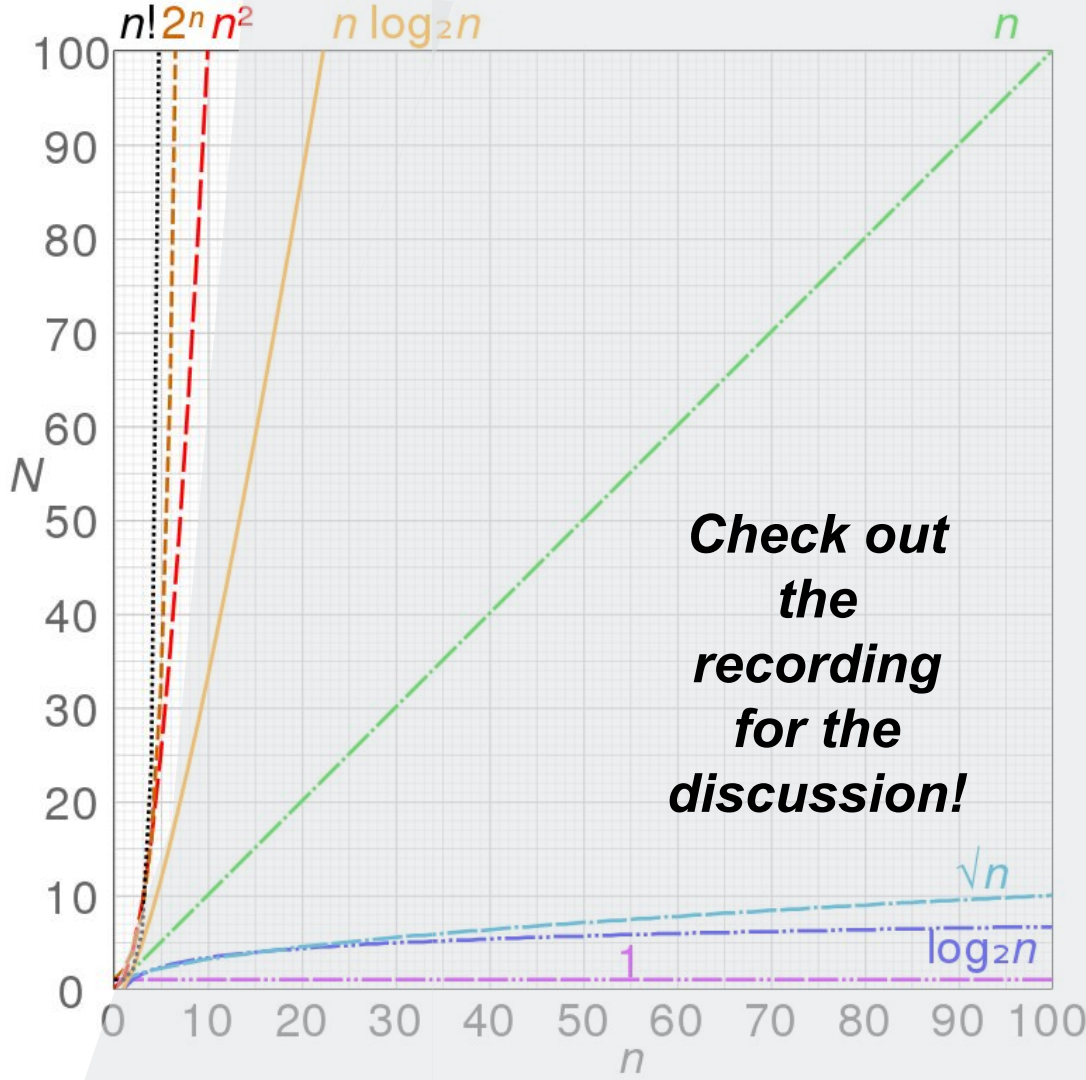


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When to Distribute

When should
we *consider*
distributing?

Super Duper Extra Extra
Large Orders of Magnitude!



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Distributed Systems

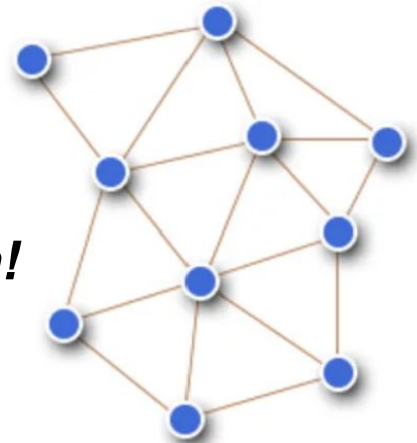
Distributed System Properties

Check out the recording for the discussion!

Global Clock

No! 👎

Yes! 👍



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Distributed Systems

Distributed System Properties

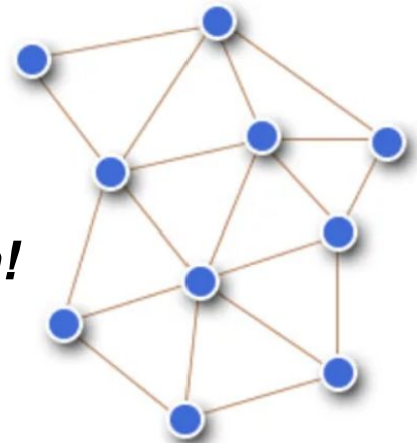
Check out the recording for the discussion!

Nodes Fail

No! 👎

Global Clock

Yes! 👍



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Distributed Systems

Distributed System Properties

Check out the recording for the discussion!

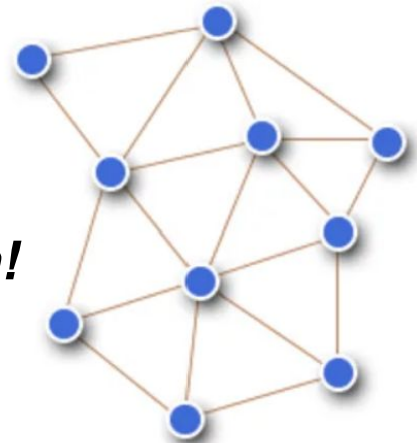
Cluster Changes

No! 👎

Global Clock

Yes! 👍

Nodes Fail



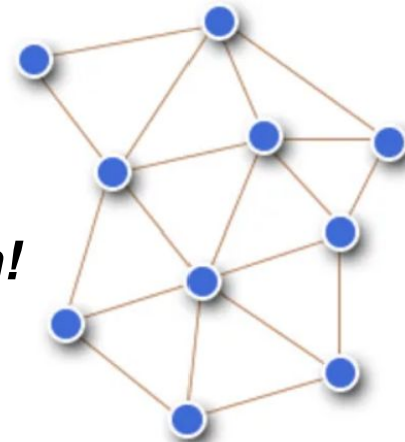
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Distributed Systems

Distributed System Properties

Check out the recording for the discussion!

Network is Reliable



No! 👎

Global Clock

Yes! 👍

Nodes Fail

Cluster Changes

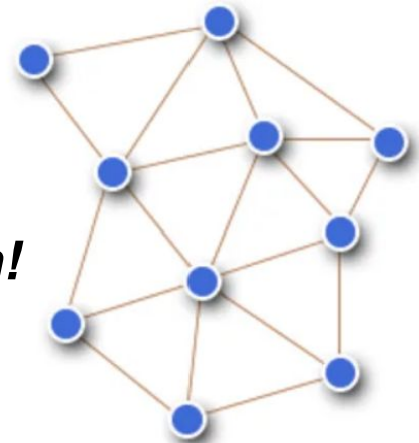
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Distributed Systems

Distributed System Properties

Check out the recording for the discussion!

Latency Never Exists



No! 👎

Global Clock

Network is Reliable

Yes! 👍

Nodes Fail

Cluster Changes

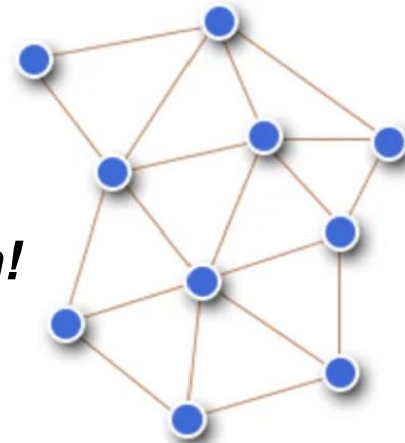
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Distributed Systems

Distributed System Properties

Check out the recording for the discussion!

Path taken Changes



No! 👎

Global Clock

Network is Reliable

Latency Never Exists

Yes! 👍

Nodes Fail

Cluster Changes

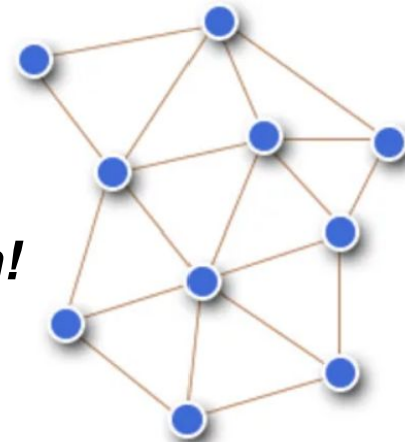
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Distributed Systems

Distributed System Properties

Check out the recording for the discussion!

Share Common Resources



No! 👎

Global Clock

Network is Reliable

Latency Never Exists

Yes! 👍

Nodes Fail

Cluster Changes

Path taken Changes

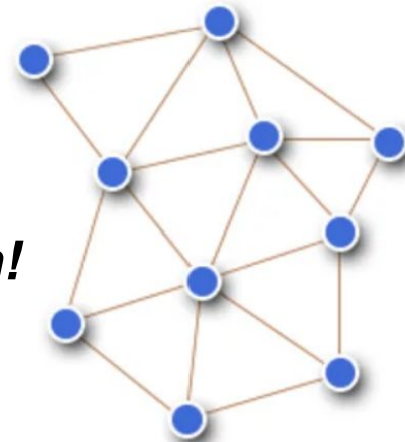
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Distributed Systems

Distributed System Properties

Check out the recording for the discussion!

Pitfalls handled inherently



No! 👎

Global Clock

Network is Reliable

Latency Never Exists

Yes! 👍

Nodes Fail

Cluster Changes

Path taken Changes

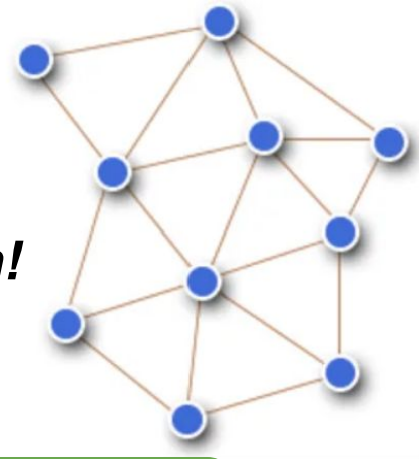
Share Common Resources

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Distributed Systems

Distributed System Properties

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No! 👎

Global Clock

Network is Reliable

Latency Never Exists

Pitfalls handled inherently

Yes! 👍

Nodes Fail

Cluster Changes

Path taken Changes

Share Common Resources

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Scratch Space

Upcoming Events

SI Sessions:

- ~~Tuesday, April 29th, at 10:00 am MST – Q&A Session~~

Review Sessions:

- ~~Sunday, April 27th at 6:00 pm MST – 2 hour Exam Review Session~~
- ~~Tuesday, April 29th, at 10:00 am MST – Q&A Session~~

FINAL EXAM SCHEDULE:

Opens: Wednesday
April 30th
@ 12:30 AM

Closes: Friday
May 2nd
@ 11:59:59 PM

Questions?

Survey:

<https://asuasn.info/ASNSurvey>



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.

[Need help using Zoom?](#)

[View the tutoring schedule](#)

[View digital resources](#)

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?](#)

[View the tutoring schedule](#)

[View digital resources](#)



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.

Select a subject

- Any -

Apply



Academic Support Network



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Select a subject

- Any -

Apply

Business


ACC 231

Uses of Accounting Info I

 [Peer Community](#)

ACC 241

Uses of Accounting Info II

 [Peer Community](#)

CIS 105

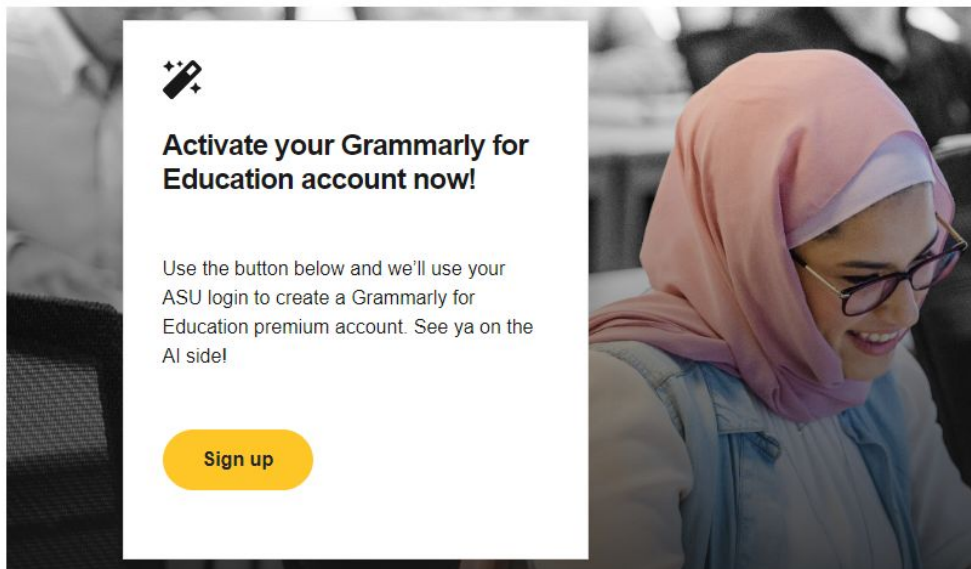
Computer Applications and Information Technology

 [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](#)
- [Austin G Walters Traffic Comparison](#)
- [RAFT](#)