

SER 321 A Session

SI Session

Wednesday, September 6th 2023

6:00 - 7:00 pm MST

Agenda



What is SI?

About Me

Session Times & Expectations

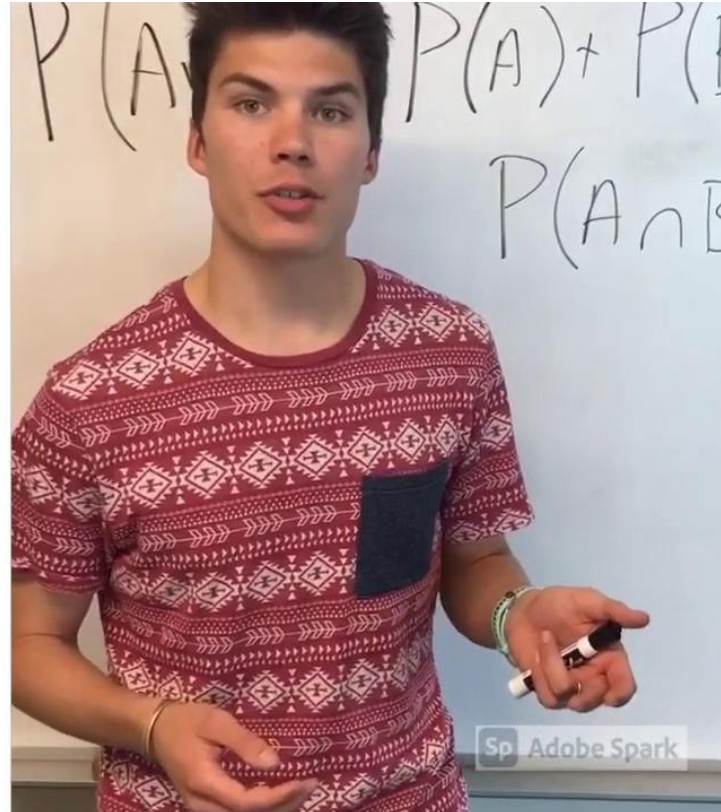
Client & Server Review

Assignment Tips

What is SI?

Informational Video

What is SI?



About Me

Katie

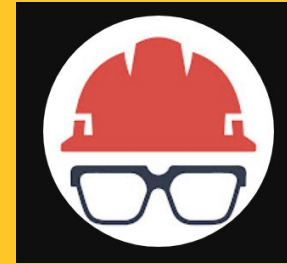
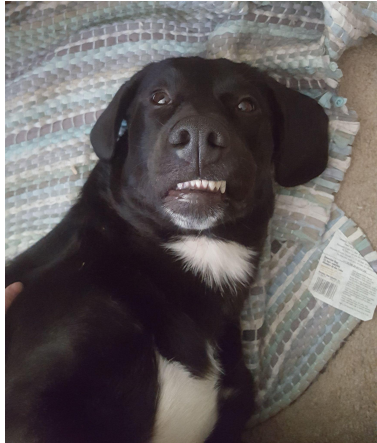
- Born and raised near Chicago, Illinois
 - Moved around within the Northern Suburbs
 - Currently in Grayslake
- Work at a family-owned Italian restaurant
- Received AS from my local Community College
- Transferred to ASU at the start of 2020
- Majoring in Software Engineering
- Runs in the family
 - Father is a Software Architect
 - Mother is a Quality Assurance Analyst



About Me

Katie

- Hobbies:
 - Gaming
 - Football (Go Bears!)
 - Reading
 - Learning in general
 - My fur babies 😊



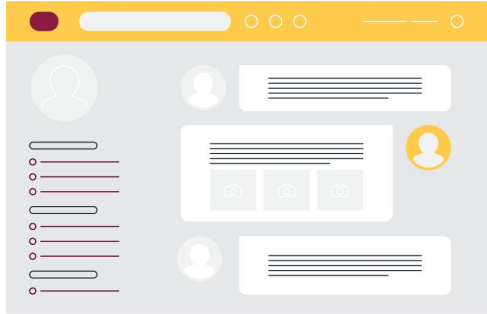
SI Session Expectations

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.
- 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

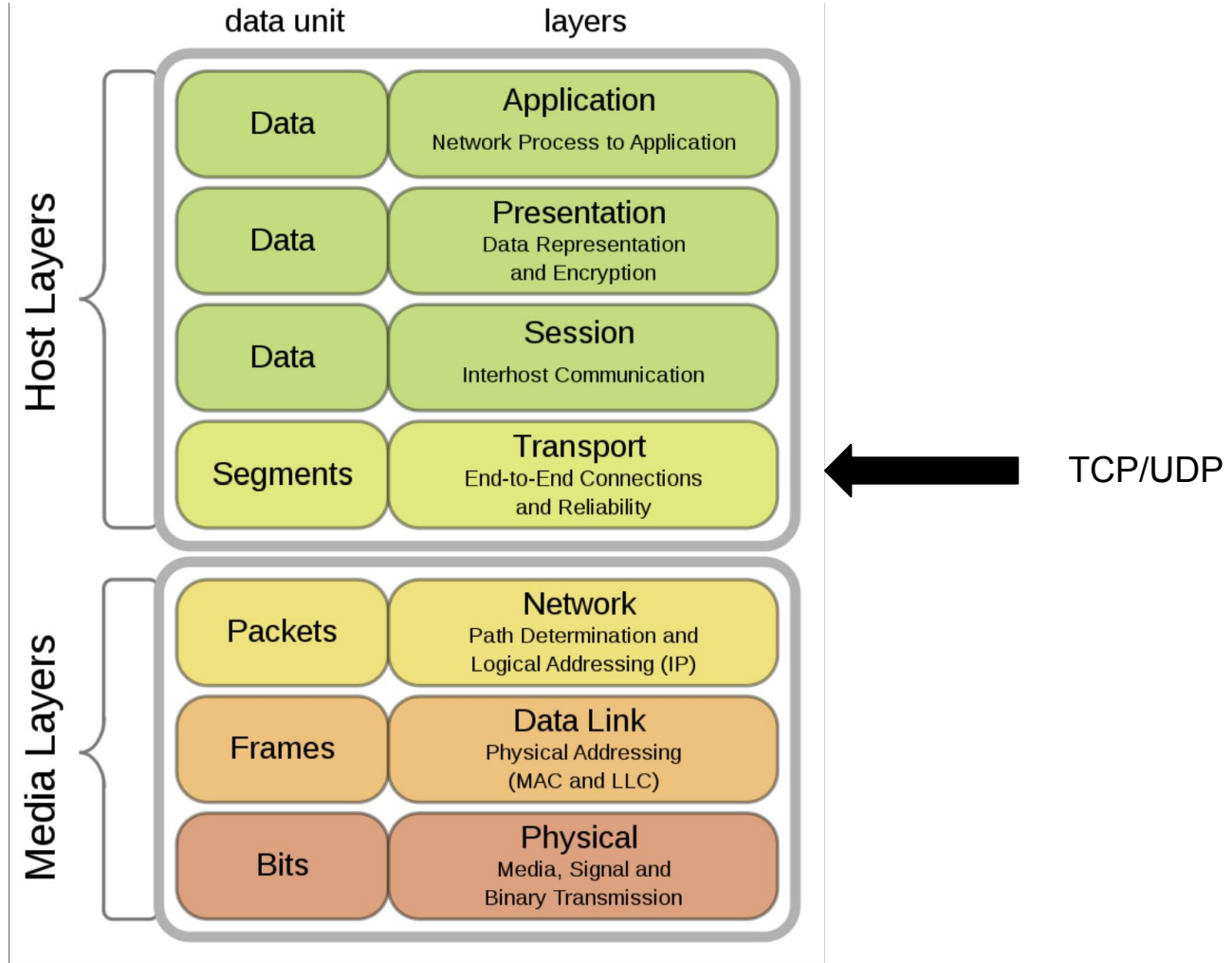


Zoom Chat

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

SER 321:

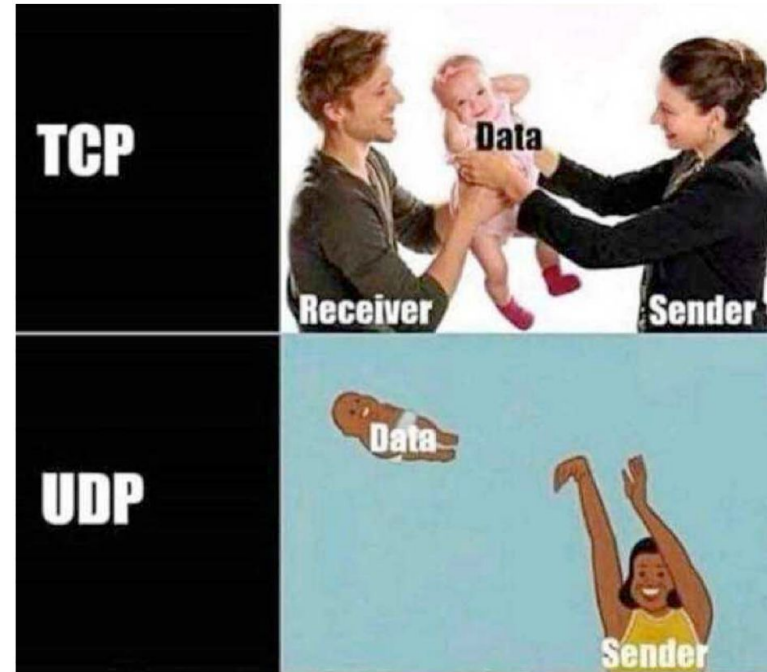
OSI Model



SER 321:

TCP/UDP

- TCP vs. UDP
 - Connection oriented vs. connectionless
 - Synchronous vs. Asynchronous
 - Stateful vs. Stateless
 - Data Stream vs. Datagram
- TCP is mailing a package with tracking
- UDP is tossing notes into your neighbor's backyard



SER 321:

Socket Programming

- Server uses a blocking wait to listen for clients that want to talk with it
- Client is responsible for knowing the specifics of the server
- Sockets use *streams* for input and output data
- Socket Properties
 - Location (IP address, or DNS)
 - Connection (TCP/UDP)
 - Message Format (header & payload)
- Two Main Models
 - PULL Model
 - polling/waiting model where client makes request and the server responds
 - Client *pulls* the response down from the server
 - Server's response either handles request or rejects it
 - PUSH Model
 - Server will send responses without a client request
 - Server *pushes* responses down to client

Check out the recording for the solution!

SER 321:

Socket Programming - Client vs. Server

Client or Server?

```
sock = new Socket(host, port: 8888);
```

```
ServerSocket serv = new ServerSocket(port: 8888);
```

SER 321:

What else goes in the Server?

Using AdvancedCustomProtocol code from the Examples Repo

1. Blocking Wait
2. Input Stream
3. Output Stream
4. Code to handle request
5. Closure of the Client specific socket

```
sock = serv.accept();
```

```
InputStream in = sock.getInputStream();  
OutputStream out = sock.getOutputStream();
```

```
switch (choice) {  
case (1):  
    returnMessage = joke();  
    break;|
```

```
if (sock != null) {  
    sock.close();  
}
```

SER 321:

What else goes in the Client?

Using AdvancedCustomProtocol code from the Examples Repo

1. Create Socket connection
2. Input Stream
3. Output Stream
4. Code to create and send the request
5. Closure of the socket and streams

```
sock = new Socket( host: "localhost", port: 9000);
```

```
InputStream in = sock.getInputStream();
```

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

```
switch (choice) {  
    case (1):  
        request = joke();  
        break;  
    case (2):  
        request = quote();  
        break;  
}
```

```
sock.close();  
out.close();  
in.close();  
System.exit( status: 0);
```

SER 321:

Socket Programming Suggestions

- If you design the protocol, *do that first!*
- Create methods for building your requests and responses
 - Think of Base.java in SimpleCustomProtocol
 - Think of NetworkUtils.java in AdvancedCustomProtocol
- Map out a general idea of the program flow before you begin coding
- Create skeletons or placeholders in places you want to come back to later
 - Allows you to get the general structure of your code set up ASAP
 - Print something like “Not implemented yet”

SER 321:

General Assignment Tips

- Start assignments early 🌟
- Play around with the examples if you are stuck
- Complete **one** requirement at a time
- **Use print statements to check your transmissions!** 🌟
- Keep a copy of the protocol handy while coding
- Commit commit commit!
- If you're struggling with a requirement, skip it!

Questions?

Survey:

https://bit.ly/asn_survey



More Questions?

Check out our other resources!

tutoring.asu.edu



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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


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 [Peer Community](#)

ACC 241

Uses of Accounting Info II

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CIS 105

Computer Applications and Information Technology

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