SER 321 B Session

SI Session

Thursday, October 24th 2024

7:00 pm - 8:00 pm MST

Agenda

- Gradle Review
- OSI Model
- HTTP Codes
- JSON

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

CORRECTION

Sockets/JavaSimpleSock2

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Gradle Review Which if statement will execute with `gradle SocketClient` ?

```
} else {
    args("localhost", "Hello!", 99)
}
```

✔

```
if (project.hasProperty("host") && project.hasProperty("message") && project.hasProperty("number")) {
```

A.

```
    args(project.getProperty('host'), project.getProperty('message'), project.getProperty('number'));

} else if (project.hasProperty("host") && project.hasProperty("message")) {
```

B.

```
    args(project.getProperty('host'), project.getProperty('message'));

} else if (pr                                    ect.hasProperty("number")) {
```

C.

```
    args(pro
        "Se                                  ed: https://gph.is/2y76sj4", project.getProperty('number'));

}  else if (project.hasProperty("host")) {
```

D.

```
    args(project.getProperty('host'));
}
```

Let's run as is…

NONE! ✔

How could we change that? ✔

CORRECTION

Sockets/JavaSimpleSock2

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Gradle Review

Step 1:

```
PS C:\ASU\SER321\examples_repo\ser321examples\Sockets\JavaSimpleSock2> gradle
SocketServer

> Task :SocketServer
Server ready for 3 connections
Server waiting for a connection
<==========----> 75% EXECUTING [16s]
> :SocketServer
```

Step 2:

```
PS C:\ASU\SER321\examples_repo\ser321examples\Sockets\JavaSimpleSock2> gradle
SocketClient
```

CORRECTION

Sockets/JavaSimpleSock2

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Gradle Review

```
> Task :SocketServer
Server ready for 3 connections
Server waiting for a connection
Received the String HI
Received the Integer 100
Server waiting for a connection
<==========----> 75% EXECUTING [1m 18s]
> :SocketServer
```

```
PS C:\ASU\SER321\examples_repo\ser321examples\Sockets\JavaSimpleSock2> gradle
SocketClient
emon could not be reused, use --status for
d in this build, making it incompatible wit
 show the individual deprecation warnings a
 own scripts or plugins.
ttps://docs.gradle.org/8.10/userguide/comma
nd_line_interface.html#sec:command_line_warnings in the Gradle documentation.
PS C:\A
SocketC
BUILD SUCCESSFUL in 12s
2 actionable tasks: 1 executed, 1 up-to-date
```

Step 2:

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CORRECTION

Sockets/JavaSimpleSock2

```
class SockClient {
  public static void main (String args[]) {
    Socket sock = null;
    String host = "localhost";
    String message = "HI";
    Integer number = 100;

    // works with no inputs or 1, 2 or 3
    // no error handling for wrong arguments
    if (args.length >= 1){ // host, if provid
      host=args[0];
    }
    if (args.length >= 2){
      message = args[1];
    }
    // user provided message and number, ignore 2 arguments
    if (args.length >= 3){
      number = Integer.valueOf(args[2]);
    }
```

Also set in the Client Code itself!

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Gradle Review

Have we set a default host here?

```
if (project.hasProperty("host") && project.hasProperty("message") && project.hasProperty("number")) {

    args(project.getProperty('host'), project.getProperty('message'), project.getProperty('number'));

} else if (project.hasProperty("host") && project.hasProperty("message")) {

    args(project.getProperty('host'), project.getProperty('message'));

} else if (project.hasProperty("host") && project.hasProperty("number")) {

    args(project.getProperty('host'),
         "Set by Gradle, since nothing provided: https://gph.is/2y76sj4", project.getProperty('number'));

}  else if (project.hasProperty("host")) {

    args(project.getProperty('host'));
}
```

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Gradle Review

Have we set any defaults here?

Network/HTTP-JSON

Let's modify this code to have *both* defaults and command line properties!

```
task API(type: JavaExec) {
  classpath = sourceSets.main.runtimeClasspath
  main = 'API'
  // default args
  args 'kgary' // port
}
```

First let's make the *if* statement:

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Gradle Review

Let's modify this code to have *both* defaults and command line properties!

```
task API(type: JavaExec) {
  classpath = sourceSets.main.runtimeClasspath
  main = 'API'

  //OPTION 1

  // default args
  args 'kgary' // port

  //OPTION 2

}
```

First let's make the *if* statement:

Okay, now where do we put it?

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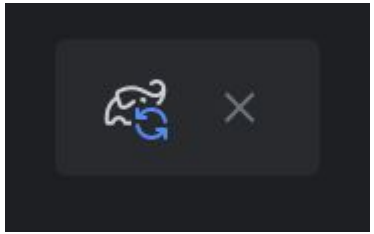
Gradle Review

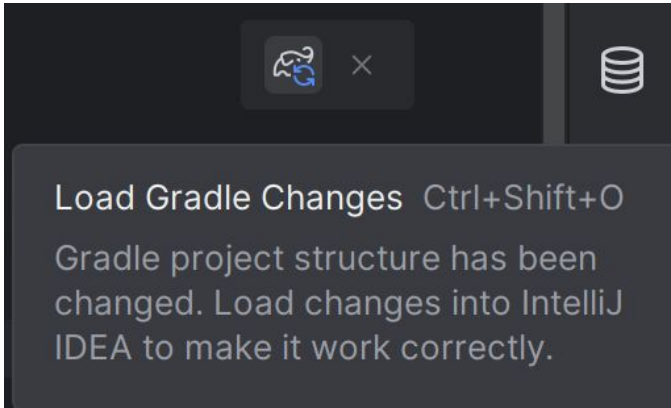
IMPORTANT NOTE!

So you need to *refresh* the project in your IDE!

```
task API(type: JavaExec) {
  classpath = sourceSets.main.runtimeClasspath
  main = 'API'

  //OPTION 1

  // default args
  args 'kgary' // port

  //OPTION 2
  if (project.hasProperty("port")) {
    args(project.getProperty("port"));
  }
}
```

We changed the content of `build.gradle`





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OSI Model

Unit	Layer	What we are *really* talking about
Data	Application	
Data	Presentation	
Data	Session	
Segment	Transport	
Packet	Network	
Frame	Data Link	
Bits	Physical	

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OSI Model

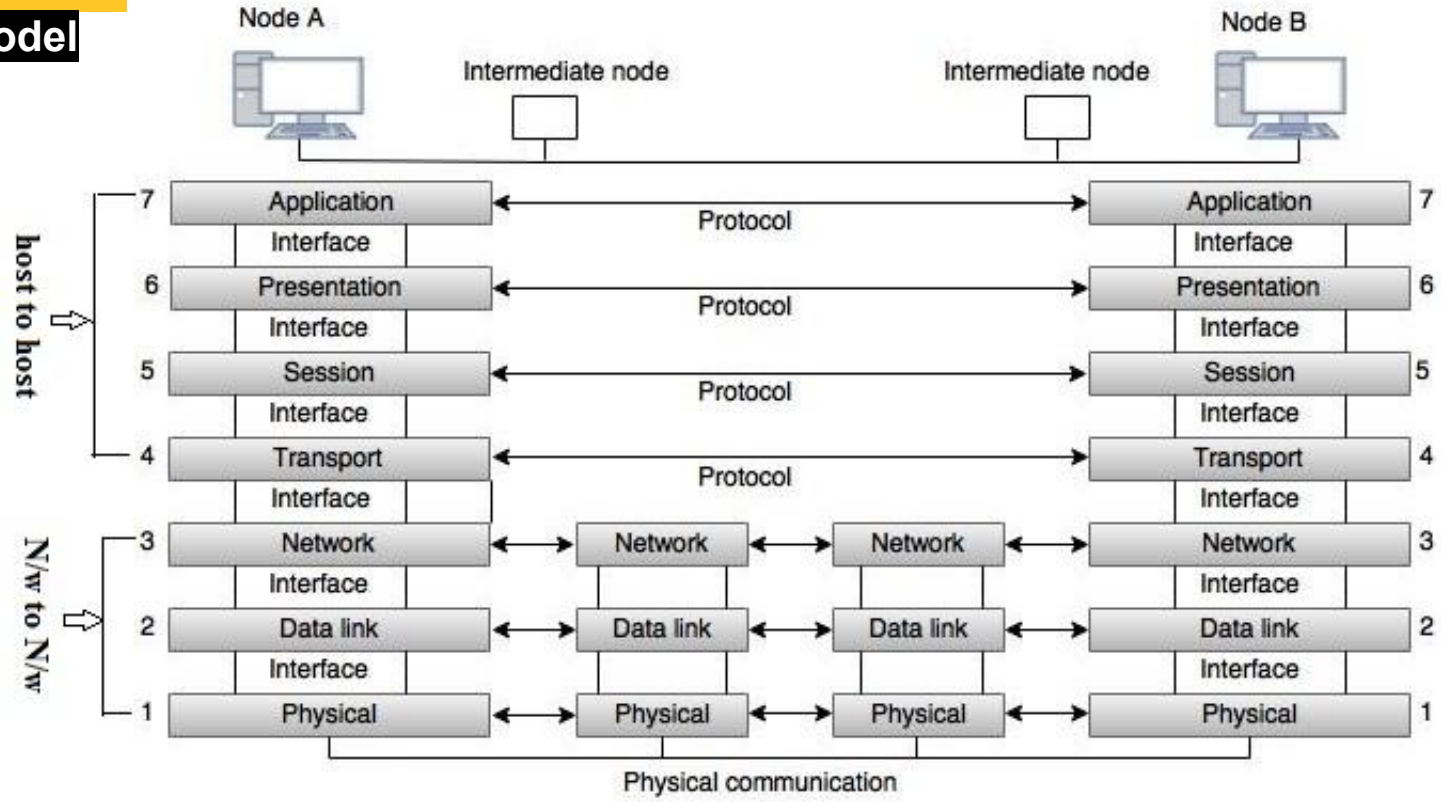

Fig: OSI Model

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OSI Model

Unit	Layer	What we are *really* talking about
Data	Application	
Data	Presentation	
Data	Session	
Segment	Transport	TCP/UDP
Packet	Network	IP address, routing and delivery
Frame	Data Link	LLC, MAC, data transmission in LAN
Bits	Physical	Signal, Binary transmission

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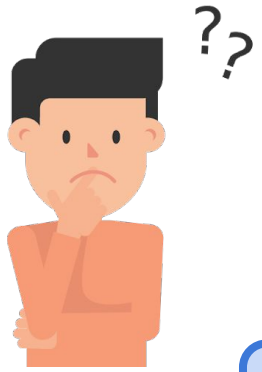
HTTP(S)



Stateful OR Stateless

Synchronous OR Asynchronous

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URLS

Given the following URL, identify the…

Query

https://www.google.com/search?q=asu

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URLS

Given the following URL, identify the…

Protocol

https://www.google.com/search?q=asu

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Given the following URL, identify the…

Path

https://www.google.com/search?q=asu

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URLS

Given the following URL, identify the…

Host

https://www.google.com/search?q=asu

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HTTP Requests

MDN HTTP Request Methods

We will focus on ***FOUR*** request types

1.

2.

3.

4.

MDN HTTP Request Methods

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HTTP Requests

What's the difference?

1. GET
2. POST
3. PUT
4. DELETE

Idempotent

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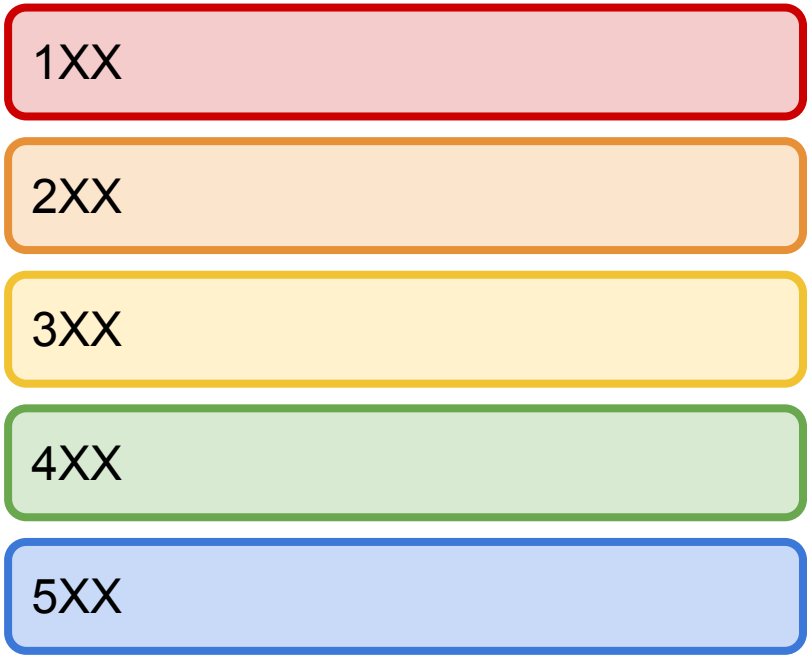
HTTP Responses

Status Codes →



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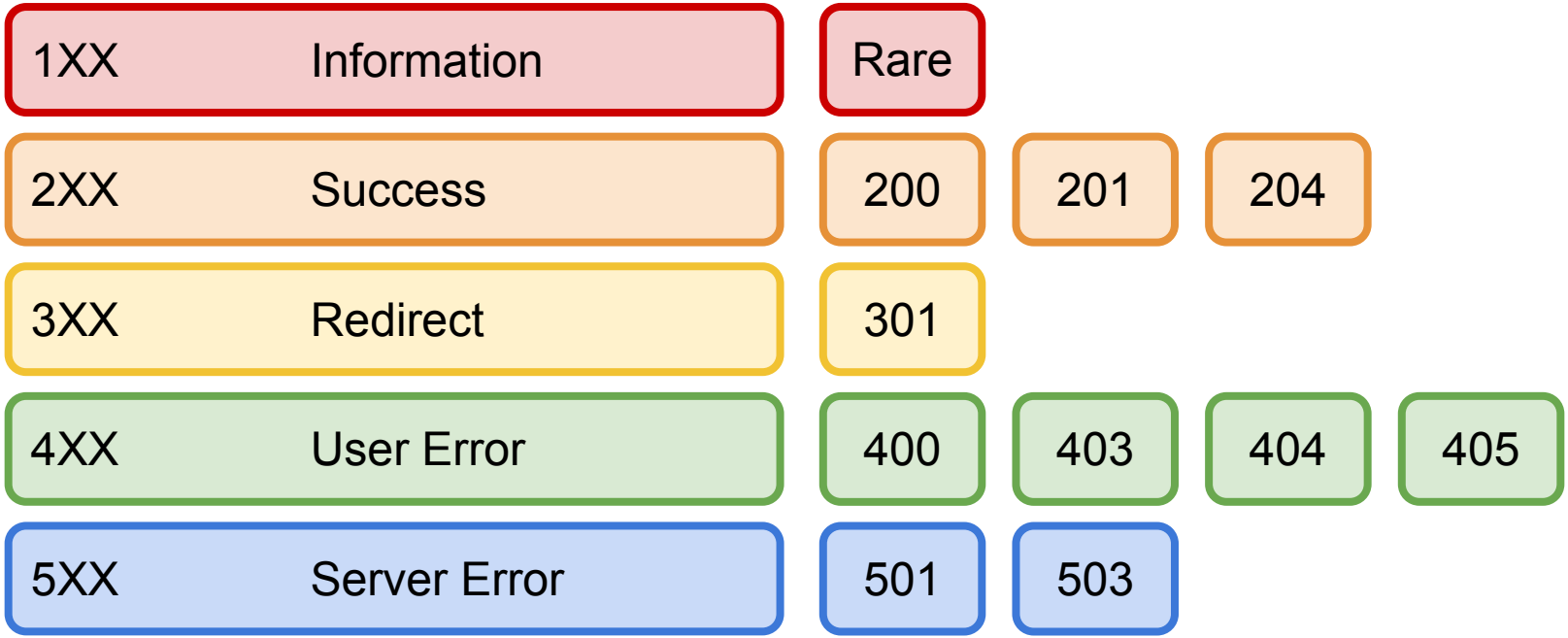
HTTP Responses



org.json Docs

JSON Guide

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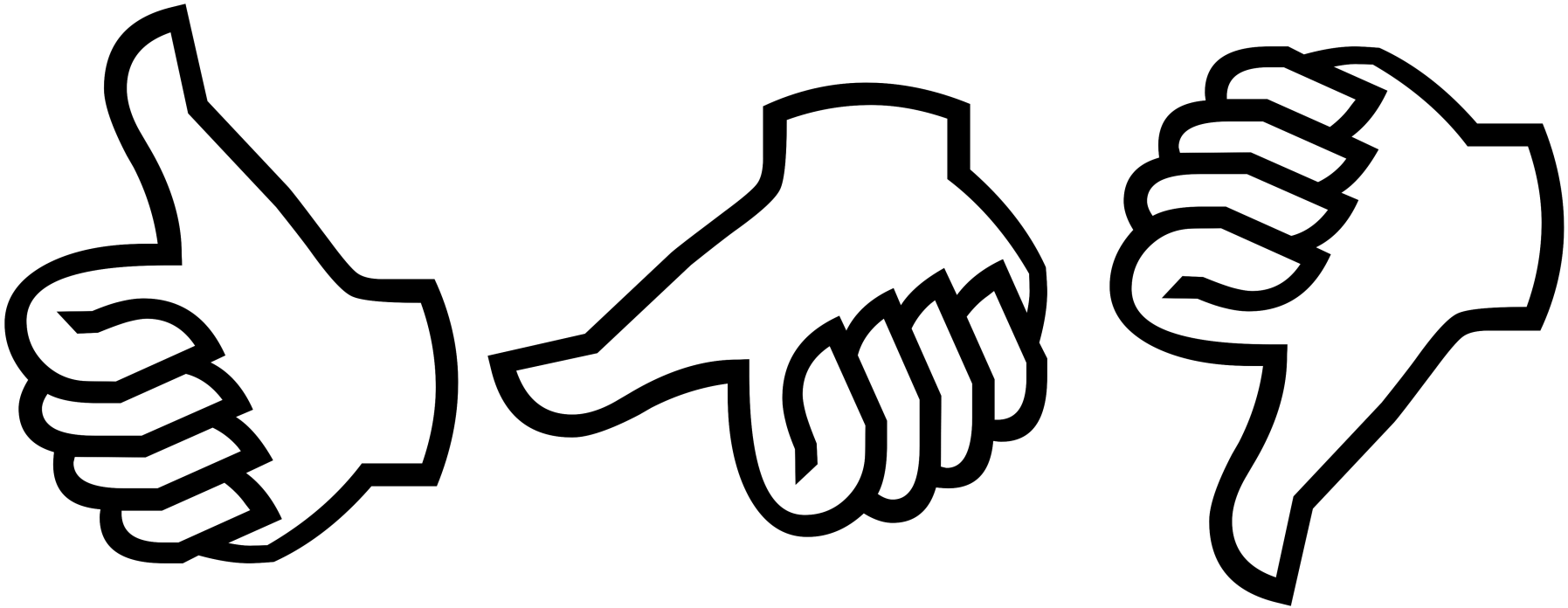
JSON

How comfortable are we with JSON?



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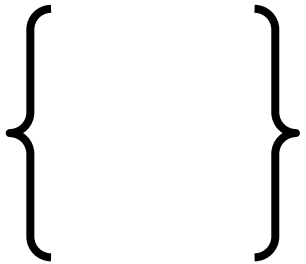
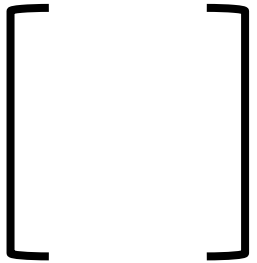
JSON

Object



Array



Member

“name” : value

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JSON

What do we see?

```
{
    “name” : “katie”,
    “role” : “student”,
    “course” : “ser321”
}
```

```
[
    {“name” : “katie”}
]
```

```
{
    “name” : “katie”,
    “pets” : {
        “dog” : “smokey”
        }
}
```

```
{
    “submissions” : [
        {“name” : “katie”},
        {“name” : “zac”}
    ]
}
```

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JSON

Do you see any errors?

1.
```
{
    “name” : “katie”,
    “role” : “student”,
    “course” : “ser321”
}
```

2.
```
[{
    “name” : “katie”,
    “name” : “zac”
}]
```

3.
```
{
    “name” : “katie”,
    “pets” : {
        “dog” : “smokey”,
        “dog” : “samie”
        }
}
```

4.
```
{
    “submissions” : [
        {“name” : “katie”},
        {“name” : “zac”}
    ]
}
```

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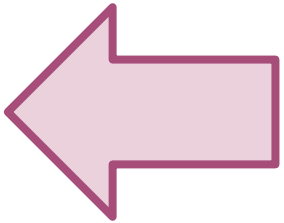
JSON

Can we fix these?

```
[
        {“name” : “katie”},
        {“name” : “zac”}
]
```



```
[{
        “name” : “katie”,
        “name” : “zac”
}]
```

WRONG

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JSON

Can we fix these?

```
[
    {“name” : “katie”},
    {“name” : “zac”}
]
```

```
[{
    “name” : “katie”,
    “name” : “zac”
}]
```

WRONG

```
{
    “name” : “katie”,
    “pets” : {
        “dog” : “smokey”,
        “dog” : “samie”
        }
}
```

WRONG

```
{
    “name” : “katie”,
    “pets” : {
        {“dog” : “smokey”},
        {“dog” : “samie”}
        }
}
```

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JSON Quiz

How many Objects?

How many Arrays?

How many Members?

```
{
  "name": "lab3vue_act3_kgrinne3",
  "version": "0.0.0",
  "private": true,
  "scripts": {
    "dev": "vite",
    "build": "vite build",
    "preview": "vite preview"
  },
  "dependencies": {
    "vue": "^3.3.4"
  },
  "devDependencies": {
    "@vitejs/plugin-vue": "^4.3.1",
    "vite": "^4.4.9"
  }
}
```

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Scratch Space

Upcoming Events

SI Sessions:

- Sunday, October 27th 2024 at 7:00 pm MST
- Tuesday, October 29th 2024 at 10:00 am MST
- Thursday, October 31st 2024 at 7:00 pm MST

Review Sessions:

- TBD

Questions?

Survey:

https://asuasn.info/ASNSurvey

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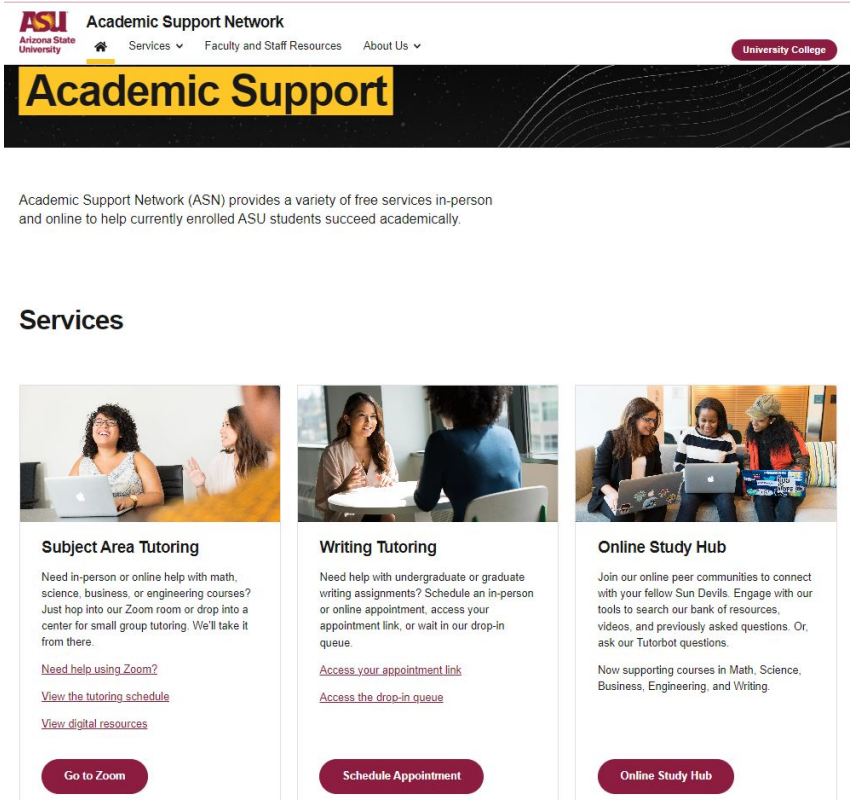
More Questions?

Check out our other resources!

tutoring.asu.edu

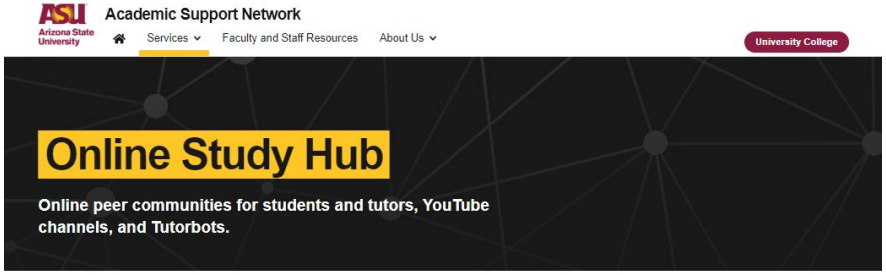


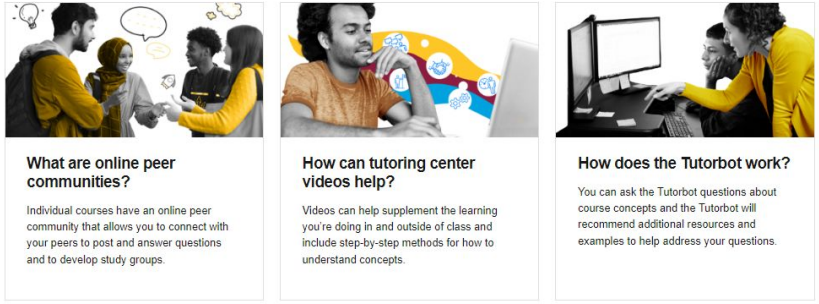
1. **Click on ‘Go to Zoom’ to log onto our Online Tutoring Center.**
2. **Click on ‘View the tutoring schedule’ to see when tutors are available for specific courses.**

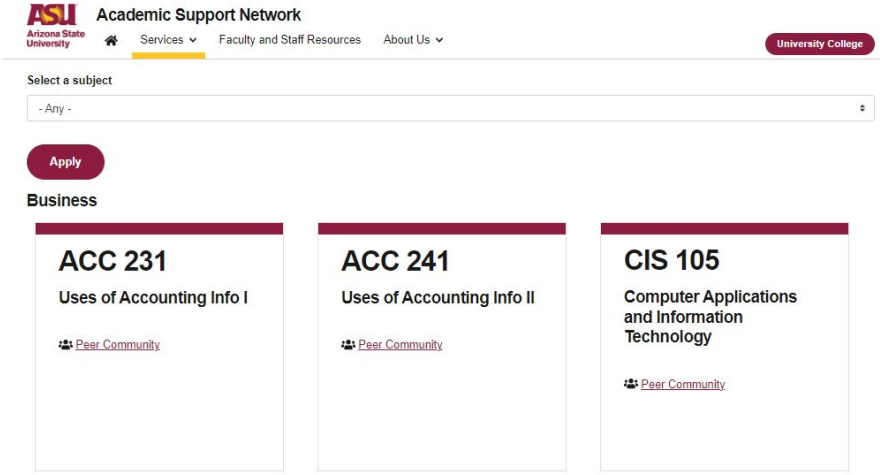
More Questions?

Check out our other resources!

tutoring.asu.edu/online-study-hub



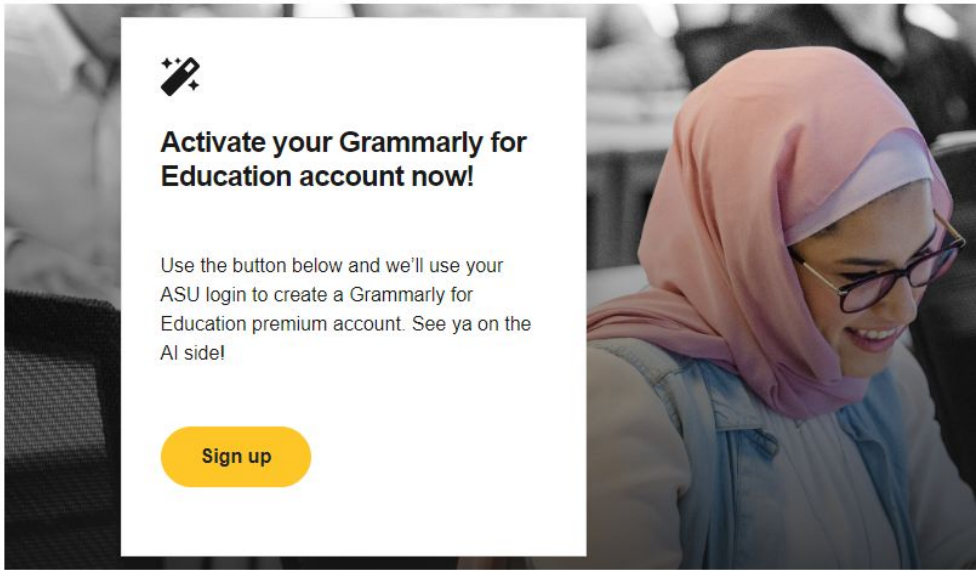




Don't forget to check out the Online Study Hub for additional resources!

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