SER 321 B Session

SI Session

Thursday, October 19th 2023

7:00 - 8:00 pm MST

Agenda

- OSI Upper Layers
- URLs & HTTP(S)
- JSON
- Example Code

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

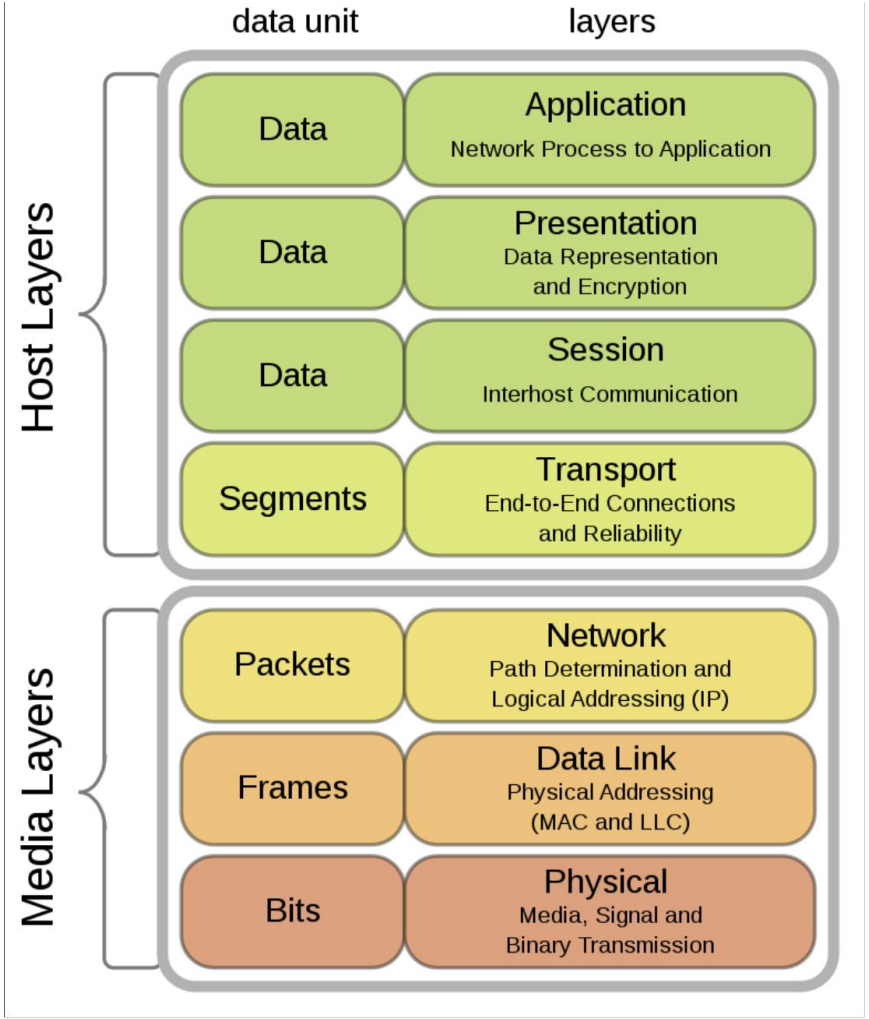
OSI from Memory

Let’s see how much of the OSI Model we can pull directly from memory!

Unit	Layer

SER 321

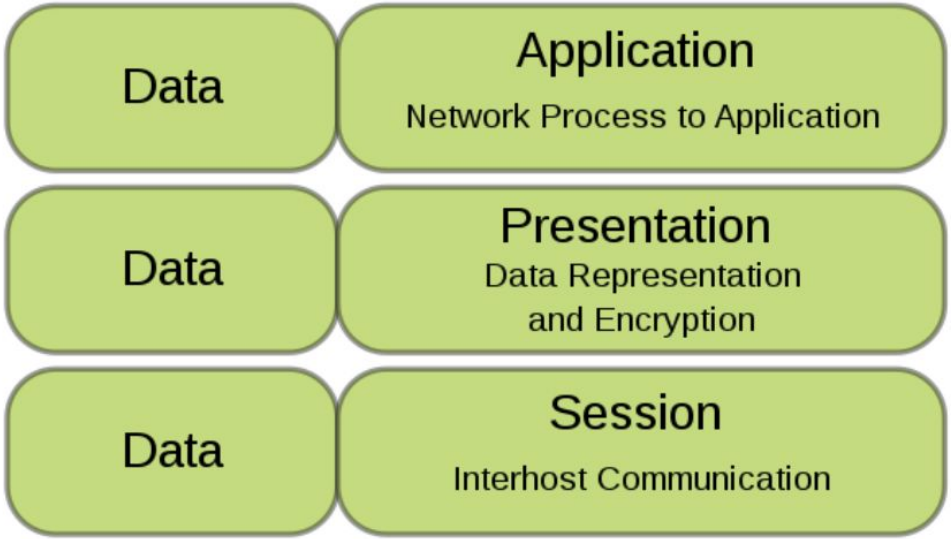
OSI - Upper Layers



SER 321

OSI - Upper Layers

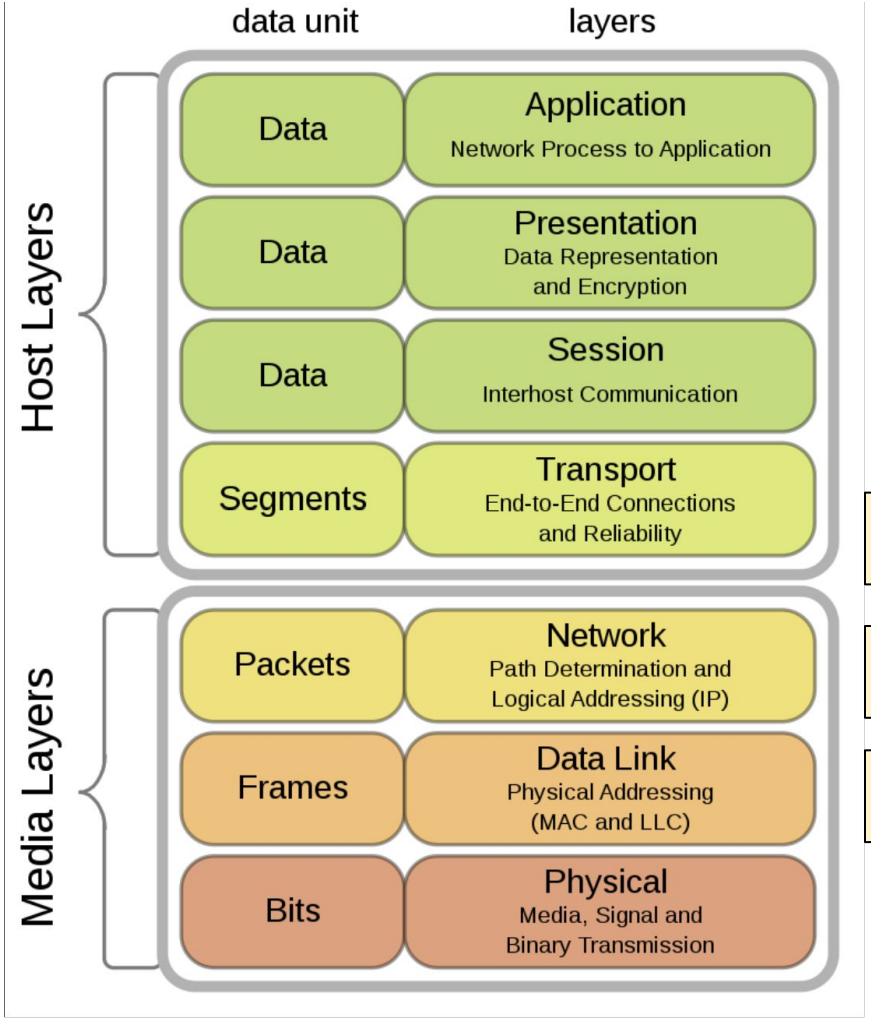
What are the responsibilities and/or protocols of each layer?

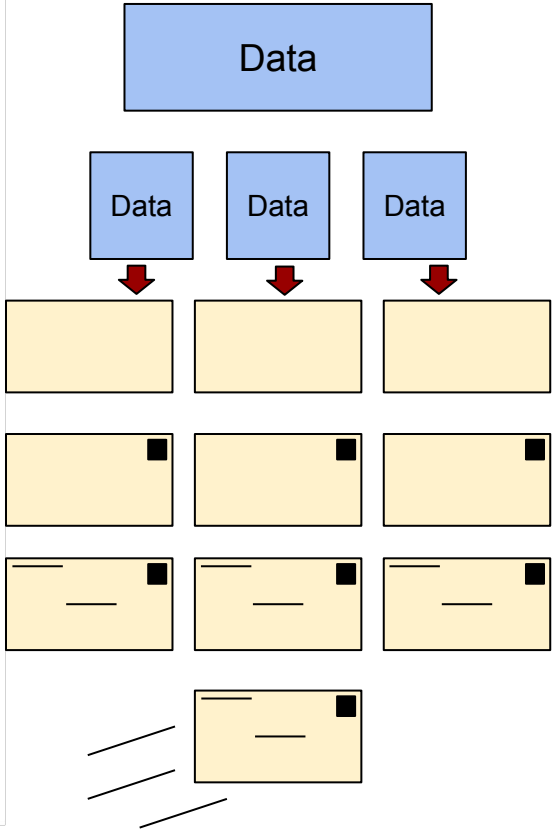


Check out the recording for the solution!

SER 321

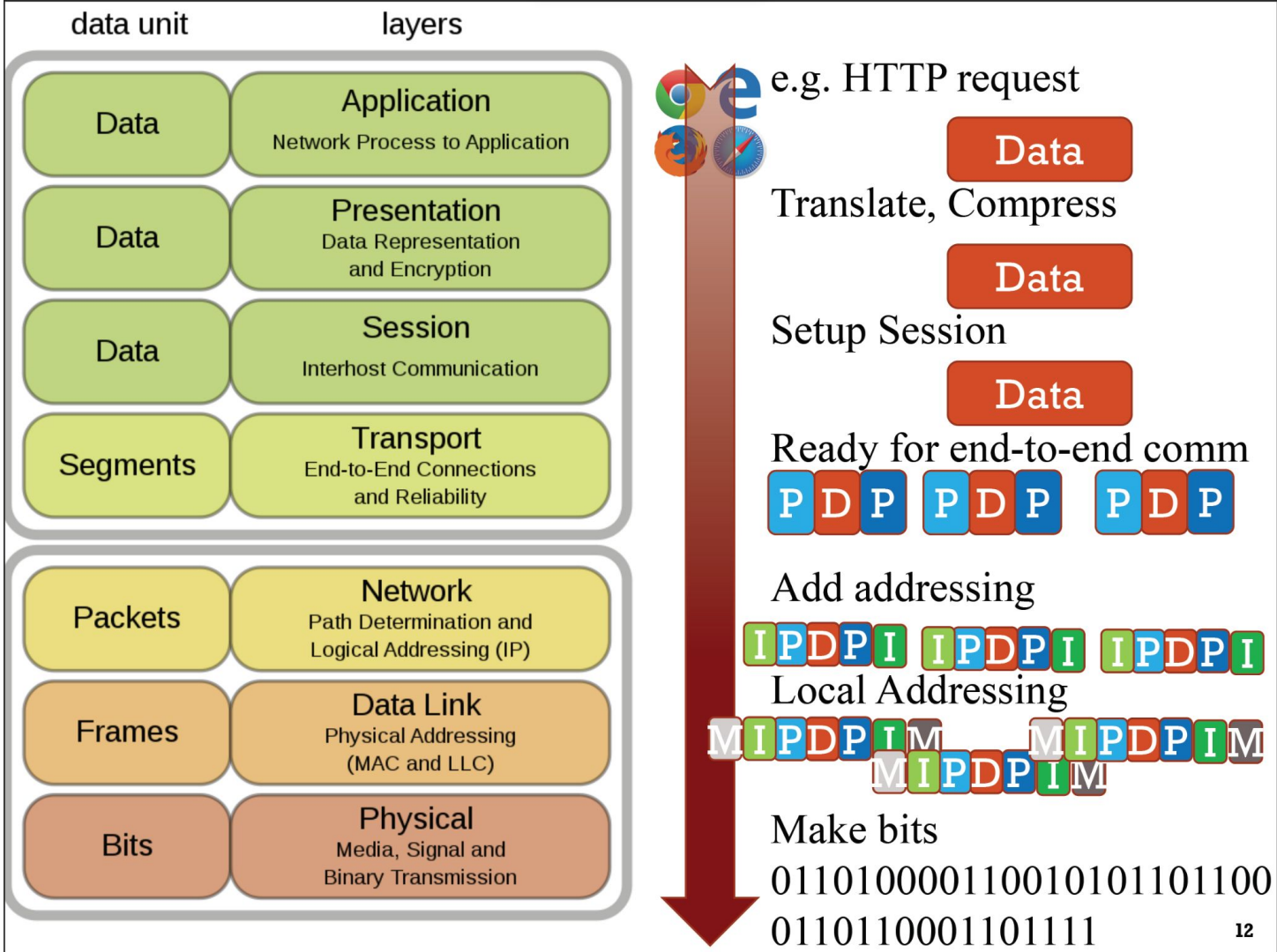
OSI Model





SER 321

OSI Model



SER 321

URLs

Protocol:
Host:
Path:
Query:

Think fast! Which of the following correctly identifies the different pieces of a URL?

A.

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

B.

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

C.

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

D.

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

Check out the recording for the solution!

SER 321

HTTP(S)

Stateful

OR

Stateless

Synchronous

OR

Asynchronous

SER 321

HTTP(S)

Stateful **OR** Stateless

Synchronous **OR** Asynchronous

Check out the recording for the solution!

SER 321

HTTP(S) Requests

We really only discuss the **four** main types of requests

1.

2.

3.

4.

Check out the recording for the solution!

SER 321

HTTP(S) Responses

What about Responses?

➔ Status Codes

SER 321

HTTP(S) Responses

What about Responses?

➔ Status Codes

SER 321

HTTP(S) Responses

Some common status codes you either have seen or will see

1XX	Information	Rare
2XX	Success	200, 201, 204
3XX	Redirect	301
4XX	Client Error	400, 403, 404, 405
5XX	Server Error	501, 503

Check out the recording for the solution!

SER 321
JSON

org.json Docs

JSON Helper

How comfortable are we with JSON?

SER 321

JSON

org.json Docs

JSON Helper

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

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

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

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

HTTP-JSON from course repo

SER 321
HTTP-JSON

Run with `gradle API`
First prints what was returned, shown below

Now we just need to pull out what we need!

```
> Task :API
[{"id":16623249,"node_id":"MDEwOlJlcG9zaXRvcnkxNjYyMzI0OQ==","name":"AQMDev","full_name":"kgary/AQMDev","private":false,"owner":{"login":"kgary","id":1686725,"node_id"
:"MDQ6VXNlcjE2ODY3MjU=","avatar_url":"https://avatars.githubusercontent.com/u/1686725?v=4","gravatar_id":"","url":"https://api.github.com/users/kgary","html_url":"http
s://github.com/kgary","followers_url":"https://api.github.com/users/kgary/followers","following_url":"https://api.github.com/users/kgary/following{/other_user}","gists
_url":"https://api.github.com/users/kgary/gists{/gist_id}","starred_url":"https://api.github.com/users/kgary/starred{/owner}{/repo}","subscriptions_url":"https://api.g
ithub.com/users/kgary/subscriptions","organizations_url":"https://api.github.com/users/kgary/orgs","repos_url":"https://api.github.com/users/kgary/repos","events_url":
"https://api.github.com/users/kgary/events{/privacy}","received_events_url":"https://api.github.com/users/kgary/received_events","type":"User","site_admin":false},"html_url":"https://github.com/kgary/AQMDev","description":"Dev copy of AQM repo","fork":false,"url":"https://api.github.com/repos/kgary/AQMDev","forks_url":"https://api.g
ithub.com/repos/kgary/AQMDev/forks","keys_url":"https://api.github.com/repos/kgary/AQMDev/keys{/key_id}","collaborators_url":"https://api.github.com/repos/kgary/AQMDev
/collaborators{/collaborator}","teams_url":"https://api.github.com/repos/kgary/AQMDev/teams","hooks_url":"https://api.github.com/repos/kgary/AQMDev/hooks","issue_event
s_url":"https://api.github.com/repos/kgary/AQMDev/issues/events{/number}","events_url":"https://api.github.com/repos/kgary/AQMDev/events","assignees_url":"https://api.
github.com/repos/kgary/AQMDev/assignees{/user}","branches_url":"https://api.github.com/repos/kgary/AQMDev/branches{/branch}","tags_url":"https://api.github.com/repos/k
gary/AQMDev/tags","blobs_url":"https://api.github.com/repos/kgary/AQMDev/git/blobs{/sha}","git_tags_url":"https://api.github.com/repos/kgary/AQMDev/git/tags{/sha}","gi
t_refs_url":"https://api.github.com/repos/kgary/AQMDev/git/refs{/sha}","trees_url":"https://api.github.com/repos/kgary/AQMDev/git/trees{/sha}","statuses_url":"https://
api.github.com/repos/kgary/AQMDev/statuses/{sha}","languages_url":"https://api.github.com/repos/kgary/AQMDev/languages","stargazers_url":"https://api.github.com/repos/
kgary/AQMDev/stargazers","contributors_url":"https://api.github.com/repos/kgary/AQMDev/contributors","subscribers_url":"https://api.github.com/repos/kgary/AQMDev/subsc
ribers","subscription_url":"https://api.github.com/repos/kgary/AQMDev/subscription","commits_url":"https://api.github.com/repos/kgary/AQMDev/commits{/sha}","git_commit
s_url":"https://api.github.com/repos/kgary/AQMDev/git/commits{/sha}","comments_url":"https://api.github.com/repos/kgary/AQMDev/comments{/number}","issue_comment_url":"
https://api.github.com/repos/kgary/AQMDev/issues/comments{/number}","contents_url":"https://api.github.com/repos/kgary/AQMDev/contents/{+path}","compare_url":"https://
api.github.com/repos/kgary/AQMDev/compare/{base}...{head}","merges_url":"https://api.github.com/repos/kgary/AQMDev/merges","archive_url":"https://api.github.com/repos/
kgary/AQMDev/{archive_format}{/ref}","downloads_url":"https://api.github.com/repos/kgary/AQMDev/downloads","issues_url":"https://api.github.com/repos/kgary/AQMDev/issu
es{/number}","pulls_url":"https://api.github.com/repos/kgary/AQMDev/pulls{/number}","milestones_url":"https://api.github.com/repos/kgary/AQMDev/milestones{/number}","n
otifications_url":"https://api.github.com/repos/kgary/AQMDev/notifications{?since,all,participating}","labels_url":"https://api.github.com/repos/kgary/AQMDev/labels{/n
ame}","releases_url":"https://api.github.com/repos/kgary/AQMDev/releases{/id}","deployments_url":"https://api.github.com/repos/kgary/AQMDev/deployments","created_at":"
2014-02-07T18:22:26Z","updated_at":"2014-04-04T20:02:14Z","pushed_at":"2014-04-04T20:02:14Z","git_url":"git://github.com/kgary/AQMDev.git","ssh_url":"git@github.com:kg
ary/AQMDev.git","clone_url":"https://github.com/kgary/AQMDev.git","svn_url":"https://github.com/kgary/AQMDev","homepage":null,"size":13039,"stargazers_count":0,"watche
```

HTTP-JSON from course repo

SER 321

HTTP-JSON

```
// saving it as JSON array (if it sere not an array it woudl need to be a JS
JSONArray repoArray = new JSONArray(json);

// new JSON which we want to save later on
JSONArray newjSON = new JSONArray();

// go through all the entries in the JSON array (so all the repos of the use
for(int i=0; i<repoArray.length(); i++){

   // now we have a JSON object, one repo
   JSONObject repo = repoArray.getJSONObject(i);

   // get repo name
   String repoName = repo.getString( key: "name");
   System.out.println(repoName);

   // owner is a JSON object in the repo object, get it and save it in own v
   JSONObject owner = repo.getJSONObject( key: "owner");
   String ownername = owner.getString( key: "login");
   System.out.println(ownername);

   // create a new object for the repo we want to store add the repo name ar
   JSONObject newRepo = new JSONObject();
   newRepo.put("name",repoName);
   newRepo.put("owner",ownername);
```

```
// fetch all the branches from the repo and save and branches JSONArray
String jsonBranches = fetchURL( aUrl: "https://api.github.com/repos/"
    + user + "/" + repoName + "/branches");
JSONArray branches = new JSONArray(jsonBranches);

// create a new branch JSON object
JSONArray newBranchJSON = new JSONArray();

// iterate through all branches and save the branch name
for(int j=0; j<branches.length(); j++){
   JSONObject branch = branches.getJSONObject(j);
   String branchName = branch.getString( key: "name");
   System.out.println("    "+ branchName);
   JSONObject newBranch = new JSONObject();
   newBranch.put("name", branchName);

   // add new branch to branch array
   newBranchJSON.put(newBranch);
}

// add the branches array to the repo
newRepo.put("branches", newBranchJSON);
newjSON.put(newRepo);
```

Questions?

Survey:

https://bit.ly/asn_survey

21

Upcoming Events

SI Sessions:

- Sunday, October 22nd 2023 at 7:00 pm MST
- Monday, October 23rd 2023 at 4:00 pm MST
- Thursday, October 26th 2023 at 7:00 pm MST

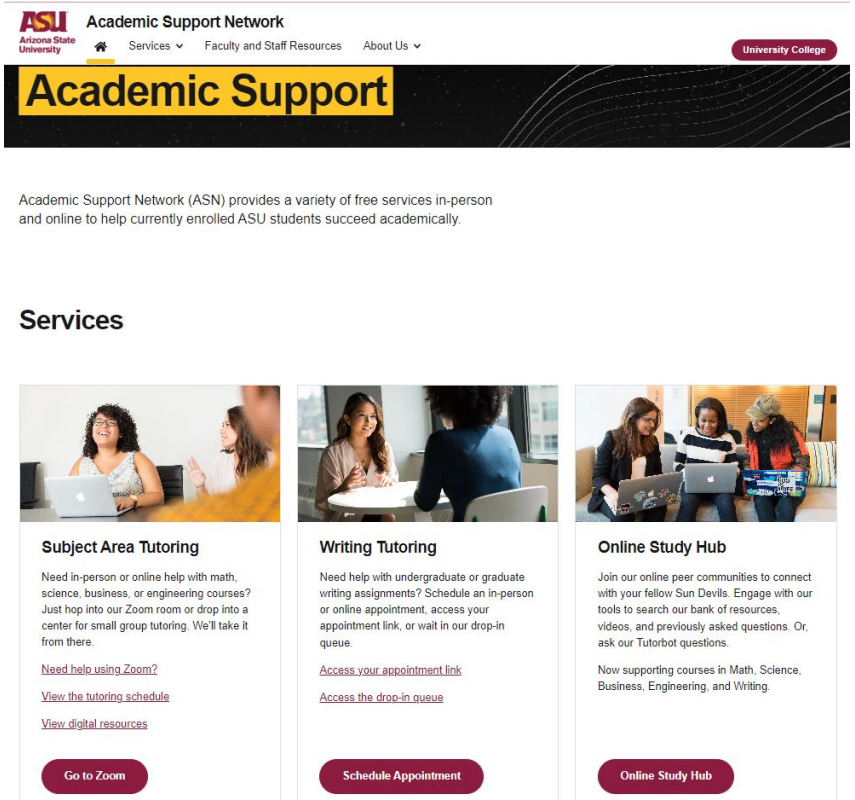
Review Sessions:

- TBD

More Questions?

Check out our other resources!

tutoring.asu.edu

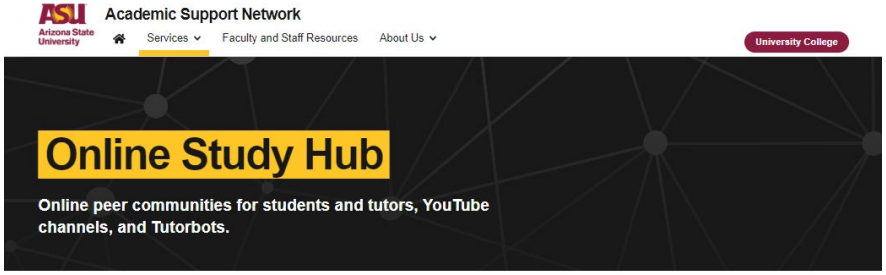


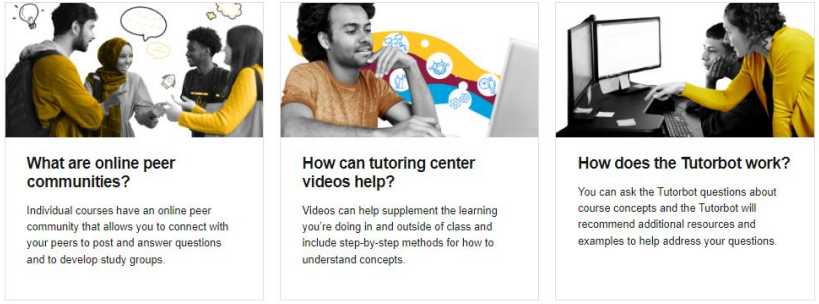
1. **Click on ‘Go to Zoom’ to log onto our Online Tutoring Center.**
2. **Click on ‘View the tutoring schedule’ to see when tutors are available for specific courses.**

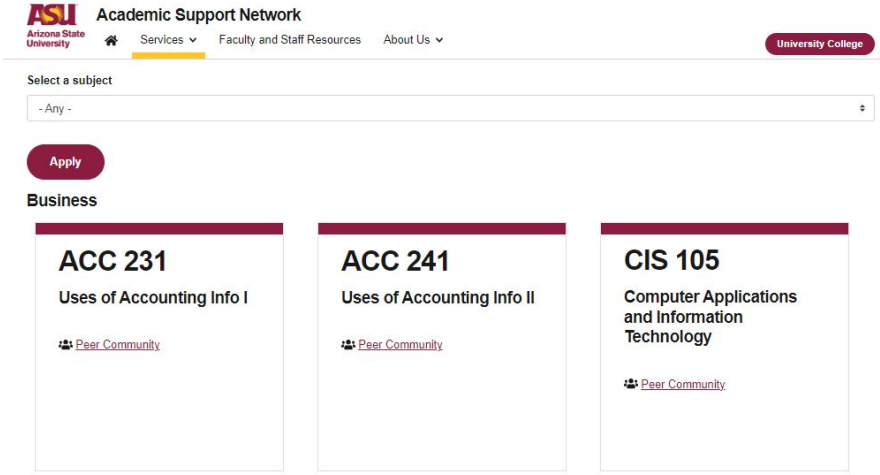
More Questions?

Check out our other resources!

tutoring.asu.edu/online-study-hub







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

Additional Resources

CoureRepo

GitHub SSH Docs

Gradle Documentation

Interactive OSI Model

org.json API Docs

JSON Helper