

SER 321 B Session

SI Session

Sunday, October 22nd 2023

7:00 - 8:00 pm MST

Agenda



JSON Review

HTTP-JSON

nginx

Setup

Troubleshooting

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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JSON

How comfortable are we with JSON?



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JSON

Object

{ }

Array

[]

Member

“name” : value

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JSON

```
{  
  "name" : "katie",  
  "role" : "student",  
  "course" : "ser321"  
}
```

```
{  
  "name" : "katie",  
  "pets" : {  
    "dog" : "smokey",  
    "dog" : "sammie"  
  }  
}
```

```
[{  
  "name" : "katie",  
  "name" : "zac",  
  "name" : "john"  
}]
```

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

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JSON

If I said:

JSONObject json =

How would we...

Get the project name?

String name = "";
name =

Get the dependencies?

JSONObject dependencies;
dependencies =

org.json Docs

JSON Helper



```
{
  "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"
  }
}
```

How many objects do we see?

How many arrays do we see?

How many members do we see?

Check out the recording for the solution!

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JSON

[org.json Docs](#)

[JSON Helper](#)

JSONObject json =

Let's do a more complex one! How would you...

Get the dev script value?

STEP ONE:
Get the scripts JSONObject

JSONObject scripts =

STEP TWO:
Get the dev value

String devVal =

```
{
  "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"
  }
}
```

Check out the recording for the solution!

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HTTP-JSON

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":"AQMDDev","full_name":"kgary/AQMDDev","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":"https://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.github.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/AQMDDev","description":"Dev copy of AQM repo","fork":false,"url":"https://api.github.com/repos/kgary/AQMDDev","forks_url":"https://api.github.com/repos/kgary/AQMDDev/forks","keys_url":"https://api.github.com/repos/kgary/AQMDDev/keys{/key_id}","collaborators_url":"https://api.github.com/repos/kgary/AQMDDev/collaborators{/collaborator}","teams_url":"https://api.github.com/repos/kgary/AQMDDev/teams","hooks_url":"https://api.github.com/repos/kgary/AQMDDev/hooks","issue_events_url":"https://api.github.com/repos/kgary/AQMDDev/issues/events{/number}","events_url":"https://api.github.com/repos/kgary/AQMDDev/events","assignees_url":"https://api.github.com/repos/kgary/AQMDDev/assignees{/user}","branches_url":"https://api.github.com/repos/kgary/AQMDDev/branches{/branch}","tags_url":"https://api.github.com/repos/kgary/AQMDDev/tags","blobs_url":"https://api.github.com/repos/kgary/AQMDDev/git/blobs{/sha}","git_tags_url":"https://api.github.com/repos/kgary/AQMDDev/git/tags{/sha}","git_refs_url":"https://api.github.com/repos/kgary/AQMDDev/git/refs{/sha}","trees_url":"https://api.github.com/repos/kgary/AQMDDev/git/trees{/sha}","statuses_url":"https://api.github.com/repos/kgary/AQMDDev/statuses/{sha}","languages_url":"https://api.github.com/repos/kgary/AQMDDev/languages","stargazers_url":"https://api.github.com/repos/kgary/AQMDDev/stargazers","contributors_url":"https://api.github.com/repos/kgary/AQMDDev/contributors","subscribers_url":"https://api.github.com/repos/kgary/AQMDDev/subscribers","subscription_url":"https://api.github.com/repos/kgary/AQMDDev/subscription","commits_url":"https://api.github.com/repos/kgary/AQMDDev/commits{/sha}","git_commit_comments_url":"https://api.github.com/repos/kgary/AQMDDev/git/commits{/sha}","comments_url":"https://api.github.com/repos/kgary/AQMDDev/comments{/number}","issue_comment_url":"https://api.github.com/repos/kgary/AQMDDev/issues/comments{/number}","contents_url":"https://api.github.com/repos/kgary/AQMDDev/contents/{+path}","compare_url":"https://api.github.com/repos/kgary/AQMDDev/compare/{base}...{head}","merges_url":"https://api.github.com/repos/kgary/AQMDDev/merges","archive_url":"https://api.github.com/repos/kgary/AQMDDev/{archive_format}{/ref}","downloads_url":"https://api.github.com/repos/kgary/AQMDDev/downloads","issues_url":"https://api.github.com/repos/kgary/AQMDDev/issues{/number}","pulls_url":"https://api.github.com/repos/kgary/AQMDDev/pulls{/number}","milestones_url":"https://api.github.com/repos/kgary/AQMDDev/milestones{/number}","notifications_url":"https://api.github.com/repos/kgary/AQMDDev/notifications{?since,all,participating}","labels_url":"https://api.github.com/repos/kgary/AQMDDev/labels{/name}","releases_url":"https://api.github.com/repos/kgary/AQMDDev/releases{/id}","deployments_url":"https://api.github.com/repos/kgary/AQMDDev/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/AQMDDev.git","ssh_url":"git@github.com:kgary/AQMDDev.git","clone_url":"https://github.com/kgary/AQMDDev.git","svn_url":"https://github.com/kgary/AQMDDev","homepage":null,"size":13039,"stargazers_count":0,"watchers_count":0,"forks_count":0,"open_issues_count":0,"license":null,"allow_forking":true,"is_template":false,"web_commit_signoff_required":false,"topics":["api","dev","github","kgary","open-source","python","testing"],"default_branch":"master","permissions":{"admin":true,"push":true,"pull":true}}]
```

HTTP-JSON from course repo

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HTTP-JSON

```
// saving it as JSON array (if it were not an array it would 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);
}
```

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NGINX

Did we get nginx working on our second machine?

You will need to modify the configuration file to get the server running!

```
server {  
    listen      80;  
    listen      [::]:80;  
    server_name <AWS IP>;  
    root        /usr/share/nginx/html;  
  
    location / {  
        proxy_pass http://localhost:9000/;  
    }  
  
    # Load configuration files for the default server block.  
    include /etc/nginx/default.d/*.conf;  
  
    error_page 404 /404.html;
```

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NGINX PSA

```
[ec2-user@ip-172-31-47-54 ~]$ sudo nginx -s reload
nginx: [error] open() "/run/nginx.pid" failed (2: No such file or directory)
[ec2-user@ip-172-31-47-54 ~]$
```

systemctl status nginx

```
[ec2-user@ip-172-31-47-54 ~]$ systemctl status nginx
○ nginx.service - The nginx HTTP and reverse proxy server
   Loaded: loaded (/usr/lib/systemd/system/nginx.service; disabled; preset: disabled)
   Active: inactive (dead)
[ec2-user@ip-172-31-47-54 ~]$
```

sudo systemctl restart nginx

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NGINX PSA

```
[ec2-user@ip-172-31-47-54 ~]$ systemctl status nginx
```

```
● nginx.service - The nginx HTTP and reverse proxy server
```

```
   Loaded: loaded (/usr/lib/systemd/system/nginx.service; disabled; preset: disabled)
```

```
   Active: active (running) since Sun 2023-10-22 19:12:58 UTC; 39s ago
```

```
 Process: 2504 ExecStartPre=/usr/bin/rm -f /run/nginx.pid (code=exited, status=0/SUCCESS)
```

```
 Process: 2505 ExecStartPre=/usr/sbin/nginx -t (code=exited, status=0/SUCCESS)
```

```
 Process: 2506 ExecStart=/usr/sbin/nginx (code=exited, status=0/SUCCESS)
```

```
Main PID: 2507 (nginx)
```

```
   Tasks: 2 (limit: 1114)
```

```
  Memory: 2.2M
```

```
    CPU: 54ms
```

```
 CGroup: /system.slice/nginx.service
```

```
        └─2507 "nginx: master process /usr/sbin/nginx"
```

```
           └─2508 "nginx: worker process"
```

```
Oct 22 19:12:58 ip-172-31-47-54.ec2.internal systemd[1]: Starting nginx.service - The nginx HTTP and reverse proxy server...
```

```
Oct 22 19:12:58 ip-172-31-47-54.ec2.internal nginx[2505]: nginx: the configuration file /etc/nginx/nginx.conf syntax is ok
```

```
Oct 22 19:12:58 ip-172-31-47-54.ec2.internal nginx[2505]: nginx: configuration file /etc/nginx/nginx.conf test is successful
```

```
Oct 22 19:12:58 ip-172-31-47-54.ec2.internal systemd[1]: Started nginx.service - The nginx HTTP and reverse proxy server.
```

```
[ec2-user@ip-172-31-47-54 ~]$ |
```

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NGINX PSA

If all else fails, we can kill it...

`ps -ef | grep nginx`

`sudo kill {PID}`

`sudo kill -9 {PID}`

-9 is like a E-Stop
Only use if you really need to!

ps is process monitoring

-e is all processes
-f is detailed output

| inserts the result into the
next command

grep nginx filters for nginx

```
[ec2-user@ip-172-31-47-54 ~]$ sudo kill 6943
[ec2-user@ip-172-31-47-54 ~]$ ps -ef | grep nginx
ec2-user      7010      6048  0 21:37 pts/0    00:00:00 grep --color=auto nginx
[ec2-user@ip-172-31-47-54 ~]$
```

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NGINX Troubleshooting

1. `systemctl status nginx`

2. `sudo systemctl restart nginx`

3. `sudo kill PID`

Questions?

Survey:

https://bit.ly/asn_survey



Upcoming Events

SI Sessions:

- Monday, October 23rd 2023 at 4:00pm MST

Review Sessions:

- TBD

More Questions?

Check out our other resources!

tutoring.asu.edu



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

Additional Resources

[CourRepo](#)

[org.json Docs](#)

[JSON Helper](#)