

<https://api.github.com/users/amehlhase316/repos>

```
{
  "id": 590581756,
  "node_id": "R_kgDOIzOP_A",
  "name": "inClass",
  "full_name": "amehlhase316/inClass",
  "private": false,
  "owner": {
    "login": "amehlhase316",
    "id": 46384989,
    "node_id": "MDQ6VXNlcjQ2Mzg0OTg5",
    "avatar_url": "https://avatars.githubusercontent.com/u/46384989?v=4",
    "gravatar_id": "",
    "url": "https://api.github.com/users/amehlhase316",
    "html_url": "https://github.com/amehlhase316",
    "followers_url": "https://api.github.com/users/amehlhase316/followers",
    "following_url": "https://api.github.com/users/amehlhase316/following{/other_user}",
    "gists_url": "https://api.github.com/users/amehlhase316/gists{/gist_id}",
    "starred_url": "https://api.github.com/users/amehlhase316/starred{/owner}/{repo}",
    "subscriptions_url": "https://api.github.com/users/amehlhase316/subscriptions",
    "organizations_url": "https://api.github.com/users/amehlhase316/orgs",
    "repos_url": "https://api.github.com/users/amehlhase316/repos",
    "events_url": "https://api.github.com/users/amehlhase316/events{/privacy}",
    "received_events_url": "https://api.github.com/users/amehlhase316/received_events",
    "type": "User",
    "site_admin": false
  },
  "html_url": "https://github.com/amehlhase316/inClass",
  "description": null,
  "fork": false,
  "url": "https://api.github.com/repos/amehlhase316/inClass",
  "forks_url": "https://api.github.com/repos/amehlhase316/inClass/forks",
  "keys_url": "https://api.github.com/repos/amehlhase316/inClass/keys{/key_id}",
  "collaborators_url": "https://api.github.com/repos/amehlhase316/inClass/collaborators{/collaborator}",
  "teams_url": "https://api.github.com/repos/amehlhase316/inClass/teams",
  "hooks_url": "https://api.github.com/repos/amehlhase316/inClass/hooks",
  "issue_events_url": "https://api.github.com/repos/amehlhase316/inClass/issues/events{/number}",
  "events_url": "https://api.github.com/repos/amehlhase316/inClass/events",
  "assignees_url": "https://api.github.com/repos/amehlhase316/inClass/assignees{/user}",
  "branches_url": "https://api.github.com/repos/amehlhase316/inClass/branches{/branch}",
  "tags_url": "https://api.github.com/repos/amehlhase316/inClass/tags",
  "blobs_url": "https://api.github.com/repos/amehlhase316/inClass/git/blobs{/sha}",
  "git_tags_url": "https://api.github.com/repos/amehlhase316/inClass/git/tags{/sha}",
  "git_refs_url": "https://api.github.com/repos/amehlhase316/inClass/git/refs{/sha}",
  "trees_url": "https://api.github.com/repos/amehlhase316/inClass/git/trees{/sha}",
  "statuses_url": "https://api.github.com/repos/amehlhase316/inClass/statuses{/sha}",
  "languages_url": "https://api.github.com/repos/amehlhase316/inClass/languages",
  "stargazers_url": "https://api.github.com/repos/amehlhase316/inClass/stargazers",
  "contributors_url": "https://api.github.com/repos/amehlhase316/inClass/contributors",
  "subscribers_url": "https://api.github.com/repos/amehlhase316/inClass/subscribers",
  "subscription_url": "https://api.github.com/repos/amehlhase316/inClass/subscription",
  "commits_url": "https://api.github.com/repos/amehlhase316/inClass/commits{/sha}",
  "git_commits_url": "https://api.github.com/repos/amehlhase316/inClass/git/commits{/sha}",
  "comments_url": "https://api.github.com/repos/amehlhase316/inClass/comments{/number}",
  "issue_comment_url": "https://api.github.com/repos/amehlhase316/inClass/issues/comments{/number}",
  "contents_url": "https://api.github.com/repos/amehlhase316/inClass/contents{/path}",
  "compare_url": "https://api.github.com/repos/amehlhase316/inClass/compare/{base}...{head}",
  "merges_url": "https://api.github.com/repos/amehlhase316/inClass/merges",
  "archive_url": "https://api.github.com/repos/amehlhase316/inClass/{archive_format}/{ref}",
  "downloads_url": "https://api.github.com/repos/amehlhase316/inClass/downloads",
  "issues_url": "https://api.github.com/repos/amehlhase316/inClass/issues{/number}",
  "pulls_url": "https://api.github.com/repos/amehlhase316/inClass/pulls{/number}",
  "milestones_url": "https://api.github.com/repos/amehlhase316/inClass/milestones{/number}",
  "notifications_url": "https://api.github.com/repos/amehlhase316/inClass/notifications{?since,all,participating}",
  "labels_url": "https://api.github.com/repos/amehlhase316/inClass/labels{/name}",
  "releases_url": "https://api.github.com/repos/amehlhase316/inClass/releases{/id}",
  "deployments_url": "https://api.github.com/repos/amehlhase316/inClass/deployments",
  "created_at": "2023-01-18T18:35:17Z",
  "updated_at": "2023-01-18T18:38:42Z",
  "pushed_at": "2023-03-15T16:16:07Z",
  "git_url": "git://github.com/amehlhase316/inClass.git",
  "ssh_url": "git@github.com:amehlhase316/inClass.git",
  "clone_url": "https://github.com/amehlhase316/inClass.git",
  "svn_url": "https://github.com/amehlhase316/inClass",
  "homepage": null,
  "size": 698,
  "stargazers_count": 0,
  "watchers_count": 0,
  "language": "Java",
  "has_issues": true,
  "has_projects": true,
  "has_downloads": true,

```

<https://api.github.com/repos/amehlhase316/memoranda> {

```
  "id": 164481338,
  "node_id": "MDEwO1JlcG9zaXRvcnkxNjQ0ODEzMzg=",
  "name": "memoranda",
  "full_name": "amehlhase316/memoranda",
  "private": false,
  "owner": {
    "login": "amehlhase316",
    "id": 46384989,
    "node_id": "MDQ6VXNlcjQ2Mzg0OTg5",
    "avatar_url":
"https://avatars.githubusercontent.com/u/46384989?v=4",
    "gravatar_id": "",
    "url": "https://api.github.com/users/amehlhase316",
    "html_url": "https://github.com/amehlhase316",

```

```
    "followers_url":
"https://api.github.com/users/amehlhase316/followers",
    "following_url":
"https://api.github.com/users/amehlhase316/following{/other_user}",
    "gists_url":
"https://api.github.com/users/amehlhase316/gists{/gist_id}",
    "starred_url":
"https://api.github.com/users/amehlhase316/starred{/owner}/{/repo}",
    "subscriptions_url":
"https://api.github.com/users/amehlhase316/subscriptions",
    "organizations_url":
"https://api.github.com/users/amehlhase316/orgs",
    "repos_url": "https://api.github.com/users/amehlhase316/repos",
    "events_url":
"https://api.github.com/users/amehlhase316/events{/privacy}",
    "received_events_url":
"https://api.github.com/users/amehlhase316/received_events",
    "type": "User",
    "site_admin": false
},
    "html_url": "https://github.com/amehlhase316/memoranda",
    "description": null,
    "fork": false,
    "url": "https://api.github.com/repos/amehlhase316/memoranda",
    "forks_url":
"https://api.github.com/repos/amehlhase316/memoranda/forks",
    "keys_url":
"https://api.github.com/repos/amehlhase316/memoranda/keys{/key_id}",
    "collaborators_url":
"https://api.github.com/repos/amehlhase316/memoranda/collaborators{/co
llaborator}",
    "teams_url":
"https://api.github.com/repos/amehlhase316/memoranda/teams",
    "hooks_url":
"https://api.github.com/repos/amehlhase316/memoranda/hooks",
    "issue_events_url":
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mber}",
    "events_url":
```

```
"https://api.github.com/repos/amehlhase316/memoranda/events",
  "assignees_url":
"https://api.github.com/repos/amehlhase316/memoranda/assignees{/user}"
,
  "branches_url":
"https://api.github.com/repos/amehlhase316/memoranda/branches{/branch}"
,
  "tags_url":
"https://api.github.com/repos/amehlhase316/memoranda/tags",
  "blobs_url":
"https://api.github.com/repos/amehlhase316/memoranda/git/blobs{/sha}",
  "git_tags_url":
"https://api.github.com/repos/amehlhase316/memoranda/git/tags{/sha}",
  "git_refs_url":
"https://api.github.com/repos/amehlhase316/memoranda/git/refs{/sha}",
  "trees_url":
"https://api.github.com/repos/amehlhase316/memoranda/git/trees{/sha}",
  "statuses_url":
"https://api.github.com/repos/amehlhase316/memoranda/statuses/{sha}",
  "languages_url":
"https://api.github.com/repos/amehlhase316/memoranda/languages",
  "stargazers_url":
"https://api.github.com/repos/amehlhase316/memoranda/stargazers",
  "contributors_url":
"https://api.github.com/repos/amehlhase316/memoranda/contributors",
  "subscribers_url":
"https://api.github.com/repos/amehlhase316/memoranda/subscribers",
  "subscription_url":
"https://api.github.com/repos/amehlhase316/memoranda/subscription",
  "commits_url":
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  "git_commits_url":
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,
  "comments_url":
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  "issue_comment_url":
"https://api.github.com/repos/amehlhase316/memoranda/issues/comments{/
```

```
number}",
  "contents_url":
"https://api.github.com/repos/amehlhase316/memoranda/contents/{+path}"
,
  "compare_url":
"https://api.github.com/repos/amehlhase316/memoranda/compare/{base}...
{head}",
  "merges_url":
"https://api.github.com/repos/amehlhase316/memoranda/merges",
  "archive_url":
"https://api.github.com/repos/amehlhase316/memoranda/{archive_format}{
/ref}",
  "downloads_url":
"https://api.github.com/repos/amehlhase316/memoranda/downloads",
  "issues_url":
"https://api.github.com/repos/amehlhase316/memoranda/issues{/number}",
  "pulls_url":
"https://api.github.com/repos/amehlhase316/memoranda/pulls{/number}",
  "milestones_url":
"https://api.github.com/repos/amehlhase316/memoranda/milestones{/numbe
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  "notifications_url":
"https://api.github.com/repos/amehlhase316/memoranda/notifications{?si
nce,all,participating}",
  "labels_url":
"https://api.github.com/repos/amehlhase316/memoranda/labels{/name}",
  "releases_url":
"https://api.github.com/repos/amehlhase316/memoranda/releases{/id}",
  "deployments_url":
"https://api.github.com/repos/amehlhase316/memoranda/deployments",
  "created_at": "2019-01-07T19:27:08Z",
  "updated_at": "2024-03-18T17:17:51Z",
  "pushed_at": "2024-01-16T16:50:27Z",
  "git_url": "git://github.com/amehlhase316/memoranda.git",
  "ssh_url": "git@github.com:amehlhase316/memoranda.git",
  "clone_url": "https://github.com/amehlhase316/memoranda.git",
  "svn_url": "https://github.com/amehlhase316/memoranda",
  "homepage": null,
  "size": 4290,
```

```
"stargazers_count": 6,
"watchers_count": 6,
"language": "Java",
"has_issues": true,
"has_projects": true,
"has_downloads": true,
"has_wiki": true,
"has_pages": false,
"has_discussions": false,
"forks_count": 69,
"mirror_url": null,
"archived": false,
"disabled": false,
"open_issues_count": 23,
"license": {
  "key": "gpl-2.0",
  "name": "GNU General Public License v2.0",
  "spdx_id": "GPL-2.0",
  "url": "https://api.github.com/licenses/gpl-2.0",
  "node_id": "MDc6TGljZW5zZTg="
},
"allow_forking": true,
"is_template": false,
"web_commit_signoff_required": false,
"topics": [

],
"visibility": "public",
"forks": 69,
"open_issues": 23,
"watchers": 6,
"default_branch": "master",
"temp_clone_token": null,
"network_count": 69,
"subscribers_count": 1
}
```

<https://api.github.com/repos/AG3NISMO/ser321-spring24-B-agooden6/commits>



```
{
  "sha": "4ee7492a858861d5a586c21fe522e27dfca75139",
  "node_id": "C_kuOOLf-3ZnAKDR12Tc8OTJhODUwODYxZDVhNTg2YzIxZmU1MjJlJmJkZmhhNzUuUztk",
  "commit": {
    "author": {
      "name": "AlGooden",
      "email": "albert.gooden.jr@gmail.com",
      "date": "2024-03-19T19:35:50Z"
    },
    "committer": {
      "name": "AlGooden",
      "email": "albert.gooden.jr@gmail.com",
      "date": "2024-03-19T19:35:50Z"
    },
    "message": "Resolved merge conflicts",
    "tree": {
      "sha": "4da861190603bb57a9ab731793e1d5380350f448",
      "url": "https://api.github.com/repos/AG3NISO/ser321-spring24-8-agooden6/git/trees/4da861190603bb57a9ab731793e1d5380350f448"
    },
    "url": "https://api.github.com/repos/AG3NISO/ser321-spring24-8-agooden6/git/commits/4ee7492a858861d5a586c21fe522e27dfca75139",
    "comment_count": 0,
    "verification": {
      "verified": false,
      "reason": "unsigned",
      "signature": null,
      "payload": null
    }
  },
  "url": "https://api.github.com/repos/AG3NISO/ser321-spring24-8-agooden6/commits/4ee7492a858861d5a586c21fe522e27dfca75139",
  "html_url": "https://github.com/AG3NISO/ser321-spring24-8-agooden6/commit/4ee7492a858861d5a586c21fe522e27dfca75139",
  "comments_url": "https://api.github.com/repos/AG3NISO/ser321-spring24-8-agooden6/commits/4ee7492a858861d5a586c21fe522e27dfca75139/comments",
  "author": {
    "login": "AG3NISO",
    "id": 103863100,
    "node_id": "U_kgDOBjOTPA",
    "avatar_url": "https://avatars.githubusercontent.com/u/103863100?v=4",
    "gravatar_id": "",
    "url": "https://api.github.com/users/AG3NISO",
    "html_url": "https://github.com/AG3NISO",
    "followers_url": "https://api.github.com/users/AG3NISO/followers",
    "following_url": "https://api.github.com/users/AG3NISO/following{/other_user}",
    "gists_url": "https://api.github.com/users/AG3NISO/gists{/gist_id}",
    "starred_url": "https://api.github.com/users/AG3NISO/starred{/owner}/{repo}",
    "subscriptions_url": "https://api.github.com/users/AG3NISO/subscriptions",
    "organizations_url": "https://api.github.com/users/AG3NISO/orgs",
    "repos_url": "https://api.github.com/users/AG3NISO/repos",
    "events_url": "https://api.github.com/users/AG3NISO/events{/privacy}",
    "received_events_url": "https://api.github.com/users/AG3NISO/received_events",
    "type": "User",
    "site_admin": false
  },
  "committer": {
    "login": "AG3NISO",
    "id": 103863100,
    "node_id": "U_kgDOBjOTPA",
    "avatar_url": "https://avatars.githubusercontent.com/u/103863100?v=4",
    "gravatar_id": "",
    "url": "https://api.github.com/users/AG3NISO",
    "html_url": "https://github.com/AG3NISO",
    "followers_url": "https://api.github.com/users/AG3NISO/followers",
    "following_url": "https://api.github.com/users/AG3NISO/following{/other_user}",
    "gists_url": "https://api.github.com/users/AG3NISO/gists{/gist_id}",
    "starred_url": "https://api.github.com/users/AG3NISO/starred{/owner}/{repo}",
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    "organizations_url": "https://api.github.com/users/AG3NISO/orgs",
    "repos_url": "https://api.github.com/users/AG3NISO/repos",
    "events_url": "https://api.github.com/users/AG3NISO/events{/privacy}",
    "received_events_url": "https://api.github.com/users/AG3NISO/received_events",
    "type": "User",
    "site_admin": false
  },
  "parents": [
    {
      "sha": "43348d21eb6a6f728dec441b5fd38404e31dc3b6",
      "url": "https://api.github.com/repos/AG3NISO/ser321-spring24-8-agooden6/commits/43348d21eb6a6f728dec441b5fd38404e31dc3b6",
      "html_url": "https://github.com/AG3NISO/ser321-spring24-8-agooden6/commit/43348d21eb6a6f728dec441b5fd38404e31dc3b6"
    }
  ],
  "sha": "f6caaa5c67ad17c56ca0aa7d0b5a6912704c319a",
  "url": "https://api.github.com/repos/AG3NISO/ser321-spring24-8-agooden6/commits/f6caaa5c67ad17c56ca0aa7d0b5a6912704c319a"
}
```

```

    }
  }
  {
    "sha": "43348d21ab6e6f728dec441b5fd38484e31dc3b6",
    "node_id": "C_huDOlf-3ZNoA8QpUq42D1x2U1Zv2Wz14Z0VjHdQvYjvnD9W4DA8E7HvZ9Huyjy",
    "commit": {
      "author": {
        "name": "A100oden",
        "email": "Albert.gooden.frg@gmail.com",
        "date": "2024-03-19T19:34:43Z"
      },
      "committer": {
        "name": "A100oden",
        "email": "Albert.gooden.frg@gmail.com",
        "date": "2024-03-19T19:34:43Z"
      },
      "message": "Move JavaOraDla folder to Assignment1",
      "tree": {
        "sha": "5a06158d6ab8c287c5f64a40ce85fca67ee49e0",
        "url": "https://api.github.com/repos/AG3N15H0/ser321-spring24-8-agooden6/git/trees/5a06158d6ab8c287c5f64a40ce85fca67ee49e0"
      },
      "url": "https://api.github.com/repos/AG3N15H0/ser321-spring24-8-agooden6/git/commits/43348d21ab6e6f728dec441b5fd38484e31dc3b6",
      "comment_count": 0,
      "verification": {
        "verified": false,
        "reason": "unsigned",
        "signature": null,
        "payload": null
      }
    },
    "url": "https://api.github.com/repos/AG3N15H0/ser321-spring24-8-agooden6/commits/43348d21ab6e6f728dec441b5fd38484e31dc3b6",
    "html_url": "https://github.com/AG3N15H0/ser321-spring24-8-agooden6/commit/43348d21ab6e6f728dec441b5fd38484e31dc3b6",
    "comments_url": "https://api.github.com/repos/AG3N15H0/ser321-spring24-8-agooden6/commits/43348d21ab6e6f728dec441b5fd38484e31dc3b6/comments",
    "author": {
      "login": "AG3N15H0",
      "id": 103863300,
      "node_id": "U_g008j0TPa",
      "avatar_url": "https://avatars.githubusercontent.com/u/103863300?v=4",
      "gravatar_id": "",
      "url": "https://api.github.com/users/AG3N15H0",
      "html_url": "https://github.com/AG3N15H0",
      "followers_url": "https://api.github.com/users/AG3N15H0/followers",
      "following_url": "https://api.github.com/users/AG3N15H0/following{/other_user}",
      "gists_url": "https://api.github.com/users/AG3N15H0/gists{/gist_id}",
      "starred_url": "https://api.github.com/users/AG3N15H0/starred{/owner}/{repo}",
      "subscriptions_url": "https://api.github.com/users/AG3N15H0/subscriptions",
      "organizations_url": "https://api.github.com/users/AG3N15H0/orgs",
      "repos_url": "https://api.github.com/users/AG3N15H0/repos",
      "events_url": "https://api.github.com/users/AG3N15H0/events{/privacy}",
      "received_events_url": "https://api.github.com/users/AG3N15H0/received_events",
      "type": "User",
      "site_admin": false
    },
    "committer": {
      "login": "AG3N15H0",
      "id": 103863300,
      "node_id": "U_g008j0TPa",
      "avatar_url": "https://avatars.githubusercontent.com/u/103863300?v=4",
      "gravatar_id": "",
      "url": "https://api.github.com/users/AG3N15H0",
      "html_url": "https://github.com/AG3N15H0",
      "followers_url": "https://api.github.com/users/AG3N15H0/followers",
      "following_url": "https://api.github.com/users/AG3N15H0/following{/other_user}",
      "gists_url": "https://api.github.com/users/AG3N15H0/gists{/gist_id}",
      "starred_url": "https://api.github.com/users/AG3N15H0/starred{/owner}/{repo}",
      "subscriptions_url": "https://api.github.com/users/AG3N15H0/subscriptions",
      "organizations_url": "https://api.github.com/users/AG3N15H0/orgs",
      "repos_url": "https://api.github.com/users/AG3N15H0/repos",
      "events_url": "https://api.github.com/users/AG3N15H0/events{/privacy}",
      "received_events_url": "https://api.github.com/users/AG3N15H0/received_events",
      "type": "User",
      "site_admin": false
    },
    "parents": [
      {
        "sha": "748d7146b70369e27cea359d20b8b0eaf673d4b",
        "url": "https://api.github.com/repos/AG3N15H0/ser321-spring24-8-agooden6/commits/748d7146b70369e27cea359d20b8b0eaf673d4b",
        "html_url": "https://github.com/AG3N15H0/ser321-spring24-8-agooden6/commit/748d7146b70369e27cea359d20b8b0eaf673d4b"
      }
    ]
  }
}

```

## 2.2: Running a Simple Java WebServer



```

> Task :FunWebServer
Received: GET / HTTP/1.1
Received: Host: 54.153.73.208:9000
Received: Connection: keep-alive
Received: Upgrade-Insecure-Requests: 1
Received: User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/122.0.0.0 Safari/537.36
Received: Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.7
Received: Accept-Encoding: gzip, deflate
Received: Accept-Language: en-US,en;q=0.9
Received:
FINISHED PARSING HEADER

Received: ++>███&K+M%'&+3+~%Ng++ SQ+ ( +J+^=+++++AS.da+++\\e+e zz+ ++/e ,e0++++
/53::#
http/1.1-+Dih2+++

Received:
Received:

Received: ++c++
Received: ++ N_+++2}8.{+T+Y+ ,+q@.iK8@ +++++@+ ,+++███W+ )^+++Z+*L+V++++!%+*c.d(Q,+ (U
++:++Y++++a+Zp+++ ++_ [+tdz+++++++O,K++P+E+
'+'{#+++
+J+e+++++c+++~2C+ ,++++8++++<+++++1+E+T6+ c++wE;++++U&+++++B+'+3q+Y"&;1+V+R|+
+0|+++++24b++++w6+++ ++|UX+███"'+D+^+Sh+
Received: @+
+ A@+9J+m+B+++{+D+ $K++5+4|+++'+D+Z@+h+ ,++d++5Zjd ++ ++t+4j++++/e' bQ,+M
6

e++++X,+B!--++++4j4+vC
Received: +6++K+9
Received: +D++U+^+@++++?+Sg███+s
Ye~++++O+g++++b+++++ +++ + '[+R+*t+po+g+++9Zn gb+
9+e+,$+aeH++dOy++
=>w5
Received: +:+"U+ +++++X++Q4N+ )e 'y+++&+1m+N+Y+ ]++f+ ,e+++L++DS+0+ ]++o+++S+L
+!e+o++V++c+g:f\\++i+g++U++++Pum+oH|+++L++8I[Ze++ +D:++a+++v)*D++7'+c+L%I.+{ +++++
++7++mWz+V_++C+; (++++TV+/+
++OW+███L++++
t+} R5++++p+Y++B+fS+1+^+
++++{f+ac+5,+++ 'p
++B+q+r#5 (+n+1V++5@+i+p+++}dc'++fU+r+wVRV+@+6KL9[G;+v+ )+ , '3++L+e+ +p&Cu+++8u=
1Y4++j+a+l+o+v |G+1|+V++++O+
++pR<4+ q+4+kT+V+ z?IB+ ++u+4+ G+++ #EY+O+;███W++++Y++pD+ wH+
XC)+sDs+ +X+Y+d+S1+ 6+U+ r███+++++D++D++D++D+:+gt|@+C++1+++M+EF +++++
$+t+ ,+i+WY+ot+<"'+S+16+XUfWw q++++0$+
Received: t%r
Received: ++++++ '[+y+a'Tis+I+ ;$+S+uA0!1>+++>Fc?+H+++++ny+ \
Received: ++Sc|++P+7++2+1
+ B+
+I+~^\\++ ,+++++g1_pde)+Z█; b++++99n+azP+1+E%k+T+
+W+V(+A+++++e:8+W++++j|+q|M+P!>: ,+BgO+++fd| )+4C'b+EeL2M+e%
Received: wLy+U5+++\\+++++b+ r+e+G+1+++ +M++++ +B+ )%+++++h<Gm+
> :FunWebServer
Received: null
FINISHED PARSING HEADER

Received: null
FINISHED PARSING HEADER

<=====--> 75% EXECUTING [2m 42s]
> :FunWebServer

```



Not secure

54.153.73.208:9000

You can make the following GET requests

- /file/sample.html -- returns the content of the file sample.html
- /json -- returns a json of the /random request
- /random -- returns index.html

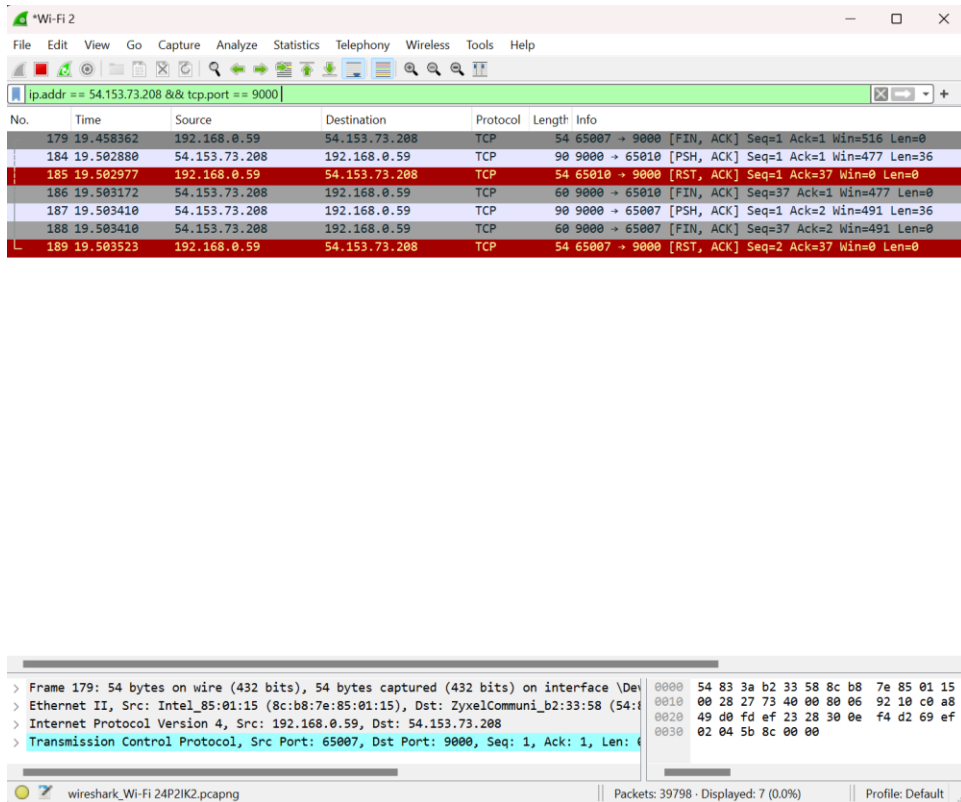
File Structure in www (you can use /file/www/FILENAME):

- index.html
- root.html

<http://localhost:9000/json>

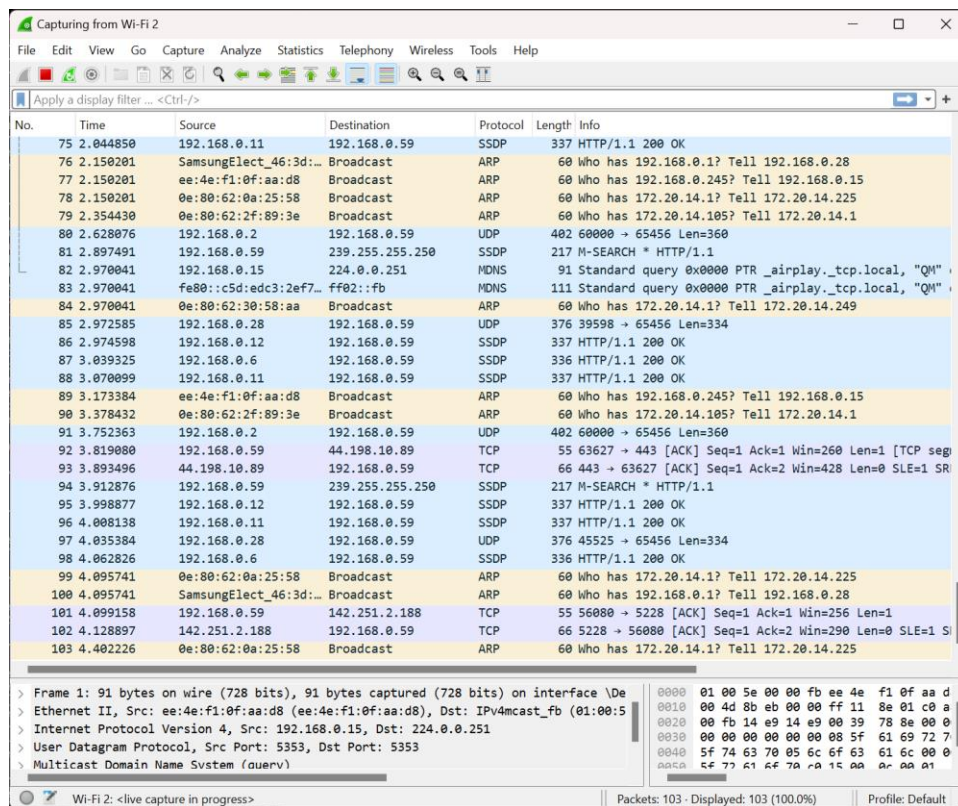
```
{"header": "bread", "image": "https://iili.io/Jj9MWG.jpg"}
```

## 2.3: Analyze what happens



1. It isolates the traffic between local machine and the server on the specific port where the server is running.
2. Clicking the "Random" button sends a smaller request to the server to get new random data without reloading the whole webpage.
3. 200 OK, 404 Not Found, 500 Internal Server Error
4. 200 OK means everything worked how it was supposed to, 404 Not found Server can't find the requested page, 500 internal server error something went wrong when processing page.
5. You can see the actual content the server sends back, which could be text or images.
6. HTTPS is more secure than HTTP. It secures information so only the information can be seen by who receives it.
7. Port 80 for HTTP, 443 for HTTPS.
8. It picks a port at random

## 2.4: Setting up a "real" WebServer



No.	Time	Source	Destination	Protocol	Length	Info
75	2.044850	192.168.0.11	192.168.0.59	SSDP	337	HTTP/1.1 200 OK
76	2.150201	SamsungElect_46:3d:...	Broadcast	ARP	60	Who has 192.168.0.1? Tell 192.168.0.28
77	2.150201	ee:4e:f1:0f:aa:d8	Broadcast	ARP	60	Who has 192.168.0.245? Tell 192.168.0.15
78	2.150201	0e:80:62:0a:25:58	Broadcast	ARP	60	Who has 172.20.14.1? Tell 172.20.14.225
79	2.354430	0e:80:62:2f:89:3e	Broadcast	ARP	60	Who has 172.20.14.105? Tell 172.20.14.1
80	2.628076	192.168.0.2	192.168.0.59	UDP	402	60000 → 65456 Len=360
81	2.897491	192.168.0.59	239.255.255.250	SSDP	217	M-SEARCH * HTTP/1.1
82	2.970041	192.168.0.15	224.0.0.251	MDNS	91	Standard query 0x0000 PTR _airplay._tcp.local, "QM"
83	2.970041	fe80::c5d:edc3:2ef7...	ff02::fb	MDNS	111	Standard query 0x0000 PTR _airplay._tcp.local, "QM"
84	2.970041	0e:80:62:30:58:aa	Broadcast	ARP	60	Who has 172.20.14.1? Tell 172.20.14.249
85	2.972585	192.168.0.28	192.168.0.59	UDP	376	39598 → 65456 Len=334
86	2.974598	192.168.0.12	192.168.0.59	SSDP	337	HTTP/1.1 200 OK
87	3.039325	192.168.0.6	192.168.0.59	SSDP	336	HTTP/1.1 200 OK
88	3.070099	192.168.0.11	192.168.0.59	SSDP	337	HTTP/1.1 200 OK
89	3.173384	ee:4e:f1:0f:aa:d8	Broadcast	ARP	60	Who has 192.168.0.245? Tell 192.168.0.15
90	3.378432	0e:80:62:2f:89:3e	Broadcast	ARP	60	Who has 172.20.14.105? Tell 172.20.14.1
91	3.752363	192.168.0.2	192.168.0.59	UDP	402	60000 → 65456 Len=360
92	3.819080	192.168.0.59	44.198.10.89	TCP	55	63627 → 443 [ACK] Seq=1 Ack=1 Win=260 Len=1 [TCP seq
93	3.893496	44.198.10.89	192.168.0.59	TCP	66	443 → 63627 [ACK] Seq=1 Ack=2 Win=428 Len=0 SLE=1 SR
94	3.912876	192.168.0.59	239.255.255.250	SSDP	217	M-SEARCH * HTTP/1.1
95	3.998877	192.168.0.12	192.168.0.59	SSDP	337	HTTP/1.1 200 OK
96	4.008138	192.168.0.11	192.168.0.59	SSDP	337	HTTP/1.1 200 OK
97	4.035384	192.168.0.28	192.168.0.59	UDP	376	45525 → 65456 Len=334
98	4.062826	192.168.0.6	192.168.0.59	SSDP	336	HTTP/1.1 200 OK
99	4.095741	0e:80:62:0a:25:58	Broadcast	ARP	60	Who has 172.20.14.1? Tell 172.20.14.225
100	4.095741	SamsungElect_46:3d:...	Broadcast	ARP	60	Who has 192.168.0.1? Tell 192.168.0.28
101	4.099158	192.168.0.59	142.251.2.188	TCP	55	56080 → 5228 [ACK] Seq=1 Ack=1 Win=256 Len=1
102	4.128897	142.251.2.188	192.168.0.59	TCP	66	5228 → 56080 [ACK] Seq=1 Ack=2 Win=290 Len=0 SLE=1 S
103	4.402226	0e:80:62:0a:25:58	Broadcast	ARP	60	Who has 172.20.14.1? Tell 172.20.14.225

> Frame 1: 91 bytes on wire (728 bits), 91 bytes captured (728 bits) on interface \Device...  
> Ethernet II, Src: ee:4e:f1:0f:aa:d8 (ee:4e:f1:0f:aa:d8), Dst: IPv4mcast\_fb (01:00:5...



## Welcome to nginx!

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to [nginx.org](https://nginx.org).  
Commercial support is available at [nginx.com](https://nginx.com).

*Thank you for using nginx.*

1. [HTTPS://54.153.73.208](https://54.153.73.208)
2. It is going to the port from the 2<sup>nd</sup> machine its different than before
3. HTTPS is more secure than HTTP for security only accessible from 1 link

```
aligo@awslog317 MINGW64 ~
$ cd /c:/Users/aligo/Downloads

aligo@awslog317 MINGW64 ~/Downloads
$ ssh -i ~/Downloads/32keyAWS.pem ec2-user@54.153.73.208

A newer release of "Amazon Linux" is available.
Version 2023.4.20240319!
Run "/usr/bin/dnf check-release-update" for full release and version update info

--
      ##B##
     V###V
    --V---
   https://aws.amazon.com/linux/amazon-linux-2023

--
      ##B##
     V###V
    --V---
   https://aws.amazon.com/linux/amazon-linux-2023

Last login: Fri Mar 22 19:53:15 2024 from 75.167.185.37
[ec2-user@ip-172-31-4-50 ~]$ sudo amazon-linux-extras install nginx1
sudo: amazon-linux-extras: command not found
[ec2-user@ip-172-31-4-50 ~]$ sudo yum install nginx
Last metadata expiration check: 1 day, 1:04:10 ago on Fri Mar 22 15:45:01 2024.
Dependencies resolved.

Package                               Architecture           Version                Repository              Size
Installing:
nginx                                x86_64                 1:1.24.0-1.amzn2023.0.2  amazonlinux             32 K
Installing dependencies:
generic-logos-httpd                  noarch                 18.0-0-12.amzn2023.0.3  amazonlinux             19 K
gsferrtools-libs-2.9.1-1.amzn2023.0.3 x86_64                 2.9.1-1.amzn2023.0.3    amazonlinux             308 K
libbunwind-1.4.0-5.amzn2023.0.2       x86_64                 1.4.0-5.amzn2023.0.2    amazonlinux             66 K
nginx-core                            x86_64                 1:1.24.0-1.amzn2023.0.2  amazonlinux             586 K
nginx-filesystem                      noarch                 1:1.24.0-1.amzn2023.0.2  amazonlinux             9.1 K
nginx-ninetytypes                    noarch                 2.1.49-3.amzn2023.0.3   amazonlinux             21 K

Transaction Summary
Install 7 Packages

Total download size: 1.0 M
Installed size: 3.4 M
Is this ok [y/N]: y
Downloading Packages:
(1/7): nginx-1:1.24.0-1.amzn2023.0.2.x86_64.rpm          537 kB/s | 32 kB  00:00
(2/7): gsferrtools-libs-2.9.1-1.amzn2023.0.3.x86_64.rpm  4.0 MB/s | 308 kB 00:00
(3/7): libbunwind-1.4.0-5.amzn2023.0.2.x86_64.rpm        3.4 MB/s | 66 kB  00:00
(4/7): nginx-core-1:1.24.0-1.amzn2023.0.2.x86_64.rpm     6.5 MB/s | 586 kB 00:00
(5/7): generic-logos-httpd-18.0-0-12.amzn2023.0.3.noarch rpm  1.2 MB/s | 19 kB  00:00
(6/7): nginx-filesystem-1:1.24.0-1.amzn2023.0.2.noarch.rpm 586 kB/s | 9.1 kB 00:00
(7/7): nginx-ninetytypes-2.1.49-3.amzn2023.0.3.noarch.rpm 1.6 MB/s | 21 kB  00:00
-----
6.0 MB/s | 1.0 MB  00:00

Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
Preparing...
Running scriptlet: nginx-filesystem-1:1.24.0-1.amzn2023.0.2.noarch
Installing : nginx-filesystem-1:1.24.0-1.amzn2023.0.2.noarch 1/7
Installing : nginx-ninetytypes-2.1.49-3.amzn2023.0.3.noarch 1/7
Installing : generic-logos-httpd-18.0-0-12.amzn2023.0.3.noarch 2/7
Installing : libbunwind-1.4.0-5.amzn2023.0.2.x86_64 3/7
Installing : gsferrtools-libs-2.9.1-1.amzn2023.0.3.x86_64 5/7
Installing : nginx-core-1:1.24.0-1.amzn2023.0.2.x86_64 6/7
Installing : nginx-1:1.24.0-1.amzn2023.0.2.x86_64 7/7
Running scriptlet: nginx-1:1.24.0-1.amzn2023.0.2.x86_64
Verifying : generic-logos-httpd-18.0-0-12.amzn2023.0.3.noarch 1/7
Verifying : nginx-1:1.24.0-1.amzn2023.0.2.x86_64 2/7
Verifying : gsferrtools-libs-2.9.1-1.amzn2023.0.3.x86_64 3/7
Verifying : libbunwind-1.4.0-5.amzn2023.0.2.x86_64 4/7
Verifying : generic-logos-httpd-18.0-0-12.amzn2023.0.3.noarch 5/7
Verifying : nginx-filesystem-1:1.24.0-1.amzn2023.0.2.noarch 6/7
Verifying : nginx-ninetytypes-2.1.49-3.amzn2023.0.3.noarch 7/7

WARNING:
A newer release of "Amazon Linux" is available.

Available Versions:

Version 2023.4.20240319:
Run the following command to upgrade to 2023.4.20240319:
dnf upgrade --releasever=2023.4.20240319

Release notes:
https://docs.aws.amazon.com/linux/al2023/release-notes/releNotes-2023.4.20240319.html

Installing:
generic-logos-httpd-18.0-0-12.amzn2023.0.3.noarch      gsferrtools-libs-2.9.1-1.amzn2023.0.3.x86_64      libbunwind-1.4.0-5.amzn2023.0.2.x86_64
nginx-1:1.24.0-1.amzn2023.0.2.x86_64                  nginx-core-1:1.24.0-1.amzn2023.0.2.x86_64        nginx-filesystem-1:1.24.0-1.amzn2023.0.2.noarch
```

```
WARNING:
A newer release of "Amazon Linux" is available.

Available Versions:

Version 2023.4.20240319:
Run the following command to upgrade to 2023.4.20240319:

dnf upgrade --releasever=2023.4.20240319

Release notes:
https://docs.aws.amazon.com/linux/al2023/release-notes/relnotes-2023.4.20240319.html
```

---

```
Installed:
generic-logos-httpd-18.0.0-12.amzn2023.0.3.noarch                gperf-tools-libs-2.9.1-1.amzn2023.0.3.x86_64          libunwind-1.4.0-5.amzn2023.0.2.x86_64
nginx-1.24.0-1.amzn2023.0.2.x86_64                               nginx-core-1.1.24.0-1.amzn2023.0.2.x86_64            nginx-filesystem-1.1.24.0-1.amzn2023.0.2.noarch
nginx-mime-types-2.1.49-3.amzn2023.0.3.noarch

Complete!
[ec2-user@ip-172-31-6-50 ~]$ sudo systemctl start nginx
Created symlink /etc/systemd/system/multi-user.target.wants/nginx.service → /usr/lib/systemd/system/nginx.service.
[ec2-user@ip-172-31-6-50 ~]$ sudo systemctl reload nginx
[ec2-user@ip-172-31-6-50 ~]$ sudo vim /etc/nginx/nginx.conf
[ec2-user@ip-172-31-6-50 ~]$ sudo systemctl status nginx
● nginx.service - The nginx HTTP and reverse proxy server
   Loaded: loaded (/usr/lib/systemd/system/nginx.service; enabled; preset: disabled)
   Active: active (running) since Sat 2024-03-23 16:49:56 UTC; 12min ago
     Process: 276598 ExecStart=/usr/sbin/nginx -s reload (code=exited, status=0/SUCCESS)
    Main PID: 276593 (nginx)
       Tasks: 2 (limit: 1114)
      Memory: 2.6M
         CPU: 10ms
        CGroup: /system.slice/nginx.service
               └─276593 "nginx: master process /usr/sbin/nginx"
                   └─276599 "nginx: worker process"
```

---

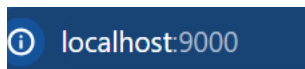
```
Mar 23 16:49:56 ip-172-31-6-50.us-west-1.compute.internal systemd[1]: Starting nginx.service - The nginx HTTP and reverse proxy server...
Mar 23 16:49:56 ip-172-31-6-50.us-west-1.compute.internal systemd[1]: nginx: the configuration file /etc/nginx/nginx.conf syntax is ok
Mar 23 16:49:56 ip-172-31-6-50.us-west-1.compute.internal systemd[1]: nginx: configuration file /etc/nginx/nginx.conf test is successful
Mar 23 16:50:02 ip-172-31-6-50.us-west-1.compute.internal systemd[1]: Started nginx.service - The nginx HTTP and reverse proxy server.
Mar 23 16:50:21 ip-172-31-6-50.us-west-1.compute.internal systemd[1]: Reloaded nginx.service - The nginx HTTP and reverse proxy server...
Mar 23 16:50:23 ip-172-31-6-50.us-west-1.compute.internal systemd[1]: Reloading nginx.service - The nginx HTTP and reverse proxy server.
[ec2-user@ip-172-31-6-50 ~]$ sudo nginx -t
nginx: the configuration file /etc/nginx/nginx.conf syntax is ok
nginx: configuration file /etc/nginx/nginx.conf test is successful
[ec2-user@ip-172-31-6-50 ~]$ sudo iptables -L
sudo: iptables: command not found
[ec2-user@ip-172-31-6-50 ~]$ sudo vim /etc/nginx/nginx.conf
[ec2-user@ip-172-31-6-50 ~]$ sudo nginx -t
nginx: [emerg] cannot load certificate "/etc/pki/nginx/server.crt": BIO_new_file() failed (SSL: error8000002:system library::No such file or directory:calling fopen(/etc/pki/nginx/server.crt, r) error:1B000080:BIO routines:NO such file or directory)
nginx: configuration file /etc/nginx/nginx.conf test failed
[ec2-user@ip-172-31-6-50 ~]$ ls -l /etc/pki/nginx/server.crt
-rw-r--r-- 1 ec2-user/private/server-key 1 /etc/pki/nginx/private/server-key
ls: cannot access '/etc/pki/nginx/server.crt': No such file or directory
ls: cannot access '/etc/pki/nginx/private/server-key': No such file or directory
[ec2-user@ip-172-31-6-50 ~]$ sudo mkdir -p /etc/pki/nginx/private
[ec2-user@ip-172-31-6-50 ~]$ sudo openssl req -x509 -nodes -days 365 -newkey rsa:2048 -keyout /etc/pki/nginx/private/server-key -out /etc/pki/nginx/server.crt
.....+-----+
You are about to be asked to enter information that will be incorporated
into your certificate request.
What you are about to enter is what is called a Distinguished Name or a DN.
There are quite a few fields but you can leave some blank
For some fields there will be a default value,
If you enter `.` , the field will be left blank.

Country Name (2 letter code) [XX]:US
State or Province Name (full name) []:Arizona
Locality Name (eg, city) [Default City]:Silber
Organization Name (eg, company) [Default Company Ltd]:ASU
Organizational Unit Name (eg, section) []:321
Common Name (eg, your name or your server's hostname) []:a1g
Email Address []:albert.gooden-jr@gmail.com
[ec2-user@ip-172-31-6-50 ~]$ sudo certtool -j /etc/pki/nginx/server.crt
{
  "certificate_key": "/etc/pki/nginx/private/server-key",
  "certificates": [
    {
      "path": "/etc/pki/nginx/cert.pem",
      "format": "PEM",
      "friendly_name": "nginx-cert"
    }
  ]
}
-bash: ssl_certificate: command not found
[ec2-user@ip-172-31-6-50 ~]$ sudo nginx -t
nginx: the configuration file /etc/nginx/nginx.conf syntax is ok
nginx: configuration file /etc/nginx/nginx.conf test is successful
[ec2-user@ip-172-31-6-50 ~]$ sudo systemctl reload nginx
[ec2-user@ip-172-31-6-50 ~]$ cd /usr/local/go/src/cmd/vendor/github.com/golang/protobuf
-bash: cd: /usr/local/go/src/cmd/vendor/github.com/golang/protobuf: No such file or directory
[ec2-user@ip-172-31-6-50 ~]$ scp -i ~/Downloads/MYawsKey.pem c:/users/algoo/spring24-8-agodn6/AAssignment2/webServer/js-webserver.jar ec2-user@54.153.73.208:
```

## 2.6: Multiply

The error code used is 400 Bad Request, meaning the code won't process a request due to a client error. It checks to make sure both parameters are correct returns error if they are not this way the server is still stable even when there is an error.

### 2.6.2 GitHub



---

**You can make the following GET requests**

- **/file/sample.html** -- returns the content of the file sample.html
- **/json** -- returns a json of the /random request
- **/random** -- returns index.html

**File Structure in www (you can use /file/www/FILENAME):**

- index.html
- root.html

### 2.6.3: Make your own requests

<http://localhost:9000/calculateBMI?weight=70&height=1.75>

---

The calculated BMI is: 22.857142857142858

### 2.6.5 Webserver for Everyone

<http://54.153.73.208:9000/>

---

**You can make the following GET requests**

- **/file/sample.html** -- returns the content of the file sample.html
- **/json** -- returns a json of the /random request
- **/random** -- returns index.html

**File Structure in www (you can use /file/www/FILENAME):**

- index.html
- root.html