Jonathan Blicharz
SER 321
Assignment 2
https://github.com/jblichar/ser321-fall23-B-jblichar.git

1.

https://api.github.com/repos/amehlhase316/ser321examples

api.github.com/repos/amehlhase316/ser321examples

```
{
  "id": 298682891,
  "node_id": "MDEwOlJlcG9zaXRvcnkyOTg2ODI4OTE=",
  "name": "ser321examples",
  "full_name": "amehlhase316/ser321examples",
  "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/ser321examples",
  "description": null,
  "fork": false,
  "url": "https://api.github.com/repos/amehlhase316/ser321examples",
  "forks_url": "https://api.github.com/repos/amehlhase316/ser321examples/forks",
  "keys_url": "https://api.github.com/repos/amehlhase316/ser321examples/keys{/key_id}",
  "collaborators_url": "https://api.github.com/repos/amehlhase316/ser321examples/collaborators{/collaborator}",
  "teams_url": "https://api.github.com/repos/amehlhase316/ser321examples/teams",
  "hooks_url": "https://api.github.com/repos/amehlhase316/ser321examples/hooks",
  "issue_events_url": "https://api.github.com/repos/amehlhase316/ser321examples/issues/events{/number}",
  "events_url": "https://api.github.com/repos/amehlhase316/ser321examples/events",
  "assignees_url": "https://api.github.com/repos/amehlhase316/ser321examples/assignees{/user}",
  "branches_url": "https://api.github.com/repos/amehlhase316/ser321examples/branches{/branch}",
  "tags_url": "https://api.github.com/repos/amehlhase316/ser321examples/tags",
  "blobs_url": "https://api.github.com/repos/amehlhase316/ser321examples/git/blobs{/sha}",
  "git_tags_url": "https://api.github.com/repos/amehlhase316/ser321examples/git/tags{/sha}",
  "git_refs_url": "https://api.github.com/repos/amehlhase316/ser321examples/git/refs{/sha}",
  "trees_url": "https://api.github.com/repos/amehlhase316/ser321examples/git/trees{/sha}",
  "statuses_url": "https://api.github.com/repos/amehlhase316/ser321examples/statuses/{sha}",
  "languages_url": "https://api.github.com/repos/amehlhase316/ser321examples/languages",
  "stargazers_url": "https://api.github.com/repos/amehlhase316/ser321examples/stargazers",
  "contributors_url": "https://api.github.com/repos/amehlhase316/ser321examples/contributors",
  "subscribers_url": "https://api.github.com/repos/amehlhase316/ser321examples/subscribers",
  "subscription_url": "https://api.github.com/repos/amehlhase316/ser321examples/subscription",
  "commits_url": "https://api.github.com/repos/amehlhase316/ser321examples/commits{/sha}",
  "git_commits_url": "https://api.github.com/repos/amehlhase316/ser321examples/git/commits{/sha}",
  "comments_url": "https://api.github.com/repos/amehlhase316/ser321examples/comments{/number}",
  "issue_comment_url": "https://api.github.com/repos/amehlhase316/ser321examples/issues/comments{/number}",
  "contents_url": "https://api.github.com/repos/amehlhase316/ser321examples/contents/{+path}",
```

← → C 🔒 api.github.com/repos/amehlhase316/ser321examples/commits?author=Hunter19823

[
  {
    "sha": "79552fb073c40dab40ae235c601ae002ac828b5e",
    "node_id": "C_kwDOEc2KC9oAKDc5NTUyZmIwNzNjNDBkYWI0MGFlMjM1YzYwMWFlMDAyYWM4MjhiNWU",
    "commit": {
      "author": {
        "name": "Hunter19823",
        "email": "73712365+Hunter19823@users.noreply.github.com",
        "date": "2023-02-01T19:52:30Z"
      },
      "committer": {
        "name": "GitHub",
        "email": "noreply@github.com",
        "date": "2023-02-01T19:52:30Z"
      },
      "message": "Added .idea folder to .gitignore for IntelliJ (#29)",
      "tree": {
        "sha": "d9e9222bf704308062160e0294dcc3a68d0b9a93",
        "url": "https://api.github.com/repos/amehlhase316/ser321examples/git/trees/d9e9222bf704308062160e0294dcc3a68d0b9a93"
      },
      "url": "https://api.github.com/repos/amehlhase316/ser321examples/git/commits/79552fb073c40dab40ae235c601ae002ac828b5e",
      "comment_count": 0,
      "verification": {
        "verified": true,
        "reason": "valid",
        "signature": "-----BEGIN PGP SIGNATURE-----\n\nwsBcBAABCAABQJj2sL+CRBK7hj4Ov3rIwAAQwkIAGNgUvhChOxscgsA7dihWa8r\nZ0qdYTTGe1YDoqOHqNeD34J9rUl
        "payload": "tree d9e9222bf704308062160e0294dcc3a68d0b9a93\nparent e913ea1a08615bd00355d62f1c20e9db8efca1f1\nauthor Hunter19823 <73712365+Hun
      }
    },
    "url": "https://api.github.com/repos/amehlhase316/ser321examples/commits/79552fb073c40dab40ae235c601ae002ac828b5e",
    "html_url": "https://github.com/amehlhase316/ser321examples/commit/79552fb073c40dab40ae235c601ae002ac828b5e",
    "comments_url": "https://api.github.com/repos/amehlhase316/ser321examples/commits/79552fb073c40dab40ae235c601ae002ac828b5e/comments",
    "author": {
      "login": "Hunter19823",
      "id": 73712365,
      "node_id": "MDQ6VXNlcjczNzEyMzY1",
      "avatar_url": "https://avatars.githubusercontent.com/u/73712365?v=4",
      "gravatar_id": "",
      "url": "https://api.github.com/users/Hunter19823",
      "html_url": "https://github.com/Hunter19823",
      "followers_url": "https://api.github.com/users/Hunter19823/followers",
      "following_url": "https://api.github.com/users/Hunter19823/following{/other_user}",
      "gists_url": "https://api.github.com/users/Hunter19823/gists{/gist_id}",
      "starred_url": "https://api.github.com/users/Hunter19823/starred{/owner}{/repo}",
      "subscriptions_url": "https://api.github.com/users/Hunter19823/subscriptions",
      "organizations_url": "https://api.github.com/users/Hunter19823/orgs",
      "repos_url": "https://api.github.com/users/Hunter19823/repos",
      "events_url": "https://api.github.com/users/Hunter19823/events{/privacy}",
      "received_events_url": "https://api.github.com/users/Hunter19823/received_events",
      "type": "User",
      "site_admin": false
    },
    "committer": {
      "login": "web-flow",
      "id": 19864447,
      "node_id": "MDQ6VXNlcjE5ODY0NDQ3",
      "avatar_url": "https://avatars.githubusercontent.com/u/19864447?v=4",
      "gravatar_id": "",
      "url": "https://api.github.com/users/web-flow",
      "html_url": "https://github.com/web-flow"

← → C 🔒 api.github.com/repos/amehlhase316/memoranda/pulls?state=closed

[
  {
    "url": "https://api.github.com/repos/amehlhase316/memoranda/pulls/37",
    "id": 1426941927,
    "node_id": "PR_kwDOCc3JOs5VDWfn",
    "html_url": "https://github.com/amehlhase316/memoranda/pull/37",
    "diff_url": "https://github.com/amehlhase316/memoranda/pull/37.diff",
    "patch_url": "https://github.com/amehlhase316/memoranda/pull/37.patch",
    "issue_url": "https://api.github.com/repos/amehlhase316/memoranda/issues/37",
    "number": 37,
    "state": "closed",
    "locked": false,
    "title": "Documentation",
    "user": {
      "login": "sjgarc20",
      "id": 127725103,
      "node_id": "U_kgDOB5zuLw",
      "avatar_url": "https://avatars.githubusercontent.com/u/127725103?v=4",
      "gravatar_id": "",
      "url": "https://api.github.com/users/sjgarc20",
      "html_url": "https://github.com/sjgarc20",
      "followers_url": "https://api.github.com/users/sjgarc20/followers",
      "following_url": "https://api.github.com/users/sjgarc20/following{/other_user}",
      "gists_url": "https://api.github.com/users/sjgarc20/gists{/gist_id}",
      "starred_url": "https://api.github.com/users/sjgarc20/starred{/owner}{/repo}",
      "subscriptions_url": "https://api.github.com/users/sjgarc20/subscriptions",
      "organizations_url": "https://api.github.com/users/sjgarc20/orgs",
      "repos_url": "https://api.github.com/users/sjgarc20/repos",
      "events_url": "https://api.github.com/users/sjgarc20/events{/privacy}",
      "received_events_url": "https://api.github.com/users/sjgarc20/received_events",
      "type": "User",
      "site_admin": false
    },
    "body": "Adding deliverable 3 documentation",
    "created_at": "2023-07-10T07:06:37Z",
    "updated_at": "2023-07-10T07:08:01Z",
    "closed_at": "2023-07-10T07:08:01Z",
    "merged_at": null,
    "merge_commit_sha": "a4366ce00ac4fc95a2849d0f9e678e3df4183c31",
    "assignee": null,
    "assignees": [

    ],
    "requested_reviewers": [

    ],
    "requested_teams": [

    ],
    "labels": [

    ],
    "milestone": null,
    "draft": false,
    "commits_url": "https://api.github.com/repos/amehlhase316/memoranda/pulls/37/commits",
    "review_comments_url": "https://api.github.com/repos/amehlhase316/memoranda/pulls/37/comments",
    "review_comment_url": "https://api.github.com/repos/amehlhase316/memoranda/pulls/comments{/number}",
    "comments_url": "https://api.github.com/repos/amehlhase316/memoranda/issues/37/comments",
    "statuses_url": "https://api.github.com/repos/amehlhase316/memoranda/statuses/d8747a205f7742792581d7a3c62f18702dffc026",
    "head": {
      "label": "sjgarc20:Documentation",
      "ref": "Documentation",
      "sha": "d8747a205f7742792581d7a3c62f18702dffc026",
      "user": {
        "login": "sjgarc20",
        "id": 127725103,
        "node_id": "U_kgDOB5zuLw",
        "avatar_url": "https://avatars.githubusercontent.com/u/127725103?v=4",
        "gravatar_id": "",
        "url": "https://api.github.com/users/sjgarc20",
        "html_url": "https://github.com/sjgarc20",

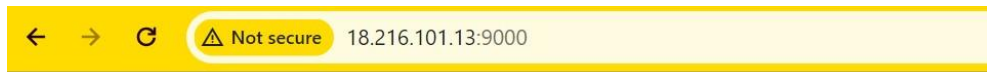https://api.github.com/repos/amehlhase316/memoranda/issues?per_page=3

← → C 🔒 api.github.com/repos/amehlhase316/memoranda/issues?per_page=3

[
  {
    "url": "https://api.github.com/repos/amehlhase316/memoranda/issues/38",
    "repository_url": "https://api.github.com/repos/amehlhase316/memoranda",
    "labels_url": "https://api.github.com/repos/amehlhase316/memoranda/issues/38/labels{/name}",
    "comments_url": "https://api.github.com/repos/amehlhase316/memoranda/issues/38/comments",
    "events_url": "https://api.github.com/repos/amehlhase316/memoranda/issues/38/events",
    "html_url": "https://github.com/amehlhase316/memoranda/pull/38",
    "id": 1951333801,
    "node_id": "PR_kwDOCc3JOs5dOcFT",
    "number": 38,
    "title": "jagoodin-Task 2.2 build file change ",
    "user": {
      "login": "jagoodin2023",
      "id": 134185224,
      "node_id": "U_kgDOB_-BCA",
      "avatar_url": "https://avatars.githubusercontent.com/u/134185224?v=4",
      "gravatar_id": "",
      "url": "https://api.github.com/users/jagoodin2023",
      "html_url": "https://github.com/jagoodin2023",
      "followers_url": "https://api.github.com/users/jagoodin2023/followers",
      "following_url": "https://api.github.com/users/jagoodin2023/following{/other_user}",
      "gists_url": "https://api.github.com/users/jagoodin2023/gists{/gist_id}",
      "starred_url": "https://api.github.com/users/jagoodin2023/starred{/owner}{/repo}",
      "subscriptions_url": "https://api.github.com/users/jagoodin2023/subscriptions",
      "organizations_url": "https://api.github.com/users/jagoodin2023/orgs",
      "repos_url": "https://api.github.com/users/jagoodin2023/repos",
      "events_url": "https://api.github.com/users/jagoodin2023/events{/privacy}",
      "received_events_url": "https://api.github.com/users/jagoodin2023/received_events",
      "type": "User",
      "site_admin": false
    },
    "labels": [

    ],
    "state": "open",
    "locked": false,
    "assignee": null,
    "assignees": [

    ],
    "milestone": null,
    "comments": 0,
    "created_at": "2023-10-19T05:51:45Z",
    "updated_at": "2023-10-19T05:51:45Z",
    "closed_at": null,
    "author_association": "NONE",
    "active_lock_reason": null,
    "draft": false,
    "pull_request": {
      "url": "https://api.github.com/repos/amehlhase316/memoranda/pulls/38",
      "html_url": "https://github.com/amehlhase316/memoranda/pull/38",
      "diff_url": "https://github.com/amehlhase316/memoranda/pull/38.diff",
      "patch_url": "https://github.com/amehlhase316/memoranda/pull/38.patch",
      "merged_at": null
    },
    "body": "- Updated the build file to allow creating a jar file.",
    "reactions": {
      "url": "https://api.github.com/repos/amehlhase316/memoranda/issues/38/reactions",
      "total_count": 0,
      "+1": 0,
      "-1": 0,
      "laugh": 0,
      "hooray": 0,
      "confused": 0,
      "heart": 0,
      "rocket": 0,
      "eyes": 0
    },
    "timeline_url": "https://api.github.com/repos/amehlhase316/memoranda/issues/38/timeline",
    "performed_via_github_app": null,
    "state_reason": null
  },
  {
    "url": "https://api.github.com/repos/amehlhase316/memoranda/issues/32",

1. I used the /pulls API to display all pull requests for the repo along with the query to show all pulls that were closed. I also used /issues to display all issues within the repo and the query to display a certain number of items on the page.

2. With stateful communication a response is expected from the server, and if one is not received, then the request is resent. Any interruption in communication causes data to be saved so you can pick up where you left off. In stateless, each communication is viewed as independent from one another, and no data is saved.

2.2

2.3

1. I used the filter tcp.port==9000 because that displays any traffic through port 9000.

2. When the button is pressed, a single call and a return call are made, and the new random image is displayed. When refresh is pressed, multiple calls are made back and forth, and a text file is passed to the machine from the IP address that doesn't appear when just pushing the random button.

3. 200, 400, 404

4. 200 – successful method call, 400 – entering invalid path, 404 – entering invalid file.

5. Yes, I'm able to see the html code of the main webpage.

6. HTTPs is more common because by monitoring any given port for an IP address, it's possible to see the source, destination, and all information passed between them when using HTTP.

7. It is listening to port 9000 in this case, but port 80 is the most common HTTP port.

8. 9000.

2.4

1. 18.216.101.13

2. Traffic has changed from port 9000 to port 80

3. It is still HTTP because no certificates have been set up to provide encryption. If encryption had been added, then it would be HTTPs and the port would be 443.
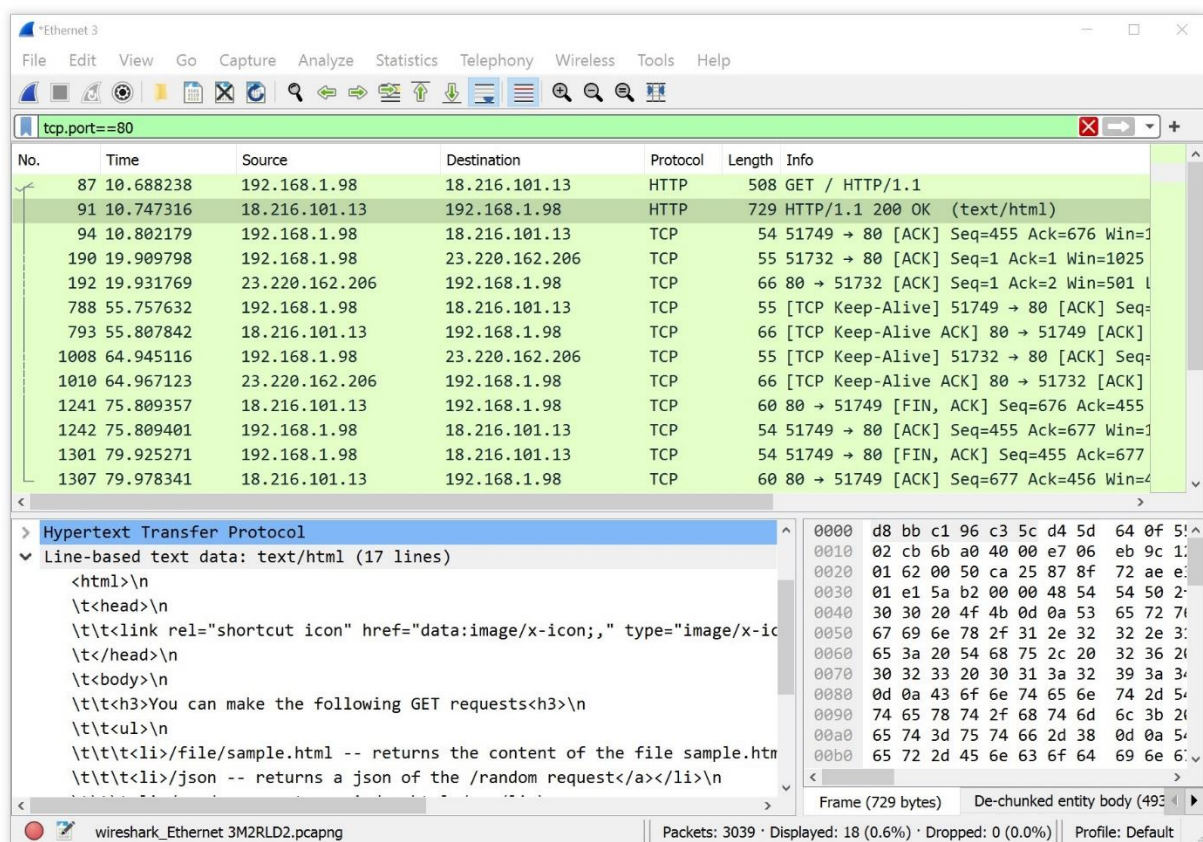
4.

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

Received:
FINISHED PARSING HEADER

Received: GET / HTTP/1.0
Received: Host: localhost:9000
Received: Connection: close
Received: User-Agent: Mozilla/5.0 (compatible; CensysInspect/1.1; +https://about
.censys.io/)
Received: Accept: */*
Received: Accept-Encoding: gzip
Received:
FINISHED PARSING HEADER

Received: GET /favicon.ico HTTP/1.0
Received: Host: localhost:9000
Received: Connection: close
Received: User-Agent: Mozilla/5.0 (compatible; CensysInspect/1.1; +https://about
.censys.io/)
Received: Accept-Encoding: gzip
Received:
FINISHED PARSING HEADER

<============---> 75% EXECUTING [13m 51s]
> :FunWebServer

Filter: tcp.port==80

No.	Time	Source	Destination	Protocol	Length	Info
87	10.688238	192.168.1.98	18.216.101.13	HTTP	508	GET / HTTP/1.1
91	10.747316	18.216.101.13	192.168.1.98	HTTP	729	HTTP/1.1 200 OK (text/html)
94	10.802179	192.168.1.98	18.216.101.13	TCP	54	51749 → 80 [ACK] Seq=455 Ack=676 Win=1
190	19.909798	192.168.1.98	23.220.162.206	TCP	55	51732 → 80 [ACK] Seq=1 Ack=1 Win=1025
192	19.931769	23.220.162.206	192.168.1.98	TCP	66	80 → 51732 [ACK] Seq=1 Ack=2 Win=501
788	55.757632	192.168.1.98	18.216.101.13	TCP	55	[TCP Keep-Alive] 51749 → 80 [ACK] Seq=
793	55.807842	18.216.101.13	192.168.1.98	TCP	66	[TCP Keep-Alive ACK] 80 → 51749 [ACK]
1008	64.945116	192.168.1.98	23.220.162.206	TCP	55	[TCP Keep-Alive] 51732 → 80 [ACK] Seq=
1010	64.967123	23.220.162.206	192.168.1.98	TCP	66	[TCP Keep-Alive ACK] 80 → 51732 [ACK]
1241	75.809357	18.216.101.13	192.168.1.98	TCP	60	80 → 51749 [FIN, ACK] Seq=676 Ack=455
1242	75.809401	192.168.1.98	18.216.101.13	TCP	54	51749 → 80 [ACK] Seq=455 Ack=677 Win=1
1301	79.925271	192.168.1.98	18.216.101.13	TCP	54	51749 → 80 [FIN, ACK] Seq=455 Ack=677
1307	79.978341	18.216.101.13	192.168.1.98	TCP	60	80 → 51749 [ACK] Seq=677 Ack=456 Win=4

> Hypertext Transfer Protocol
∨ Line-based text data: text/html (17 lines)
    <html>\n
    \t<head>\n
    \t\t<link rel="shortcut icon" href="data:image/x-icon;," type="image/x-ic
    \t</head>\n
    \t<body>\n
    \t\t<h3>You can make the following GET requests<h3>\n
    \t\t<ul>\n
    \t\t\t<li>/file/sample.html -- returns the content of the file sample.htm
    \t\t\t
/json -- returns a json of the /random request
\n

```
0000  d8 bb c1 96 c3 5c d4 5d   64 0f 5!
0010  02 cb 6b a0 40 00 e7 06   eb 9c 1:
0020  01 62 00 50 ca 25 87 8f   72 ae e:
0030  01 e1 5a b2 00 00 48 54   54 50 2·
0040  30 30 20 4f 4b 0d 0a 53   65 72 7(
0050  67 69 6e 78 2f 31 2e 32   32 2e 3:
0060  65 3a 20 54 68 75 2c 20   32 36 2(
0070  30 32 33 20 30 31 3a 32   39 3a 3·
0080  0d 0a 43 6f 6e 74 65 6e   74 2d 5·
0090  74 65 78 74 2f 68 74 6d   6c 3b 2·
00a0  65 74 3d 75 74 66 2d 38   0d 0a 5·
00b0  65 72 2d 45 6e 63 6f 64   69 6e 6:
```

Frame (729 bytes)   De-chunked entity body (493

wireshark_Ethernet 3M2RLD2.pcapng

Packets: 3039 · Displayed: 18 (0.6%) · Dropped: 0 (0.0%) | Profile: Default

2.6.4

1.

Request:

host:port/currency?curr=eur&conv=jpy

Path:

currency

Body Parameter:

curr (String) – required // Given to conversion API to be converted into another currency

conv (String) – optional // Given to conversion API as currency to convert to. USD is default.

Response:

[

{

"date": *current date*,

"conv": *new currency*

}

]

HTTP response status codes

200 – Ok, currency converted

400 – Bad Request, Parameters missing – requires one

404 – Not Found, Invalid URL – use valid currency codes

2.

Request:

host:port/volume?rad={radius}&h={height}

Path:

volume

Body Parameter:

rad (Integer) – required // Used as radius value in volume of cone equation.

h (Integer) – optional // Used as height value. 78 is default.

Response:

Volume is: *volume*

HTTP response status codes

200 – Ok, volume calculated correctly

400 – Bad Request, Parameters missing – requires one

412 – Precondition Failed, values are too large