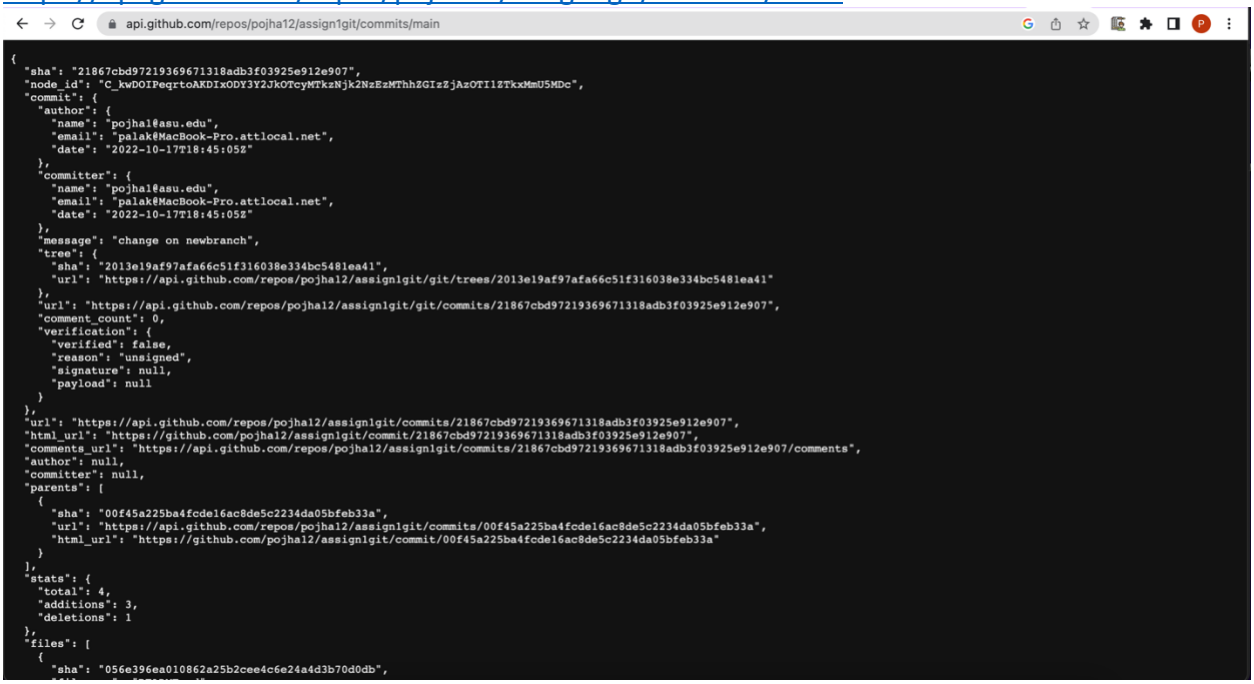
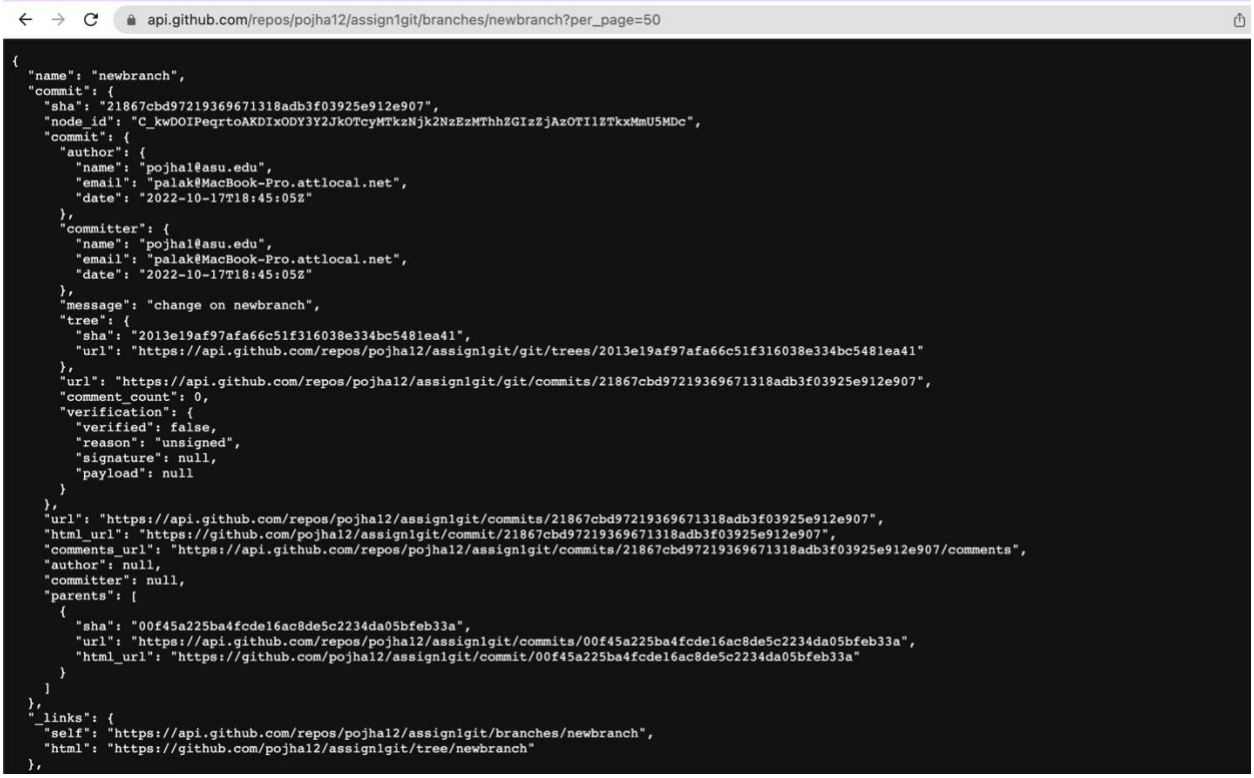
Link: https://github.com/pojha12/ser321-summer23-C-pojha1

https://api.github.com/repos/pojha12/assign1git/commits/main



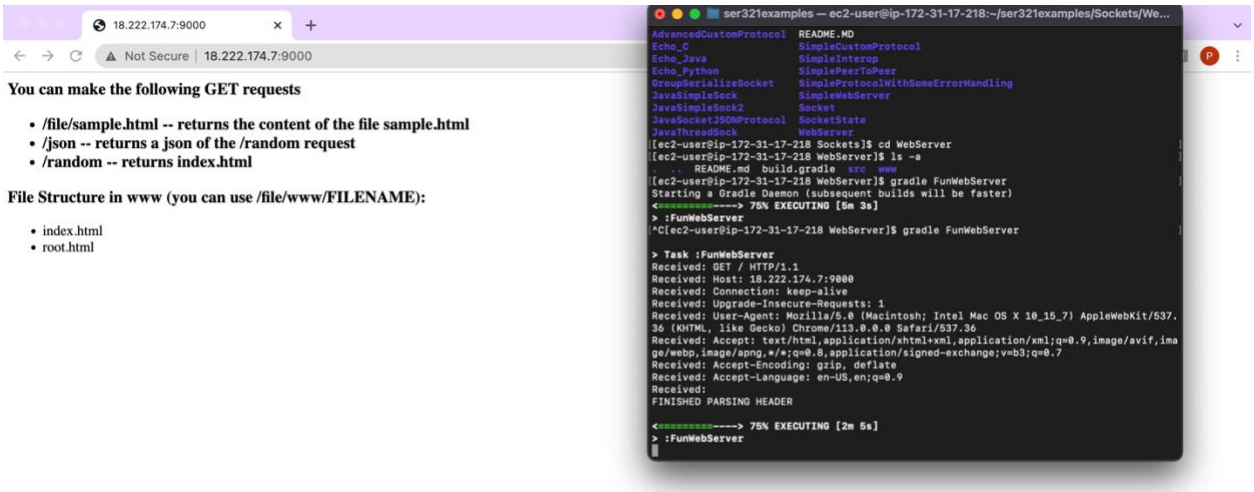
https://api.github.com/repos/pojha12/assign1git/branches/newbranch?per_page=50



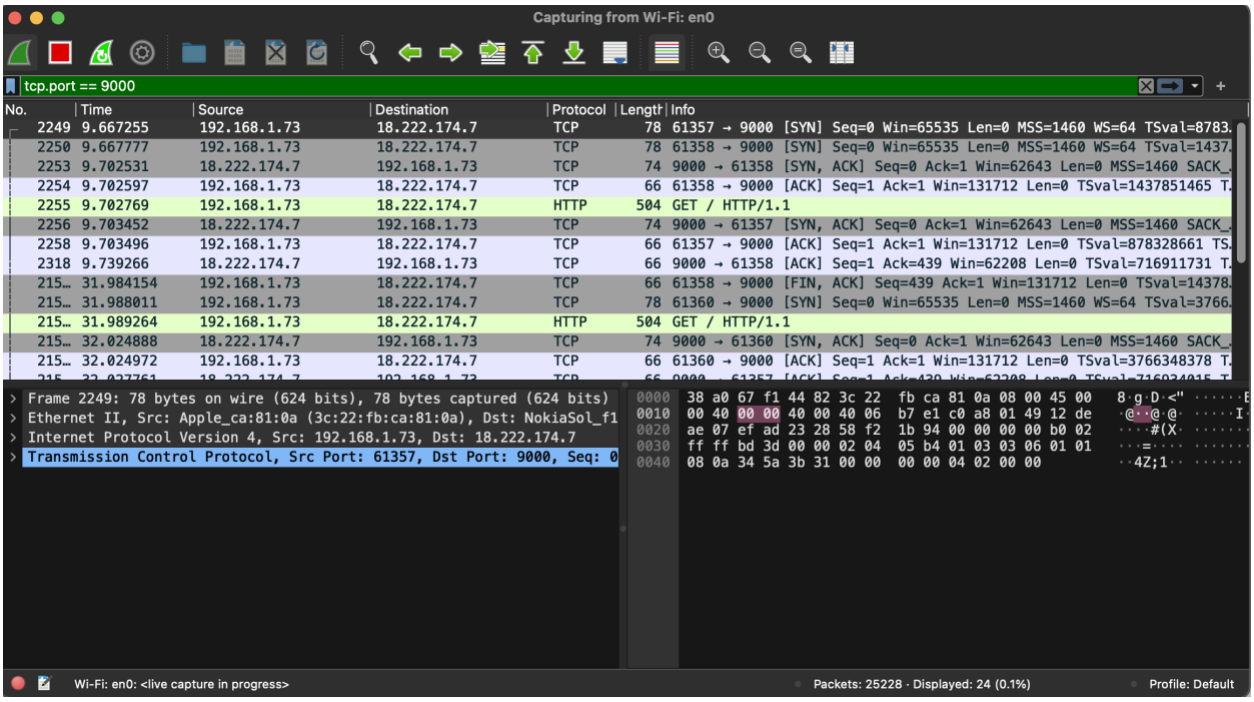
1. Explain the specific API calls you used.
   In the first call, I used main as the default branch. Commits/master gave me any commits the user had on the master branch. In the second call, I got the requests made in a specific branch. It was followed by the per_page argument which specifies the number of commits that are visible.
2. Explain the difference between stateless and a stateful communication.

   Stateless communication is when the response of a request doesn't depend on a previous request. The protocol HTTP/HTTPs doesn't require the server to retain the session information.
   Stateful communication is when the requests are dependent on the `previous requests. The protocol requires the server to save the session information.

2.2



2.3



1. What filter did you use? Explain why you chose that filter.
   The filter I used was tcp.port == 9000. We are dealing with a tcp connection and 9000 is the port that I was connecting to.

2. What happens when you are on /random and click the "Random" button compared to the browser refresh (you can also use the command line output that the WebServer generates to answer this)?
   When the random button is clicked, the server receives a GET /json HTTTP/1.1. When you refresh, the server receives a GET /random HTTP/1.1 and then a GET /json HTTP/1.1.

3. What kinds of response codes are you able to get through different requests to your server?
   I got 200, 400, and 404.

4. Explain the response codes you get and why you get them.
   Response code of 200 means that the request was successful. Response code of 400 means that the request was bad on the client side. Response code of 404 means that the server couldn't find the requested resource.

5. When you do a ipOfSecondMachine:9000 take a look what Wireshark generates as a server response. Are you able to find the data that the server sends back to you?
   Yes I am able to see.

6. Based on the above question explain why HTTPs is now more common than HTTP.
   HTTPs is more secure than HTTP.

7. What port does the server listen to for HTTP requests in our case and is that the most common port for HTTP?
   The server listened for port 9000 and the most common port is 80.

8. What local port is used when sending different requests to the WebServer? How does it differ to the traffic to your SMTP server from part 1?
   The port is 59948.

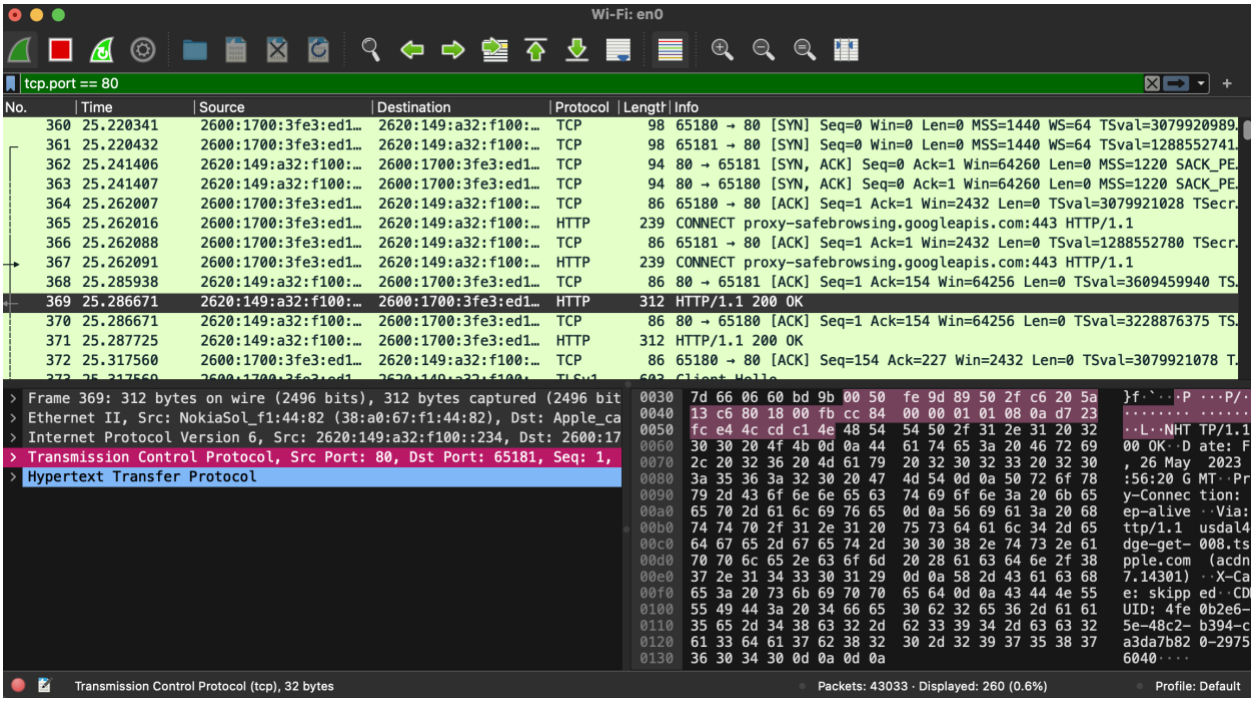
2.4

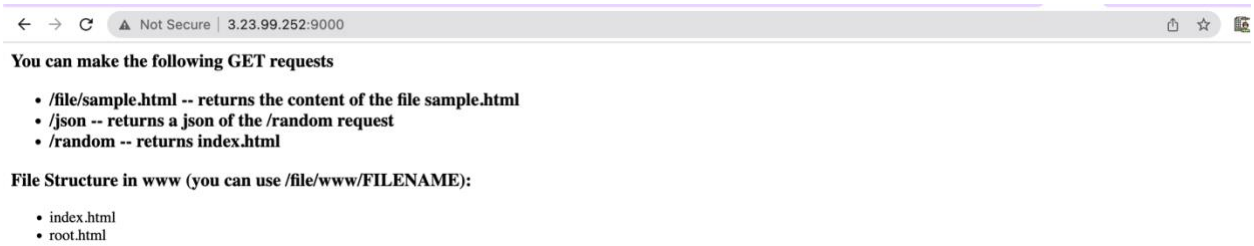
1. What is the URL that you can use now to reach the main page?
   http://3.23.99.252:9000/

2. Check your traffic to your Webserver. What port is the traffic going to now? Is it the same as previously used or is it and should it be different?
   The traffic is going through port 80 now. It was using port 9000 before.

3. Is it still HTTP or is it now HTTPs? Why?
   It's still HTTP.

4.





2.6.1

I used 206 for content missing. This is to ensure that there are 2 arguments when the request is made since multiplication cannot be done without 2 numbers. I also used 400 for bad request.