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CSE156l

Assignment 1

1. In this lab, we will create a simple http downloader.
2. To start my project, I first create a makefile that will compile my code. The compiler I use is clang. My makefile contains 3 parts. The first part is to use the .c file to create a .o file. The second part is to use the .o file to create the executable file. The final part is to clean the .o and executable files.
3. To start the coding, I first need to create a socket, which needs a port number, ip address. This will return a value, if the value is 0 then there is an error.
4. Then I need to connect to the server. To do that I will need a url and path to the page. Then it will return -1 if there is any error.
5. After connecting, I can read the sock like a file descriptor using syscall read.
6. First of all, I will need to write to the server using write. The content is GET /index.html HTTP/1.1\r\nHost: www.example.com\r\n\r\n. Then I will need to read the header from the content. To do that, I need to look for continuous \r\n in the content. Then, I will need to find content length inside the body. With the content length, I can download the body.
7. To test my code, I run the following code :
    a. ./bin/myweb www.softwareqatest.com 216.92.49.183:80/index.html
       Result:

b. /bin/myweb www.softwareqatest.com 216.92.49.183:80/index.html -h


```
HTTP/1.1 200 OK
Date: Wed, 12 Jan 2022 21:56:13 GMT
Server: Apache
Last-Modified: Fri, 05 Feb 2021 03:42:22 GMT
Accept-Ranges: bytes
Content-Length: 10445
Content-Type: text/html
```

c. ./bin/myweb pudim.com.br 54.207.20.104:80/index.html

```
HTTP/1.1 200 OK
Date: Wed, 12 Jan 2022 22:03:09 GMT
Server: Apache/2.4.34 (Amazon) OpenSSL/1.0.2k-fips PHP/5.5.38
Last-Modified: Wed, 23 Dec 2015 01:18:20 GMT
ETag: "353-527867f65e8ad"
Accept-Ranges: bytes
Content-Length: 851
Content-Type: text/html; charset=UTF-8
```

D. ./bin/myweb www.google.com 142.250.176.4/index.html
Has chunk

```
P3P: CP="This is not a P3P policy! See g.co/p3phelp for more info."
Server: gws
X-XSS-Protection: 0
X-Frame-Options: SAMEORIGIN
Set-Cookie: 1P_JAR=2022-01-12-23; expires=Fri, 11-Feb-2022 23:18:36 GMT; path=/; domain=.google.com; Secure
Set-Cookie: NID=511=kudOEtrIEduigLFH0LGCyjQ5YABXEPhKul1ch_tgSH6pF1xmq9O9Y8JSDKee1R49CTwFfiR8tFv2psSetdkEcY2Gb_BtUGqwJ1GBMHIOdP27pUpDACC0q5LBxwjS0C6bFrd-v7Zg5gJOCI4Egr
xkpI5okrXkCgV7iJNQHpxW-WY; expires=Thu, 14-Jul-2022 23:18:36 GMT; path=/; domain=.google.com; HttpOnly
Accept-Ranges: none
Vary: Accept-Encoding
Transfer-Encoding: chunked
has chunk
```

F.

```
(base) dongzihao@eduroam-169-233-211-22 Assignment_1 % ./bin/myweb pudim.com.br 54.207.104../index.html
GET /index.html HTTP/1.1
Host: pudim.com.br


ip FORMAT Incorrect
```

Incorrect IP address.