

Network final assignment  
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Part1:

works as it is spoused to.

below are screenshots of the results.

```
yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university/2nd year 2nd semester/networking/fina
le assignmet$
yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university/2nd year 2nd semester/networking/fina
le assignmet$
yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university/2nd year 2nd semester/networking/fina
le assignmet$ gcc -o s send_udp.c
yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university/2nd year 2nd semester/networking/fina
le assignmet$ ./s localhost
yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university/2nd year 2nd semester/networking/fina
le assignmet$

yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university/2nd year 2nd semester/networking/fina
le assignmet$ ./r
RECV UDP
Local socket is:: --IP: 0.0.0.0 -- port: 13107

waiting to recieve a packet
recv_udp:
Packet from:: --IP: 127.0.0.1 -- port: 34717
Got data ::<45864>

waiting to recieve a packet
```

```
PROBLEMS OUTPUT TERMINAL
▼ TERMINAL
yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university/2nd year 2nd semester/networking/fina
le assignmet$ ./s localhost
src port 13107 , dest port 13000
^C
yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university/2nd year 2nd semester/networking/fina
le assignmet$

yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university/2nd year 2nd semester/networking/fina
le assignmet$ ./r
Segmentation fault (core dumped)
yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university/2nd year 2nd semester/networking/fina
le assignmet$ ./g localhost 13000
Relaying data ::<1>
i am port 13000, recived from port 9114, sending to port 13001
Relaying data ::<3>
i am port 13000, recived from port 9114, sending to port 13001
Relaying data ::<4>
i am port 13000, recived from port 9114, sending to port 13001
Relaying data ::<5>
i am port 13000, recived from port 9114, sending to port 13001
Relaying data ::<8>
i am port 13000, recived from port 9114, sending to port 13001
Relaying data ::<10>
i am port 13000, recived from port 9114, sending to port 13001

yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university/2nd year 2nd semester/networking/fina
le assignmet$ ./si 1
Got data ::<1>
i am port 13001, recived from port 13000
Got data ::<3>
i am port 13001, recived from port 13000
Got data ::<4>
i am port 13001, recived from port 13000
Got data ::<5>
i am port 13001, recived from port 13000
Got data ::<8>
i am port 13001, recived from port 13000
Got data ::<10>
i am port 13001, recived from port 13000
```

## Part2/Part1:

The code in the files net\_client.c and net\_server.c did not have matching ports, and net\_client.c didn't have an IP address.

when running the code in these configurations these are my results:

	Nonmatching port	Matching port
No IP	Error establishing communication: Network is unreachable. (image1)	Error establishing communication: Network is unreachable. (image2)
Wrong IP	Error establishing communication: NO route to host. (image3)	Error establishing communication: NO route to host. (image4)
Correct IP	Error establishing communication: Connection refused. (image5)	No errors- printed what it was spoused to. (image6)

When trying to run the client without the server running and the correct IP and port, we get an error. Error establishing communication: NO route to host. (image7)

Image1	<pre> 20 #define IP_ADDRESS "???" 21 #define PORT 9998 22 </pre> <p>PROBLEMS OUTPUT <b>TERMINAL</b></p> <p>▼ TERMINAL</p> <pre> /2nd year 2nd semester/networking/finale assignmet\$ gcc -o tcpc net_client.c -w yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university /2nd year 2nd semester/networking/finale assignmet\$ ./tcpc Client is alive and establishing socket connection. Error establishing communications: Network is unreachable yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university /2nd year 2nd semester/networking/finale assignmet\$ </pre>	<pre> 20 #define PORT 9999 21 #define SIM_LENGTH 10 22 </pre> <p>PROBLEMS OUTPUT <b>TERMINAL</b></p> <p>▼ TERMINAL</p> <pre> /2nd year 2nd semester/networking/finale assignmet\$ gcc -o tcpc net_server.c -w yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university/2nd year 2nd semester/networking/finale assignmet\$ gcc -o tcps net_server.c -w yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university/2nd year 2nd semester/networking/finale assignmet\$ ./tcps </pre>
Image2	<pre> 20 #define IP_ADDRESS "???" 21 #define PORT 9999 22 </pre> <p>PROBLEMS OUTPUT <b>TERMINAL</b></p> <p>▼ TERMINAL</p> <pre> /2nd year 2nd semester/networking/finale assignmet\$ gcc -o tcpc net_client.c -w yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university /2nd year 2nd semester/networking/finale assignmet\$ ./tcpc Client is alive and establishing socket connection. Error establishing communications: Network is unreachable yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university /2nd year 2nd semester/networking/finale assignmet\$ </pre>	<pre> 20 #define PORT 9999 21 #define SIM_LENGTH 10 22 </pre> <p>PROBLEMS OUTPUT <b>TERMINAL</b></p> <p>▼ TERMINAL</p> <pre> /2nd year 2nd semester/networking/finale assignmet\$ gcc -o tcpc net_server.c -w yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university/2nd year 2nd semester/networking/finale assignmet\$ gcc -o tcps net_server.c -w yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university/2nd year 2nd semester/networking/finale assignmet\$ ./tcps </pre>
Image3	<pre> 19 #define IP_ADDRESS "10.9.13.221" 20 // #define IP_ADDRESS "???" 21 #define PORT 9998 22 </pre> <p>PROBLEMS OUTPUT <b>TERMINAL</b></p> <p>▼ TERMINAL</p> <pre> /2nd year 2nd semester/networking/finale assignmet\$ gcc -o tcpc net_client.c -w yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university /2nd year 2nd semester/networking/finale assignmet\$ ./tcpc Client is alive and establishing socket connection. Error establishing communications: No route to host yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university /2nd year 2nd semester/networking/finale assignmet\$ </pre>	<pre> 19 #define PORT 9999 20 #define SIM_LENGTH 10 21 </pre> <p>PROBLEMS OUTPUT <b>TERMINAL</b></p> <p>▼ TERMINAL</p> <pre> /2nd year 2nd semester/networking/finale assignmet\$ gcc -o tcpc net_server.c -w yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university/2nd year 2nd semester/networking/finale assignmet\$ gcc -o tcps net_server.c -w yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university/2nd year 2nd semester/networking/finale assignmet\$ ./tcps </pre>



Image4	<pre> 18 #define SIM_LENGTH 10 19 #define IP_ADDRESS "10.9.13.221" 20 // #define IP_ADDRESS "???" 21 #define PORT 9999 22 </pre> <p>PROBLEMS OUTPUT <b>TERMINAL</b></p> <p>TERMINAL</p> <pre> /2nd year 2nd semester/networking/finale assignmet\$ gcc -o tcpc net_client.c -w yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university /2nd year 2nd semester/networking/finale assignmet\$ ./tcpc Client is alive and establishing socket connection. Error establishing communications: No route to host yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university /2nd year 2nd semester/networking/finale assignmet\$ </pre> <pre> 19 20 #define PORT 9999 21 #define SIM_LENGTH 10 22 </pre> <pre> Server has written 10 to socket. yehudit@yehudit-Aspire-E1-572:~/Documents/ariel uni versity/2nd year 2nd semester/networking/finale ass ignmet\$ gcc -o tcps net_server.c -w yehudit@yehudit-Aspire-E1-572:~/Documents/ariel uni versity/2nd year 2nd semester/networking/finale ass ignmet\$ ./tcps </pre>
Image5	<pre> #define IP_ADDRESS "10.9.13.222" // #define IP_ADDRESS "???" #define PORT 9998 </pre> <p>PROBLEMS OUTPUT <b>TERMINAL</b></p> <p>TERMINAL</p> <pre> /2nd year 2nd semester/networking/finale assignmet\$ gcc -o tcpc net_client.c -w yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university /2nd year 2nd semester/networking/finale assignmet\$ ./tcpc Client is alive and establishing socket connection. Error establishing communications: Connection refused yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university /2nd year 2nd semester/networking/finale assignmet\$ </pre> <pre> 19 20 #define PORT 9999 21 #define SIM_LENGTH 10 22 </pre> <pre> ^C yehudit@yehudit-Aspire-E1-572:~/Documents/ariel uni versity/2nd year 2nd semester/networking/finale ass ignmet\$ gcc -o tcps net_server.c -w yehudit@yehudit-Aspire-E1-572:~/Documents/ariel uni versity/2nd year 2nd semester/networking/finale ass ignmet\$ ./tcps </pre>
Image6	<pre> #define IP_ADDRESS "10.9.13.222" // #define IP_ADDRESS "???" #define PORT 9999 </pre> <pre> 18 19 20 #define PORT 9999 21 #define SIM_LENGTH 10 22 23 int main(void) </pre> <p>PROBLEMS OUTPUT <b>TERMINAL</b></p> <p>TERMINAL</p> <pre> yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university /2nd year 2nd semester/networking/finale assignmet\$ gcc -o tcpc net_client.c -w yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university /2nd year 2nd semester/networking/finale assignmet\$ ./tcpc Client is alive and establishing socket connection. Client has received 1 from socket. Client has received 2 from socket. Client has received 3 from socket. Client has received 4 from socket. Client has received 5 from socket. Client has received 6 from socket. Client has received 7 from socket. Client has received 8 from socket. Client has received 9 from socket. Client has received 10 from socket. Exiting now. yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university </pre> <pre> yehudit@yehudit-Aspire-E1-572:~/Documents/ariel uni versity/2nd year 2nd semester/networking/finale ass ignmet\$ gcc -o tcps net_server.c -w yehudit@yehudit-Aspire-E1-572:~/Documents/ariel uni versity/2nd year 2nd semester/networking/finale ass ignmet\$ ./tcps Server has written 1 to socket. Server has written 2 to socket. Server has written 3 to socket. Server has written 4 to socket. Server has written 5 to socket. Server has written 6 to socket. Server has written 7 to socket. Server has written 8 to socket. Server has written 9 to socket. Server has written 10 to socket. yehudit@yehudit-Aspire-E1-572:~/Documents/ariel uni versity/2nd year 2nd semester/networking/finale ass </pre>
Image7	<pre> Client is alive and establishing socket connection. Error establishing communications: No route to host yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university /2nd year 2nd semester/networking/finale assignmet\$ ./tcpc Client is alive and establishing socket connection. Error establishing communications: No route to host yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university /2nd year 2nd semester/networking/finale assignmet\$ </pre> <pre> ignmet\$ gcc -o tcps net_server.c -w yehudit@yehudit-Aspire-E1-572:~/Documents/ariel uni versity/2nd year 2nd semester/networking/finale ass ignmet\$ ./tcps ^C yehudit@yehudit-Aspire-E1-572:~/Documents/ariel uni versity/2nd year 2nd semester/networking/finale ass ignmet\$ </pre>

The code for the net\_client that can accept the hostname is in the file `new_client.c`. here are the results of running the code

```
yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university/2nd year 2nd semester/networking/final assignment$ ./newtcpc yehudit-Aspire-E1-572
Address for yehudit-Aspire-E1-572 is 127.0.1.1
Client is alive and establishing socket connection.
Client has received 1 from socket.
Client has received 2 from socket.
Client has received 3 from socket.
Client has received 4 from socket.
Client has received 5 from socket.
Client has received 6 from socket.
Client has received 7 from socket.
Client has received 8 from socket.
Client has received 9 from socket.
Client has received 10 from socket.
Exiting now.
yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university/2nd year 2nd semester/networking/final assignment$

yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university/2nd year 2nd semester/networking/final assignment$ ./tcps
Server has written 1 to socket.
Server has written 2 to socket.
Server has written 3 to socket.
Server has written 4 to socket.
Server has written 5 to socket.
Server has written 6 to socket.
Server has written 7 to socket.
Server has written 8 to socket.
Server has written 9 to socket.
Server has written 10 to socket.
yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university/2nd year 2nd semester/networking/final assignment$
```

## Part2/Part2:

the code for this part is in the file tcp2.c

when running the code with <http://www.yahoo.com> I got the following result:

```
yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university/2nd year 2nd semester/networking/final assignment$ ./t http://www.yahoo.com
Address for www.yahoo.com is 87.248.100.215
Client is alive and establishing socket connection.
GET / HTTP/1.0
HOST: www.yahoo.com

CONNECTED!

HTTP/1.0 301 Moved Permanently
Date: Tue, 02 Aug 2022 13:19:28 GMT
Server: ATS
Cache-Control: no-store, no-cache
Content-Type: text/html
Content-Language: en
Connection: keep-alive
Content-Security-Policy: frame-ancestors 'self' https://*.builtbygirls.com https://*.rivals.com https://*.engadget.com https://*.intheknow.com https://*.autoblog.com https://*.techcrunch.com https://*.yahoo.com https://*.aol.com https://*.huffingtonpost.com https://*.oath.com https://*.search.yahoo.com https://*.search.aol.com https://*.search.huffpost.com https://*.onesearch.com https://*.verizonmedia.com https://*.publishing.oath.com https://*.autoblog.com; sandbox allow-forms allow-same-origin allow-scripts allow-popups allow-popups-to-escape-sandbox allow-presentation; report-uri https://csp.yahoo.com/beacon/csp?src=ats&site=frontpage&region=US&lang=en-US&device=&yrld=2963gl9hei930&partner=;
X-Frame-Options: SAMEORIGIN
X-XSS-Protection: 1; report="https://csp.yahoo.com/beacon/csp?src=fp-hpkp-www"
Location: https://www.yahoo.com/
Content-Length: 8

redirect

Exiting now.
```

I couldn't access the website because it was permanently removed and I was told to try to access the same website with https.

when running the code <http://www.yahoo.com/does-not-exist> I got the following result:

```
yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university/2nd year 2nd semester/networking/final assignment$ ./t http://www.yahoo.com/does-not-exist
Address for www.yahoo.com is 87.248.100.215
Client is alive and establishing socket connection.
GET /does-not-exist HTTP/1.0
HOST: www.yahoo.com

CONNECTED!

HTTP/1.0 301 Moved Permanently
Date: Tue, 02 Aug 2022 14:02:23 GMT
Server: ATS
Cache-Control: no-store, no-cache
Content-Type: text/html
Content-Language: en
Connection: keep-alive
Content-Security-Policy: frame-ancestors 'self' https://*.builtbygirls.com https://*.rivals.com https://*.engadget.com https://*.intheknow.com https://*.autoblog.com https://*.techcrunch.com https://*.yahoo.com https://*.aol.com https://*.huffingtonpost.com https://*.oath.com https://*.search.yahoo.com https://*.search.aol.com https://*.search.huffpost.com https://*.onesearch.com https://*.verizonmedia.com https://*.publishing.oath.com https://*.autoblog.com; sandbox allow-forms allow-same-origin allow-scripts allow-popups allow-popups-to-escape-sandbox allow-presentation; report-uri https://csp.yahoo.com/beacon/csp?src=ats&site=frontpage&region=US&lang=en-US&device=&yrld=8kkgkmhheibj&partner=;
X-Frame-Options: SAMEORIGIN
X-XSS-Protection: 1; report="https://csp.yahoo.com/beacon/csp?src=fp-hpkp-www"
Location: https://www.yahoo.com/does-not-exist
Content-Length: 8

redirect

Exiting now.
```

same as with yahoo.



when running the code with <http://ab-webcam-jeru.epizy.com/?i=2> I got the following result:

```
yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university/2nd year 2nd semester/networking/final assignment$ ./t http://ab-webcam-jeru.epizy.com/?i=2
Address for ab-webcam-jeru.epizy.com is 185.27.134.130
Client is alive and establishing socket connection.
GET /?i=2 HTTP/1.0
HOST: ab-webcam-jeru.epizy.com

CONNECTED!

HTTP/1.1 200 OK
Server: nginx
Date: Tue, 02 Aug 2022 13:24:00 GMT
Content-Type: text/html
Content-Length: 835
Connection: close
Vary: Accept-Encoding
Expires: Thu, 01 Jan 1970 00:00:01 GMT
Cache-Control: no-cache

<html><body><script type="text/javascript" src="/aes.js" ></script><script>function toNumbers(d){var e=[];d.replace(/./g,function(d){e.push(parseInt(d,16));});return e}function toHex(){for(var d=[],d1=arguments.length&&arguments[0].constructor==Array?arguments[0]:arguments,e="",f=0;f<d.length;f++)e+=(16>d[f]?"0":"")+d[f].toString(16);return e.toLowerCase()}var a=toNumbers("f655ba9d09a112d4968c63579db590b4"),b=toNumbers("98344c2eee86c3994890592585b49f80"),c=toNumbers("eb26b5f18166a64ede244fa8be1036c2");document.cookie=" test="+toHex(slowAES.decrypt(c,2,a,b))+"; expires=Thu, 31-Dec-37 23:55:55 GMT; path=/"; location.href="http://ab-webcam-jeru.epizy.com/?i=3";</script><noscript>This site requires Javascript to work, please enable Javascript in your browser or use a browser with Javascript support</noscript></body></html>

Exiting now.
```

I was able to access the website because it is an http, but couldn't see the data because it was in javascript and not html.

when running the code with <http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file1.html> I got the following result:

```
yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university/2nd year 2nd semester/networking/final assignment$ ./t http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file1.html
Address for gaia.cs.umass.edu is 128.119.245.12
Client is alive and establishing socket connection.
GET /wireshark-labs/HTTP-wireshark-file1.html HTTP/1.0
HOST: gaia.cs.umass.edu

CONNECTED!

HTTP/1.1 200 OK
Date: Tue, 02 Aug 2022 13:32:49 GMT
Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.30 mod_perl/2.0.11 Perl/v5.16.3
Last-Modified: Tue, 02 Aug 2022 05:59:02 GMT
ETag: "80-5e53bd034cb84"
Accept-Ranges: bytes
Content-Length: 128
Connection: close
Content-Type: text/html; charset=UTF-8

<html>
Congratulations. You've downloaded the file
http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file1.html!
</html>

Exiting now.
```

I was able to access the website because it is an http, and I could see the file because it was in html.

when running the code with <http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file1> I got the following result:

```
yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university/2nd year 2nd semester/networking/fina
le assignmet$ ./t http://gaia.cs.umass.edu/wireshark-labs/HTTP-wireshark-file1
Address for gaia.cs.umass.edu is 128.119.245.12
Client is alive and establishing socket connection.
GET /wireshark-labs/HTTP-wireshark-file1 HTTP/1.0
HOST: gaia.cs.umass.edu

CONNECTED!

HTTP/1.1 404 Not Found
Date: Tue, 02 Aug 2022 14:21:52 GMT
Server: Apache/2.4.6 (CentOS) OpenSSL/1.0.2k-fips PHP/7.4.30 mod_perl/2.0.11 Perl/v5.16.3
Content-Length: 233
Connection: close
Content-Type: text/html; charset=iso-8859-1

<!DOCTYPE HTML PUBLIC "-//IETF//DTD HTML 2.0//EN">
<html><head>
<title>404 Not Found</title>
</head><body>
<h1>Not Found</h1>
<p>The requested URL /wireshark-labs/HTTP-wireshark-file1 was not found on this server.</p>
</body></html>

Exiting now.
```

I wasn't able to connect because I didn't give it the full path of the url.

when running the code with <http://www.google.co.il> I got the following result:

```
yehudit@yehudit-Aspire-E1-572:~/Documents/ariel university/2nd year 2nd semester/networking/fina
le assignmet$ ./t http://www.google.co.il
Address for www.google.co.il is 142.250.200.227
Client is alive and establishing socket connection.
GET / HTTP/1.0
HOST: www.google.co.il

CONNECTED!

HTTP/1.0 200 OK
Date: Tue, 02 Aug 2022 13:27:47 GMT
Expires: -1
Cache-Control: private, max-age=0
Content-Type: text/html; charset=windows-1255
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=2022-08-02-13; expires=Thu, 01-Sep-2022 13:27:47 GMT; path=/; domain=.google.co.il; Secure
Set-Cookie: AEC=AakniGNCuxFKVZs5cuzojjPynw3JH6_sKV53IRnDqew5Qgp9iHImctcsh4; expires=Sun, 29-Jan-2023 13:27:47 GMT; path=/; domain=.google.co.il; Se
cure; HttpOnly; SameSite=lax
Set-Cookie: NID=511=Q8CJPAKlasr-05h7LbuoDyM9WDSXH2D5_3PlssxuSXSE9C9sTlroHHD_HhopuNYLMwqrmVTtyJZVnvvrUmU_CkL3z5Y-XJuxogfsEZw3JrPCdpAa_4fWHzLT_2UH8uLW
Z05wJkz5kwyGPa7VB4Lt1L2ZfxGdkx3oLWY0iV8yhc; expires=Wed, 01-Feb-2023 13:27:47 GMT; path=/; domain=.google.co.il; HttpOnly
Accept-Ranges: none
Vary: Accept-Encoding

<!doctype html><html dir="rtl" itemscope="" itemtype="http://schema.org/WebPage" lang="iw"><head><meta content="text/html; charset=UTF-8" http-equiv
="Content-Type"><meta content="/images/branding/google/1x/google_standard_color_128dp.png" itemprop="image"><title>Google</title><script nonce="XU
zh0Wizw98p8Fcj2YixCg">(function(){window.google={kEI:'UybpYp6LDquTpt0Ppv2u-Aw',kEXPI:'0,18168,1284368,56873,6059,206,4804,2316,383,246,5,5367,112375
```

I was able to access the website even though its real website is https because the website doesn't have an expires date. I also got a lot of gibberish that represents what is on the google page.

All the code can be found in my github here: <https://github.com/Yehudit-Brickner/network-final-assignment>