

Summary exercise

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UDP programming

Problem 1: Learn to use datagram sockets by example.

Work as specified. The comments in the code.

How to run:

- a. Type in terminal: make first
- b. split the terminal to 3 or run-in background
- c. ./recv 127.0.0.1 (end with ctrl c)
- d. ./send for each message to recv

Problem 2: Create a gateway process that simulates datagram loss.

Work as specified. The comments in the code.

How to run:

- a. Make sec
 - b. ./sink
 - c. ./gateway 127.0.0.1
 - d. ./source 127.0.0.1
- To finish press ctrl + c for each process

TCP programming

Part A: IP addresses, hostnames and HTTP

After Compile both programs (net_server.c and net_client.c), we can see that the connection don't work because we need to pass IP address.

After change the definition in net_client.c, of IP_ADDRESS (using nslookup) so that it is the address of the computer you are working on and recompile,
We can see that the connection work and server send message to the client:

```
dvir@DESKTOP-MHAH202:~/comm.finals$ gcc net_server.c -o serv
dvir@DESKTOP-MHAH202:~/comm.finals$ ./serv
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.
dvir@DESKTOP-MHAH202:~/comm.finals$ []

dvir@DESKTOP-MHAH202:~/comm.finals$ gcc net_client.c -o cli
dvir@DESKTOP-MHAH202:~/comm.finals$ ./cli
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.
dvir@DESKTOP-MHAH202:~/comm.finals$ []
```

If we run client while the server isn't run the connection denied cause the socket that we want to connect to don't exist.

Part B: A simple web client

if the URL is <http://www.yahoo.com>

then the data begin with: Content-Security-Policy-Report-Only

```
gcc web client.c -o wc
dvir@ubuntu:~/Desktop/comm.finals$ ./wc http://www.yahoo.com
Client is alive and establishing socket connection.
HTTP/1.0 301 Moved Permanently
Date: Sun, 31 Jul 2022 09:12:29 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://*.inteknow.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=6yrid=6b84d11hechrt5&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/www.yahoo.com
Content-Length: 8

redirect
Exiting now.
```

else, if the URL is : <http://www.yahoo.com/does-not-exist>

then the data begin with: "Content-Security-Policy

```
dvir@ubuntu:~/Desktop/comm.finals$ ./wc http://www.yahoo.com/does-not-exist
Client is alive and establishing socket connection.
HTTP/1.0 301 Moved Permanently
Date: Sun, 31 Jul 2022 09:24:36 GMT
Server: ATS
Cache-Control: no-store, no-cache
Content-Type: text/html
Content-Language: en
Connection: keep-alive
Content-Security-Policy-Report-Only: connect-src 'self' https://s.yimg.com https://rtr.innovid.com https://*.yahoo.com https://*.oath.com https://*.advertising.com https://*.cdn.yimg.com https://*.yahoo.net https://ad.doubleclick.net; style-src https://*.btrll.com https://cdn.cmp.advertising.com https://*.oath.com https://*.yimg.com https://*.yahoo.com 'self' 'unsafe-inline' data: blob; script-src https://*.btrll.com https://cdn.cmp.advertising.com https://*.oath.com https://*.yahoo.com https://*.yimg.com 'self' 'unsafe-inline' https://platform.twitter.com https://*.btrll.com data: blob; img-src 'self' data: blob; about: https://*.yimg.com https://*.yahoo.com https://*.scorecardresearch.com https://*.doubleclick.net https://*.adsafeprotected.com https://*.googleadsyndication.com; frame-ancestors https://*.builtbygirls.com https://*.rivals.com https://*.engadget.com https://*.inteknow.com https://*.autoblog.com https://*.techcrunch.com https://*.huffingtonpost.com https://*.aol.com https://*.yahoo.com https://*.autoblog.com https://*.search.yahoo.com https://*.search.aol.com https://*.search.huffpost.com https://*.onesearch.com; s andbox 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=6yrid=6h3qbodheclik&partner=;
Content-Security-Policy: frame-ancestors 'self' https://*.builtbygirls.com https://*.rivals.com https://*.engadget.com https://*.inteknow.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=6yrid=6h3qbodheclik&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.
```

How to run:

- Make url
- ./url and the URL address that we want to get info on.

