

Puzzling Proxy

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Proxy Project Description

- Our project is writing a proxy server in C that can handle multiple clients.
- We also want to be able to use our proxy server as a configurable firewall by being able to add a list of whitelisted and blacklisted domains that our client can access.
- We want to learn about networking and understand how computers interact with each other through the Internet, as well as how firewalls block specific requests. A proxy server is an interesting practical application of what we'll learn about networking.

Goals met

- Multithreaded server
- Secure requests through HTTPS
- Whitelisting/Blacklisting domains
- We've gained a fundamental understanding of proxy servers, HTTP requests, and networking.

Features we couldn't get working

- Handling HTTP (Only handling HTTPS since most websites require it now)
- Caching web pages for better performance
- Circumventing a firewall (Said we would try at the beginning, but focus changed)
- Putting our proxy server on the cloud

Most Challenging Part

- SSL and Handling HTTPS
 - Most websites require secure connection
 - Finding resources about the CONNECT Method
 - Figuring out how to handle CONNECT requests, since they don't function the same as GET, LIST, etc. in the networking MP
 - Tried OpenSSL to connect to the target server
- Linking the set library like how it is used in 241 assignments
- Randomly crashing because buffer was too big

Helpful Resources

- Coursebook (Looking at networking lectures before 241)
- Help links from mentor
 - OpenSSL: <https://opensource.com/article/19/6/cryptography-basics-openssl-part-1>
 - HTTP Protocol: <https://www.jmarshall.com/easy/http/>
 - CONNECT method: <https://developer.mozilla.org/en-US/docs/Web/HTTP/Methods/CONNECT>
- Beej's Guide to Network Programming