Assignment 1: Web Censorship Proxy

User Manual

This user manual describes how to compile, configure, and use the Web proxy.
The required features and optional features (if any) that the proxy supports.
Where and how the testing was done (e.g., home, university, office), what works, and what does not.

What you will receive

You will receive a C++ file named HTTPproxy.cpp

How to configure your web browser

To use the HTTP proxy, you will need to configure your web browser, follow these steps.

1. In your web browser, head over to settings, look for menus like Tools, Internet Options, Proxies, Advanced, LAN Settings, etc. For Firefox specifically, head over to Settings → General → Network Settings and choose the "Manual proxy configuration" option.
2. Set HTTP Proxy to "localhost" and the Port to "8080" then click OK.

You have now configured your web browser and you are ready to use the web proxy.

How to compile, configure and use the web proxy

To compile and run the web proxy follow these steps.

1. Open a terminal window and direct yourself to the directory where the HTTPproxy.cpp file is stored.
2. Type in the following command: *g++ -Wall -o proxy HTTPproxy.cpp*
3. Then type in the following command: *./proxy*

You will see that the proxy is now running, however it tells you to connect to the proxy on port 8081 so you can dynamically configure.

To setup dynamic configuration, follow these steps.

1. Open a new terminal window.
2. Type in the following command: *telnet localhost 8081*
3. You will now be connected to the proxy through port 8081 on this terminal window.

There are 2 commands you can use from this terminal window for dynamic configuration:
BLOCK *word*
FREE *word*

word being any word you would like to BLOCK or FREE.
Any string typed in after BLOCK or FREE will be taken as the word, including spaces.
Please carefully type in the correct word, and make sure you have not accidentally included any invisible characters.

When a word is blocked, the proxy will determine if the word appears in the URL, if it does, you will be redirected to the error.html page.
The maximum number of words that can be blocked at one time is 3.
If you try and add more than 3 words to the block list, you will not be able to do so.
If you try and send the web proxy any other commands, you will simply be ignored.

The proxy should now be running.
You can now open and test with any of the CPSC 441 web pages (test cases).

Where and how was the testing done?

This web proxy was built and tested on my personal MacBook Pro.

What works and what does not?

- When no words are blocked, the proxy can receive and forward HTTP requests and responses to the server and client transparently. It is successfully able to function as a transparent proxy.
- The proxy is able to successfully redirect any blocked URLs to the error.html page.
- The proxy is dynamically configurable, you can type in the configuration commands in the other terminal window. All configuration commands are processed right after the proxy accepts a client.