## CS 3031: Telecommunications

Assignment #1: A Web Proxy Server

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Blah blah

library used: tcdlib from CS2031

Web proxy client class:

The client operates on port 2000

The client takes in an input to be the client number which makes it operate on port: 2000+client\_no.

Due to this multiple clients can operate simultaneously.

My client class takes in a string which becomes the payload of the message being send to the server.

The client\_no is stored in the header[0] of the packet the client sends, to know who sent it.

header[1] of the packet is initialised to -1 to show that the message hasnt passed through the blacklist yet(happens in management console).

The clients can only send packets to the proxy server.

The client prints messages received.

Proxy server class:

The gateway operates on port 4000.

It can send packets to the client or management console.

On receipt, it filters the message by buffer[1], which if -1 means it has to be sent to management console for blacklist filtering, 0 if its been checked and its banned, 1 for an approved http request.

There is an LRU cache instanciated on running the server and checks cache before doing a GET request and if not in cache, adds to cache upon receiving response from website.

If banned, it sends a packet to client(client\_no from buffer[0]) which sent it, detailing that the website requested is banned.

If buffer[1]==-1, reroute packet to management console.

The server is threaded, allowing many clients to operate simultaneously.

eroute the packet and send it to its correct destination.

Management console class:

DO THIS NEXT

Operates on port 2000.

The main objective of this is to implement a persistent ban list, which is stored as a txt file.

It can dynamically add websites to the ban list as well as check if a website is banned.

It displays each http request on the console.

LRUcache & LRUnode class:

Implements a least recently used cache to cache requests locally to save bandwidth.

You can set the capacity to any desired number. I had it set to 4 in my program.

The cache is used in the proxy server class.

Packet content class:

The packet content class serves as an interface. It possesses the toString() and toDatagramPacket() methods. It also holds the length of the header as HEADERLENGTH.

This interface along with string content and node classes are from my last years asssignments from CS2031

String content class:

String content implements the packet content class. It returns the string and makes a datagram packet through.

Node class:

The listener function in the node class listens for incoming packets on a datagram socket and informs registered receivers about incoming packets. It listens for incoming packets and informs receivers upon arrival.

**CODE dump:**