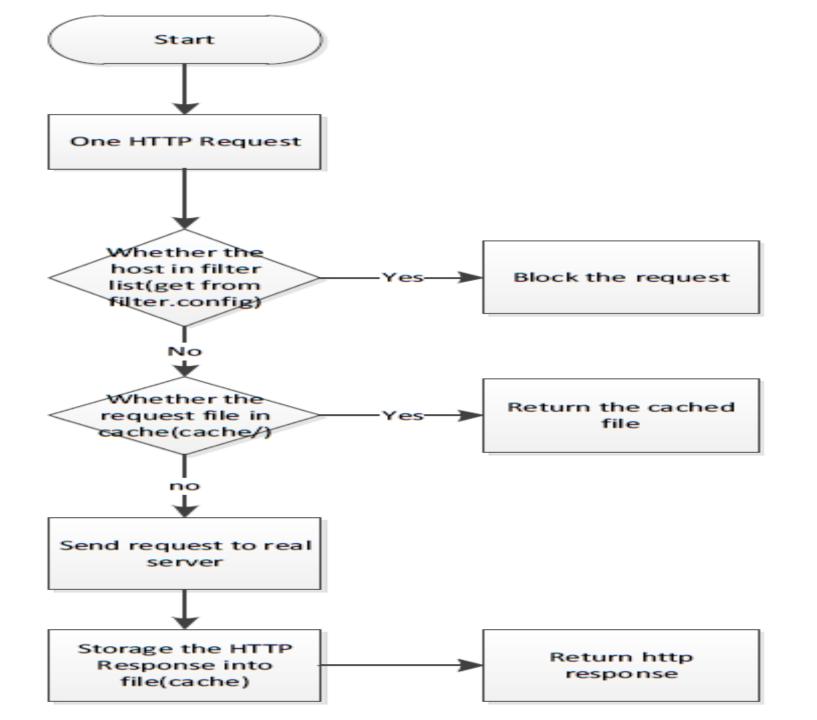
COMP112 FINAL PROJECT ArtOz Proxy Server

MAIN GOAL

- Designing a Proxy Server
 - Simple Get Request
 - Adding Some Useful Features

FEATURES

- Concurrency
 - Handling multiple clients
- Content Filtering
 - Prevents users to access some URLs
- Cache Function
 - Caching text, picture
- Search Engine
 - Basic search engine fetching cached data

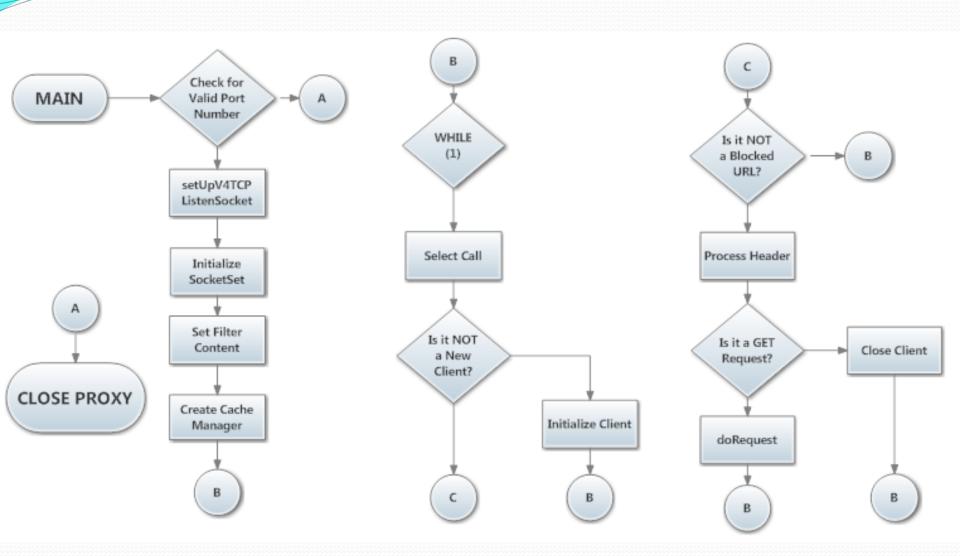


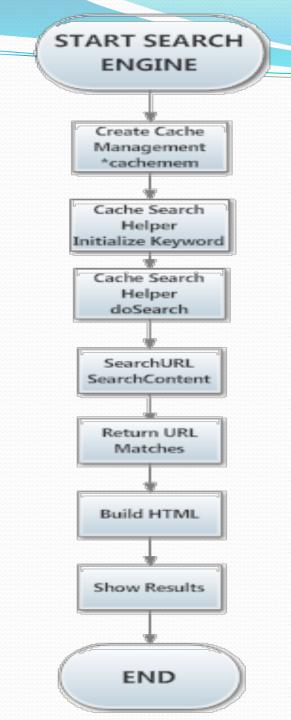
IMPLEMENTATION

- Language : C++11
 - Object Oriented Programming
 - Pass by Reference feature
 - More flexible functions
 - Manipulating strings
 - Vectors

LIBRARIES

- algorithm
 - find(), copy(), search()
- iostream
 - cout, endl
- string
 - ==, c_str()
- vector
 - insert(), erase()
- pthread
 - pthread_create(), pthread_mutex_lock(), pthread_mutex_init()
- fstream
 - open(), close(), good(), fail(), write(), read(), tellg(), seekg()





DEMO

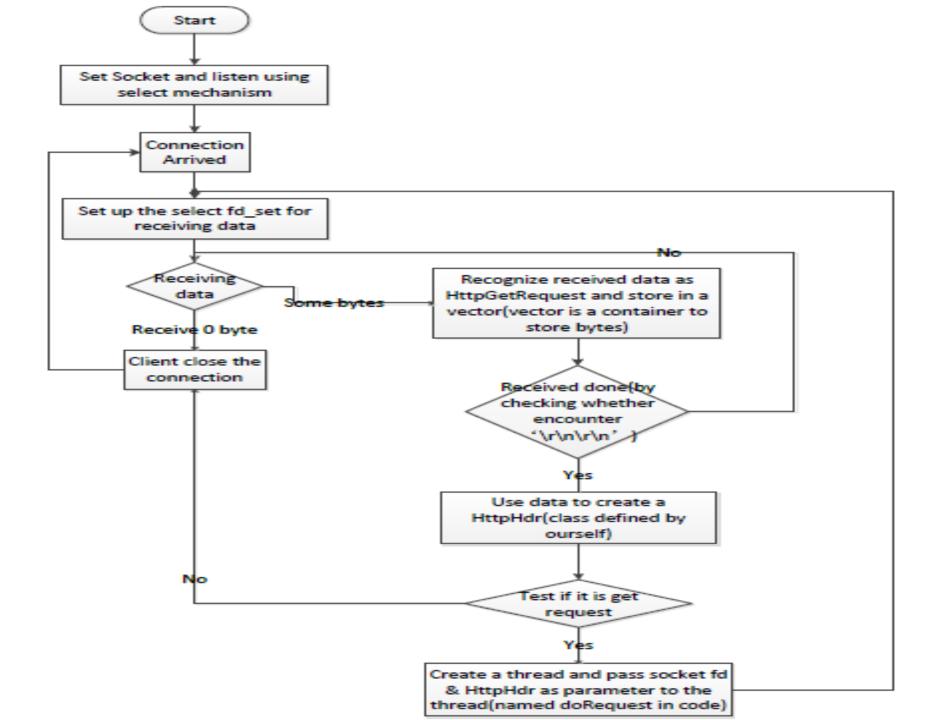
CLASSES

HttpHdr.h

 Extracts the type of requests, the host, the object/ filename

- Remove the http prefix.
 - Checks whether header is complete or not

Prints the header



HttpPkt.h

 Retrieves the packet from the HTTP response and the header as well

• It also checks whether the packet is complete or not, by using the 'Content-Length' field from HTTP 1.1

Prints packets

HttpGetForwarder.h

- Processes the GET request
- Gets the information of URL
- Connects to the server
- Gets the response
- Makes the packet
- Sends to the client

FilterHelper.h

Checks whether host is valid or not

Gets the blocked URLs from filterURL file

CacheStorageHelper.h

- Checks whether path is valid or not
- Gets the file length and checks whether the file existed
- Reads file content
- Creates directory
- Writes into File

CacheManagement.h

Inserts the filename into the list CachedFiles

Searches for URL or for Content

Shows the files

CacheSearchHelper.h

- Basically lies on doSearch in cpp file
 - Searches for URL <u>or</u> Content
- Gets the file length
- Reads the file content

Writes into file

Launch ArtOz

Script

```
$./run_proxy.sh
```

- Search Engine (ArtOz)
 - Type http://l27.0.0.1/search.html or Type http://localhost/search.html

Lessons learned

- Improved C++ skills
- Basic use of threads
- Debugging skills
- HTTP 1.1 knowledge
 - Chunks, content length, HTML, query string

Thank you!
¡Gracias!
Teşekkürler
Shukriya