Sample Design Document

Haofan Wang
CruzID: hwang108

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1. Goal

The goals for Assignment 2 are to modify the HTTP server that you already implemented to have two additional features: multi-threading and logging.

2. Assumptions

I'm assuming we need to extract the number of the thread and logging file and port number from the argument. Then use the number to create threads we are asking for. The process for each thread is what we did in assignment 2.

3. Design

The approach I'm taking is to create threads first, then extract the information from the argument, use this information to create threads and enter the correct localhost number. Lock the threads make sure the information we are passing by is stable. Then use the code from asg2 to handle the put and get function.

4. Pseudocode

This is the core pseudocode for this program

Procedure httpserver
    Get the number of threads, logging files, and host number.
    Create a thread array to store multiple threads
    Open the logging file and record the data
    void*(args){
        Creat socket file descriptor

Print out an error message if socket failed
Set the socket port and attach it to the port 8080
bind(server, address)
While connecting
Get the content length
Get the command
Get the file name
If the length of the file is greater than 27, send bad request 400 to client
Else determine if it's a put or get operation
If is put
If able to access
Size = recv(socket, data)
access (file)
open(file)
write(file, data)
close(fd)
send(socket, buffer)
Else
open(file) to create a file
write(file, date)
close(fd)
send (socket, buffer)
If is get
open(file) with read-only
If the fd is -1
If the error is EACCES
Send 403 forbidden
If the error is ENOENT
Send 404 not found
Read the fd and save all the data to the file
close(fd)
Send 200 ok

Else if it’s not get and put

Send 500 internal server error

Else

Send 400 bad request

Close(socket)

}

End procedure