CS118 Project 1 Report

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CS 118: Computer Network Fundamentals

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1. Description of our server program

For part1a, firstly, we created server socket by using socket() function. Then we used bind() function to bind the socket to an address. Then we used listen() function to listen on the connection of sockets. Then we used accept() function to let process to block until a socket connects the server. To allow the server to handle multiple, we used fork().

For part1b, we firstly used open(), read(),write() to write file to local memory. Then we used strcmp() function to parse the header. Then we can return the file if it qualifies, or we can return error message.

2. Difficulty met in this project

One of the teammates used windows to code. So when we tested it on Linux, there is an error. We solved this by using dos2unix function.

3. How to compile

For part a, in the directory 'part-a', run "make". And then type "./server *PORTNUMBER*" to run.

For part b, in the directory 'part-b', run "make", and then type "./serever *PORTNUMBER*" to run.

The webserver will listen at the specified port number and accept all incoming connections (currently limited at 127 max connections)

4. Sample output

Part a:

GET / HTTP/1.1

//This line is the status line. The GET method means retrieve whatever information (in the form of an entity) is identified by the Request-URI.

Host: localhost:8080
Connection: keep-alive
//This is general-header. It defines host domain.

Accept:
text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8
User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10_10_2) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/42.0.2311.135 Safari/537.36
Accept-Encoding: gzip, deflate, sdch
Accept-Language: en-US,en;q=0.8,zh-CN;q=0.6,zh;q=0.4
// This is the request header, accept means a list of media ranges which are acceptable as a response to the request.

Part B:
To test code, we put test file in the same directory with server.c. We typed make to compile. And run "./server 8080", in browser, we typed localhost:8080/hue.jpg. The picture was shown. If we typed localhost:8080/1, it will show "404 not found", because we do not have that file in our directory.