L3: HTTP Client-Server

CS 283 Systems Programming

Grading: 100 Points

Description

Part A

Using network sockets, write a C program called *client* that receives three command-line arguments in the form:

client host port file

and sends a request to a web server. The command-line arguments are

host	Represents the web server to connect to
port	Represents the port number where a request is sent. Normally an HTTP request is sent over port 80, but this format allows for custom ports
file	Represents the file requested from the web server.

Your program should create a client socket that connects to the server indicated by *host*, and send the following:

```
GET /index.html HTTP/1.1\r\n
Host: www.google.com\r\n
\r\n
```

Then, your program should read the entire result and display it on the screen.

Part B

Write a second program that accepts a port number as a command line argument, and starts an HTTP server. This server should constantly accept() connections, read requests of the form

```
GET /path HTTP/1.1\r\n\r\n
```

read the file indicated by /path, and send it over the “connect” file descriptor returned by the call to accept().

Hints

- You will find the sample CSAPP echo client and echo server programs helpful for this lab.
- You will also find the file read/write examples helpful for working with the file descriptors.
- Use option -lpthread to link your files (because csapp.c contains thread functions).

What To Hand In

A zip file containing your code, including console output from test cases, a make script, and a description file which specifies how to run/test the program.

For each part:
35 Points: Program correctness
15 Points: Program documentation and code style (5), readme (5), makefile (5).