Programming Assignment #1

CSCE 3530

Spring 2016

Introduction to Computer Networks

100 Points

Due: 02/25/2016, 11:55 PM

Late Due: 02/27/2016, 11:55 PM

The assignment can be completed in a group of **up to two students** in each group. The program assignment has two parts.

The assignment will be graded in the following manner:

- 5% Comments
- 10 % ReadMe file (compile instructions, your approach to the problem, & limitations [if any]). Also, include the name of the group members here!
- 20% Evidence of compilation and execution (Screen Shots, include in ReadMe)
- 25% Compiles and executes for grader with correct results.
- 40% Code

Please create a zip archive of your assignment folder (code, header files and readme) and upload the zip file (only one of the group members)

Part 1: Web Server

In the first part, you will develop a simple Web server in C that is capable of processing only one request. Specifically, your Web server will

a. create a connection socket when contacted by a client (browser)
b. receive the HTTP request from this connection
c. parse the request to determine the specific file being requested
d. get the requested file from the server's file system
e. create an HTTP response message consisting of the requested file proceeded by header lines
f. send the response over the TCP connection to the requesting browser.

If a browser requests a file that is not present in your server, your server should return a "404 Not Found" error message.

Part 2: Single-Threaded Web Proxy

In the second part, you will develop a Web proxy. When your proxy receives an HTTP request for an object from a browser, it generates a new HTTP request for the same object and sends it to the origin server. When the proxy receives the corresponding HTTP response with the object from the origin server,

it creates a new HTTP response, including the object, and sends it to the client. This proxy does not have be multi-threaded.

FYI: the companion Web site provides a skeleton code for both web server and web proxy in Python. However, your assignment has to be completed in **C programming** language!! The programming problem are taken from the textbook, “Compute Networking, A top down approach”.