**CS 118 Project 1: Simple HTTP Client and Server**

Omar Ozgur, *704465898* Jahan Cherian, *104436427* Kevin Xu, *704303603*

Abstract

The purpose of this project was to become accustomed to the basics of socket programming and the HTTP protocol. This was accomplished through the development of a client that would use specified URLs to create and send HTTP requests to a server that would process the requests and send back the corresponding HTTP responses. These responses were then parsed in order to determine properties such as status codes and messages, as well as to retrieve the requested data if it was available.

1. Build Instructions

In order to build the executable files, simply navigate to the folder containing the source files and run the “make” command. This will create multiple files (“web-client” and “web-server”) that can be used to run the client and server.

2. Server Design

The server was designed really really well.

3. Client Design

The client was also designed really well.

4. Problems

While creating the project files, a few main problems had to be overcome.

In one case, there was an issue with sending bytes to the server while creating the client code. This was first noticed because the client would successfully finish the “send” function, and then it would hang after running “recv”. At first this was thought to be a problem with reading the data, but we came to the realization that it was actually due to the fact that a vector cannot be directly passed to the “send” function. Instead, the vector had to be converted to a fixed-size buffer before sending the data.

5. Testing

In order to test the client and server implementations, each modular component was tested individually. By breaking up each “main” method into multiple functions with separate error handling, specific scenarios could be introduced to see if the corresponding responses would occur.

6. Team Contributions

Here is some information regarding the work that each team member did during the project.

Omar Ozgur: Omar mainly developed the web-client implementation, and created abstractions for URLs and connections.

Jahan Cherian: Jahan mainly focused on the web-server implementation, as well as abstractions for HTTP requests and responses.

Kevin Xu: Kevin focused mostly on developing the web-server, as well as parsing HTTP requests and responses on the server.