University of Dhaka

Department of Computer Science and Engineering

CSE-3111 : Computer Networking Lab

Lab Report 3: Implementing File transfer using Socket Programming and HTTP GET/POST requests

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1 Introduction

File transfer is a critical aspect of modern networking applications, facilitating the exchange of data between systems. This lab report focuses on implementing file transfer using two essential techniques: socket programming and HTTP GET/POST requests. Socket programming provides a foundational framework for establishing communication channels between client and server applications, while HTTP protocols offer standardized methods for data exchange over the web.

1.1 Objectives

- Develop a file transfer mechanism using socket programming to establish communication between client and server applications.
- Implement HTTP GET and POST requests to facilitate file retrieval and submission over the network.
- Evaluate the performance and scalability of the implemented file transfer system under varying network conditions and file sizes.

2 Theory

Socket programming is the foundation of network communication, facilitating the establishment of connections between client and server applications for data exchange. HTTP (Hypertext Transfer Protocol) serves as the backbone of web communication, enabling clients to request resources from servers using methods such as GET and POST. In file transfer implementations, socket programming enables connection setup and data transmission, while HTTP requests facilitate resource retrieval (GET) and data submission (POST) between client and server. Combining these techniques provides a robust framework for efficient and standardized file transfer over networks.

3 Methodology

3.1 Server

The server is initialized on a specific port and it listens for incoming requests. Whenever a client requests to connect, the server accepts the connection and provides necessary services.

In case of sockets, the server lets the client choose whether they want to get the list of available files, upload or download a file.

3.2 Client

Here our client side is any web browser. We will enter IP address of our server and the port number. Then an HTTP request will be sent from our browser to the server.

We will see links to some files that the server provided. If we click any of them we can download them in our pc.

4 Experimental result

Some Snapshots of the Client Side queries can be seen in the following figures:

Figure 1: Content of Server

Figure 2: Client Side View after successful request

5 Experience

1. We had to see some examples of how to use HttpServer package in Java
2. We used html tags for the first time to create the links.

References

[1] Computer networking : a top-down approach 6th ed.

[2] StackOverflow : `http://stackoverflow.com/`

[3] HTML Codes : `http://www.w3schools.com/`