**COSC 4333 Basic Multithreaded FTP Server Project Report**

1. **Introduction**

This project is an implementation of a basic multithreaded FTP server based on message-oriented and client-server communication for performing operations. The two source programs operate together primarily with the exchange of and operation on files. The 4 basic file operations implemented into this project include delete, rename, and as is significant to any FTP server, an upload and download function.

1. **Basic Server Overview**

The server’s main function which contains a while loop to keep the server running until its termination. Helper functions such as SendFileOverSocket and CommandProcessor are pivotal to communicating with the client in terms of sending files and how to operate on them. One whole function is dedicated to each operation to be performed on files as well. The function CommandProcessor processes the command received from the client and relies on the aid of such functions as GetCommandFromRequest, GetArgumentFromRequest, and Get3Arguments from request. Additionally, there is a countChars function to count the amount of characters in a file and returns that as the file size so that the proper amount of memory is allocated for creating and writing files upon download.

1. **Basic Client Overview**

On the other hand, the client program serves as the user’s interface. Similar to the server program, it has its own main function which contains various fail-safes to terminate the program gracefully and a while loop to keep the client interface open for as long as desired by the user. Also similar to server, it contains a function SendFileOverSocket for the exchange of files and 4 functions each dedicated to the four basic FTP operations.