BLG 337E Project 2

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1. **Introduction**

   The objective of this project was to create a client-server application using socket programming and TCP protocol. The client application is intended to send a text file containing student information to the server, which stores the data in a file. Following the closure of the initial connection, the client initiates a second connection to retrieve the text file. Finally, the client compares the downloaded file with the original, generating a report to indicate the success or failure of the transmission.

2. **Implementation**

   Note: The step by step explanation of the program is provided with comments in the source code.

   Client Application:

   • The client application is responsible for establishing a connection with the server using TCP protocol.
   • It reads a text file containing student information (student name, student number, course name).
   • Sends the file data to the server for storage.
   • Establishes a second connection to download the file from the server.

   Server Application:

   • The server listens for incoming connections from clients.
   • Upon connection, it receives the student information and stores it in a file.
   • Allows a second connection for file download.

3. **Outcomes**

   The project has successfully demonstrated the implementation of socket programming for client-server communication. It also demonstrated TCP protocol for reliable communication. The reliable transmission of student information files was achieved, and the report generation mechanism effectively communicates the outcome of the transmission. This project enhanced my understanding of network programming concepts, socket communication, and file handling in a distributed system.