CS 4390.501

Team 11

Design Document

Server design
Constructor:
Create an arrayList of ClientHandler objects

Reads IP and port argument from main method
Initialize server socket using that port and IP
Once a client connects, assign a ClientHandler object to that client
Continue looping until program terminates

ClientHandler:
Start a print writer and a buffered reader for input and output
Take input from the assigned client
Interpret math equation from input
Listen for equations until keyword “quit” is sent
Every line sent is evaluated as an equation
Return the result to the client and print it to the log as well
Once “quit” is sent: close the connection

Client design
Attempts to connect to a server running on the specified host name and port
Prompt user for a username and store it as a variable
Start a print writer and a buffered reader for input and output
When any response is received from the server, print it to the terminal

Protocol
The client reads input directly from the terminal and sends it to a DataOutputStream
The server listens to each client for a DataInputStream

Sending/Receiving math equations:
Equation is sent as a string which is then split into its components. Assumption is that each string contains at least two numbers and at least one symbol, and that each symbol is between two numbers.
Sending math equation results:
The result is saved as an integer which is then printed on the client end, and also logged on the server

When connection is closed:
Print “Connection with [user] closed” alongside the username of the client that disconnected

When connection is opened:
Print “New Client connected”
Prompt the client for a username (needed for logging purposes)
When username is received: send ACK

Format for keeping logs:
Time stamp always comes first
Logs must include the username of the client, whether sending or receiving
Logs should contain the action being performed