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CPSC 5042 Milestone 1: Outline for Connect Four Game

Our project is a Connect 4 style game where the user competes against the computer to be the first to string together four of their disks in the game board. The game board is a seven-column and six-row vertically suspended grid. The user and the computer take turns choosing a column to drop their disk into. The token falls straight down occupying the lowest available space in the column. The objective of the game is for a player to string their own four disks together in either a horizontal, vertical, or diagonal direction. Whoever wins will score one point, and the game board is reset.

For simplicity, the game is between a user and a computer. Each player is assigned a different colored disk. The computer will randomly select a column to drop a disk into. The game can be played many times over a period to accumulate points. The player with the highest point becomes the ultimate winner.

RPCs:

connectRPC - creates socket connection between client and server

ARGNAME	DataType	Input/Output	Example
username	String	Input	“USERNAME”
password	String	Input	“PASSWORD1234”
status	Int	Output	“1” for success, else “0”

disconnectRPC - disconnects client from server and closes client socket

ARGNAME	DataType	Input/Output	Example
status	Int	Output	“1” for success

playConnect4RPC - starts a Connect 4 game

ARGNAME	DataType	Input/Output	Example

firstTurn	Int	Input	“1” or “2” for either user or computer
grid	String	Output	“0000000;0000000;0000000;0000000;0000000;0000000”

playPieceRPC - user chooses a column on the game board to place their piece

ARGNAME	DataType	Input/Output	Example
column	Int	Input	“5”
grid	String	Output	“0211201;0002000;0000000;0000000;0000000;0000000”
winner	Int	Output	“0” for no winner, “1” for user has won, or “2” for computer has won

checkStatsRPC - gets win stats for the current user sessions

ARGNAME	DataType	Input/Output	Example
userScore	Int	Output	“3”
computerScore	Int	Output	“0”

Compilation and Execution Instructions:

On CS1, compile using the following commands:

```
g++ -o client client.cpp
g++ -o server main.cpp RPCServer.cpp
```

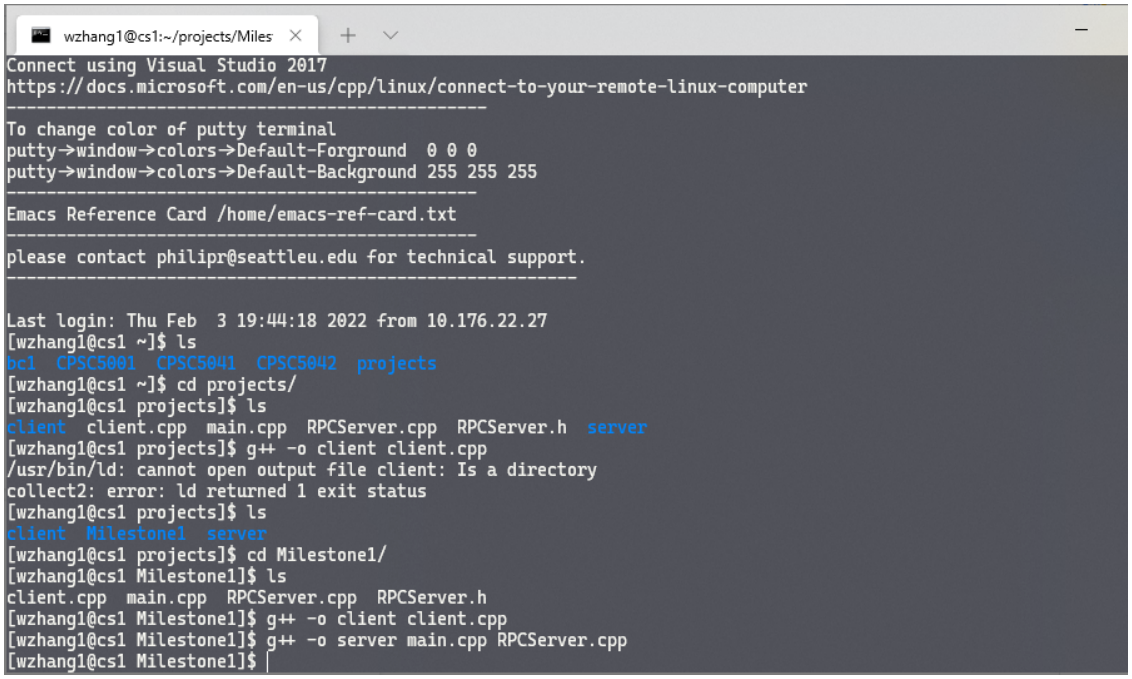
In separate console windows, execute using the following commands, starting with the server:

```
./server 127.0.0.1 10306
./client 127.0.0.1 10306
```

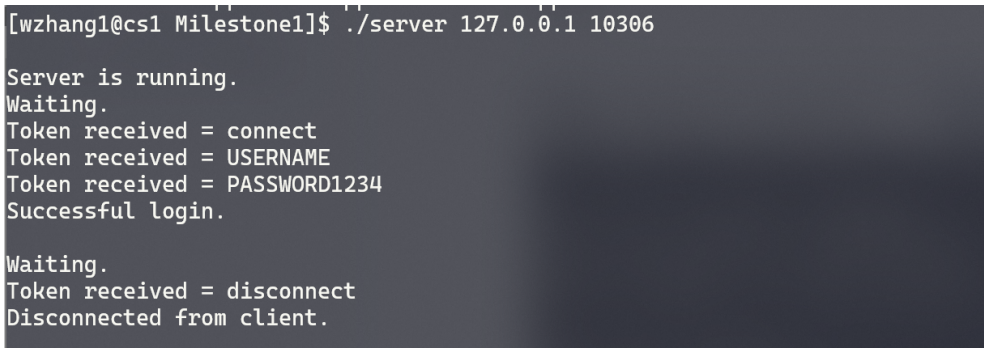
In the client console window, use “USERNAME” as the login username and “PASSWORD1234” as the login password. Once logged in, type “EXIT” to disconnect.

Screen shots:

Compiling code.



Server:



Client: