Homework Assignment 05 **Assigned:** Wed 11 APR 2023
The Challenge of Network Protocol Development **Due:** Wed 18 APR 2023

Instructions:

- The assignment is to be uploaded to the course repository (GitHub) by the due date, which is scheduled for 11:59pm ET that day since solutions will be distributed soon after.
- We expect that you will study with friends and often work out problem solutions together, but *you must write up your own solutions, in your own words*. **Cheating will not be tolerated.** Professors and TAs will be available to answer questions but will not do your homework for you. One of our course goals is to teach you how to think on your own and solve your own problems using your resources.
- We require that all homework submissions be neat and organized. **There will be point deductions if the submission is not neat** (is disordered, difficult to read, etc.).

Goal of Assignment:
Our goal is this assignment is to convert either your client or server-operating code to work with another classmate's opposing solution such that you are both able to play the game using independent implementations.

Your application need operation in either client or server mode using the declared well-known port (WKP), which for this application will always be port 5131. An example of a server startup is:

```
% ./ttt -s 5131
```

where -s signifies that we are running in server mode and listening to the port that follows. Alternatively, you may configure your server to startup without a port and it should default to port 5131.

When launching a client, we will need to know the port where a server is listening to start a game, such as 5131, and the hostname and domain of the device. An example would be:

```
% ./ttt -c login.khoury.northeastern.edu 5131
```

where -c signifies that we are running in client mode and connecting to the host (or IP address) and port that follows. Alternatively, you may configure your client to startup without a hostname and use the hostname of the device on which the client application is running, and the port could also be left blank, and it should default to port 5131.

Actions to Fulfill:
Since all implementations of Assignment 4 are based on the same initial code rubric, some decisions made by individual programmers in lieu of defined standards will be necessary to allow each piece of code to interoperate.

During the April 18 class, students will partner to pair program to ensure that a pair of code solutions can send and receive messages and play the game. Students may choose to work together in advance of the April 18 class in an effort to "fill the grid" of all possible student solutions with all other solutions in both client and server modes.

Deliverables and Grading:

Demonstrating a working pair of code in any combination will yield full marks. For each additional pair of working solutions achieved, extra credit will be awarded.

Submitting Your Final Assignment:

To turn-in your project, you should submit your source code and makefile to GitHub in a directory called HW5 in your CS5700_username private repo.

You may submit as many times as you wish; only the last submission will be recorded.

Grade:

This project is worth 100 points. You will receive credit based on the above guidelines.