CSC-364 Introduction to Networked, Distributed, and Parallel Computing
Summer 2025
Lab 1 | Sockets

Multiplayer Tic-Tac-Toe Game
Teams of Two

In this lab, you will implement a multiplayer Tic-Tac-Toe game. Python is recommended however you can use any other programming language. The minimum requirements for the lab:

1. A server is used to pair two ready players.
2. The server allows multiple concurrent games.
3. The game is played between two players (clients).
4. The server keeps a scoreboard by the player's name.
5. Every win (over multiple games with same player name) increases your score by 2, every draw increases your score by 1.
6. Only sockets are used for network communication.
7. Games can be played from terminal, GUI is optional.

Your report should include your design choices for (1) application architecture, (2) a diagram showing how the system components interact, (3) transport-level protocol, (4) types, syntax, and semantics of all request and response messages, and (5) rules for determining when and how a process sends messages and responds to messages.

Your presentation should include a summary of all information in the report along with a video demonstrating your game running with more than 3 concurrent game plays.

You should submit your code files, PDF report, and the presentation. Presentations (10 minutes per team) will take place during lab time.

The grading criteria for this lab are:

The server handles multiple games simultaneously	**10%**
Clients are connected and can communicate	**10%**
Game logic	**10%**
Game result is reported to the server	**10%**
Server updates scoreboard correctly	**10%**
Report	**20%**
Presentation + Demo	**30%**