

# Project 1 – Writeup

In this project, I implemented a network-based application for rock-paper-scissors. This application uses the client-server architecture to allow players to theoretically compete remotely (note: this application does not go behind the transport layer). All applications/sockets in this project use the UDP protocol.

## Features/Workflow:

1. Client-server Architecture:
  - a. The game implements a base server that is used to handle incoming connections from any remote clients. The server also allows a user to play on the server side.
  - b. Every player needs to build a client application in order to connect to the server in order to participate. Once a client connects, a handshake protocol is initiated.
2. Handshake Protocol:
  - a. The handshake protocol is established on first contact between the client and server.
  - b. During this, the client and server create a connection, and then exchange player information. This ensures that both players are ready to play a game.
3. Move Selection:
  - a. After the handshake, each side requests a move locally from the players. Once the moves have been confirmed, the moves are exchanged between the client and server.
  - b. On completion of the exchange, the server performs the game logic to determine which player is the winner.
4. Results:
  - a. After moves are exchanged between the client and server, a countdown is run locally on both applications. Then the results are displayed to the players.
  - b. Once, results are shown both sockets are cleanly broken down.