PA5 – Multiplayer Pong over the Internet

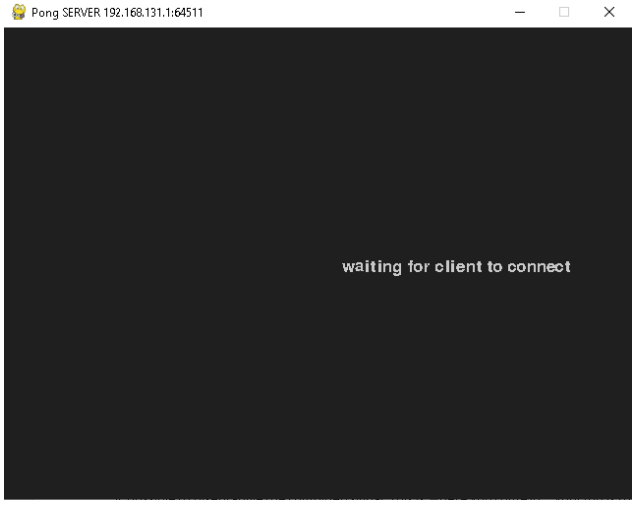
Overview
For this project, you will write a Python script that allows a client/server Pong game to send necessary information to each other via a UDP socket

Details
Use the pygame library for rendering and input.
Install this with:

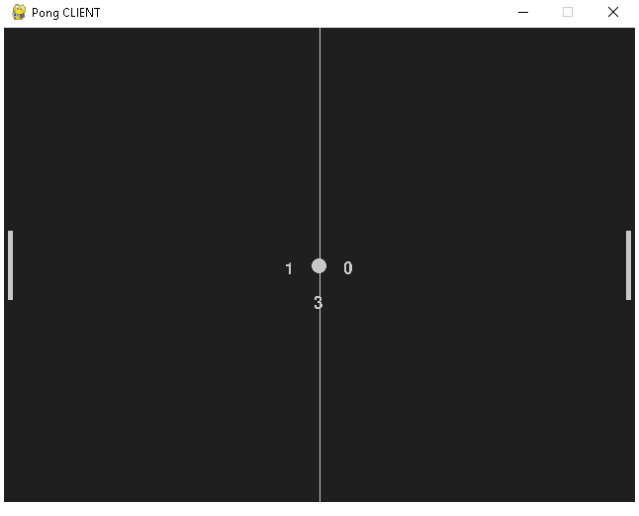
- "pip install pygame"

Using a publicly available implementation of local multiplayer Pong:
https://github.com/Vinay609/Two-Player-Pong
You will implement the message passing necessary for two players to connect to each other via a UDP socket using just the Server's IP address and port number. Both server and client will use the up/down arrows to control their game.

Starting the server (open the program without additional command-line arguments)
`python pa5.py`



Starting the client (use ip:port as an additional command-line argument)
`python pa5.py 192.168.131.1:64511`



The IP address and port number will be displayed in the window title bar of the server

Carefully inspect the variables that the game needs to move objects on the screen and keep score. Only send necessary information to the other host.

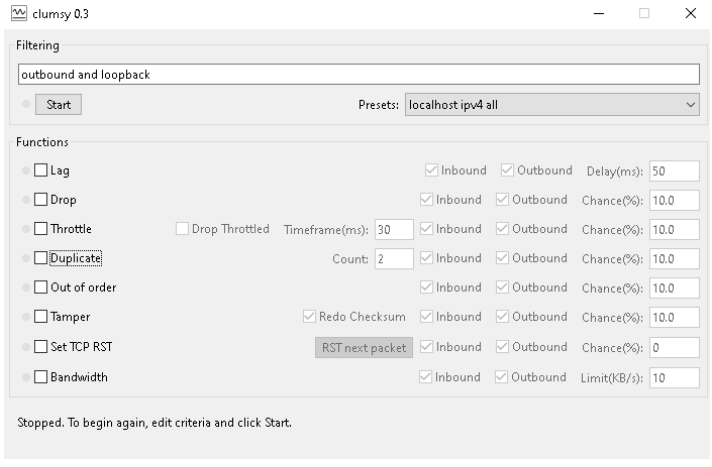
Files
`pa5.py` – The incomplete network multiplayer game (look for the commented section to complete)
playback.gif and playback.mp4 – the is an example run of both programs

What to Hand In
1. A screen recording of you starting both programs and playing the game for a short period of time.

Extra Credit: 1% on final course grade

Provide support for congestion between server and client. You may not use a single python library that solves this issue. You must implement it yourself in your python code. Use Clumsy.exe (windows) or another application that simulations congestion (ask me first, “netem” on Linux or “network link conditioner” on Mac).

http://jagt.github.io/clumsy/download.html



What to Hand In

1. A screen recording of you starting both programs and playing the game for a short period of time with clumsy enabled Lag on packets and then Duplicate of packets. (You do not have to enable both at the same time.)
2. You must submit your python code for extra credit!