

# phago.io

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### OVERVIEW:

phago.io is an online multiplayer game inspired by Agar.io, developed using Python with Pygame and Socket Programming. It brings players together in the same game world where they control blobs, consume food to grow, and compete for the highest score in a five-minute match. A server runs the game, handling all player actions and swapping data between players instantly. The camera zooms in and out to keep your blob in view, and we kept the rules simple so it's easy to jump in and play.

### KEY FEATURES:

Feature	Description	Significance	Implementation
Playing Together	Hooks up players to one server for the game.	Let everyone play at once.	Uses TCP sockets to send stuff back and forth between players and server.
Staying Up-to-Date	Updates where blobs, food, and points are.	Make sure we all see the same game.	Server sends new info every 0.01 seconds with pickle to keep it fast.
Auto Tracking	Change the view when your blob grows.	Keep your blob easy to see.	Sets zoom based on size with rules so it doesn't jump around too much.
Game Rules	Says how blobs move, grow, and get points.	Keep it fun and fair.	Ties blob moves to the mouse, checks for food hits, and scores.
Local Matchmaking	Lets you play with friends on the same network.	Works without outside internet if you're on the same setup.	Runs the server on a computer and others join with its IP.

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## HOW TO PLAY:

Step	What to do
Start the Server	Run <code>server.py</code> on one computer and see the IP and port it gives.
Join in	Run <code>client.py</code> on your device, type the server IP, and pick a name.
Play	Move your blob with the mouse, eat food to grow, and grab points.
Win	Get the most points by the end of 5 minutes to come out on top.

phago.io is a real example of how networks make a game work for lots of players. It ties everyone to a server, keeps the game fresh every moment, and handles info so it's fun and fair. Making it showed us how to use sockets, keep a network steady, and fix problems when people play together. We built this for the Computer Networks Lab (23XT46) to turn class stuff into something you can actually play.