

## Advanced Network Tic-Tac-Toe

A Python-based advanced Tic-Tac-Toe game allowing two players to compete over a local network (LAN) with an intuitive graphical user interface built using tkinter. The game leverages sockets for seamless network connectivity and threading to maintain a responsive GUI.

### Features

- Local Network Multiplayer: Play Tic-Tac-Toe across two devices connected via LAN.
- Responsive GUI: Interactive and user-friendly interface developed with Tkinter.
- Socket Programming: Reliable network connection using TCP sockets.
- Threading: Ensures GUI responsiveness during gameplay.
- Class-Based Design: Clean and maintainable code structure.

### File Structure

tic\_tac\_toe\_network/

- tic\_tac\_toe.py
- server.py
- client.py

### Requirements

- Python 3.x
- Standard libraries only (no external packages required)

## Running the Game

### Step 1: Clone or Download

Clone this repository or download the files directly to your computer.

```
git clone https://github.com/your-repository/tic_tac_toe_network.git
```

```
cd tic_tac_toe_network
```

### Step 2: Run the Server

On the host machine (server):

```
python server.py
```

The server waits for a client connection and will indicate when a connection has been established.

### Step 3: Run the Client

On the client machine:

```
python client.py
```

Enter the server's IP address when prompted:

Enter Server IP: <Server IP Address>

Once connected, gameplay begins immediately.

## Gameplay

- The Server always plays first (X).
- The Client plays second (O).
- Click on an empty square to make your move.
- The game checks for win conditions or draw automatically.

## Contributing

Contributions and improvements are welcome. Please open issues or submit pull requests.

## License

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