The tic-tac-toe game contains 3 modes – one is local, and two others are multiplayer – host and client. First, a bit about the game itself

The application is composed and created using pygame. It also uses some other libraries, like sys, os, time, threading, random, socket, pickle, math. All them are required for using the application.

Itself, source code has 7 classes: Player, GameEngine (which is a child of Player class), Button, Cell, Text, Server and Client.

Player has 1 object. It’s a player “profile”, it contains some main components of the game (like size of the window and colors used), but also a path for connecting to the sound files.

GameEngine is a main class of the game. It contains the full game logic, including the play function, which is the main function of this class. This function executes always, it draws the game and it executes the computer turns. The only 2 aspects of game not included into this function are Server and Client. The computer uses a mini-max algorithm in its turns, and so, it’s very accurate in making turns, so I specially made it a little stupid so the player have a chance to win in the local game.

Button, Cell, Text are decorative functions. They’re provided for better usage of buttons, text and buttons in the game. Their objects are interactable and visible.

Client and Server both perform as an objects. They’re created after starting game as a server or client. They perform a communication between Server and Clients. Communication is provided using network I\O pipeline, using a special protocol, coded in bytes.