JH Game Launcher User Guide

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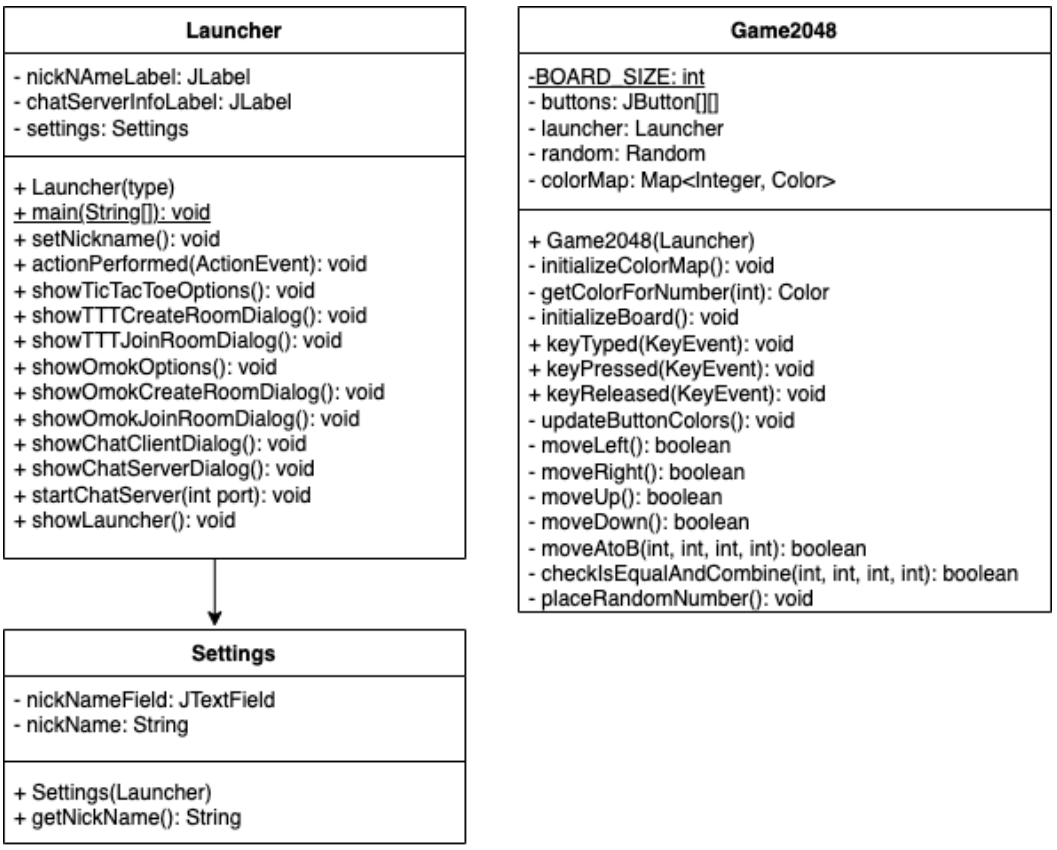
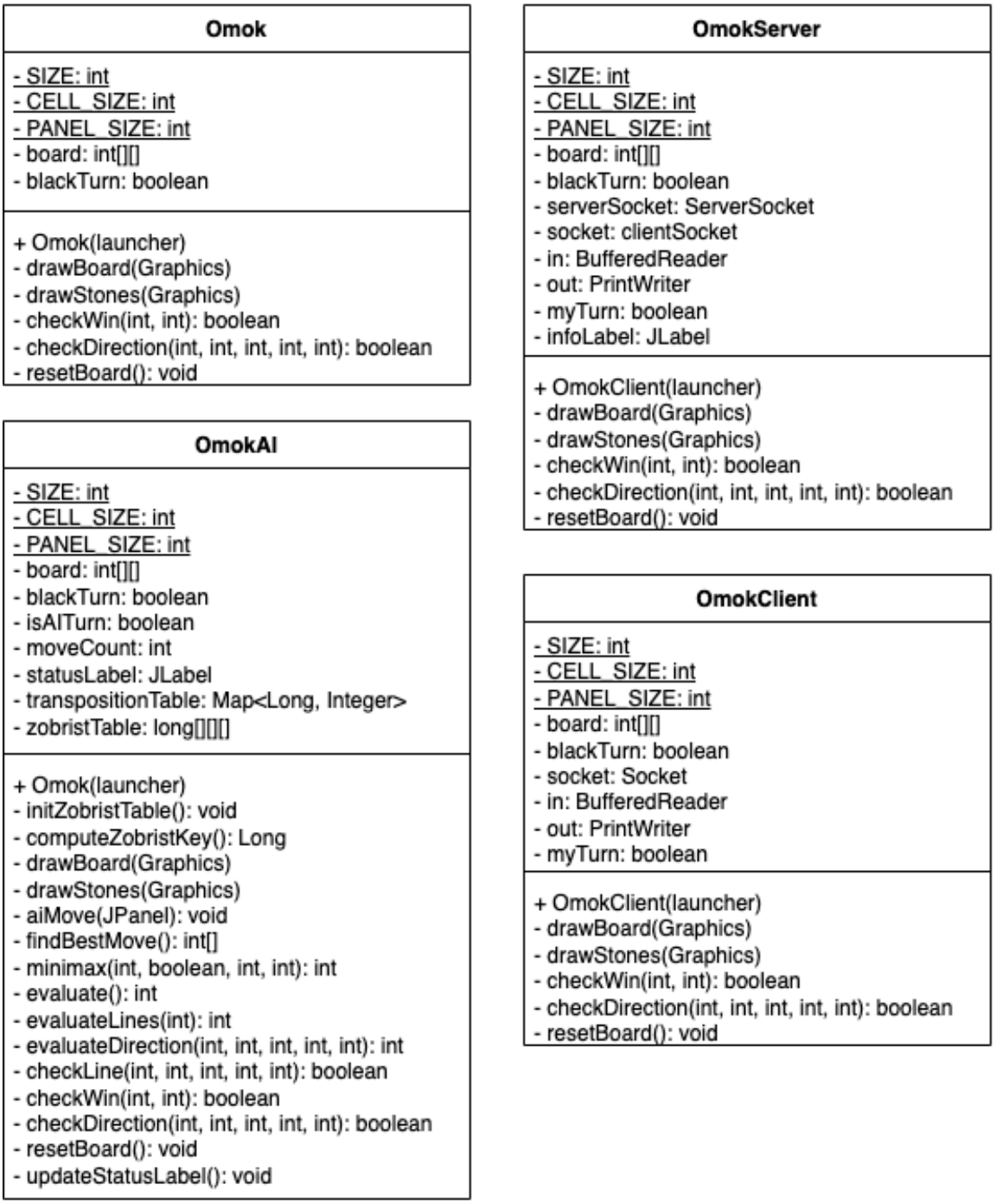
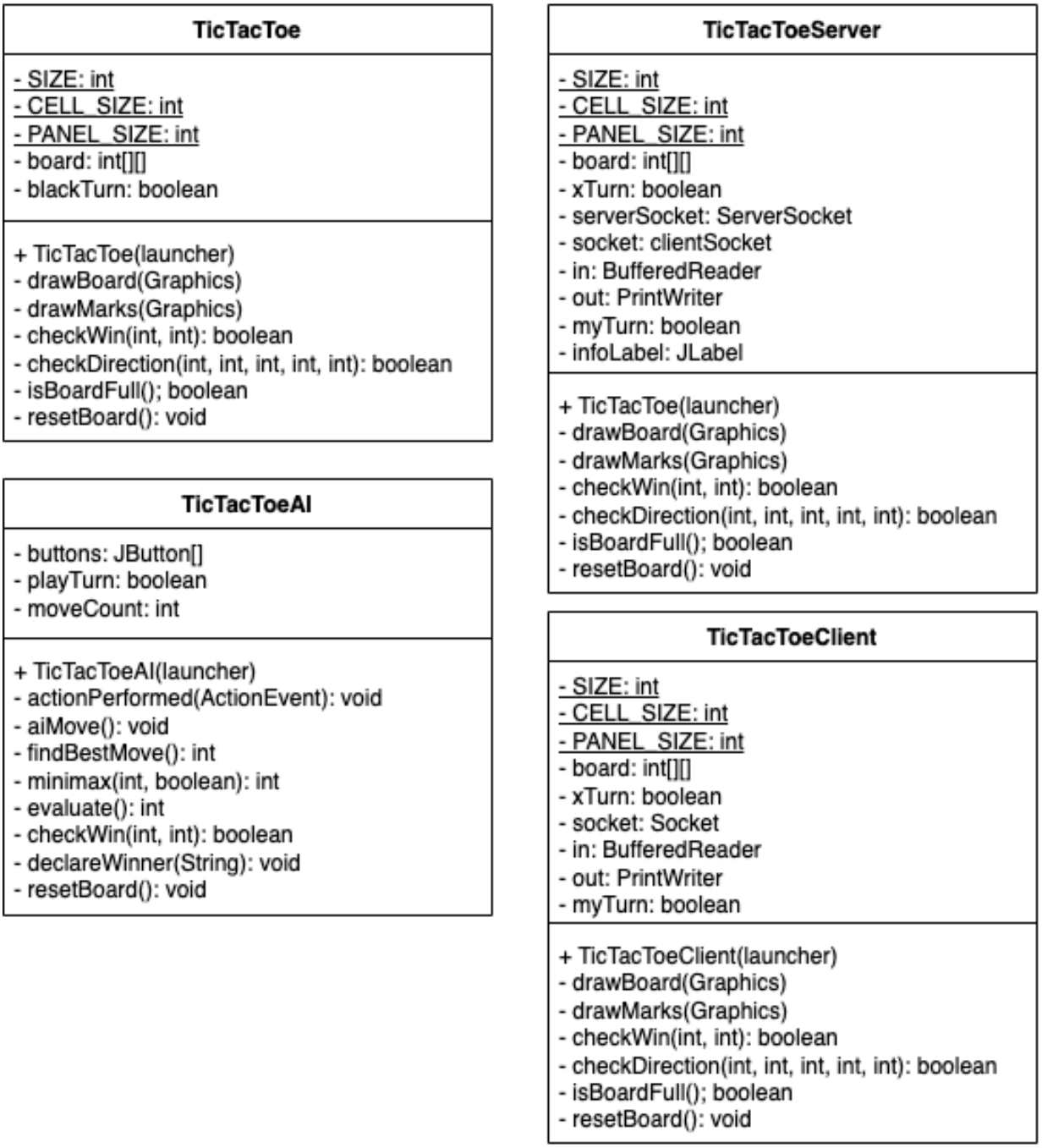
The goal of our program is to develop a game launcher that includes two classic board games: Tic Tac Toe and 오목 (Concave game or Five in a Row), and 2048. The objective of the program is to develop a program using Swing for GUI and socket programming for the functionality of multiplayer. Our program is going to have the features to choose between playing Tic Tac Toc, 오목, or 2048 from the launcher's main menu. The 오목 game involves players placing stones on a 15x15 board to defeat the opponent strategically. The game will update the board each time a player places a stone and verify the win condition after each move to determine the winner. The Tic Tac Toe game is played in a 3x3 board where players take turns placing an 'X' or 'O' to create a row, column, or diagonal of three identical symbols to win the game. The application should update the board after each player's moves and check for win conditions. Additionally, 2048 is a single-player block sliding puzzle game where the player combines numbered tiles on a grid to create a tile with the number 2048. The game is continued until there are no more moves available and the highest score is achieved. The program should support a multiplayer mode allowing players to enjoy the game simultaneously.

UML Diagram




Omok
- SIZE: int
- CELL_SIZE: int
- PANEL_SIZE: int
- board: int[][]
- blackTurn: boolean
+ Omok(launcher)
- drawBoard(Graphics)
- drawStones(Graphics)
- checkWin(int, int): boolean
- checkDirection(int, int, int, int, int): boolean
- resetBoard(): void
OmokAI
- SIZE: int
- CELL_SIZE: int
- PANEL_SIZE: int
- board: int[][]
- blackTurn: boolean
- isAITurn: boolean
- moveCount: int
- statusLabel: JLabel
- transpositionTable: Map<Long, Integer>
- zobristTable: long[][][]
+ Omok(launcher)
- initZobristTable(): void
- computeZobristKey(): Long
- drawBoard(Graphics)
- drawStones(Graphics)
- aiMove(JPanel): void
- findBestMove(): int[]
- minimax(int, boolean, int, int): int
- evaluate(): int
- evaluateLines(int): int
- evaluateDirection(int, int, int, int, int): int
- checkLine(int, int, int, int, int): boolean
- checkWin(int, int): boolean
- checkDirection(int, int, int, int, int): boolean
- resetBoard(): void
- updateStatusLabel(): void
OmokServer
- SIZE: int
- CELL_SIZE: int
- PANEL_SIZE: int
- board: int[][]
- blackTurn: boolean
- serverSocket: ServerSocket
- socket: clientSocket
- in: BufferedReader
- out: PrintWriter
- myTurn: boolean
- infoLabel: JLabel
+ OmokClient(launcher)
- drawBoard(Graphics)
- drawStones(Graphics)
- checkWin(int, int): boolean
- checkDirection(int, int, int, int, int): boolean
- resetBoard(): void
OmokClient
- SIZE: int
- CELL_SIZE: int
- PANEL_SIZE: int
- board: int[][]
- blackTurn: boolean
- socket: Socket
- in: BufferedReader
- out: PrintWriter
- myTurn: boolean
+ OmokClient(launcher)
- drawBoard(Graphics)
- drawStones(Graphics)
- checkWin(int, int): boolean
- checkDirection(int, int, int, int, int): boolean
- resetBoard(): void



github link: https://github.com/DolmaengC/GameLauncher

User's guide

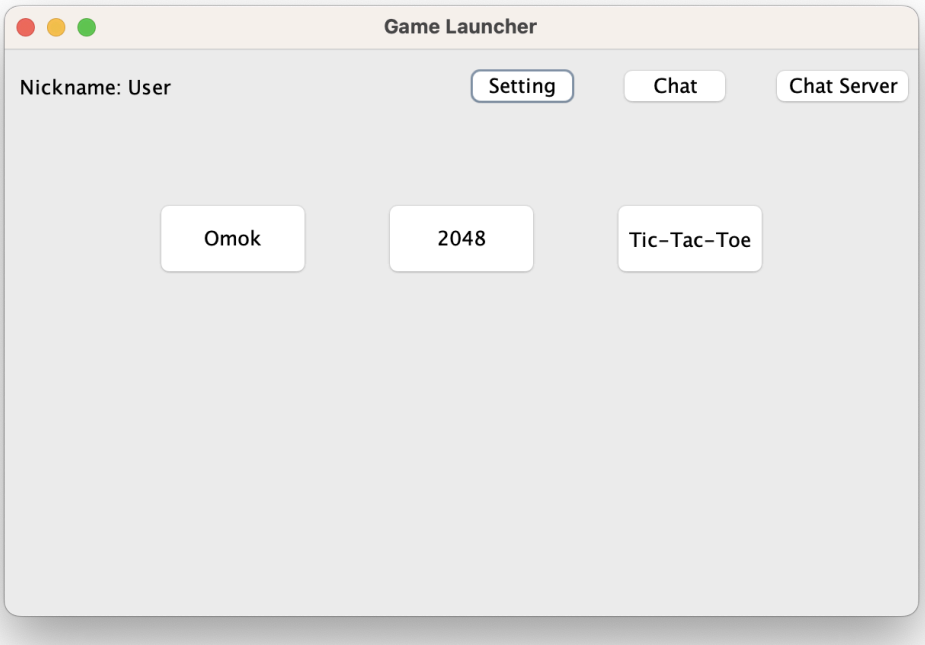
Environments
Java 16

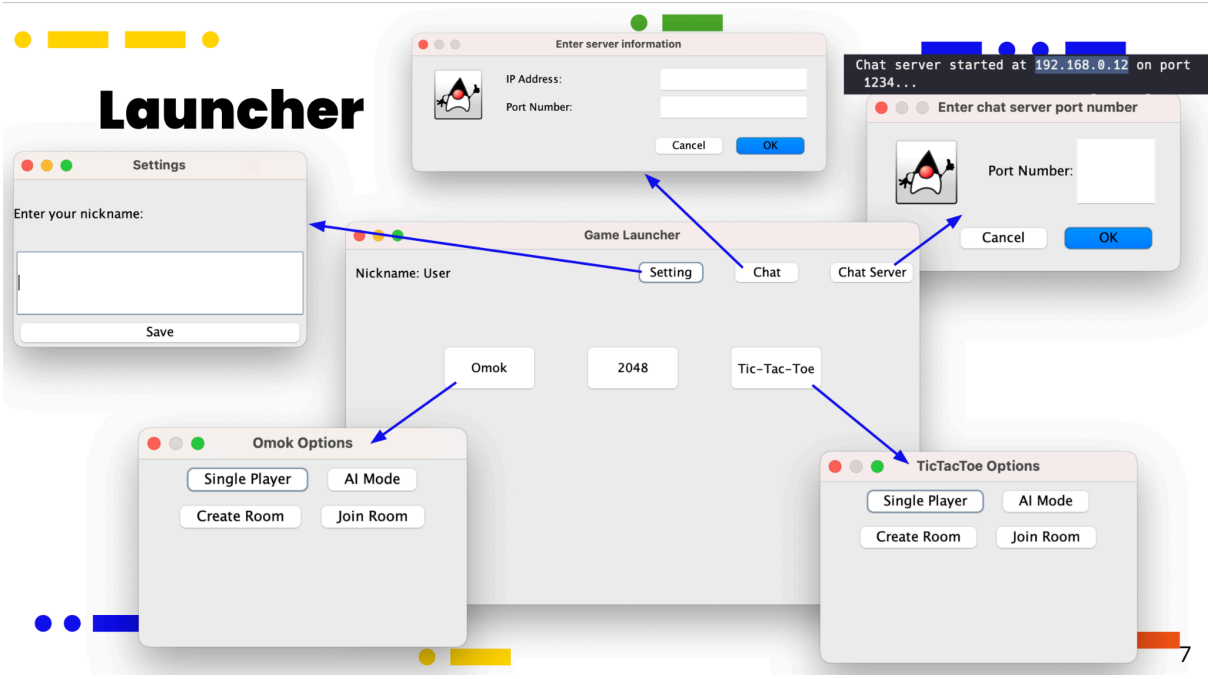
Gradle 7.5.1

How to run?

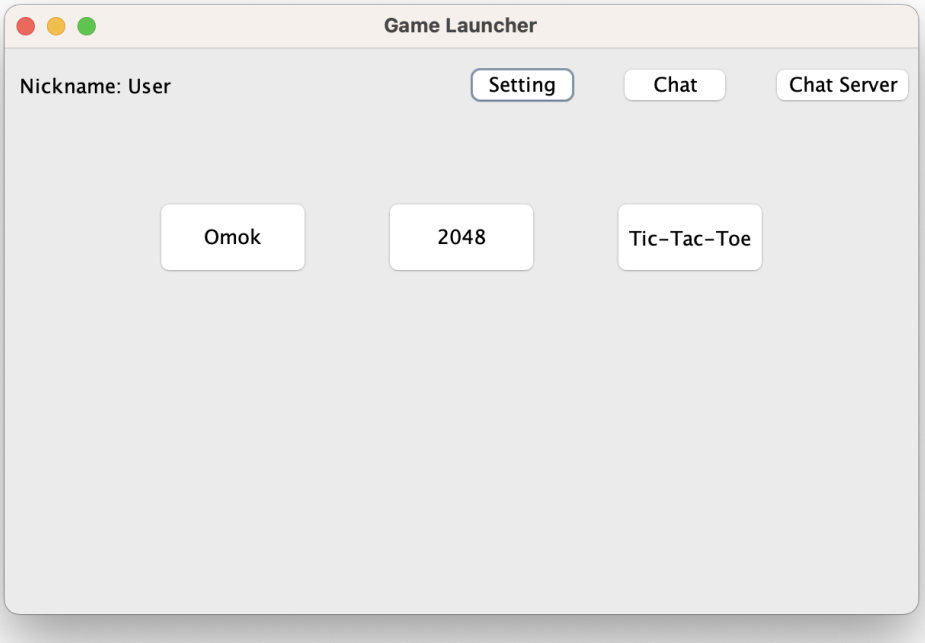
1. Start a CLI
2. git clone https://github.com/DolmaengC/GameLauncher.git
3. cd GameLauncher
4. gradle run

then you can see the launcher.

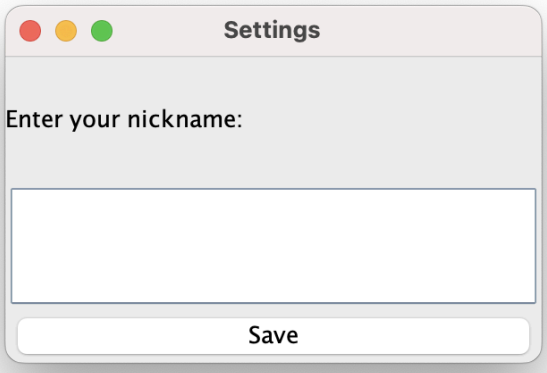




Set Nickname:

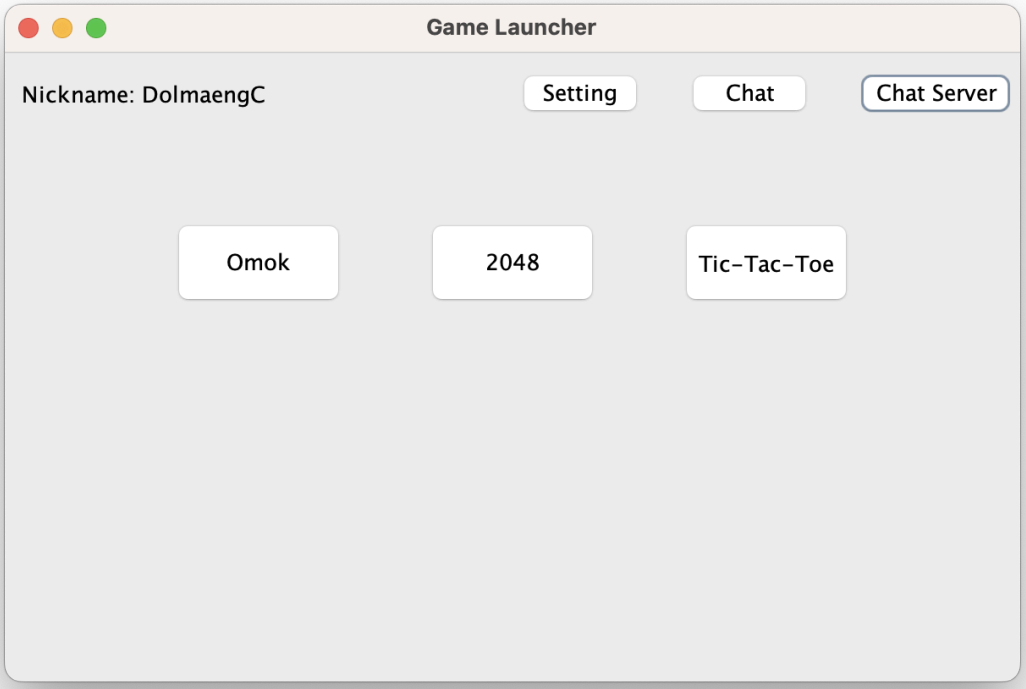


1. Click the **Setting** button

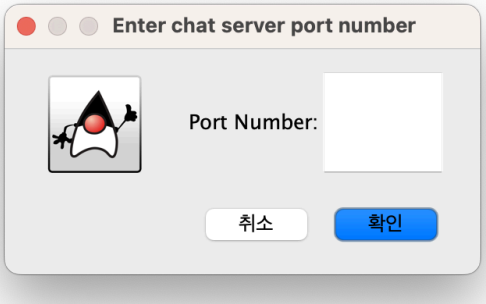


2. Enter the nickname
3. Click the **Save** button

Start Chat server
If you want to use the chat, anyone must have one person running the Chat server.



1. Click the **Chat Server** button

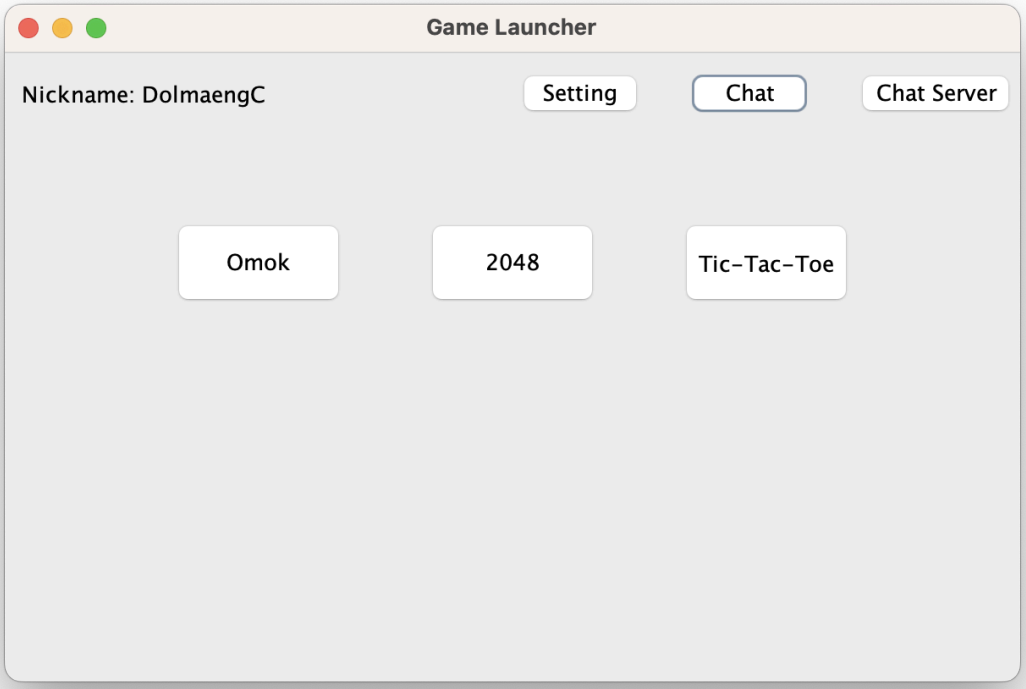


2. Enter a Port Number (ex: 1234)

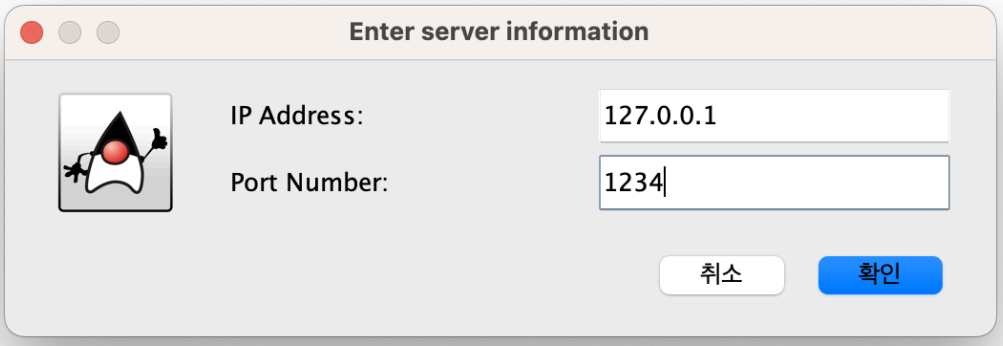
Then your cli print the ip address and port number.

```
Chat server started at 127.0.0.1 on port 1234...
```

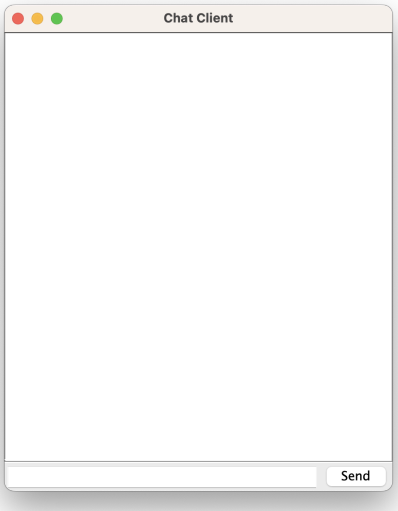
Start Chat client



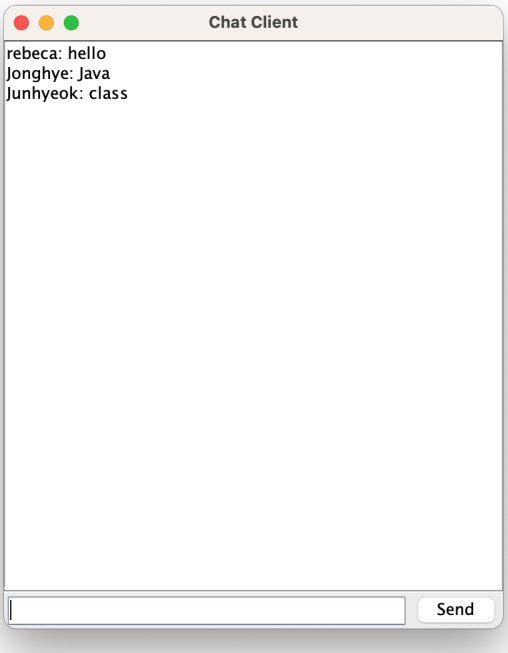
1. Click the **Chat** button



2. Enter the IP address and Port number
3. Click the 확인 button
4. Then the Chat Room can be opened

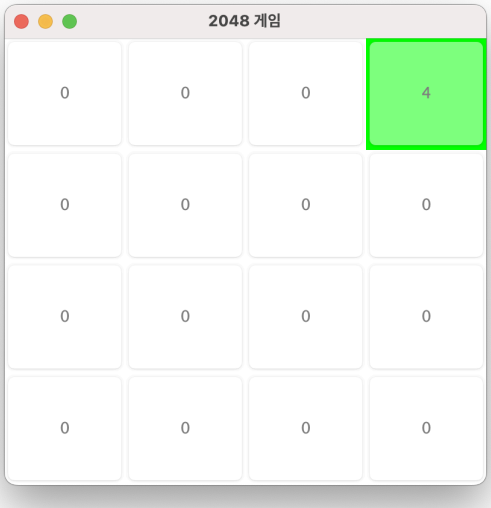


5. In the Chat room. You can type a message by clicking on the box in the chat room.
6. Click the Send button. Then all users in the chat room can see the message.



2048

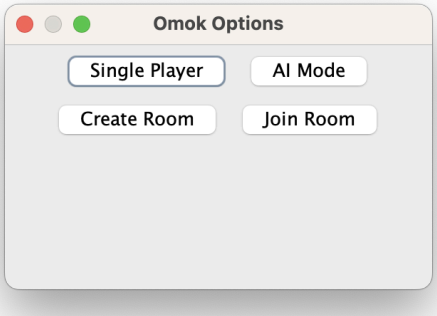
1. Click the 2048 Game
2. Click 확인 button



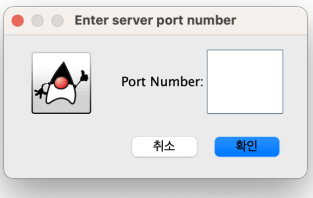
3. You can play the game with ⬆️ ⬇️ ⬅️ ➡️

Omok(Tic-Tac-Toe)

1. Click the **Omok(Tic-Tac-Toe)** button

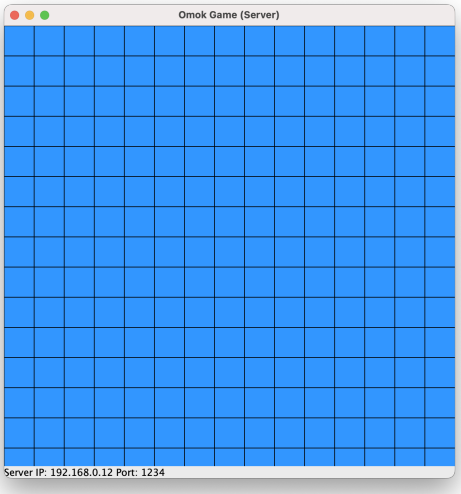


2. You can choose the mode
    a. Single Player
        i. You can play the Omok(Tic-Tac-Toe) in single player.
    b. AI Mode
        i. You can play the Omok(Tic-Tac-Toe) with AI.
    c. Create Room
        i. If you want to play Omok(Tic-Tac-Toe) with your friend, you can create a room.



        ii.

iii. Enter a Port number



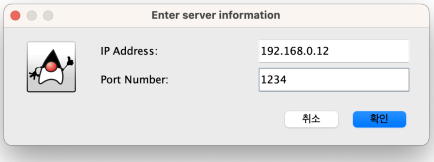
iv.

v. Check the IP address and port number

1. Your friend can access using this information

d. Join Room

i. If your friend create a room, you can join the room



ii.

iii. Enter the IP address and Port number

iv. Click the 확인 button