



CS4530 Final Project: "Interactive Gomoku Game with Chat Room Integration"

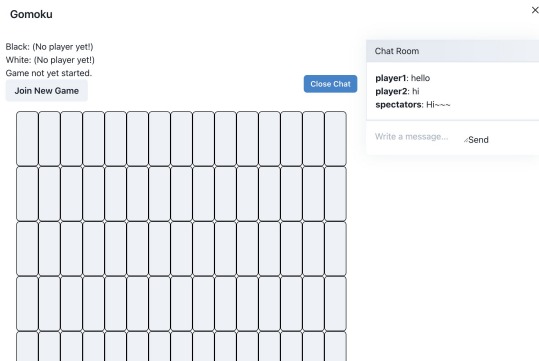
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Demo: <https://team604-frontend.onrender.com/>

Source: <https://github.com/neu-cs4530/fall23-team-project-group-604>

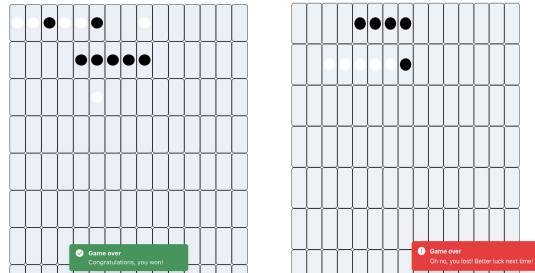
Our Feature: Gomoku in Covey.Town

In the original Covey.Town services, which provides a 2D arcade-style map that users can walk around in. We can see a lot of functional feature areas like Video Streaming, Conversation Areas, as well as a TicTacToe Game. However, we think that such a arcade style service just can not have only one small game inside, and people can talk inside the game because the Conversation Area is separated from the TicTacToe Game Area. Therefore, we innovated Covey.Town by introducing a Gomoku game area where users can engage in the strategic game of Gomoku, a logic game played on a 15x15 board. Alongside this, we implemented a chat room feature, enabling users to communicate while playing or spectating. This combination of gameplay and social interaction enhances the user experience in the Covey.Town environment. As shown below, the left side is the game area for Gomoku, and the right side is the Chat room feature.



Future Work

- Multi-Game Platform: Expanding the concept to include more board games, transforming our Gomoku area into a diverse gaming hub.
- Chat Functionality Enhancements: Introducing private messaging and group chats.
- Performance and Scalability: Refactoring for better handling of multiple simultaneous games and chats.



The left screenshot shows when the black player(our player) wins with 5 continues chess within the same row. The right screenshot shows when the black player(our player) losses because the white player has 5 continues chess within the same row and we do not.

Our Technology Stack & Design

- Integration with Covey.Town: Our Gomoku feature is built on the existing Covey.Town codebase, harmoniously integrating with its infrastructure.
- Game Area Rendering with Phaser:
 - Phaser Framework: The entire Gomoku game area, including the board and chat room, is rendered using the Phaser HTML5 game framework, offering a rich and interactive gaming experience.
- Game and Chat UI with React Chakra UI:
 - Unified UI Design: Both the Gomoku game and chat room utilize React Chakra UI, ensuring a consistent and user-friendly interface.
 - Interactive Elements: Leveraging React's capabilities for dynamic content, our design includes interactive game boards and chat functionalities.
- Backend Synchronization:
 - CoveyTownController Backend: Both the game and chat room functionalities are synchronized across clients using the CoveyTownController backend.
 - Real-Time Interaction: Utilizing socket.io, we ensure real-time updates and interactions between players within the Gomoku game and chat room.
- Continuous Integration and Deployment:
 - Automated Testing: We employ a continuous integration pipeline that runs an automated test suite on both frontend and backend components.
 - Deployment: The project is deployed using Render.com, ensuring a seamless and scalable delivery of the application.