CS4530 Final Project: Competitive Hangman

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Our Feature: Competitive Hangman

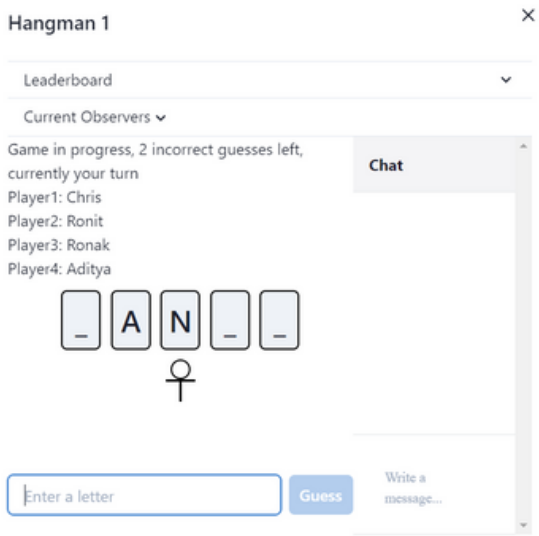
After evaluating Covey.Town, our group has added an interactive and engaging Hangman game to Covey.Town. While Covey.Town already boasts some recreational features like tic-tac-toe and connect four, and these games are primarily focused on strategy and pattern recognition, our Hangman game feature for Covey.Town addresses a unique and currently unexplored aspect of user engagement within the platform: word-based interactive gameplay.

The integration of a Hangman game would be the platform's first foray into word-centric entertainment, offering a new dimension of intellectual and social engagement for its users. Importantly, it will also introduce a single-player mode – a first for Covey.Town's gaming features – allowing users to enjoy the game independently, catering to those who prefer solitary play or wish to practice alone before joining others. Users will also have the choice of playing collaboratively or competitively against one another

The Hangman game allows users to initiate, join, and actively participate in solving word puzzles, promoting collaboration and engagement within the platform. Hangman stands out due to its educational and cognitive benefits, such as enhancing vocabulary, spelling skills, and lateral thinking. This game positions Covey.Town as a versatile space that values both leisure and learning, setting it apart from other virtual collaborative environments. Our integration will feature the classic rules of Hangman, where players take turns selecting letters in hopes of guessing the secret word before the stick figure is hung.

Demo & Source:

Our demo site is available at https://spring24-project-s24-group-401.onrender.com, and our code at https://github.com/neu-cs4530/spring24-project-s24-group-401.



In a competitive game of up to four people, players compete to guess the word first. While competitive with there being only one true winner, players must also collaborate to get the word before running out of guesses

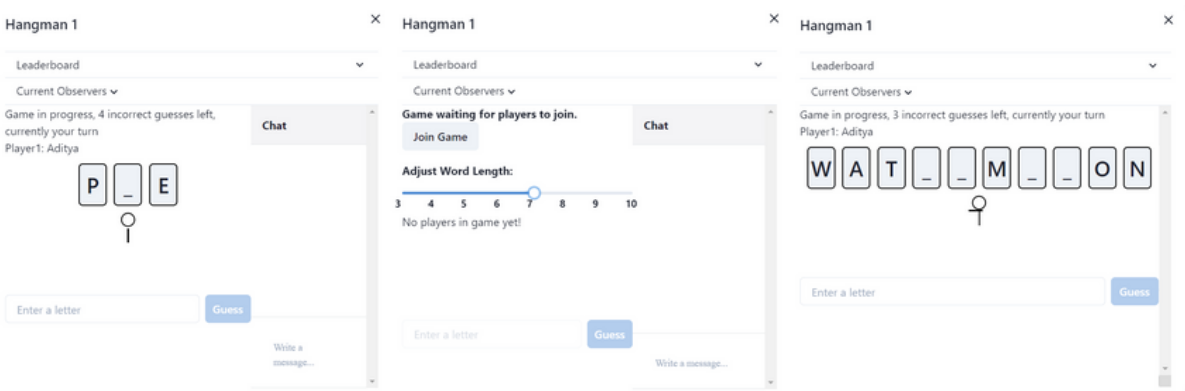
Our Technology Stack & Design

We implemented the Hangman game in the existing covey.town codebase. We added a new InteractableArea called HangmanArea. When users enter this area, they can press space to start observing the current game or be able to join a new hangman game and specify the length of the word that is randomly generated. This game can be played with 1-4 players. The front end is rendered using React/Chakra and communicates with our model using the HangmanAreaController. The initial board state would be an empty array with the length of the word to be guessed. Our model keeps track of the correct letters guessed, amount of incorrect guesses, and the player's turn to provide real-time updates to the end-user. The input box to submit a letter will be disabled if it is not your turn. We utilized GitHub actions to automatically run our test suites and deploy to our site using Render.com

Future Work

While we did successfully create a functioning version of both single and multiplayer hangman, there are several ways we envision that could improve the game. For starters, in the early stages of planning we considered a multiplayer mode where rather than playing on the same hangman, each player has their own hangman and they race each other to complete the word. While we didn't implement this mode, if implemented in the future it would make the game more competitive. It would also avoid the situation where the first player completes the word on their first turn so no other players get a turn. Additionally, the user interface is somewhat primitive. In particular, the graphical representation of the hangman is extremely basic. In the future a more developed user interface could make the game more engaging.

There are also interesting extensions that could be added to the leaderboard feature. If extended to encompass the other games in Covey.Town, a global leaderboard could be developed where users are ranked on their performance across all games in addition to the separate leaderboards for games.



Players can also control the length of the word to customize the difficulty of their game