CS4530 Final Project: "Tic Tac Toe"

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Our Feature: Tic Tac Toe

In the original release of Covey.Town, we noticed that users could only have conversations with each other but not interact in any other way. We thought adding a game would be a fun way for players to interact and get to know one another. Our feature implements **Tic Tac Toe** where users can play the classic Tic Tac Toe game with each other. Like conversation areas, users will join a designated Tic Tac Toe area and begin a new game when there are two players. Other users can join the game as spectators. Players can see their Tic Tac Toe statistics and navigate to the leaderboard area on the map to view the leaderboard with top scorers in the town.

Demo & Source

Our demo site is available at https://group-2e-tictactoe.netlify.app and our code at https://github.com/neu-cs4530-s22/team-project-group-2e

The Tic Tac Toe area and leaderboard area are labeled with text boxes. In this screenshot, Harini and Angela are playing Tic Tac Toe against one another, and Elaina is viewing the leaderboard.

A player's Tic Tac Toe stats in their Social Sidebar

The leaderboard modal with the town's top 5 players and their respective stats

Our Technology Stack & Design

We implemented the Tic Tac Toe feature in the existing Covey.Town codebase. There is a Tic Tac Toe area and a leaderboard area, represented as "objects" in the tilemap which can be easily manipulated using "Tiled." These objects are dynamically constructed when the map is loaded and rendered on the screen by Phaser. When a player enters a Tic Tac Toe area and presses space, a React/Chakra modal is displayed inviting them to start or join a game which is input through the modal. When a game starts, a gameplay modal appears and allows the players to take turns by clicking on Buttons. Moves are tracked by the Tic Tac Toe Game backend and synced to each client using socket-io. The player's stats are added to the Social Sidebar which relies on a React hook to receive updates. When a player enters the leaderboard area, a modal appears that rerenders based on a React hook that receives updates about completed Tic Toe Games from the backend.
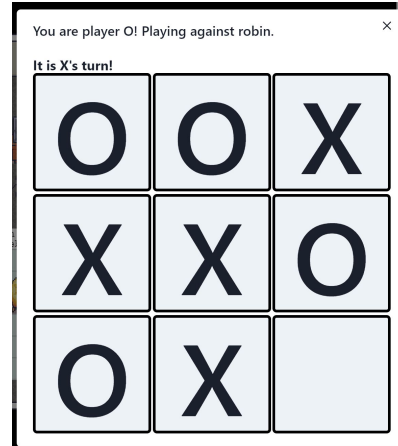
Our continuous integration pipeline runs an automated test suite in the frontend and backend components and deploys the site using Heroku and Netlify.

The current player (O) is playing against Robin (X). It's currently X's turn. Both players have placed moves which are shown in the gameplay modal.

Future Work

Ideally, there would be more than one Tic Tac Toe game going on at once. We would have multiple game areas to play tic tac toe, similar to how there are multiple conversation areas. Currently, our design runs one game at a time, but the town and map store a list of games, so we can have multiple games run simultaneously in the future.

Additionally, we would like to add to the spectator feature to allow spectators to send messages and emotes. These messages and emotes will be visible to the game players and all spectators.

Lastly, we would like to add the ability for players to play again from the "end of game" modal. Currently, they have to exit the area and re-enter which is not efficient if two players want to play a series of games.