CS4530- Final Project: "Uno"

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Our Feature: Uno Game

We are particularly excited about introducing Uno in Covey.Town for several reasons. Firstly, Covey.Town has successfully recreated a virtual space that mirrors real-world social experiences, and we believe that integrating Uno as a feature will further enrich this simulation. It seamlessly blends one of the real world's social highlights into the digital realm, creating a familiar yet explorative game to enjoy with friends or new acquaintances. It offers users the opportunity to engage in spontaneous and enjoyable interactions, akin to those experienced during casual game nights with friends. Secondly, Uno is a game that requires minimal explanation, ensuring accessibility for users of all ages and backgrounds. This aligns perfectly with Covey.Town's mission of inclusivity and accessibility. By introducing Uno, we aspire to lower the entry barrier for users who may be less familiar with complex virtual activities. Lastly, we believe that integrating Uno will significantly boost user retention, as the game will provide an added incentive for users to return to Covey.Town regularly, fostering lasting connections and enriching the overall user experience. Our primary aim is to alleviate the challenge of limited engagement and social interaction in Covey.Town by introducing Uno as a universally cherished, accessible, and immersive game, ultimately elevating the user experience and strengthening the platform's community bonds.

Future Work

Taking this project to the next level will consist of incorporating an in-game reactions menu, multi player, adding player avatars ... etc would provide users with more ways to be interactive and add a personalized touch. To further increase general understanding of the game and to eliminate confusion among new players, we would like to make an interactive tutorial that allows the player to visually navigate a 'fake game' to more thoroughly learn the rules. Additionally, Uno has also recently come out with new adaptations and card plays to the game (such as wild "shuffle hands" cards, wild "switch hands" cards and wild customizable rule cards), catering to diverse user preferences, groups and skill levels.

Our Technology and Stack & Design

Drawing inspiration from our previous work in ticTacToe, we organized our new data inside CoveyTownSocket.d.ts. In the frontend, some of the uno files we have implemented include UnoAreaController.ts (which encapsulated the logic and state), UnoArea.tsx (which provides the UI), UnoBoard.tsx (renders the game) as well as an assets folder that includes SVG files for each card in the game. These cards include 0-9s, Skips, Draw 2s for Red, Green, Blue and Yellow in addition to the Wild Card and Draw 4 cards. In the backend, we have implemented a UnoGame.ts file which manages the logic and state (including methods for shuffling the deck, applying moves, checking the validity of moves, and handling players joining and leaving the game). Similarly in the backend, we have implemented a UnoGameArea.ts file which is responsible for hosting and managing interactions.

Although any and all design can be iteratively improved, we believe this was the right design for several reasons. Drawing inspiration from prior successful implementations saved development time and ensure a consistent coding style across different parts of the project. Moreover, we have a clear separation of concerns when it comes to our design decisions. The division of responsibilities between frontend and backend files is apparent. For example, UnoAreaController.ts encapsulates the logic and state on the frontend, while UnoGame.ts manages game logic and state on the backend. This separation of concerns promotes a modular and maintainable codebase, making it easier to debug, test, and extend functionality in the future. The right design took longer, but was the right choice.

Demo and Source

Source Repo: https://github.com/neu-cs4530/fall23-team-project-group-608

Public Demo Site: https://covey-town-onemec.onrender.com/







Joining A Game

Starting A New Game