SET CARD GAME

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Project Description:

As our group surveyed the Covey.Town one particular point we found to be lacking was the area of mentally stimulating and rigorous skill-based games. So, we decided to work on the popular pattern matching card game Set, as it has a simple-to-learn, hard-to-master format and rule set that allows for continual improvement and development of pattern spotting skills.

For our project, we introduced a new Set game area into the Covey.Town map. In our Set window, the user is able to participate in either a single player or multiplayer game. In single player mode, a player can add up to 3 AI players in the game to challenge themselves and increase their pattern matching skill. Anyone in the town can view the leaderboard above the board. This leaderboard stores all the high scores of everyone who has ever played a game of set.

Link:

Our demo site is available at
https://spring24-project-s24-group-202.onrender.com/
Our source code is available at
https://github.com/neu-cs4530/spring24-project-s24-group-202

Technology Stack & Design Decisions:

Our project was created using the existing Covey.Town code base. We followed the same framework as a tic tac toe game and a connect four game by introducing set as a new game area. The area itself was created as an object in the tilemap which was edited using "Tiled." We primarily used Chakra components to create the main window. The leaderboard is stored in a Firebase database and the deployment/hosting is handled on Render and Heroku.

As our game followed the same framework as connect four, it largely followed the model, view, controller framework. SetGame acts as the model, holding the primary logic and attributes of the game. SetGameAreaController communicates actions in the view to the model to update the game. The SetBoard and SetArea views respond to values from the controller and represent them visually to the user.

Future Work:

In the future, we would like to add different levels of difficulty for our AI players. Currently, any AI players added in single player are set to a default difficulty but we would like to offer three modes going from easy, medium, to hard. We would also like to add the option of AI players in multiplayer mode. While it was not mentioned in our original project plan, it could be helpful to include a search bar in the leaderboard so the user can more easily find their high score.
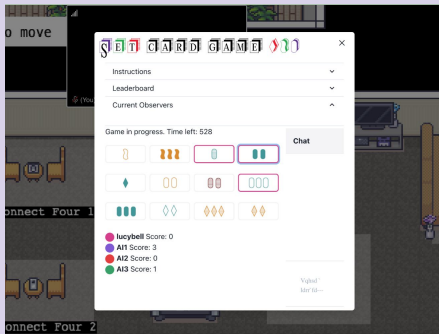
Set window where the user is selecting a set
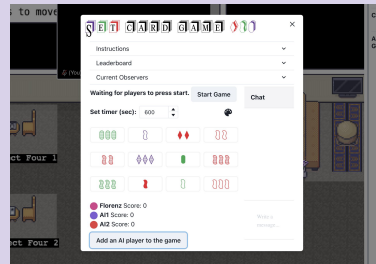
Window demonstrating the addition of AI players
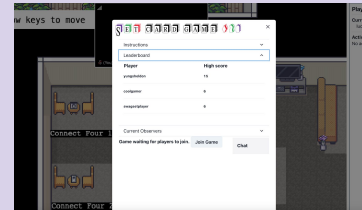
Leaderboard

Set Board on the map