

CS4530 Final Project Group 408: Dave, Joey, Dom, Abhi

Draw The Perfect Shape!

Our Feature

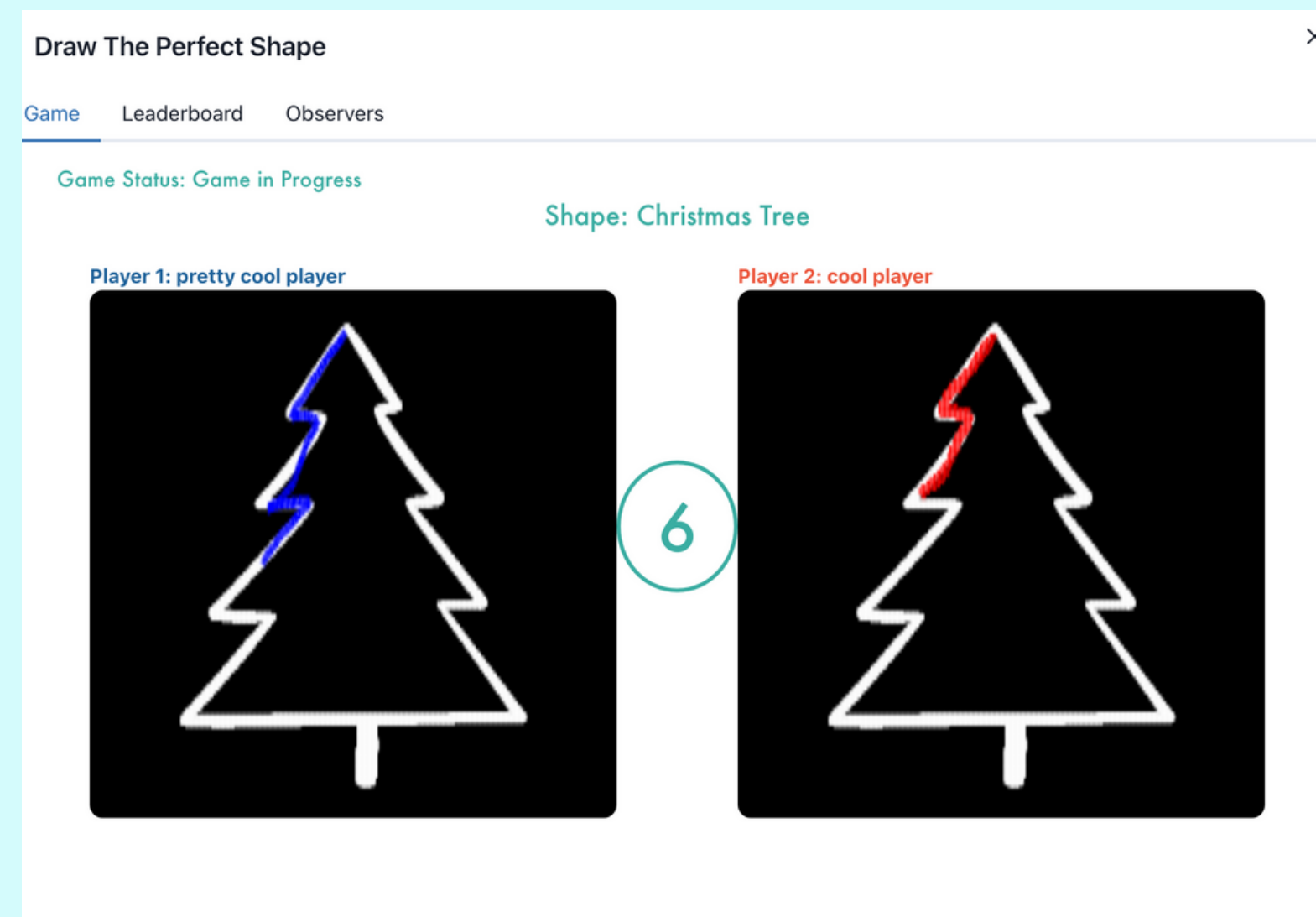
In the initial version of Covey.Town, we felt the game variety wasn't complete. So, we decided to allow users to hone their drawing skills! Our new feature includes a game in which users will compete against other users to see who can trace a shape better. Users will be given a score based on how close their tracings were to the original shape and will only be given a limited time to perfect their drawing! The game is complete with three difficulty levels including nine different shapes. Users can also compare their scores to other players, search for specific players, and sort leaderboard scores by difficulty.

Future Work

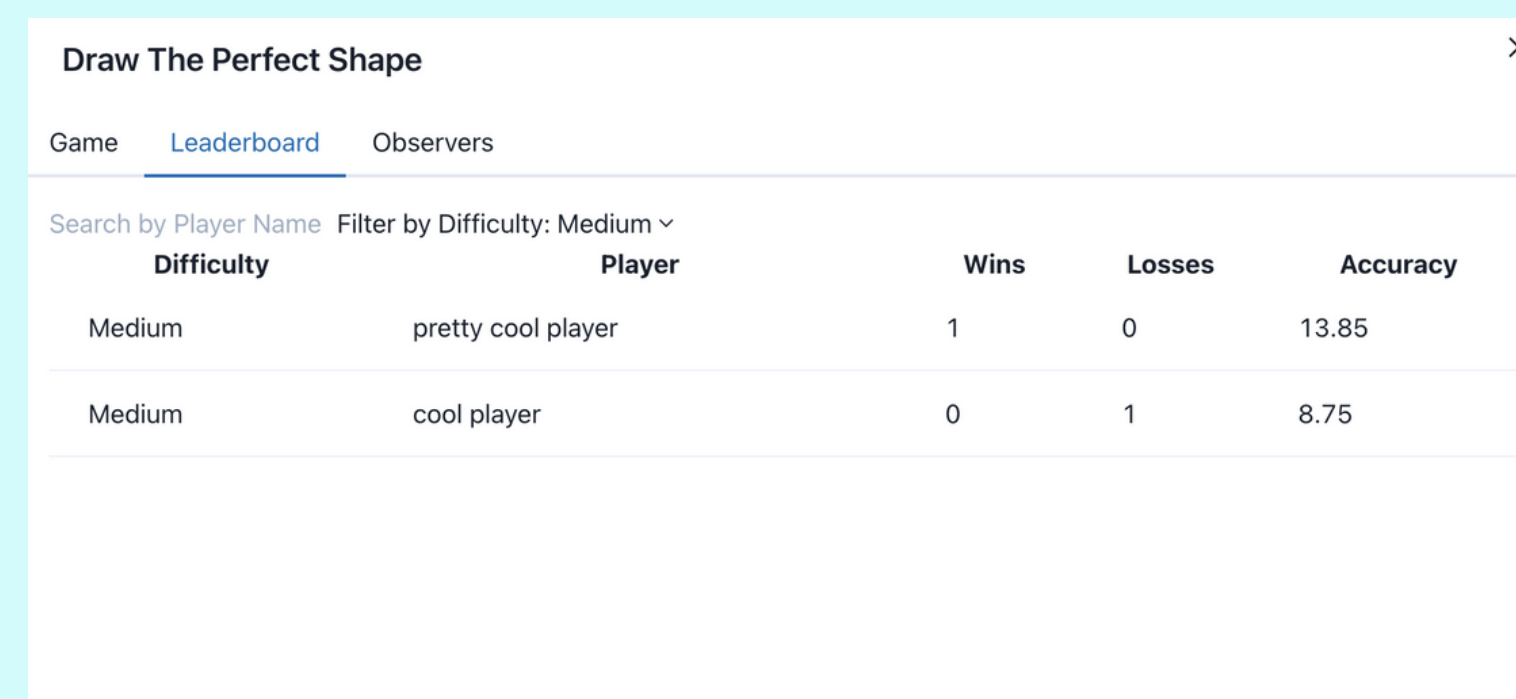
Going forward, we would like to add a feature that live-updates the user accuracy as they draw. We would also like to add new shapes and add a new difficulty where the drawing stencil disappears after a certain time. Finally, we would like to implement a login system and persisting database using Firebase.

Tech Stack/Design

We created a new GameArea in Covey.town to support our game. Each game contains a game state which stores the player info, player shapes, accuracies, the traceable shape, and the timer. Each of our shapes contains a list of X and Y coordinate-indexed pixels and has both a difficulty and title. The shapes class allows us to add individual pixels to shapes and compare accuracy between shapes, taking into account correct and incorrect pixels and adjusting for stencil thickness. Our frontend includes an interactable HTML5 Canvas that uses the CanvasRenderingContext2DContext to enable drawing. When players draw, the new pixels are added to their individual shapes, which is updated by a useEffect in our frontend area to make user drawings universally visible to players and observers.



An active Draw The Perfect Shape Game on medium difficulty



Difficulty	Player	Wins	Losses	Accuracy
Medium	pretty cool player	1	0	13.85
Medium	cool player	0	1	8.75

Leaderboard after a medium difficulty game was played

Demo and Source

Code: <https://github.com/neu-cs4530/fall23-team-project-group-408>
Demo: <https://draw-the-perfect-shape-frontend.onrender.com>