CS4530 Final Project: Coveynames
Group 211: Jonathan, Alex, Daniel, Mash
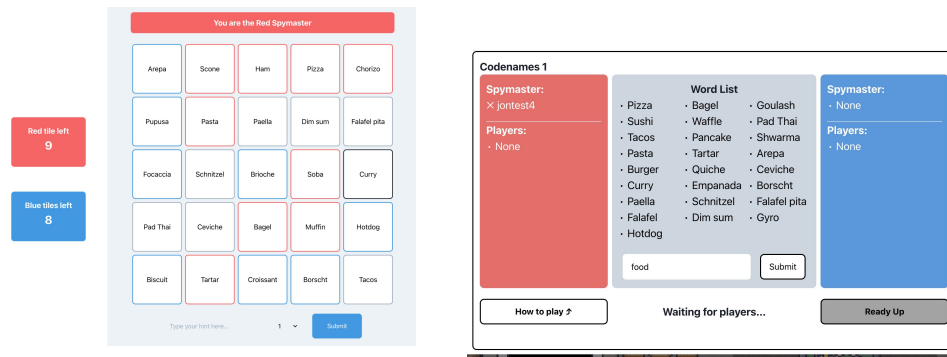
Our Features:
- **Codenames Game Area**
- **Customizable Word Sets w/ Gen AI**
- **Login/Signup System with Leaderboards**

One of the first things we noticed about Covey.Town was the games, and how the only two available ones were individuals playing against each other. With the nature of Covey.Town being one about meeting people and interacting, we thought a cooperative game like Codenames was perfect for the getting to know new people! To add onto the base game, however, we wanted to add the ability to play with custom word sets, which led us to using generative AI to aid us in creating these sets. This would introduce more variety into the game without the need for manually curated lists, making it easier for players to have unique experiences every game. Finally, we decided we wanted to have a persistent, global leaderboard among all players to encourage more Codenames playtime, and this led to us also deciding on a signin/signup system, so that we could associate a player's winning record with a permanent account.

Demo and Source:
Demo: https://spring24-project-group-211.onrender.com
Source code: https://github.com/neu-cs4530/spring24-project-group-211


Our main Codenames game board as well as a custom lobby screen, with indicators for player roles and ready status. The center area of the lobby indicates a sample of the word list, which in this case was generated with the "food" prompt.

Tech Stack & Design:
With ConnectFour and TicTacToe as reference, we built similar backend classes for Codenames, although modifications were made because of the team-based nature of the game. The frontend was more unique, as we have a custom game area complete with a lobby screen and stylized game board, all using Chakra UI components. Similar to the other games, Codenames employs a MVC structure to maintain state across the frontend and backend. To add the custom word set functionality, we employed HuggingFace's API for text generation, which we hooked up to the Covey.Town backend through a provided SDK. Another SDK was used to connect Supabase to the backend, so that we could implement our signin/signup and leaderboard systems. These were integrated into the backend and we wrote endpoints to allow for access from the frontend.

Future Work:
Although we were generally pretty happy with the way that we approached developing the Codenames game itself, there could have been many improvements when it came down to developing API endpoints and integrating the third-party services that we chose. For one, it might be better to have separate REST APIs for both Supabase and HuggingFace, instead of having all requests go through the single TownsService interface. With greater separation between the three services, each could be more flexible to change and allow for more features to be added with less code coupling. Future work might consider developing these independent services.
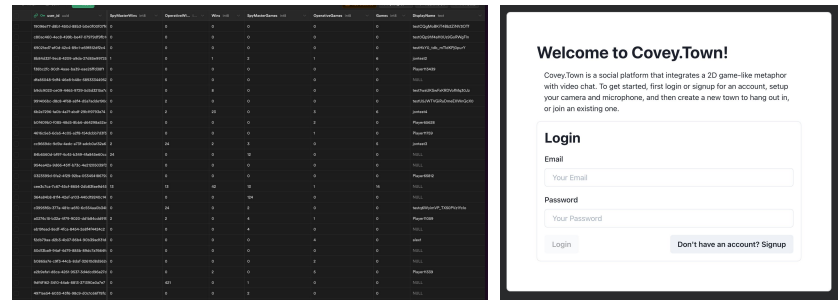
Database for our project housing our leaderboard that keeps track of useful information about games user's player

Simple signin screen, which sends a request to Supabase to verify authentication.