Self Assessment

Part A

My main contribution to this project was designing and implementing the bots that the users play against, but I was also involved in more. I played a key role in improving the frontend, improving the backend game logic, and contributing to the Random Forest Model. Creating the bots required a lot of research into different approaches. While I explored multiple options, I decided to start with a more rule-based bot with a plan to implement Monte Carlo Simulations. I made a complex set of rules that the bots followed, using simulations to further refine the rules. The simulations ran thousands of hands to evaluate the bot performance and gave back useful statistics on the bots, such as win percentage. I used this data to improve the decision-making logic of the bots, so they played more aggressively and strategically.

Throughout the project, I built on many skills and developed several new ones. Being able to work on the frontend gave me valuable experience with JavaScript, HTML, and CSS, which helped me to improve the UI and overall experience of the game. Working with the backend led to facing a lot of challenges with integrating Python with the JavaScript frontend, especially with passing data between the two. I learned a lot about asynchronous communication and full-stack development. Also, helping with the Random Forest Models taught me a lot about machine learning and data processing. One of the biggest challenges I faced was navigating the project structure, making adding new features difficult sometimes. Facing these issues, though, taught me a lot about the importance of architecture and planning ahead. Overall, this project gave me a deeper understanding of AI, web development, and how everything interacts to create an application.