Hello, we are final-year students at Utah Valley University, and I'm here to present our capstone project, RTSanalytics.

The goal of our project is to enhance strategy in real-time strategy games, for this demonstration we will be using Starcraft 2. We do this by calculating win rates linked to different races and specific game strategies, known as build orders. These insights are then provided directly to the players in the game through an overlay feature.

An RTS (Real-Time Strategy) game is a video game where players simultaneously build structures, manage resources, and command units to defeat opponents in real-time.

In RTS games, players can choose from unique races or factions, each offering different buildings, units, and gameplay mechanics.

Since the race of each player is recorded in the replay file, we can easily extract this information without needing a specialized algorithm. We can then calculate race win rates by tracking how often each race wins compared to how often they are played.

\*Demonstrate Race Winrates

This lets the users know the current state of the game and developers know what needs to be balanced

Build orders are pre-determined set commands the player can follow to optimize in-game performance. Each build order varies, designed to achieve different strategic goals.

To calculate the win rates of build orders, we first identify which strategies were used in a game replay. We've developed a program that extracts data from these replays and matches players' actions to our library of known build orders. This allows us to determine which strategy was most likely used and track its success rate across different games.

\*Demonstrate Build Order Winrates\*

Knowing the winrates of build orders let the user’s make informed decisions about what strategies to implore.

Each of our predetermined build orders can be overlayed to the user’s screen so that it is easier for the user to follow and optimize their performance.

\*Demonstrate Overlay\*

We hope our application will enhance player performance and lower the high barrier to entry typically associated with RTS games. Additionally, it provides developers with insights into the current state of the game, enabling them to make necessary adjustments to maintain a balanced gameplay environment.

Our current phase of the project is dedicated to building a robust and well-organized codebase that is easy to maintain and scale. In future updates, we plan to enhance the user experience, improve the functionality of the application, and refine the quality of the information we analyze.