# RACING GAME

Description of the game

Racing game is an interactive multiplayer game in which users will utilize the WASD keys and the arrow keys to operate the cars and race around the track. The physics of the vehicle are designed to model real-life cars, incorporating physics concepts such as inertia, tangential velocity, normal velocity, acceleration, etc. The goal of the game is to complete 3 laps around the race track before the other player whilst avoiding the red barrier (resulting in automatic loss).
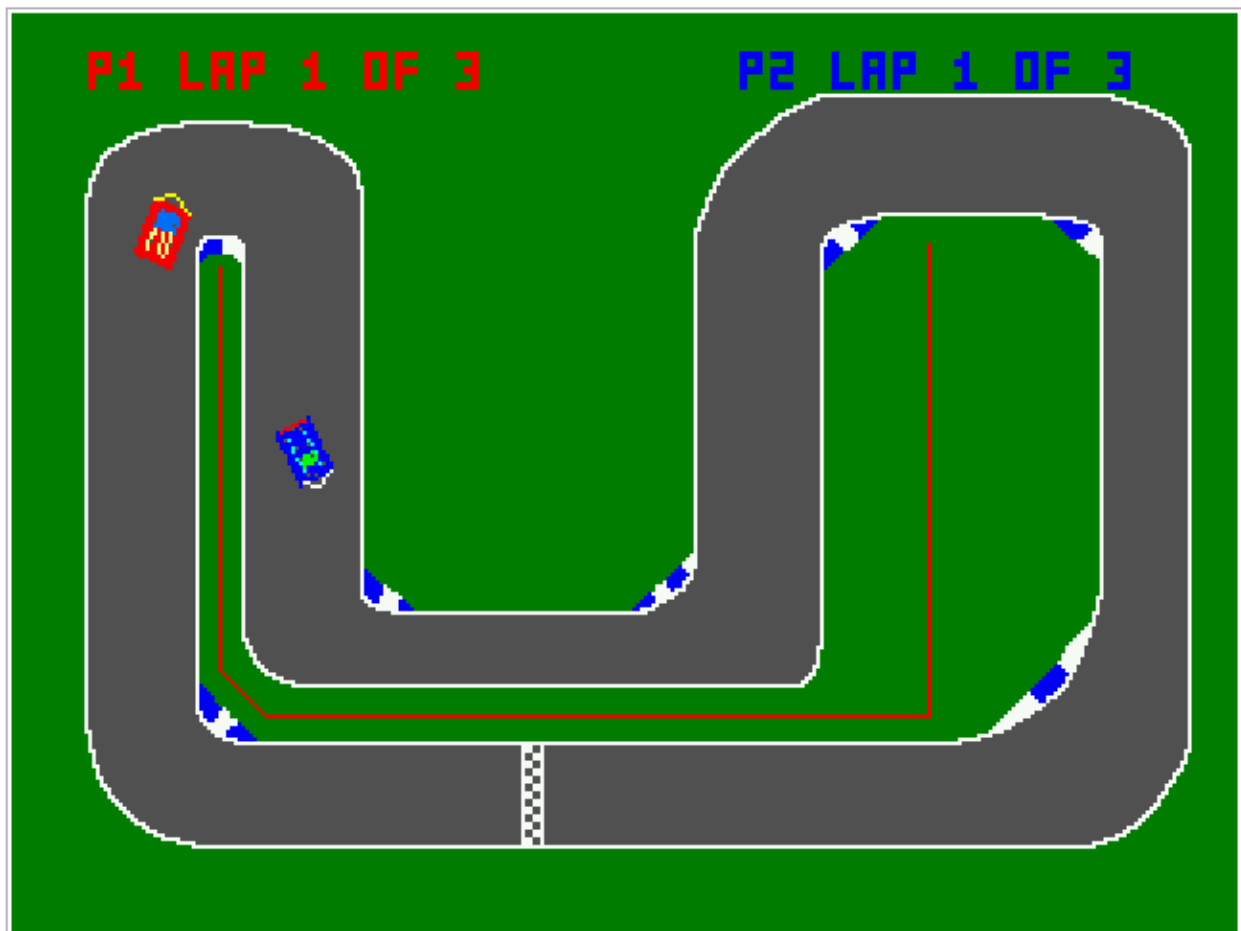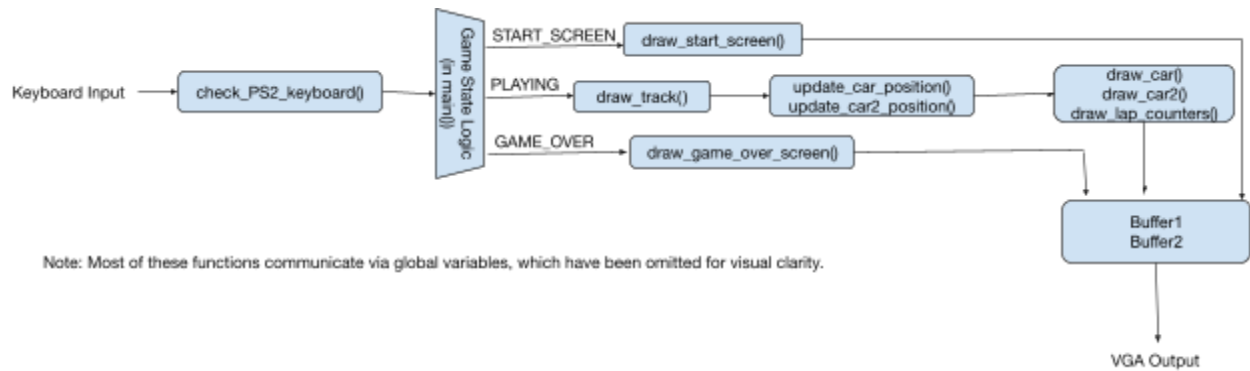

How to play

1. When greeted with the start screen press ENTER on the ps2 keyboard to start the game
2. Players can use the WASD keys to operate the red car and arrow keys for the blue car:
   - W/ (Up Arrow): Move in the direction the car is facing
   - A / (Left Arrow): Rotate the car and drift in the clockwise direction
   - D / (Right Arrow): Rotate the car and drift in the counterclockwise direction

- ● S/ (Down Arrow): Apply brakes to stop the car
3. First to finish 3 laps while avoiding the red barrier wins
4. Touching the red barrier results in disqualification

Block Diagram

Note: Most of these functions communicate via global variables, which have been omitted for visual clarity.

Attribution Table

Function	Partner
Drawing functions for pixel, line, rectangles, and car 1 and car 2	Rayan
Drawing function for entire map	Seva
Clear Screen and drawing screen functions and game sate	Rayan
Entire physics: - Location and speed calculations	Seva
Ps2keyboard handling	Rayan
Lap checking and win condition handling	Seva
Race car collisions with finish line, grass, and red barrier	Seva
Initial conditions for the car	Seva