This document contains a list of some prototypes which I feel would be very useful to have built when coming to do a full technical design of the 2D Multiplayer Car Game project.

The intention is by completing these prototypes: I will have a good understanding and practical grasp on each of the core elements of the final project BEFORE I do the full technical design.

This will hopefully help me break the project down into more manageable steps before combing them into the full project.

List of prototypes

Driving and Collision detection and handling on client side (12/03/24 – 16/03/24) – 4 days

- Realistic collision detection of rectangles(cars) and lines (track edges).
- Realistic application of impulses on collision
- Driving must feel intuitive and realistic and have drifting mechanic implemented

Duplicating Simulation and Collision Detection on Server (18/03/24 – 19/03/24) - 2 days

- Copy same simulation and collision detection on the server
- Add packet system to enable updating of game-state from packets

Client – GameServer connection (20/03/24 – 23/03/24) – 4 days

- Handling connection of multiple clients to the sever
- Sending of inputs to the server
- Reconciliation of game state from based on its simulation.
- Client side prediction using the already implemented simulation code
- Server reconciliation to validate the players movements
- Handling client of server disconnects

High-scores website and accounts databases (25/03/24 – 27/03/24) - 3 Days

- Creating and managing user accounts
- POSTing and GETing of high-score and user data SECURELY.

Matchmaking server (28/03/24 – 31/03/24) – 4 days

- Connecting to any client (maybe have list of banned clients/IPs)
- Authenticate users based on the user account database in high-scores app
- Allow users to create lobby’s to join with other users
- Communicating with Azure web services to request game-servers
- Passing relevant information to clients to connect to game server or visa versa