Networked Car Race Game

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Introduction

• OpenScene Graph to render graphics on the screen.
• Internet Socket programming for communication
• Parallelizing by using Openmp for the position updates of different cars.
Network protocol (TCP/IP)
Server functions

1. Listen to new connections
2. Determine and send unique ID to each Car.
3. Maintain Map with Unique ID of each car and its Location
4. Serve all nodes in cyclic order, and send positions of all other cars to each car.
5. Upon disconnection, remove entry of node from map and communicate to all cars.
States for server

- The server

- Listening
- New process

- send
- receive
- Update map
The Race Process

- The player with server program can start the game
- Then the player would give out his IP address and Port number
- The other players can join by running client programs and connecting to that ip and port
- The server updates every client of the location of each car on racetrack
Extension to UDP

• No connection is established.
• Maintain map of IP addresses and position.
• Faster communication as Overheads avoided, by compromising quality.
• All major commercial games use UDP for communication as the flow and continuity is more important than the accuracy.
• TCP has mechanism for resending lost packets that creates a problem as past packets are received and have to be discarded.