

Project Proposal - F1 Racing Circuit Simulator

Overview

I will create a 3D interactive F1 racing circuit simulation featuring realistic modeling, lighting, textures, and a complex scene with numerous elements. The project will build upon my homework but will significantly enhance its complexity through various elements. It will allow the user to drive the car among other cars on the track.

Current Progress

Developed an F1 car model. Created a building with textured windows. Built a track with 2 U-turns. Added environmental elements such as trees. Implemented textures and lighting throughout the scene.

Plan to Complete:

Adding more elements to the scene:

1. Adding a pit stop with a garage setup, start signal, streetlights, and fencing for the track.
2. Improve car geometry with proper wings and cockpit, stop light at the back, change the canopy to a helmet, and add a person.
3. Add stands to the scene with seating tiers and roof structures.

Adding Other features:

1. Add a User control for moving the car around the track.
2. Add rotating wheels when the car is in motion, and add brake lighting when the car slows down.
3. Adding different views, like a helicopter view, a cockpit view.
4. Adding lighting from brake lights and streetlights.
5. Day Mode and Night mode with Rain.
6. Add particle effects for braking and rain.

Stretch Goals:

Adding sound effects for driving and braking. Adding more particle effects for other cars. Adding collision detection for cars. Add cutscenes or camera transitions for a cinematic experience.

Super stretched goal: Implement a complete gameplay system with laps, checkpoints, and timers. Create a fully interactive racing game with UI that integrates all features above, allowing players to drive, race, and experience the F1 environment in real-time.