The World

- **Checkpoints**
  - Black Translucent Boxes
  - Checks they’re staying on path
  - Penalizes when checkpoints are not hit

- **Road**
  - The blue prisms capture where the road turns
  - Two different textures used; one for shoulder and one for main road

- **Terrain**
  - Raised and lowered to simulate a hilled area

- **Trees**
  - Added to better represent the hilled environment and provide contrast
Problems Faced

- Problems
  - Universal Render Pipeline Issues
  - Tree and asset placement
  - Fixing textures and materials manually

- Assets
  - Universal Render Pipeline/Lit
  - Placed in same terrain
The Car

- Engine Noise derived from 4 audio clips
  - Low acceleration
  - Low deceleration
  - High acceleration
  - High deceleration
- Body collider
  - Allows car to collide/interact with other object
- Center of mass
  - Used in driving physics calculations
- Steering wheel
  - Needed to configure the car’s steering wheel to move in relation to our physical steering wheel
- Wheels
  - Driving physics are calculated based on the wheels of the car. Each wheel has its own wheel collider.
Driving Physics

Car is built using Unity Wheel Collider Physics. These include the following adjustable points:

- **Suspension**
  - Spring Rate
  - Dampers
  - Ride height/travel
- **Forward Friction**
  - Extreme Slip
  - Asymptote Slip
- **Sideways Friction**
  - Extreme Slip
  - Asymptote Slip
Controller

Steering Wheel/Pedals → Logitech G29

- Functionality comes from Logitech G SDK assets
- Steering the wheel corresponds to car’s steering
- Steering wheel centers itself with input
- Pedals function as expected
Game Play

- Timer → Task is to finish the track in minimum time
- Checkpoints to track path of vehicle movement and progress