PROJECT 07 - ARCADE RACER

Level Design Document

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Course: *Level Design II*

Program: *Game Level Design*

Term: *Winter 2016*

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Outline

This project is envisioned to create an arcade racer game using level design techniques through three different locations in one race circuit, as well as distinctive gameplay according to the proposed thematic. The prototype is created in Unity, using Maya for the integration of assets and environmental modeling, as well as prefabs available in the project package and some others imported from the Unity asset store.

Story

The general theme and composition of the track is inspired on the retro futuristic and 80's science fiction movies, such as Tron, Knight Rider, Runaway, and Blade Runner.

Level Design and Composition

The track will have five distinctive regions/landmarks:

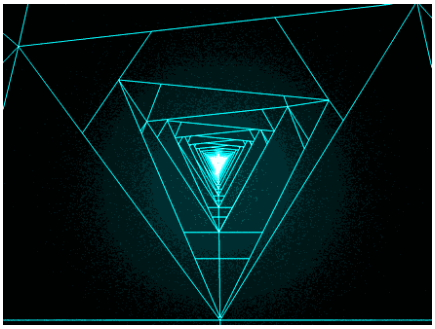
- **Tower (central HUB)**
- **City (buildings)**
- **Bridge**
- **Tunnels**
- **Mountains**

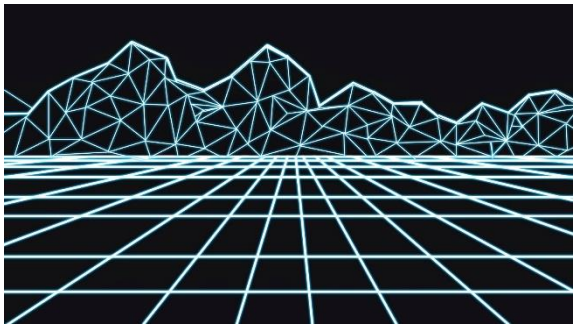
In the same way, the following elements will be used in the track in order to create a composition, beat and design in the game:

- **Lights and materials**. The lighting used in the game will be bright and saturated, using colors like blue, green, orange and violet. Materials will have minimalistic textures like metallic buildings and dark blue concrete, as well as highlighted grids using the same color palette described before.
- **Flares**. Flares will be added to some point lights in enclosed areas like tunnels and in the city
- **Skybox**. The skybox used in the scene is a futuristic space-themed nebula.
- **Tunnels, arcs and fences**. In order to create certain enclosure, this elements will be placed along the track and the main enclosure will be made using holographic fences and concrete barricades.
- **Ramps**. In certain areas, ramps will be placed and will be useful to take advantage in the arcade race mode.
- **Shortcuts**. They will be used to take advantage from other players in the game, as side paths which are hard to find for beginners.

References

Taking references from films, illustrations and other games, the following references are used for the environment design and atmosphere in the game.





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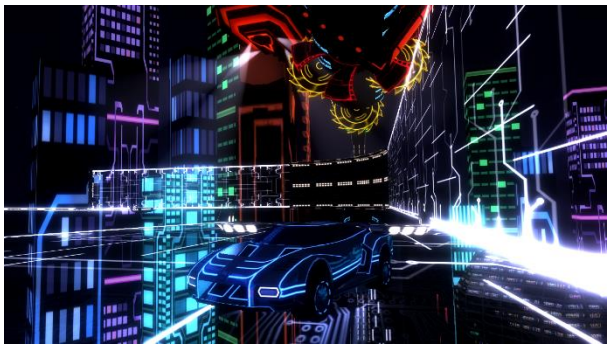
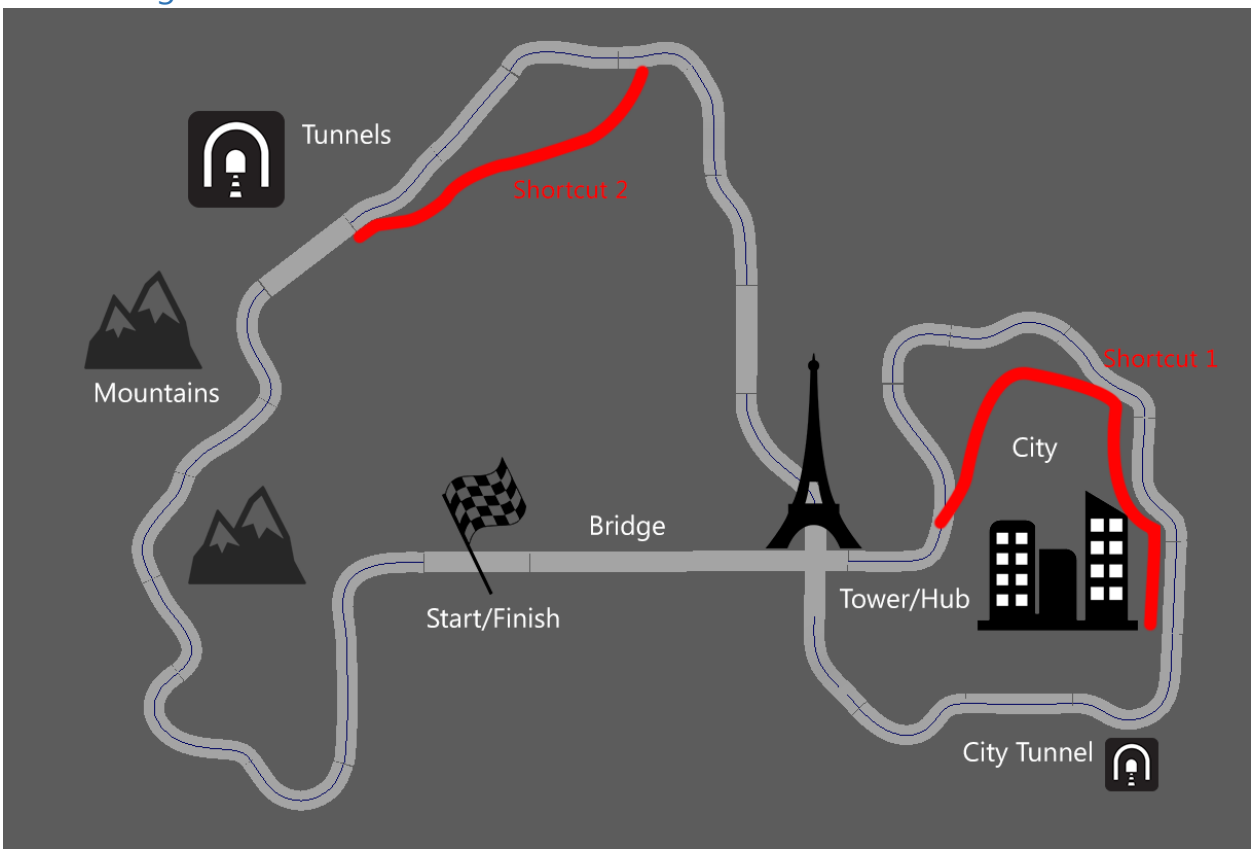


Diagrams

Circuit diagram



Bubble Diagram

Pending

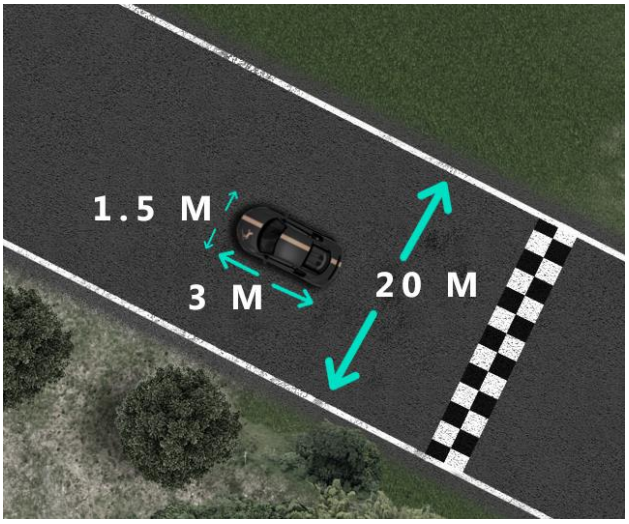
Program / Requirements / Features / Gameplay

- **Game space type**: circuit/loop
- **Number of players**: 1 player and 2 AI cars
- **Speed**: The average time per lap is 2.5 minutes.
- **Design and aesthetics.** The level design and aesthetics will resemble those 80's futuristic movies and TV series, and will be inspired mostly in TRON and Matrix (Vaporwave style).
- **Enclosure.** The side parts of the track will be enclosed by invisible meshes (colliders), preventing the player to go outside of the track.
- **Weapons:** None.
- **Power Ups:** Boosters and ramps (to be developed)
- **Environment design elements:**
    - Futuristic buildings
    - Neon lights and holographic decals
    - Starry/nebula skybox
    - Vaporwave music
    - Retro sun
    - Turn signs

Metrics

Track width: 20 meters.

Car dimensions: 3 m (length), 1.5 m (width)

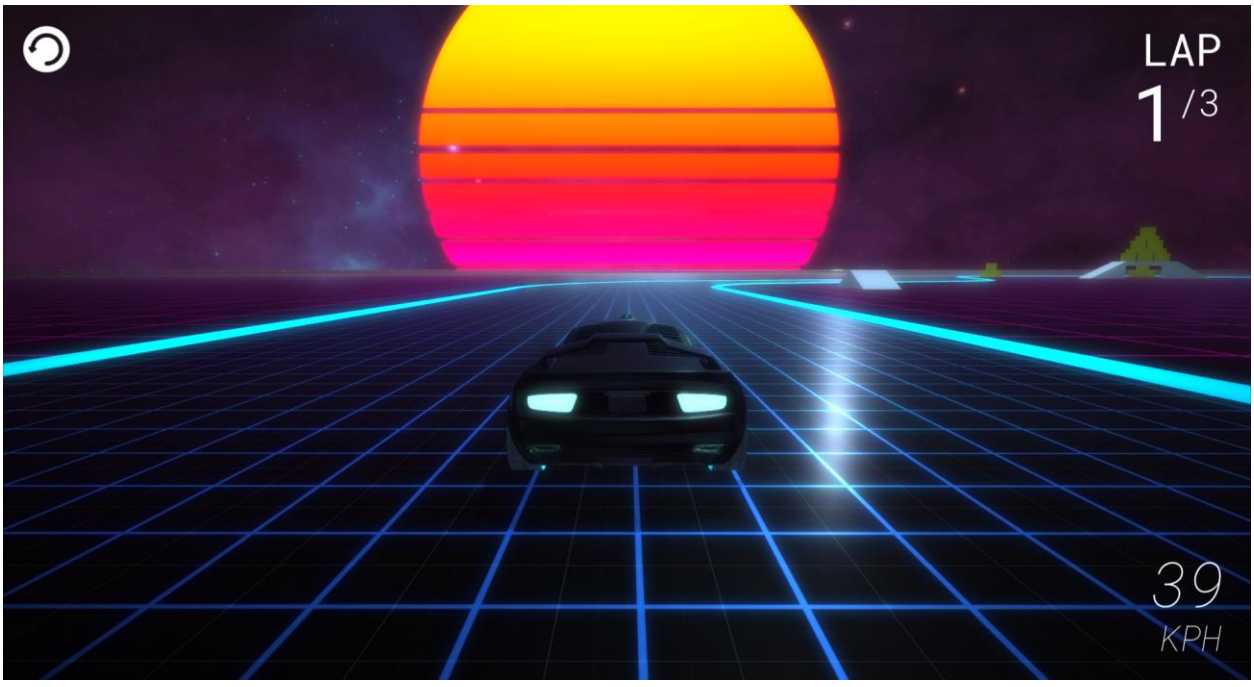


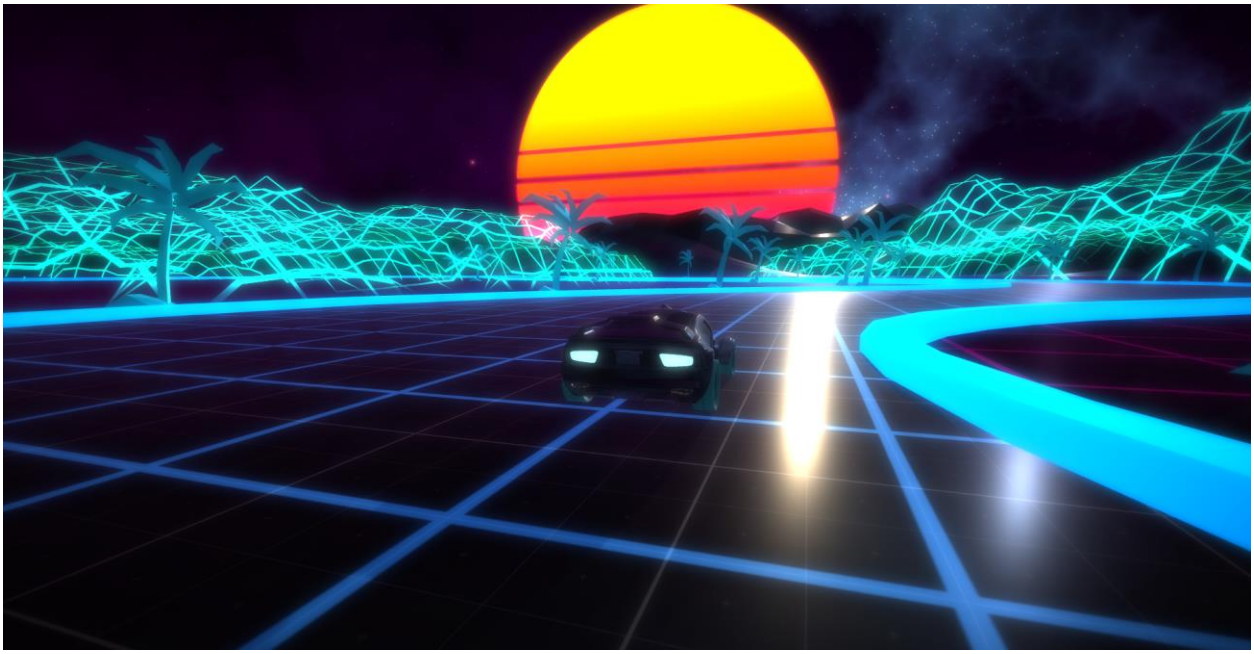
Track length (average travel time): 2 minutes per lap.

Curves Maximum angle: 45 degrees.

Car maximum speed: 120 km/h

Prototype Screenshots





Moments

According to the different sections in the track, the following moments are created in order to create a unique gameplay experience and provide diversity to the race in the level:

1. **Futuristic City**. Player can drive across the futuristic city, between the different buildings.

2. **Tunnels**. Player can experience the sensation of enclosure of travelling inside tunnels.

3. **Mountains and landscapes**. Provided the retro style, player can experience a more relaxing moment in a mountain landscape zone.

4. **Bridge**. A large bridge that connects the mountains section with the city, provide a panoramic view of the track.

All the different moments are provided with the respective challenging elements like wide turns, power cubes that enhance the gameplay and in a real race, can be used to block the way, and also ramps and sideways that can be used to take advantage from other players.

Estimates

The following props were modeled, textured and re-utilized as part of the environment design in the level:

- Buildings: 8 different buildings in total
- Arrow turn signs: 1 type
- Ramp: 1 type
- Power cubes: 1 type
- Hologram decals: 6 types
- Bridge meshes: 4
- Sun decal: 1
- Track: 1 general mesh, 2 sideways meshes. All the track is surrounded by an invisible mesh (collider)
- Ground: 1 mesh
- Mountains: 5 meshes (reutilized)
- Tunnels: 3 tunnel (cylinder) meshes and repeated rings inside the tunnels
- Palm trees: 1 type, reutilized meshes
- Lamps: 1 type, reutilized meshes