# RACING GAMES

## Evolution Through Time:

Racing games have evolved significantly since their introduction in the early arcade era. Early racing titles were limited by hardware constraints and featured simple two-dimensional graphics, basic controls, and short gameplay loops. As computing power increased, racing games transitioned into three-dimensional environments, offering improved vehicle physics, more complex track designs, and enhanced realism.

During the late 1990s and early 2000s, developers began focusing on realism, incorporating licensed vehicles, real-world tracks, and detailed customization systems. In recent years, advancements in graphics engines, artificial intelligence, and online connectivity have led to highly immersive racing experiences, including competitive online multiplayer and professional-level racing simulations. Today, racing games range from casual entertainment to advanced simulators used for esports and driver training.

## Subgenres:

### Arcade-Style Racing

Arcade-style racing games prioritize accessibility, fast-paced gameplay, and entertainment over realism. Vehicle handling is intentionally simplified, allowing players to perform sharp turns, high-speed maneuvers, and dramatic collisions with minimal penalty. These games often include exaggerated physics, visual effects, and power-ups. The primary objective is enjoyment and immediate engagement rather than accurate vehicle behavior.

### Simulation Racing

Simulation racing games aim to replicate real-world driving as accurately as possible. They feature detailed physics models, realistic vehicle handling, and authentic representations of cars and tracks. Players are often required to manage factors such as tire wear, fuel consumption, braking techniques, and weather conditions. Due to their complexity, simulation racing games are commonly used by professional drivers and are prominent in competitive esports environments.

### Kart Racing

Kart racing games are characterized by small vehicles, stylized tracks, and an emphasis on fun and unpredictability. These games typically include power-ups or special abilities that can influence race outcomes, such as speed boosts or obstacles affecting opponents. Kart racing games often feature colorful visuals and simplified controls, making them accessible to players of all ages and skill levels.

### Anti-Gravity Racing

Anti-gravity racing games feature vehicles that do not rely on traditional traction or contact with the ground. Instead, vehicles hover above the track and are often capable of extreme speeds, sharp turns, and vertical or inverted track designs. These games commonly incorporate futuristic themes, advanced technology, and non-traditional racing mechanics, distinguishing them from conventional racing experiences.

**Momentum-Based Racing (Emerging Subgenre)**(Need a better name)

Momentum-Based Racing is an emerging subgenre of racing games characterized by vehicle movement on intentionally slippery or low-traction surfaces. Unlike traditional racing games where grip and braking are central mechanics, this subgenre emphasizes inertia, momentum management, and controlled sliding. Players retain the ability to accelerate, decelerate, and steer, but must account for delayed responses and reduced friction when doing so.

In these games, success depends on predicting movement rather than reacting instantly. Steering inputs influence the vehicle gradually, requiring players to plan turns in advance and maintain optimal momentum through corners. Speed control is achieved through careful acceleration rather than sudden braking, as abrupt inputs often result in loss of control.

This subgenre is commonly found in community-driven or experimental game environments, such as user-generated content platforms. Examples include ice-boat racing minigames in Minecraft and drifting-based racing games in Roblox, where simple mechanics create deep and skill-based gameplay.

(Momentum-Based Racing often intersects with other racing subgenres. It borrows accessibility from arcade-style racing, physics experimentation from simulation racing, and creative track design from kart and futuristic racing games. As game development tools become more accessible, this subgenre continues to grow through player-made experiences, making it a notable and evolving area within racing game design.)

**WHY THREE.JS IS RIGHT CHOICE FOR THIS PROJEKT**

**Introduction:**
This project is not a large commercial production.
Because of this, many disadvantages of not using
a full game engine (such as team workflow, large toolchains, or AAA-scale asset pipelines) do not apply.

**The main goals of the project are:**
Technical understanding
Full control over rendering and game logic
Fast iteration
Web accessibility
For these reasons, THREE.js is a more suitable choice than engines like Unity, Unreal, or Godot.

**1. Full Control Over Rendering and the Graphics Pipeline**
THREE.js allows direct control over the rendering loop, cameras, materials, shaders.
Minimal engine abstractions
Rendering bugs are easier to understand and fix
Clear understanding of how 3D graphics actually work
Ideal for learning
Game engines hide large parts of the pipeline, making debugging and learning harder.

**2. Fast Load Times and Lightweight Runtime**
The game runs directly in the browser with no heavy engine runtime.
Smaller bundle size
Faster startup times
Assets can be streamed progressively
Unity and Unreal Web builds are large and slow to load, even for simple projects.

**3. Superior UI and Menu Creation Using HTML, CSS, and JavaScript**
Menus, HUDs, and settings are easier and faster to build using standard web technologies.
Easy styling and animation
No need to learn engine-specific UI systems
Faster iteration and design changes
Engine UI systems are more complex and less flexible than HTML/CSS for 2D interfaces.

**4. Excellent Support for Split-Screen and Multi-Camera Rendering**
The project must include a co-op feature.
Manual control over multiple cameras
Simple viewport and scissor setup
No engine constraints or presets
Easy experimentation with layouts
Engines support split-screen, but often through rigid systems that are harder to customize.

**OSEBINA:**

Zunanja naslovnica (Sprednja).
Notranja naslovnica (1 ne pišeš)
Prazna stran (2 ne pišeš)
ali Navajanje zunanjih sodelovalcev in institucij
Stan z navedbo ključnih bedes(3 vidno oštevilčeno)
5-10 ključnih besed(opredelijo temo pisnega dela)
1 starn za slovenski izvleček (600-1200 nakov s preseldeki)
1 stran za angleščki izvleček
Kazalo zajema naslove useh poglavji(1 t) in podpoglavji(1.1 t)
1 Začetek{Uvod} 1-3 strani
V njem opredelimo temo, pojasnimo, zakaj
smo si jo izbrali, in navedemo, kako se bomo lotili obravnave.
2 Jedro razprave:
Zgodovinski kontekst
Teoretične razikava opredelavanega problema
S prspektive vse dostopre litelature
3 Zaključek
Pouzetek ugotovitev in prikaz razultatos dela
4 Seznam litelature(zajema tiskano in elektronsko literaturo ter vire)
Viri (urejeni po abecednem vrstem redu priimkov piscev)
5 Velike reprodukvije umetniških del avtorja naloge:

6 Senznam slikovnega gradiva:

7 Seznam Uporabnij kratic okrajšav in simbolov:
vsebovati mora razlago uporabljenih kratic,
okrajšav … Ni obvezna sestavina dela!

PRILOGE:
Priloge:dokumentacija
Zahvale:

Konec{Literatura oz. seznami, tabele... ,na koncu naloge}

HRBET
Hrbet
Na hrbtu, po debelini trdo vezanega. izvoda morajo biti natisnjeni naslednji podatki: ime in PRIIMEK (samo priimek obvezno z VELIKIMI TISKANIMI ČRKAMI), naslov dela (ker je verjetno predolg, samo prve besede in znak za okrajšanje, tj. tri pike – za presledkom. Natisnjeno besedilo naj se začne tri centimetre pod zgornjim robom, besede naj tečejo od vrha navzdol. Sledi naj jim rimska številka I za diplomska dela prve stopnje oz. rimska številka II za magistrska dela druge stopnje.
Zunanja naslovnica (Zadnja).

Priprava na delo:
Moodboards
Zgodovina
Trenutne metode

Graphick disign
Fonts
Menues
Post procesing
VFX
Charekters
Models
8 cars
8 tracks
Musick disign
Bacground
Interactive
Game loops
PLAYEBLE MINIGAMES
Racing around the track to beat the best time.
Race in interact with other players on the field
Power ups
pick ups
stationary
Boost bar

Uprašanja:

OBLIKOVNA NAVODILA:
Notranji rob:3cm
Zunanji rob:2cm
Zgornji rob:2,5cm
Spodnji rob:1,5
Razmik med vrastivami je 1,5 vrastice
Times New Roman
velikost:12 pik
Enostranska poravnava

Številčenje:Vse zunanji rob zgoraj
lihe desno, sode levo
Od notranje naslovnice naprej
Ne številčimo 1 in 2 ter prilog in zahval

Format:A4 ali A3 za oblikovalska dela