2D CAR RACING GAME AS A COMPUTER GRAPHICS PROJECT

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INTRODUCTION

- **Objective:** Present a 2D car racing game developed as a computer graphics project

- **Scope:** Overview of design, development, and implementation

PROJECT OVERVIEW

- **GAME CONCEPT:** CLASSIC 2D TOP-DOWN CAR RACING GAME

- **PLATFORM:** [SPECIFY PLATFORM, E.G., WEB, DESKTOP]

- **TOOLS & TECHNOLOGIES:** [E.G., UNITY, GODOT, PYGAME, C++, PYTHON]

GAME DESIGN

- Gameplay Mechanics:

    *Top Down View

    *Player controls: Arrow keys or WASD

    *Objectives: Complete laps, avoid obstacles, or race against a timer.

- Game Features:

    *Track layout

    *Car physics

    *Power-ups and obstacles

ART AND GRAPHICS

- Visual Style:

    *Pixel art, vector graphics, or sprite-based.

- Assets:

    *Car sprites

    *Track tiles

    *Backgrounds

- Design Tools:

    *[e.g., Photoshop, Aseprite, Illustrator]

TECHNICAL IMPLEMENTATION

- **Game Engine/Framework:** [e.g., Unity, Pygame]

- **Rendering:** 2D sprite rendering, animation techniques

- **Physics Engine:** Simple collision detection and response

- **Controls and Input Handling:** Mapping keyboard inputs to game actions

DEVELOPMENT PROCESS

- **Planning:** Designing game mechanics, creating wireframes

- **Implementation:** Coding game logic, integrating assets

- **Testing:** Debugging, optimizing performance

- **Iteration:** Refining features based on feedback

CHALLENGES AND SOLUTIONS

- **Challenge 1:** Smooth car movement and control

  - **Solution:** Implementing a responsive control scheme

- **Challenge 2:** Designing an engaging track

  - **Solution:** Utilizing procedural generation or manual design

- **Challenge 3:** Handling collisions and physics

  - **Solution:** Simple physics algorithms and collision detection

KEY FEATURES DEMONSTRATION

- **Screenshots or Video Clips:**
  - Game in action
  - Examples of gameplay
  - Key features highlighted

FUTURE IMPROVEMENTS

- **Additional Features:**

  - Multiplayer mode

  - Enhanced graphics

  - More tracks and levels

- **Technological Upgrades:**

  - Transition to a 3D version

  - Integration of advanced physics

CONCLUSION

- **Summary:** Recap of project goals, achievements, and learning outcomes

- **Acknowledgments:** Credits to team members, resources, and tools used