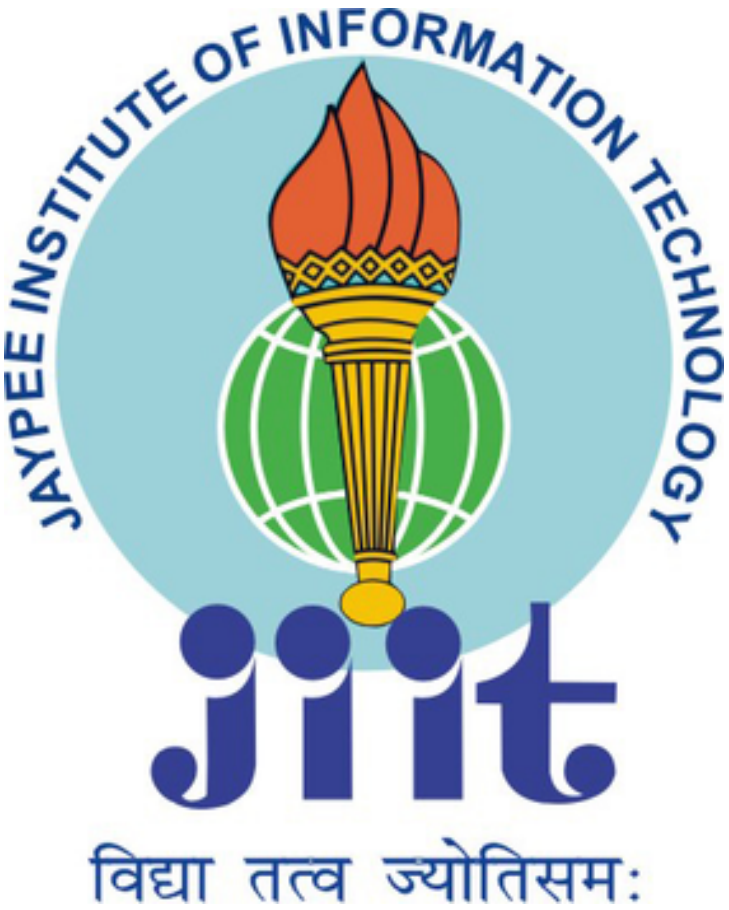

Title : SDF Project Synopsis

Course Details : SDF LAB - 2

Course Code : 15B17CI271

Even-Semester-2

Batch B5

Team members :

Mukul Aggarwal (2401030239)

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Project Title: 2D/Hybrid 3D-2D Car Racing Game

Introduction

This project aims to develop a car racing game with either a purely 2D or a hybrid 3D-2D approach. The game will feature custom physics and self-made graphics, providing a unique and optimized experience. The primary goal is to implement car handling and dynamic environments while maintaining high performance.

Technology Stack

- **Programming Language: C++**
- **Graphics & Game Library: Raylib**
- **Physics: Custom-built physics engine**
- **Rendering: Sprite-based for 2D, possible low-poly models for 3D elements**
- **Input Handling: Keyboard only**

Features

- **Custom Physics Engine: Realistic car acceleration, braking, drifting, and collisions, coded manually.**
- **Graphics & UI: Self-designed visuals, including track textures, UI elements, and animations.**

(a similar game that exists in market)

Challenges & Solutions

- **Physics Accuracy: Implementing realistic vehicle movement with efficient collision detection.**
- **Performance Optimization: Ensuring smooth frame rates with optimized rendering and physics calculations.**

- **AI Development: Creating an intelligent opponent system that adapts to the player's racing style.**

Expected Outcome

By the end of this project, a fully functional car racing game with smooth gameplay, engaging mechanics, and unique graphics will be developed, demonstrating deep control over game physics and rendering techniques.
