Software Requirements Specification (SRS) for 2-D Car Racing Game in C++

1. Introduction

1.1 Purpose

The purpose of this document is to define the software requirements for the development of a Car Racing Game in C++ using Object-Oriented Programming (OOP) principles.

1.2 Scope

This project aims to create an interactive and engaging car racing game with features such as multiple tracks and various cars.

1.3 Definitions, Acronyms, and Abbreviations

- GUI: Graphical User Interface

2. Overall Description

2.1 Product Perspective

The car racing game will be a standalone application with a graphical user interface. It will consist of various components such as the game engine and user interface.

2.2 Product Features

- Multiple racing tracks
- Selection of different cars
- User-controlled car movement
- Fuel Management
- Score Counter

3. System Features

3.1 User Interface

The game will have an intuitive and visually appealing GUI that includes menus for starting a new game, selecting cars, and configuring game settings.

3.2 Game Engine

The game engine will manage physics, collision detection, and scoring. It should support smooth rendering and handle user input effectively.

3.3 Cars and Tracks

The system will provide a variety of cars with distinct attributes (speed, handling) and multiple racing tracks.

4. User Requirements

4.1 User Interaction

- The game should provide an intuitive and user-friendly interface for players to navigate menus and control their cars during races.

4.2 Car and Track Selection

- Users should be able to choose from a variety of cars and racing tracks before starting a game.

4.3 Gameplay Controls

- Players should have easy-to-use controls for accelerating, braking, and steering their cars.

4.4 Competitive Experience

- Users expect a challenging user experience through different obstacle courses that provide an engaging and competitive gaming experience.

5. Performance Requirements

5.1 Response Time

The game should respond to user input promptly, ensuring a smooth and enjoyable gaming experience.

6. Security Requirements

6.1 Data Security

The game should not store sensitive user data, and all interactions should be secure.

7. Documentation Requirements

7.1 Code Documentation

Code should be well-documented to facilitate maintenance and future enhancements.

7.2 User Manual

A comprehensive user manual should be provided to guide players through game controls, settings, and features.

8. Conclusion

This Software Requirements Specification outlines the key features, interfaces, and performance expectations for the development of a 2-D Car Racing Game in C++. Adherence to these requirements will result in the successful implementation of a captivating and well-functioning game.