National University of computer science and emerging science Karachi campus

PROJECT PROPOSAL

Parallel and distributing computing (CS-3006)

Section: BCS-5J

Dino-Alert Game

Car shooter game development project

Instructor: Syed Faisal Ali

Group members:

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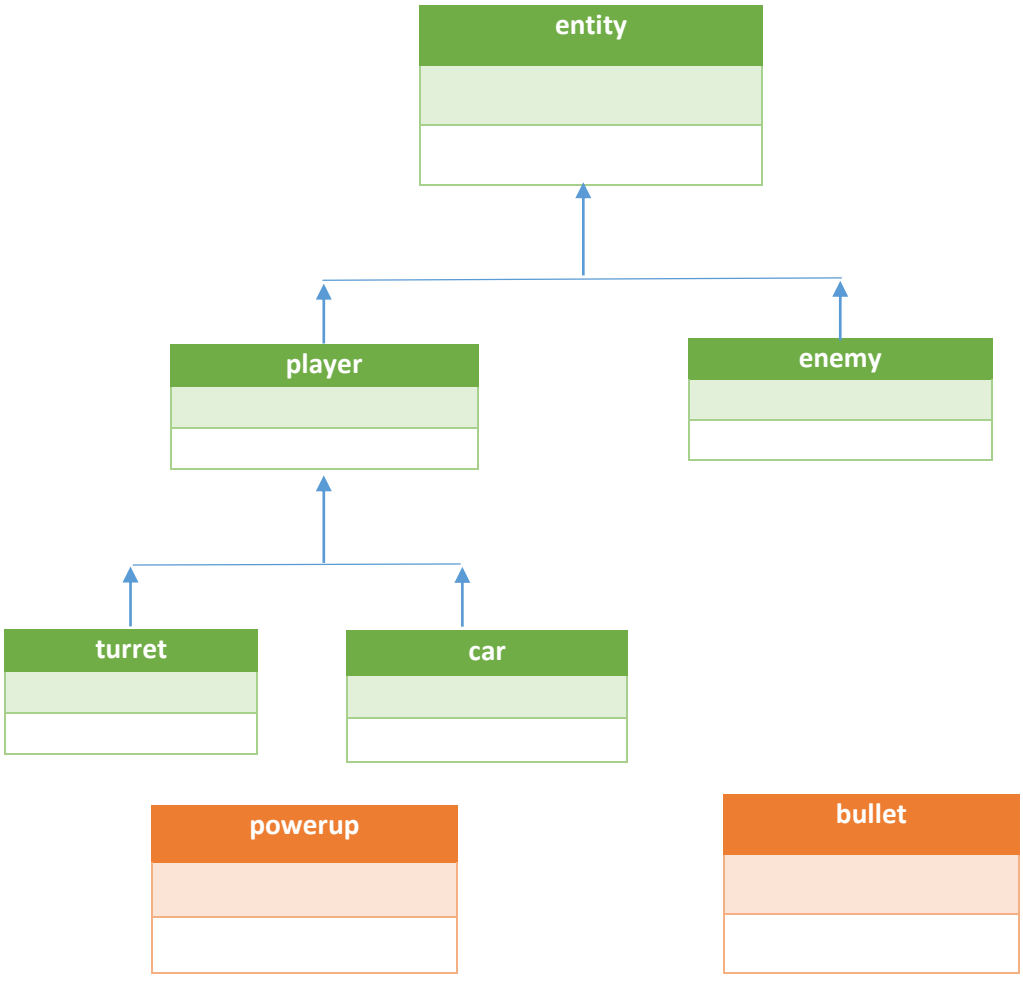
1. Introduction:

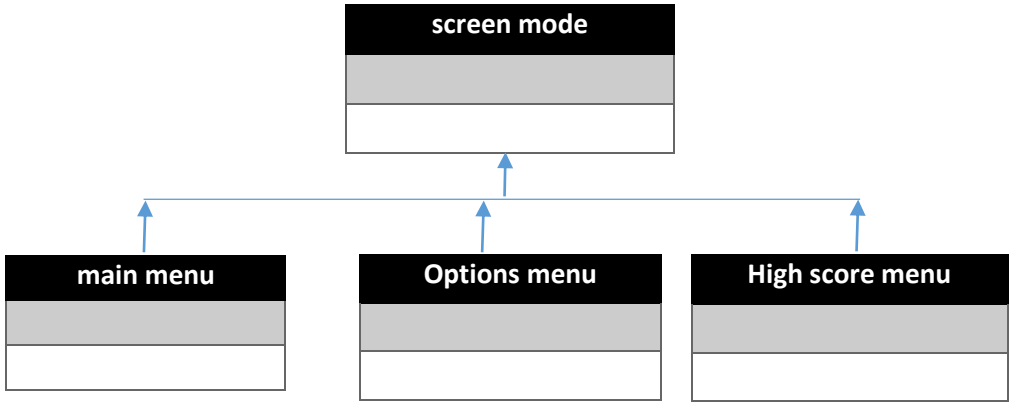
We propose a project titled "DinoAlert," a 2D game developed using Visual Studio Code and C++ gaming library Raylib. DinoAlert is an action-packed game featuring elements of object-oriented programming with various classes, including Bullet, Player, Turret, Enemy, Screen Mode, and Power Up. The primary focus of this project is to create an engaging and efficient gaming experience while exploring the advantages of parallel programming in game development.

1.1 PARALLEL COMPUTING:

In game development, parallelism is a crucial technique to enhance performance and provide a better gaming experience. This involves executing multiple tasks simultaneously to optimize resource utilization. Key areas where parallelism can be applied include asset generation, player movement, enemy AI pathfinding, bullet-enemy collisions, power up creation, sound effects, and score tracking. Implementing parallelism in these aspects improves game fluidity, responsiveness, and visual quality while ensuring that gameplay remains immersive and engaging

Game Development Structure:

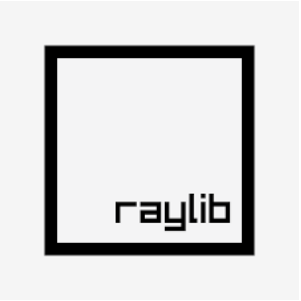




2. Technologies:

2.1 Front-End:

For the game's front-end, we will implement a user-friendly graphical interface. We will use Visual Studio Code for development, creating a solution (sln) file, and C++ for the application logic. The primary graphical library we will employ is Raylib, a powerful tool widely used in game development.



2.2 Back-End:

The game's back-end will focus on the core game mechanics. We will implement parallel programming techniques to optimize the generation of enemies and to handle the computational load required for bullet generation. This will enable us to compare the game's performance and user experience between running it with parallel processing, showing how the reduces time .

2.3 Other Tools:

We will utilize Git for version control, which will enable us to efficiently collaborate, track changes, and maintain a history of our project. Additionally, we will employ various development tools and libraries to enhance the user experience, such as audio, physics, and input handling libraries as required.

- **Git Logs:**

Throughout the development process, we will maintain comprehensive Git logs, documenting every change, bug fix, and feature implementation. This will help us keep track of the project's progress and maintain a transparent history for all contributors.

3. Conclusion:

In conclusion, the "DinoAlert" game will be a fantastic example of how Visual Studio Code, C++, and the Raylib library can come together to create an engaging and efficient gaming experience. By employing object-oriented programming, parallel processing, and various development tools, we aim to optimize performance and user satisfaction. The inclusion of Git version control ensures that the project is well-documented and maintains a clear history of changes. We are excited to embark on this project and look forward to delivering a fun and immersive gaming experience.