

Project Proposal: Invaders Game (C++ with Raylib)

Project Title:

Invaders – A 2D Space Shooter Game

Team Members:

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Project Overview:

Invaders is a 2D arcade-style space shooter game inspired by classic titles like *Space Invaders*. The game is being developed using **C++** with the **Raylib** graphics library for rendering and input handling. The objective of the game is to defend the planet by shooting down waves of alien invaders while avoiding their attacks.

Project Objectives:

- To design and implement a playable, interactive 2D game using C++.
 - To utilize Raylib for handling game graphics, user input, and sound.
 - To reinforce concepts of object-oriented programming, game loops, collision detection, and basic AI.
 - To simulate a structured game development process: design, implementation, testing, and polish.
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Features:

- **Player Ship:** Controlled by arrow keys (movement) and spacebar (shooting).
- **Enemy Invaders:** Arranged in grids, move across the screen and shoot back.
- **Bullets:** Player and enemy bullets with collision detection.
- **Score System:** Points awarded for destroying invaders.
- **Levels:** Increasing difficulty with each wave.
- **Sound Effects:** Laser fire, explosions, and background music.
- **Game Over/Restart Options:** When the player loses all lives or all invaders are destroyed.

Development Tools & Technologies:

- **Language:** C++
 - **Graphics Library:** Raylib (<https://www.raylib.com/>)
 - **IDE:** Visual Studio Code
 - **Version Control:** Git (GitHub repository for collaboration and version tracking)
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Game Design Elements:

- **Graphics:** Simple 2D sprites for player, enemies, bullets.
- **Controls:** Keyboard input for navigation and shooting.
- **Physics:** Basic collision detection between bullets and objects.
- **UI:** Start screen, in-game score, and end screen with restart option.