

Final Project Proposal: Recreation of Space Invaders

Goal of this exercise

In this exercise I will use rasterization and animation to render sprites in order to make a recreation of the late 70's arcade game, Space Invaders.

Dependencies

For this project, I will be using OpenGL with GLFW and GLEW with all code written in C++.

1 Tasks

For each task listed below, I will provide at least one image in my README in order to demonstrate that I have completed the given task.

1.1 Drawing Sprites

For this task I will set up the necessary parts of the code to be able to draw sprites through the CPU using a buffer, meaning I will operate on individual pixels and then send that information to the GPU to be drawn as a texture.

1.2 Sprite Animation

For this task I will create the different sprites that are necessary for the variants of aliens within the original game, as well as the player sprite, and animate them with a stationary animation, as well as an animation that makes them progressively move downward towards the player.

1.3 Player Input

For this task I will detect user input through key call backs as I have done in previous projects for this course. Specifically, I will implement player movement—from left to right on the screen—and the ability for the player to fire a missile towards the enemy aliens.

1.4 Collision Detection

For this task I will implement collision detection: missiles colliding with enemies, missiles colliding with the player, and missiles colliding with missiles. In this stage I will also implement an explosion animation to accompany the collision.

1.5 Cosmetics

For this task, I will add cosmetic enhancements to the game, namely a player score and a high score to be stored within a file and retrieved later. Should I have the time, I will attempt to implement a start screen that will give the user the option to either clear the current high score or start a new game.