Game Development Spring 2025 Final Project Writeup

https://youtu.be/esKRRIM8JOg

Download Location: Canvas (UltraGangster3DBuild for the build, UltraGangster3DSource for the source code and project files)

Name of Game: Ultra Gangster 3D

Controls:

- WASD to move
- Left click to shoot (when not in menus)
- Press 1 to swap to pistol
- Press 2 to swap to rifle (level 2 onwards)
- Press 3 to swap to shotgun (level 3 onwards)
- Press 4 to swap to grenade launcher (level 4 onwards)
- Right click to throw grenades or thermite charges
- Press E to swap between grenades and thermite
- Left mouse to click on buttons
- ESC to open pause menu

Objective: Eliminate all enemies in a level to progress to the next level.

Summary: For the purposes of the final project, I decided to create a first person shooter. The objective is to defeat every enemy in a given level in order to progress to the next level, and eventually reach the titular "Ultra Gangster", the boss on the final level. As the player progresses through the levels, they unlock new weapons to use and acquire different items to help spice things up. The game is intended to be a remake of a twin stick shooter that I previously made in Godot (simply titled "Ultra Gangster: A Twin Stick Shooter Game"), but due to time constraints, I was not able to really finish this game.

Assets:

- SnakeF8: Snake's Authentic Gun Sounds
- SnakeF8: Snake's SECOND Authentic Gun Sounds Pack
- Levi Vilas Boas: Heavy 8-Bit Explosions

Requirements: Start menu with appropriate buttons was created. Some dynamic audio is played (shooting guns). The player can choose a game resolution. Although the player can change the volume in the settings, this does not actually change how loud the volume is, as this was not implemented.

AI:

- Include any form of AI, even simple with predefined behavior (2 points)
- Enable the AI to pathfind through the environment. Using A* or similar algorithm (8 points)
- Include additional varieties of AI with unique behaviors (2 points each, maximum 3 extra) (different enemies have different fire rates; black enemies have different bullet speeds as well; some enemies have “armor”; boss on final level has two phases, in which it regenerates its armor and starts firing two weapons at the same time)

Levels:

- Include at least 3 separate areas / maps / zones the player can visit. (2 points) (5 levels in game)

Level Design:

- Include colliders with beneficial effects (2 points) (little boxes are scattered around that give the player health, armor, and ammo)

Physics:

- Allow the user to launch projectiles of some sort (2 points) (player can fire bullets, thrown grenades and thermite have gravity applied to them)

Time:

- Allow the user to pause the game (2 points)

Items:

- Include different items that the player can equip and use. (Up to 6 points) (player has several weapons and items that they can swap between as they progress through the levels, with those items having stored ammo counts)

Saving and Loading:

- Allow the player to resume progress after quitting. (5 points) (when game is loaded from main menu, returns player to beginning of their last level)

3D Modeling:

- Include custom 3D models in your game (up to 8 points) (though barebones and maybe not entirely applicable here, I still created all of the present models and environments in the game)
- Texture your models to elevate their appearance (up to 6 points) (again, barebones, but the existing models do have at least some colors to them)

Options:

- Include additional options in your required options menu
    - Vsync on and off (2 pts)
    - Fullscreen on and off (2 pts)