

CS 4730: Computer Game Design

Engine Team: Engine Improvements Part 1

Overview

For this assignment, you will be implementing one of many engine improvements for your game. Your goal is to identify what engine improvements are most useful for your particular game and make it.

IMPORTANT NOTES

- 1) For this assignment, your larger group will submit a SINGLE BUILD of your game, with the additions of each of the three sub-teams incorporated. This will serve as an **alpha release** of your game.
- 2) In lab, you may have negotiated slightly different requirements than are specified in this document. If this applies to you, then work on the requirements you agreed to with your TA.

Part 1: Identify an engine improvement

Your first goal is to identify one improvement your engine can have that will make life better for your other sub-teams. Some common improvements that you might consider are listed below:

- **Improved Collision Detection**: Maybe your game needs to support Sprites with multiple hit-boxes, or perhaps your game has an unusually high number of items to check for collisions and the system must be optimized. Maybe your game requires collision with unconventional shapes (triangles or some other geometry) You may choose this week to make some kind of substantial improvement on the collision system. Please note that using this assignment to finish the requirements from the earlier assignment is NOT allowed here. The improvement must go beyond the initial requirements.
- **Lighting**: Maybe your game requires an advanced lighting effect so the player can't see everything but what is around them, or similar. If your game needs some kind of lighting effect, build a simple lighting engine for your team.
- **Particle System**: One nice way to add polish to your game is to use very small Sprites as "Particles". These sprites are placed on the game and "float" according to some behavior (e.g., snowflakes will float down and to the right for some number of frames and fade out). Maybe you implement a particle system to add polish to your game.
- **Dev Tool Updates**: Perhaps your team's life would be easier if the development tool had a couple more features. Maybe placing enemies, configuring parallax layers, configuring transitions, etc.
- **Other**: Coordinate with your TA if you think there is some other engine improvement that would qualify.

Part 2: Implement Improvement

Once you've selected an improvement, implement it into your engine and notify your team members about how it works. They may want to utilize it in building out the game.

Part 3: Alpha Build

This week, it should be possible to fully play (potentially with small bugs and lack of polish) the first two areas of your game. While you are responsible primarily for the engine's robustness / efficiency, you should work with your team members to ensure everything gets merged together smoothly and correctly. Integrate these changes with everything your group has produced so far. This means that your demo this week will be fully playable for at least the first two areas.

Turn In

Submit a single zip of your game on Collab OR a link to a github repository with ALL of the additions from each sub-team incorporated.