TownCount Remake: 2D Metroidvania Game with Shader Effects

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***Abstract*—This is the final project in the Interactive Computer Graphics courses. I am going to make a 2D Metroidvania game. The main character has to pass through different terrain and defeat monsters. I will apply multiple shader effects and lighting in this game to make it look more fashionable. Similar games are Hollow Knight, Mario, and Rockman.**

1. Libraries and Material

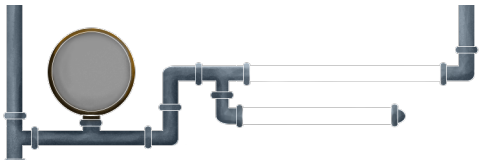
Only use Opengl for the Graphic programming(glm, glfw, and glew libraries). And use the characters and the stage sprites from my previous project.

2. Tasks

These are the tasks I will try to attempt.

2.1. 2D Animations

1. Show the animations of the characters and monsters using glBindTexture and splitting UVs. The animations I want to achieve are: Idle, Run, Jump, 3 Chain Attack, Jump Attack, Damaged, and Died animations.
2. HP bar and other UIs.



2.2. 2D AABB Collision Applies to Game Mechanics

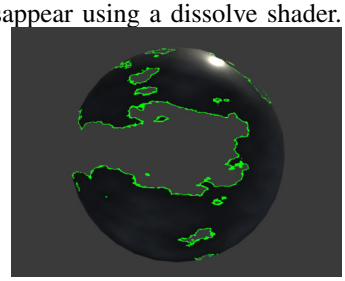
1. The character can interact with terrain or even jump on a platform from its bottom.
2. The character can attack monsters, and be hit by monsters.

2.3. 2D Light and Shadow

1. The light source came from the main character and lighten the surrounding. It can also apply to the lamp light in the scene.

2.4. 2D Shaders

1. Apply some effects on the characters and monsters. For example, if the monsters have been defeated they will disappear using a dissolve shader.



2. Full-screen shader, like the whole screen will display a damaging effect when the character has been hit.

2.5. Extra tasks

If I have time I wanna make a menu and a special ability for the main character. His special ability is that he can use a rope to pull himself to the terrain, or even pull a monster closer to himself.

3. Suggested Grading

I want the 25+15% of the grading, simply because I will make a game alone. I have 4 basic tasks, each for 7%, and the other 12% for the complexity and completeness of the whole game.