Zombie CA

For our second continuous assessment in the Gameplay Programming module, we were required to take the Zombie game and make improvements to it and add new features. This will be my design doc on how I implemented these features.

The first improvement I made was fixing the hitboxes. To do this I simply changed the dimensions on the images for the zombies and the player. Before I did this it felt as if the player was at an unfair advantage as he was getting hit when the zombie was nowhere near him.

A screenshot of a computer

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Figure 1 Changing dimensions on image.

Next what I did was add a noise when the player runs out of ammo. This I thought improved the game as it adds an audible que when the player runs out of ammo rather than having them constantly looking down at their ammo counter.

A screen shot of a computer

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Figure 2 Buffer for out of ammo sound.

A black screen with green text

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Figure 3 Code for playing sound.

The next feature I added was putting in a speed pickup. This pickup can be grabbed and each one of these you pick up increase your speed by .5. This resets to 300 at the beginning of the next round. It also limits it so you cannot go past 400 speed each round.

A computer screen shot of a program

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Figure 4 code for pickup in pickup.cpp

A screen shot of a computer program

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Figure 5 code for when the pickup is picked up

I also changed the menu so when you used to be able to upgrade your speed in between rounds, you now upgrade the pickup by multiplying it by .5.

I also added an assault rifle pickup. This drastically increases the fire rate. It also increases the spare bullets and the clip size.

A screen shot of a computer code

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Figure 6 Code for assault rifle.

I also attempted to make a shotgun pickup, but I could not manage to change the damage, so it ended up being a slower version of the pistol. I decided to cut it in the end.

I also increased the pickup rates as the rounds go on and increased the amount of time they stay active as the rounds go on to adapt to the increase in map size.

Finally, I added a zombie hound as a variant of the zombie. This is a zombie with 1 health and is also the fastest variant.

Overall, I feel I learned a lot from doing this ca as it required a lot of ciphering through the code and a great deal of understanding of how the game works. I also learned a lot about improving upon existing features and not just adding in new ones. I also learned how to restructure existing code and make it better as well.

I also included a uml diagram here to showcase the class hierarchy in the zombie game.

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