FIT2097\_A3

Link: <https://gitlab.com/yyeu0005/fit2097_a1.git>

Program Design

Diagram, schematic

Description automatically generated

Player class

One of my extra functions is to reduce the player’s walking speed and blur out the player’s vision when the water/ food level is low. To achieve this I add new float variables WalkSpeed and MaxSpeed to the player class. MaxSpeed stores the original walking speed of the player when it has its water/ food level in a normal state. WalkSpeed is MaxSpeed\* 0.9, it will lower the walking speed by 10%, which becomes the same as the speed of enemies.

Time Bomb

The time bomb would have two count-down values(float): countdown and destroyCountDown. When the item is placed the variable Countdown starts decreasing. Once reaches 0, the time bomb explodes. They would then hide in the game and destroy themselves when destroyCountDown reaches 0. As enemies would move to the bomb location if they are nearby, the destroyCountDown variable is used to make sure the enemy class has time to get and save the location of the bomb.

Super Star

This is another extra function in the game. The class is intractable. After the player walks into it, it would get the invincible bool in the character and make the bool true and destroy itself. When the invincible bool is true, the float invincibleCountDown would start decreasing in the character class. When invincible bool is true and invincibleCountDown is not 0, the player is invincible and can block all damage from the enemy and needle traps. When invincibleCountDown reaches 0, the invincible bool would back to false and the player would no longer be invincible. Messages would show on screen to remind the invincible time is over.

Needle Trap

This is another extra function in the game. The class is intractable. The float speed is the speed of its movement. The float variable health is the amount of health drawn from the player’s health. The Hit function would be called once the player interacts with the needle trap.

Spawner

A class to spawn the Needle Trap. SpawnCountdown would be set to 3. Once the countdown is finished, the CountdownHasFinished function is called and StartSpawning Boolean = true. The actor would start spawning.

Tricky Pickup

This is for one of the extra functions in my game. TrickyPickup is a type of trap. It would first generate a random int from 0 to 2, which is for deciding which one of three materials it is going to put on (the three materials of the health/ food/water pickup). When the player interacts with the tricky pickup, their health/ water/ food level would decrease by 10 according to which materials the pickup is set.

Stun Grenade

An interactable class. Once pickup, the holdingGrenade Boolean changes to true in the player class. The player can then press ‘g’ to use the grenade. Only one can be used at a time.

Enemy AI Controller

The class would cast the player and check grenadeUsed Boolean in the player. If grenadeUsed is true, check if any enemies were around using ‘FVector::Dist’. If yes, set the "CanStun" to true in BlackboardComponent. Else clear “CanStun”.

The class would also look at the bomb and check if any enemies were around when it exploded. It would use the ‘FVector::Dist’ for the distance calculation. If there are enemies nearby when exploded (if (targetBomb->explode==true) ), set "CanDistract" Boolean to true in the BlackboardComponent and clear the value if explode is false.

Readme document, demonstration video and a copy of this document can be found on git and in the document folder (A3).