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Mobile Applications Development 3

Developer Diary

Introduction:

This is a developer diary to be maintained along with the development of my 4th year Mobile Applications project. We have been given the task of creating a 3D on rails shooter with the Unity engine. I received my design document from John Glynn, to develop a Virtua Cop inspired 3D on rails shooter.

21/10/20

I received the design document from John and created the git repository.

26/10/20

Due to some difficulties with git I moved to a new repository. I created the game title card and the main menu to access Single Player, Multiplayer, Leaderboard and Exit. Currently only Single Player works, bringing the user to a new scene.

28/10/20

The initial draft of the first map has been created, now the functionality of the gameplay can be started. From a lap I reused the code to make a circuit of the path I want the player to travel through the map with.

29/10/20

Added a waypoint tracker to the circuit is to be used in conjunction with the circuit. For the first level, only simple targets will be used, they have a rigid body for the player to interact with.

Player can not shoot a projectile “bullet” from any point of the screen.

30/10/20

I am unsure what I want the targets to do at this time so I created three target variants.

Gib on collide – Destroys the game object and creates a particle effect.

Flip on collide – The game object rotates on a hinge.

Gravity on collide – The game object simply floats off from it’s point of spawn.

31/10/20

Unfortunately, the circuit method will not suit the kind of gameplay I am hoping to get out of this. I am instead opting to use player animation. I have created an animation of how the player will navigate through the map.

04/11/20

Fixed some bugs with the gib on collide.

After difficulty with the triggering the player animations I have refactored to use a node-based system. This is better in several ways. The nodes are treated like a linked list, moving from one to one. The design requires there to be some areas with a choice of path movement. With a node-based system I suspect this to be easier implemented.

I have made a game object of each stage of enemies and an AdvanceOnNoChildren script. This allows the player to move to the next node when all the enemies in that area have been destroyed.

05/11/20

The rotation along with the position of the node influences the player. I’m very happy with how the player movement has come out. With this I have the skeleton to create a first level draft.

I have completed the first level, there are some bugs that need addressing but I will fix these anther time.

With what I learned from creating level 1, creating level 2 was quick and painless.

Added the first volatile enemies to the map, initially I used the animations for the enemies but ran into the same problems as I did with the player. So I am using the same node movement script and creating a separate node mesh for the enemies. Enemies now move into place when the player approaches.

Scaled the entire map up a little, this may be tweaked in the future when all the functionality has been added.

11/10/20

Enemy movement is causing some trouble but looks good for now.

13/10/20

Still experiencing trouble with enemy movement. From what I can see this looks like a bug in Unity but may be something I overlooked. Refactored back to animations. Each enemy from a stage now moves to their own node when player approaches.

I am spending a lot of time fixing this problem, and fear to not meet the deadline. So, for now I am going to move onto other features.

17/10/20

Added two scripts for the enemies. ShootOnDelay and ThrowOnDelay. Both of which I plan to use as different enemy attacks.

The player can destroy enemy projectiles to avoid being hit. Also added player health to the UI.

18/10/20

Player’s health now decreases when hit with an enemy projectile, when the player health reaches 0, the game will end and the player will be presented with a splash screen.

Added the remainder of the Level 2 player nodes, there is now a functional Level 2 from start to finish.

Added some more GUI objects:

Pause menu – When you hit esc the game is paused and player can select to resume or exit. As per design, this will need to be updated with an onscreen button to pause game.

Countdown timer – Simple timer which counts down to 0. After 10 seconds texts turns red, at 0 game will end.

Ammo Counter – As the player shoots, the ammo on screen will decrese.