Luke Sanderson

Introduction to Programming

Marsh Effect

14/01/2017

Introduction

In this assignment, we were tasked in making a small group and developing a 10-15 minute long game. The artists of the group specifically built an environment in which various 'rooms' or 'pieces' of a building could be used to create a level (or in our case, part of a level). The gameplay programmers, including me, focussed solely on the gameplay programming and ensuring the game actually ran.

Our team project is *Marsh Effect* – a game where the player must survive on an alien planet by mining useful resources and collecting parts of their ship to upgrade. The player can choose to roam the island freely – as long as they have enough oxygen to last their trip. Not only do they have to find extra oxygen to mine, the player must find ship pieces and connect it to their ship by completing a series of challenging mini-games. The player finishes the game once they retrieve their ship's engine, though you'll need to make use of all the upgrades gained so far to reach it, let alone have time to return to your ship…

Gameplay

The player progresses through the game by finding and returning parts of their ship, which have scattered around the island. By returning the pieces, the player has the opportunity to complete a simple mini-game which fixes the respective part of the ship, as well as sometimes unlocking a new ability. For example, returning the Speeder Fragment unlocks the use of the Speeder, which greatly increases the player's speed. The game is played from a first person perspective, and control can be switched from the player and Speeder once it has been unlocked.

It was important that we included some form of 'drive' for the player, so they'd want to play it through to the end. This led to the development of the oxygen system, which would encourage the player to test their resolve and accomplish as much in one trip as possible. At the same time, the oxygen degradation rate can be upgraded in order to give some sense of progression for the player.

The Team & My Contribution

My contribution mainly focused on the Speeder, which was an important for the gameplay in general as the island is huge.

The Speeder consists of a simple cube mesh with 4 Line Traces which always face down on the world's axis, all fixed at a certain distance. Once a line hits any part of the world, it adds force upwards at its relative location. The weight of the mesh and the constant upwards force being applied gives the illusion of the Speeder floating. Linear and Angular dampening are applied in order to give the Speeder a little suspension. An impressive 3D model is overlaid over the initial cube mesh, though we made sure that it didn't have physics or

collision attached as it put the whole system off balance when it tries to take in the model's mass and collision boundaries into consideration.

Aside from the Speeder, I assisted with various gameplay systems, including the ability to mine minerals and convert them to a deduction of the oxygen degradation rate.

As the artists were behind the main idea and general gameplay of the project, they were instrumental in devising the initial prototype that the programmers built from. They understood instantly what gameplay systems were meant to be in place and started from there. For example, they knew that the main objective for the players was to retrieve ship pieces, so they started building not only the collision systems which allowed the pieces to be picked up, but the respective puzzle found in the base, each one completely unique, from a *Simon Says* styled game to a platforming puzzle.

I'd like to take this opportunity to thank Delainey Ackerman – she fixed countless bugs, began coding many of the games systems, coded the majority of the game's collision and trigger systems and was present in every step of the game's production.

The Final Product

Overall, I'm happy with the game in its final state. It isn't as polished as it could be but it I feel that the team understood what type of game we would be making as well as the general look of the game. I enjoy the variation of gameplay from scavenging for ship pieces to upgrading yourself at the ship – it's a nice system that pushes the player onward.

My Speeder, I think, works rather well. There are some instances where it fails miserably (for example, if you slam into some walls at a high velocity you can go right through them) – however, the player would have to actively go out of their way to break the system. Functioning in this particular game world, which is open and relatively wall-free, it does wonders in giving the player a sense of speed, and, mixed with the oxygen, a sense of urgency.