

Unreal Programmer Task

Since the task was to create a skateboarding simulator, and this kind of game heavily relies on animations, my first thought was to start by handling the models and animations.

I decided to use the Mixamo's animations suggested on the interview task, and I thought I should get a custom character that not only would fit the animations but also have a nice style that would fit a skateboard game. So I found the Avatar SDK MetaPerson where I was able to customise a fully working rigged character.

In the Mixamo, I was able to tweak the parameters of the animations to make some variations for the **Idle**, **walk** and **forward boost** animations. All of this took about a few hours to make.

Starting the project in the unreal engine, I chose the *Third Person template*, which would provide me with the basic movement for the character. I imported the custom avatar model, the skateboard model and the animations and started setting up the idle and walk animations. I used an **Animation Blend Space** to blend between the movement animations. In about 5 hours I had a character moving around on a skateboard with animations.

After that, I started to implement the forward boost feature. I did it all in the **ASkateboardGameCharacter** c++ class, binding a new Action Input to a function that changes the walking speed of the character. To make things more interesting, I decided to make a stamina to limit the boost usage. So every time the player holds shift, they will use a speed boost that will consume stamina. The stamina will regenerate automatically over time.

With the forward boost feature working, I decided to implement an animation for the jump. I found a good animation on Mixamo of a giant jumping. I used an Animation Montage to trigger when the player pressed the jump button. The animation wasn't made for skateboarding so to make this work I made the skateboard snap into the character's feet while jumping. To make this happen I use the Montage's Notify Window event. It's a little bit wonky but it works.

The few last hours I spent on making a simple obstacle with a box component to trigger when the player jumps over them, adding to the score. I also made a **widget** to display the score points and the stamina bar.

Unfortunately, I wasn't able to make the "slow down the functionality" and the environment. I had to turn the project in before the 48 hours were up.