

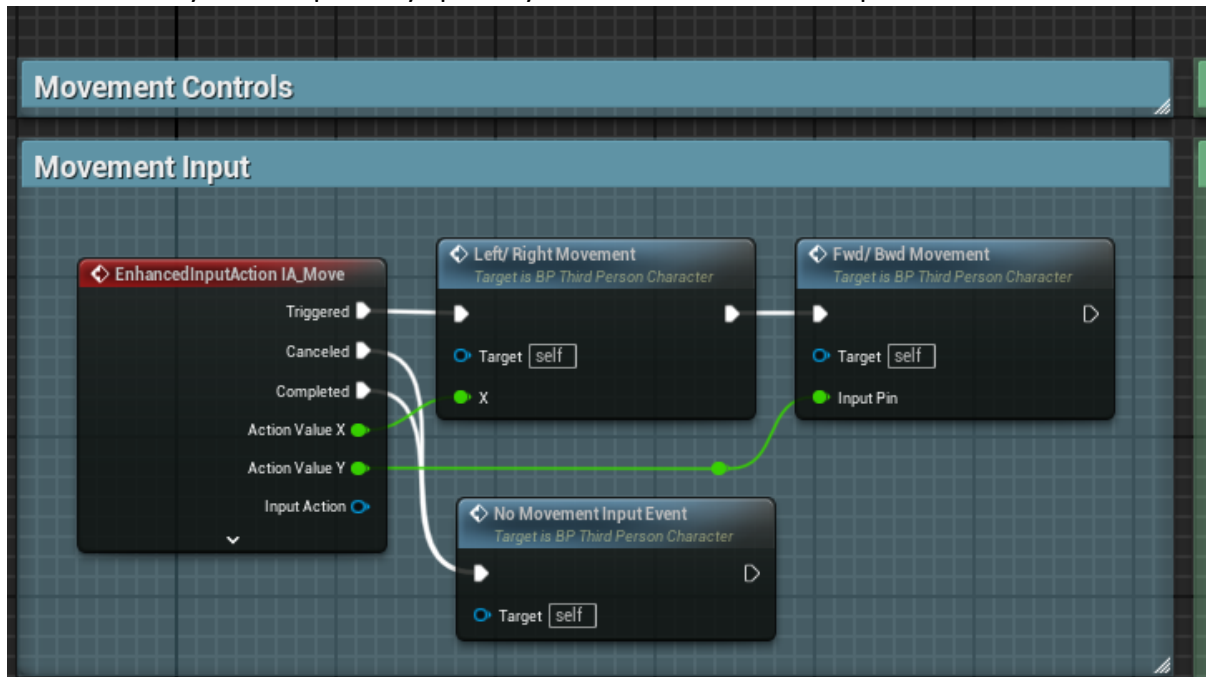
## Introduction

This document provides an overview of the development process and personal assessment for an interview task. It covers the implementation of movement functionality, UI design, pushing and slowing down mechanics, level design with obstacles and points system, and thought process during the interview. I found the tasks relatively easy, with some initial concerns about finding additional animations. However, overall, the process proceeded smoothly, and I enjoyed it.

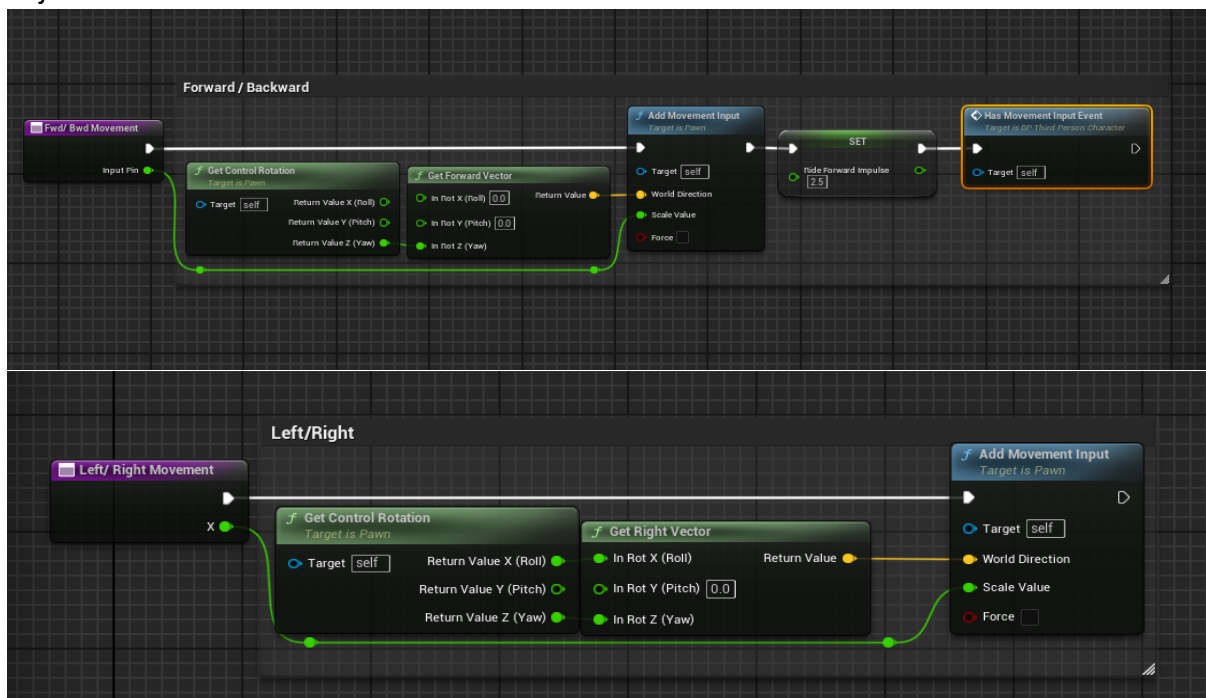
The personal assessment includes strengths, weaknesses, achievements, areas for improvement, and overall reflection. The total time invested in the assessment is 35 hours, including tasks, preparation, research, and documentation. Additional activities such as watching videos, research of skateboarding games, fixing errors, and organizing code were also conducted.

# 1. Movement Functionality

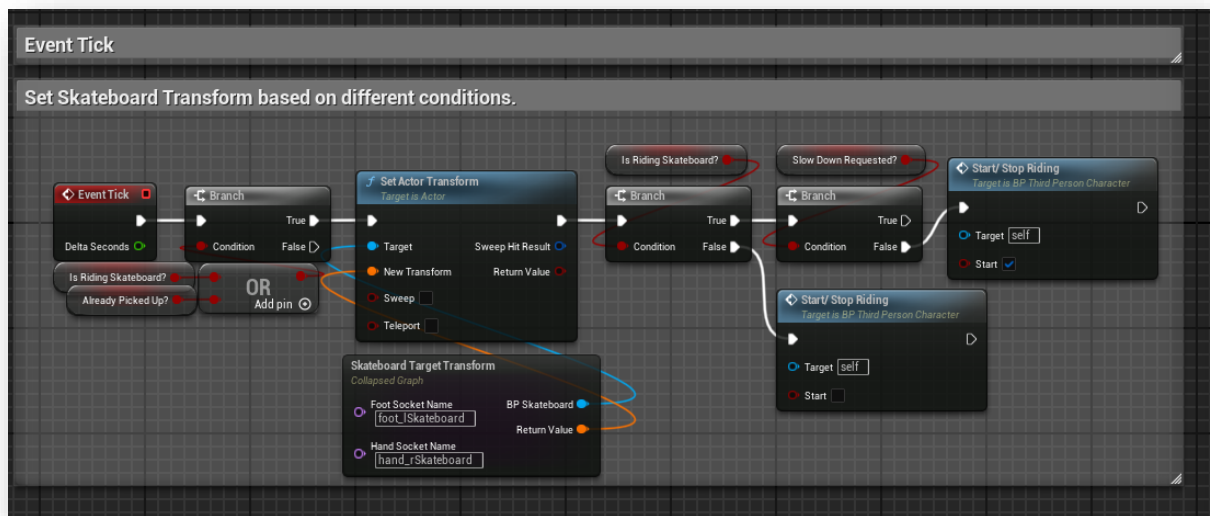
I used the Enhanced Input Action which is a good approach for handling player inputs with more flexibility and adaptability specially for future movement improvements.



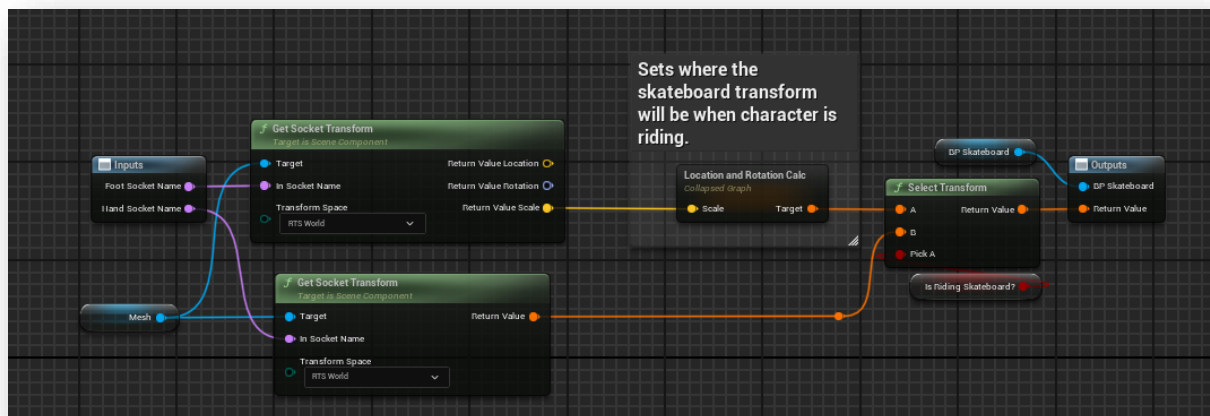
Features included in the movement functionality, such as turning left and right and speed adjustment.



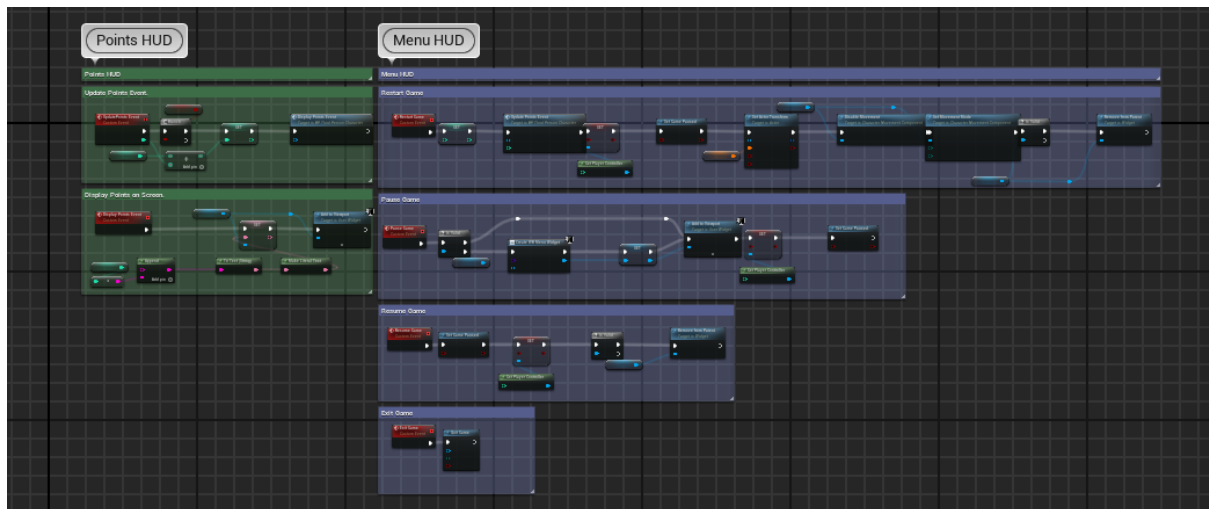
The event tick updates the skateboard's position, rotation, and scale within the game world.



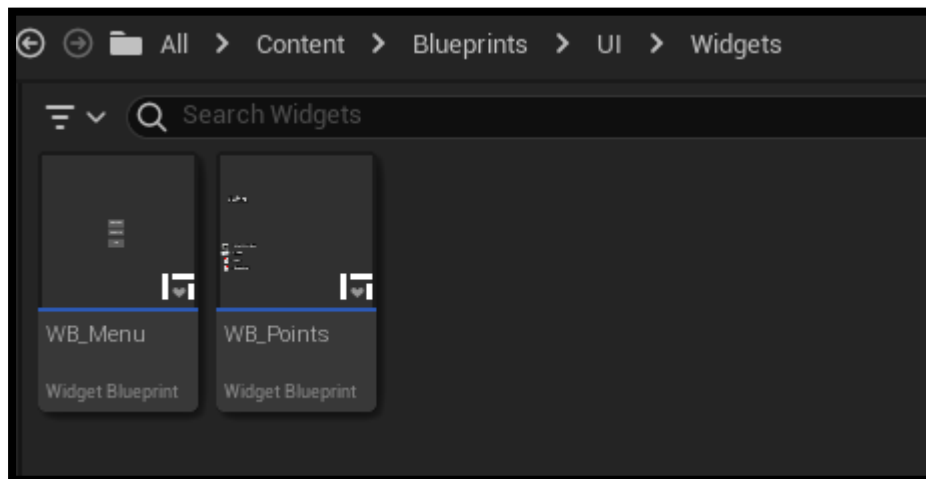
Here I used different socket-based calculations to determine the skateboard's transform depending on whether the player is riding the skateboard or simply walking around.



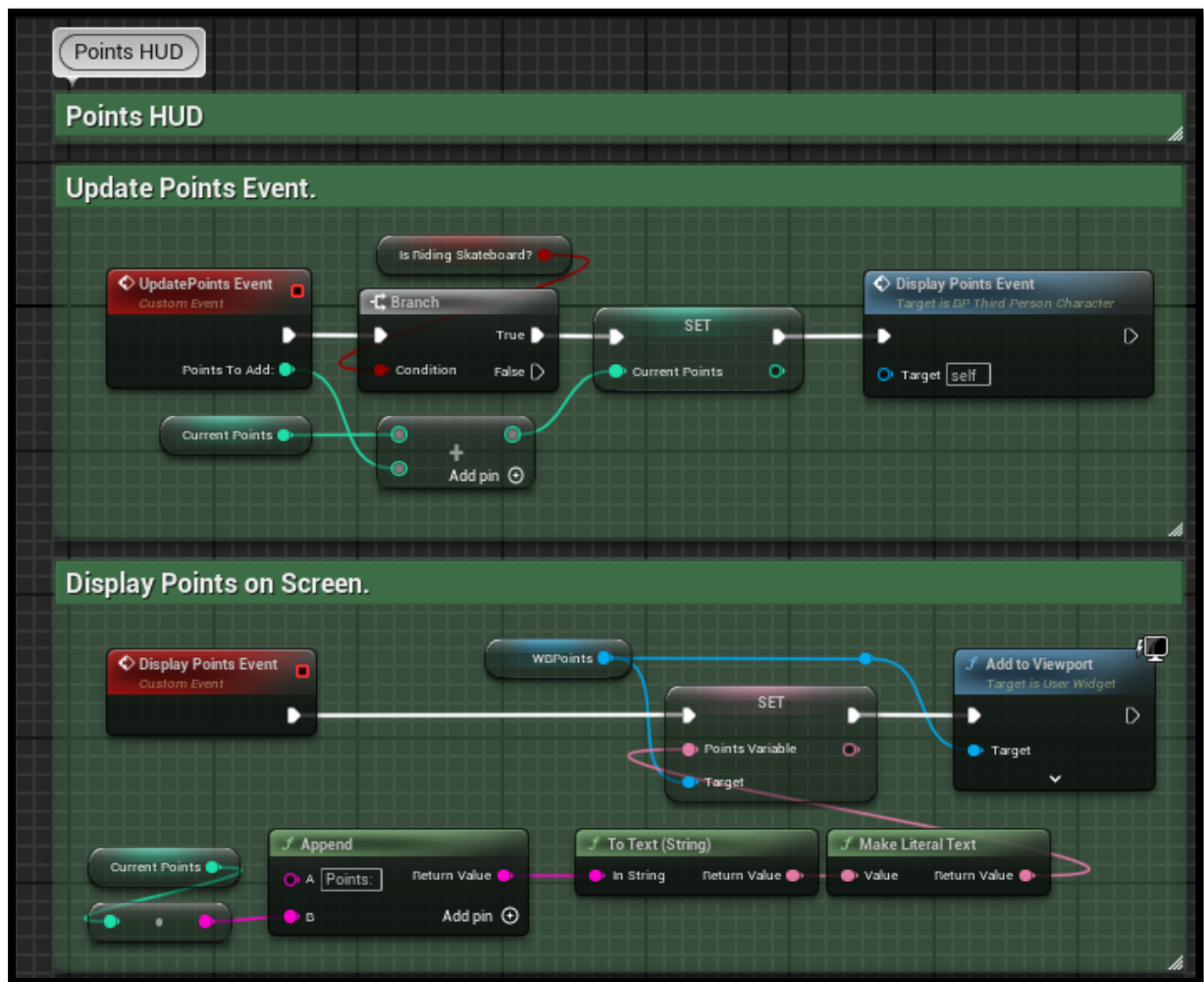
## 2. Suitable UI design for the



There are two widgets, one for the menu that appears when you press the Esc key. The second is for displaying the current updated points and other gameplay information.

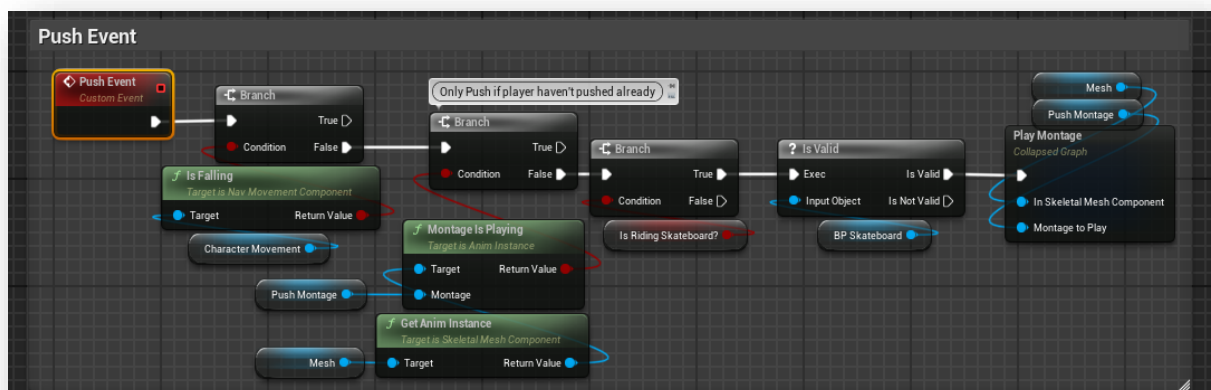


The widget for displaying the Points is displayed as soon as the game starts.

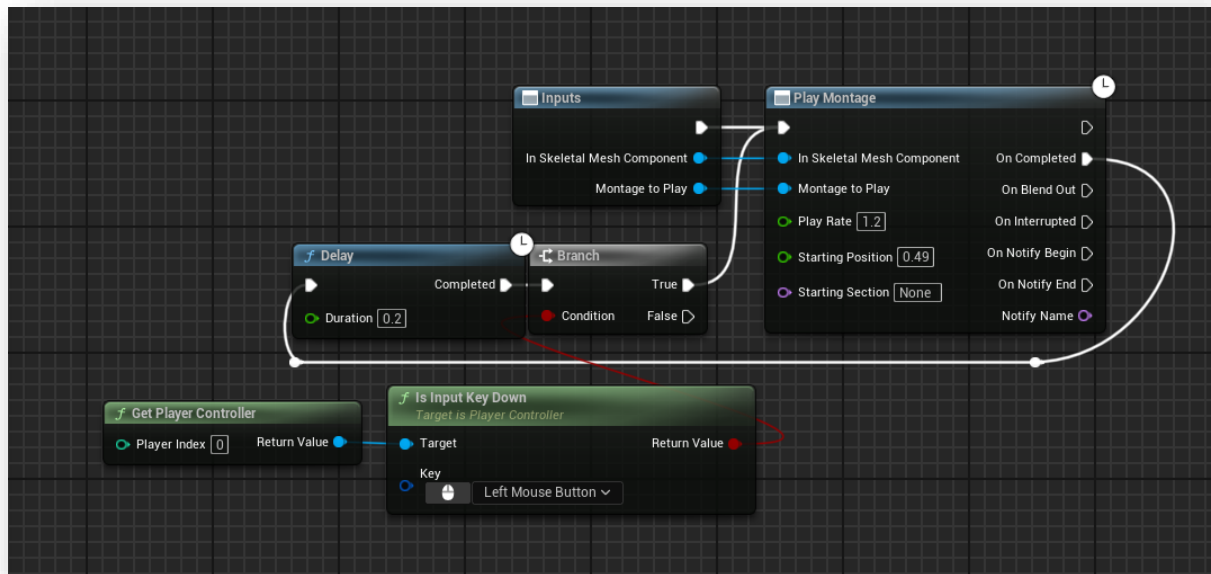


### 3. Pushing Functionality - *Speed up*

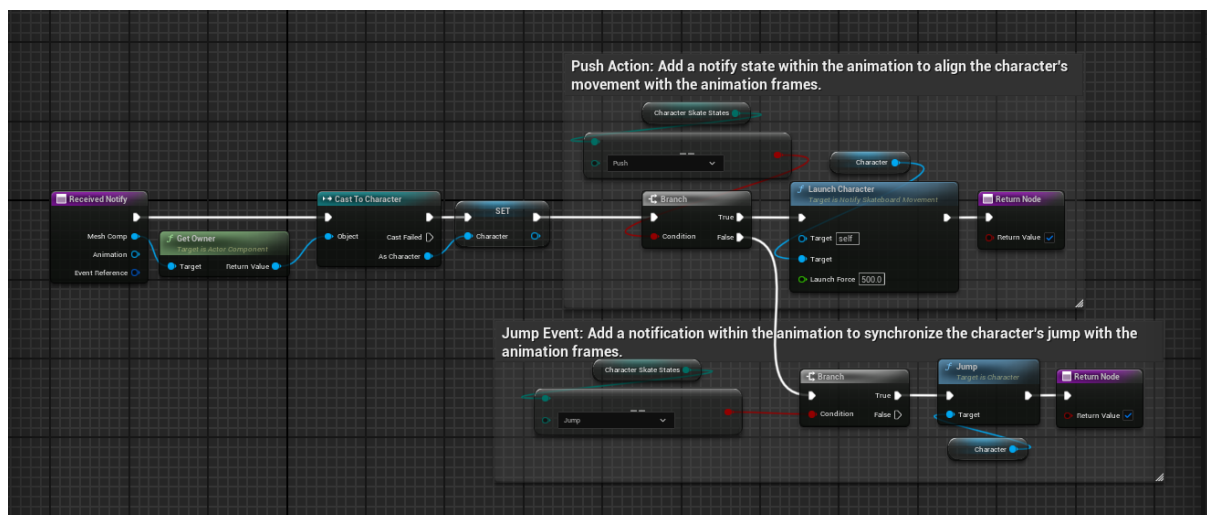
For pushing, I firstly check if the player is in a good condition to do so, then we can play the montage.



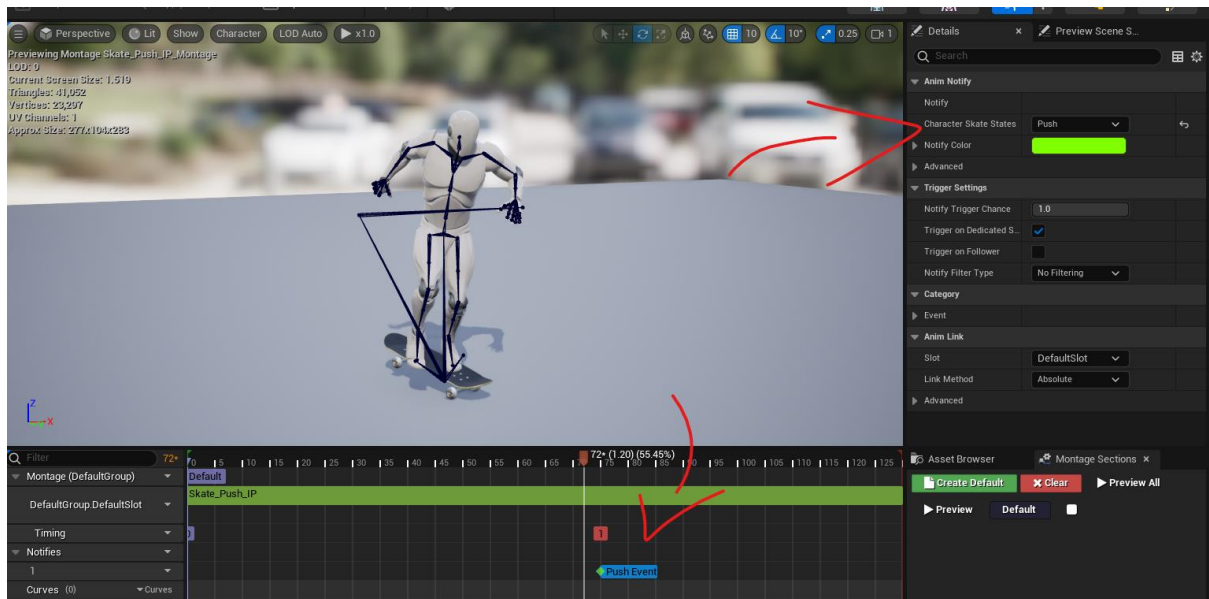
after playing the montage, it checks if the player is holding the left mouse button, so we're able to speed up again.



I have created a Notify State Blueprint for the Push and also for the Jump action, I found it would be better for a more realistic movement action and better function\code management.

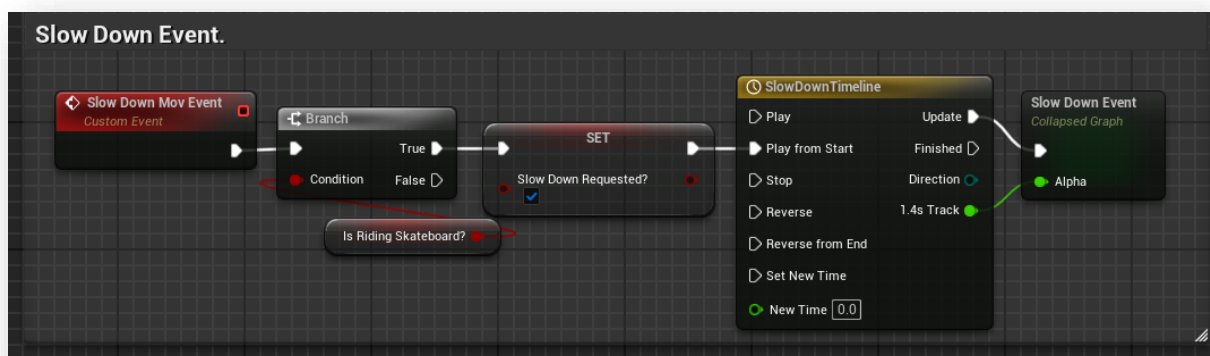


The notify state is positioned slightly before the push action in the animation frame begins, like so:

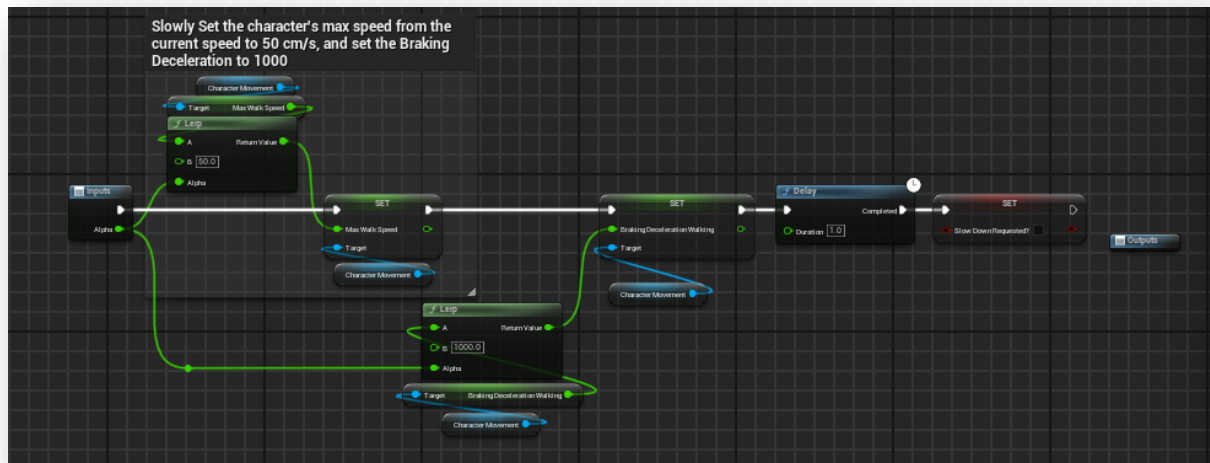


## 4. Slow Down Functionality

Before slowing down, we check if the conditions are met, then we run a timeline that will slowly reduce the character's speed.



Set movement conditions to make the character go slower based on the timeline length.



## 5. Small Designed Level with Jumping obstacles and Points system - *for every obstacle jumped over*

For this level, I have used the map asset as commented in the bottom of the task description:

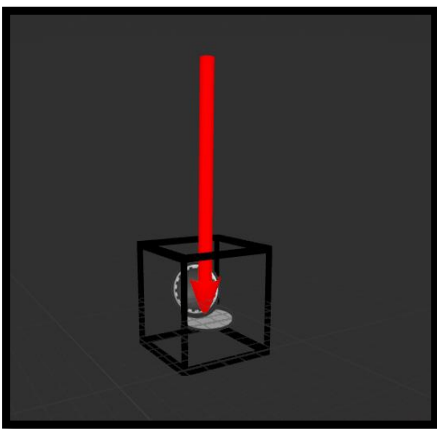
<https://www.unrealengine.com/marketplace/en-US/product/city-park-environment-collection-lite?sessionInvalidated=true>

I have removed unnecessary parts of the map to focus on testing a specific location. By doing so, the map has become lighter and more suitable for testing purposes. I selected and separated the best obstacles and placed them in the designated map location.

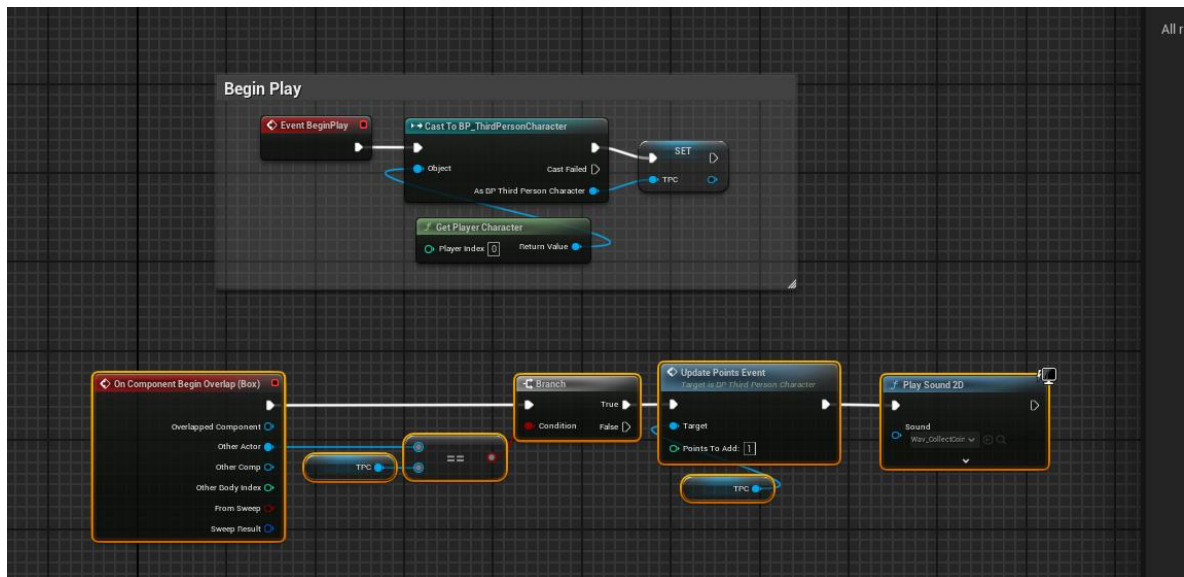




I have made a blueprint class called "BP\_ObstacleJumpCheck" that you can place in the world, on the top of the obstacles you wish the system to be considered as an "obstacle jumped".



This "BP\_ObstacleJumpCheck " blueprint is very versatile. Not only give player points but possible to have all sorts of other interactions.



## 6. My thought process during the interview task

I found the tasks relatively easy overall, very detailed and concise. With my only concern initially

being the search for additional animations. However, in the end, everything proceeded smoothly and I enjoyed the whole process.

## 7. Personal assessment of my performance

### Strengths:

Character animation blueprint management.

Character movement physics.

### Weaknesses:

Slide issue while on a skateboard at high speeds. I was thinking of solving this problem with programming the skate as if it was a 4 wheel vehicle, I believe the skateboard and character movement physics while riding would look and feel much better when riding.

### Areas for Improvement:

- Character movement on the skateboard.
- Drop skateboard with physics.
- Improved Collision Boxes.
- Various character animations when riding.
- Align skateboard and character with slope. (Slope detection)
- Land Prediction for better animation transition weights.
- Separate Animation Blueprint for the Skateboard.

## 8. Number of hours spent on each task.

- Movement Functionality: **6 hours**
- Suitable UI design for the prototype: **3 hours**

- Pushing Functionality - Speed up: **3 hours**
- Slow Down Functionality: **3 hours**
- Small Designed Level with Jumping obstacles and Points system: **4 hours**
- Total Hours Spent on each task: **19 Hours.**

## 9. Total time invested in the assessment.

This includes all activities related to the assessment process, such as tasks, preparation, research, and documentation.

Additional Activities:

- Watching videos about skateboarding games, researching and studying existing skateboarding games to gather inspiration and understand their mechanics and design principles.
- Additional research on fixing errors related to building the package and utilizing GitHub Large File Storage (LFS) for committing larger files.
- Organizing and documenting code within Unreal Engine, as well as creating this PDF document.
- Total time invested in the assessment: **35 hours.**