Skateboarding Simulation System Explanation

System Overview:

The project involves creating a skateboarding simulation game with a character that can perform actions such as skating, jumping, and interacting with obstacles. Key features include a Mixamo-animated character, point system for obstacle jumps, realistic skateboard physics, a timer limiting gameplay to 2 minutes, interactive menus, and audio feedback for player actions.

Development Process:

Character Setup (6 hours):

- Imported character and animations from Mixamo.
- Configured the Animation Blueprint to handle state machine events for skating and jumping.
- Set up character movement properties and collision detection.

Obstacle Interaction and Point System (3 hours):

- Created a JumpDetectionBox to detect when the character jumps over obstacles.
- Implemented line tracing to determine if the character is over an obstacle and award points.
- Added sound effects for point collection.

Physics and Movement (5 hours):

- Tweaked movement settings to simulate realistic skateboarding physics, including ground friction, air control, and braking deceleration.
- Implemented input actions for pushing and slowing down the skateboard.

Timer Mechanism (0.5 hours):

- Implemented a countdown timer to limit the gameplay to 2 minutes.
- Set up the timer to transition to an end screen once the time runs out.

Menus and UI (5 hours):

- Designed Main Menu, Select World, and How To Play screens in Figma.
- Integrated UI elements into the game and added sound effects for button interactions.
- Provided instructions for controls (Shift to push, Control to slow down).

Audio Feedback (3 hours):

- Added sound effects for skateboarding movement to enhance realism and player immersion.
- Included specific sounds for jumping with the skateboard and implemented a fade-out system for the skateboard's slowing down effect.

Code Documentation and Organization (3 hours):

- Documented all code using Javadoc-style comments for clarity and maintainability.
- Ensured Unreal Engine base code is documented similarly.
- Organized project files and code structure for ease of navigation and understanding.

Map Creation (5h)

- Created all design of the map and made sure it was fun to play!

Thought Process During the Interview:

Throughout the development process, I aimed to deliver a compelling and immersive skateboarding experience. This involved meticulous attention to physics for realistic movement, intuitive controls, and engaging audiovisual feedback. I prioritized clear documentation and organized code to demonstrate professionalism and readiness for collaborative environments.

Self-Assessment:
I am pleased with the outcome as I successfully integrated all planned features within the allotted time. The addition of sound effects and polished mechanics such as the fade-out system for stopping added depth to gameplay. Given more time, I would further refine animations and expand gameplay elements for enhanced variety and challenge.

Time Spent:

Character Setup: 6 hours
Obstacle Interaction and Point System: 3 hours
Physics and Movement: 5 hours
Timer Mechanism: 0.5 hours
Menus and UI: 5 hours
Audio Feedback: 3 hours
Code Documentation and Organization: 3 hours
Map Creation (5h)
Total Time Invested: 30.5 hours