Coding Challenge 1: NPC Cycling Behaviour

Context

The level consists of an endlessly generated street. The player can hop on a bicycle and ride along this street. The project includes an Actor Blueprint for NPC cyclists, complete with assets, but currently without behaviour or logic.

Objective

Implement intelligent and realistic NPC cycling behaviour that interacts dynamically with the player, as far as possible. Try to follow the requirements below, but you may deviate if you wish.

Time

2 hours

Deliverable

Prepare a demo of 5min, emphasising what features you created / modified. Also show what and where you adjusted in the repository.

Requirements

1. **Spawning and Movement**
    - NPCs spawn on the bike lane, behind the player, when the player is on a bike. NPCs spawn with a reasonable frequency.
    - NPCs cycle along the bike lane towards the end of the street, taking into account continuous street generation.
2. **Overtaking Behaviour**
    - When an NPC approaches the player:
        - The NPC increases its speed, moves to the left, overtakes, and then returns to its original trajectory and speed.
        - **OPTIONAL:** If overtaking on the left is impossible (e.g., the player blocks the path), the NPC rings the bicycle bell.
3. **Dynamic Adaptation & Implementation Flexibility**
    - The overtaking trigger should be adjustable. For example:
        - **Distance-based**: NPCs initiate overtaking when within a configurable distance from the player.
        - **Collision-based**: NPCs initiate overtaking when overlapping with a configurable collision area.
    - **OPTIONAL:** Make adjustable: speed values (normal speed, overtaking speed), frequency of NPC spawning, distance between the player and the NPC spawn point**.**

The goal is to ensure that the overtaking conditions can be easily tuned and tested.