Challenge 2
Player Control

Exam Objectives Covered

- Determine code that would accomplish a specified interaction or programming logic

Challenge Overview: Writing the Player Controller

Welcome to the next challenge in our SkiFree-inspired game development journey! Now that we have our basic environment setup and a stand-in player character in our scene, it's time to set up our player controller. This session will focus on programming the skier's movement and behavior according to specified design constraints.

Step 1: Set Up the Player Controller Script

Create a script to control the skier's movement using Unity's physics engine.

Instructions:

1. Create the Player Controller Script:
    - Create a new C# script, PlayerController, and attach it to the skier GameObject.
2. Rigibody Manipulation:
    - Ensure the skier moves by changing the velocity of its Rigidbody, leveraging Unity's physics engine for movement rather than directly modifying the transform.

Step 2: Implement Movement Constraints

Program the skier to move downhill and implement turning constraints.

Instructions:

1. Downhill Movement:
    - Ensure the skier always moves downhill except when turned 90 degrees to the left or right.
2. Turning Constraints:
    - Implement logic to prevent the skier from turning further than 90 degrees to the left or right.

- Ensure the skier moves downhill in the direction they are facing.

Step 3: Ground Check Implementation

Implement a mechanism to determine if the skier is on the ground.

Instructions:

1. Ground Detection:
    - Add a method to check whether the skier is on the ground.
    - Prevent the skier from turning while in the air.

Step 4: Implement Animation Controller

Create an animation controller to switch between different poses based on the skier's speed.

Instructions:

1. Create Simple Animation Controller:
    - Set up a simple animation controller for the skier.
    - Use parameters to switch between a skiing pose when moving fast and a more relaxed pose when moving slowly or standing still.
2. Link Speed to Animation:
    - Ensure the animation controller responds to the speed of the skier, smoothly transitioning between the poses based on movement.

Once you've implemented and tested these features, your skier should move and behave according to the design constraints, offering a fun and responsive player experience.

Good luck with scripting the player controller! This exercise will help you master player movement dynamics and animation interactions in Unity. Happy skiing!