CSE-411L: INTRO TO GAME DEVELOPMENT LAB

OPEN ENDED LAB

Task:

1. **Scene Setup:**

   • Create a new Unity scene with a thematic environment (e.g., a dojo, forest, or urban street).

   • Add a textured plane to serve as the ground in the scene. Incorporate additional props such as fences, trees, or barrels to enhance the environment.

2. **Character Setup:**

   • Download and import character models for the player and enemy from Mixamo.com.

   • Assign appropriate animations (walk, idle, punch, kick) to both characters.

   • Ensure the characters have humanoid rigging for animation compatibility.

3. **Player Controls:**

   • Implement **on-screen directional buttons** using Unity's UI system for forward, backward, left, and right movement. Bind these buttons to move the player character.

   • Use the Unity **Event System** to handle button interactions.

   • Enable mouse input to trigger the following animations:

     • **Pressing Mouse0 and Q** triggers the **player's punch animation**.

     • **Pressing Mouse0 and W** triggers a **player's kick animation**.

4. **Enemy Behavior:**

   • Write an AI script that allows the enemy to follow the player if the distance between them is less than **5 units**.

   • When the enemy is close enough (e.g., within 1.5 units), it should automatically trigger the punch animation.

   • If the player moves away and the distance exceeds 5 units, the enemy should return to its idle state.

5. **Delegate System:**

   • Implement a delegate-based input system to handle the player's actions:

     • Use delegates for input detection to trigger punch and kick animations based on key combinations.

     • Ensure the system is modular, allowing for easy addition of new animations or actions.

6. **Advanced Animation Features:**

   • Add smooth animation transitions using Unity's Animator Controller (e.g., transitioning between idle, walk, and attack states).

   • Use animation events to sync visual effects or sound effects with specific frames of the animations (e.g., a punching sound during a punch).

7. **Health System:**

   • Add a **health system** to both the player and the enemy:

     • Display health bars above each character or on the UI.

     • When the player or enemy lands a punch or kick, reduce the opponent's health.

     • Trigger a defeat animation when health reaches 0, and display a "Game Over" or "Victory" message.