

ADA University

Game Development Fundamentals (CSCI-4836)

Homework Assignment 1

Custom Character Controller Implementation

Deadline

April 5, 2024, 11:59 PM (Late submissions: -10% per day, maximum 2 days late)

Objective

Develop a custom character controller for a 3D character model, implementing movement, animations, collisions, and audio.

Requirements

1. Character Setup

- Download a free 3D character from Unity Asset Store
- Import into a new Unity project
- Create a basic scene with floor and interactive objects

2. Character Controller (C# Script)

- Create script named: [YourName]CharacterController.cs
- Implement:
 - WASD/Arrow key movement
 - Spacebar jumping
 - Interaction key (e.g., 'E' to pick up objects)
- Use Rigidbody or CharacterController component

3. Animation System

- Create Animator Controller with 3 states:
 - (a) Idle
 - (b) Walk/Run
 - (c) Custom animation (created by you)
- Trigger animations through code

4. Collision & Interaction

- Detect collisions with objects
- Implement gameplay reactions (e.g., score increase)

5. Audio Implementation

- Minimum 2 sound effects:
 - (a) Movement sound (e.g., footsteps)
 - (b) Interaction sound (e.g., item pickup)

6. Video Demonstration

- 45-60 second video showing:
 - Character movement
 - Custom animation
 - Collision interactions
 - Audio feedback

Bonus Opportunity (1 extra point)

- Add your face texture to the character using image editing software
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Submission Requirements

- *YourName*CharacterController.cs file
 - Demonstration video (MP4 or link)
 - Optional: Zipped Unity project
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Cheating Policy

All submissions will be checked for:

- Code plagiarism between students
- AI-generated code patterns
- Proper asset usage

Penalties: 1st offense - resubmission; 2nd offense - zero grade; severe cases - academic misconduct report

Grading Breakdown

Character Setup	20%
Character Controller	40%
Animation System	20%
Collision & Interaction	10%
Audio	10%
Bonus (Face texture)	+1 point

Formatting Guidelines

- Zip file name: FirstName_LastName_GD_HW1.zip
 - Clean, commented code
 - Video should be clearly visible
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Tips for Success

1. Start with basic movement first
2. Test animations early
3. Ask questions if stuck
4. Leave time for video recording

Late work accepted until April 7 with penalty. No submissions accepted after April 7.