Applications of ICT (HCI)

LAB 12

Course Instructor
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Submission Rules:

- The lab work is to be submitted on Google Classroom.
- Upload a Link to Your GitHub Repository
- Failing to follow the naming convention will result in 10% marks deduction.
- You need to finish the lab within 3 hours and there's going to be no extension in the deadline. And late submission will not be considered at all.

Introduction to Unity and Game Engines

Objective

This lab is designed to encourage teamwork and practical application of game design. Students will work in groups to create a playable level and implement basic player movement mechanics based on a selected Game Design Document (GDD).

Lab Overview

In this lab, you will:

1. **Form a Group and Select a GDD**
2. **Design a Level Based on the GDD**
3. **Implement Player Movement Mechanics**
4. **Test and Refine the Level**

Prerequisites

- Students should have an existing Game Design Document (GDD).
- Familiarity with Unity basics, including scene setup and script attachment.

Lab Steps

Task 1: Group Formation and GDD Selection

1. **Form a Group**
    - Each group can consist of up to 5 members.
    - Choose a group leader to manage the submission.
2. **Select a GDD**
    - Each member should present their GDD.
    - The group will decide which GDD to develop for this lab, focusing on one level from the chosen design.

Task 2: Level Design

1. **Define the Level Objectives**
    - Based on the selected GDD, outline the goal(s) of the level (e.g., reach an endpoint, collect items, avoid obstacles).
2. **Create the Level Layout in Unity**
    - Use 3D objects and assets to build a layout matching the GDD's theme and objectives.
    - Include essential elements mentioned in the GDD
3. **Add Decorative Elements**
    - Enhance the environment by adding details like background props, lighting, and textures that fit the level's aesthetic.

Task 3: Implement Player Movement Mechanics

1. **Script Player Movement**
    - Develop or attach a script to allow the player character to move within the level. This should include basic mechanics such as walking, running, or jumping as appropriate to the GDD.
2. **Configure the Character Controller**
    - Use Unity's Character Controller component **OR** Rigidbody for player physics, adjusting for realistic or stylized movement as per the design.
3. **Test the Mechanics**
    - Test the player movement to ensure smooth control and responsiveness.
    - Make necessary adjustments to speed, jump height, and other movement parameters to align with the level design.

Task 4: Testing and Final Adjustments

1. **Playtest the Level**
    - As a group, play through the level multiple times, focusing on both gameplay flow and player controls.
2. **Refine Gameplay**
    - Make adjustments based on group feedback to improve player experience, fix bugs, and ensure that the level meets the GDD's vision.

Deliverables

- Submit screenshots of the completed level in Unity.
- Provide a brief description of the level's objectives and the movement mechanics implemented.
- Upload a link to your `Github Repo`.

Note: Collaboration, effective communication, and adherence to the selected GDD will be evaluated as part of the grading criteria.