



Loop Games - Technical Assessment Case Study

Unity Game Developer with Playable Ads Experience

Introduction

Thank you for applying for the Unity Game Developer position at **Loop Games**. We are excited about the opportunity to work together. This technical assessment is designed to evaluate your skills in Unity and Luna Playable (Playworks)—both crucial for creating engaging playable ads that reach millions of users worldwide.

Technical Assessment Task

Requirements

- Use **Unity 2022.3.51 (LTS)** for project development.
- Use **Unity Playworks Plugin 6.1.1** as part of the project setup.

Objective

Create the game from the provided reference video of "**Apple Grapple**" using **Unity**, and then convert it into a playable ad using **Unity's Luna Playable (Playworks)** platform. Use the supplied assets to develop a playable ad that demonstrates your technical proficiency and attention to detail.

Task Description

Task 1. Gameplay and Unity Development

- **Reference Video**
 - You will receive a reference video demonstrating the gameplay of "Apple Grapple."
 - **Objective:** Replicate the gameplay mechanics and user experience shown in the video as closely as possible.

- **Assets Provided**
 - A downloadable package containing the following folders:
 - **Plugins**
 - **Textures**
 - **Reference**
 - These assets are intended to assist you in recreating the game environment and mechanics.
- **Game Mechanics**
 - Implement core gameplay mechanics using Unity and C# scripts based on the reference video.
 - Characters can pick up swords from the ground. Swords will spawn on the map at random intervals, and all swords are equal in strength. Adding variability to sword spawn timing can make the gameplay more dynamic and challenging.
 - If a character loses their sword, they have enough health to survive three sword strikes before dying.
 - Each level starts with three other characters besides the player, making a total of four characters. The player wins by defeating all other characters.
 - Only sword combat will be included; features like speed boosts and shooting, as seen in the reference video, will be excluded.
 - If two swords clash, both swords will be destroyed.
 - Ensure controls are intuitive and responsive, matching the user experience in the video.
- **Enemy AI**
 - Implement basic enemy AI that is neither too simple (dummy-like) nor overly intelligent. Enemies should behave similarly to an average player, such as navigating towards the closest sword, avoiding obvious dangers, and attacking when an opponent is within range. This will create a fair and challenging experience for the user.
- **Asset Integration**
 - Utilize the provided textures to build the game environment.
 - Implement random tile placement using the provided grass and stone tiles to create the game's background. This earns extra credit. If random placement is not implemented, a static level background should be created.
 - You may create additional assets if necessary, but focus on using the provided resources.

Task 2. Scratch Card Integration (BONUS)

- **Scratch Card Plugin**
 - Use the **scratch-card plugin** provided in the Plugins folder to create an interactive element similar to "cleaning" an area, as demonstrated in the reference video.
 - Ensure the scratch mechanic provides a similar feel to the action shown in the video.
 - Refer to the plugin documentation for implementation details:
<https://assetstore.unity.com/packages/tools/particles-effects/scratch-card-228309>

Task 3. Luna Integration

- **Setup with Luna**
 - Follow the setup guide from the Luna Playable Quickstart documentation to properly configure the project: <https://docs.lunalabs.io/docs/playable/quickstart>.
 - Ensure that you resolve any issues within the project and obtain a successful build using the Luna Develop tool without errors.
 - Use the end card images provided in the Textures folder to create an end card that appears either when the player character dies or after defeating all enemies. The end card should include a call-to-action button, with the necessary call-to-action code connected to it.
 - Once you have successfully built the project, verify that the build opens correctly in the browser using the 'Open in Browser' feature. (You don't need to export playable)
 - Note: During the initial plugin setup, Luna Playable may request account registration. Please create an account if needed, and use 'Loop Games' as the company name if asked.
 - Note: Due to the integration of the scratch card plugin, obtaining a successful build without errors may be challenging, and resolving these issues is a key difficulty of this step.
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Deliverables and Submission Guidelines

- **Format**
 - Compress the Unity project files into a single ZIP archive named: YourName_LoopGames_PlayableAd.zip.
 - **Contents**
 - Source files (Unity project, excluding Library, Temp, LunaTemp).
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Evaluation Criteria

Your submission will be evaluated based on the following aspects:

- **Technical Proficiency**
 - The quality of your implementation in Unity, including how closely the gameplay mechanics match the reference video.
 - The integration of Luna Playable and achieving a successful build, especially resolving issues related to the scratch card plugin.

- **Attention to Detail**
 - The level of fidelity in replicating the gameplay experience, including animations, physics, and overall game feel.
 - Effective use of provided assets, and any additional creativity applied.
- **Optimization**
 - Ensuring the game runs smoothly without errors.
- **Problem Solving**
 - Successfully overcoming challenges related to the scratch card plugin and Luna Playable integration.
 - The creativity applied in overcoming any obstacles.
- **Gameplay Experience**
 - Intuitive and responsive controls.
 - Fair and challenging enemy AI, providing a balanced gameplay experience.

We encourage you to demonstrate your strengths across these areas, and we are excited to see how you tackle the technical challenges!

Additional Guidelines

- **Resources**
 - You must use the assets provided in the package.
 - All code must be written by you personally.
 - **Originality**
 - The work submitted should be original and created specifically for this assessment.
 - **Support**
 - If you have any questions or need clarifications, feel free to reach out to fiat@loopgames.net.
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We look forward to seeing your technical skills and creativity shine through this assessment. Good luck!

Please note: All materials provided as part of this assessment are confidential and intended solely for evaluation purposes.