

Streamline

Unity Developer Assignment

Table of Contents

Table of Contents.....	1
Overview	2
Project Setup.....	2
Requirements.....	3
Basic Movement & Input	3
Advanced Movement	3
Gameplay	3
Optional/Bonus Requirements	3
Deliverables	4
Judgement Criteria	4
Frequently Asked Questions	5

Overview

At Streamline, your role as a 'Unity Developer' will involve working on a variety of real-time 3D interactive products and creative solutions, including but not limited to developing virtual worlds, medium-to-large scale multiplayer experiences, XR experiences, digital twins, HMIs, and digital transformation products.

This assignment is to gauge your understanding & experience using the **Unity Engine** and its many features by creating a simple game.

Project Setup

Please ensure you have the latest LTS version of Unity (<https://unity3d.com/unity/qa/lts-releases>), which will be used for this assignment.

Create a new project using the "3D" template available in Unity and this will be the foundation for your assignment. You will not need additional assets to complete the base requirements of this assignment.

Requirements

Basic Movement & Input

Create a sphere that can be controlled and can roll around in a scene. The movement should be controlled via the arrow keys & WASD.

Next add a jumping mechanic to the sphere. This should be controlled via the space bar.

Variables exposed to the editor should include:

1. A variable that allows to adjust the speed at which the sphere can move at.
2. A variable that allows to adjust how high the sphere can jump.

Advanced Movement

Add a jetpack jump to the sphere. Requirements for the jetpack jump are:

1. A UI indicator that shows the remaining fuel when in air.
2. The jetpack should recharge only when grounded.
3. Expose multiple variables that allow for adjustments to recharge rate, fuel amount & boost strength.

Gameplay

Using the above, add one more gameplay mechanic of your choice. You can choose from the list below or create one of your own.

1. Door and key / trigger.
2. Point system with a functional leader board.
3. Treasure hunt.
4. Jump pad.

Optional/Bonus Requirements

1. Code tests.
2. Proper Documentation.
3. Any other feature that you feel would benefit or improve the product.

Deliverables

The contents of your submission should include the following:

1. The Unity Project, including any source code and additional assets (or external location to retrieve said assets).
2. Do not include intermediate or temporary files (Read “.gitignore”)
3. Documentation for your test submission, detailing
 - a. What should we look for in your project?
 - b. What are you most proud of?
 - c. What could have been done better?
 - d. How much time was spent on each section/ task.

Judgement Criteria

Your submission will be judged according to the following criteria:

1. The correctness of the application – Your ability to understand the requirements and implement bug-free solutions that fulfil those requirements is the topmost priority.
2. The structure of the code – The code patterns and data structures you employ tell us a great deal about your knowledge and experience.
3. The algorithms utilized – Your choice of algorithms and the degree of success when implementing them informs us about your logical abilities. We’ll also be looking for memory and/or CPU performance issues.
4. The cleanness and clarity of the code – Consistent style and documentation are important for large-scale projects.

Frequently Asked Questions

Q: Can I use any libraries, assets or frameworks?

A: Yes, as long it's free and/or open source, and available for us to download/retrieve ourselves.

Q: Will I fail this test if I cannot finish all the requirements?

A: We use this test to assess your skill level, so there's no way to fail, short of not doing the test at all. How you perform on the test will be compared against the availability of junior, mid-level, and senior positions.

Q: I'm stuck on one of the requirements. Can I skip it and move on to the next requirement?

A: You can, however some requirements depend on earlier ones, so skipping one may make another requirement impossible to complete.

Q: How do I submit my application for review?

A: Setting up the project with source control (git, svn, etc.) is advised, and you may pass us a link to it or add us as contributors.

Do refrain from using the words "Streamline" within your repo/project to avoid others from copying/stealing your submission.

If using source control is not possible, do submit your assignment as a single compressed archive (.zip, .gzip, .7z, etc.), or if you have a preferred alternative method of submitting your application for review, just let us know.

Q: How will you test my application?

A: We will run the application internally and enter our own test data. Your application will be judged according to the Judgment Criteria section on the previous page. If any special setup steps are required to run your application, please include instructions.

Q: I have a question that this FAQ doesn't answer. Who do I ask?

A: Feel free to email us if you have any questions regarding this task, however, you must do all the work yourself. If you're invited for a follow-up interview, we will be discussing your code with you.