Assessment Submission Coversheet:  
Complex Game Systems

Task 1 – Write a Modular Complex System Brief

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| **Course Stream:** | 10702NAT – Advanced Diploma of Professional Game Development |
| **Assessment Name:** | Complex Game Systems |
| **Units Covered:** | PGDGSP6006–Develop complex systems for real time applications |
| **Teacher/s:** | Jesse James Donlevy |
| **Due Date:** | 09/05/2023 |
| **Date of Submission:** | *Will be automatically recorded on Canvas* |
| **Assessment Work Location** | Canvas |

*For more information on this task, please click on the* [***Subject and Assessment Guide***](https://aie.instructure.com/courses/1027/files/723198?wrap=1) *link in the course* ***Game Programming Year 2*** *under the subject* ***Complex Game Systems*** *on* [*https://aie.instructure.com*](https://aie.instructure.com) *and read the* ***2023 Subject & Assessment Guide – Complex Game Systems***

**Naming Convention**:

* *Yourname*\_CGS\_Brief.pdf

**Declaration**

By submitting this work under my name, I declare that my submission is my own work with respect to plagiarism and does not violate any copyright laws. I have retained a copy of this assessment material that I can produce if requested.

Tick to acknowledge you have read and agree with this declaration.

Name: Connor Mills Date: 09/05/2023

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Task 1 – Write a Modular Complex System Brief

**Work Submitted:***Tick to acknowledge you have submitted this part of the assessment.*

* Write a Brief for your Modular Complex System:   
  I have submitted a Brief of my Modular Complex System. In the Brief it lists and explains all the following points.
  + The purpose of the system:   
    In the Brief I have outlines the purpose of the Complex System I will be creating. It is a Deterministic replay system that is aiming to allow designers the ability to add a replay feature into their game.
  + Libraries it relies on:   
    As I will be creating the system in and for Unity, I will be using Unity’s inbuilt libraries. I will also use System.IO as I will need MemoryStream and the functions associated to it.
  + The mathematical operations to be used:   
    The system that I will be creating is very light of mathematical operations. The only operations that occur are the calculation of the change between the previous and current frame as well as the adding of the change to the game object each frame.
  + The advanced algorithms to be implemented:   
    I will be using an algorithm to optimise the system by cutting down on unnecessary data. I will only be saving the difference between the last frame and the current and use a bit in the MemoryStream to tell the algorithm if it needs to pull the data or skip it.
  + How it will be made modular:   
    In the brief I talked about how I will create presets that the user can use and how I will add documentation that will guide the user in making their own presets.
  + How to integrate your system with a new or existing application   
    The system will be put together as a Unity Package. It will contain the scripts that are needed and an example scene with a working replay system. Because it is a Unity Package it will be easy for any user to just download and import it into their project from the Unity Package Manager.

Name: Connor Mills Date: 09/05/2023